

OFFICE OF THE COUNCIL

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LAURA M. TOY



33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
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OFFICE OF THE COUNCIL

**MEETING PACKET FOR
THE REGULAR MEETING OF
MONDAY, OCTOBER 6, 2025
7:00 P.M.**

**The electronic agenda is compiled, produced and
distributed by the City Council Staff.**

(734) 466-2250

The official documents are on file in the City Clerk's office.

2026th Regular Meeting Agenda of the Council of the City of Livonia - Revised
Monday, October 6, 2025
7:00 p.m. - City Hall Auditorium
33000 Civic Center Drive, Livonia, Michigan

CALL TO ORDER

INVOCATION/PLEDGE OF ALLEGIANCE

ROLL CALL

PRESENTATION OF MINUTES – Regular Meeting Minutes of September 22, 2025

AUDIENCE COMMUNICATION

REPORTS FROM THE MAYOR AND OTHER CITY OFFICIALS

- a. [Communication from the Department of Finance dated September 19, 2025, re: forwarding Quarterly Investment Report for the City of Livonia for the quarter ending August 31, 2025.](#)

CONSENT AGENDA

1. [REQUEST TO WAIVE THE FORMAL BIDDING PROCESS AND AUTHORIZE THE PURCHASE OF FLOCK SAFETY CAMERAS AND SOFTWARE PRODUCTS: Division of Police, re: to enhance crime prevention and investigations, from budgeted and grant funds. \(Approving\)](#)
2. [REQUEST TO WAIVE THE SEALED BID PROCESS AND AUTHORIZE THE PURCHASE OF TWO \(2\) MARKED POLICE VEHICLES USING STATE OF MICHIGAN COOPERATIVE BID PRICING: Division of Police, re: to be replaced as part of the vehicle replacement program, from budgeted funds. \(Approving\)](#)
3. [AWARD OF BID: Department of Parks and Recreation, re: for various types of clothing for a two \(2\) year period, from budgeted funds. \(Approving\)](#)
4. [REQUEST TO WAIVE THE SEALED BID PROCESS AND AWARD OF CONTRACT: Department of Public Works, Building Maintenance Division, re: for the phase two installation of building maintenance systems, from budgeted funds. \(Approving\)](#)

UNFINISHED BUSINESS

5. [BLOCK PARTY: Malgorzata Simmons, re: to be held Saturday, October 25, 2025, from 3:00 p.m. to 6:00 p.m., on Melrose Street between Elsie Street and Jamison Avenue.](#)
6. [BLOCK PARTY AND STREET BARRICADING: Danielle Greason, re: to be held Friday, October 31, 2025, from 5:00 p.m. to 9:30 p.m., on Emerson Court to West Chicago and on Tulipwood from Emerson Court to Harrison Street.](#)
7. [REQUEST TO APPROVE FIRST AMENDMENT TO THE SHOPPES AT COLLEGE PARK PLANNED GENERAL DEVELOPMENT AGREEMENT BETWEEN THE CITY OF LIVONIA AND HAGGERTY SIX PARTNERS, LLC: Doraid Markus on behalf of Haggerty Six Partners, LLC, re: Petition 2024-02-02-03, to amend the signage provisions of paragraph 4.7 of the Agreement. \(CR 135-24\)](#)

NEW BUSINESS

8. [BLOCK PARTY: Kathy Faitel, re: to be held Sunday, October 19, 2025, from 2:00 p.m. to 5:00 p.m., on Edgewood Street between Perth and Scone Streets.](#)

9. REQUEST TO AUTHORIZE ADDITIONAL EXPENDITURE: Engineering Division, re: in order to close out the West Chicago Reconstruction Project, Harrison Avenue to Inkster Road, in the amount of \$18,499.08 to Anderson, Eckstein & Westrick, Inc. (AEW), from budgeted funds. (CR 207-24)

AUDIENCE COMMUNICATION

NOTICE(S)

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LORI L. MILLER, CITY CLERK



LETTER TO THE LIVONIA CITY COUNCIL

Finance
September 19, 2025

MEETING DATE

Regular Meeting
10/20/2025

PRESENTED BY

AGENDA ITEM

a. Communication from the Department of Finance, dated September 19, 2025, re: forwarding Quarterly Investment Report for the City of Livonia for the quarter ending August 31, 2025.

BACKGROUND DETAILS

Public Act 213 of 2007 requires that a quarterly written report shall be provided to the governing body regarding the investment of public funds. Attached for Council's information is a summary of investments for the City of Livonia as of August 31, 2025. All investments are in compliance with the City's Investment Policy and Michigan Public Act 20.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

We respectfully request that City Council receive and file this report.

ATTACHMENTS

1. 2025 Quarterly Investments -3rd Quarter

APPROVED BY

Handwritten signature of Debra A. Lichtenberg in black ink.

Debra Peck Lichtenberg, CPA, Finance Director

Date: September 19, 2025

Handwritten signature of Maureen Miller Brosnan in black ink.

Maureen Miller Brosnan, Mayor

Date: September 19, 2025

CERTIFICATES OF DEPOSIT & TERM SECURITIES HELD

**As of
August 31, 2025**

DATE OF PURCHASE	CERTIFICATE HELD AT	PRINCIPAL AMOUNT	DATE OF MATURITY
05/20/25	FLAGSTAR	2,000,000.00	09/02/25
05/28/25	PFM GovMIC	6,000,000.00	09/09/25
06/04/25	PFM GovMIC	1,000,000.00	09/16/25
06/11/25	PFM GovMIC	6,000,000.00	09/23/25
06/18/25	PFM GovMIC	2,000,000.00	09/30/25
06/24/25	INDEPENDENT	1,000,000.00	10/07/25
06/25/25	PFM GovMIC	1,000,000.00	10/07/25
07/02/25	PFM GovMIC	4,000,000.00	10/14/25
07/09/25	PFM GovMIC	1,000,000.00	10/21/25
07/16/25	PFM GovMIC	1,000,000.00	10/28/25
07/23/25	PFM GovMIC	2,000,000.00	11/04/25
07/30/25	PFM GovMIC	1,000,000.00	11/10/25
08/06/25	PFM GovMIC	2,000,000.00	12/02/25
08/05/25	FLAGSTAR	2,000,000.00	12/02/25
08/13/25	PFM GovMIC	1,000,000.00	12/09/25
08/20/25	PFM GovMIC	1,000,000.00	12/16/25
08/27/25	PFM GovMIC	5,000,000.00	12/23/25

39,000,000.00

**SCHEDULE OF POOLED CASH HELD
AS OF
August 31, 2025**

08/31/25	Comerica Bank	Money Mkt, Pooled, etc.	42,597,965.57
08/31/25	Flagstar	Money Market	94,222.29
08/31/25	GovMic	PFM Asset Management	17,606,688.28
08/31/25	Independent Bank	Lockbox - Water	220,200.20
			<u>60,519,076.34</u>

**SCHEDULE OF U.S. TREASURY AND AGENCY
SECURITIES HELD**

DATE OF PURCHASE	DESCRIPTION		MATURITY DATE	HISTORICAL COST
07/02/21	#280 - STATE OF MI	594612BD4	05/15/27	1,140,682.20
09/09/22	#291 - USA Treasury	9128285J5	10/31/25	1,133,247.99
12/09/22	#295 - FHLB	3130ALGJ7	03/23/26	832,328.25
01/17/23	#296 - FFCB	3133EN6A3	01/13/26	659,615.22
02/23/23	#298 - FFCB	3133EPBJ3	02/23/26	1,123,526.25
03/10/23	#299 - USA Treasury	91282CGA3	12/15/25	1,026,879.28
05/02/23	#304 - USA Treasury	912828U24	11/15/26	1,083,429.63
05/16/23	#305 - FHLMC	3134GW5P7	10/27/25	1,056,676.35
06/30/23	#306 - USA Treasury	91282CEW7	06/30/27	1,160,066.52
10/27/23	#308 - FNMA	3135G05Y5	10/08/27	1,064,771.25
10/31/23	#309 - USA Treasury	91282CGP0	02/29/28	1,123,119.51
12/08/23	#310 - FFCB	3133EPK79	12/07/26	799,442.40
01/26/24	#311 - USA Treasury	91282CJN2	11/30/28	1,217,207.14
02/05/24	#312 - USA Treasury	91282CHQ7	07/31/28	1,153,867.13
05/02/24	#313 - FFCB	3133ERDH1	04/30/29	790,323.90
05/13/24	#314 - USA Treasury	91282CJW2	01/31/29	980,433.04
06/26/24	#315 - FFCB	3133ERGL9	06/07/28	801,360.00
07/08/24	#316 - USA Treasury	91282CKT7	05/31/29	622,377.26
08/01/24	#317 - FFCB	3133ERKX8	07/12/29	615,056.90
08/01/24	#318 - USA Treasury	9128283F5	11/15/27	565,572.32
09/30/24	#319 - FHLB	3130ATHW0	09/10/27	589,273.62
09/30/24	#320 - USA Treasury	91282CFJ5	08/31/29	588,400.45
10/31/24	#321 - FHLB	3130ATHX8	09/14/29	675,881.55
10/31/24	#322 - FFCB	3133ERAX9	04/12/28	561,959.70
11/29/24	#323 - USA Treasury	91282CHM6	07/15/26	752,580.64
11/29/24	#324 - USA Treasury	91282CJF9	10/31/28	779,061.92
12/20/24	#325 - USA Treasury	91282CKJ9	04/15/27	702,709.38
12/23/24	#326 - USA Treasury	91282CMB4	12/15/27	694,889.06
12/31/24	#327 - USA Treasury	91282CKK6	04/30/26	513,986.08
12/31/24	#328 - USA Treasury	91282CJC6	10/15/26	513,029.83
01/09/25	#329 - FHLB	3130AMYV8	06/30/26	480,070.00
01/19/25	#330 - FHLB	3130ATUT2	12/29/29	800,441.60
02/25/25	#331 - FFCB	3133ERZ46	01/28/28	750,898.50
02/26/25	#332 - FNMA	3136GABN8	02/26/29	750,802.50
03/31/25	#333 - FHLB	3130AV5P3	03/08/30	761,932.50
04/16/25	#335 - FFCB	3133ETBF3	04/01/30	499,344.00
05/27/25	#338 - USA Treasury	91282CMG3	01/31/30	604,734.38
06/02/25	#339 - Freddie Mac	3134HAW33	12/18/29	601,500.00
06/20/25	#340 - USA Treasury	91282CHF1	05/31/30	494,923.55
07/17/25	#341 - USA Treasury	91282CJT9	01/15/27	700,248.44
08/27/25	#342 - USA Treasury	91282CHU8	08/15/26	602,462.95
08/27/25	#343 - USA Treasury	91282CKZ3	07/15/27	505,724.33
08/27/25	#344 - USA Treasury	91282CMA6	11/30/29	507,091.52
08/31/25	SECURITIES - TOTAL			33,381,929.05
08/31/25	SECURITIES - POOLED FUND			21,542.13
				33,403,471.18

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

3. REQUEST TO WAIVE THE FORMAL BIDDING PROCESS AND AUTHORIZE THE PURCHASE OF FLOCK SAFETY CAMERAS AND SOFTWARE PRODUCTS: Division of Police, re: to enhance crime prevention and investigations, from budgeted and grant funds.

Thomas Goralski, Chief of Police, stated the Flock cameras help recognize vehicle descriptions and license plates, all the surrounding cities have them, Flock maintains all of the posts, and grant money will cover the costs.

Motion was made by Vice President Ptashnik to put the matter on the Consent portion of the next Regular Agenda.

DIRECTION:

APPROVING

CONSENT



LETTER TO THE LIVONIA CITY COUNCIL

1.

Police
September 22, 2025

MEETING DATE

S092225/R100625

PRESENTED BY

Thomas Goralski, Police Chief

AGENDA ITEM

REQUEST TO WAIVE THE FORMAL BIDDING PROCESS AND AUTHORIZE THE PURCHASE OF FLOCK SAFETY CAMERAS AND SOFTWARE PRODUCTS: Division of Police, re: to enhance crime prevention and investigations, from budgeted and grant funds.

BACKGROUND DETAILS

The Livonia Division of Police is requesting authorization to purchase Flock Safety cameras and technology for deployment throughout the City of Livonia. Flock Safety cameras are an advanced tool that enhances law enforcement's ability to prevent and investigate crime by:

- Providing real-time license plate recognition to identify vehicles associated with criminal activity.
- Assisting in locating missing persons and stolen vehicles.
- Offering valuable evidence to support investigations and prosecutions.
- Serving as a force multiplier by expanding situational awareness across our community.

Flock Safety cameras are designed with privacy safeguards and comply with all state and federal legal standards regarding data storage and usage.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

The Livonia Division of Police is requesting approval to purchase and implement the Flock Safety cameras and technology throughout the city. The proposed investment will directly support our mission to protect and serve Livonia residents by leveraging technology to keep our community safe.

SPECIFIC NAME OF PRODUCT AND NUMBER TO BE PURCHASED (if more than one)

Flock Safety Platform

Twenty-one (21) Flock Safety LPR, fka Falcon

Law enforcement grade solar power + LTE license plate recognition cameras with proprietary Vehicle Fingerprint technology and real-time alerts for unlimited users.

Ten (10) Solar Long-range LPR, fka Solar Falcon LR

Law enforcement grade long range and high vehicle speed license plate recognition camera with proprietary Vehicle Fingerprint technology and real-time alerts for unlimited users.

Two (2) Dual Solar LPR - Standard Bundle, fka Falcon

Two solar-powered fixed standard-range LPR cameras on the same pole.

One (1) Flock Safety Platform - Essentials

An integrated public safety platform that detects, centralizes and decodes actionable evidence to increase safety, improve efficiency, and connect the community,

One (1) Enhanced LPR Upgrade

The enhanced LPR upgrade package is a software add-on for any of the Flock OS tiers designed to help detectives and patrol officers conduct more efficient, informed and collaborative investigations. Its advanced License Plate Recognition (LPR) features streamline investigations, providing officers with immediate access to essential information and improving communication within and across departments.

In addition, Flock Safety Professional Services and One Time Purchases include first year implementation fees.

CONTRACT: Amount and/or purchase price and length of contract (with dates if applicable)

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DETAILED WORK BEING PERFORMED

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FISCAL CONSIDERATIONS (Amount requested and Account(s) used. If applicable, Grant Funding information)

The cost of the two-year contract, which includes all the systems and services delineated in this document, will be \$165,250 in the first year, and 130,100.00 in the second year of the contract, with a total cost of \$295,350.00, which includes a savings of \$15,000.00. Funds are budgeted for year one in account #262-333-818-000 (Contractual Services). Grant monies have been approved through the Michigan State Police Automobile Theft Prevention Authority. The grant award is 37% of year one's total cost.

ACCEPTANCE OF BID (Please detail the following: Why accepted, why not lowest bidder, company name, contact person, full address)

.

REASON TO WAIVE BID PROCESS (Emergency, Professional services, No advantage to City and

why, Consortium package, etc): Pursuant to Finance Ordinance 3.04.140 E.3, the Livonia Division of Police is requesting the Council's approval to waive the bid process and recognize the preferred vendor, Flock Safety, a sole source provider, to supply the Police Department with Flock Safety platform cameras, technology and professional services for deployment throughout the city to enhance our ability to prevent and investigate crime.

ATTACHMENTS

1. Flock Proposal
2. Sole Source Letter

APPROVED BY

_____ Thomas Goralski, Police Chief	Date:
_____ Debra Peck Lichtenberg, CPA, Finance Director	Date:
_____ Carter Fisher, City Attorney	Date:
_____ Maureen Miller Brosnan, Mayor	Date:

Flock Safety + MI - Livonia PD

Flock Group Inc.
1170 Howell Mill Rd, Suite 210
Atlanta, GA 30318

MAIN CONTACT:
Mike Lampman
mike.lampman@flocksafety.com
+14348260998

Created Date: 09/05/2025
Expiration Date: 10/03/2025
Quote Number: Q-160624
PO Number:

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Budgetary Quote

This document is for informational purposes only. Pricing is subject to change.

Bill To: 15050 Farmington Rd Livonia, Michigan 48150

Ship To: 15050 Farmington Rd Livonia, Michigan 48150

Billing Company Name: MI - Livonia PD

Billing Contact Name:

Billing Email Address:

Billing Phone:

Subscription Term: 24 Months

Payment Terms: Net 30

Retention Period: 30 Days

Billing Frequency: Annual Plan - First Year Invoiced at Signing.

Hardware and Software Products

Annual recurring amounts over subscription term

Item	Cost	Quantity	Total
Flock Safety Platform			\$130,100.00
Flock Safety Platform			
Flock Safety Platform - Essentials	Included	1	Included
Flock Safety Flock OS			
Enhanced LPR Upgrade	Included	1	Included
Flock Safety Bundles			
Dual Solar LPR - Standard Bundle, fka Falcon	Included	2	Included
Flock Safety LPR Products			
Solar Long-Range LPR, fka Solar Falcon LR	Included	10	Included
Flock Safety LPR, fka Falcon	Included	21	Included

Professional Services and One Time Purchases

Item	Cost	Quantity	Total
One Time Fees			
Flock Safety Professional Services			
Professional Services - Solar Implementation Fee	\$750.00	4	\$3,000.00
Professional Services - MASH Tested Pole Implementation Fee - Non-Coastal Region	\$1,250.00	6	\$7,500.00
Professional Services - Standard Implementation Fee	\$650.00	2	\$1,300.00
Professional Services - Existing Infrastructure Implementation Fee	\$150.00	2	\$300.00
Professional Services - MASH Tested Pole Implementation Fee - Non-Coastal Region	\$1,250.00	17	\$21,250.00
Professional Services - Solar Bundle Implementation Fee	\$900.00	2	\$1,800.00

Subtotal Year 1: \$165,250.00

Annual Recurring Subtotal: \$130,100.00

Discounts:	\$15,000.00
Estimated Tax:	\$0.00
Contract Total:	\$295,350.00

Taxes shown above are provided as an estimate. Actual taxes are the responsibility of the Customer. This is not an invoice – this document is a non-binding proposal for informational purposes only. Pricing is subject to change.

Billing Schedule	Amount (USD)
Year 1	
At Contract Signing	\$165,250.00
Annual Recurring after Year 1	\$130,100.00
Contract Total	\$295,350.00

*Tax not included

Discounts Applied	Amount (USD)
Flock Safety Platform	\$15,000.00
Flock Safety Add-ons	\$0.00
Flock Safety Professional Services	\$0.00

Product and Services Description

FlockOS Features	Description
Enhanced LPR Upgrade	The Enhanced LPR Package is a software add-on for any of the FlockOS™ tiers designed to help detectives and patrol officers conduct more efficient, informed, and collaborative investigations. Its advanced License Plate Recognition (LPR) features streamline investigations, providing officers with immediate access to essential information and improving communication within and across departments.
Flock Safety Platform - Essentials	An integrated public safety platform that detects, centralizes and decodes actionable evidence to increase safety, improve efficiency, and connect the community.
Solar Long-Range LPR, fka Solar Falcon LR	Law enforcement grade, long range and high vehicle speed license plate recognition camera with Vehicle Fingerprint™ technology (proprietary machine learning software) and real-time alerts for unlimited users, with LTE. Solar Power only
Flock Safety LPR, fka Falcon	Law enforcement grade infrastructure-free (solar power + LTE) license plate recognition camera with Vehicle Fingerprint™ technology (proprietary machine learning software) and real-time alerts for unlimited users.
Dual Solar LPR - Standard Bundle, fka Falcon	Two solar-powered fixed standard-range LPR cameras on the same pole
Professional Services - Solar Implementation Fee	One-time Professional Services engagement. Includes site and safety assessment, camera setup and testing, and shipping and handling in accordance with the Flock Safety Standard Implementation Service Brief.
Professional Services - MASH Tested Pole Implementation Fee - Non-Coastal Region	MASH tested pole that meets DOT crashworthiness requirements. Includes materials, installation, and maintenance.
Professional Services - Standard Implementation Fee	One-time Professional Services engagement. Includes site and safety assessment, camera setup and testing, and shipping and handling in accordance with the Flock Safety Standard Implementation Service Brief.
Professional Services - Existing Infrastructure Implementation Fee	One-time Professional Services engagement. Includes site and safety assessment of existing vertical infrastructure location, camera setup and testing, and shipping and handling in accordance with the Flock Safety Standard Implementation Service Brief.
Professional Services - MASH Tested Pole Implementation Fee - Non-Coastal Region	MASH tested pole that meets DOT crashworthiness requirements. Includes materials, installation, and maintenance.
Solar LPR, fka Solar Falcon	Standard range license plate recognition camera with Vehicle Fingerprint™ technology (proprietary machine learning software) and real-time alerts for unlimited users, with LTE
Professional Services - Solar Bundle Implementation Fee	One-time Professional Services engagement. Includes site and safety assessment, camera setup and testing, and shipping and handling in accordance with the Flock Safety Standard Implementation Service Brief.

FlockOS Features & Description

FlockOS Features	Description
Convoy Search	Unearth hidden connections by detecting suspect vehicles that frequently travel together. This tool is invaluable for investigating organized or serial crimes and identifying accomplices.
Visual Search	Transforms any digital photo into a potent investigative lead, enhancing evidence collection. Upload the image of a vehicle into FlockOS™ to initiate a reverse image search that will help you identify crucial suspect vehicle information and unlock dead-end investigations.
Multi Geo Search	Connects the dots between multiple crimes and crime scenes. Link a suspect vehicle to multiple incidents based on location, without needing a vehicle description or plate number.
Custom Hot List Attachments	The ability to add case notes, photos, reports, and other relevant case information to Custom Hot List Alerts
Custom Hot List Deconfliction	Allows Flock Safety users to identify overlapping investigations within their agency and within other law enforcement agencies and provide the contact information of opted-in parties to facilitate collaboration.
Unlimited Vehicle Description Alerts	Users can set up and receive notifications for suspect vehicles based on body type, make, color, location and timeframe. Notifications are sent via app, SMS or email when a vehicle matching the

	predetermined criteria passes a camera in your organization's network.
Community Network Access	The ability to request direct access to feeds from privately owned Flock Safety LPR cameras located in neighborhoods, schools, and businesses in your community, significantly increasing actionable evidence that clears cases.
Unlimited Users	Unlimited users for FlockOS
State Network (License Plate Lookup Only)	Allows agencies to look up license plates on all cameras opted into the Flock Safety network within your state.
Nationwide Network (License Plate Lookup Only)	With the vast Flock Safety sharing network, law enforcement agencies no longer have to rely on just their devices alone. Agencies can leverage a nationwide system boasting 10 billion additional plate reads per month to amplify the potential to collect vital evidence in otherwise dead-end investigations.
Law Enforcement Network Access	The ability to request direct access to evidence detection devices from Law Enforcement agencies outside of your jurisdiction.
Time & Location Based Search	Search full, partial, and temporary plates by time at particular device locations
License Plate Lookup	Look up specific license plate location history captured on Flock devices
Vehicle Fingerprint Search	Search footage using Vehicle Fingerprint™ technology. Access vehicle type, make, color, license plate state, missing / covered plates, and other unique features like bumper stickers, decals, and roof racks.
Insights & Analytics	Reporting tool to help administrators manage their LPR program with device performance data, user and network audits, plate read reports, hot list alert reports, event logs, and outcome reports.
Real-Time NCIC Alerts on Flock ALPR Cameras	Receive automated alerts when vehicles entered into established databases for missing and wanted persons are detected, including the FBI's National Crime Information Center (NCIC) and National Center for Missing & Exploited Children (NCMEC) databases.
Unlimited Custom Hot Lists	Ability to add a suspect's license plate to a custom list and get alerted when it passes by a Flock camera

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Sole Source Letter for Flock Safety™ ALPR Cameras and Solution

Flock Safety is the sole manufacturer and developer of the Flock Safety ALPR Camera. Flock Safety is also the sole provider of the comprehensive monitoring, processing, and machine vision services which integrate with the Flock Safety ALPR Camera.

The Flock Safety ALPR camera and devices are the only Law Enforcement Grade ALPR System to offer the following combination of proprietary features:

1. Vehicle Fingerprint Technology™:

- Patented proprietary machine vision to analyze vehicle license plate, state recognition, and vehicle attributes such as color, type, make and objects (roof rack, bumper stickers, etc.) based on image analytics (not car registration data)
- Machine vision to capture and identify characteristics of vehicles with a paper license plate and vehicles with the absence of a license plate
- Ability to 'Save Search' based on description of vehicles using our patented Vehicle Fingerprint Technology without the need for a license plate, and set up alerts based on vehicle description
- Only LPR provider with "Visual Search" which can transform digital images from any source into an investigative lead by finding matching vehicles based on the vehicle attributes in the uploaded photo
- Falcon Flex™: an infrastructure-free, location-flexible license plate reader camera that is easy to self install. Falcon Flex ties seamlessly into the Flock ecosystem with a small and lightweight camera with the ability to read up to 30,000 license plates and vehicle attributes on a single battery charge

2. Integrated Cloud-Software & Hardware Platform:

- Ability to capture two (2+) lanes of traffic simultaneously with a single camera from a vertical mass
- Best in class ability to capture and process up to 30,000 vehicles per day with a single camera powered exclusively by solar power
- Wireless deployment of solar powered license plate reading cameras with integrated cellular communication weighing less than 5lbs and able to be powered solely by a solar panel of 60W or less
- Web based footage retrieval tool with filtering capabilities such as vehicle color, vehicle type, vehicle manufacturer, partial or full license plate, state of license plate, and object detection
- Utilizes motion capture to start and stop recording without the need for a reflective plate

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- Motion detection allows for unique cases such as bicycle capture, ATV, motorcycle, etc.
 - On device machine processing to limit LTE bandwidth consumption
 - Cloud storage of footage
 - Covert industrial design for minimizing visual pollution
3. Transparency & Ethical Product Design:
- One-of-a-kind "Transparency Portal" public-facing dashboard that details the policies in place by the purchaser, as well as automatically updated metrics from the Flock system
 - Built-in integration with NCMEC to receive AMBER Alerts to find missing children
 - Privacy controls to enable certain vehicles to "opt-out" of being captured
4. Integrated Audio & Gunshot Detection:
- Natively integrated audio detection capabilities utilizing machine learning to recognize audio signatures typical of crimes in progress (e.g., gunshots)
5. Live Video Integration:
- Ability to apply computer vision to third-party cameras using Wing™ LPR, transforming them to evidence capture devices using the same Vehicle Fingerprint technology offered on the Flock Safety Falcon™ ALPR cameras
 - Wing™ Livestream integrates live stream traffic cameras, publicly or privately owned livestream security cameras into one cloud-based situational awareness dashboard to increase response time in mission-critical incidents
 - Manage various government intelligence including ALPR, livestream cameras, CAD, automatic vehicle location (AVL) on Flock Safety's Wing™ Suite
 - Access Wing™ Replay to unlock enhanced situational awareness with 7-day footage retention, Hot List Live Video Instant Replay, and downloadable MP4
6. Partnerships:
- Flock Safety is the only LPR provider to officially partner with AXON to be natively and directly integrated into Evidence.com
 - Flock Safety is the only LPR provider to be fully integrated into a dynamic network of Axon's Fleet 3 mobile ALPR cameras for patrol cars and Flock Safety's Falcon cameras
 - Access to additional cameras purchased by our HOA and private business partners, means an ever-increasing amount of cameras and data at no additional cost
-

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7. Warranty & Service:

- Lifetime maintenance and support included in subscription price
- Flock Safety is the only fully integrated ALPR one-stop solution from production of the camera to delivery and installation
- Performance monitoring software to predict potential failures, obstructions, tilts, and other critical or minor issues

Thank you,



Garrett Langley CEO, Flock Safety

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

4. REQUEST TO WAIVE THE SEALED BID PROCESS AND AUTHORIZE THE PURCHASE OF TWO (2) MARKED POLICE VEHICLES USING STATE OF MICHIGAN COOPERATIVE BID PRICING: Division of Police, re: to be placed as part of the vehicle replacement program, from budgeted funds.

Thomas Goralski, Chief of Police, requested for approval to purchase 2 Tahoe's specifically for the use of the new grappling system.

Steve King, Coventry Gardens, mentioned electrical vehicles and the possibility of gravitating towards them, stated grappling devices are not new, and pushed towards the further use of drones.

Motion was made by Councilmember Morgan to put the matter on the Consent portion of the next Regular Agenda.

DIRECTION:

APPROVING

CONSENT



LETTER TO THE LIVONIA CITY COUNCIL

4.

Police
September 3, 2025

MEETING DATE

S092225/R100625

PRESENTED BY

Thomas Goralski, Police Chief

AGENDA ITEM

REQUEST TO WAIVE THE SEALED BID PROCESS AND AUTHORIZE THE PURCHASE OF TWO (2) MARKED POLICE VEHICLES USING STATE OF MICHIGAN COOPERATIVE BID PRICING: Division of Police, re: to be replaced as part of the vehicle replacement program, from budgeted funds

BACKGROUND DETAILS

The proposed purchase is for the replacement of marked police vehicles as part of our vehicle replacement program.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

The Livonia Division of Police is requesting authorization to purchase two (2) marked vehicles. This proposed purchase is for the replacement of vehicles and will utilize \$109,062.00 from budgeted funds in account #101-325-985-000.

SPECIFIC NAME OF PRODUCT AND NUMBER TO BE PURCHASED (if more than one)

CONTRACT: Amount and/or purchase price and length of contract (with dates if applicable)

DETAILED WORK BEING PERFORMED

FISCAL CONSIDERATIONS (Amount requested and Account(s) used. If applicable, Grant Funding information)

Pursuant to Finance Ordinance 3.04.140 E.4, we are requesting a waiver of the sealed bid process, based on the police department's association with the State of Michigan cooperative purchasing consortium. Upon receipt of various bids and specifications from vetted participating vendors, the Livonia Division of Police requests to purchase the following vehicles for the replacement of marked vehicles, and will utilize \$109,062.00 from budgeted funds in account #101-325-985-000:

(2) 2025 Chevrolet Tahoe Police Pursuit Vehicle Utility @ \$54,531.00 (\$109,062.00 total) from:
Todd Wenzel Chevrolet
3156 Highland Drive, PO Box 310
Hudsonville, MI 49426
(734) 713-1065

ACCEPTANCE OF BID (Please detail the following: Why accepted, why not lowest bidder, company name, contact person, full address)

REASON TO WAIVE BID PROCESS (Emergency, Professional services, No advantage to City and why, Consortium package, etc): Pursuant to Finance Ordinance 3.04.140 E.4, we are requesting a waiver of the sealed bid process, based on the police department's association with the State of Michigan cooperative purchasing consortium. We will utilize bid pricing under MiDeal Contract #071B7700178.

ATTACHMENTS

1. Quote - Todd Wenzel Chevy - Tahoe

APPROVED BY



Thomas Goralski, Police Chief

Date: September 10, 2025



Debra Peck Lichtenberg, CPA, Finance Director

Date: September 12, 2025



Carter Fisher, City Attorney

Date: September 12, 2025



Maureen Miller Brosnan, Mayor

Date: September 12, 2025

Livonia Police Department
Departmental Correspondence

Date: September 3, 2025

To: Capt. Tyree through Channels

Submitted by / Dept.: Hoskin / Administration

Subject: ☒ Request for Purchase Order ☐ Request for Payment (invoice must be attached)

☐ Confirming Order (prior Admin. approval required)

Recommended Vendor/Address (if known):

Todd Wenzel Chevrolet

3156 Highland Dr. PO. Box: 310

Hudsonville, MI. 49426

Albert Li

Approvals: Name/ Title Capt. Marcotte

Name/ Title

Administrative Approval (Capt. Tyree):

Account Number (LEAVE BLANK):

101-325-985-000

Sole Source? ☒ N/A ☐ Yes ☐ No

Council Resolution # (over \$20,000):

Item / Description / Order Number	Cost each	Quantity	Total Cost
2025 Chevrolet Tahoe 4wd PPV Utility, Code: CK10706	54531.00	2	\$109,062.00
Subtotal			\$109,062.00
Shipping & Handling (Enter S&H on page 2 if a second page is required, otherwise, enter S&H in "Cost each" column.)			\$0.00
TOTAL			\$109,062.00

Three quotes attached if over \$3,000

☐ Yes ☐ No ☐ N/A If no, why?

Other information / instructions:

State of Michigan Contract Bid: 071B7700178

MiDeal Spec # 1010-POL

Submitted by (signature):

☒ If checked, please send copies to requestor

Item / Description / Order Number	Cost each	Quantity	Total Cost
SUBTOTAL FROM PRIOR PAGE			\$109,062.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
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			0.00
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			0.00
			0.00
			0.00
			0.00
			0.00
Subtotal			\$109,062.00
Shipping & Handling (enter in "Cost Each" column)			\$0.00
TOTAL			\$109,062.00

Please contact Computers at x2020 if you have any trouble with this form.



Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

City of Livonia Police Dept.

Prepared For: Rollie Hoskin

(734) 466-2311

rollie.hoskin@LivoniaPD.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23)

TODD WENZEL CHEVROLET

3156 Highland Dr, PO Box 310

Hudsonville, MI 49426

State of Michigan MiDeal Contract # 071B7700178

MiDeal Spec # 1010-POL

City of Livonia Pricing

(MiDeal Pricing)

2025 Chevrolet Tahoe 4wd PPV Utility

7400# GVWR 5.3L V8 Gas / 10-Spd Auto Trans 4wd 9C1 Pkg

SPEC 1010 - 2025 Chevrolet Tahoe 4wd PPV Utility \$ 54,531.00

Prices Quoted are for a MiDeal GM Dealer Stock Unit.

(2) Units Available for Immediate Delivery; Availability Subject to Prior Sale.

FOB Livonia, MI



Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (Complete)

Price Summary

PRICE SUMMARY

	MSRP
Base Price	\$56,500.00
Total Options	\$2,561.00
Vehicle Subtotal	\$59,061.00
Destination Charge	\$2,595.00
Grand Total	\$61,656.00

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Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (Complete)

Selected Model and Options

MODEL

CODE	MODEL
CK10706	2025 Chevrolet Tahoe 4WD 4dr Commercial

COLORS

CODE	DESCRIPTION
GBA	Black

OPTIONS

CODE	DESCRIPTION
Z56	Suspension Package, heavy-duty, police-rated.
FE9	Emissions, Federal requirements
L84	Engine, 5.3L EcoTec3 V8
MHU	Transmission, 10-speed automatic
C6G	GVWR, 7600 lbs. (3447 kg)
GU5	Rear axle, 3.23 ratio
1FL	Commercial Preferred Equipment Group
PXT	Wheels, 20" x 9" (50.8 cm x 22.9 cm) steel
XCS	Tires, 275/55R20SL all-season, blackwall, Firestone Firehawk Pursuit
GBA	Black
AZ3	Seats, front 40/20/40 split-bench
H1T	Jet Black, Cloth seat trim
URW	Audio system, 17.7" diagonal advanced color LCD display
9C1	Identifier for Police Package Vehicle
AMF	Remote Keyless Entry Package
K3W	Battery, 850 cold-cranking amps with 95 amp hour rating
K6K	Battery, auxiliary, 760 cold-cranking amps with 70 amp hour rating
KX4	Alternator, 250 amps
V76	Recovery hooks, 2 front, frame-mounted, Black
RC1	Skid plate, front
—	Capless Fuel Fill

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Todd Wenzel Buick-GMC and TW Chevrolet

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[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (Complete)

OPTIONS

CODE	DESCRIPTION
RNQ	Wheel, full-size spare, matching 20" (50.8 cm) steel wheel without center cap
RAV	Tire, spare 275/55R20 all-season, blackwall, Firestone Firehawk Pursuit
WUA	Fascia, front high-approach angle
V53	Luggage rack side rails, delete
—	Exterior ornamentation delete
ATD	Seat delete, third row
VZ2	Speedometer calibration
—	Instrumentation, analog
AU7	Key common, fleet
BTV	Remote start
K34	Cruise control, electronic with set and resume speed
—	Theft-deterrent system, vehicle, PASS-Key III
—	Power supply, 50-amp, power supply, auxiliary battery, passenger compartment wiring harness
—	Power supply, 100-amp, auxiliary battery, passenger compartment wiring harness
—	Power supply, 120-amp, (4) 30-amp circuit, Primary battery, relay controlled, passenger compartment harness wiring
AYH	Airbags, Frontal airbags for driver and front outboard passenger;
—	Seat belts, 3-point, all seating positions
—	Active Hill Hold Assist
UD7	Rear Parking Assist
—	Protected idle
6J3	Wiring, grille lamps and siren speakers
6J4	Wiring, horn and siren circuit
UT7	Ground wires, blunt cut cargo area and blunt cut console area
T66	Wiring provision, for outside mirrors and cargo side mirrors
6J7	Flasher system, headlamp and taillamp, DRL compatible with control wire
5J9	Calibration, taillamp flasher, Red/White
5LO	Calibration, taillamp flasher, Red/Red
6C7	Lighting, red and white front auxiliary dome

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Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (☒ Complete)

OPTIONS

CODE	DESCRIPTION
------	-------------

T53	Lamps, alternate flashing Red & Blue rear compartment lid warning
7X2	Spotlamps, left- and right-hand
5J1	Calibration, keyless remote panic button and exterior lights/horn disable
5J3	Calibration, Surveillance Mode interior lighting
BCV	Lock control, driver side auto door lock disable
6N6	Door locks and handles, inside rear doors inoperative
6E2	Fleet Calibration
5T5	Seats, front cloth and second row vinyl
6N5	Switches, rear window inoperative
UN9	Radio Suppression Package, with ground straps
UTQ	Theft-deterrent system
9G8	Headlamps, Daytime Running Lamps and automatic headlamp control delete
VPV	Ship Thru, Produced in Arlington Assembly and shipped to Kerr Industries and onto Arlington Assembly

Options Total

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Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (✔ Complete)

Standard Equipment

Mechanical

Engine, 5.3L EcoTec3 V8 with Dynamic Fuel Management, Direct Injection and Variable Valve Timing, includes aluminum block construction (355 hp [265 kW] @ 5600 rpm, 383 lb-ft of torque [518 Nm] @ 4100 rpm) (STD)

Transmission, 10-speed automatic electronically controlled with overdrive, includes Traction Select System including tow/haul (STD)

Rear axle, 3.23 ratio

Suspension, Premium Smooth Ride

GVWR, 7600 lbs. (3447 kg) (4WD models only.) (STD)

Keyless start, push button

Automatic Stop/Start (Not available when (9C1) Police Vehicle or (5W4) Special Service Vehicle is ordered.)

Engine control, stop/start system disable button, non-latching (Not available when (9C1) Police Vehicle or (5W4) Special Service Vehicle is ordered.)

Engine air filtration monitor

Fuel, gasoline, E15

Transfer case, active, single-speed, electronic Autotrac does not include neutral. Cannot be dinghy towed

Differential, mechanical limited-slip

4-wheel drive

Air filter, heavy-duty

Cooling, external engine oil cooler, heavy-duty air-to-oil integral to driver side of radiator

Cooling, auxiliary transmission oil cooler, heavy-duty air-to-oil

Alternator, 220 amps (Not available with (9C1) Police Vehicle or (5W4) Special Service Vehicle.)

Trailer equipment includes trailering hitch platform, 7-wire harness with independent fused trailering circuits mated to a 7-way connector and 2" trailering receiver

Trailer sway control

Hitch Guidance

Suspension, front coil-over-shock with stabilizer bar

Suspension, rear multi-link with coil springs

Steering, power

Brakes, 4-wheel antilock, 4-wheel disc with DURALIFE rotors

Exhaust, single system, single-outlet

Mechanical Jack with tools

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Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (Complete)

Exterior

Wheels, 18" x 8.5" (45.7 cm x 21.6 cm) Bright Silver painted aluminum (STD)

Tires, 265/65R18SL all-season, blackwall (Standard with (RCV) 18" Bright Silver painted aluminum wheels only.) (STD)

Wheel, full-size spare, 17" (43.2 cm) steel

Tire, spare P265/70R17 all-season, blackwall

Tire carrier, lockable outside spare, winch-type mounted under frame at rear

Active aero shutters, upper

Fascia, front

Luggage rack side rails, roof-mounted, Black, standard (Available with (5W4) Special Services Vehicle.)

Assist steps, Black with chrome accent strip

Headlamps, LED

Tail lamps, LED

Mirrors, outside heated power-adjustable, manual-folding, body-color

Mirror caps, body-color

Glass, deep-tinted (all windows, except light-tinted glass on windshield and driver- and front passenger-side glass)

Glass, acoustic, laminated

Glass, windshield shade band

Windshield, solar absorbing

Wipers, front intermittent, Rainsense

Wiper, rear intermittent with washer

Door handles, body-color

Liftgate, rear manual

Entertainment

Audio system, 17.7" diagonal advanced color LCD display with Google built-in compatibility (select service plan required, terms and limitations apply), including navigation capability, connected apps, personalized profiles for each driver's settings, Natural Voice Recognition and Phone Integration (STD)

Audio system feature, 6-speaker system

Bluetooth for phone personal cell phone connectivity to vehicle audio system

5G Wi-Fi Hotspot capable (Requires (UE1) OnStar. Terms and limitations apply. See onstar.com or dealer for details.)

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[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (✓ Complete)

Entertainment

Wi-Fi Hotspot capable (Requires (UE1) OnStar. Terms and limitations apply. See onstar.com or dealer for details.)

SiriusXM, delete

Wireless Apple CarPlay/Wireless Android Auto

Interior

Seats, front bucket (4WD only. When ordered with (9C1) Police Vehicle, requires (PQA) 1FL Safety Package and (UDA) OnStar deactivated. Includes (D07) floor console. Not available with SEO (5Y1) front center seat delete or SEO (5T5) front cloth and second row vinyl seats.)

Seat adjuster, driver 8-way power

Seat adjuster, front passenger 6-way power

Seat adjuster, front passenger 8-way power

Seat adjuster, driver 2-way power lumbar

Seat adjuster, front passenger 2-way power lumbar

Seats, second row 60/40 split-folding bench, manual

Seats, third row 60/40 split-folding bench, manual (Not available with (9C1) Police Package or (5W4) Special Service Package.)

Floor covering, Black rubberized vinyl (Deleted when (B30) floor covering is ordered.)

Electronic Precision Shift

Steering column lock, electrical

Steering column, manual tilt and telescopic

Steering wheel, vinyl

Steering wheel controls, mounted audio, Driver Information Center, Adaptive Cruise Control, Forward Collision Alert following gap button and heated steering wheel (when equipped)

Driver Information Center, 11" diagonal multi-color digital display

Door locks, power programmable with lockout protection and delayed locking

Keyless Open includes extended range Remote Keyless Entry

Window, power with driver Express-Up/Down

Window, power with front passenger Express-Up/Down

Windows, power with rear Express-Down

Adaptive Cruise Control (Not available with (9C1) Police Vehicle or (5W4) Special Service Vehicle.)

Universal Vehicle Module

Theft-deterrent system, electrical, unauthorized entry

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Todd Wenzel Buick-GMC and TW Chevrolet

Albert Li | (734) 713-1065 | ali@toddwenzel.com

[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (✔ Complete)

Interior

Display, automatic occupant sensing (Requires (9C1) Police Vehicle or (5W4) Special Service Vehicle.)

Wireless Phone Charging, for portable devices

USB ports, 2 type-A and C, charge and data, located on front console

USB ports, 2 type-C, charge-only, located in third row

Air conditioning, tri-zone automatic climate control with individual climate settings for driver, right front passenger and rear seat occupants

Air conditioning, rear

Defogger, rear-window electric

Power outlets, 2, 120-volt, located on the rear of the center console and rear cargo area

Sill plates, bright, front and rear door

Mirror, inside rearview manual day/night

Visors, driver and front passenger illuminated vanity mirrors, sliding

Assist handles, overhead, driver and front passenger, located in headliner

Assist handles, front passenger A-pillar and second row outboard B-pillar

Lighting, interior with dome light, driver- and passenger-side door switch with delayed entry feature, cargo lights, door handle or Remote Keyless Entry-activated illuminated entry and map lights in front and second seat positions

Cargo management system

Chevrolet Connected Access capable (Subject to terms. See onstar.com or dealer for details.)

Safety-Interior

Forward Collision Alert (Deleted when (9C1) Police Vehicle or (5W4) Special Service Vehicle is ordered.)

Airbags, Frontal airbags for driver and front outboard passenger; Seat-mounted side-impact airbags for driver and front outboard passenger; Driver inboard seat-mounted side-impact airbag; Head-curtain airbags for all rows in outboard seating positions (Always use seat belts and child restraints. Children are safer when properly secured in a rear seat in the appropriate child restraint. See the Owner's Manual for more information.)

Front outboard Passenger Sensing System for frontal outboard passenger airbag (Always use seat belts and child restraints. Children are safer when properly secured in a rear seat in the appropriate child restraint. See the Owner's Manual for more information.)

Hill Start Assist

OnStar Services capable (On 4WD model, deleted when (UDA) OnStar deactivated is ordered. See onstar.com for details and limitations. Services vary by model. Service plan required.)

Enhanced Automatic Parking Assist (Not available with (9C1) Police Vehicle or (5W4) Special Service Vehicle.)

HD Surround Vision

Rear Camera Washer

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[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (✔ Complete)

Safety-Interior

Rear Pedestrian Alert

Forward Collision Alert (Deleted when (9C1) Police Vehicle or (5W4) Special Service Vehicle is ordered.)

Safety Alert Seat

Rear Seat Reminder

Buckle to Drive prevents vehicle from being shifted out of Park until driver seat belt is fastened; times out after 20 seconds and encourages seat belt use, can be turned on and off in Settings or Teen Driver menu (Defaulted off. Feature can be turned on in the infotainment menu.)

Door locks, rear child security, manual

LATCH system (Lower Anchors and Tethers for Children), for child restraint seats lower anchors and top tethers located in all second-row seating positions, top tethers located in third row seating positions

Teen Driver a configurable feature that lets you activate customizable vehicle settings associated with a key fob, to help encourage safe driving behavior. It can limit certain available vehicle features, and it prevents certain safety systems from being turned off. An in-vehicle report card gives you information on driving habits and helps you to continue to coach your new driver

Tire Pressure Monitoring System auto learn, includes Tire Fill Alert (does not apply to spare tire)

Warning tones headlamp on, driver and right-front passenger seat belt unfasten and turn signal on

OnStar Basics (OnStar Fleet Basics for Fleet) Drive confidently with core OnStar services including remote commands, built-in voice assistance, real-time traffic and navigation, and Automatic Crash Response to help if you're in need. (OnStar Basics includes remote commands, Navigation, Voice Assistance, and Automatic Crash Response, for eligible vehicles with compatible software. For MY25 vehicles, OnStar Basics is standard for 8 years; OnStar plan, working electrical system, cell reception and GPS signal required. OnStar links to emergency services. Service coverage varies with conditions and location. Service availability, features and functionality vary by device and software version. See onstar.com for details and limitations.)

Safety-Mechanical

Enhanced Automatic Emergency Braking

Reverse Automatic Braking (Not available with (9C1) Police Vehicle or (5W4) Special Service Vehicle.)

StabiliTrak, stability control system with brake assist, includes traction control

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[Fleet] 2025 Chevrolet Tahoe (CK10706) 4WD 4dr Commercial (23) (✓ Complete)

WARRANTY

Warranty Note: <<< Preliminary 2025 Warranty >>>

Basic Years: 3

Basic Miles/km: 36,000

Drivetrain Years: 5

Drivetrain Miles/km: 60,000

Drivetrain Note: 3.0L & 6.0L Duramax® Turbo-Diesel engines, and certain commercial, government, and qualified fleet vehicles: 5 years/100,000 miles

Corrosion Years (Rust-Through): 6

Corrosion Years: 3

Corrosion Miles/km (Rust-Through): 100,000

Corrosion Miles/km: 36,000

Roadside Assistance Years: 5

Roadside Assistance Miles/km: 60,000

Roadside Assistance Note: 3.0L & 6.0L Duramax® Turbo-Diesel engines, and certain commercial, government, and qualified fleet vehicles: 5 years/100,000 miles

Maintenance Note: First Visit: 12 Months/12,000 Miles

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**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

7. AWARD OF BID: Department of Parks and Recreation, re: for various types of clothing for a two (2) year period, from budgeted funds.

Ted Davis, Superintendent of Parks and Recreation, noted the low bid offered and explained the clothing is to provide uniforms for staff.

Motion was made by Vice President Ptashnik to put the matter on the Consent portion of the next Regular Agenda.

DIRECTION:

APPROVING

CONSENT



LETTER TO THE LIVONIA CITY COUNCIL

7.

Parks and Recreation August 27, 2025

MEETING DATE

September 22, 2025 Study

PRESENTED BY

Ted Davis, CPRP, Superintendent of Parks and Recreation

AGENDA ITEM

AWARD OF BID: Department of Parks and Recreation, re: for various types of clothing for a two (2) year period, from budgeted funds.

BACKGROUND DETAILS

The Department of Parks and Recreation has taken bids for various types of clothing for a two (2) year period. Specifications were prepared by the department and the bid was placed on the MITN website.

Seventeen (17) bids were received and opened in the presence of the Bid Committee at 2:00 p.m. on August 19, 2025. One bid from Art & Stitchery, LLC was disqualified as they did not submit on the correct pricing sheet.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

The Parks and Recreation Department is asking Council to award the bid items to the low bidders as indicated on the attached result breakdown sheets for purchases made 12/1/25 through 11/30/2027.

SPECIFIC NAME OF PRODUCT AND NUMBER TO BE PURCHASED (if more than one)

Various types of clothing.

CONTRACT: Amount and/or purchase price and length of contract (with dates if applicable)

N/A

DETAILED WORK BEING PERFORMED

N/A

FISCAL CONSIDERATIONS (Amount requested and Account(s) used. If applicable, Grant Funding information)

Funds are available in the following accounts 208-755-768-000, 208-776-764-000, 101-759-766-

000, 101-752-764-000, 101-758-760-000 and 208-755-776-040.

ACCEPTANCE OF BID (Please detail the following: Why accepted, why not lowest bidder, company name, contact person, full address)

Awards will be given to the lowest bidder for each item.

REASON TO WAIVE BID PROCESS (Emergency, Professional services, No advantage to City and why, Consortium package, etc): N/A

ATTACHMENTS

1. Bid Results

APPROVED BY



Ted Davis, CPRP, Superintendent of Parks and Recreation

Date: August 27, 2025



Debra Peck Lichtenberg, CPA, Finance Director

Date: September 02, 2025



Maureen Miller Brosnan, Mayor

Date: September 11, 2025

		AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			DO APPAREL LIVONIA, MI			DRN'S CORP BROOKLYN, NY			
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1	Adult Small - Adult X-Lg	70		\$ 5.11	\$ 357.70		\$ 8.67	\$ 606.90	Jerzees	\$ 5.89	\$ 412.30
	Adult 2XL	32		\$ 7.11	\$ 227.52		\$ 9.67	\$ 309.44	Jerzees	\$ 7.76	\$ 248.32
	Adult 3XL	8		\$ 9.11	\$ 72.88		\$ 10.67	\$ 85.36	Jerzees	\$ 9.21	\$ 73.68
					\$ 658.10			\$ 1,001.70			\$ 734.30
							3% Total w/3%	\$ 30.05 \$ 971.65			
2	Adult Small - Adult X-Lg	100		\$ 13.93	\$ 1,393.00		\$ 15.24	\$ 1,524.00	Jerzees	\$ 12.69	\$ 1,269.00
	Adult 2 XL-4 XL	15		\$ 16.93	\$ 253.95		\$ 19.24	\$ 288.60	Jerzees	\$ 15.99	\$ 239.85
					\$ 1,646.95			\$ 1,812.60			\$ 1,508.85
							3% Total w/3%	\$ 54.38 \$ 1,758.22			
3	Adult Sm-Adult X-Lg	50		\$ 13.93	\$ 696.50		\$ 12.24	\$ 612.00	Jerzees	\$ 11.69	\$ 584.50
	Adult 2XL	15		\$ 16.93	\$ 253.95		\$ 18.24	\$ 273.60	Jerzees	\$ 14.09	\$ 211.35
	Adult 3XL	5		\$ 19.93	\$ 99.65		\$ 19.24	\$ 96.20	Jerzees	\$ 16.23	\$ 81.15
					\$ 950.45			\$ 981.80			\$ 877.00
							3% Total w/3%	\$ 29.45 \$ 952.35			
4	Adult Small - Adult X-Lg	30		\$ 8.50	\$ 255.00		\$ 9.29	\$ 278.70	Jerzees	\$ 8.47	\$ 254.10
					\$ 255.00			\$ 278.70			\$ 254.10
							3% Total w/3%	\$ 8.36 \$ 270.34			
5	Adult Sm - Adult X-Lg	60		\$ 7.50	\$ 450.00		\$ 8.67	\$ 520.20	Jerzees	\$ 5.48	\$ 328.80
					\$ 450.00			\$ 520.20			\$ 328.80
							3% Total w/3%	\$ 15.61 \$ 504.59			
6	Adult Sm- Adult X-Lg	20		\$ 8.50	\$ 170.00		\$ 15.93	\$ 318.60	Jerzees	\$ 6.61	\$ 132.20
					\$ 170.00			\$ 318.60			\$ 132.20
							3% Total w/3%	\$ 9.56 \$ 309.04			
7	Adult Med- Adult X-Lg	140		\$ 5.11	\$ 715.40		\$ 8.67	\$ 1,213.80	Jerzees	\$ 6.14	\$ 859.60
	Adult 2XL	40		\$ 7.11	\$ 284.40		\$ 9.67	\$ 386.80	Jerzees	\$ 8.01	\$ 320.40
					\$ 999.80			\$ 1,600.60			\$ 1,180.00
							3% Total w/3%	\$ 48.02 \$ 1,552.58			
8	Adult Med- Adult X-Lg	100		\$ 5.11	\$ 511.00		\$ 8.67	\$ 867.00	Jerzees	\$ 5.44	\$ 544.00
	Adult 2XL	16		\$ 7.11	\$ 113.76		\$ 9.67	\$ 154.72	Jerzees	\$ 7.31	\$ 116.96
	Adult 3XL	8		\$ 9.11	\$ 72.88		\$ 10.67	\$ 85.36	Jerzees	\$ 8.76	\$ 70.08
					\$ 697.64			\$ 1,107.08			\$ 731.04
							3% Total w/3%	\$ 33.21 \$ 1,073.87			
9	Adult Med-Adult X-Lg	50		\$ 8.49	\$ 424.50		\$ 10.67	\$ 533.50	Jerzees	\$ 10.29	\$ 514.50
	Adult 2 XL	20		\$ 10.49	\$ 209.80		\$ 12.67	\$ 253.40	Jerzees	\$ 12.25	\$ 245.00
	Adult 3 XL	6		\$ 12.49	\$ 74.94		\$ 14.67	\$ 88.02	Jerzees	\$ 14.49	\$ 86.94
					\$ 709.24			\$ 874.92			\$ 846.44
							3% Total w/3%	\$ 26.25 \$ 848.67			
10	Adult Sm - Adult X-Lg	30		\$ 10.00	\$ 300.00		\$ 9.29	\$ 278.70	Jerzees	\$ 9.06	\$ 271.80
	Adult 2XL	5		\$ 12.00	\$ 60.00		\$ 11.29	\$ 56.45	Jerzees	\$ 11.09	\$ 55.45
					\$ 360.00			\$ 335.15			\$ 327.25
							3% Total w/3%	\$ 10.05 \$ 325.10			
11	Adult Sm - X-Lg	100		\$ 5.11	\$ 511.00		\$ 8.92	\$ 892.00	Gildan	\$ 5.66	\$ 566.00
	Adult 2XL-4XL	15		\$ 7.11	\$ 106.65		\$ 9.92	\$ 148.80	Gildan	\$ 8.62	\$ 129.30
					\$ 617.65			\$ 1,040.80			\$ 695.30
							3% Total w/3%	\$ 31.22 \$ 1,009.58			

ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
			AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			DO APPAREL LIVONIA, MI			DRN'S CORP BROOKLYN, NY		
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A	Youth Med-Large	400		\$ 3.89	\$ 1,556.00		\$ 8.77	\$ 3,508.00	Gildan	\$ 4.48	\$ 1,792.00
	Adult Sm-Medium	110		\$ 3.89	\$ 427.90		\$ 8.92	\$ 981.20	Gildan	\$ 4.49	\$ 493.90
	Adult Lg-Adult XL	35		\$ 7.89	\$ 276.15		\$ 8.92	\$ 312.20	Gildan	\$ 4.49	\$ 157.15
					\$ 2,260.05						\$ 2,443.05
						3%					\$ 144.04
						Total w/3%					\$ 4,657.36
12B	Adult Med - Adult X-Lg	80		\$ 5.93	\$ 474.40		\$ 8.92	\$ 713.60	Gildan	\$ 4.49	\$ 359.20
	Adult 2XL	15		\$ 7.93	\$ 118.95		\$ 11.92	\$ 178.80	Gildan	\$ 6.38	\$ 95.70
					\$ 593.35						\$ 454.90
						3%					\$ 26.77
						Total w/3%					\$ 865.63
12A & 12B Total					\$ 2,853.40						\$ 2,897.95
13	Youth Sm-Medium	50		\$ 6.49	\$ 324.50		\$ 10.27	\$ 513.50	Gildan	\$ 7.15	\$ 357.50
	Adult Sm-XL	500		\$ 6.49	\$ 3,245.00		\$ 10.45	\$ 5,225.00	Gildan	\$ 9.27	\$ 4,635.00
	Adult 2XL-3XL	50		\$ 8.49	\$ 424.50		\$ 12.45	\$ 622.50	Gildan	\$ 10.96	\$ 548.00
					\$ 3,994.00						\$ 5,540.50
						3%					\$ 190.83
						Total w/3%					\$ 6,170.17
14	Youth Sm-Large	450		\$ 8.67	\$ 3,901.50		\$ 15.50	\$ 6,975.00	Augusta Spo	\$ 14.96	\$ 6,732.00
	Adult Sm-XL	75		\$ 8.67	\$ 650.25		\$ 16.00	\$ 1,200.00	Augusta Spo	\$ 14.96	\$ 1,122.00
	Adult 2XL	40		\$ 10.67	\$ 426.80		\$ 16.00	\$ 640.00	Augusta Spo	\$ 14.96	\$ 598.40
	Adult 4XL	10		\$ 11.67	\$ 116.70		\$ 17.00	\$ 170.00	Augusta Spo	\$ 18.06	\$ 180.60
					\$ 5,095.25						\$ 8,633.00
						3%					\$ 269.55
						Total w/3%					\$ 8,715.45
15	Youth Sm - Youth Large	275		\$ 8.67	\$ 2,384.25		\$ 15.50	\$ 4,262.50	Augusta Spo	\$ 14.96	\$ 4,114.00
	Adult Sm - Adult X-Lg	50		\$ 8.67	\$ 433.50		\$ 16.00	\$ 800.00	Augusta Spo	\$ 14.96	\$ 748.00
	Adult 2XL	15		\$ 10.67	\$ 160.05		\$ 16.00	\$ 240.00	Augusta Spo	\$ 14.96	\$ 224.40
	Adult 3XL	10		\$ 11.67	\$ 116.70		\$ 17.00	\$ 170.00	Augusta Spo	\$ 18.06	\$ 180.60
					\$ 3,094.50						\$ 5,267.00
						3%					\$ 164.18
						Total w/3%					\$ 5,308.33
16	One size fits all	750		\$ 7.93	\$ 5,947.50		\$ 7.50	\$ 5,625.00	Augusta Spo	\$ 6.22	\$ 4,665.00
					\$ 5,947.50						\$ 4,665.00
						3%					\$ 168.75
						Total w/3%					\$ 5,456.25
17	Adult Sm-XL	45		\$ 13.93	\$ 626.85		\$ 12.24	\$ 550.80	Jerzees	\$ 11.69	\$ 526.05
	Adult 2XL	10		\$ 16.93	\$ 169.30		\$ 18.24	\$ 182.40	Jerzees	\$ 14.09	\$ 140.90
					\$ 796.15						\$ 666.95
						3%					\$ 22.00
						Total w/3%					\$ 711.20
18	Adult Sm-XL	30		\$ 13.97	\$ 419.10		\$ 13.86	\$ 415.80	Port Authori	\$ 13.25	\$ 397.50
	Adult 2XL	5		\$ 16.97	\$ 84.85		\$ 14.86	\$ 74.30	Port Authori	\$ 14.35	\$ 71.75
					\$ 503.95						\$ 469.25
						3%					\$ 14.70
						Total w/3%					\$ 475.40
19	Adult Sm-XL	100		\$ 16.93	\$ 1,693.00		\$ 17.75	\$ 1,775.00	Jerzees	\$ 18.04	\$ 1,804.00
	Adult 2XL-4XL	15		\$ 19.93	\$ 298.95		\$ 25.75	\$ 386.25	Jerzees	\$ 26.49	\$ 397.35
					\$ 1,991.95						\$ 2,201.35
						3%					\$ 64.84
						Total w/3%					\$ 2,096.41
20	Adult Sm-XL	25		\$ 5.89	\$ 147.25		\$ 6.86	\$ 171.50	Gildan (980)	\$ 4.95	\$ 123.75
	Adult 2XL-4XL	8		\$ 7.89	\$ 63.12		\$ 7.86	\$ 62.88	Gildan (980)	\$ 9.06	\$ 72.48
					\$ 210.37						\$ 196.23
						3%					\$ 7.03
						Total w/3%					\$ 227.35
21	Adult Sm - X-Lg	25		\$ 18.97	\$ 474.25		\$ 17.75	\$ 443.75	Jerzees	\$ 18.04	\$ 451.00
	Adult 2XL-4XL	8		\$ 22.97	\$ 183.76		\$ 25.75	\$ 206.00	Jerzees	\$ 26.49	\$ 211.92
					\$ 658.01						\$ 662.92
						3%					\$ 19.49
						Total w/3%					\$ 630.26
22	Adult Med-XLg.	20		\$ 7.50	\$ 150.00		\$ 8.67	\$ 173.40	Jerzees	\$ 3.14	\$ 62.80
	Adult 2XL	8		\$ 9.50	\$ 76.00		\$ 9.67	\$ 77.36	Jerzees	\$ 5.01	\$ 40.08
	Adult 3XL	3		\$ 11.50	\$ 34.50		\$ 10.67	\$ 32.01	Jerzees	\$ 6.46	\$ 19.38
					\$ 260.50						\$ 122.26
						3%					\$ 8.48
						Total w/3%					\$ 274.29

ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
			AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			DO APPAREL LIVONIA, MI			DRN'S CORP BROOKLYN, NY		
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23	Adult Med-XL	40		\$ 40.57	\$ 1,622.80		\$-	\$-	Galeton Rep	\$ 14.19	\$ 567.60
	Adult 2XL	15		\$ 43.57	\$ 653.55		\$-	\$-	Galeton Rep	\$ 14.72	\$ 220.80
	Adult 3XL	5		\$ 46.67	\$ 233.35		\$-	\$-	Galeton Rep	\$ 15.28	\$ 76.40
					\$ 2,509.70				\$-		
24	Adult Sm - X-Lg	425		\$ 6.37	\$ 2,707.25		\$ 8.50	\$ 3,612.50	A4 A4N314	\$ 10.50	\$ 4,462.50
	Adult 2 XL	50		\$ 8.37	\$ 418.50		\$ 8.50	\$ 425.00	A4 A4N314	\$ 10.50	\$ 525.00
	Adult 3XL	25		\$ 10.37	\$ 259.25		\$ 8.50	\$ 212.50	A4 A4N314	\$ 10.50	\$ 262.50
					\$ 3,385.00				\$ 4,250.00		
									3%		
									Total w/3%		
									\$ 127.50		
									\$ 4,122.50		
25	Adult Sm-Adult XL	25		\$ 13.97	\$ 349.25		\$ 13.86	\$ 346.50	Port Authori	\$ 13.25	\$ 331.25
	Adult 2XL	4		\$ 16.97	\$ 67.88		\$ 14.86	\$ 59.44	Port Authori	\$ 14.35	\$ 57.40
	Adult 3XL-4XL	4		\$ 18.97	\$ 75.88		\$ 17.86	\$ 71.44	Port Authori	\$ 17.10	\$ 68.40
					\$ 493.01				\$ 477.38		
									3%		
									Total w/3%		
									\$ 14.32		
									\$ 463.06		
26	Adult Small-XL	25		\$ 10.97	\$ 274.25		\$ 10.03	\$ 250.75	Sport-Tek	\$ 9.03	\$ 225.75
	Adult 2XL-4XL	8		\$ 12.97	\$ 103.76		\$ 13.03	\$ 104.24	Sport-Tek	\$ 13.43	\$ 107.44
					\$ 378.01				\$ 354.99		
									3%		
									Total w/3%		
									\$ 10.65		
									\$ 344.34		
27	Adult Small-XL	100		\$ 15.97	\$ 1,597.00		\$ 13.86	\$ 1,386.00	Port Authori	\$ 13.25	\$ 1,325.00
	Adult 2XL-4XL	5		\$ 17.97	\$ 89.85		\$ 17.86	\$ 89.30	Port Authori	\$ 14.35	\$ 71.75
					\$ 1,686.85				\$ 1,475.30		
									3%		
									Total w/3%		
									\$ 44.26		
									\$ 1,431.04		
28	Adult Small-XL	100		\$ 5.25	\$ 525.00	A4 N3402	\$ 8.50	\$ 850.00	A4 A4N340	\$ 6.30	\$ 630.00
	Adult 2XL-4XL	15		\$ 7.25	\$ 108.75	A4 N3402	\$ 8.50	\$ 127.50	A4 A4N340	\$ 6.30	\$ 94.50
					\$ 633.75				\$ 977.50		
									3%		
									Total w/3%		
									\$ 29.33		
									\$ 948.18		
29	Adult Small-XL	30		\$ 18.97	\$ 569.10		\$ 18.40	\$ 552.00	Port & Co	\$ 8.08	\$ 242.40
	Adult 2XL-4XL	5		\$ 21.97	\$ 109.85		\$ 21.40	\$ 107.00	Port & Co	\$ 11.35	\$ 56.75
					\$ 678.95				\$ 659.00		
									3%		
									Total w/3%		
									\$ 19.77		
									\$ 639.23		
30	Adult Small-XL	30		\$ 13.93	\$ 417.90		\$ 12.24	\$ 367.20	Jerzees	\$ 11.19	\$ 335.70
	Adult 2XL-4XL	5		\$ 16.93	\$ 84.65		\$ 18.96	\$ 94.80	Jerzees	\$ 15.73	\$ 78.65
					\$ 502.55				\$ 462.00		
									3%		
									Total w/3%		
									\$ 13.86		
									\$ 448.14		
31	Adult Small-XL	30		\$ 10.93	\$ 327.90		\$ 9.79	\$ 293.70	Jerzees	\$ 8.45	\$ 253.50
	Adult 2XL-4XL	5		\$ 13.93	\$ 69.65		\$ 13.79	\$ 68.95	Jerzees	\$ 12.36	\$ 61.80
					\$ 397.55				\$ 362.65		
									3%		
									Total w/3%		
									\$ 10.88		
									\$ 351.77		
32	Youth Small-Large	50		\$ 3.89	\$ 194.50		\$ 8.69	\$ 434.50	Gildan	\$ 5.38	\$ 269.00
	Adult Small-XL	400		\$ 3.89	\$ 1,556.00		\$ 8.89	\$ 3,556.00	Gildan	\$ 5.39	\$ 2,156.00
	Adult 2XL-3XL	50		\$ 5.89	\$ 294.50		\$ 12.89	\$ 644.50	Gildan	\$ 7.28	\$ 364.00
					\$ 2,045.00				\$ 4,635.00		
									3%		
									Total w/3%		
									\$ 139.05		
									\$ 4,495.95		
33	Adult Small-Medium	25		\$ 13.93	\$ 348.25		\$ 13.24	\$ 331.00	Jerzees	\$ 13.19	\$ 329.75
	Adult Large-XL	15		\$ 13.93	\$ 208.95		\$ 13.24	\$ 198.60	Jerzees	\$ 15.59	\$ 233.85
	Adult 2XL-3XL	10		\$ 16.93	\$ 169.30		\$ 20.24	\$ 202.40	Jerzees	\$ 17.73	\$ 177.30
					\$ 726.50				\$ 732.00		
									3%		
									Total w/3%		
									\$ 21.96		
									\$ 710.04		

EMPIRE PRINTING SPRINGFIELD, MO				HATTERAS, INC. PLYMOUTH, MI			LIBRA INDUSTRIES JACKSON, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1	Jerzees	\$ 5.07	\$ 354.90		\$ 8.05	\$ 563.50	Jerzees	\$ 4.63	\$ 324.10	(29MR)	\$ 4.26	\$ 298.20
	Jerzees	\$ 7.07	\$ 226.24		\$ 8.05	\$ 257.60	Jerzees	\$ 7.13	\$ 228.16	(29MR)	\$ 6.13	\$ 196.16
	Jerzees	\$ 8.07	\$ 64.56		\$ 8.05	\$ 64.40	Jerzees	\$ 7.34	\$ 58.72	(29MR)	\$ 7.13	\$ 57.04
			\$ 645.70			\$ 885.50			\$ 610.98			\$ 551.40
2	Jerzees	\$ 13.86	\$ 1,386.00		\$ 15.96	\$ 1,596.00	Jerzees	\$ 12.55	\$ 1,255.00	996M	\$ 12.24	\$ 1,224.00
	Jerzees	\$ 16.86	\$ 252.90		\$ 15.96	\$ 239.40	Jerzees	\$ 20.27	\$ 304.05	996M	\$ 14.42	\$ 216.30
			\$ 1,638.90			\$ 1,835.40			\$ 1,559.05			\$ 1,440.30
3	Jerzees	\$ 13.08	\$ 654.00		\$ 21.66	\$ 1,083.00	Jerzees	\$ 13.76	\$ 688.00	996M	\$ 8.99	\$ 449.50
	Jerzees	\$ 15.08	\$ 226.20		\$ 21.66	\$ 324.90	Jerzees	\$ 20.60	\$ 309.00	996M	\$ 11.17	\$ 167.55
	Jerzees	\$ 16.08	\$ 80.40		\$ -	\$ -	Jerzees	\$ 21.35	\$ 106.75	996M	\$ 16.37	\$ 81.85
			\$ 960.60			\$ 1,407.90			\$ 1,103.75			\$ 698.90
4	Jerzees	\$ 8.93	\$ 267.90		\$ 12.44	\$ 373.23	Jerzees	\$ 8.35	\$ 250.50	437MSR	\$ 9.24	\$ 277.20
			\$ 267.90			\$ 373.23			\$ 250.50			\$ 277.20
5	Gildan	\$ 4.58	\$ 274.80		\$ 8.44	\$ 506.40	Jerzees 363	\$ 3.21	\$ 192.60	363m	\$ 4.31	\$ 258.60
			\$ 274.80			\$ 506.40			\$ 192.60			\$ 258.60
6	Jerzees	\$ 15.16	\$ 303.20		\$ 19.94	\$ 398.80	Jerzees	\$ 15.07	\$ 301.40	437ML	\$ 16.15	\$ 323.00
			\$ 303.20			\$ 398.80			\$ 301.40			\$ 323.00
7	Jerzees	\$ 5.33	\$ 746.20		\$ 6.22	\$ 870.80	Jerzees	\$ 8.49	\$ 1,188.60	29MR	\$ 4.26	\$ 596.40
	Jerzees	\$ 7.33	\$ 293.20		\$ 6.22	\$ 248.80	Jerzees	\$ 10.99	\$ 439.60	29MR	\$ 6.13	\$ 245.20
			\$ 1,039.40			\$ 1,119.60			\$ 1,628.20			\$ 841.60
8	Jerzees	\$ 5.33	\$ 533.00		\$ 6.10	\$ 610.00	Jerzees	\$ 9.68	\$ 968.00	29MR	\$ 4.26	\$ 426.00
	Jerzees	\$ 7.33	\$ 117.28		\$ 6.10	\$ 97.60	Jerzees	\$ 12.18	\$ 194.88	29MR	\$ 6.13	\$ 98.08
	Jerzees	\$ 8.33	\$ 66.64		\$ 6.10	\$ 48.80	Jerzees	\$ 13.67	\$ 109.36	29MR	\$ 7.13	\$ 57.04
			\$ 716.92			\$ 756.40			\$ 1,272.24			\$ 581.12
9	Jerzees	\$ 9.00	\$ 450.00		\$ 12.74	\$ 637.00	Jerzees	\$ 14.22	\$ 711.00	29LSR	\$ 6.90	\$ 345.00
	Jerzees	\$ 11.00	\$ 220.00		\$ 12.74	\$ 254.80	Jerzees	\$ 16.67	\$ 333.40	29LSR	\$ 8.19	\$ 163.80
	Jerzees	\$ 12.00	\$ 72.00		\$ 12.74	\$ 76.44	Jerzees	\$ 19.47	\$ 116.82	29LSR	\$ 9.75	\$ 58.50
			\$ 742.00			\$ 968.24			\$ 1,161.22			\$ 567.30
10	Jerzees	\$ 8.93	\$ 267.90		\$ 12.45	\$ 373.50	Jerzees	\$ 8.60	\$ 258.00	437M	\$ 9.54	\$ 286.20
	Jerzees	\$ 10.93	\$ 54.65		\$ 12.45	\$ 62.25	Jerzees	\$ 11.51	\$ 57.55	437M	\$ 11.79	\$ 58.95
			\$ 322.55			\$ 435.75			\$ 315.55			\$ 345.15
11	Gildan	\$ 5.36	\$ 536.00		\$ 7.82	\$ 782.00	Gildan	\$ 4.57	\$ 457.00	2000	\$ 4.47	\$ 447.00
	Gildan	\$ 8.36	\$ 125.40		\$ 7.82	\$ 117.30	Gildan	\$ 8.42	\$ 126.30	2000	\$ 6.05	\$ 90.75
			\$ 661.40			\$ 899.30			\$ 583.30			\$ 537.75

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	EMPIRE PRINTING SPRINGFIELD, MO			HATTERAS, INC. PLYMOUTH, MI			LIBRA INDUSTRIES JACKSON, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A	Gildan	\$ 5.33	\$ 2,132.00		\$ 6.19	\$ 2,476.00	Gildan	\$ 5.79	\$ 2,316.00	2000B	\$ 3.93	\$ 1,572.00
	Gildan	\$ 5.33	\$ 586.30		\$ 6.19	\$ 680.90	Gildan	\$ 5.87	\$ 645.70	2000	\$ 4.01	\$ 441.10
	Gildan	\$ 5.33	\$ 186.55		\$ 6.19	\$ 216.65	Gildan	\$ 5.87	\$ 205.45	2000	\$ 5.75	\$ 201.25
			\$ 2,904.85			\$ 3,373.55			\$ 3,167.15			\$ 2,214.35
12B	Gildan	\$ 5.33	\$ 426.40		\$ 6.19	\$ 495.20	Gildan	\$ 8.53	\$ 682.40	2000	\$ 4.46	\$ 356.80
	Gildan	\$ 5.33	\$ 79.95		\$ 6.19	\$ 92.85	Gildan	\$ 11.43	\$ 171.45	2000	\$ 6.20	\$ 93.00
			\$ 506.35			\$ 588.05			\$ 853.85			\$ 449.80
			\$ 3,411.20			\$ 3,961.60			\$ 4,021.00	Lowest Total 12A and 12B		\$ 2,664.15
13	Gildan	\$ 8.85	\$ 442.50		\$ 10.30	\$ 515.00	Gildan 5400	\$ 11.02	\$ 551.00	5400B	\$ 6.97	\$ 348.50
	Gildan	\$ 8.85	\$ 4,425.00		\$ 10.30	\$ 5,150.00	Gildan 5400	\$ 10.27	\$ 5,135.00	5400	\$ 6.41	\$ 3,205.00
	Gildan	\$ 8.85	\$ 442.50		\$ 10.30	\$ 515.00	Gildan 5400	\$ 12.58	\$ 629.00	5400	\$ 8.85	\$ 442.50
			\$ 5,310.00			\$ 6,180.00			\$ 6,315.00			\$ 3,996.00
14	Augusta	\$ 15.07	\$ 6,781.50		\$ 16.90	\$ 7,605.00	Augusta 156	\$ 11.84	\$ 5,328.00	1566	\$ 13.10	\$ 5,895.00
	Augusta	\$ 15.07	\$ 1,130.25		\$ 16.90	\$ 1,267.50	Augusta 156	\$ 12.81	\$ 960.75	1565	\$ 13.10	\$ 982.50
	Augusta	\$ 17.07	\$ 682.80		\$ 16.90	\$ 676.00	Augusta 156	\$ 13.75	\$ 550.00	1565	\$ 13.10	\$ 524.00
	Augusta	\$ 18.07	\$ 180.70		\$ 16.90	\$ 169.00	Augusta 156	\$ 18.45	\$ 184.50	1565	\$ 16.10	\$ 161.00
			\$ 8,775.25			\$ 9,717.50			\$ 7,023.25			\$ 7,562.50
15	Augusta	\$ 15.07	\$ 4,144.25		\$ 25.62	\$ 7,045.50	Augusta 156	\$ 11.84	\$ 3,256.00	1566	\$ 13.10	\$ 3,602.50
	Augusta	\$ 15.07	\$ 753.50		\$ 25.62	\$ 1,281.00	Augusta 156	\$ 12.81	\$ 640.50	1565	\$ 13.10	\$ 655.00
	Augusta	\$ 17.07	\$ 256.05		\$ 25.62	\$ 384.30	Augusta 156	\$ 13.75	\$ 206.25	1565	\$ 13.10	\$ 196.50
	Augusta	\$ 18.07	\$ 180.70		\$ 25.62	\$ 256.20	Augusta 156	\$ 16.49	\$ 164.90	1565	\$ 16.10	\$ 161.00
			\$ 5,334.50			\$ 8,967.00			\$ 4,267.65			\$ 4,615.00
16	Augusta	\$ 9.61	\$ 7,207.50		\$ 16.45	\$ 12,337.50	Augusta	\$ 6.37	\$ 4,777.50	6236	\$ 7.75	\$ 5,812.50
			\$ 7,207.50			\$ 12,337.50			\$ 4,777.50			\$ 5,812.50
17	Jerzees	\$ 13.08	\$ 588.60		\$ 15.94	\$ 717.30	Jerzees	\$ 14.05	\$ 632.25	996M	\$ 13.89	\$ 625.05
	Jerzees	\$ 15.08	\$ 150.80		\$ 15.94	\$ 159.40	Jerzees	\$ 21.76	\$ 217.60	996M	\$ 16.90	\$ 169.00
			\$ 739.40			\$ 876.70			\$ 849.85			\$ 794.05
18	Port Authority	\$ 15.02	\$ 450.60	Augusta Spd	\$ 20.50	\$ 615.00	Port Authori	\$ 14.22	\$ 426.60	K584	\$ 15.11	\$ 453.30
	Port Authority	\$ 17.02	\$ 85.10	Augusta Spd	\$ 20.50	\$ 102.50	Port Authori	\$ 15.48	\$ 77.40	K584	\$ 16.11	\$ 80.55
			\$ 535.70			\$ 717.50			\$ 504.00			\$ 533.85
19	Jerzees	\$ 20.57	\$ 2,057.00	Gildan Unise	\$ 22.76	\$ 2,276.00	Jerzees 993M	\$ 19.26	\$ 1,926.00	933M	\$ 17.75	\$ 1,775.00
	Jerzees	\$ 22.57	\$ 338.55	Gildan Unise	\$ 22.76	\$ 341.40	Jerzees 993M	\$ 28.87	\$ 433.05	933M	\$ 22.38	\$ 335.70
			\$ 2,395.55			\$ 2,617.40			\$ 2,359.05			\$ 2,110.70
20	Anvil	\$ 5.16	\$ 129.00	Gildan Unise	\$ 9.50	\$ 237.50	Anvil	\$ 4.52	\$ 113.00	G980	\$ 5.80	\$ 145.00
	Anvil	\$ 8.16	\$ 65.28	Gildan Unise	\$ 9.50	\$ 76.00	Anvil	\$ 8.28	\$ 66.24	G980	\$ 7.60	\$ 60.80
			\$ 194.28			\$ 313.50			\$ 179.24			\$ 205.80
21	Jerzees	\$ 22.65	\$ 566.25	Gildan Unise	\$ 32.80	\$ 820.00	Jerzees 993M	\$ 24.23	\$ 605.75	933M	\$ 18.75	\$ 468.75
	Jerzees	\$ 25.65	\$ 205.20	Gildan Unise	\$ 32.80	\$ 262.40	Jerzees 993M	\$ 33.84	\$ 270.72	933M	\$ 23.38	\$ 187.04
			\$ 771.45			\$ 1,082.40			\$ 876.47			\$ 655.79
22	Jerzees	\$ 5.33	\$ 106.60		\$ 13.88	\$ 277.60	Jerzees	\$ 17.04	\$ 340.80	29MR	\$ 5.26	\$ 105.20
	Jerzees	\$ 7.33	\$ 58.64		\$ 13.88	\$ 111.04	Jerzees	\$ 19.54	\$ 156.32	29MR	\$ 7.13	\$ 57.04
	Jerzees	\$ 8.33	\$ 24.99		\$ 13.88	\$ 41.64	Jerzees	\$ 21.04	\$ 63.12	29MR	\$ 8.13	\$ 24.39
			\$ 190.23			\$ 430.28			\$ 560.24			\$ 186.63

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	EMPIRE PRINTING SPRINGFIELD, MO			HATTERAS, INC. PLYMOUTH, MI			LIBRA INDUSTRIES JACKSON, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23	Port Authority	\$ 42.79	\$ 1,711.60	- Repel Rain	\$26.99	\$ 1,079.60	Galeton	\$ 14.67	\$ 586.80	SKU: 13268	\$ 13.85	\$ 554.00
	Port Authority	\$ 44.79	\$ 671.85	- Repel Rain	\$26.99	\$ 404.85	Galeton	\$ 15.33	\$ 229.95		\$ 14.85	\$ 222.75
	Port Authority	\$ 45.79	\$ 228.95	Repel Rainw	\$ 26.99	\$ 134.95	Galeton	\$ 16.01	\$ 80.05		\$ 15.85	\$ 79.25
			\$ 2,612.40			\$ 1,619.40			\$ 896.80			\$ 856.00
24	Epic Sport	\$ 6.75	\$ 2,868.75	Team 365 M	\$ 18.25	\$ 7,756.25	A4	\$ 7.29	\$ 3,098.25	PC380	\$ 5.68	\$ 2,414.00
	Epic Sport	\$ 8.75	\$ 437.50	Team 365 M	\$ 18.25	\$ 912.50	A4	\$ 7.26	\$ 363.00	PC380	\$ 6.82	\$ 341.00
	Epic Sport	\$ 9.75	\$ 243.75	Team 365 M	\$ 18.25	\$ 456.25	A4	\$ 7.26	\$ 181.50	PC380	\$ 7.51	\$ 187.75
			\$ 3,550.00			\$ 9,125.00			\$ 3,642.75			\$ 2,942.75
25	Port Authority	\$ 15.02	\$ 375.50		\$ 19.34	\$ 483.50	Port Author	\$ 14.22	\$ 355.50	K584	\$ 15.76	\$ 394.00
	Port Authority	\$ 17.02	\$ 68.08		\$ 19.34	\$ 77.36	Port Author	\$ 15.48	\$ 61.92	K584	\$ 16.76	\$ 67.04
	Port Authority	\$ 18.02	\$ 72.08		\$ 19.34	\$ 77.36	Port Author	\$ 18.64	\$ 74.56	K584	\$ 18.76	\$ 75.04
			\$ 515.66			\$ 638.22			\$ 491.98			\$ 536.08
26	Sport-Tek	\$ 9.50	\$ 237.50		\$ 14.44	\$ 361.00	Sport Tek	\$ 9.56	\$ 239.00	ST700	\$ 10.93	\$ 273.25
	Sport-Tek	\$ 12.50	\$ 100.00		\$ 14.44	\$ 115.52		\$ 12.46	\$ 99.68	ST700	\$ 11.93	\$ 95.44
			\$ 337.50			\$ 476.52			\$ 338.68			\$ 368.69
27	Port Authority	\$ 15.80	\$ 1,580.00		\$ 6.04	\$ 604.00	Port Author	\$ 14.98	\$ 1,498.00	K584	\$ 13.76	\$ 1,376.00
	Port Authority	\$ 18.80	\$ 94.00		\$ 6.04	\$ 30.20	Port Author	\$ 18.09	\$ 90.45	K584	\$ 15.76	\$ 78.80
			\$ 1,674.00			\$ 634.20			\$ 1,588.45			\$ 1,454.80
28	C2 Sport	\$ 6.19	\$ 619.00		\$ 8.82	\$ 882.00	C2	\$ 5.65	\$ 565.00	5100	\$ 5.96	\$ 596.00
	C2 Sport	\$ 9.19	\$ 137.85		\$ 8.82	\$ 132.30	C2	\$ 10.44	\$ 156.60	5100	\$ 6.34	\$ 95.10
			\$ 756.85			\$ 1,014.30			\$ 721.60			\$ 691.10
29	Port & Co	\$ 19.25	\$ 577.50		\$ 21.14	\$ 634.20	Port & Comp	\$ 18.81	\$ 564.30	PC78ZH	\$ 19.29	\$ 578.70
	Port & Co	\$ 22.25	\$ 111.25		\$ 21.14	\$ 105.70	Port & Comp	\$ 23.94	\$ 119.70	PC78ZH	\$ 20.25	\$ 101.25
			\$ 688.75			\$ 739.90			\$ 684.00			\$ 679.95
30	Jerzees	\$ 13.08	\$ 392.40		\$ 16.18	\$ 485.40	Jerzees	\$ 11.79	\$ 353.70	996M	\$ 13.99	\$ 419.70
	Jerzees	\$ 16.08	\$ 80.40		\$ 16.18	\$ 80.90	Jerzees	\$ 20.81	\$ 104.05	996M	\$ 16.17	\$ 80.85
			\$ 472.80			\$ 566.30			\$ 457.75			\$ 500.55
31	Jerzees	\$ 10.15	\$ 304.50		\$ 12.88	\$ 386.40	Jerzees	\$ 9.18	\$ 275.40	562M	\$ 9.34	\$ 280.20
	Jerzees	\$ 13.15	\$ 65.75		\$ 12.88	\$ 64.40	Jerzees	\$ 13.82	\$ 69.10	562M	\$ 11.90	\$ 59.50
			\$ 370.25			\$ 450.80			\$ 344.50			\$ 339.70
32	Gildan	\$ 5.59	\$ 279.50		\$ 6.06	\$ 303.00	Gildan	\$ 5.24	\$ 262.00	2000B	\$ 4.23	\$ 211.50
	Gildan	\$ 5.59	\$ 2,236.00		\$ 6.06	\$ 2,424.00	Gildan	\$ 5.31	\$ 2,124.00	2000	\$ 4.31	\$ 1,724.00
	Gildan	\$ 8.09	\$ 404.50		\$ 6.06	\$ 303.00	Gildan	\$ 9.31	\$ 465.50	2000	\$ 6.05	\$ 302.50
			\$ 2,920.00			\$ 3,030.00			\$ 2,851.50			\$ 2,238.00
33	Jerzees	\$ 13.08	\$ 327.00		\$ 17.59	\$ 439.75	Jerzees	\$ 14.73	\$ 368.25	996M	\$ 13.99	\$ 349.75
	Jerzees	\$ 13.08	\$ 196.20		\$ 17.59	\$ 263.85	Jerzees	\$ 14.73	\$ 220.95	996M	\$ 13.99	\$ 209.85
	Jerzees	\$ 15.58	\$ 155.80		\$ 17.59	\$ 175.90	Jerzees	\$ 23.43	\$ 234.30	996M	\$ 16.17	\$ 161.70
			\$ 679.00			\$ 879.50			\$ 823.50			\$ 721.30

ALL AMERICAN EMBROIDERY LIVONIA, MI				BIENALI PROMOTIONS LLC HIGHLAND PARK, IL			DIGITAL DASH CREATIVE BRIDGEPORT, CT			EMBROIDERY SHOPPE WESTLAND, MI			
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	ITEM #
1	PC55	\$ 6.99	\$ 489.30	Jerzees	\$ 17.90	\$ 1,253.00	Jerzees	\$ 7.11	\$ 497.70		\$ 9.00	\$ 630.00	1
	PC55	\$ 8.99	\$ 287.68	Jerzees	\$ 20.34	\$ 650.88	Jerzees	\$ 9.07	\$ 290.24		\$ 12.00	\$ 384.00	
	PC55	\$ 9.99	\$ 79.92	Jerzees	\$ 21.94	\$ 175.52	Jerzees	\$ 10.35	\$ 82.80		\$ 14.00	\$ 112.00	
			\$ 856.90			\$ 2,079.40			\$ 870.74			\$ 1,126.00	
	3%		\$ 25.71										
	Total w/3%		\$ 831.19										
2	PC78H	\$ 15.99	\$ 1,599.00	Jerzees	\$ 25.56	\$ 2,556.00	Jerzees	\$ 16.43	\$ 1,643.00		\$ 21.00	\$ 2,100.00	2
	PC78H	\$ 18.99	\$ 284.85	Jerzees	\$ 35.44	\$ 531.60	Jerzees	\$ 22.10	\$ 331.50		\$ 35.00	\$ 525.00	
			\$ 1,883.85			\$ 3,087.60			\$ 1,974.50			\$ 2,625.00	
	3%		\$ 56.52										
	Total w/3%		\$ 1,827.33										
3	PC78H	\$ 16.99	\$ 849.50	Jerzees	\$ 25.56	\$ 1,278.00	Jerzees	\$ 15.88	\$ 794.00		\$ 20.00	\$ 1,000.00	3
	PC78H	\$ 18.99	\$ 284.85	Jerzees	\$ 33.44	\$ 501.60	Jerzees	\$ 18.87	\$ 283.05		\$ 29.00	\$ 435.00	
	PC78H	\$ 20.99	\$ 104.95	Jerzees	\$ 35.44	\$ 1,779.60	Jerzees	\$ 20.47	\$ 102.35		\$ 31.00	\$ 155.00	
			\$ 1,239.30			\$ 3,559.20			\$ 1,179.40			\$ 1,590.00	
	3%		\$ 37.18										
	Total w/3%		\$ 1,202.12										
4	KP55	\$ 12.99	\$ 389.70	Jerzees	\$ 22.48	\$ 674.40	tultex 400	\$ 8.54	\$ 256.20		\$ 12.50	\$ 375.00	4
			\$ 389.70			\$ 674.40			\$ 256.20			\$ 375.00	
	3%		\$ 11.69										
	Total w/3%		\$ 378.01										
5	PC54	\$ 6.99	\$ 419.40	Jerzees	\$ 16.70	\$ 1,002.00	gildan g500	\$ 6.44	\$ 386.40		\$ 12.50	\$ 750.00	5
			\$ 419.40			\$ 1,002.00			\$ 386.40			\$ 750.00	
	3%		\$ 12.58										
	Total w/3%		\$ 406.82										
6	437MLR	\$ 21.99	\$ 439.80	Jerzees	\$ 28.60	\$ 572.00	Jerzees	\$ 14.60	\$ 292.00		\$ 24.00	\$ 480.00	6
			\$ 439.80			\$ 572.00			\$ 292.00			\$ 480.00	
7	PC55	\$ 6.99	\$ 978.60	Jerzees	\$ 19.80	\$ 2,772.00	jerzees	\$ 8.36	\$ 1,170.40		\$ 11.00	\$ 1,540.00	7
	PC55	\$ 8.99	\$ 359.60	Jerzees	\$ 22.30	\$ 892.00	jerzees	\$ 10.32	\$ 412.80		\$ 16.00	\$ 640.00	
			\$ 1,338.20			\$ 3,664.00			\$ 1,583.20			\$ 2,180.00	
	3%		\$ 40.15										
	Total w/3%		\$ 1,298.05										
8	PC55	\$ 6.99	\$ 699.00	Jerzees	\$ 19.80	\$ 1,980.00	jerzees	\$ 8.36	\$ 836.00		\$ 11.00	\$ 1,100.00	8
	PC55	\$ 8.99	\$ 143.84	Jerzees	\$ 22.30	\$ 356.80	g500	\$ 10.24	\$ 163.84		\$ 15.00	\$ 240.00	
	PC55	\$ 9.99	\$ 79.92	Jerzees	\$ 23.88	\$ 191.04	g500	\$ 10.24	\$ 81.92		\$ 16.00	\$ 128.00	
			\$ 922.76			\$ 2,527.84			\$ 1,081.76			\$ 1,468.00	
	3%		\$ 27.68										
	Total w/3%		\$ 895.08										
9	PC55LS	\$ 11.99	\$ 599.50	Jerzees	\$ 23.38	\$ 1,169.00	Jerzees	\$ 10.00	\$ 500.00		\$ 14.00	\$ 700.00	9
	PC55LS	\$ 13.99	\$ 279.80	Jerzees	\$ 25.32	\$ 506.40	Jerzees	\$ 10.91	\$ 218.20		\$ 16.00	\$ 320.00	
	PC55LS	\$ 14.99	\$ 89.94	Jerzees	\$ 27.98	\$ 167.88	Jerzees	\$ 12.52	\$ 75.12		\$ 18.00	\$ 108.00	
			\$ 969.24			\$ 1,843.28			\$ 793.32			\$ 1,128.00	
	3%		\$ 29.08										
	Total w/3%		\$ 940.16										
10	KP55	\$ 12.99	\$ 389.70	Jerzees	\$ 22.48	\$ 674.40	jerzees	\$ 10.01	\$ 300.30		\$ 15.00	\$ 450.00	10
	KP55	\$ 14.99	\$ 74.95	Jerzees	\$ 24.95	\$ 124.80	jerzees	\$ 12.11	\$ 60.55		\$ 18.00	\$ 90.00	
			\$ 464.65			\$ 799.20			\$ 360.85			\$ 540.00	
	3%		\$ 13.94										
	Total w/3%		\$ 450.71										
11	PC61	\$ 8.99	\$ 899.00	Gildan	\$ 17.96	\$ 1,796.00	gildan	\$ 7.15	\$ 715.00		\$ 10.00	\$ 1,000.00	11
	PC61	\$ 10.99	\$ 164.85	Gildan	\$ 20.38	\$ 305.70	gildan	\$ 10.65	\$ 159.75		\$ 14.00	\$ 210.00	
			\$ 1,063.85			\$ 2,101.70			\$ 874.75			\$ 1,210.00	
	3%		\$ 31.92										
	Total w/3%		\$ 1,031.93										

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	ITEM #
	ALL AMERICAN EMBROIDERY LIVONIA, MI			BIENALI PROMOTIONS LLC HIGHLAND PARK, IL			DIGITAL DASH CREATIVE BRIDGEPORT, CT			EMBROIDERY SHOPPE WESTLAND, MI			
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	ITEM #
12A	PC55	\$ 6.99	\$ 2,796.00	Gildan	\$ 17.28	\$ 6,912.00	gildan	\$ 6.55	\$ 2,620.00		\$ 10.00	\$ 4,000.00	12A
	PC55	\$ 6.99	\$ 768.90	Gildan	\$ 17.96	\$ 1,975.60	gildan	\$ 6.81	\$ 749.10		\$ 14.00	\$ 1,540.00	
	PC55	\$ 6.99	\$ 244.65	Gildan	\$ 17.96	\$ 628.60	gildan	\$ 6.81	\$ 238.35		\$ 16.00	\$ 560.00	
			\$ 3,809.55			\$ 9,516.20			\$ 3,607.45			\$ 6,100.00	
		3%	\$ 114.29										
		Total w/3%	\$ 3,695.26										
12B	PC55	\$ 6.99	\$ 559.20	Gildan	\$ 17.96	\$ 1,436.80	gildan	\$ 6.81	\$ 544.80		\$ 12.00	\$ 960.00	12B
	PC55	\$ 9.99	\$ 149.85	Gildan	\$ 20.36	\$ 305.40	gildan	\$ 8.62	\$ 129.30		\$ 16.00	\$ 240.00	
			\$ 709.05			\$ 1,742.20			\$ 674.10			\$ 1,200.00	
		3%	\$ 21.27										
		Total w/3%	\$ 687.78										
			\$ 4,383.04			\$ 11,258.40			\$ 4,281.55			\$ 7,300.00	
13	PC54LS	\$ 9.99	\$ 499.50	Gildan	\$ 22.04	\$ 1,102.00	gildan	\$ 9.45	\$ 472.50		\$ 10.00	\$ 500.00	13
	PC54LS	\$ 9.99	\$ 4,995.00	Gildan	\$ 22.72	\$ 11,360.00	gildan	\$ 10.86	\$ 5,430.00		\$ 10.00	\$ 5,000.00	
	PC54LS	\$ 12.96	\$ 648.00	Gildan	\$ 24.48	\$ 1,224.00	gildan	\$ 14.03	\$ 701.50		\$ 18.00	\$ 900.00	
			\$ 6,142.50			\$ 13,686.00			\$ 6,604.00			\$ 6,400.00	
		3%	\$ 184.28										
		Total w/3%	\$ 5,958.23										
14	Augusta 1566	\$ 15.49	\$ 6,970.50	Augusta	\$ 31.72	\$ 14,274.00	augusta	\$ 13.21	\$ 5,944.50		\$ 26.00	\$ 11,700.00	14
	Augusta 1565	\$ 15.48	\$ 1,161.00	Augusta	\$ 32.68	\$ 2,451.00	augusta	\$ 13.98	\$ 1,048.50		\$ 28.00	\$ 2,100.00	
	Augusta 1565	\$ 15.48	\$ 619.20	Augusta	\$ 33.62	\$ 1,344.80	augusta	\$ 14.73	\$ 589.20		\$ 30.00	\$ 1,200.00	
	Augusta 1565	\$ 17.55	\$ 175.50	Augusta	\$ 38.28	\$ 382.80	augusta	\$ 18.48	\$ 184.80		\$ 31.00	\$ 310.00	
			\$ 8,926.20			\$ 18,452.60			\$ 7,767.00			\$ 15,310.00	
		3%	\$ 267.79										
		Total w/3%	\$ 8,658.41										
15	Augusta 1566	\$ 15.49	\$ 4,259.75	Augusta	\$ 31.72	\$ 8,723.00	Augusta	\$ 13.21	\$ 3,632.75		\$ 26.00	\$ 7,150.00	15
	Augusta 1565	\$ 15.48	\$ 774.00	Augusta	\$ 32.68	\$ 1,634.00	Augusta	\$ 13.98	\$ 699.00		\$ 28.00	\$ 1,400.00	
	Augusta 1565	\$ 15.48	\$ 232.20	Augusta	\$ 33.62	\$ 504.30	Augusta	\$ 14.73	\$ 220.95		\$ 30.00	\$ 450.00	
	Augusta 1565	\$ 17.55	\$ 175.50	Augusta	\$ 36.34	\$ 363.40	Augusta	\$ 18.48	\$ 184.80		\$ 31.00	\$ 310.00	
			\$ 5,441.45			\$ 11,224.70			\$ 4,737.50			\$ 9,310.00	
		3%	\$ 163.24										
		Total w/3%	\$ 5,278.21										
16	C911	\$ 6.66	\$ 4,995.00	Augusta	\$ 19.86	\$ 14,895.00	Augusta	\$ 10.62	\$ 7,965.00		\$ 16.50	\$ 12,375.00	16
			\$ 4,995.00			\$ 14,895.00			\$ 7,965.00			\$ 12,375.00	
		3%	\$ 149.85										
		Total w/3%	\$ 4,845.15										
17	PC78h	\$ 16.99	\$ 764.55	Jerzees	\$ 25.56	\$ 1,150.20	jerzees	\$ 15.68	\$ 705.60		\$ 21.00	\$ 945.00	17
	PC78h	\$ 18.99	\$ 189.90	Jerzees	\$ 33.44	\$ 334.40	jerzees	\$ 17.89	\$ 178.90		\$ 30.00	\$ 300.00	
			\$ 954.45			\$ 1,484.60			\$ 884.50			\$ 1,245.00	
		3%	\$ 28.63										
		Total w/3%	\$ 925.82										
18	ST357	\$ 14.76	\$ 442.80	Port Authority	\$ 25.82	\$ 774.60	Team 365 tt	\$ 13.56	\$ 406.80		\$ 24.00	\$ 720.00	18
	ST357	\$ 16.74	\$ 83.70	Port Authority	\$ 27.12	\$ 135.60	Team 365 tt	\$ 14.59	\$ 72.95		\$ 28.00	\$ 140.00	
			\$ 526.50			\$ 910.20			\$ 479.75			\$ 860.00	
		3%	\$ 15.80										
		Total w/3%	\$ 510.71										
19	PC78ZH	\$ 21.78	\$ 2,178.00	Jerzees	\$ 36.56	\$ 3,656.00	jerzees	\$ 19.03	\$ 1,903.00		\$ 38.00	\$ 3,800.00	19
	PC78ZH	\$ 23.78	\$ 356.70	Jerzees	\$ 39.96	\$ 599.40	jerzees	\$ 25.11	\$ 376.65		\$ 45.00	\$ 675.00	
			\$ 2,534.70			\$ 4,255.40			\$ 2,279.65			\$ 4,475.00	
		3%	\$ 76.04										
		Total w/3%	\$ 2,458.66										
20	PC43	\$ 5.99	\$ 149.75	Anvil	\$ 12.94	\$ 323.50	gildan	\$ 6.16	\$ 154.00		\$ 11.00	\$ 275.00	20
	PC43	\$ 8.99	\$ 71.92	Anvil	\$ 12.94	\$ 103.52	gildan	\$ 9.21	\$ 73.68		\$ 16.00	\$ 128.00	
			\$ 221.67			\$ 427.02			\$ 227.68			\$ 403.00	
		3%	\$ 6.65										
		Total w/3%	\$ 215.02										
21	PC78ZH	\$ 21.78	\$ 544.50	Jerzees	\$ 36.30	\$ 907.50	jerzees	\$ 22.78	\$ 569.50		\$ 45.00	\$ 1,125.00	21
	PC78ZH	\$ 23.78	\$ 190.24	Jerzees	\$ 39.72	\$ 317.76	jerzees	\$ 28.86	\$ 230.88		\$ 55.00	\$ 440.00	
			\$ 734.74			\$ 1,225.26			\$ 800.38			\$ 1,565.00	
		3%	\$ 22.04										
		Total w/3%	\$ 712.70										
22	PC55	\$ 9.99	\$ 199.80	Jerzees	\$ 19.80	\$ 396.00	jerzees	\$ 7.89	\$ 157.80		\$ 10.00	\$ 200.00	22
	PC55	\$ 11.99	\$ 95.92	Jerzees	\$ 22.24	\$ 177.92	jerzees	\$ 10.05	\$ 80.40		\$ 12.00	\$ 96.00	
	PC55	\$ 13.99	\$ 41.97	Jerzees	\$ 23.84	\$ 71.52	jerzees	\$ 10.39	\$ 31.17		\$ 14.00	\$ 42.00	
			\$ 337.69			\$ 645.44			\$ 269.37			\$ 338.00	
		3%	\$ 10.13										
		Total w/3%	\$ 327.56										

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	ITEM #
	ALL AMERICAN EMBROIDERY LIVONIA, MI			BIENALI PROMOTIONS LLC HIGHLAND PARK, IL			DIGITAL DASH CREATIVE BRIDGEPORT, CT			EMBROIDERY SHOPPE WESTLAND, MI			
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	ITEM #
23	Galeton : 13268-L-BH	\$ 25.99	\$ 1,039.60	Port Authority	\$ 65.10	\$ 2,604.00	galeton	\$ 15.70	\$ 628.00		\$ 22.00	\$ 880.00	23
	Galeton : 13268-L-BH	\$ 28.99	\$ 434.85	Port Authority	\$ 66.10	\$ 991.50	galeton	\$ 17.70	\$ 265.50		\$ 24.00	\$ 360.00	
	Galeton : 13268-L-BH	\$ 30.99	\$ 154.95	Port Authority	\$ 67.10	\$ 335.50	galeton	\$ 18.70	\$ 93.50		\$ 26.00	\$ 130.00	
			\$ 1,629.40			\$ 3,931.00			\$ 987.00			\$ 1,370.00	
	3%		\$ 48.88										
	Total w/3%		\$ 1,580.52										
24	ST101/ST100	\$ 11.88	\$ 5,049.00	Epic Cool	\$ 25.14	\$ 10,684.50	epic sports	\$ 8.75	\$ 3,718.75		\$ 20.00	\$ 8,500.00	24
	ST101/ST100	\$ 13.50	\$ 675.00	Epic Cool	\$ 26.42	\$ 1,321.00	epic sports	\$ 9.75	\$ 487.50		\$ 22.00	\$ 1,100.00	
	ST101/ST100	\$ 15.30	\$ 382.50	Epic Cool	\$ 28.98	\$ 724.50	epic sports	\$ 9.75	\$ 243.75		\$ 24.00	\$ 600.00	
			\$ 6,106.50			\$ 12,730.00			\$ 4,450.00			\$ 10,200.00	
	3%		\$ 183.20										
	Total w/3%		\$ 5,923.31										
25	ST357	\$ 14.76	\$ 369.00	Port Authority	\$ 30.20	\$ 755.00	team 365 tt3	\$ 13.56	\$ 339.00		\$ 18.00	\$ 450.00	25
	ST357	\$ 16.74	\$ 66.96	Port Authority	\$ 31.48	\$ 125.92	team 365 tt3	\$ 14.56	\$ 58.24		\$ 20.00	\$ 80.00	
	ST357	\$ 18.99	\$ 75.96	Port Authority	\$ 34.04	\$ 136.16	team 365 tt3	\$ 16.00	\$ 64.00		\$ 26.00	\$ 104.00	
			\$ 511.92			\$ 1,017.08			\$ 461.24			\$ 634.00	
	3%		\$ 15.36										
	Total w/3%		\$ 496.56										
26	ST700	\$ 11.11	\$ 277.75	Sports Tek	\$ 25.28	\$ 632.00	islander perf	\$ 9.28	\$ 232.00		\$ 18.00	\$ 450.00	26
	ST700	\$ 14.40	\$ 115.20	Sports Tek	\$ 29.12	\$ 232.96	islander perf	\$ 13.41	\$ 107.28		\$ 22.00	\$ 176.00	
			\$ 392.95			\$ 864.96			\$ 339.28			\$ 626.00	
	3%		\$ 11.79										
	Total w/3%		\$ 381.16										
27	ST357	\$ 14.76	\$ 1,476.00	Port Authority	\$ 30.20	\$ 3,020.00	team 365 tt3	\$ 14.56	\$ 1,456.00		\$ 18.00	\$ 1,800.00	27
	ST357	\$ 16.74	\$ 83.70	Port Authority	\$ 34.04	\$ 170.20	team 365 tt3	\$ 16.75	\$ 83.75		\$ 22.00	\$ 110.00	
			\$ 1,559.70			\$ 3,190.20			\$ 1,539.75			\$ 1,910.00	
	3%		\$ 46.79										
	Total w/3%		\$ 1,512.91										
28	PC380	\$ 6.39	\$ 639.00	C25port	\$ 13.98	\$ 1,398.00	c2 sport	\$ 7.47	\$ 747.00		\$ 14.00	\$ 1,400.00	28
	PC380	\$ 6.39	\$ 95.85	C25port	\$ 14.48	\$ 217.20	c2 sport	\$ 11.98	\$ 179.70		\$ 16.00	\$ 240.00	
			\$ 734.85			\$ 1,615.20			\$ 926.70			\$ 1,640.00	
	3%		\$ 22.05										
	Total w/3%		\$ 712.80										
29	PC78ZH	\$ 21.78	\$ 653.40	Port and Co	\$ 27.80	\$ 834.00	tultex 331	\$ 16.45	\$ 493.50		\$ 32.00	\$ 960.00	29
	PC78ZH	\$ 23.78	\$ 118.90	Port and Co	\$ 35.94	\$ 179.70	tultex 332	\$ 18.52	\$ 92.60		\$ 36.00	\$ 180.00	
			\$ 772.30			\$ 1,013.70			\$ 586.10			\$ 1,140.00	
	3%		\$ 23.17										
	Total w/3%		\$ 749.13										
30	PC78H	\$ 16.99	\$ 509.70	Jerzees	\$ 25.56	\$ 766.80	jerzees	\$ 15.68	\$ 470.40		\$ 22.00	\$ 660.00	30
	PC78H	\$ 18.99	\$ 94.95	Jerzees	\$ 33.44	\$ 167.20	jerzees	\$ 18.15	\$ 90.75		\$ 26.00	\$ 130.00	
			\$ 604.65			\$ 934.00			\$ 561.15			\$ 790.00	
	3%		\$ 18.14										
	Total w/3%		\$ 586.51										
31	PC78	\$ 11.99	\$ 359.70	Jerzees	\$ 18.06	\$ 541.80		\$ 9.79	\$ 293.70		\$ 18.00	\$ 540.00	31
	PC78	\$ 13.99	\$ 69.95	Jerzees	\$ 23.80	\$ 118.50		\$ 11.14	\$ 55.70		\$ 22.00	\$ 110.00	
			\$ 429.65			\$ 660.30			\$ 349.40			\$ 650.00	
	3%		\$ 12.89										
	Total w/3%		\$ 416.76										
32	PC55	\$ 6.99	\$ 349.50	Gildan	\$ 17.28	\$ 864.00		\$ 7.55	\$ 377.50		\$ 12.00	\$ 600.00	32
	PC55	\$ 6.99	\$ 2,796.00	Gildan	\$ 17.96	\$ 7,184.00		\$ 7.81	\$ 3,124.00		\$ 12.00	\$ 4,800.00	
	PC55	\$ 6.99	\$ 349.50	Gildan	\$ 20.36	\$ 1,018.00		\$ 11.18	\$ 559.00		\$ 16.00	\$ 800.00	
			\$ 3,495.00			\$ 9,066.00			\$ 4,060.50			\$ 6,200.00	
	3%		\$ 104.85										
	Total w/3%		\$ 3,390.15										
33	PC78h	\$ 16.99	\$ 424.75	Jerzees	\$ 25.56	\$ 639.00		\$ 15.68	\$ 392.00		\$ 24.00	\$ 600.00	33
	PC78h	\$ 16.99	\$ 254.85	Jerzees	\$ 25.56	\$ 383.40		\$ 15.68	\$ 235.20		\$ 26.00	\$ 390.00	
	PC78h	\$ 18.99	\$ 189.90	Jerzees	\$ 33.44	\$ 334.40		\$ 18.15	\$ 181.50		\$ 28.00	\$ 280.00	
			\$ 869.50			\$ 1,356.80			\$ 808.70			\$ 1,270.00	
	3%		\$ 26.09										
	Total w/3%		\$ 843.42										

IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI			ITEM #	LITTLE ENGINE PROMOTION MACOMB, MI			NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI		
Proposed Brand	Proposed Unit Price	TOTAL		Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
Jerzees/Gilda	\$ 5.10	\$ 357.00	1		\$ 7.10	\$ 497.00		\$ 7.20	\$ 504.00		\$ 14.50	\$ 1,015.00
Jerzees/Gilda	\$ 7.10	\$ 227.20			\$ 9.10	\$ 291.20		\$ 9.20	\$ 294.40		\$ 15.75	\$ 504.00
Jerzees/Gilda	\$ 7.10	\$ 56.80			\$ 10.10	\$ 80.80		\$ 10.80	\$ 86.40		\$ 16.85	\$ 134.80
		\$ 641.00				\$ 869.00			\$ 884.80			\$ 1,653.80
									3%			
									Total w/3%	\$ 26.54		
										\$ 858.26		
Jerzees/Gilda	\$ 19.50	\$ 1,950.00	2		\$ 16.00	\$ 1,600.00		\$ 16.50	\$ 1,650.00		\$ 30.55	\$ 3,055.00
Jerzees/Gilda	\$ 24.50	\$ 367.50			\$ 18.00	\$ 270.00	Adult 2XL	\$ 24.74	\$ 123.70		\$ 39.95	\$ 599.25
		\$ 2,317.50				\$ 1,870.00	Adult 3XL	\$ 26.75	\$ 133.75			\$ 3,654.25
							Adult 4XL	\$ 26.75	\$ 133.75			
									\$ 2,041.20			
									3%	\$ 61.24		
									Total w/3%	\$ 1,979.96		
Jerzees/Gilda	\$ 18.50	\$ 925.00	3		\$ 14.50	\$ 725.00		\$ 15.50	\$ 775.00		\$ 30.55	\$ 1,527.50
Jerzees/Gilda	\$ 23.50	\$ 352.50			\$ 16.50	\$ 247.50		\$ 23.70	\$ 355.50		\$ 36.65	\$ 549.75
Jerzees/Gilda	\$ 23.50	\$ 117.50			\$ -	\$ -		\$ 15.70	\$ 78.50		\$ 38.85	\$ 194.25
		\$ 1,277.50				\$ 972.50			\$ 1,209.00			\$ 2,271.50
									3%	\$ 36.27		
									Total w/3%	\$ 1,172.73		
Jerzees/Gilda	\$ 12.50	\$ 375.00	4		\$ 11.50	\$ 345.00		\$ 12.15	\$ 364.50		\$ 17.50	\$ 525.00
		\$ 375.00				\$ 345.00			\$ 364.50			\$ 525.00
									3%	\$ 10.94		
									Total w/3%	\$ 353.57		
Jerzees/Gilda	\$ 5.15	\$ 309.00	5		\$ 5.25	\$ 315.00		\$ 6.67	\$ 400.20		\$ 14.00	\$ 840.00
		\$ 309.00				\$ 315.00			\$ 400.20			\$ 840.00
									3%	\$ 12.01		
									Total w/3%	\$ 388.19		
Jerzees/Gilda	\$ 22.50	\$ 450.00	6		\$ 20.00	\$ 400.00		\$ 21.67	\$ 433.40		\$ 16.02	\$ 320.40
		\$ 450.00				\$ 400.00			\$ 433.40			\$ 320.40
									3%	\$ 13.00		
									Total w/3%	\$ 420.40		
Jerzees/Gilda	\$ 6.50	\$ 910.00	7		\$ 7.50	\$ 1,050.00		\$ 7.72	\$ 1,080.80		\$ 24.50	\$ 3,430.00
Jerzees/Gilda	\$ 8.50	\$ 340.00			\$ 9.50	\$ 380.00		\$ 9.80	\$ 392.00		\$ 25.50	\$ 1,020.00
		\$ 1,250.00				\$ 1,430.00			\$ 1,472.80			\$ 4,450.00
									3%	\$ 44.18		
									Total w/3%	\$ 1,428.62		
Jerzees/Gilda	\$ 6.50	\$ 650.00	8		\$ 7.50	\$ 750.00		\$ 8.05	\$ 805.00		\$ 24.50	\$ 2,450.00
Jerzees/Gilda	\$ 8.50	\$ 136.00			\$ 9.50	\$ 152.00		\$ 10.05	\$ 160.80		\$ 25.50	\$ 408.00
Jerzees/Gilda	\$ 8.50	\$ 68.00			\$ 10.50	\$ 84.00		\$ 11.55	\$ 92.40		\$ 27.50	\$ 220.00
		\$ 854.00				\$ 986.00			\$ 1,058.20			\$ 3,078.00
									3%	\$ 31.75		
									Total w/3%	\$ 1,026.45		
Jerzees/Gilda	\$ 9.50	\$ 475.00	9		\$ 11.50	\$ 575.00		\$ 12.59	\$ 629.50		\$ 28.75	\$ 1,437.50
Jerzees/Gilda	\$ 11.50	\$ 230.00			\$ 13.50	\$ 270.00		\$ 15.59	\$ 311.80		\$ 31.50	\$ 630.00
Jerzees/Gilda	\$ 11.50	\$ 69.00			\$ 14.50	\$ 87.00		\$ 18.00	\$ 108.00		\$ 33.50	\$ 201.00
		\$ 774.00				\$ 932.00			\$ 1,049.30			\$ 2,268.50
									3%	\$ 31.48		
									Total w/3%	\$ 1,017.82		
Jerzees/Gilda	\$ 12.50	\$ 375.00	10		\$ 11.50	\$ 345.00		\$ 13.24	\$ 397.20		\$ 19.17	\$ 575.10
Jerzees/Gilda	\$ 15.50	\$ 77.50			\$ 13.50	\$ 67.50		\$ 16.30	\$ 81.50		\$ 21.17	\$ 105.85
		\$ 452.50				\$ 412.50			\$ 478.70			\$ 680.95
									3%	\$ 14.36		
									Total w/3%	\$ 464.34		
Jerzees/Gilda	\$ 5.50	\$ 550.00	11		\$ 11.25	\$ 1,125.00		\$ 6.99	\$ 699.00		\$ 21.12	\$ 2,112.00
Jerzees/Gilda	\$ 7.50	\$ 112.50			\$ 13.25	\$ 198.75	Adult 2XL	\$ 10.88	\$ 54.40		\$ 24.50	\$ 367.50
		\$ 662.50				\$ 1,323.75	Adult 3XL	\$ 12.88	\$ 128.80			\$ 2,479.50
									\$ 882.20			
									3%	\$ 26.47		
									Total w/3%	\$ 855.73		

Proposed Brand	Proposed Unit Price	TOTAL	ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI				LITTLE ENGINE PROMOTION MACOMB, MI			NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI		
Proposed Brand	Proposed Unit Price	TOTAL	ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
Jerzees/Gildan	\$ 5.95	\$ 2,380.00	12A		\$ 6.85	\$ 2,740.00		\$ 4.97	\$ 1,988.00		\$ 14.50	\$ 5,800.00
Jerzees/Gildan	\$ 5.95	\$ 654.50			\$ 7.00	\$ 770.00		\$ 5.15	\$ 566.50		\$ 17.51	\$ 1,926.10
Jerzees/Gildan	\$ 5.95	\$ 208.25			\$ 9.00	\$ 315.00		\$ 8.25	\$ 288.75		\$ 19.26	\$ 674.10
		\$ 3,242.75				\$ 3,825.00			\$ 2,843.25			\$ 8,400.20
								3%	\$ 85.30			
								Total w/3%	\$ 2,757.95			
Jerzees/Gildan	\$ 5.95	\$ 476.00	12B		\$ 8.25	\$ 660.00		\$ 5.15	\$ 412.00		\$ 17.51	\$ 1,400.80
Jerzees/Gildan	\$ 7.95	\$ 119.25			\$ 10.25	\$ 153.75		\$ 8.25	\$ 123.75		\$ 19.75	\$ 296.25
		\$ 595.25				\$ 813.75			\$ 535.75			\$ 1,697.05
								3%	\$ 16.07			
								Total w/3%	\$ 519.68			
	\$ 3,838.00				\$ 4,638.75			\$ 3,277.63			\$ 10,097.25	
Jerzees/Gildan	\$ 11.95	\$ 597.50	13	PC54YLS	\$ 8.75	\$ 437.50		\$ 10.48	\$ 524.00		\$ 22.50	\$ 1,125.00
Jerzees/Gildan	\$ 11.95	\$ 5,975.00			\$ 10.75	\$ 5,375.00		\$ 7.32	\$ 3,660.00		\$ 22.75	\$ 11,375.00
Jerzees/Gildan	\$ 13.95	\$ 697.50			\$ 10.75	\$ 537.50		\$ 8.50	\$ 425.00		\$ 26.50	\$ 1,325.00
		\$ 7,270.00				\$ 6,350.00			\$ 4,609.00			\$ 13,825.00
								3%	\$ 138.27			
								Total w/3%	\$ 4,470.73			
Augusta	\$ 18.95	\$ 8,527.50	14		\$ 15.75	\$ 7,087.50		\$ 19.65	\$ 8,842.50		\$ 47.30	\$ 21,285.00
Augusta	\$ 18.95	\$ 1,421.25			\$ 16.00	\$ 1,200.00		\$ 22.15	\$ 1,661.25		\$ 48.50	\$ 3,637.50
Augusta	\$ 20.95	\$ 838.00			\$ 18.00	\$ 720.00		\$ 22.15	\$ 886.00		\$ 48.50	\$ 1,940.00
Augusta	\$ 22.95	\$ 229.50			\$ 20.00	\$ 200.00		\$ 27.07	\$ 270.70		\$ 50.50	\$ 505.00
		\$ 11,016.25				\$ 9,207.50			\$ 11,660.45			\$ 27,367.50
								3%	\$ 349.81			
								Total w/3%	\$ 11,310.64			
Augusta	\$ 18.95	\$ 5,211.25	15		\$ 15.75	\$ 4,331.25		\$ 19.17	\$ 5,271.75		\$ 47.30	\$ 13,007.50
Augusta	\$ 18.95	\$ 947.50			\$ 16.00	\$ 800.00		\$ 22.79	\$ 1,139.50		\$ 48.50	\$ 2,425.00
Augusta	\$ 20.95	\$ 314.25			\$ 18.00	\$ 270.00		\$ 22.79	\$ 341.85		\$ 48.50	\$ 727.50
Augusta	\$ 22.95	\$ 229.50			\$ 20.00	\$ 200.00		\$ 27.07	\$ 270.70		\$ 48.50	\$ 485.00
		\$ 6,702.50				\$ 5,601.25			\$ 7,023.80			\$ 16,645.00
								3%	\$ 210.71			
								Total w/3%	\$ 6,813.09			
Port Authority	\$ 10.50	\$ 7,875.00	16		\$ 10.25	\$ 7,687.50		\$ 11.99	\$ 8,992.50		\$ 15.50	\$ 11,625.00
		\$ 7,875.00				\$ 7,687.50			\$ 8,992.50			\$ 11,625.00
								3%	\$ 269.78			
								Total w/3%	\$ 8,722.73			
Jerzees/Gildan	\$ 18.50	\$ 832.50	17		\$ 15.25	\$ 686.25		\$ 15.77	\$ 709.65		\$ 22.55	\$ 1,014.75
Jerzees/Gildan	\$ 23.50	\$ 235.00			\$ 17.25	\$ 172.50		\$ 23.97	\$ 239.70		\$ 26.75	\$ 267.50
		\$ 1,067.50				\$ 858.75			\$ 949.35			\$ 1,282.25
								3%	\$ 28.48			
								Total w/3%	\$ 920.87			
Port Authority	\$ 19.95	\$ 598.50	18		\$ 17.50	\$ 525.00		\$ 19.70	\$ 591.00		\$ 32.85	\$ 985.50
Port Authority	\$ 21.95	\$ 109.75			\$ 19.50	\$ 97.50		\$ 21.00	\$ 105.00		\$ 34.00	\$ 170.00
		\$ 708.25				\$ 622.50			\$ 696.00			\$ 1,155.50
								3%	\$ 20.88			
								Total w/3%	\$ 675.12			
Jerzees/Gildan	\$ 27.50	\$ 2,750.00	19		\$ 24.50	\$ 2,450.00		\$ 24.25	\$ 2,425.00		\$ 45.25	\$ 4,525.00
Jerzees/Gildan	\$ 29.50	\$ 442.50			\$ 26.50	\$ 397.50	Adult 2XL	\$ 31.90	\$ 159.50		\$ 48.50	\$ 727.50
		\$ 3,192.50				\$ 2,847.50	Adult 3XL	\$ 34.40	\$ 344.00			\$ 5,252.50
									\$ 2,928.50			
								3%	\$ 87.86			
								Total w/3%	\$ 2,840.65			
Gildan	\$ 6.15	\$ 153.75	20		\$ 6.00	\$ 150.00	Gildan	\$ 8.77	\$ 219.25		\$ 17.75	\$ 443.75
Gildan	\$ 8.15	\$ 65.20			\$ 8.00	\$ 64.00	Gildan 2XL	\$ 11.59	\$ 46.36		\$ 20.25	\$ 162.00
		\$ 218.95				\$ 214.00	Gildan 3XL	\$ 13.75	\$ 55.00			\$ 605.75
									\$ 320.61			
								3%	\$ 9.62			
								Total w/3%	\$ 310.99			
Jerzees/Gildan	\$ 33.50	\$ 837.00	21		\$ 30.00	\$ 750.00		\$ 24.14	\$ 603.50		\$ 49.25	\$ 1,231.25
Jerzees/Gildan	\$ 35.50	\$ 284.00			\$ 32.00	\$ 256.00		\$ 33.50	\$ 268.00		\$ 51.00	\$ 408.00
		\$ 1,121.00				\$ 1,006.00			\$ 871.50			\$ 1,639.25
								3%	\$ 26.15			
								Total w/3%	\$ 845.36			
Jerzees/Gildan	\$ 6.50	\$ 130.00	22		\$ 8.25	\$ 165.00		\$ 17.85	\$ 357.00		\$ 14.50	\$ 290.00
Jerzees/Gildan	\$ 8.50	\$ 68.00			\$ 10.25	\$ 82.00		\$ 20.00	\$ 160.00		\$ 15.75	\$ 126.00
Jerzees/Gildan	\$ 8.50	\$ 25.50			\$ 11.25	\$ 33.75		\$ 21.70	\$ 65.10		\$ 16.85	\$ 50.55
		\$ 223.50				\$ 280.75			\$ 582.10			\$ 466.55
								3%	\$ 17.46			
								Total w/3%	\$ 564.64			

Proposed Brand	Proposed Unit Price	TOTAL	ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI			23	LITTLE ENGINE PROMOTION MACOMB, MI			NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI		
Proposed Brand	Proposed Unit Price	TOTAL		Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
Galeton	\$ 25.00	\$ 1,000.00			\$ 21.50	\$ 860.00		\$ 15.87	\$ 634.80		\$ 64.50	\$ 2,580.00
Galeton	\$ 27.00	\$ 405.00			\$ 23.50	\$ 352.50		\$ 15.87	\$ 238.05		\$ 64.50	\$ 967.50
Galeton	\$ 28.00	\$ 140.00			\$ 24.50	\$ 122.50		\$ 15.87	\$ 79.35		\$ 64.50	\$ 322.50
		\$ 1,545.00				\$ 1,335.00			\$ 952.20			\$ 3,870.00
									\$ 28.57			
									Total w/3%			\$ 923.63
Port & Com	\$ 12.95	\$ 5,503.75	24	BAN3142	\$ 14.50	\$ 6,162.50	EGPro	\$ 13.45	\$ 5,716.25		\$ 27.60	\$ 11,730.00
Port & Com	\$ 14.95	\$ 747.50		BAN3142	\$ 16.50	\$ 825.00	EGPro	\$ 13.45	\$ 672.50		\$ 29.80	\$ 1,490.00
Port & Com	\$ 15.95	\$ 398.75		BAN3142	\$ 17.50	\$ 437.50	EGPro	\$ 13.45	\$ 336.25		\$ 31.60	\$ 790.00
		\$ 6,650.00				\$ 7,425.00			\$ 6,725.00			\$ 14,010.00
									\$ 201.75			
									Total w/3%			\$ 6,523.25
Port Authori	\$ 19.95	\$ 498.75	25		\$ 17.50	\$ 437.50		\$ 19.40	\$ 485.00		\$ 36.50	\$ 912.50
Port Authori	\$ 21.95	\$ 87.80			\$ 19.50	\$ 78.00		\$ 21.00	\$ 84.00		\$ 38.50	\$ 154.00
Port Authori	\$ 22.95	\$ 91.80			\$ 21.50	\$ 86.00		\$ 23.60	\$ 94.40		\$ 40.50	\$ 162.00
		\$ 678.35				\$ 601.50			\$ 663.40			\$ 1,228.50
									\$ 19.90			
									Total w/3%			\$ 643.50
Sport-Tek	\$ 14.50	\$ 362.50	26		\$ 12.25	\$ 306.25		\$ 14.30	\$ 357.50		\$ 32.50	\$ 812.50
Sport-Tek	\$ 16.50	\$ 132.00			\$ 15.25	\$ 122.00	Adult 2XL	\$ 15.50	\$ 62.00		\$ 35.50	\$ 284.00
		\$ 494.50				\$ 428.25	Adult 3XL	\$ 17.70	\$ 70.80			\$ 1,096.50
									\$ 490.30			
									\$ 14.71			
									Total w/3%			\$ 475.59
Port Authori	\$ 21.00	\$ 2,100.00	27		\$ 18.75	\$ 1,875.00		\$ 18.35	\$ 1,835.00		\$ 36.50	\$ 3,650.00
Port Authori	\$ 23.00	\$ 115.00			\$ 20.75	\$ 103.75	Adult 2XL	\$ 19.35	\$ 96.75		\$ 40.50	\$ 202.50
		\$ 2,215.00				\$ 1,978.75	Adult 3XL	\$ 22.00	\$ 110.00			\$ 3,852.50
									\$ 2,041.75			
									\$ 61.25			
									Total w/3%			\$ 1,980.50
C2 Sport	\$ 8.95	\$ 895.00	28		\$ 8.50	\$ 850.00		\$ 8.25	\$ 825.00		\$ 31.80	\$ 3,180.00
C2 Sport	\$ 10.95	\$ 164.25			\$ 11.50	\$ 172.50	Adult 2XL	\$ 8.50	\$ 42.50		\$ 33.50	\$ 502.50
		\$ 1,059.25				\$ 1,022.50	Adult 3XL	\$ 13.50	\$ 67.50			\$ 3,682.50
									\$ 935.00			
									\$ 28.05			
									Total w/3%			\$ 906.95
Jerzees/Gilda	\$ 26.50	\$ 795.00	29		\$ 29.50	\$ 885.00		\$ 24.95	\$ 748.50		\$ 32.62	\$ 978.60
Jerzees/Gilda	\$ 28.50	\$ 142.50			\$ 32.50	\$ 162.50		\$ 28.20	\$ 141.00		\$ 36.75	\$ 183.75
		\$ 937.50				\$ 1,047.50			\$ 889.50			\$ 1,162.35
									\$ 26.69			
									Total w/3%			\$ 862.82
Jerzees/Gilda	\$ 18.50	\$ 555.00	30		\$ 15.50	\$ 465.00		\$ 17.45	\$ 523.50		\$ 22.55	\$ 676.50
Jerzees/Gilda	\$ 23.50	\$ 117.50			\$ 17.50	\$ 87.50		\$ 25.66	\$ 128.30		\$ 26.75	\$ 133.75
		\$ 672.50				\$ 552.50			\$ 651.80			\$ 810.25
									\$ 19.55			
									Total w/3%			\$ 632.25
Jerzees/Gilda	\$ 13.95	\$ 418.50	31		\$ 11.75	\$ 352.50		\$ 14.00	\$ 420.00		\$ 22.40	\$ 672.00
Jerzees/Gilda	\$ 18.95	\$ 94.75			\$ 13.75	\$ 68.75		\$ 18.39	\$ 91.95		\$ 25.65	\$ 128.25
		\$ 513.25				\$ 421.25			\$ 511.95			\$ 800.25
									\$ 15.36			
									Total w/3%			\$ 496.59
Jerzees/Gilda	\$ 5.95	\$ 297.50	32		\$ 6.50	\$ 325.00		\$ 5.15	\$ 257.50		\$ 18.50	\$ 925.00
Jerzees/Gilda	\$ 5.95	\$ 2,380.00			\$ 6.75	\$ 2,700.00		\$ 5.25	\$ 2,100.00		\$ 23.55	\$ 9,420.00
Jerzees/Gilda	\$ 7.95	\$ 397.50			\$ 9.75	\$ 487.50		\$ 8.25	\$ 412.50		\$ 26.75	\$ 1,337.50
		\$ 3,075.00				\$ 3,512.50			\$ 2,770.00			\$ 11,682.50
									\$ 83.10			
									Total w/3%			\$ 2,686.90
Jerzees/Gilda	\$ 19.50	\$ 487.50	33		\$ 15.50	\$ 387.50		\$ 16.00	\$ 400.00		\$ 25.55	\$ 638.75
Jerzees/Gilda	\$ 19.50	\$ 292.50			\$ 15.50	\$ 232.50		\$ 24.40	\$ 366.00		\$ 29.75	\$ 446.25
Jerzees/Gilda	\$ 24.50	\$ 245.00			\$ 17.50	\$ 175.00		\$ 26.50	\$ 265.00		\$ 33.77	\$ 337.70
		\$ 1,025.00				\$ 795.00			\$ 1,031.00			\$ 1,422.70
									\$ 30.93			
									Total w/3%			\$ 1,000.07

THE SOCK BAG SHIRLEY, NY	ART & STITCHERY, LLC SHACKLEFORDS, VA
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ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1		\$ 10.72	\$ 750.40			
		\$ 14.64	\$ 468.48			
		\$ 17.20	\$ 137.60			
			\$ 1,356.48			
2		\$ 30.26	\$ 3,026.00			
		\$ 39.44	\$ 591.60			
			\$ 3,617.60			
3		\$ 28.26	\$ 1,413.00			
		\$ 34.24	\$ 513.60			
		\$ 37.44	\$ 187.20			
			\$ 2,113.80			
4		\$ 16.52	\$ 495.60			
			\$ 495.60			
5	Jerzees570N	\$ 12.58	\$ 754.80			
			\$ 754.80			
6		\$ 25.68	\$ 513.60			
			\$ 513.60			
7		\$ 15.72	\$ 2,200.80			
		\$ 19.64	\$ 785.60			
			\$ 2,986.40			
8		\$ 15.72	\$ 1,572.00			
		\$ 19.64	\$ 314.24			
		\$ 22.20	\$ 177.60			
			\$ 2,063.84			
9		\$ 19.00	\$ 950.00			
		\$ 20.82	\$ 416.40			
		\$ 24.04	\$ 144.24			
			\$ 1,510.64			
10		\$ 20.10	\$ 603.00			
		\$ 23.80	\$ 119.00			
			\$ 722.00			
11		\$ 10.94	\$ 1,094.00			
		\$ 18.20	\$ 273.00			
			\$ 1,367.00			

Disqualified:
Company used the
wrong proposal form.

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	THE SOCK BAG SHIRLEY, NY			ART & STITCHERY, LLC SHACKLEFORDS, VA		

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A		\$ 14.32	\$ 5,728.00			
		\$ 14.80	\$ 1,628.00			
		\$ 14.80	\$ 518.00			
			\$ 7,874.00			

12B		\$ 14.80	\$ 1,184.00			
		\$ 18.66	\$ 279.90			
			\$ 1,463.90			

\$ 9,337.90

13		\$ 19.40	\$ 970.00			
		\$ 20.90	\$ 10,450.00			
		\$ 28.50	\$ 1,425.00			
			\$ 12,845.00			

14		\$ 24.44	\$ 10,998.00			
		\$ 25.52	\$ 1,914.00			
		\$ 26.57	\$ 1,062.80			
		\$ 29.62	\$ 296.20			
			\$ 14,271.00			

15		\$ 24.44	\$ 6,721.00			
		\$ 25.52	\$ 1,276.00			
		\$ 26.57	\$ 398.55			
		\$ 29.62	\$ 296.20			
			\$ 8,691.75			

16		\$ 8.22	\$ 6,165.00			
			\$ 6,165.00			

17		\$ 26.26	\$ 1,181.70			
		\$ 32.24	\$ 322.40			
			\$ 1,504.10			

18		\$ 27.72	\$ 831.60			
		\$ 29.72	\$ 148.60			
			\$ 980.20			

19		\$ 28.52	\$ 2,852.00			
		\$ 35.15	\$ 527.25			
			\$ 3,379.25			

20		\$ 9.78	\$ 244.50			
		\$ 15.15	\$ 121.20			
			\$ 365.70			

21		\$ 27.11	\$ 677.75			
		\$ 30.95	\$ 247.60			
			\$ 925.35			

22		\$ 15.72	\$ 314.40			
		\$ 19.64	\$ 157.12			
		\$ 21.20	\$ 63.60			
			\$ 535.12			

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	THE SOCK BAG SHIRLEY, NY			ART & STITCHERY, LLC SHACKLEFORDS, VA		

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23		\$ 17.32	\$ 692.80			
		\$ 18.03	\$ 270.45			
		\$ 18.77	\$ 93.85			
			\$ 1,057.10			

24		\$ 13.98	\$ 5,941.50			
		\$ 13.98	\$ 699.00			
		\$ 17.18	\$ 429.50			
			\$ 7,070.00			

25		\$ 27.72	\$ 693.00			
		\$ 29.72	\$ 118.88			
		\$ 33.72	\$ 134.88			
			\$ 946.76			

26		\$ 14.04	\$ 351.00			
		\$ 18.24	\$ 145.92			
			\$ 496.92			

27		\$ 27.72	\$ 2,772.00			
		\$ 29.72	\$ 148.60			
			\$ 2,920.60			

28		\$ 11.44	\$ 1,144.00			
		\$ 17.21	\$ 258.15			
			\$ 1,402.15			

29		\$ 19.67	\$ 590.10			
		\$ 23.17	\$ 115.85			
			\$ 705.95			

30		\$ 28.26	\$ 847.80			
		\$ 37.44	\$ 187.20			
			\$ 1,035.00			

31		\$ 14.14	\$ 424.20			
		\$ 19.12	\$ 95.60			
			\$ 519.80			

32		\$ 18.42	\$ 921.00			
		\$ 18.76	\$ 7,504.00			
		\$ 21.46	\$ 1,073.00			
			\$ 9,498.00			

33		\$ 28.26	\$ 706.50			
		\$ 28.26	\$ 423.90			
		\$ 37.44	\$ 374.40			
			\$ 1,504.80			

		AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			ALL AMERICAN EMBROIDERY LIVONIA, MI			BIENALI PROMOTIONS LLC HIGHLAND PARK, IL			
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1	Adult Small - Adult X-Lg	70		\$ 5.11	\$ 357.70	PC55	\$ 6.99	\$ 489.30	Jerzees	\$ 17.90	\$ 1,253.00
	Adult 2XL	32		\$ 7.11	\$ 227.52	PC55	\$ 8.99	\$ 287.68	Jerzees	\$ 20.34	\$ 650.88
	Adult 3XL	8		\$ 9.11	\$ 72.88	PC55	\$ 9.99	\$ 79.92	Jerzees	\$ 21.94	\$ 175.52
					\$ 658.10			\$ 856.90			\$ 2,079.40
							3% Total w/3%	\$ 25.71 \$ 831.19			
2	Adult Small - Adult X-Lg	100		\$ 13.93	\$ 1,393.00	PC78H	\$ 15.99	\$ 1,599.00	Jerzees	\$ 25.56	\$ 2,556.00
	Adult 2 XL-4 XL	15		\$ 16.93	\$ 253.95	PC78H	\$ 18.99	\$ 284.85	Jerzees	\$ 35.44	\$ 531.60
					\$ 1,646.95			\$ 1,883.85			\$ 3,087.60
							3% Total w/3%	\$ 56.52 \$ 1,827.33			
3	Adult Sm-Adult X-Lg	50		\$ 13.93	\$ 696.50	PC78H	\$ 16.99	\$ 849.50	Jerzees	\$ 25.56	\$ 1,278.00
	Adult 2XL	15		\$ 16.93	\$ 253.95	PC78H	\$ 18.99	\$ 284.85	Jerzees	\$ 33.44	\$ 501.60
	Adult 3XL	5		\$ 19.93	\$ 99.65	PC78H	\$ 20.99	\$ 104.95	Jerzees	\$ 35.44	\$ 1,779.60
					\$ 950.45			\$ 1,239.30			\$ 3,559.20
							3% Total w/3%	\$ 37.18 \$ 1,202.12			
4	Adult Small - Adult X-Lg	30		\$ 8.50	\$ 255.00	KP55	\$ 12.99	\$ 389.70	Jerzees	\$ 22.48	\$ 674.40
					\$ 255.00			\$ 389.70			\$ 674.40
							3% Total w/3%	\$ 11.69 \$ 378.01			
5	Adult Sm - Adult X-Lg	60		\$ 7.50	\$ 450.00	PC54	\$ 6.99	\$ 419.40	Jerzees	\$ 16.70	\$ 1,002.00
					\$ 450.00			\$ 419.40			\$ 1,002.00
							3% Total w/3%	\$ 12.58 \$ 406.82			
6	Adult Sm- Adult X-Lg	20		\$ 8.50	\$ 170.00	437MLR	\$ 21.99	\$ 439.80	Jerzees	\$ 28.60	\$ 572.00
					\$ 170.00			\$ 439.80			\$ 572.00
7	Adult Med- Adult X-Lg	140		\$ 5.11	\$ 715.40	PC55	\$ 6.99	\$ 978.60	Jerzees	\$ 19.80	\$ 2,772.00
	Adult 2XL	40		\$ 7.11	\$ 284.40	PC55	\$ 8.99	\$ 359.60	Jerzees	\$ 22.30	\$ 892.00
					\$ 999.80			\$ 1,338.20			\$ 3,664.00
							3% Total w/3%	\$ 40.15 \$ 1,298.05			
8	Adult Med- Adult X-Lg	100		\$ 5.11	\$ 511.00	PC55	\$ 6.99	\$ 699.00	Jerzees	\$ 19.80	\$ 1,980.00
	Adult 2XL	16		\$ 7.11	\$ 113.76	PC55	\$ 8.99	\$ 143.84	Jerzees	\$ 22.30	\$ 356.80
	Adult 3XL	8		\$ 9.11	\$ 72.88	PC55	\$ 9.99	\$ 79.92	Jerzees	\$ 23.88	\$ 191.04
					\$ 697.64			\$ 922.76			\$ 2,527.84
							3% Total w/3%	\$ 27.68 \$ 895.08			
9	Adult Med-Adult X-Lg	50		\$ 8.49	\$ 424.50	PC55LS	\$ 11.99	\$ 599.50	Jerzees	\$ 23.38	\$ 1,169.00
	Adult 2 XL	20		\$ 10.49	\$ 209.80	PC55LS	\$ 13.99	\$ 279.80	Jerzees	\$ 25.32	\$ 506.40
	Adult 3 XL	6		\$ 12.49	\$ 74.94	PC55LS	\$ 14.99	\$ 89.94	Jerzees	\$ 27.98	\$ 167.88
					\$ 709.24			\$ 969.24			\$ 1,843.28
							3% Total w/3%	\$ 29.08 \$ 940.16			
10	Adult Sm - Adult X-Lg	30		\$ 10.00	\$ 300.00	KP55	\$ 12.99	\$ 389.70	Jerzees	\$ 22.48	\$ 674.40
	Adult 2XL	5		\$ 12.00	\$ 60.00	KP55	\$ 14.99	\$ 74.95	Jerzees	\$ 24.95	\$ 124.80
					\$ 360.00			\$ 464.65			\$ 799.20
							3% Total w/3%	\$ 13.94 \$ 450.71			
11	Adult Sm - X-Lg	100		\$ 5.11	\$ 511.00	PC61	\$ 8.99	\$ 899.00	Gildan	\$ 17.96	\$ 1,796.00
	Adult 2XL-4XL	15		\$ 7.11	\$ 106.65	PC61	\$ 10.99	\$ 164.85	Gildan	\$ 20.38	\$ 305.70
					\$ 617.65			\$ 1,063.85			\$ 2,101.70
							3% Total w/3%	\$ 31.92 \$ 1,031.93			

ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
			AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			ALL AMERICAN EMBROIDERY LIVONIA, MI			BIENALI PROMOTIONS LLC HIGHLAND PARK, IL		
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A	Youth Med-Large	400		\$ 3.89	\$ 1,556.00	PC55	\$ 6.99	\$ 2,796.00	Gildan	\$ 17.28	\$ 6,912.00
	Adult Sm-Medium	110		\$ 3.89	\$ 427.90	PC55	\$ 6.99	\$ 768.90	Gildan	\$ 17.96	\$ 1,975.60
	Adult Lg-Adult XL	35		\$ 7.89	\$ 276.15	PC55	\$ 6.99	\$ 244.65	Gildan	\$ 17.96	\$ 628.60
					\$ 2,260.05					\$ 3,809.55	\$ 9,516.20
						3% Total w/3%				\$ 114.29 \$ 3,695.26	
12B	Adult Med - Adult X-Lg	80		\$ 5.93	\$ 474.40	PC55	\$ 6.99	\$ 559.20	Gildan	17..96	\$ 1,436.80
	Adult 2XL	15		\$ 7.93	\$ 118.95	PC55	\$ 9.99	\$ 149.85	Gildan	\$ 20.36	\$ 305.40
					\$ 593.35					\$ 709.05	\$ 1,742.20
						3% Total w/3%				\$ 21.27 \$ 687.78	
	12A & 12B Total				\$ 2,853.40					\$ 4,383.04	\$ 11,258.40
13	Youth Sm-Medium	50		\$ 6.49	\$ 324.50	PC54LS	\$ 9.99	\$ 499.50	Gildan	\$ 22.04	\$ 1,102.00
	Adult Sm-XL	500		\$ 6.49	\$ 3,245.00	PC54LS	\$ 9.99	\$ 4,995.00	Gildan	\$ 22.72	\$ 11,360.00
	Adult 2XL-3XL	50		\$ 8.49	\$ 424.50	PC54LS	\$ 12.96	\$ 648.00	Gildan	\$ 24.48	\$ 1,224.00
					\$ 3,994.00					\$ 6,142.50	\$ 13,686.00
						3% Total w/3%				\$ 184.28 \$ 5,958.23	
14	Youth Sm-Large	450		\$ 8.67	\$ 3,901.50	Augusta 1566	\$ 15.49	\$ 6,970.50	Augusta	\$ 31.72	\$ 14,274.00
	Adult Sm-XL	75		\$ 8.67	\$ 650.25	Augusta 1565	\$ 15.48	\$ 1,161.00	Augusta	\$ 32.68	\$ 2,451.00
	Adult 2XL	40		\$ 10.67	\$ 426.80	Augusta 1565	\$ 15.48	\$ 619.20	Augusta	\$ 33.62	\$ 1,344.80
	Adult 4XL	10		\$ 11.67	\$ 116.70	Augusta 1565	\$ 17.55	\$ 175.50	Augusta	\$ 38.28	\$ 382.80
					\$ 5,095.25					\$ 8,926.20	\$ 18,452.60
					3% Total w/3%				\$ 267.79 \$ 8,658.41		
15	Youth Sm - Youth Large	275		\$ 8.67	\$ 2,384.25	Augusta 1566	\$ 15.49	\$ 4,259.75	Augusta	\$ 31.72	\$ 8,723.00
	Adult Sm - Adult X-Lg	50		\$ 8.67	\$ 433.50	Augusta 1565	\$ 15.48	\$ 774.00	Augusta	\$ 32.68	\$ 1,634.00
	Adult 2XL	15		\$ 10.67	\$ 160.05	Augusta 1565	\$ 15.48	\$ 232.20	Augusta	\$ 33.62	\$ 504.30
	Adult 3XL	10		\$ 11.67	\$ 116.70	Augusta 1565	\$ 17.55	\$ 175.50	Augusta	\$ 36.34	\$ 363.40
					\$ 3,094.50					\$ 5,441.45	\$ 11,224.70
					3% Total w/3%				\$ 163.24 \$ 5,278.21		
16	One size fits all	750		\$ 7.93	\$ 5,947.50	C911	\$ 6.66	\$ 4,995.00	Augusta	\$ 19.86	\$ 14,895.00
					\$ 5,947.50					\$ 4,995.00	\$ 14,895.00
						3% Total w/3%				\$ 149.85 \$ 4,845.15	
17	Adult Sm-XL	45		\$ 13.93	\$ 626.85	PC78h	\$ 16.99	\$ 764.55	Jerzees	\$ 25.56	\$ 1,150.20
	Adult 2XL	10		\$ 16.93	\$ 169.30	PC78h	\$ 18.99	\$ 189.90	Jerzees	\$ 33.44	\$ 334.40
					\$ 796.15					\$ 954.45	\$ 1,484.60
					3% Total w/3%				\$ 28.63 \$ 925.82		
18	Adult Sm-XL	30		\$ 13.97	\$ 419.10	ST357	\$ 14.76	\$ 442.80	Port Authority	\$ 25.82	\$ 774.60
	Adult 2XL	5		\$ 16.97	\$ 84.85	ST357	\$ 16.74	\$ 83.70	Port Authority	\$ 27.12	\$ 135.60
					\$ 503.95					\$ 526.50	\$ 910.20
					3% Total w/3%				\$ 15.80 \$ 510.71		
19	Adult Sm-XL	100		\$ 16.93	\$ 1,693.00	PC78ZH	\$ 21.78	\$ 2,178.00	Jerzees	\$ 36.56	\$ 3,656.00
	Adult 2XL-4XL	15		\$ 19.93	\$ 298.95	PC78ZH	\$ 23.78	\$ 356.70	Jerzees	\$ 39.96	\$ 599.40
					\$ 1,991.95					\$ 2,534.70	\$ 4,255.40
					3% Total w/3%				\$ 76.04 \$ 2,458.66		
20	Adult Sm-XL	25		\$ 5.89	\$ 147.25	PC43	\$ 5.99	\$ 149.75	Anvil	\$ 12.94	\$ 323.50
	Adult 2XL-4XL	8		\$ 7.89	\$ 63.12	PC43	\$ 8.99	\$ 71.92	Anvil	\$ 12.94	\$ 103.52
					\$ 210.37					\$ 221.67	\$ 427.02
					3% Total w/3%				\$ 6.65 \$ 215.02		
21	Adult Sm - X-Lg	25		\$ 18.97	\$ 474.25	PC78ZH	\$ 21.78	\$ 544.50	Jerzees	\$ 36.30	\$ 907.50
	Adult 2XL-4XL	8		\$ 22.97	\$ 183.76	PC78ZH	\$ 23.78	\$ 190.24	Jerzees	\$ 39.72	\$ 317.76
					\$ 658.01					\$ 734.74	\$ 1,225.26
					3% Total w/3%				\$ 22.04 \$ 712.70		
22	Adult Med-XLg.	20		\$ 7.50	\$ 150.00	PC55	\$ 9.99	\$ 199.80	Jerzees	\$ 19.80	\$ 396.00
	Adult 2XL	8		\$ 9.50	\$ 76.00	PC55	\$ 11.99	\$ 95.92	Jerzees	\$ 22.24	\$ 177.92
	Adult 3XL	3		\$ 11.50	\$ 34.50	PC55	\$ 13.99	\$ 41.97	Jerzees	\$ 23.84	\$ 71.52
					\$ 260.50					\$ 337.69	\$ 645.44
					3% Total w/3%				\$ 10.13 \$ 327.56		

ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
			AD-WEAR AND SPECIALTY OF TEXAS HOUSTON, TX			ALL AMERICAN EMBROIDERY LIVONIA, MI			BIENALI PROMOTIONS LLC HIGHLAND PARK, IL		
ITEM #	SIZE	Approx. Quantity	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23	Adult Med-XL	40		\$ 40.57	\$ 1,622.80	Gaileton : 13268-L-B	\$ 25.99	\$ 1,039.60	Port Authority	\$ 65.10	\$ 2,604.00
	Adult 2XL	15		\$ 43.57	\$ 653.55	Gaileton : 13268-L-B	\$ 28.99	\$ 434.85	Port Authority	\$ 66.10	\$ 991.50
	Adult 3XL	5		\$ 46.67	\$ 233.35	Gaileton : 13268-L-B	\$ 30.99	\$ 154.95	Port Authority	\$ 67.10	\$ 335.50
					\$ 2,509.70						

DIGITAL DASH CREATIVE BRIDGEPORT, CT				DO APPAREL LIVONIA, MI			DRN'S CORP BROOKLYN, NY			EMBROIDERY SHOPPE WESTLAND, MI		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1	Jerzees	\$ 7.11	\$ 497.70		\$ 8.67	\$ 606.90	Jerzees	\$ 5.89	\$ 412.30		\$ 9.00	\$ 630.00
	Jerzees	\$ 9.07	\$ 290.24		\$ 9.67	\$ 309.44	Jerzees	\$ 7.76	\$ 248.32		\$ 12.00	\$ 384.00
	Jerzees	\$ 10.35	\$ 82.80		\$ 10.67	\$ 85.36	Jerzees	\$ 9.21	\$ 73.68		\$ 14.00	\$ 112.00
			\$ 870.74			\$ 1,001.70			\$ 734.30			\$ 1,126.00
					3% Total w/3%	\$ 30.05 \$ 971.65						
2	Jerzees	\$ 16.43	\$ 1,643.00		\$ 15.24	\$ 1,524.00	Jerzees	\$ 12.69	\$ 1,269.00		\$ 21.00	\$ 2,100.00
	Jerzees	\$ 22.10	\$ 331.50		\$ 19.24	\$ 288.60	Jerzees	\$ 15.99	\$ 239.85		\$ 35.00	\$ 525.00
			\$ 1,974.50			\$ 1,812.60			\$ 1,508.85			\$ 2,625.00
					3% Total w/3%	\$ 54.38 \$ 1,758.22						
3	Jerzees	\$ 15.88	\$ 794.00		\$ 12.24	\$ 612.00	Jerzees	\$ 11.69	\$ 584.50		\$ 20.00	\$ 1,000.00
	Jerzees	\$ 18.87	\$ 283.05		\$ 18.24	\$ 273.60	Jerzees	\$ 14.09	\$ 211.35		\$ 29.00	\$ 435.00
	Jerzees	\$ 20.47	\$ 102.35		\$ 19.24	\$ 96.20	Jerzees	\$ 16.23	\$ 81.15		\$ 31.00	\$ 155.00
			\$ 1,179.40			\$ 981.80			\$ 877.00			\$ 1,590.00
					3% Total w/3%	\$ 29.45 \$ 952.35						
4	tultex 400	\$ 8.54	\$ 256.20		\$ 9.29	\$ 278.70	Jerzees	\$ 8.47	\$ 254.10		\$ 12.50	\$ 375.00
			\$ 256.20			\$ 278.70			\$ 254.10			\$ 375.00
					3% Total w/3%	\$ 8.36 \$ 270.34						
5	gildan g500	\$ 6.44	\$ 386.40		\$ 8.67	\$ 520.20	Jerzees	\$ 5.48	\$ 328.80		\$ 12.50	\$ 750.00
			\$ 386.40			\$ 520.20			\$ 328.80			\$ 750.00
					3% Total w/3%	\$ 15.61 \$ 504.59						
6	Jerzees	\$ 14.60	\$ 292.00		\$ 15.93	\$ 318.60	Jerzees	\$ 6.61	\$ 132.20		\$ 24.00	\$ 480.00
			\$ 292.00			\$ 318.60			\$ 132.20			\$ 480.00
					3% Total w/3%	\$ 9.56 \$ 309.04						
7	jerzees	\$ 8.36	\$ 1,170.40		\$ 8.67	\$ 1,213.80	Jerzees	\$ 6.14	\$ 859.60		\$ 11.00	\$ 1,540.00
	jerzees	\$ 10.32	\$ 412.80		\$ 9.67	\$ 386.80	Jerzees	\$ 8.01	\$ 320.40		\$ 16.00	\$ 640.00
			\$ 1,583.20			\$ 1,600.60			\$ 1,180.00			\$ 2,180.00
					3% Total w/3%	\$ 48.02 \$ 1,552.58						
8	jerzees	\$ 8.36	\$ 836.00		\$ 8.67	\$ 867.00	Jerzees	\$ 5.44	\$ 544.00		\$ 11.00	\$ 1,100.00
	g500	\$ 10.24	\$ 163.84		\$ 9.67	\$ 154.72	Jerzees	\$ 7.31	\$ 116.96		\$ 15.00	\$ 240.00
	g500	\$ 10.24	\$ 81.92		\$ 10.67	\$ 85.36	Jerzees	\$ 8.76	\$ 70.08		\$ 16.00	\$ 128.00
			\$ 1,081.76			\$ 1,107.08			\$ 731.04			\$ 1,468.00
					3% Total w/3%	\$ 33.21 \$ 1,073.87						
9	Jerzees	\$ 10.00	\$ 500.00		\$ 10.67	\$ 533.50	Jerzees	\$ 10.29	\$ 514.50		\$ 14.00	\$ 700.00
	Jerzees	\$ 10.91	\$ 218.20		\$ 12.67	\$ 253.40	Jerzees	\$ 12.25	\$ 245.00		\$ 16.00	\$ 320.00
	Jerzees	\$ 12.52	\$ 75.12		\$ 14.67	\$ 88.02	Jerzees	\$ 14.49	\$ 86.94		\$ 18.00	\$ 108.00
			\$ 793.32			\$ 874.92			\$ 846.44			\$ 1,128.00
					3% Total w/3%	\$ 26.25 \$ 848.67						
10	jerzees	\$ 10.01	\$ 300.30		\$ 9.29	\$ 278.70	Jerzees	\$ 9.06	\$ 271.80		\$ 15.00	\$ 450.00
	jerzees	\$ 12.11	\$ 60.55		\$ 11.29	\$ 56.45	Jerzees	\$ 11.09	\$ 55.45		\$ 18.00	\$ 90.00
			\$ 360.85			\$ 335.15			\$ 327.25			\$ 540.00
					3% Total w/3%	\$ 10.05 \$ 325.10						
11	gildan	\$ 7.15	\$ 715.00		\$ 8.92	\$ 892.00	Gildan	\$ 5.66	\$ 566.00		\$ 10.00	\$ 1,000.00
	gildan	\$ 10.65	\$ 159.75		\$ 9.92	\$ 148.80	Gildan	\$ 8.62	\$ 129.30		\$ 14.00	\$ 210.00
			\$ 874.75			\$ 1,040.80			\$ 695.30			\$ 1,210.00
					3% Total w/3%	\$ 31.22 \$ 1,009.58						

	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL			
ITEM #	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL			
	DIGITAL DASH CREATIVE BRIDGEPORT, CT				DO APPAREL LIVONIA, MI				DRN'S CORP BROOKLYN, NY				EMBROIDERY SHOPPE WESTLAND, MI		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL			
12A	gildan	\$ 6.55	\$ 2,620.00		\$ 8.77	\$ 3,508.00	Gildan	\$ 4.48	\$ 1,792.00		\$ 10.00	\$ 4,000.00			
	gildan	\$ 6.81	\$ 749.10		\$ 8.92	\$ 981.20	Gildan	\$ 4.49	\$ 493.90		\$ 14.00	\$ 1,540.00			
	gildan	\$ 6.81	\$ 238.35		\$ 8.92	\$ 312.20	Gildan	\$ 4.49	\$ 157.15		\$ 16.00	\$ 560.00			
			\$ 3,607.45			\$ 4,801.40			\$ 2,443.05			\$ 6,100.00			
				3%		\$ 144.04									
				Total w/3%		\$ 4,657.36									
12B	gildan	\$ 6.81	\$ 544.80		\$ 8.92	\$ 713.60	Gildan	\$ 4.49	\$ 359.20		\$ 12.00	\$ 960.00			
	gildan	\$ 8.62	\$ 129.30		\$ 11.92	\$ 178.80	Gildan	\$ 6.38	\$ 95.70		\$ 16.00	\$ 240.00			
			\$ 674.10			\$ 892.40			\$ 454.90			\$ 1,200.00			
				3%		\$ 26.77									
				Total w/3%		\$ 865.63									
		\$ 4,281.55				\$ 5,522.99			\$ 2,897.95			\$ 7,300.00			
13	gildan	\$ 9.45	\$ 472.50		\$ 10.27	\$ 513.50	Gildan	\$ 7.15	\$ 357.50		\$ 10.00	\$ 500.00			
	gildan	\$ 10.86	\$ 5,430.00		\$ 10.45	\$ 5,225.00	Gildan	\$ 9.27	\$ 4,635.00		\$ 10.00	\$ 5,000.00			
	gildan	\$ 14.03	\$ 701.50		\$ 12.45	\$ 622.50	Gildan	\$ 10.96	\$ 548.00		\$ 18.00	\$ 900.00			
			\$ 6,604.00			\$ 6,361.00			\$ 5,540.50			\$ 6,400.00			
				3%		\$ 190.83									
				Total w/3%		\$ 6,170.17									
14	augusta	\$ 13.21	\$ 5,944.50		\$ 15.50	\$ 6,975.00	Augusta Spo	\$ 14.96	\$ 6,732.00		\$ 26.00	\$ 11,700.00			
	augusta	\$ 13.98	\$ 1,048.50		\$ 16.00	\$ 1,200.00	Augusta Spo	\$ 14.96	\$ 1,122.00		\$ 28.00	\$ 2,100.00			
	augusta	\$ 14.73	\$ 589.20		\$ 16.00	\$ 640.00	Augusta Spo	\$ 14.96	\$ 598.40		\$ 30.00	\$ 1,200.00			
	augusta	\$ 18.48	\$ 184.80		\$ 17.00	\$ 170.00	Augusta Spo	\$ 18.06	\$ 180.60		\$ 31.00	\$ 310.00			
			\$ 7,767.00			\$ 8,985.00			\$ 8,633.00			\$ 15,310.00			
				3%		\$ 269.55									
				Total w/3%		\$ 8,715.45									
15	Augusta	\$ 13.21	\$ 3,632.75		\$ 15.50	\$ 4,262.50	Augusta Spo	\$ 14.96	\$ 4,114.00		\$ 26.00	\$ 7,150.00			
	Augusta	\$ 13.98	\$ 699.00		\$ 16.00	\$ 800.00	Augusta Spo	\$ 14.96	\$ 748.00		\$ 28.00	\$ 1,400.00			
	Augusta	\$ 14.73	\$ 220.95		\$ 16.00	\$ 240.00	Augusta Spo	\$ 14.96	\$ 224.40		\$ 30.00	\$ 450.00			
	Augusta	\$ 18.48	\$ 184.80		\$ 17.00	\$ 170.00	Augusta Spo	\$ 18.06	\$ 180.60		\$ 31.00	\$ 310.00			
			\$ 4,737.50			\$ 5,472.50			\$ 5,267.00			\$ 9,310.00			
				3%		\$ 164.18									
				Total w/3%		\$ 5,308.33									
16	Augusta	\$ 10.62	\$ 7,965.00		\$ 7.50	\$ 5,625.00	Augusta Spo	\$ 6.22	\$ 4,665.00		\$ 16.50	\$ 12,375.00			
			\$ 7,965.00			\$ 5,625.00			\$ 4,665.00			\$ 12,375.00			
				3%		\$ 168.75									
				Total w/3%		\$ 5,456.25									
17	jerzees	\$ 15.68	\$ 705.60		\$ 12.24	\$ 550.80	Jerzees	\$ 11.69	\$ 526.05		\$ 21.00	\$ 945.00			
	jerzees	\$ 17.89	\$ 178.90		\$ 18.24	\$ 182.40	Jerzees	\$ 14.09	\$ 140.90		\$ 30.00	\$ 300.00			
			\$ 884.50			\$ 733.20			\$ 666.95			\$ 1,245.00			
				3%		\$ 22.00									
				Total w/3%		\$ 711.20									
18	Team 365 tt	\$ 13.56	\$ 406.80		\$ 13.86	\$ 415.80	Port Authori	\$ 13.25	\$ 397.50		\$ 24.00	\$ 720.00			
	Team 365 tt	\$ 14.59	\$ 72.95		\$ 14.86	\$ 74.30	Port Authori	\$ 14.35	\$ 71.75		\$ 28.00	\$ 140.00			
			\$ 479.75			\$ 490.10			\$ 469.25			\$ 860.00			
				3%		\$ 14.70									
				Total w/3%		\$ 475.40									
19	jerzees	\$ 19.03	\$ 1,903.00		\$ 17.75	\$ 1,775.00	Jerzees	\$ 18.04	\$ 1,804.00		\$ 38.00	\$ 3,800.00			
	jerzees	\$ 25.11	\$ 376.65		\$ 25.75	\$ 386.25	Jerzees	\$ 26.49	\$ 397.35		\$ 45.00	\$ 675.00			
			\$ 2,279.65			\$ 2,161.25			\$ 2,201.35			\$ 4,475.00			
				3%		\$ 64.84									
				Total w/3%		\$ 2,096.41									
20	gildan	\$ 6.16	\$ 154.00		\$ 6.86	\$ 171.50	Gildan (980)	\$ 4.95	\$ 123.75		\$ 11.00	\$ 275.00			
	gildan	\$ 9.21	\$ 73.68		\$ 7.86	\$ 62.88	Gildan (980)	\$ 9.06	\$ 72.48		\$ 16.00	\$ 128.00			
			\$ 227.68			\$ 234.38			\$ 196.23			\$ 403.00			
				3%		\$ 7.03									
				Total w/3%		\$ 227.35									
21	jerzees	\$ 22.78	\$ 569.50		\$ 17.75	\$ 443.75	Jerzees	\$ 18.04	\$ 451.00		\$ 45.00	\$ 1,125.00			
	jerzees	\$ 28.86	\$ 230.88		\$ 25.75	\$ 206.00	Jerzees	\$ 26.49	\$ 211.92		\$ 55.00	\$ 440.00			
			\$ 800.38			\$ 649.75			\$ 662.92			\$ 1,565.00			
				3%		\$ 19.49									
				Total w/3%		\$ 630.26									
22	jerzees	\$ 7.89	\$ 157.80		\$ 8.67	\$ 173.40	Jerzees	\$ 3.14	\$ 62.80		\$ 10.00	\$ 200.00			
	jerzees	\$ 10.05	\$ 80.40		\$ 9.67	\$ 77.36	Jerzees	\$ 5.01	\$ 40.08		\$ 12.00	\$ 96.00			
	jerzees	\$ 10.39	\$ 31.17		\$ 10.67	\$ 32.01	Jerzees	\$ 6.46	\$ 19.38		\$ 14.00	\$ 42.00			
			\$ 269.37			\$ 282.77			\$ 122.26			\$ 338.00			
				3%		\$ 8.48									
				Total w/3%		\$ 274.29									

	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL			
	DIGITAL DASH CREATIVE BRIDGEPORT, CT				DO APPAREL LIVONIA, MI				DRN'S CORP BROOKLYN, NY				EMBROIDERY SHOPPE WESTLAND, MI		
ITEM #	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL	Brand	Unit Price	TOTAL			
23	galeton	\$ 15.70	\$ 628.00		\$ -	\$ -	Galeton Rep	\$ 14.19	\$ 567.60		\$ 22.00	\$ 880.00			
	galeton	\$ 17.70	\$ 265.50		\$ -	\$ -	Galeton Rep	\$ 14.72	\$ 220.80		\$ 24.00	\$ 360.00			
	galeton	\$ 18.70	\$ 93.50		\$ -	\$ -	Galeton Rep	\$ 15.28	\$ 76.40		\$ 26.00	\$ 130.00			
			\$ 987.00			\$ -			\$ 864.80			\$ 1,370.00			
24	epic sports	\$ 8.75	\$ 3,718.75		\$ 8.50	\$ 3,612.50	A4 A4N314	\$ 10.50	\$ 4,462.50		\$ 20.00	\$ 8,500.00			
	epic sports	\$ 9.75	\$ 487.50		\$ 8.50	\$ 425.00	A4 A4N314	\$ 10.50	\$ 525.00		\$ 22.00	\$ 1,100.00			
	epic sports	\$ 9.75	\$ 243.75		\$ 8.50	\$ 212.50	A4 A4N314	\$ 10.50	\$ 262.50		\$ 24.00	\$ 600.00			
			\$ 4,450.00			\$ 4,250.00			\$ 5,250.00			\$ 10,200.00			
				3%		\$ 127.50									
				Total w/3%		\$ 4,122.50									
25	team 365 tt	\$ 13.56	\$ 339.00		\$ 13.86	\$ 346.50	Port Authori	\$ 13.25	\$ 331.25		\$ 18.00	\$ 450.00			
	team 365 tt	\$ 14.56	\$ 58.24		\$ 14.86	\$ 59.44	Port Authori	\$ 14.35	\$ 57.40		\$ 20.00	\$ 80.00			
	team 365 tt	\$ 16.00	\$ 64.00		\$ 17.86	\$ 71.44	Port Authori	\$ 17.10	\$ 68.40		\$ 26.00	\$ 104.00			
			\$ 461.24			\$ 477.38			\$ 457.05			\$ 634.00			
				3%		\$ 14.32									
				Total w/3%		\$ 463.06									
26	islander perf	\$ 9.28	\$ 232.00		\$ 10.03	\$ 250.75	Sport-Tek	\$ 9.03	\$ 225.75		\$ 18.00	\$ 450.00			
	islander perf	\$ 13.41	\$ 107.28		\$ 13.03	\$ 104.24	Sport-Tek	\$ 13.43	\$ 107.44		\$ 22.00	\$ 176.00			
			\$ 339.28			\$ 354.99			\$ 333.19			\$ 626.00			
				3%		\$ 10.65									
				Total w/3%		\$ 344.34									
27	team 365 tt	\$ 14.56	\$ 1,456.00		\$ 13.86	\$ 1,386.00	Port Authori	\$ 13.25	\$ 1,325.00		\$ 18.00	\$ 1,800.00			
	team 365 tt	\$ 16.75	\$ 83.75		\$ 17.86	\$ 89.30	Port Authori	\$ 14.35	\$ 71.75		\$ 22.00	\$ 110.00			
			\$ 1,539.75			\$ 1,475.30			\$ 1,396.75			\$ 1,910.00			
				3%		\$ 44.26									
				Total w/3%		\$ 1,431.04									
28	c2 sport	\$ 7.47	\$ 747.00	A4 N3402	\$ 8.50	\$ 850.00	A4 A4N340	\$ 6.30	\$ 630.00		\$ 14.00	\$ 1,400.00			
	c2 sport	\$ 11.98	\$ 179.70	A4 N3402	\$ 8.50	\$ 127.50	A4 A4N340	\$ 6.30	\$ 94.50		\$ 16.00	\$ 240.00			
			\$ 926.70			\$ 977.50			\$ 724.50			\$ 1,640.00			
				3%		\$ 29.33									
				Total w/3%		\$ 948.18									
29	tultex 331	\$ 16.45	\$ 493.50		\$ 18.40	\$ 552.00	Port & Co	\$ 8.08	\$ 242.40		\$ 32.00	\$ 960.00			
	tultex 332	\$ 18.52	\$ 92.60		\$ 21.40	\$ 107.00	Port & Co	\$ 11.35	\$ 56.75		\$ 36.00	\$ 180.00			
			\$ 586.10			\$ 659.00			\$ 299.15			\$ 1,140.00			
				3%		\$ 19.77									
				Total w/3%		\$ 639.23									
30	jerzees	\$ 15.68	\$ 470.40		\$ 12.24	\$ 367.20	Jerzees	\$ 11.19	\$ 335.70		\$ 22.00	\$ 660.00			
	jerzees	\$ 18.15	\$ 90.75		\$ 18.96	\$ 94.80	Jerzees	\$ 15.73	\$ 78.65		\$ 26.00	\$ 130.00			
			\$ 561.15			\$ 462.00			\$ 414.35			\$ 790.00			
				3%		\$ 13.86									
				Total w/3%		\$ 448.14									
31		\$ 9.79	\$ 293.70		\$ 9.79	\$ 293.70	Jerzees	\$ 8.45	\$ 253.50		\$ 18.00	\$ 540.00			
		\$ 11.14	\$ 55.70		\$ 13.79	\$ 68.95	Jerzees	\$ 12.36	\$ 61.80		\$ 22.00	\$ 110.00			
			\$ 349.40			\$ 362.65			\$ 315.30			\$ 650.00			
				3%		\$ 10.88									
				Total w/3%		\$ 351.77									
32		\$ 7.55	\$ 377.50		\$ 8.69	\$ 434.50	Gildan	\$ 5.38	\$ 269.00		\$ 12.00	\$ 600.00			
		\$ 7.81	\$ 3,124.00		\$ 8.89	\$ 3,556.00	Gildan	\$ 5.39	\$ 2,156.00		\$ 12.00	\$ 4,800.00			
		\$ 11.18	\$ 559.00		\$ 12.89	\$ 644.50	Gildan	\$ 7.28	\$ 364.00		\$ 16.00	\$ 800.00			
			\$ 4,060.50			\$ 4,635.00			\$ 2,789.00			\$ 6,200.00			
				3%		\$ 139.05									
				Total w/3%		\$ 4,495.95									
33		\$ 15.68	\$ 392.00		\$ 13.24	\$ 331.00	Jerzees	\$ 13.19	\$ 329.75		\$ 24.00	\$ 600.00			
		\$ 15.68	\$ 235.20		\$ 13.24	\$ 198.60	Jerzees	\$ 15.59	\$ 233.85		\$ 26.00	\$ 390.00			
		\$ 18.15	\$ 181.50		\$ 20.24	\$ 202.40	Jerzees	\$ 17.73	\$ 177.30		\$ 28.00	\$ 280.00			
			\$ 808.70			\$ 732.00			\$ 740.90			\$ 1,270.00			
				3%		\$ 21.96									
				Total w/3%		\$ 710.04									

ITEM #	EMPIRE PRINTING SPRINGFIELD, MO			HATTERAS, INC. PLYMOUTH, MI			IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI			LIBRA INDUSTRIES JACKSON, MI		
	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1	Jerzees	\$ 5.07	\$ 354.90		\$ 8.05	\$ 563.50	Jerzees/Gildan	\$ 5.10	\$ 357.00	Jerzees	\$ 4.63	\$ 324.10
	Jerzees	\$ 7.07	\$ 226.24		\$ 8.05	\$ 257.60	Jerzees/Gildan	\$ 7.10	\$ 227.20	Jerzees	\$ 7.13	\$ 228.16
	Jerzees	\$ 8.07	\$ 64.56		\$ 8.05	\$ 64.40	Jerzees/Gildan	\$ 7.10	\$ 56.80	Jerzees	\$ 7.34	\$ 58.72
			\$ 645.70			\$ 885.50			\$ 641.00			\$ 610.98
2	Jerzees	\$ 13.86	\$ 1,386.00		\$ 15.96	\$ 1,596.00	Jerzees/Gildan	\$ 19.50	\$ 1,950.00	Jerzees	\$ 12.55	\$ 1,255.00
	Jerzees	\$ 16.86	\$ 252.90		\$ 15.96	\$ 239.40	Jerzees/Gildan	\$ 24.50	\$ 367.50	Jerzees	\$ 20.27	\$ 304.05
			\$ 1,638.90			\$ 1,835.40			\$ 2,317.50			\$ 1,559.05
3	Jerzees	\$ 13.08	\$ 654.00		\$ 21.66	\$ 1,083.00	Jerzees/Gildan	\$ 18.50	\$ 925.00	Jerzees	\$ 13.76	\$ 688.00
	Jerzees	\$ 15.08	\$ 226.20		\$ 21.66	\$ 324.90	Jerzees/Gildan	\$ 23.50	\$ 352.50	Jerzees	\$ 20.60	\$ 309.00
	Jerzees	\$ 16.08	\$ 80.40		-	-	Jerzees/Gildan	\$ 23.50	\$ 117.50	Jerzees	\$ 21.35	\$ 106.75
			\$ 960.60			\$ 1,407.90			\$ 1,277.50			\$ 1,103.75
4	Jerzees	\$ 8.93	\$ 267.90		\$ 12.44	\$ 373.23	Jerzees/Gildan	\$ 12.50	\$ 375.00	Jerzees	\$ 8.35	\$ 250.50
			\$ 267.90			\$ 373.23			\$ 375.00			\$ 250.50
5	Gildan	\$ 4.58	\$ 274.80		\$ 8.44	\$ 506.40	Jerzees/Gildan	\$ 5.15	\$ 309.00	Jerzees 363	\$ 3.21	\$ 192.60
			\$ 274.80			\$ 506.40			\$ 309.00			\$ 192.60
6	Jerzees	\$ 15.16	\$ 303.20		\$ 19.94	\$ 398.80	Jerzees/Gildan	\$ 22.50	\$ 450.00	Jerzees	\$ 15.07	\$ 301.40
			\$ 303.20			\$ 398.80			\$ 450.00			\$ 301.40
7	Jerzees	\$ 5.33	\$ 746.20		\$ 6.22	\$ 870.80	Jerzees/Gildan	\$ 6.50	\$ 910.00	Jerzees	\$ 8.49	\$ 1,188.60
	Jerzees	\$ 7.33	\$ 293.20		\$ 6.22	\$ 248.80	Jerzees/Gildan	\$ 8.50	\$ 340.00	Jerzees	\$ 10.99	\$ 439.60
			\$ 1,039.40			\$ 1,119.60			\$ 1,250.00			\$ 1,628.20
8	Jerzees	\$ 5.33	\$ 533.00		\$ 6.10	\$ 610.00	Jerzees/Gildan	\$ 6.50	\$ 650.00	Jerzees	\$ 9.68	\$ 968.00
	Jerzees	\$ 7.33	\$ 117.28		\$ 6.10	\$ 97.60	Jerzees/Gildan	\$ 8.50	\$ 136.00	Jerzees	\$ 12.18	\$ 194.88
	Jerzees	\$ 8.33	\$ 66.64		\$ 6.10	\$ 48.80	Jerzees/Gildan	\$ 8.50	\$ 68.00	Jerzees	\$ 13.67	\$ 109.36
			\$ 716.92			\$ 756.40			\$ 854.00			\$ 1,272.24
9	Jerzees	\$ 9.00	\$ 450.00		\$ 12.74	\$ 637.00	Jerzees/Gildan	\$ 9.50	\$ 475.00	Jerzees	\$ 14.22	\$ 711.00
	Jerzees	\$ 11.00	\$ 220.00		\$ 12.74	\$ 254.80	Jerzees/Gildan	\$ 11.50	\$ 230.00	Jerzees	\$ 16.67	\$ 333.40
	Jerzees	\$ 12.00	\$ 72.00		\$ 12.74	\$ 76.44	Jerzees/Gildan	\$ 11.50	\$ 69.00	Jerzees	\$ 19.47	\$ 116.82
			\$ 742.00			\$ 968.24			\$ 774.00			\$ 1,161.22
10	Jerzees	\$ 8.93	\$ 267.90		\$ 12.45	\$ 373.50	Jerzees/Gildan	\$ 12.50	\$ 375.00	Jerzees	\$ 8.60	\$ 258.00
	Jerzees	\$ 10.93	\$ 54.65		\$ 12.45	\$ 62.25	Jerzees/Gildan	\$ 15.50	\$ 77.50	Jerzees	\$ 11.51	\$ 57.55
			\$ 322.55			\$ 435.75			\$ 452.50			\$ 315.55
11	Gildan	\$ 5.36	\$ 536.00		\$ 7.82	\$ 782.00	Jerzees/Gildan	\$ 5.50	\$ 550.00	Gildan	\$ 4.57	\$ 457.00
	Gildan	\$ 8.36	\$ 125.40		\$ 7.82	\$ 117.30	Jerzees/Gildan	\$ 7.50	\$ 112.50	Gildan	\$ 8.42	\$ 126.30
			\$ 661.40			\$ 899.30			\$ 662.50			\$ 583.30

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	EMPIRE PRINTING SPRINGFIELD, MO			HATTERAS, INC. PLYMOUTH, MI			IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI			LIBRA INDUSTRIES JACKSON, MI		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A	Gildan	\$ 5.33	\$ 2,132.00		\$ 6.19	\$ 2,476.00	Jerzees/Gildan	\$ 5.95	\$ 2,380.00	Gildan	\$ 5.79	\$ 2,316.00
	Gildan	\$ 5.33	\$ 586.30		\$ 6.19	\$ 680.90	Jerzees/Gildan	\$ 5.95	\$ 654.50	Gildan	\$ 5.87	\$ 645.70
	Gildan	\$ 5.33	\$ 186.55		\$ 6.19	\$ 216.65	Jerzees/Gildan	\$ 5.95	\$ 208.25	Gildan	\$ 5.87	\$ 205.45
			\$ 2,904.85			\$ 3,373.55			\$ 3,242.75			\$ 3,167.15
12B	Gildan	\$ 5.33	\$ 426.40		\$ 6.19	\$ 495.20	Jerzees/Gildan	\$ 5.95	\$ 476.00	Gildan	\$ 8.53	\$ 682.40
	Gildan	\$ 5.33	\$ 79.95		\$ 6.19	\$ 92.85	Jerzees/Gildan	\$ 7.95	\$ 119.25	Gildan	\$ 11.43	\$ 171.45
			\$ 506.35			\$ 588.05			\$ 595.25			\$ 853.85
			\$ 3,411.20			\$ 3,961.60			\$ 3,838.00			\$ 4,021.00
13	Gildan	\$ 8.85	\$ 442.50		\$ 10.30	\$ 515.00	Jerzees/Gildan	\$ 11.95	\$ 597.50	Gildan 5400	\$ 11.02	\$ 551.00
	Gildan	\$ 8.85	\$ 4,425.00		\$ 10.30	\$ 5,150.00	Jerzees/Gildan	\$ 11.95	\$ 5,975.00	Gildan 5400	\$ 10.27	\$ 5,135.00
	Gildan	\$ 8.85	\$ 442.50		\$ 10.30	\$ 515.00	Jerzees/Gildan	\$ 13.95	\$ 697.50	Gildan 5400	\$ 12.58	\$ 629.00
			\$ 5,310.00			\$ 6,180.00			\$ 7,270.00			\$ 6,315.00
14	Augusta	\$ 15.07	\$ 6,781.50		\$ 16.90	\$ 7,605.00	Augusta	\$ 18.95	\$ 8,527.50	Augusta 156	\$ 11.84	\$ 5,328.00
	Augusta	\$ 15.07	\$ 1,130.25		\$ 16.90	\$ 1,267.50	Augusta	\$ 18.95	\$ 1,421.25	Augusta 156	\$ 12.81	\$ 960.75
	Augusta	\$ 17.07	\$ 682.80		\$ 16.90	\$ 676.00	Augusta	\$ 20.95	\$ 838.00	Augusta 156	\$ 13.75	\$ 550.00
	Augusta	\$ 18.07	\$ 180.70		\$ 16.90	\$ 169.00	Augusta	\$ 22.95	\$ 229.50	Augusta 156	\$ 18.45	\$ 184.50
			\$ 8,775.25			\$ 9,717.50			\$ 11,016.25			\$ 7,023.25
15	Augusta	\$ 15.07	\$ 4,144.25		\$ 25.62	\$ 7,045.50	Augusta	\$ 18.95	\$ 5,211.25	Augusta 156	\$ 11.84	\$ 3,256.00
	Augusta	\$ 15.07	\$ 753.50		\$ 25.62	\$ 1,281.00	Augusta	\$ 18.95	\$ 947.50	Augusta 156	\$ 12.81	\$ 640.50
	Augusta	\$ 17.07	\$ 256.05		\$ 25.62	\$ 384.30	Augusta	\$ 20.95	\$ 314.25	Augusta 156	\$ 13.75	\$ 206.25
	Augusta	\$ 18.07	\$ 180.70		\$ 25.62	\$ 256.20	Augusta	\$ 22.95	\$ 229.50	Augusta 156	\$ 16.49	\$ 164.90
			\$ 5,334.50			\$ 8,967.00			\$ 6,702.50			\$ 4,267.65
16	Augusta	\$ 9.61	\$ 7,207.50		\$ 16.45	\$ 12,337.50	Port Authority	\$ 10.50	\$ 7,875.00	Augusta	\$ 6.37	\$ 4,777.50
			\$ 7,207.50			\$ 12,337.50			\$ 7,875.00			\$ 4,777.50
17	Jerzees	\$ 13.08	\$ 588.60		\$ 15.94	\$ 717.30	Jerzees/Gildan	\$ 18.50	\$ 832.50	Jerzees	\$ 14.05	\$ 632.25
	Jerzees	\$ 15.08	\$ 150.80		\$ 15.94	\$ 159.40	Jerzees/Gildan	\$ 23.50	\$ 235.00	Jerzees	\$ 21.76	\$ 217.60
			\$ 739.40			\$ 876.70			\$ 1,067.50			\$ 849.85
18	Port Authority	\$ 15.02	\$ 450.60	Augusta Spd	\$ 20.50	\$ 615.00	Port Authority	\$ 19.95	\$ 598.50	Port Authority	\$ 14.22	\$ 426.60
	Port Authority	\$ 17.02	\$ 85.10	Augusta Spd	\$ 20.50	\$ 102.50	Port Authority	\$ 21.95	\$ 109.75	Port Authority	\$ 15.48	\$ 77.40
			\$ 535.70			\$ 717.50			\$ 708.25			\$ 504.00
19	Jerzees	\$ 20.57	\$ 2,057.00	Gildan Unise	\$ 22.76	\$ 2,276.00	Jerzees/Gildan	\$ 27.50	\$ 2,750.00	Jerzees 993H	\$ 19.26	\$ 1,926.00
	Jerzees	\$ 22.57	\$ 338.55	Gildan Unise	\$ 22.76	\$ 341.40	Jerzees/Gildan	\$ 29.50	\$ 442.50	Jerzees 993H	\$ 28.87	\$ 433.05
			\$ 2,395.55			\$ 2,617.40			\$ 3,192.50			\$ 2,359.05
20	Anvil	\$ 5.16	\$ 129.00	Gildan Unise	\$ 9.50	\$ 237.50	Gildan	\$ 6.15	\$ 153.75	Anvil	\$ 4.52	\$ 113.00
	Anvil	\$ 8.16	\$ 65.28	Gildan Unise	\$ 9.50	\$ 76.00	Gildan	\$ 8.15	\$ 65.20	Anvil	\$ 8.28	\$ 66.24
			\$ 194.28			\$ 313.50			\$ 218.95			\$ 179.24
21	Jerzees	\$ 22.65	\$ 566.25	Gildan Unise	\$ 32.80	\$ 820.00	Jerzees/Gildan	\$ 33.50	\$ 837.00	Jerzees 993H	\$ 24.23	\$ 605.75
	Jerzees	\$ 25.65	\$ 205.20	Gildan Unise	\$ 32.80	\$ 262.40	Jerzees/Gildan	\$ 35.50	\$ 284.00	Jerzees 993H	\$ 33.84	\$ 270.72
			\$ 771.45			\$ 1,082.40			\$ 1,121.00			\$ 876.47
22	Jerzees	\$ 5.33	\$ 106.60		\$ 13.88	\$ 277.60	Jerzees/Gildan	\$ 6.50	\$ 130.00	Jerzees	\$ 17.04	\$ 340.80
	Jerzees	\$ 7.33	\$ 58.64		\$ 13.88	\$ 111.04	Jerzees/Gildan	\$ 8.50	\$ 68.00	Jerzees	\$ 19.54	\$ 156.32
	Jerzees	\$ 8.33	\$ 24.99		\$ 13.88	\$ 41.64	Jerzees/Gildan	\$ 8.50	\$ 25.50	Jerzees	\$ 21.04	\$ 63.12
			\$ 190.23			\$ 430.28			\$ 223.50			\$ 560.24

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	EMPIRE PRINTING SPRINGFIELD, MO			HATTERAS, INC. PLYMOUTH, MI			IMPRESSIVE PROMOTIONAL PRODUCTS CLAWSON, MI			LIBRA INDUSTRIES JACKSON, MI		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23	Port Authority	\$ 42.79	\$ 1,711.60	- Repel Rain	\$26.99	\$ 1,079.60	Galeton	\$ 25.00	\$ 1,000.00	Galeton	\$ 14.67	\$ 586.80
	Port Authority	\$ 44.79	\$ 671.85	- Repel Rain	\$26.99	\$ 404.85	Port Authority	\$ 27.00	\$ 405.00	Galeton	\$ 15.33	\$ 229.95
	Port Authority	\$ 45.79	\$ 228.95	Repel Rainw	\$ 26.99	\$ 134.95	Galeton	\$ 28.00	\$ 140.00	Galeton	\$ 16.01	\$ 80.05
			\$ 2,612.40			\$ 1,619.40			\$ 1,545.00			\$ 896.80
24	Epic Sport	\$ 6.75	\$ 2,868.75	Team 365 M	\$ 18.25	\$ 7,756.25	Port & Comf	\$ 12.95	\$ 5,503.75	A4	\$ 7.29	\$ 3,098.25
	Epic Sport	\$ 8.75	\$ 437.50	Team 365 M	\$ 18.25	\$ 912.50	Port & Comf	\$ 14.95	\$ 747.50	A4	\$ 7.26	\$ 363.00
	Epic Sport	\$ 9.75	\$ 243.75	Team 365 M	\$ 18.25	\$ 456.25	Port & Comf	\$ 15.95	\$ 398.75	A4	\$ 7.26	\$ 181.50
			\$ 3,550.00			\$ 9,125.00			\$ 6,650.00			\$ 3,642.75
25	Port Authority	\$ 15.02	\$ 375.50		\$ 19.34	\$ 483.50	Port Authori	\$ 19.95	\$ 498.75	Port Authori	\$ 14.22	\$ 355.50
	Port Authority	\$ 17.02	\$ 68.08		\$ 19.34	\$ 77.36	Port Authori	\$ 21.95	\$ 87.80	Port Authori	\$ 15.48	\$ 61.92
	Port Authority	\$ 18.02	\$ 72.08		\$ 19.34	\$ 77.36	Port Authori	\$ 22.95	\$ 91.80	Port Authori	\$ 18.64	\$ 74.56
			\$ 515.66			\$ 638.22			\$ 678.35			\$ 491.98
26	Sport-Tek	\$ 9.50	\$ 237.50		\$ 14.44	\$ 361.00	Sport-Tek	\$ 14.50	\$ 362.50	Sport Tek	\$ 9.56	\$ 239.00
	Sport-Tek	\$ 12.50	\$ 100.00		\$ 14.44	\$ 115.52	Sport-Tek	\$ 16.50	\$ 132.00		\$ 12.46	\$ 99.68
			\$ 337.50			\$ 476.52			\$ 494.50			\$ 338.68
27	Port Authority	\$ 15.80	\$ 1,580.00		\$ 6.04	\$ 604.00	Port Authori	\$ 21.00	\$ 2,100.00	Port Authori	\$ 14.98	\$ 1,498.00
	Port Authority	\$ 18.80	\$ 94.00		\$ 6.04	\$ 30.20	Port Authori	\$ 23.00	\$ 115.00	Port Authori	\$ 18.09	\$ 90.45
			\$ 1,674.00			\$ 634.20			\$ 2,215.00			\$ 1,588.45
28	C2 Sport	\$ 6.19	\$ 619.00		\$ 8.82	\$ 882.00	C2 Sport	\$ 8.95	\$ 895.00	C2	\$ 5.65	\$ 565.00
	C2 Sport	\$ 9.19	\$ 137.85		\$ 8.82	\$ 132.30	C2 Sport	\$ 10.95	\$ 164.25	C2	\$ 10.44	\$ 156.60
			\$ 756.85			\$ 1,014.30			\$ 1,059.25			\$ 721.60
29	Port & Co	\$ 19.25	\$ 577.50		\$ 21.14	\$ 634.20	Jerzees/Gilda	\$ 26.50	\$ 795.00	Port & Comf	\$ 18.81	\$ 564.30
	Port & Co	\$ 22.25	\$ 111.25		\$ 21.14	\$ 105.70	Jerzees/Gilda	\$ 28.50	\$ 142.50	Port & Comf	\$ 23.94	\$ 119.70
			\$ 688.75			\$ 739.90			\$ 937.50			\$ 684.00
30	Jerzees	\$ 13.08	\$ 392.40		\$ 16.18	\$ 485.40	Jerzees/Gilda	\$ 18.50	\$ 555.00	Jerzees	\$ 11.79	\$ 353.70
	Jerzees	\$ 16.08	\$ 80.40		\$ 16.18	\$ 80.90	Jerzees/Gilda	\$ 23.50	\$ 117.50	Jerzees	\$ 20.81	\$ 104.05
			\$ 472.80			\$ 566.30			\$ 672.50			\$ 457.75
31	Jerzees	\$ 10.15	\$ 304.50		\$ 12.88	\$ 386.40	Jerzees/Gilda	\$ 13.95	\$ 418.50	Jerzees	\$ 9.18	\$ 275.40
	Jerzees	\$ 13.15	\$ 65.75		\$ 12.88	\$ 64.40	Jerzees/Gilda	\$ 18.95	\$ 94.75	Jerzees	\$ 13.82	\$ 69.10
			\$ 370.25			\$ 450.80			\$ 513.25			\$ 344.50
32	Gildan	\$ 5.59	\$ 279.50		\$ 6.06	\$ 303.00	Jerzees/Gilda	\$ 5.95	\$ 297.50	Gildan	\$ 5.24	\$ 262.00
	Gildan	\$ 5.59	\$ 2,236.00		\$ 6.06	\$ 2,424.00	Jerzees/Gilda	\$ 5.95	\$ 2,380.00	Gildan	\$ 5.31	\$ 2,124.00
	Gildan	\$ 8.09	\$ 404.50		\$ 6.06	\$ 303.00	Jerzees/Gilda	\$ 7.95	\$ 397.50	Gildan	\$ 9.31	\$ 465.50
			\$ 2,920.00			\$ 3,030.00			\$ 3,075.00			\$ 2,851.50
33	Jerzees	\$ 13.08	\$ 327.00		\$ 17.59	\$ 439.75	Jerzees/Gilda	\$ 19.50	\$ 487.50	Jerzees	\$ 14.73	\$ 368.25
	Jerzees	\$ 13.08	\$ 196.20		\$ 17.59	\$ 263.85	Jerzees/Gilda	\$ 19.50	\$ 292.50	Jerzees	\$ 14.73	\$ 220.95
	Jerzees	\$ 15.58	\$ 155.80		\$ 17.59	\$ 175.90	Jerzees/Gilda	\$ 24.50	\$ 245.00	Jerzees	\$ 23.43	\$ 234.30
			\$ 679.00			\$ 879.50			\$ 1,025.00			\$ 823.50

LITTLE ENGINE PROMOTION MACOMB, MI				NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1		\$ 7.10	\$ 497.00		\$ 7.20	\$ 504.00		\$ 14.50	\$ 1,015.00	(29MR)	\$ 4.26	\$ 298.20
		\$ 9.10	\$ 291.20		\$ 9.20	\$ 294.40		\$ 15.75	\$ 504.00	(29MR)	\$ 6.13	\$ 196.16
		\$ 10.10	\$ 80.80		\$ 10.80	\$ 86.40		\$ 16.85	\$ 134.80	(29MR)	\$ 7.13	\$ 57.04
			\$ 869.00			\$ 884.80			\$ 1,653.80			\$ 551.40
					3% Total w/3%	\$ 26.54 \$ 858.26						
2		\$ 16.00	\$ 1,600.00		\$ 16.50	\$ 1,650.00		\$ 30.55	\$ 3,055.00	996M	\$ 12.24	\$ 1,224.00
		\$ 18.00	\$ 270.00	Adult 2XL	\$ 24.74	\$ 123.70		\$ 39.95	\$ 599.25	996M	\$ 14.42	\$ 216.30
			\$ 1,870.00	Adult 3XL	\$ 26.75	\$ 133.75			\$ 3,654.25			\$ 1,440.30
				Adult 4XL	\$ 26.75	\$ 133.75						
					3% Total w/3%	\$ 61.24 \$ 1,979.96						
3		\$ 14.50	\$ 725.00		\$ 15.50	\$ 775.00		\$ 30.55	\$ 1,527.50	996M	\$ 8.99	\$ 449.50
		\$ 16.50	\$ 247.50		\$ 23.70	\$ 355.50		\$ 36.65	\$ 549.75	996M	\$ 11.17	\$ 167.55
		\$ -	\$ -		\$ 15.70	\$ 78.50		\$ 38.85	\$ 194.25	996M	\$ 16.37	\$ 81.85
			\$ 972.50			\$ 1,209.00			\$ 2,271.50			\$ 698.90
					3% Total w/3%	\$ 36.27 \$ 1,172.73						
4		\$ 11.50	\$ 345.00		\$ 12.15	\$ 364.50		\$ 17.50	\$ 525.00	437MSR	\$ 9.24	\$ 277.20
			\$ 345.00			\$ 364.50			\$ 525.00			\$ 277.20
					3% Total w/3%	\$ 10.94 \$ 353.57						
5		\$ 5.25	\$ 315.00		\$ 6.67	\$ 400.20		\$ 14.00	\$ 840.00	363m	\$ 4.31	\$ 258.60
			\$ 315.00			\$ 400.20			\$ 840.00			\$ 258.60
					3% Total w/3%	\$ 12.01 \$ 388.19						
6		\$ 20.00	\$ 400.00		\$ 21.67	\$ 433.40		\$ 16.02	\$ 320.40	437ML	\$ 16.15	\$ 323.00
			\$ 400.00			\$ 433.40			\$ 320.40			\$ 323.00
					3% Total w/3%	\$ 13.00 \$ 420.40						
7		\$ 7.50	\$ 1,050.00		\$ 7.72	\$ 1,080.80		\$ 24.50	\$ 3,430.00	29MR	\$ 4.26	\$ 596.40
		\$ 9.50	\$ 380.00		\$ 9.80	\$ 392.00		\$ 25.50	\$ 1,020.00	29MR	\$ 6.13	\$ 245.20
			\$ 1,430.00			\$ 1,472.80			\$ 4,450.00			\$ 841.60
					3% Total w/3%	\$ 44.18 \$ 1,428.62						
8		\$ 7.50	\$ 750.00		\$ 8.05	\$ 805.00		\$ 24.50	\$ 2,450.00	29MR	\$ 4.26	\$ 426.00
		\$ 9.50	\$ 152.00		\$ 10.05	\$ 160.80		\$ 25.50	\$ 408.00	29MR	\$ 6.13	\$ 98.08
		\$ 10.50	\$ 84.00		\$ 11.55	\$ 92.40		\$ 27.50	\$ 220.00	29MR	\$ 7.13	\$ 57.04
			\$ 986.00			\$ 1,058.20			\$ 3,078.00			\$ 581.12
					3% Total w/3%	\$ 31.75 \$ 1,026.45						
9		\$ 11.50	\$ 575.00		\$ 12.59	\$ 629.50		\$ 28.75	\$ 1,437.50	29LSR	\$ 6.90	\$ 345.00
		\$ 13.50	\$ 270.00		\$ 15.59	\$ 311.80		\$ 31.50	\$ 630.00	29LSR	\$ 8.19	\$ 163.80
		\$ 14.50	\$ 87.00		\$ 18.00	\$ 108.00		\$ 33.50	\$ 201.00	29LSR	\$ 9.75	\$ 58.50
			\$ 932.00			\$ 1,049.30			\$ 2,268.50			\$ 567.30
					3% Total w/3%	\$ 31.48 \$ 1,017.82						
10		\$ 11.50	\$ 345.00		\$ 13.24	\$ 397.20		\$ 19.17	\$ 575.10	437M	\$ 9.54	\$ 286.20
		\$ 13.50	\$ 67.50		\$ 16.30	\$ 81.50		\$ 21.17	\$ 105.85	437M	\$ 11.79	\$ 58.95
			\$ 412.50			\$ 478.70			\$ 680.95			\$ 345.15
					3% Total w/3%	\$ 14.36 \$ 464.34						
11		\$ 11.25	\$ 1,125.00		\$ 6.99	\$ 699.00		\$ 21.12	\$ 2,112.00	2000	\$ 4.47	\$ 447.00
		\$ 13.25	\$ 198.75	Adult 2XL	\$ 10.88	\$ 54.40		\$ 24.50	\$ 367.50	2000	\$ 6.05	\$ 90.75
			\$ 1,323.75	Adult 3XL	\$ 12.88	\$ 128.80			\$ 2,479.50			\$ 537.75
						\$ 882.20						
					3% Total w/3%	\$ 26.47 \$ 855.73						

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	LITTLE ENGINE PROMOTION MACOMB, MI			NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A		\$ 6.85	\$ 2,740.00		\$ 4.97	\$ 1,988.00		\$ 14.50	\$ 5,800.00	2000B	\$ 3.93	\$ 1,572.00
		\$ 7.00	\$ 770.00		\$ 5.15	\$ 566.50		\$ 17.51	\$ 1,926.10	2000	\$ 4.01	\$ 441.10
		\$ 9.00	\$ 315.00		\$ 8.25	\$ 288.75		\$ 19.26	\$ 674.10	2000	\$ 5.75	\$ 201.25
			\$ 3,825.00			\$ 2,843.25			\$ 8,400.20			\$ 2,214.35
					3%	\$ 85.30						
					Total w/3%	\$ 2,757.95						
12B		\$ 8.25	\$ 660.00		\$ 5.15	\$ 412.00		\$ 17.51	\$ 1,400.80	2000	\$ 4.46	\$ 356.80
		\$ 10.25	\$ 153.75		\$ 8.25	\$ 123.75		\$ 19.75	\$ 296.25	2000	\$ 6.20	\$ 93.00
			\$ 813.75			\$ 535.75			\$ 1,697.05			\$ 449.80
					3%	\$ 16.07						
					Total w/3%	\$ 519.68						
		\$ 4,638.75				\$ 3,277.63			\$ 10,097.25		Lowest Total 12A and 12B	\$ 2,664.15
13	PC54YLS	\$ 8.75	\$ 437.50		\$ 10.48	\$ 524.00		\$ 22.50	\$ 1,125.00	5400B	\$ 6.97	\$ 348.50
		\$ 10.75	\$ 5,375.00		\$ 7.32	\$ 3,660.00		\$ 22.75	\$ 11,375.00	5400	\$ 6.41	\$ 3,205.00
		\$ 10.75	\$ 537.50		\$ 8.50	\$ 425.00		\$ 26.50	\$ 1,325.00	5400	\$ 8.85	\$ 442.50
			\$ 6,350.00			\$ 4,609.00			\$ 13,825.00			\$ 3,996.00
					3%	\$ 138.27						
					Total w/3%	\$ 4,470.73						
14		\$ 15.75	\$ 7,087.50		\$ 19.65	\$ 8,842.50		\$ 47.30	\$ 21,285.00	1566	\$ 13.10	\$ 5,895.00
		\$ 16.00	\$ 1,200.00		\$ 22.15	\$ 1,661.25		\$ 48.50	\$ 3,637.50	1565	\$ 13.10	\$ 982.50
		\$ 18.00	\$ 720.00		\$ 22.15	\$ 886.00		\$ 48.50	\$ 1,940.00	1565	\$ 13.10	\$ 524.00
		\$ 20.00	\$ 200.00		\$ 27.07	\$ 270.70		\$ 50.50	\$ 505.00	1565	\$ 16.10	\$ 161.00
			\$ 9,207.50			\$ 11,660.45			\$ 27,367.50			\$ 7,562.50
					3%	\$ 349.81						
					Total w/3%	\$ 11,310.64						
15		\$ 15.75	\$ 4,331.25		\$ 19.17	\$ 5,271.75		\$ 47.30	\$ 13,007.50	1566	\$ 13.10	\$ 3,602.50
		\$ 16.00	\$ 800.00		\$ 22.79	\$ 1,139.50		\$ 48.50	\$ 2,425.00	1565	\$ 13.10	\$ 655.00
		\$ 18.00	\$ 270.00		\$ 22.79	\$ 341.85		\$ 48.50	\$ 727.50	1565	\$ 13.10	\$ 196.50
		\$ 20.00	\$ 200.00		\$ 27.07	\$ 270.70		\$ 48.50	\$ 485.00	1565	\$ 16.10	\$ 161.00
			\$ 5,601.25			\$ 7,023.80			\$ 16,645.00			\$ 4,615.00
					3%	\$ 210.71						
					Total w/3%	\$ 6,813.09						
16		\$ 10.25	\$ 7,687.50		\$ 11.99	\$ 8,992.50		\$ 15.50	\$ 11,625.00	6236	\$ 7.75	\$ 5,812.50
			\$ 7,687.50			\$ 8,992.50			\$ 11,625.00			\$ 5,812.50
					3%	\$ 269.78						
					Total w/3%	\$ 8,722.73						
17		\$ 15.25	\$ 686.25		\$ 15.77	\$ 709.65		\$ 22.55	\$ 1,014.75	996M	\$ 13.89	\$ 625.05
		\$ 17.25	\$ 172.50		\$ 23.97	\$ 239.70		\$ 26.75	\$ 267.50	996M	\$ 16.90	\$ 169.00
			\$ 858.75			\$ 949.35			\$ 1,282.25			\$ 794.05
					3%	\$ 28.48						
					Total w/3%	\$ 920.87						
18		\$ 17.50	\$ 525.00		\$ 19.70	\$ 591.00		\$ 32.85	\$ 985.50	K584	\$ 15.11	\$ 453.30
		\$ 19.50	\$ 97.50		\$ 21.00	\$ 105.00		\$ 34.00	\$ 170.00	K584	\$ 16.11	\$ 80.55
			\$ 622.50			\$ 696.00			\$ 1,155.50			\$ 533.85
					3%	\$ 20.88						
					Total w/3%	\$ 675.12						
19		\$ 24.50	\$ 2,450.00		\$ 24.25	\$ 2,425.00		\$ 45.25	\$ 4,525.00	933M	\$ 17.75	\$ 1,775.00
		\$ 26.50	\$ 397.50	Adult 2XL	\$ 31.90	\$ 159.50		\$ 48.50	\$ 727.50	933M	\$ 22.38	\$ 335.70
			\$ 2,847.50	Adult 3XL	\$ 34.40	\$ 344.00			\$ 5,252.50			\$ 2,110.70
						\$ 2,928.50						
					3%	\$ 87.86						
					Total w/3%	\$ 2,840.65						
20		\$ 6.00	\$ 150.00	Gildan	\$ 8.77	\$ 219.25		\$ 17.75	\$ 443.75	G980	\$ 5.80	\$ 145.00
		\$ 8.00	\$ 64.00	Gildan 2XL	\$ 11.59	\$ 46.36		\$ 20.25	\$ 162.00	G980	\$ 7.60	\$ 60.80
			\$ 214.00	Gildan 3XL	\$ 13.75	\$ 55.00			\$ 605.75			\$ 205.80
						\$ 320.61						
					3%	\$ 9.62						
					Total w/3%	\$ 310.99						
21		\$ 30.00	\$ 750.00		\$ 24.14	\$ 603.50		\$ 49.25	\$ 1,231.25	933M	\$ 18.75	\$ 468.75
		\$ 32.00	\$ 256.00		\$ 33.50	\$ 268.00		\$ 51.00	\$ 408.00	933M	\$ 23.38	\$ 187.04
			\$ 1,006.00			\$ 871.50			\$ 1,639.25			\$ 655.79
					3%	\$ 26.15						
					Total w/3%	\$ 845.36						
22		\$ 8.25	\$ 165.00		\$ 17.85	\$ 357.00		\$ 14.50	\$ 290.00	29MR	\$ 5.26	\$ 105.20
		\$ 10.25	\$ 82.00		\$ 20.00	\$ 160.00		\$ 15.75	\$ 126.00	29MR	\$ 7.13	\$ 57.04
		\$ 11.25	\$ 33.75		\$ 21.70	\$ 65.10		\$ 16.85	\$ 50.55	29MR	\$ 8.13	\$ 24.39
			\$ 280.75			\$ 582.10			\$ 466.55			\$ 186.63
					3%	\$ 17.46						
					Total w/3%	\$ 564.64						

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	LITTLE ENGINE PROMOTION MACOMB, MI			NEW PARADIGM PROMOTIONAL LIVONIA, MI			POSTnFIT TNPJ DISTRIBUTION DETROIT, MI			SP DESIGNS & MFG, INC. CAPE CORAL, FL 33990		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23		\$ 21.50	\$ 860.00		\$ 15.87	\$ 634.80		\$ 64.50	\$ 2,580.00	SKU: 13268-	\$ 13.85	\$ 554.00
		\$ 23.50	\$ 352.50		\$ 15.87	\$ 238.05		\$ 64.50	\$ 967.50		\$ 14.85	\$ 222.75
		\$ 24.50	\$ 122.50		\$ 15.87	\$ 79.35		\$ 64.50	\$ 322.50		\$ 15.85	\$ 79.25
			\$ 1,335.00			\$ 952.20			\$ 3,870.00			\$ 856.00
					3%	\$ 28.57						
					Total w/3%	\$ 923.63						
24	BAN3142	\$ 14.50	\$ 6,162.50	EGPro	\$ 13.45	\$ 5,716.25		\$ 27.60	\$ 11,730.00	PC380	\$ 5.68	\$ 2,414.00
	BAN3142	\$ 16.50	\$ 825.00	EGPro	\$ 13.45	\$ 672.50		\$ 29.80	\$ 1,490.00	PC380	\$ 6.82	\$ 341.00
	BAN3142	\$ 17.50	\$ 437.50	EGPro	\$ 13.45	\$ 336.25		\$ 31.60	\$ 790.00	PC380	\$ 7.51	\$ 187.75
			\$ 7,425.00			\$ 6,725.00			\$ 14,010.00			\$ 2,942.75
					3%	\$ 201.75						
					Total w/3%	\$ 6,523.25						
25		\$ 17.50	\$ 437.50		\$ 19.40	\$ 485.00		\$ 36.50	\$ 912.50	K584	\$ 15.76	\$ 394.00
		\$ 19.50	\$ 78.00		\$ 21.00	\$ 84.00		\$ 38.50	\$ 154.00	K584	\$ 16.76	\$ 67.04
		\$ 21.50	\$ 86.00		\$ 23.60	\$ 94.40		\$ 40.50	\$ 162.00	K584	\$ 18.76	\$ 75.04
			\$ 601.50			\$ 663.40			\$ 1,228.50			\$ 536.08
					3%	\$ 19.90						
					Total w/3%	\$ 643.50						
26		\$ 12.25	\$ 306.25		\$ 14.30	\$ 357.50		\$ 32.50	\$ 812.50	ST700	\$ 10.93	\$ 273.25
		\$ 15.25	\$ 122.00	Adult 2XL	\$ 15.50	\$ 62.00		\$ 35.50	\$ 284.00	ST700	\$ 11.93	\$ 95.44
			\$ 428.25	Adult 3XL	\$ 17.70	\$ 70.80			\$ 1,096.50			\$ 368.69
						\$ 490.30						
					3%	\$ 14.71						
					Total w/3%	\$ 475.59						
27		\$ 18.75	\$ 1,875.00		\$ 18.35	\$ 1,835.00		\$ 36.50	\$ 3,650.00	K584	\$ 13.76	\$ 1,376.00
		\$ 20.75	\$ 103.75	Adult 2XL	\$ 19.35	\$ 96.75		\$ 40.50	\$ 202.50	K584	\$ 15.76	\$ 78.80
			\$ 1,978.75	Adult 3XL	\$ 22.00	\$ 110.00			\$ 3,852.50			\$ 1,454.80
						\$ 2,041.75						
					3%	\$ 61.25						
					Total w/3%	\$ 1,980.50						
28		\$ 8.50	\$ 850.00		\$ 8.25	\$ 825.00		\$ 31.80	\$ 3,180.00	5100	\$ 5.96	\$ 596.00
		\$ 11.50	\$ 172.50	Adult 2XL	\$ 8.50	\$ 42.50		\$ 33.50	\$ 502.50	5100	\$ 6.34	\$ 95.10
			\$ 1,022.50	Adult 3XL	\$ 13.50	\$ 67.50			\$ 3,682.50			\$ 691.10
						\$ 935.00						
					3%	\$ 28.05						
					Total w/3%	\$ 906.95						
29		\$ 29.50	\$ 885.00		\$ 24.95	\$ 748.50		\$ 32.62	\$ 978.60	PC78ZH	\$ 19.29	\$ 578.70
		\$ 32.50	\$ 162.50		\$ 28.20	\$ 141.00		\$ 36.75	\$ 183.75	PC78ZH	\$ 20.25	\$ 101.25
			\$ 1,047.50			\$ 889.50			\$ 1,162.35			\$ 679.95
					3%	\$ 26.69						
					Total w/3%	\$ 862.82						
30		\$ 15.50	\$ 465.00		\$ 17.45	\$ 523.50		\$ 22.55	\$ 676.50	996M	\$ 13.99	\$ 419.70
		\$ 17.50	\$ 87.50		\$ 25.66	\$ 128.30		\$ 26.75	\$ 133.75	996M	\$ 16.17	\$ 80.85
			\$ 552.50			\$ 651.80			\$ 810.25			\$ 500.55
					3%	\$ 19.55						
					Total w/3%	\$ 632.25						
31		\$ 11.75	\$ 352.50		\$ 14.00	\$ 420.00		\$ 22.40	\$ 672.00	562M	\$ 9.34	\$ 280.20
		\$ 13.75	\$ 68.75		\$ 18.39	\$ 91.95		\$ 25.65	\$ 128.25	562M	\$ 11.90	\$ 59.50
			\$ 421.25			\$ 511.95			\$ 800.25			\$ 339.70
					3%	\$ 15.36						
					Total w/3%	\$ 496.59						
32		\$ 6.50	\$ 325.00		\$ 5.15	\$ 257.50		\$ 18.50	\$ 925.00	2000B	\$ 4.23	\$ 211.50
		\$ 6.75	\$ 2,700.00		\$ 5.25	\$ 2,100.00		\$ 23.55	\$ 9,420.00	2000	\$ 4.31	\$ 1,724.00
		\$ 9.75	\$ 487.50		\$ 8.25	\$ 412.50		\$ 26.75	\$ 1,337.50	2000	\$ 6.05	\$ 302.50
			\$ 3,512.50			\$ 2,770.00			\$ 11,682.50			\$ 2,238.00
					3%	\$ 83.10						
					Total w/3%	\$ 2,686.90						
33		\$ 15.50	\$ 387.50		\$ 16.00	\$ 400.00		\$ 25.55	\$ 638.75	996M	\$ 13.99	\$ 349.75
		\$ 15.50	\$ 232.50		\$ 24.40	\$ 366.00		\$ 29.75	\$ 446.25	996M	\$ 13.99	\$ 209.85
		\$ 17.50	\$ 175.00		\$ 26.50	\$ 265.00		\$ 33.77	\$ 337.70	996M	\$ 16.17	\$ 161.70
			\$ 795.00			\$ 1,031.00			\$ 1,422.70			\$ 721.30
					3%	\$ 30.93						
					Total w/3%	\$ 1,000.07						

THE SOCK BAG SHIRLEY, NY	ART & STITCHERY, LLC SHACKLEFORDS, VA
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ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
1		\$ 10.72	\$ 750.40			
		\$ 14.64	\$ 468.48			
		\$ 17.20	\$ 137.60			
			\$ 1,356.48			
2		\$ 30.26	\$ 3,026.00			
		\$ 39.44	\$ 591.60			
			\$ 3,617.60			
3		\$ 28.26	\$ 1,413.00			
		\$ 34.24	\$ 513.60			
		\$ 37.44	\$ 187.20			
			\$ 2,113.80			
4		\$ 16.52	\$ 495.60			
			\$ 495.60			
5	Jerzees570N	\$ 12.58	\$ 754.80			
			\$ 754.80			
6		\$ 25.68	\$ 513.60			
			\$ 513.60			
7		\$ 15.72	\$ 2,200.80			
		\$ 19.64	\$ 785.60			
			\$ 2,986.40			
8		\$ 15.72	\$ 1,572.00			
		\$ 19.64	\$ 314.24			
		\$ 22.20	\$ 177.60			
			\$ 2,063.84			
9		\$ 19.00	\$ 950.00			
		\$ 20.82	\$ 416.40			
		\$ 24.04	\$ 144.24			
			\$ 1,510.64			
10		\$ 20.10	\$ 603.00			
		\$ 23.80	\$ 119.00			
			\$ 722.00			
11		\$ 10.94	\$ 1,094.00			
		\$ 18.20	\$ 273.00			
			\$ 1,367.00			

Disqualified:
Company used the
wrong proposal form.

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	THE SOCK BAG SHIRLEY, NY			ART & STITCHERY, LLC SHACKLEFORDS, VA		
ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
12A		\$ 14.32	\$ 5,728.00			
		\$ 14.80	\$ 1,628.00			
		\$ 14.80	\$ 518.00			
			\$ 7,874.00			
12B		\$ 14.80	\$ 1,184.00			
		\$ 18.66	\$ 279.90			
			\$ 1,463.90			
			\$ 9,337.90			
13		\$ 19.40	\$ 970.00			
		\$ 20.90	\$ 10,450.00			
		\$ 28.50	\$ 1,425.00			
			\$ 12,845.00			
14		\$ 24.44	\$ 10,998.00			
		\$ 25.52	\$ 1,914.00			
		\$ 26.57	\$ 1,062.80			
		\$ 29.62	\$ 296.20			
			\$ 14,271.00			
15		\$ 24.44	\$ 6,721.00			
		\$ 25.52	\$ 1,276.00			
		\$ 26.57	\$ 398.55			
		\$ 29.62	\$ 296.20			
			\$ 8,691.75			
16		\$ 8.22	\$ 6,165.00			
			\$ 6,165.00			
17		\$ 26.26	\$ 1,181.70			
		\$ 32.24	\$ 322.40			
			\$ 1,504.10			
18		\$ 27.72	\$ 831.60			
		\$ 29.72	\$ 148.60			
			\$ 980.20			
19		\$ 28.52	\$ 2,852.00			
		\$ 35.15	\$ 527.25			
			\$ 3,379.25			
20		\$ 9.78	\$ 244.50			
		\$ 15.15	\$ 121.20			
			\$ 365.70			
21		\$ 27.11	\$ 677.75			
		\$ 30.95	\$ 247.60			
			\$ 925.35			
22		\$ 15.72	\$ 314.40			
		\$ 19.64	\$ 157.12			
		\$ 21.20	\$ 63.60			
			\$ 535.12			

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
	THE SOCK BAG SHIRLEY, NY			ART & STITCHERY, LLC SHACKLEFORDS, VA		

ITEM #	Proposed Brand	Proposed Unit Price	TOTAL	Proposed Brand	Proposed Unit Price	TOTAL
23		\$ 17.32	\$ 692.80			
		\$ 18.03	\$ 270.45			
		\$ 18.77	\$ 93.85			
			\$ 1,057.10			

24		\$ 13.98	\$ 5,941.50			
		\$ 13.98	\$ 699.00			
		\$ 17.18	\$ 429.50			
			\$ 7,070.00			

25		\$ 27.72	\$ 693.00			
		\$ 29.72	\$ 118.88			
		\$ 33.72	\$ 134.88			
			\$ 946.76			

26		\$ 14.04	\$ 351.00			
		\$ 18.24	\$ 145.92			
			\$ 496.92			

27		\$ 27.72	\$ 2,772.00			
		\$ 29.72	\$ 148.60			
			\$ 2,920.60			

28		\$ 11.44	\$ 1,144.00			
		\$ 17.21	\$ 258.15			
			\$ 1,402.15			

29		\$ 19.67	\$ 590.10			
		\$ 23.17	\$ 115.85			
			\$ 705.95			

30		\$ 28.26	\$ 847.80			
		\$ 37.44	\$ 187.20			
			\$ 1,035.00			

31		\$ 14.14	\$ 424.20			
		\$ 19.12	\$ 95.60			
			\$ 519.80			

32		\$ 18.42	\$ 921.00			
		\$ 18.76	\$ 7,504.00			
		\$ 21.46	\$ 1,073.00			
			\$ 9,498.00			

33		\$ 28.26	\$ 706.50			
		\$ 28.26	\$ 423.90			
		\$ 37.44	\$ 374.40			
			\$ 1,504.80			

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

8. REQUEST TO WAIVE THE SEALED BID PROCESS AND AWARD OF CONTRACT:
Department of Public Works, Building Maintenance Division, re: for the phase two installation of building maintenance systems, from budgeted funds.

Doug Moore, Assistant Director of Public Works, stated the systems are old and parts have become unavailable, meaning it is time to upgrade to a newer system.

Motion was made by Councilmember Budzinski to put the matter on the Regular portion of the next Regular Agenda.

DIRECTION:

APPROVING

CONSENT



LETTER TO THE LIVONIA CITY COUNCIL

8.

DPW

September 11, 2025

MEETING DATE

S092225/R100625

PRESENTED BY

Douglas L. Moore, MSA, Assistant Director of Public Works

AGENDA ITEM

REQUEST TO WAIVE THE SEALED BID PROCESS AND AWARD OF CONTRACT: Department of Public Works, Building Maintenance Division, re: for the phase two installation of building maintenance systems, from budgeted funds.

BACKGROUND DETAILS

As part of our ongoing project to upgrade the building maintenance systems (Ref: CR# 098-23), we have received a quote from Havel, Southfield, Michigan to begin Phase 2 of this project, which includes installing a direct digital system at the DPW Garage, Housing Commission building and Fire Stations 1, 3, 4, 5 and 6. Havel has submitted a bid for the project using the OMNIA Partners Public Sector contract R220703, providing reduced costs to Government entities, and is recommended and vetted by the project's facilitator, OHM Advisors.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

Award the installation of Tridium Niagara N4/BACnet IP direct digital system of automatic temperature control and building automation to Havel in the DPW Garage, Housing Commission offices and Fire Stations 1, 3, 4, 5 and 6, in the amount of \$112,582.00 as quoted.

SPECIFIC NAME OF PRODUCT AND NUMBER TO BE PURCHASED (if more than one)

Tridium Niagara N4/BACnet IP direct digital building automation system.

CONTRACT: Amount and/or purchase price and length of contract (with dates if applicable)

\$112,582.00 (to be reimbursed via EECBG Grant)

DETAILED WORK BEING PERFORMED

Installation of Building Automation system.

FISCAL CONSIDERATIONS (Amount requested and Account(s) used. If applicable, Grant Funding information)

\$112,582.00

401-000-987-000

Grant funding was awarded by the US Department of Energy through their Energy Efficiency and Conservation Block Grant (EECBG) to reimburse the City of Livonia for this project as funds are spent in an amount not to exceed \$155,220.00.

ACCEPTANCE OF BID (Please detail the following: Why accepted, why not lowest bidder, company name, contact person, full address)

Bids were submitted to our project administrator, OHM Advisors, who selected Havel as the winning bidder.

REASON TO WAIVE BID PROCESS (Emergency, Professional services, No advantage to City and why, Consortium package, etc): Waive the formal bidding process in accordance with Section 3.04.140.E.4 of the Livonia Code of Ordinances, as amended, since no advantage to the City would result from competitive bidding.

ATTACHMENTS

1. 2022_1018_BuildingControls_SPECS
2. Havel updated BMS proposal revised
3. 098-23 - Building Controls Upgrade
4. EECBG - About the Program
5. EECBG Approval E-Mail 12-31-2024
6. EECEQ-01334-Project In-Progress-2025-06-13

APPROVED BY



Douglas L. Moore, MSA, Assistant Director of Public Works

Date: September 11, 2025



Don Rohraff, Director of Public Works

Date: September 11, 2025



Debra Peck Lichtenberg, CPA, Finance Director

Date: September 12, 2025



Carter Fisher, City Attorney

Date: September 12, 2025

A handwritten signature in black ink, reading "Maureen Miller Brosnan". The signature is written in a cursive, flowing style.

Date: September 12, 2025

Maureen Miller Brosnan, Mayor

PROJECT MANUAL

CITY OF LIVONIA BUILDING CONTROLS UPGRADES

Livonia, MI



PROJECT NO. 0090-21-0060

DATE: October 18, 2022

Division	Section Title	Pages
DIVISION 00	- PROCUREMENT AND CONTRACTING REQUIREMENTS	
00 26 00	PROCUREMENT SUBSTITUTION PROCEDURES	2
DIVISION 01	- GENERAL REQUIREMENTS	
01 21 00	ALLOWANCES	1
01 25 00	SUBSTITUTION PROCEDURES	3
01 26 00	CONTRACT MODIFICATION PROCEDURES	2
01 29 00	PAYMENT PROCEDURES	3
01 31 00	PROJECT MANAGEMENT AND COORDINATION	4
01 32 33	PHOTOGRAPHIC DOCUMENTATION	2
01 33 00	SUBMITTAL PROCEDURES	7
01 40 00	QUALITY REQUIREMENTS	5
01 60 00	PRODUCT REQUIREMENTS	5
01 73 00	EXECUTION	5
01 77 00	CLOSEOUT PROCEDURES	4
01 78 23	OPERATION AND MAINTENANCE DATA	7
01 78 39	PROJECT RECORD DOCUMENTS	4
01 79 00	DEMONSTRATION AND TRAINING	4
DIVISION 07	- THERMAL AND MOISTURE PROTECTION	
07 84 13	PENETRATION FIRESTOPPING	3
07 92 00	JOINT SEALANTS	4
DIVISION 23	- HEATING VENTILATING AND AIR CONDITIONING (HVAC)	
23 09 23	DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC	57
DIVISION 26	- ELECTRICAL	
26 05 53	IDENTIFICATION FOR ELECTRICAL SYSTEMS	4

END OF TABLE OF CONTENTS

DOCUMENT 00 26 00 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 01 25 00 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect . Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than date of questions cut-off identified in Instructions to Bidder.
 - 2. Submittal Format: Submit One electronic copy of each written Procurement Substitution Request, using form bound in Project Manual or CSI Substitution Request Form 1.5C.
- B. Architect's Action:
 - 1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.
- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 00 26 00



SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

A/E Project Number: _____
Re: _____ Contract For: _____

Specification Title: Enter the title of the spec book Description: Enter the section title from spec book here
Section: Enter Spec section Page: Enter Spec page# Article/Paragraph: Enter the spec paragraph# here

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: * Add submitters name (typically the Project Manager for the Sub)

Signed by: _____

Firm: * Add submitters company name

Address: * Add submitters company address

Telephone: * Add submitters company phone number

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____

Date: _____

Supporting Data Attached: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☒ _____

Attach to E-Mail

Print a Copy

Save a Copy

Attach a file

Reset Form

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Contingency allowances.
- C. Related Requirements:
 - 1. Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.2 DEFINITIONS

- A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.3 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.
- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

- A. Allowance No. 7: Contingency Allowance: Include a contingency allowance of \$20,000.00 for use according to Owner's written instructions.

END OF SECTION 01 21 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 01 60 00 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form acceptable to Architect.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided

- within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 01 25 00 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
 - 2. Section 01 31 00 "Project Management and Coordination" for requirements for forms for contract modifications provided as part of web-based Project management software.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710 .

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use forms acceptable to Architect .
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect .
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times,

and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Section 01 25 00 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Architect .

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 .

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 . Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 01 26 00 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.2 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
 - 4. Each building to have its own schedule of values.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Owner's name.
 - c. Owner's Project number.
 - d. Name of Architect.
 - e. Architect's Project number.
 - f. Contractor's name and address.
 - g. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703 .
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - 4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 - 5. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

6. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
7. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by Architect and paid for by Owner.
- B. Payment Application Times: Submit Application for Payment to Architect by the first day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month .
 1. Submit draft copy of Application for Payment five days prior to due date for review by Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
 1. Other Application for Payment forms proposed by the Contractor may be acceptable to Architect and Owner. Submit forms for approval with initial submittal of schedule of values.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. Copies of building permits.
- H. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 01 77 00 "Closeout Procedures."
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Certification of completion of final punch list items.
 3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 4. Updated final statement, accounting for final changes to the Contract Sum.
 5. AIA Document G706.
 6. AIA Document G707.
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.
 10. Proof that taxes, fees, and similar obligations are paid.
 11. Waivers and releases.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. RFIs.
 - 3. Contractor's use of Architects CAD files
 - 4. Project meetings.

1.2 DEFINITIONS

- A. RFI: Request for Information from Contractor seeking information required by or clarifications of the Contract Documents.

1.3 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.
- D. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion

1.4 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. RFI Forms: AIA Document G716 or form with similar information approved by Architect.
1. Attachments shall be electronic files in PDF format.
- C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 26 00 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 days of receipt of the RFI response.
- D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log the day before progress meetings or no longer than bi-weekly to team. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number, including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within three days if Contractor disagrees with response.

1.5 CONTRACTOR'S USE OF ARCHITECTS CAD FILES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.

3. The Contractor, Subcontractors and other parties requesting files shall submit Electronic Media Files Agreement.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within five days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 30 days after execution of the Agreement.
 1. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - 1) Identify individuals and their duties and responsibilities; list company, addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - f. Lines of communications.
 - g. Use of web-based Project software.
 - h. Procedures for processing field decisions and Change Orders.
 - i. Procedures for RFIs.
 - j. Procedures for testing and inspecting.
 - k. Procedures for processing Applications for Payment.
 - l. Distribution of the Contract Documents.
 - m. Submittal procedures.
 - n. Preparation of Record Documents.
 - o. Use of the premises.
 - p. Work restrictions.
 - q. Working hours.
 - r. Owner's occupancy requirements.
 - s. Responsibility for temporary facilities and controls.
 - t. Procedures for disruptions and shutdowns.
 - u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

- C. Progress Meetings: Conduct progress meetings at bi-weekly intervals.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of Proposal Requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
 3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. Related Requirements:
 - 1. Section 01 77.00 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
- B. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding work area, including existing items to remain during construction, from different vantage points.
- C. Periodic Construction Photographs:
 - 1. Select vantage points to show status of construction and progress since last photographs were taken.
 - 2. Provide photographs of work that is concealed, penetrations of wall construction, and work completed to indicate compliance with required scope of work.

END OF SECTION 01 32 33

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal schedule requirements.
 - 2. Administrative and procedural requirements for submittals.
- B. Related Requirements:
 - 1. Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 01 40 00 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
 - 3. Section 01 77 00 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
 - 4. Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 5. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.

- e. Description of the Work covered.
- f. Scheduled date for Architect's final release or approval.
- g. Scheduled dates for purchasing.
- h. Scheduled date of fabrication.
- i. Scheduled dates for installation.
- j. Activity or event number.
- k. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of the need to review submittals concurrently for coordination.
- l. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.4 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
 - 1. Project name.
 - 2. Date.
 - 3. Name of Architect.
 - 4. Name of Contractor.
 - 5. Name of firm or entity that prepared submittal.
 - 6. Names of subcontractor, manufacturer, and supplier.
 - 7. Unique submittal number, including revision identifier.
 - 8. Category and type of submittal.
 - 9. Submittal purpose and description.
 - 10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 - 11. Drawing number and detail references, as appropriate.
 - 12. Indication of full or partial submittal.
 - 13. Location(s) where product is to be installed, as appropriate.
 - 14. Other necessary identification.
 - 15. Remarks.
 - 16. Signature of transmitter. Include Contractor's certification stating that information submitted complies with the Requirements of the Contract Documents.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number. Submit via Project management software.

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
 - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

- B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier. Include Specification Section number with sequential alphanumeric identifier an 'r' and numerical suffix for resubmittals. (ie 013300-01r1)
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- D. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
- E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's catalog cuts.
 - c. Manufacturer's product specifications.
 - d. Standard color charts.
 - e. Statement of compliance with specified referenced standards.
 - f. Testing by recognized testing agency.
 - g. Application of testing agency labels and seals.
 - h. Notation of coordination requirements.
 - i. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed vs. field installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. BIM Incorporation: Develop and incorporate Shop Drawing files into BIM established for Project.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

- b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 - 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 - 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 - 2. Manufacturer and product name, and model number if applicable.
 - 3. Number and name of room or space.
 - 4. Location within room or space.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
 - 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 - 2. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
 - 3. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
 - 4. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.7 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect .
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.8 ARCHITECT'S REVIEW

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- F. Architect will return without review submittals received from sources other than Contractor.
- G. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- C. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

1.3 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports and documents as specified.
- D. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.5 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 15 days of Notice of Award , and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
- E. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, telephone number, and email address of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.

1.7 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1.8 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

- C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspection equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.
1. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
 2. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 01 25 00 "Substitution Procedures" for requests for substitutions.
 - 2. Section 01770 "Closeout Procedures" for submitting warranties.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
 - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
 - 1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.
- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 01 33 00 "Submittal Procedures."
- F. Substitution: Refer to Section 01 25 00 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Resolution of Compatibility Disputes between Multiple Contractors:
 - a. Contractors are responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - b. If a dispute arises between the multiple contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
 2. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.4 COORDINATION

- A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.
- C. Storage:

1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
2. Store products to allow for inspection and measurement of quantity or counting of units.
3. Store materials in a manner that will not endanger Project structure.
4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.
5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
 - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
 - a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 25 00 "Substitution Procedures" for substitutions for convenience.

- C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
 - 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.
- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 01 33 00 "Submittal Procedures."
 - 1. Form of Approval of Submittal: As specified in Section 01 33 00 "Submittal Procedures."
 - 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.
- D. Submittal Requirements, Single-Step Process: When acceptable to Architect, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by the Architect of Contractor's request for use of comparable product and of individual submittal requirements will also satisfy other submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
 - 1. Installation of the Work.
 - 2. Cutting and patching.
 - 3. Progress cleaning.
 - 4. Starting and adjusting.
 - 5. Protection of installed construction.
 - 6. Correction of the Work.
- B. Related Requirements:
 - 1. Section 07 84 13 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Plumbing piping systems.
 - f. Mechanical systems piping and ducts.
 - g. Control systems.
 - h. Communication systems.
 - i. Fire-detection and -alarm systems.
 - j. Conveying systems.
 - k. Electrical wiring systems.
 - l. Operating systems of special construction.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in

reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

- a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb, and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

3.3 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- D. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Proceed with patching after construction operations requiring cutting are complete.
- E. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 2. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
 3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- F. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.4 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- I. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION 01 73 00

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
- B. Related Requirements:
 - 1. Section 01 29 00 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
 - 2. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 3. Section 01 78 39 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 4. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 DEFINITIONS

- A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit testing, adjusting, and balancing records.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Complete startup and testing of systems and equipment.
 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."
 4. Complete final cleaning requirements.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, provide items identified on Final Completion Checklist included in project manual.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, listed by room or space number.
 2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.

3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect .
 - d. Name of Contractor.
 - e. Page number.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 1. Submit by uploading to web-based project software site.
- D. Warranties in Paper Form:
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - e. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
 - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - h. Remove labels that are not permanent.
 - i. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - j. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 01 73 00 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 01 77 00

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.
- B. Related Requirements:
 - 1. Section 01 33 00 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit by uploading to web-based project software site. Enable reviewer comments on draft submittals.
 - 2. For Final Manual Submittal, Submit three paper copies in bound manuals to Owner.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect and Commissioning Authority will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.
- E. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
 4. Supplementary Prepared on 8-1/2-by-11-inch white bond paper.
 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Include the following information:
1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.

10. Cross-reference to related systems in other operation and maintenance manuals.

- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:
 - 1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
 - 2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
 - 3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

1.6 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

- E. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.
 - 8. Piped system diagrams.
 - 9. Precautions against improper use.
 - 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
 - 1. Product name and model number. Use designations for products indicated on Contract Documents.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.
 - 9. Complete nomenclature and number of replacement parts.
- D. Operating Procedures: Include the following, as applicable:
 - 1. Startup procedures.
 - 2. Equipment or system break-in procedures.
 - 3. Routine and normal operating instructions.
 - 4. Regulation and control procedures.
 - 5. Instructions on stopping.
 - 6. Normal shutdown instructions.
 - 7. Seasonal and weekend operating instructions.
 - 8. Required sequences for electric or electronic systems.
 - 9. Special operating instructions and procedures.

- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.
- C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of maintenance manuals.
- 1.9 PRODUCT MAINTENANCE MANUALS
- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- D. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- E. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 01 73 00 "Execution" for final property survey.
 - 2. Section 01 77 00 "Closeout Procedures" for general closeout procedures.
 - 3. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
 - 2) Submit Record Digital Data Files and one set(s) of plots.
 - 3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files of scanned Record Prints and three set(s) of file prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- E. Reports: Submit written report weekly indicating items incorporated into Project Record Documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect . When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as for the original Contract Drawings.
 2. Format: DWG , Version 2018
 3. Format: Annotated PDF electronic file.
 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 5. Refer instances of uncertainty to Architect through Construction Manager for resolution.
 6. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
 - a. See Section 01 31 00 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file.

3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect .
 - e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.
- B. Format: Submit record specifications as annotated PDF or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders , Record Specifications, and Record Drawings where applicable.
- C. Format: Submit Record Product Data as annotated PDF or electronic file scanned PDF electronic file(s) of marked-up paper copy of Product Data.
 1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.7 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39

SECTION 01 79 00 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. This section applies to all technical specifications calling for Demonstrations or Training.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.

1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit one copies within seven days of end of each training module.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of videographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date of video recording.
 - 2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.

1.5 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.6 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.7 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 - 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.

- i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.8 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.9 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner , through Architect, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

- E. Cleanup: Collect used and leftover educational materials and remove from Project site . Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.10 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.
 - 1. Submit video recordings on thumb drive .
 - 2. File Hierarchy: Organize folder structure and file locations according to Project Manual table of contents. Provide complete screen-based menu.
 - 3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
 - 4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the equipment demonstration and training recording that describes the following for each Contractor involved on the Project, arranged according to Project Manual table of contents:
 - a. Name of Contractor/Installer.
 - b. Business address.
 - c. Business phone number.
 - d. Point of contact.
 - e. Email address.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
 - 1. Film training session(s) in segments not to exceed 15 minutes.
 - a. Produce segments to present a single significant piece of equipment per segment.
 - b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
 - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
 - 1. Furnish additional portable lighting as required.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 01 79 00

SECTION 07 84 13 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Penetrations in fire-resistance-rated walls.
 - 2. Penetrations in horizontal assemblies.
 - 3. Penetrations in smoke barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Listed System Designs: For each penetration firestopping system, for tests performed by a qualified testing agency.

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install penetration firestopping system when ambient or substrate temperatures are outside limits permitted by penetration firestopping system manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
- B. Install and cure penetration firestopping materials per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.5 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping systems can be installed according to specified firestopping system design.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping systems.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain joint firestop systems for each type of joint opening indicated from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:
 - 1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
 - 2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
 - a. Penetration firestop systems installed with products bearing the classification marking of a qualified product certification agency in accordance with listed system designs published by a qualified testing agency.

- 1) UL in its online directory "Product iQ."
- 2) FM Approvals in its "Approval Guide."

2.3 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems are to be compatible with one another, with the substrates forming openings, and with penetrating items if any.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. 3M Fire Protection Products.
 - b. Hilti, Inc.
 - c. RectorSeal Firestop; a CSW Industrials Company.
- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479.
 1. F-Rating: Not less than the fire-resistance rating of the wall penetrated.
- C. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined per UL 1479.
 1. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening and no more than 50-cfm cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.
- D. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E84.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Before installing penetration firestopping systems, clean out openings immediately to comply with manufacturer's written instructions and with the following requirements:
 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping materials.
 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping materials. Remove loose particles remaining from cleaning operation.
 3. Remove laitance and form-release agents from concrete.
- B. Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION OF PENETRATION FIRESTOPPING SYSTEMS

- A. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.
- B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- C. Install fill materials by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 CLEANING AND PROTECTION

- A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping material and install new materials to produce systems complying with specified requirements.

END OF SECTION 07 84 13

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Nonstaining silicone joint sealants.
 - 2. Latex joint sealants.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Joint-sealants.
 - 2. Joint sealant backing materials.

1.3 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested in accordance with ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Pecora Corporation.
 - b. Sika Corporation; Joint Sealants.
 - c. Tremco Incorporated.

2.3 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Pecora Corporation.
 - b. Tremco Incorporated.

2.4 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Construction Foam Products; a division of Nomaco, Inc.
 - b. Master Builders Solutions.
- B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) Type O (open-cell material) Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- B. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and

- approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Remove laitance and form-release agents from concrete.

- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

- A. Exterior joints in vertical surfaces and horizontal nontraffic surfaces:
 1. Joint Locations:
 - a. Penetrations by conduits at exterior walls
 - b. Other joints as indicated on Drawings.
 2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT .
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors .

- B. Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement:
1. Joint Locations:
 - a. Penetrations by conduits at interior, non-rated, wall construction.
 2. Joint Sealant: Acrylic latex .
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors .

END OF SECTION 07 92 00

SECTION 23 09 23 - DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Direct digital control (DDC) system for HVAC.

1.2 DEFINITIONS

- A. Algorithm: A logical procedure for solving a recurrent mathematical problem. A prescribed set of well-defined rules or processes for solving a problem in a finite number of steps.
- B. Analog: A continuously varying signal value, such as current, flow, pressure, or temperature.
- C. BACnet Specific Definitions:
 - 1. BACnet: Building Automation Control Network Protocol, ASHRAE 135. A communications protocol allowing devices to communicate data and services over a network.
 - 2. BACnet Interoperability Building Blocks (BIBBs): BIBB defines a small portion of BACnet functionality that is needed to perform a particular task. BIBBs are combined to build the BACnet functional requirements for a device.
 - 3. BACnet/IP: Defines and allows using a reserved UDP socket to transmit BACnet messages over IP networks. A BACnet/IP network is a collection of one or more IP subnetworks that share the same BACnet network number.
 - 4. BACnet Testing Laboratories (BTL): Organization responsible for testing products for compliance with ASHRAE 135, operated under direction of BACnet International.
- D. Binary: Two-state signal where a high signal level represents "ON" or "OPEN" condition and a low signal level represents "OFF" or "CLOSED" condition. "Digital" is sometimes used interchangeably with "Binary" to indicate a two-state signal.
- E. Controller: Generic term for any standalone, microprocessor-based, digital controller residing on a network, used for local or global control. Three types of controllers are indicated: network controllers, programmable application controllers, and application-specific controllers.
- F. Control System Integrator: An entity that assists in expansion of existing enterprise system and support of additional operator interfaces to I/O being added to existing enterprise system.
- G. COV: Changes of value.
- H. DDC System Provider: Authorized representative of, and trained by, DDC system manufacturer and responsible for execution of DDC system Work indicated.
- I. Distributed Control: Processing of system data is decentralized and control decisions are made at subsystem level. System operational programs and information are provided to remote subsystems and status is reported back. On loss of communication, subsystems to be capable of operating in a standalone mode using the last best available data.
- J. Gateway: Bidirectional protocol translator that connects control systems that use different communication protocols.
- K. HLC: Heavy load conditions.

- L. I/O: System through which information is received and transmitted. I/O refers to analog input (AI), binary input (BI), analog output (AO) and binary output (BO). Analog signals are continuous and represent control influences such as flow, level, moisture, pressure, and temperature. Binary signals convert electronic signals to digital pulses (values) and generally represent two-position operating and alarm status. "Digital," (DI) and (DO), is sometimes used interchangeably with "Binary," (BI) and (BO), respectively.
- M. LAN: Local area network.
- N. LNS: LonWorks Network Services.
- O. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.
- P. Mobile Device: A data-enabled phone or tablet computer capable of connecting to a cellular data network and running a native control application or accessing a web interface.
- Q. Modbus TCP/IP: An open protocol for exchange of process data.
- R. MS/TP: Master-slave/token-passing, ISO/IEC/IEEE 8802-3. Datalink protocol LAN option that uses twisted-pair wire for low-speed communication.
- S. MTBF: Mean time between failures.
- T. Network Controller: Digital controller, which supports a family of programmable application controllers and application-specific controllers, that communicates on peer-to-peer network for transmission of global data.
- U. Network Repeater: Device that receives data packet from one network and rebroadcasts it to another network. No routing information is added to protocol.
- V. Peer to Peer: Networking architecture that treats all network stations as equal partners.
- W. POT: Portable operator's terminal.
- X. RAM: Random access memory.
- Y. RF: Radio frequency.
- Z. Router: Device connecting two or more networks at network layer.
- AA. Server: Computer used to maintain system configuration, historical and programming database.
- BB. TCP/IP: Transport control protocol/Internet protocol.
- CC. UPS: Uninterruptible power supply.
- DD. USB: Universal Serial Bus.
- EE. User Datagram Protocol (UDP): This protocol assumes that the IP is used as the underlying protocol.
- FF. VAV: Variable air volume.

GG. WLED: White light emitting diode.

1.3 ACTION SUBMITTALS

A. Pre-Construction Air and Water Balance:

1. All systems (water and air side) shall have readings taken and documented. This shall include but not limited to all water flows at valves, devices, coils, etc., Air flows at terminal boxes, AHUs, exhaust fans, duct traverses, etc. This shall be completed to allow for the system to be set back to preconstruction flows after controls are installed.

B. Multiple Submissions:

1. If multiple submissions are required to execute work within schedule, first submit a coordinated schedule clearly defining intent of multiple submissions. Include a proposed date of each submission with a detailed description of submittal content to be included in each submission.
2. Clearly identify each submittal requirement indicated and in which submission the information will be provided.
3. Include an updated schedule in each subsequent submission with changes highlighted to easily track the changes made to previous submitted schedule.

C. Product Data:

1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Operating characteristics, electrical characteristics, and furnished accessories indicating process operating range, accuracy over range, control signal over range, default control signal with loss of power, calibration data specific to each unique application, electrical power requirements, and limitations of ambient operating environment, including temperature and humidity.
3. Product description with complete technical data, performance curves, and product specification sheets.
4. Installation, operation, and maintenance instructions including factors effecting performance.
5. Bill of materials of indicating quantity, manufacturer, and extended model number for each unique product.
 - a. Servers.
 - b. Gateways.
 - c. Routers.
 - d. Protocol analyzers.
 - e. DDC controllers.
 - f. Enclosures.
 - g. Electrical power devices.
 - h. UPS units.
 - i. Accessories.
 - j. Instruments.
 - k. Control dampers and actuators.
 - l. Control valves and actuators.
6. When manufacturer's product datasheets apply to a product series rather than a specific product model, clearly indicate and highlight only applicable information.
7. Each submitted piece of product literature to clearly cross reference specification and drawings that submittal is to cover.

D. Software Submittal:

1. Cross-referenced listing of software to be loaded on each operator workstation, server, gateway, and DDC controller.

2. Description and technical data of all software provided and cross-referenced to products in which software will be installed.
3. Operating system software, operator interface and programming software, color graphic software, DDC controller software, maintenance management software, and third-party software.
4. Include a flow diagram and an outline of each subroutine that indicates each program variable name and units of measure.
5. Listing and description of each engineering equation used with reference source.
6. Listing and description of each constant used in engineering equations and a reference source to prove origin of each constant.
7. Description of operator interface to alphanumeric and graphic programming.
8. Description of each network communication protocol.
9. Description of system database, including all data included in database, database capacity, and limitations to expand database.
10. Description of each application program and device drivers to be generated, including specific information on data acquisition and control strategies showing their relationship to system timing, speed, processing burden, and system throughout.
11. Controlled Systems: Instrumentation list with element name, type of device, manufacturer, model number, and product data. Include written description of sequence of operation including schematic diagram.

E. Shop Drawings:

1. General Requirements:
 - a. Include cover drawing with Project name, location, Owner, Architect, Contractor, and issue date with each Shop Drawings submission.
 - b. Include a drawing index sheet listing each drawing number and title that matches information in each title block.
2. Include plans, elevations, sections, and mounting details where applicable.
3. Include details of product assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
4. Detail means of vibration isolation and show attachments to rotating equipment.
5. Plan Drawings indicating the following:
 - a. Screened backgrounds of walls, structural grid lines, HVAC equipment, ductwork, and piping.
 - b. Room names and numbers with coordinated placement to avoid interference with control products indicated.
 - c. Each desktop workstation network port, server, gateway, router, DDC controller, control panel instrument connecting to DDC controller, and damper and valve connecting to DDC controller, if included in Project.
 - d. Exact placement of products in rooms, ducts, and piping to reflect proposed installed condition.
 - e. Network communication cable and raceway routing.
 - f. Proposed routing of wiring, cabling, conduit, and tubing; coordinated with building services for review before installation.
6. Schematic drawings for each controlled HVAC system indicating the following:
 - a. I/O points labeled with point names shown. Indicate instrument range, normal operating set points, and alarm set points. Indicate fail position of each damper and valve, if included in Project.
 - b. I/O listed in table format showing point name, type of device, manufacturer, model number, and cross-reference to product data sheet number.
 - c. A graphic showing location of control I/O in proper relationship to HVAC system.
 - d. Wiring diagram with each I/O point having a unique identification and indicating labels for all wiring terminals.

- e. Unique identification of each I/O that to be consistently used between different drawings showing same point.
- f. Elementary wiring diagrams of controls for HVAC equipment motor circuits including interlocks, switches, relays, and interface to DDC controllers.
- g. Narrative sequence of operation.
- h. Graphic sequence of operation, showing all inputs and output logical blocks.
- 7. Control panel drawings indicating the following:
 - a. Panel dimensions, materials, size, and location of field cable, raceways, and tubing connections.
 - b. Interior subpanel layout, drawn to scale and showing all internal components, cabling and wiring raceways, nameplates, and allocated spare space.
 - c. Front, rear, and side elevations and nameplate legend.
 - d. Unique drawing for each panel.
- 8. DDC system network riser diagram indicating the following:
 - a. Each device connected to network with unique identification for each.
 - b. Interconnection of each different network in DDC system.
 - c. For each network, indicate communication protocol, speed, and physical means of interconnecting network devices, such as copper cable type, or optical fiber cable type. Indicate raceway type and size for each.
 - d. Each network port for connection of an operator workstation or other type of operator interface with unique identification for each.
- 9. DDC system electrical power riser diagram indicating the following:
 - a. Each point of connection to field power with requirements (volts/phase/hertz/amperes/connection type) listed for each.
 - b. Each control power supply including, as applicable, transformers, power-line conditioners, transient voltage suppression and high filter noise units, DC power supplies, and UPS units with unique identification for each.
 - c. Each product requiring power with requirements (volts/phase/hertz/amperes/connection type) listed for each.
 - d. Power wiring type and size, race type, and size for each.
- 10. Monitoring and control signal diagrams indicating the following:
 - a. Control signal cable and wiring between controllers and I/O.
 - b. Point-to-point schematic wiring diagrams for each product.
 - c. Control signal tubing to sensors, switches, and transmitters.
 - d. Process signal tubing to sensors, switches, and transmitters.
- 11. Color graphics indicating the following:
 - a. Itemized list of color graphic displays to be provided.
 - b. For each display screen to be provided, a true color copy showing layout of pictures, graphics, and data displayed.
 - c. Intended operator access between related hierarchical display screens.

F. System Description:

- 1. Full description of DDC system architecture, network configuration, operator interfaces and peripherals, servers, controller types and applications, gateways, routers and other network devices, and power supplies.
- 2. Complete listing and description of each report, log and trend for format and timing, and events that initiate generation.
- 3. System and product operation under each potential failure condition including, but not limited to, the following:
 - a. Loss of power.
 - b. Loss of network communication signal.
 - c. Loss of controller signals to inputs and outputs.
 - d. Operator workstation failure.
 - e. Server failure.
 - f. Gateway failure.

- g. Network failure.
- h. Controller failure.
- i. Instrument failure.
- j. Control damper and valve actuator failure.
- 4. Complete bibliography of documentation and media to be delivered to Owner.
- 5. Description of testing plans and procedures.
- 6. Description of Owner training.
- 7. Post Construction Air and Water Balance:
 - a. All systems (water and air side) shall have readings taken and documented. This shall include but not limited to all water flows at valves, devices, coils, etc., Air flows at terminal boxes, AHUs, exhaust fans, duct traverses, etc.
- G. Delegated Design Submittals: For DDC system products and installation indicated as being delegated.
 - 1. Supporting documentation showing DDC system design complies with performance requirements indicated, including calculations and other documentation necessary to prove compliance.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings:
 - 1. Plan drawings, reflected ceiling plans, or Building Information Model (BIM), and corresponding product installation details, drawn to scale, showing the items described in this Section and coordinated with all building trades.
- B. Qualification Statements:
 - 1. Systems Provider's Qualification Data:
 - a. Resume of project manager assigned to Project.
 - b. Resumes of application engineering staff assigned to Project.
 - c. Resumes of installation and programming technicians assigned to Project.
 - d. Resumes of service technicians assigned to Project.
 - e. Brief description of past project including physical address, floor area, number of floors, building system cooling and heating capacity, and building's primary function.
 - f. Description of past project DDC system, noting similarities to Project scope and complexity indicated.
 - g. Names of staff assigned to past project that will also be assigned to execute work of this Project.
 - h. Owner contact information for past project including name, phone number, and email address.
 - i. Contractor contact information for past project including name, phone number, and email address.
 - j. Architect and Engineer contact information for past project including name, phone number, and email address.
 - 2. Manufacturer's qualification data.
 - 3. Testing agency's qualification data.
- C. Product Certificates:
 - 1. Data Communications Protocol Certificates:
 - a. Certifying that each proposed DDC system component complies with ASHRAE 135.
 - b. Certifying that each proposed DDC system component complies with LonWorks.
- D. Source Quality-Control Reports: For DDC system equipment and components.

- E. Field Quality-Control Reports: For DDC system equipment and components.
- F. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For DDC system.
 - 1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include the following:
 - a. Project Record Drawings of as-built versions of submittal Shop Drawings provided in electronic PDF format.
 - b. Testing and commissioning reports and checklists of completed final versions of reports, checklists, and trend logs.
 - c. As-built versions of submittal Product Data.
 - d. Names, addresses, email addresses, and 24-hour telephone numbers of Installer and service representatives for DDC system and products.
 - e. Operator's manual with procedures for operating control systems including logging on and off, handling alarms, producing point reports, trending data, overriding computer control, and changing set points and variables.
 - f. Programming manuals with description of programming language and syntax, of statements for algorithms and calculations used, of point database creation and modification, of program creation and modification, and of editor use.
 - g. Engineering, installation, and maintenance manuals that explain how to do the following:
 - 1) Design and install new points, panels, and other hardware.
 - 2) Perform preventive maintenance and calibration.
 - 3) Debug hardware problems.
 - 4) Repair or replace hardware.
 - h. Documentation of all programs created using custom programming language including set points, tuning parameters, and object database.
 - i. Backup copy of graphic files, programs, and databases on electronic media.
 - j. List of recommended spare parts with part numbers and suppliers.
 - k. Complete original-issue documentation, installation, and maintenance information for furnished third-party hardware including computer equipment and sensors.
 - l. Complete original-issue copies of furnished software, including operating systems, custom programming language, operator workstation software, and graphics software.
 - m. Licenses, guarantees, and warranty documents.
 - n. Recommended preventive maintenance procedures for system components, including schedule of tasks such as inspection, cleaning, and calibration; time between tasks; and task descriptions.
 - o. Owner training materials.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Material: Furnish extra materials and parts to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- B. Include product manufacturers' recommended parts lists for proper product operation over four - year period following warranty period. Parts list to be indicated for each year.
- C. Furnish parts, as indicated by manufacturer's recommended parts list, for product operation during two -year period following warranty period.

- D. Furnish quantity indicated of matching product(s) in Project inventory for each unique size and type of following:
1. Network Controller: One .
 2. Programmable Application Controller: One .
 3. Application-Specific Controller: One .
 4. General-Purpose Relay: One .
 5. Multifunction Time-Delay Relay: One .
 6. Latching Relay: One .
 7. Current-Sensing Relay: One .
 8. Combination On-Off Status Sensor and On-Off Relay: One .
 9. Transformer: One .
 10. DC Power Supply: One .

1.7 QUALITY ASSURANCE

- A. DDC System Manufacturer Qualifications:
1. Nationally recognized manufacturer of DDC systems and products.
 2. DDC systems with similar requirements to those indicated for a continuous period of five years within time of bid.
 3. DDC systems and products that have been successfully tested and in use on at least three past projects.
 4. Having complete published catalog literature, installation, operation, and maintenance manuals for all products intended for use.
 5. Having full-time in-house employees for the following:
 - a. Product research and development.
 - b. Product and application engineering.
 - c. Product manufacturing, testing, and quality control.
 - d. Technical support for DDC system installation training, commissioning, and troubleshooting of installations.
 - e. Owner operator training.

1.8 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace products that fail in materials or workmanship within specified warranty period.
1. Adjust, repair, or replace failures at no additional cost or reduction in service to Owner.
 2. Include updates or upgrades to software and firmware if necessary to resolve deficiencies.
 - a. Install updates only after receiving Owner's written authorization.
 3. Perform warranty service during normal business hours and commence within 8 hours of Owner's warranty service request.
 4. Warranty Period: Two year(s) from date of Substantial Completion.
 - a. For Gateway: Two -year parts and labor warranty for each.

PART 2 - PRODUCTS

2.1 DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ABB, Electrification Business.
 2. Automated Logic Corporation.
 3. Delta Controls Inc.
 4. Honeywell International Inc.
 5. Johnson Controls, Inc.

6. KMC Controls, Inc.
7. Schneider Electric USA, Inc.
8. Siemens Industry, Inc., Building Technologies Division.
9. Trane.

2.2 DDC SYSTEM DESCRIPTION

- A. Microprocessor-based monitoring and control including analog/digital conversion and program logic. A control loop or subsystem in which digital and analog information is received and processed by a microprocessor, and digital control signals are generated based on control algorithms and transmitted to field devices to achieve a set of predefined conditions.
 1. DDC system consisting of high-speed, peer-to-peer network of distributed DDC controllers, other network devices, operator interfaces, and software.
 2. The existing Johnson Controls (JCI) ADS graphic interface and associated server is located at the DPW facility. New controls shall integrate BacNet/IP controllers to existing server and graphic interface. All building level controls, hardware required at both DPW (if required) or new buildings controls shall be included in this contract. Selected contractor shall include JCI as a partner for the scope needed on the existing equipment. The final product shall be a seamless system where all newly bid buildings (Sanburg, Civic Center Library, Police Station and Courthouse as well as existing DPW) will be accessible from a single point front end graphical interface.
 3. During the integration scope of work, JCI shall add a floor plan graphic for the existing DPW facility and link thermostats and equipment drill downs to the areas that are served
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 WEB ACCESS

- A. DDC system to be web based.
 1. Web-Based Access to DDC System:
 - a. DDC system software based on server thin-client architecture, designed around open standards of web technology. DDC system server accessed using a web browser over DDC system network, using Owner's LAN, and remotely over Internet through Owner's LAN.
 - b. Intent of thin-client architecture is to provide operators complete access to DDC system via a web browser. No special software other than a web browser is required to access graphics, point displays, and trends; to configure trends, points, and controllers; and to edit programming.
 - c. Password-protected web access.
 2. Web-Compatible Access to DDC System:
 - a. server to perform overall system supervision and configuration, graphical user interface, management report generation, and alarm annunciation.
 - b. DDC system to support web browser access to building data. Operator using a standard web browser is able to access control graphics and change adjustable set points.
 - c. Password-protected web access.

2.4 PERFORMANCE REQUIREMENTS

- A. Delivery of Selected Control Devices: Deliver to equipment and systems manufacturers for factory installation and to HVAC systems installers for field installation.
- B. DDC System Speed:
 1. Response Time of Connected I/O:

- a. Update AI point values connected to DDC system at least every two seconds for use by DDC controllers. Points used globally to also comply with this requirement.
 - b. Update BI point values connected to DDC system at least every two seconds for use by DDC controllers. Points used globally to also comply with this requirement.
 - c. AO points connected to DDC system to begin to respond to controller output commands within two second(s). Global commands to also comply with this requirement.
 - d. BO point values connected to DDC system to respond to controller output commands within two second(s). Global commands to also comply with this requirement.
 2. Display of Connected I/O:
 - a. Update and display analog point COV connected to DDC system at least every five seconds for use by operator.
 - b. Update and display binary point COV connected to DDC system at least every five seconds for use by operator.
 - c. Update and display alarms of analog and digital points connected to DDC system within 15 seconds of activation or change of state.
 - d. Update graphic display refresh within four seconds.
 - e. Point change of values and alarms displayed from workstation to workstation when multiple operators are viewing from multiple workstations to not exceed graphic refresh rate indicated.
- C. Network Bandwidth: Design each network of DDC system to include spare bandwidth with DDC system operating under normal and heavy load conditions indicated. Calculate bandwidth usage, and apply a safety factor to ensure that requirement is satisfied when subjected to testing under worst case conditions. Minimum spare bandwidth as follows:
1. Level 1 Networks: 20 .
 2. Level 2 Networks: 20 .
 3. Level 3 Networks: 20 .
- D. DDC System Data Storage:
1. Include capability to archive not less than 36 consecutive months of historical data for all I/O points connected to system, including alarms, event histories, transaction logs, trends, and other information indicated.
 2. Local Storage:
 - a. Provide server with data storage indicated. Server(s) to use IT industry standard database platforms and be capable of functions described in "DDC Data Access" Paragraph.
 3. Cloud Storage:
 - a. Provide application-based and web browser interfaces to configure, upload, download, and manage data and to service plan with storage adequate to store all data for term indicated. Cloud storage uses IT industry standard database platforms and is capable of functions described in "DDC Data Access" Paragraph.
- E. DDC Data Access:
1. When logged into the system, operator able to also interact with any DDC controllers connected to DDC system as required for functional operation of DDC system.
 2. Use for application configuration; for archiving, reporting, and trending of data; for operator transaction archiving and reporting; for network information management; for alarm annunciation; and for operator interface tasks and controls application management.
- F. Future Expandability:
1. DDC system size is expandable to an ultimate capacity of at least 1.25 times total I/O points indicated.

2. Design and install system networks to achieve ultimate capacity with only addition of DDC controllers, I/O, and associated wiring and cable. Design and install initial network infrastructure to support ultimate capacity without having to remove and replace portions of network installation.
 3. Operator interfaces installed initially do not require hardware and software additions and revisions for system when operating at ultimate capacity.
- G. Input Point Values Displayed Accuracy: Meet following end-to-end overall system accuracy, including errors associated with meter, sensor, transmitter, lead wire or cable, and analog to digital conversion.
1. Flow:
 - a. Air: Within 5 percent of design flow rate.
 - b. Air (Terminal Units): Within 5 percent of design flow rate.
 - c. Water: Within 5 percent of design flow rate.
 2. Gas:
 - a. Carbon Dioxide: Within 50 ppm.
 - b. Refrigerant: Within 5 percent of reading.
 3. Pressure:
 - a. Air, Ducts and Equipment: 1 percent of instrument range .
 - b. Space: Within 1 percent of instrument range .
 - c. Water: Within 1 percent of instrument range .
 4. Temperature, Dry Bulb:
 - a. Air: Within 0.5 deg F .
 - b. Space: Within 0.5 deg F .
 - c. Outdoor: Within 1 deg F .
 - d. Chilled Water: Within 1 deg F .
 - e. Condenser Water: Within 1 deg F .
 - f. Heating Hot Water: Within 1 deg F .
- H. Precision of I/O Reported Values: Values reported in database and displayed to have following precision:
1. Flow:
 - a. Air: Nearest 1/10th of a cubic feet per minute through 100 cfm; nearest cubic feet per minute between 100 and 1000 cfm; nearest 10 cfm between 1000 and 10,000 cfm; nearest 100 cfm above 10,000 cfm.
 2. Gas:
 - a. Carbon Dioxide (ppm): Nearest ppm.
 - b. Refrigerant (ppm): Nearest ppm.
 3. Position, Dampers and Valves (Percentage Open): Nearest 1 percent.
 4. Pressure:
 - a. Air, Ducts and Equipment: Nearest 1/10th of an inch water closet.
 - b. Space: Nearest 1/100th of an inch water closet.
 - c. Water: Nearest 1/10 of a pound per square inch gauge through 100 psig; nearest pound per square inch gauge above 100 psig.
 5. Temperature:
 - a. Air, Ducts and Equipment: Nearest 1/10th of a degree.
 - b. Outdoor: Nearest degree.
 - c. Space: Nearest 1/10th of a degree.
 - d. Chilled Water: Nearest 1/10th of a degree.
 - e. Condenser Water: Nearest 1/10th of a degree.
 - f. Heating Hot Water: Nearest degree.
- I. Control Stability: Control variables indicated within the following limits:
1. Flow:

- a. Air, Ducts and Equipment, except Terminal Units: Within 5 percent of design flow rate.
 - b. Air, Terminal Units: Within 5 percent of design flow rate.
 - c. Water: Within 5 percent of design flow rate.
 - 2. Gas:
 - a. Carbon Dioxide: Within 50 ppm.
 - 3. Pressure:
 - a. Air, Ducts and Equipment: 1 percent of instrument range .
 - b. Space: Within 1 percent of instrument range .
 - c. Water: Within 1 percent of instrument range .
 - 4. Temperature, Dry Bulb:
 - a. Air: Within 1 deg F 0.5 deg F .
 - b. Space: Within 1 deg F .
 - c. Chilled Water: Within 1 deg F .
 - d. Condenser Water: Within 1 deg F .
 - e. Heating Hot Water: Within 1 deg F .
- J. Environmental Conditions for Controllers, Gateways, and Routers:
- 1. Products to operate without performance degradation under ambient environmental temperature, pressure, and humidity conditions encountered for installed location.
 - a. If product alone cannot comply with requirement, install product in a protective enclosure that is isolated and protected from conditions impacting performance. Enclosure to be internally insulated, electrically heated, cooled, and ventilated as required by product and application.
 - 2. Protect products with enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. House products not available with integral enclosures complying with requirements indicated in protective secondary enclosures. Installed location dictates the following NEMA 250 enclosure requirements:
 - a. Indoors, Heated with Non-Filtered Ventilation: Type 2 .
 - b. Mechanical Equipment Rooms:
 - 1) Chiller and Boiler Rooms: Type 4X .
- K. Environmental Conditions for Instruments and Actuators:
- 1. Instruments and actuators to operate without performance degradation under the ambient environmental temperature, pressure, humidity, and vibration conditions specified and encountered for installed location.
 - a. If instruments and actuators alone cannot comply with requirement, install instruments and actuators in protective enclosures that are isolated and protected from conditions impacting performance. Enclosure is internally insulated, electrically heated, and ventilated as required by instrument and application.
 - 2. Protect instruments, actuators, and accessories with enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. House instruments and actuators not available with integral enclosures complying with requirements indicated in protective secondary enclosures. Installed location is to dictate the following NEMA 250 enclosure requirements:
 - a. Outdoors, Protected: Type 3 .
 - b. Indoors, Heated with Non-Filtered Ventilation: Type 2 .
 - c. Mechanical Equipment Rooms:
 - 1) Chiller and Boiler Rooms: Type 4X .
- L. DDC System Reliability:
- 1. Design, install, and configure DDC controllers, gateways, routers, to yield a MTBF of at least 40,000 hours, based on a confidence level of at least 90 percent. MTBF value includes any failure for any reason to any part of products indicated.

2. If required to comply with MTBF indicated, include DDC system and product redundancy to maintain DCC system, and associated systems and equipment being controlled, operational, and under automatic control.
3. See Drawings for critical systems and equipment that require a higher degree of DDC system redundancy than MTBF indicated.

M. Electric Power Quality:

1. Power-Line Surges:
 - a. Protect susceptible DDC system products connected to ac power circuits from power-line surges to comply with requirements of IEEE C62.41.1 and IEEE C62.41.2.
 - b. Do not use fuses for surge protection.
 - c. Test protection in the normal mode and in the common mode, using the following two waveforms:
 - 1) 10-by-1000-microsecond waveform with a peak voltage of 1500 V and a peak current of 60 A.
 - 2) 8-by-20-microsecond waveform with a peak voltage of 1000 V and a peak current of 500 A.
2. Power Conditioning:
 - a. Protect susceptible DDC system products connected to ac power circuits from irregularities and noise rejection. Characteristics of power-line conditioner are as follows:
 - 1) At 85 percent load, output voltage to not deviate by more than plus or minus 1 percent of nominal when input voltage fluctuates between minus 20 percent to plus 10 percent of nominal.
 - 2) During load changes from zero to full load, output voltage to not deviate by more than 3 percent of nominal.
 - 3) Accomplish full correction of load switching disturbances within five cycles, and 95 percent correction within two cycles of onset of disturbance.
 - 4) Total harmonic distortion to not exceed 2 percent at full load.
3. Ground Fault: Protect products from ground fault by providing suitable grounding. Products to not fail due to ground fault condition.

N. UPS:

1. DDC system products powered by UPS units are to include the following:
 - a. Servers.
 - b. Gateways.

O. Continuity of Operation after Electric Power Interruption:

1. Equipment and associated factory-installed controls, field-installed controls, electrical equipment, and power supply connected to building normal and backup power systems are to automatically return equipment and associated controls to operating state occurring immediately before loss of normal power, without need for manual intervention by operator when power is restored either through backup power source or through normal power if restored before backup power is brought online.

2.5 SYSTEM ARCHITECTURE

A. System architecture consisting of no more than two or three levels of LANs.

1. Level 2 LAN: Connect network controllers and operator workstations.
2. Level 1 or Level 2 LAN: Connect Level 1 or Level 2 programmable application controllers to other programmable application controllers and to network controllers.
3. Level 2 or Level 3 LAN: Connect Level 2 or Level 3 application-specific controllers to programmable application controllers and to network controllers application-specific controllers.

- B. Minimum Data Transfer and Communication Speed:
 - 1. LAN Connecting Operator Workstations and Network Controllers: 100 Mbps.
 - 2. LAN Connecting Programmable Application Controllers: 100 kbps.
 - 3. LAN Connecting Application-Specific Controllers: 115,000 bps.
- C. Provide dedicated and separated DDC system LANs that are not shared with other building systems and tenant data and communication networks.
- D. Provide modular system architecture with inherent ability to expand to not less than 1.5 times system size indicated with no impact to performance indicated.
- E. Configure architecture to minimize need to remove and replace existing network equipment for system expansion.
- F. Make number of LANs and associated communication transparent to operator. Configure all I/O points residing on any LAN to be capable of global sharing between all system LANs.
- G. Design system to eliminate dependence on any single device for system alarm reporting and control execution. Design each controller to operate independently by performing own control, alarm management, and historical data collection.
- H. Special Network Architecture Requirements:
 - 1. Air-Handling Systems: For control applications of an air-handling system that consists of air-handling unit(s) and VAV terminal units, include a dedicated LAN of application-specific controllers serving VAV terminal units connected directly to controller that is controlling air-handling-system air-handling unit(s). Basically, create DDC system LAN that aligns with air-handling system being controlled.

2.6 DDC SYSTEM OPERATOR INTERFACES

- A. Operator Means of System Access: Operator able to access entire DDC system through any of multiple means including, but not limited to, the following:
 - 1. Remote connection through web access.
- B. Make access to system, regardless of operator means used, transparent to operator.
- C. Network Ports: For hardwired connection of desktop or portable workstation. Network port easily accessible, properly protected, clearly labeled, and installed at the following locations:
 - 1. Each mechanical equipment room.
 - 2. Each boiler room.
 - 3. Each chiller room.
 - 4. Each different roof level with roof-mounted equipment connected to DDC system.
- D. Portable Workstations:
 - 1. Provide a quantity of two
 - 2. Connect portable workstation(s) to DDC system Level 1 LAN through a communications port directly on LAN or through a communications port on a DDC controller.
 - 3. Able to communicate with any device located on any DDC system LAN.
 - 4. Connect to DDC system Level 2 or Level 3 LAN through a communications port on an application-specific controller, or a room temperature sensor connected to an application-specific controller.
 - 5. Connect to system through a wireless router connected to Level 1 LAN.
 - 6. Connect to system through a cellular broadband data service.
 - 7. Portable workstation able to communicate with any device connected to any system LAN regardless of point of physical connection to system.

8. Monitor, program, schedule, adjust set points, and report capabilities of I/O connected anywhere in system.
9. Have dynamic graphic displays that are identical to desktop workstations.

E. POT:

1. Connect DDC controller through a communications port local to controller.
2. Able to communicate with any DDC system controller that is directly connected or connected to DDC system.

F. Mobile Device (Tablet and Smart Phone):

1. Connect Owner-furnished mobile devices to system through a wireless router connected to LAN and cellular data service.
2. Able to communicate with any DDC controller connected to DDC system using dedicated application and secure web access.

G. Critical Alarm Reporting:

1. Send operator-selected critical alarms to notify operator of critical alarms that require immediate attention.
2. Send alarm notification to multiple recipients that are assigned for each alarm.
3. Notify recipients by any or all means, including email, text message, and prerecorded phone message to mobile and landline phone numbers.

H. Simultaneous Operator Use: Capable of accommodating up to five simultaneous operators that are accessing DDC system through any of operator interfaces indicated.

2.7 NETWORKS

A. Acceptable networks for connecting programmable application controllers include the following:

1. IP.

B. Acceptable networks for connecting application-specific controllers include the following:

1. IP.

2.8 NETWORK COMMUNICATION PROTOCOL

A. Use network communication protocol(s) that are open to Owner and available to other companies for use in making future modifications to DDC system.

B. ASHRAE 135 Protocol:

1. Use ASHRAE 135 communication protocol as sole and native protocol used throughout entire DDC system.
2. DDC system to not require use of gateways except to integrate HVAC equipment and other building systems and equipment; not required to use ASHRAE 135 communication protocol.
3. If used, gateways to connect to DDC system using ASHRAE 135 communication protocol and Project object properties and read/write services indicated by interoperability schedule.
4. Use operator workstations, controllers, and other network devices that are tested and listed by BTL.

C. Industry Standard Protocols:

1. Use any one or a combination of the following industry standard protocols for network communication while complying with other DDC system requirements indicated:
 - a. ASHRAE 135.

2. Provide portions of DDC system networks using ASHRAE 135 communication protocol as an open implementation of network devices complying with ASHRAE 135. Use network devices that are tested and listed by BTL.
3. Provide portions of DDC system networks using CTA-709.1-D communication protocol as an open implementation of LonWorks technology using CTA-709.1-D communication protocol and using LonMark SNVTs as defined in LonMark SNVT list exclusively for DDC system.
4. Provide portions of DDC system networks using Modbus Application Protocol Specification V1.1b3 communication protocol as an open implementation of network devices and technology complying with Modbus Application Protocol Specification V1.1b3.
5. Use gateways to connect networks and network devices with different protocols.

2.9 Desktop Display

- A. Provide one (1) 85" LED screen for the maintenance office with connectivity to display all current alarms
- B. Provide a wall mounting kit for screen

2.10 SERVERS

- A. Description: x86-based permanently installed computer used for client-server computing.
- B. Mounting: Rack .
- C. Power: Dual power supply, minimum 300 W.
- D. Performance Requirements:
 1. Performance requirements may dictate equipment exceeding minimum requirements indicated.
 2. ENERGY STAR compliant.
 3. Redundant Array of Independent Discs: Two configuration.
 4. Drive Bays: Eight at 2.5 inches or eight at 3.5 inches.
 5. Hard-Drive Storage: Two
 6. Network Interface: Dual-port gigabit Ethernet .
- E. Servers are to include the following:
 1. Full-feature backup server (server and backup minimum requirement).
 2. Software licenses.
 3. Cable installation between server(s) and network.
- F. Web Server:
 1. If required to be separate, include web server hardware and software to match, except backup server is not required.
 2. Firewalls between server web and networks.
 3. Password protection for access to server from web server.
 4. Cable installation between the server(s) and building Ethernet network.
- G. Power each server through a dedicated UPS unit.

2.11 SYSTEM SOFTWARE

- A. System Software Minimum Requirements:

1. Real-time multitasking and multiuser 64-bit operating system that allows concurrent multiple operator workstations operating and concurrent execution of multiple real-time programs and custom program development.
2. Operating system capable of operating DOS and Microsoft Windows applications.
3. Database management software to manage all data on an integrated and non-redundant basis. Additions and deletions to database are to be without detriment to existing data. Include cross linkages so no data required by a program can be deleted by an operator until that data have been deleted from respective programs.
4. Network communications software to manage and control multiple network communications to provide exchange of global information and execution of global programs.
5. Operator interface software to include day-to-day operator transaction processing, alarm and report handling, operator privilege level and data segregation control, custom programming, and online data modification capability.
6. Scheduling software to schedule centrally based time and event, temporary, and exception day programs.

B. Operator Interface Software:

1. Minimize operator training through use of English language pronouncing and English language point identification.
2. Minimize use of a typewriter-style keyboard through use of a pointing device similar to a mouse.
3. Make operator sign-off a manual operation or, if no keyboard or mouse activity takes place, an automatic sign-off.
4. Make automatic sign-off period programmable from one to 60 minutes in one-minute increments on a per operator basis.
5. Record operator sign-on and sign-off activity and send to printer.
6. Security Access:
 - a. Use password control for operator access to DDC system.
 - b. Assign an alphanumeric password (field assignable) to each operator.
 - c. Grant operators access to DDC system by entry of proper password.
 - d. Use same operator password regardless of which computer or other operator interface means are used.
 - e. Automatically update additions or changes made to passwords.
 - f. Assign each operator an access level to restrict access to data and functions the operator is capable of performing.
 - g. Provide software with at least five access levels.
 - h. Assign each menu item an access level so that a one-for-one correspondence between operator assigned access level(s) and menu item access level(s) is required to gain access to menu item.
 - i. Display menu items to operator with those capable of access highlighted. Make menu and operator access level assignments online programmable and under password control.
7. Data Segregation:
 - a. Include data segregation for control of specific data routed to a workstation, to an operator or to a specific output device, such as a printer.
 - b. Make segregation groups selectable such as "fire points," "fire points on second floor," "space temperature points," "HVAC points," and so on.
 - c. Make points assignable to multiple segregation groups. Display and output of data to printer or monitor is to occur where there is a match of operator or peripheral segregation group assignment and point segregations.
 - d. Make alarms displayed and printed at each peripheral to which segregation allows, but only those operators assigned to peripheral and having proper authorization level will be allowed to acknowledge alarms.

- e. Assign operators and peripherals to multiple segregation groups and make all assignments online programmable and under password control.
 - 8. Operators able to perform commands including, but not limited to, the following:
 - a. Start or stop selected equipment.
 - b. Adjust set points.
 - c. Add, modify, and delete time programming.
 - d. Lock and unlock alarm reporting for each point.
 - e. Override control loop set points.
 - f. Enter temporary override schedules.
 - g. Define holiday schedules.
 - h. Change time and date.
 - i. Enter and modify analog alarm limits.
 - j. Enter and modify analog warning limits.
 - k. View limits.
 - l. Display logic programming for each control sequence.
 - 9. Reporting:
 - a. Generated automatically and manually.
 - b. Sent to displays, printers and disc files.
 - c. Types of Reporting:
 - 1) General listing of points.
 - 2) List points currently in alarm.
 - 3) List of off-line points.
 - 4) List points currently in override status.
 - 5) List of disabled points.
 - 6) List points currently locked out.
 - 7) List weekly schedules.
 - 8) List holiday programming.
 - 9) List of limits and deadbands.
 - 10. Summaries: For specific points, for a logical point group, for an operator selected group(s), or for entire system without restriction due to hardware configuration.
- C. Graphic Interface Software:
- 1. Include a full interactive graphical selection means of accessing and displaying system data to operator. Include at least five levels with the penetration path operator assignable (for example, site, building, floor, air-handling unit, and supply temperature loop). Native language descriptors assigned to menu items are to be operator defined and modifiable under password control.
 - 2. Include a hierarchical-linked dynamic graphic operator interface for accessing and displaying system data and commanding and modifying equipment operation. Interface is to use a pointing device with pull-down or penetrating menus, color, and animation to facilitate operator understanding of system.
 - 3. Include at least 10 levels of graphic penetration with the hierarchy operator assignable.
 - 4. Make descriptors for graphics, points, alarms, and such modifiable through operator's workstation under password control.
 - 5. Make graphic displays online user definable and modifiable using the hardware and software provided.
 - 6. Make data displayed within a graphic assignable regardless of physical hardware address, communication, or point type.
 - 7. Make graphics online programmable and under password control.
 - 8. Make points assignable to multiple graphics where necessary to facilitate operator understanding of system operation.
 - 9. Graphics to also contain software points.
 - 10. Penetration within a graphic hierarchy is to display each graphic name as graphics are selected to facilitate operator understanding.

11. Provide a back-trace feature to permit operator to move upward in the hierarchy using a pointing device. Back trace to show all previous penetration levels. Include operator with option of showing each graphic full-screen size with back trace as horizontal header or by showing a "stack" of graphics, each with a back trace.
12. Display operator accessed data on the monitor.
13. Provide operator with ability to select further penetration using pointing device to click on a site, building, floor, area, equipment, and so on. Display defined and linked graphic below that selection.
14. Include operator with means to directly access graphics without going through penetration path.
15. Make dynamic data assignable to graphics.
16. Display points (physical and software) with dynamic data provided by DDC system with appropriate text descriptors, status or value, and engineering unit.
17. Use color, rotation, or other highly visible means, to denote status and alarm states. Make colors variable for each class of points, as chosen by operator.
18. Provide dynamic points with operator adjustable update rates on a per point basis from one second to over a minute .
19. For operators with appropriate privilege, command points directly from display using pointing device.
 - a. For an analog command point such as set point, display current conditions and limits so operator can position new set point using pointing device.
 - b. For a digital command point such as valve position, show valve in current state such as open or closed so operator could select alternative position using pointing device.
 - c. Include a keyboard equivalent for those operators with that preference.
20. Give operator ability to split or resize viewing screen into quadrants to show one graphic on one quadrant of screen and other graphics or spreadsheet, bar chart, word processing, curve plot, and other information on other quadrants on screen. This feature allows real-time monitoring of one part of system while displaying other parts of system or data to better facilitate overall system operation.
21. Help Features:
 - a. Online context-sensitive help utility to facilitate operator training and understanding.
 - b. Bridge to further explanation of selected keywords and contain text and graphics to clarify system operation.
 - 1) If help feature does not have ability to bridge on keywords for more information, provide a complete set of user manuals in an indexed word-processing program, which runs concurrently with operating system software.
 - c. Available for Every Menu Item:
 - 1) Index items for each system menu item.
22. Provide graphic generation software to allow operator ability to add, modify, or delete system graphic displays.
 - a. Include libraries of symbols depicting HVAC symbols such as fans, coils, filters, dampers, valves pumps, and electrical symbols similar to those indicated.
 - b. Use a pointing device in conjunction with a drawing program to allow operator to perform the following:
 - 1) Define background screens.
 - 2) Define connecting lines and curves.
 - 3) Locate, orient, and size descriptive text.
 - 4) Define and display colors for all elements.
 - 5) Establish correlation between symbols or text and associated system points or other displays.

D. Project-Specific Graphics: Graphics documentation including, but not limited to, the following:

City of Livonia
 Building Controls Upgrade
 OHM PROJECT # 0090210060

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1. Site plan showing each building, and additional site elements, which are being controlled or monitored by DDC system.
2. Plan for each building floor, including interstitial floors, and each roof level of each building, showing the following:
 - a. Room layouts with room identification and name.
 - b. Locations and identification of all monitored and controlled HVAC equipment and other equipment being monitored and controlled by DDC system.
 - c. Location and identification of each hardware point being controlled or monitored by DDC system.
3. Control schematic for each of following, including a graphic system schematic representation, similar to that indicated on Drawings, with point identification, set point and dynamic value indication, sequence of operation and control logic diagram.
4. Graphic display for each piece of equipment connected to DDC system through a data communications link. Include dynamic indication of all points associated with equipment.
5. DDC system network riser diagram that shows schematic layout for entire system including all networks and all controllers, gateways and other network devices.

E. Customizing Software:

1. Software to modify and tailor DDC system to specific and unique requirements of equipment installed, to programs implemented and to staffing and operational practices planned.
2. Online modification of DDC system configuration, program parameters, and database using menu selection and keyboard entry of data into preformatted display templates.
3. At a minimum, include the following modification capability:
 - a. Operator Assignment: Designation of operator passwords, access levels, point segregation, and auto sign-off.
 - b. Peripheral Assignment: Assignment of segregation groups and operators to consoles and printers, designation of backup workstations and printers, designation of workstation header points, and enabling and disabling of printout of operator changes.
 - c. System Configuration and Diagnostics: Communications and peripheral port assignments, DDC controller assignments to network, DDC controller enable and disable, assignment of command trace to points, and application programs and initiation of diagnostics.
 - d. System Text Addition and Change: English or native language descriptors for points, segregation groups and access levels and action messages for alarms, run time, and trouble condition.
 - e. Time and Schedule Change: Time and date set, time and occupancy schedules, exception and holiday schedules, and daylight-savings time schedules.
 - f. Point related change capability is to include the following:
 - 1) System and point enable and disable.
 - 2) Run-time enable and disable.
 - 3) Assignment of points to segregation groups, calibration tables, lockout, and run time and to a fixed I/O value.
 - 4) Assignment of alarm and warning limits.
 - g. Application program change capability is to include the following:
 - 1) Enable and disable of software programs.
 - 2) Programming changes.
 - 3) Assignment of comfort limits, global points, time and event initiators, time and event schedules and enable and disable time and event programs.
4. Provide software to allow operator ability to add points, or groups of points, to DDC system and to link them to energy optimization and management programs. Make additions and modifications online programmable using operator workstations, downloaded to other network devices and entered into their databases. After verification

- of point additions and associated program operation, upload and record database on hard drive and disc for archived record.
- 5. Include high-level language programming software capability for implementation of custom DDC programs. Include a compiler, linker, and up- and down-load capability.
- 6. Include a library of DDC algorithms, intrinsic control operators, arithmetic, logic, and relational operators for implementation of control sequences. Also include, at a minimum, the following:
 - a. Proportional control (P).
 - b. Proportional plus integral (PI).
 - c. Proportional plus integral plus derivative (PID).
 - d. Adaptive and intelligent self-learning control.
 - 1) Algorithm monitors loop response to output corrections and adjust loop response characteristics in accordance with time constant changes imposed.
 - 2) Algorithm operates in a continuous self-learning manner and retains in memory a stored record of system dynamics so that on system shut down and restart, learning process starts from where it left off.
- 7. Fully implemented intrinsic control operators including sequence, reversing, ratio, time delay, time of day, highest select AO, lowest select AO, analog controlled digital output, analog control AO, and digitally controlled AO.
- 8. Logic operators such as "And," "Or," "Not," and others that are part of a standard set available with a high-level language.
- 9. Arithmetic operators such as "Add," "Subtract," "Multiply," "Divide," and others that are part of a standard set available with a high-level language.
- 10. Relational operators such as "Equal to," "Not Equal to," "Less Than," "Greater Than," and others that are part of a standard set available with a high-level language.

F. Alarm Handling Software:

- 1. Include alarm handling software to report all alarm conditions monitored and transmitted through DDC controllers, gateways and other network devices.
- 2. Include first in, first out handling of alarms in accordance with alarm priority ranking, with most critical alarms first, and with buffer storage in case of simultaneous and multiple alarms.
- 3. Make alarm handling active at all times to ensure that alarms are processed even if an operator is not currently signed on to DDC system.
- 4. Alarms display is to include the following:
 - a. Indication of alarm condition such as "Abnormal Off," "Hi Alarm," and "Low Alarm."
 - b. "Analog Value" or "Status" group and point identification with native language point descriptor such as "Space Temperature, Building 110, 2nd Floor, Room 212."
 - c. Discrete per point alarm action message, such as "Call Maintenance Dept. Ext-5561."
 - d. Include extended message capability to allow assignment and printing of extended action messages. Capability is to be operator programmable and assignable on a per point basis.
- 5. Direct alarms to appropriate operator workstations, printers, and individual operators by privilege level and segregation assignments.
- 6. Send email alarm messages to designated operators.
- 7. Send email, page, text, and voice messages to designated operators for critical alarms.
- 8. Categorize and process alarms by class.
 - a. Class 1:
 - 1) Associated with fire, security, and other extremely critical equipment monitoring functions; have alarm, trouble, return to normal, and acknowledge conditions printed and displayed.
 - 2) Unacknowledged alarms to be placed in unacknowledged alarm buffer.

- 3) All conditions make an audible alarm sound and require individual acknowledgment to silence audible sound.
- b. Class 2:
 - 1) Critical, but not life-safety related, and processed same as Class 1 alarms, except do not require individual acknowledgment.
 - 2) Acknowledgement may be through a multiple alarm acknowledgment.
- c. Class 3:
 - 1) General alarms; printed, displayed, and placed in unacknowledged alarm buffer queues.
 - 2) Configure so each new alarm received makes an audible alarm sound that are silenced by "acknowledging" alarm or by pressing a "silence" key.
 - 3) Make acknowledgement of queued alarms either on an individual basis or through a multiple alarm acknowledgement.
 - 4) Print alarms returning to normal condition without an audible alarm sound or require acknowledgment.
- d. Class 4:
 - 1) Routine maintenance or other types of warning alarms.
 - 2) Alarms to be printed only, with no display, no audible sound and no acknowledgment required.
9. Include an unacknowledged alarm indicator on display to alert operator that there are unacknowledged alarms in system. Operator able to acknowledge alarms on an individual basis or through a multiple alarm acknowledge key, depending on alarm class.
10. To ensure that no alarm records are lost, make it possible to assign a backup printer to accept alarms in case of failure of primary printer.

G. Reports and Logs:

1. Include reporting software package that allows operator to select, modify, or create reports using DDC system I/O point data available.
2. Setup each report so data content, format, interval, and date are operator definable.
3. Sample and store report data on DDC controller, within storage limits of DDC controller, and then uploaded to archive on server for historical reporting.
4. Make it possible for operators to obtain real-time logs of all I/O points by type or status, such as alarm, point lockout, or normal.
5. Store reports and logs on servers hard drives in a format that is readily accessible by other standard software applications, including spreadsheets and word processing.
6. Make reports and logs readily printable and set to be print either on operator command or at a specific time each day.

H. Standard Reports: Provide standard DDC system reports with operator ability to customize reports later.

1. All I/O: With current status and values.
2. Alarm: All current alarms, except those in alarm lockout.
3. Disabled I/O: All I/O points that are disabled.
4. Alarm Lockout I/O: All I/O points in alarm lockout, whether manual or automatic.
5. Alarm Lockout I/O in Alarm: All I/O in alarm lockout that are currently in alarm.
6. Logs:
 - a. Alarm history.
 - b. System messages.
 - c. System events.
 - d. Trends.

I. HVAC Equipment Reports: Prepare Project-specific reports.

1. Chiller Report: Daily report showing operating conditions of each chiller in accordance with ASHRAE 147 including, but not limited to, the following:
 - a. Chilled-water entering temperature.

- b. Chilled-water leaving temperature.
- c. Chilled-water flow rate.
- d. Chilled-water inlet and outlet pressures.
- e. Evaporator refrigerant pressure and temperature.
- f. Condenser refrigerant pressure and liquid temperature.
- g. Condenser-water entering temperature.
- h. Condenser-water leaving temperature.
- i. Condenser-water flow rate.
- j. Refrigerant levels.
- k. Compressor refrigerant discharge temperature.
- l. Compressor refrigerant suction temperature.
- m. Motor amperes per phase.
- n. Motor volts per phase.
- o. Refrigerant monitor level (PPM).
- p. Purge exhaust time or discharge count.
- q. Ambient temperature (dry bulb and wet bulb).
- r. Date and time logged.

J. Standard Trends:

- 1. Trend all I/O point present values, set points, and other parameters indicated for trending.
- 2. Associate trends into groups, and setup a trend report for each group.
- 3. Store trends within DDC controller and uploaded to hard drives automatically on reaching percent of DDC controller buffer limit, or by operator request, or by archiving time schedule.
- 4. Preset trend intervals for each I/O point after review with Owner.
- 5. Make trend intervals operator selectable from 10 seconds up to 60 minutes. Make minimum number of consecutive trend values stored at one time 100 per variable.
- 6. When drive storage memory is full, overwrite oldest data with most recent data.
- 7. Make archived and real-time trend data available for viewing numerically and graphically by operators.

K. Programming Software:

- 1. Include programming software to execute sequences of operation indicated.
- 2. Include programming routines in simple and easy to follow logic with detailed text comments describing what the logic does and how it corresponds to sequence of operation.
- 3. Programming Software: As follows :
 - a. Graphic Based: Use a library of function blocks made from preprogrammed code designed for DDC control systems.
 - 1) Assemble function blocks with interconnection lines that represent to control sequence in a flowchart.
 - 2) Make programming tools viewable in real time to show present values and logical results of each function block.
- 4. Include means for detecting programming errors and testing software control strategies with a simulation tool before implementing in actual control. Simulation tool may be inherent with programming software or as a separate product.

L. Database Management Software:

- 1. Where a separate SQL database is used for information storage, include database management software that separates database monitoring and managing functions by supporting multiple separate windows.
- 2. Secure database access using standard SQL authentication including ability to access data for use outside of DDC system applications.
- 3. Include database management function summarizing information on trend, alarm, event, and audit for the following database management actions:

- a. Backup.
 - b. Purge.
 - c. Restore.
- 4. Database management software supporting the following:
 - a. Statistics: Display database server information and trend, alarm, event, and audit information on database.
 - b. Maintenance: Include method of purging records from trend, alarm, event, and audit databases by supporting separate screens for creating a backup before purging, selecting database, and allowing for retention of a selected number of day's data.
 - c. Backup: Include means to create a database backup file and select a storage location.
 - d. Restore: Include a restricted means of restoring a database by requiring operator to have proper security level.
- 5. Information of current database activity, including the following:
 - a. Ready.
 - b. Purging record from a database.
 - c. Action failed.
 - d. Refreshing statistics.
 - e. Restoring database.
 - f. Shrinking a database.
 - g. Backing up a database.
 - h. Resetting Internet information services.
 - i. Starting network device manager.
 - j. Shutting down the network device manager.
 - k. Action successful.
- 6. Database management software monitoring functions is to continuously read database information once operator has logged on.
- 7. Include operator notification through on-screen pop-up display and email message when database value has exceeded a warning or alarm limit.
- 8. Monitoring settings window with the following Sections:
 - a. Allow operator to set and review scan intervals and start times.
 - b. Email: Allow operator to create and review email and phone text messages to be delivered when a warning or an alarm is generated.
 - c. Warning: Allow operator to define warning limit parameters, set reminder frequency, and link email message.
 - d. Alarm: Allow operator to define alarm limit parameters, set reminder frequency, and link email message.
 - e. Database Login: Protect system from unauthorized database manipulation by creating a read access and a write access for each of trend, alarm, event, and audit databases as well as operator proper security access to restore a database.
- 9. Monitoring settings taskbar with following informational icons:
 - a. Normal: Indicates by color and size, or other easily identifiable means, that all databases are within their limits.
 - b. Warning: Indicates by color and size, or other easily identifiable means, that one or more databases have exceeded their warning limit.
 - c. Alarm: Indicates by color and size, or other easily identifiable means, that one or more databases have exceeded their alarm limit.

2.12 ASHRAE 135 GATEWAYS

- A. Include BACnet communication ports, whenever available as an equipment OEM standard option, for integration via a single communication cable. BACnet-controlled plant equipment includes, but is not limited to, boilers, chillers, and variable-speed drives.

- B. Include gateways to connect BACnet to legacy systems where indicated, existing non-BACnet devices, and existing non-BACnet DDC-controlled equipment.
- C. Include with each gateway an interoperability schedule showing each point or event on legacy side that BACnet "client" will read, and each parameter that BACnet network will write to. Describe this interoperability of BACnet services, or BIBBs, defined in ASHRAE 135, Annex K.
- D. Gateway Minimum Requirements:
 - 1. Read and view all readable object properties on non-BACnet network to BACnet network, and vice versa, where applicable.
 - 2. Write to all writable object properties on non-BACnet network from BACnet network, and vice versa, where applicable.
 - 3. Include single-pass (only one protocol to BACnet without intermediary protocols) translation from non-BACnet protocol to BACnet, and vice versa.
 - 4. Comply with requirements of Data Sharing Read Property, Data Sharing Write Property, Device Management Dynamic Device Binding-B, and Device Management Communication Control BIBBs in accordance with ASHRAE 135.
 - 5. Hardware, software, software licenses, and configuration tools for operator-to-gateway communications.
 - 6. Backup programming and parameters on CD media with ability to modify, download, backup, and restore gateway configuration.

2.13 ASHRAE 135 PROTOCOL ANALYZER

- A. Analyzer and required cables and fittings for connection to ASHRAE 135 network.
- B. Include the following minimum capabilities:
 - 1. Capture and store to a file data traffic on all network levels.
 - 2. Measure bandwidth usage.
 - 3. Filtering options with ability to ignore select traffic.

2.14 DDC CONTROLLERS

- A. DDC system consisting of a combination of network controllers, programmable application controllers, and application-specific controllers to satisfy performance requirements indicated.
- B. DDC controllers to perform monitoring, control, energy optimization, and other requirements indicated.
- C. DDC controllers are to use a multitasking, multiuser, real-time digital control microprocessor with a distributed network database and intelligence.
- D. Each DDC controller is capable of full and complete operation as a completely independent unit and as a part of DDC system wide distributed network.
- E. Environment Requirements:
 - 1. Controller hardware suitable for anticipated ambient conditions.
 - 2. Controllers located in conditioned space rated for operation at 32 to 120 deg F .
 - 3. Controllers located outdoors rated for operation at 40 to 150 deg F .
- F. Power and Noise Immunity:
 - 1. Operate controller at 90 to 110 percent of nominal voltage rating and perform an orderly shutdown below 80 percent of nominal voltage.
 - 2. Protect against electrical noise of 5 to 120 Hz and from keyed radios with up to 5 W of power located within 36 inches of enclosure.

- G. DDC Controller Spare Processing Capacity:
 - 1. Include spare processing memory for each controller. RAM, PROM, or EEPROM will implement requirements indicated with the following spare memory:
 - a. Network Controllers: 50 percent.
 - b. Programmable Application Controllers: Not less than 60 percent.
 - c. Application-Specific Controllers: Not less than 70 percent.
 - 2. Memory for DDC controller's operating system and database are to include the following:
 - a. Monitoring and control.
 - b. Energy management, operation, and optimization applications.
 - c. Alarm management.
 - d. Historical trend data of all connected I/O points.
 - e. Maintenance applications.
 - f. Operator interfaces.
 - g. Monitoring of manual overrides.

- H. DDC Controller Spare I/O Point Capacity: Include spare I/O point capacity for each controller as follows:
 - 1. Network Controllers:
 - a. 10 percent of each AI, AO, BI, and BO point connected to controller.
 - b. Minimum Spare I/O Points per Controller:
 - 1) AIs: Two .
 - 2) AOs: Two .
 - 3) BIs: Three .
 - 4) BOs: Three .
 - 5) Option to provide universal I/O to meet spare requirements.
 - 2. Programmable Application Controllers:
 - a. 10 percent of each AI, AO, BI, and BO point connected to controller.
 - b. Minimum Spare I/O Points per Controller:
 - 1) AIs: Two .
 - 2) AOs: Two .
 - 3) BIs: Three .
 - 4) BOs: Three .
 - 5) Option to provide universal I/O to meet spare requirements.
 - 3. Application-Specific Controllers:
 - a. 10 percent of each AI, AO, BI, and BO point connected to controller.
 - b. Minimum Spare I/O Points per Controller:
 - 1) AIs: One .
 - 2) AOs: One .
 - 3) BIs: One .
 - 4) BOs: One .
 - 5) Option to provide universal I/O to meet spare requirements.

- I. Maintenance and Support: Include the following features to facilitate maintenance and support:
 - 1. Mount microprocessor components on circuit cards for ease of removal and replacement.
 - 2. Means to quickly and easily disconnect controller from network.
 - 3. Means to quickly and easily access connect to field test equipment.
 - 4. Visual indication that controller electric power is on, of communication fault or trouble, and that controller is receiving and sending signals to network.

- J. General Requirements for CTA-709.1-D DDC Controllers:
 - 1. LonMark certified.
 - 2. Distinguishable and accessible switch, button, or pin, when pressed is to broadcast its 48-bit Node ID and Program ID over network.
 - 3. TP/FT-10 transceiver in accordance with CTA-709.3 and connections for TP/FT-10 control network wiring.

4. TP/XF-1250 transceiver in accordance with CTA-709.3 and connections for TP/XF-1250 control network wiring.
 5. Communicate using CTA-709.1-D protocol.
 6. Controllers configured into subnets, as required, to comply with performance requirements indicated.
 7. Network communication through LNS network management and database standard for CTA-709.1-D network devices.
 8. Locally powered, not powered through network connection.
 9. Functionality required to support applications indicated including, but not limited to, the following:
 - a. I/Os indicated and as required to support sequence of operation and application in which it is used. SNVTs to have meaningful names identifying the value represented by SNVT. Unless SNVT of an appropriate engineering type is unavailable, all network variables to be of SNVT with engineering units appropriate to value the variable represents.
 - b. Configurable through SCPTs defined in LonMark SCPT List, operator-defined UCPTs, network configuration inputs (NCIs) of SNVT type defined in LonMark SNVT List, NCIs of an operator-defined network variable type, or hardware settings on controller itself for all settings and parameters used by application in which it is used.
 10. Programmable controllers comply with "LonMark Interoperability Guidelines" and have LonMark certification.
- K. I/O Point Interface:
1. Connect hardwired I/O points to network, programmable application, and application-specific controllers.
 2. Protect I/O points so shorting of point to itself, to another point, or to ground will not damage controller.
 3. Protect I/O points from voltage up to 24 V of any duration so that contact will not damage controller.
 4. AIs:
 - a. Include monitoring of low-voltage (0 to 10 V dc), current (4 to 20 mA) and resistance signals from thermistor and RTD sensors.
 - b. Compatible with, and field configurable to, sensor and transmitters installed.
 - c. Perform analog-to-digital (A-to-D) conversion with a minimum resolution of 8 bits or better to comply with accuracy requirements indicated.
 - d. Signal conditioning including transient rejection for each AI.
 - e. Capable of being individually calibrated for zero and span.
 - f. Incorporate common-mode noise rejection of at least 50 dB from 0 to 100 Hz for differential inputs, and normal-mode noise rejection of at least 20 dB at 60 Hz from a source impedance of 10000 ohms.
 - g. External conversion resistors are not permitted.
 5. AOs:
 - a. Perform analog-to-digital (A-to-D) conversion with a minimum resolution of 8 bits or better to comply with accuracy requirements indicated.
 - b. Output signals range of 4 to 20 mA dc or 0 to 10 V dc as required to include proper control of output device.
 - c. Capable of being individually calibrated for zero and span.
 - d. Drift is to be not greater than 0.4 percent of range per year.
 - e. External conversion resistors are not permitted.
 6. BIs:
 - a. Accept contact closures and ignore transients of less than 5 ms duration.
 - b. Isolate and protect against an applied steady-state voltage of up to 180 V ac peak.

- c. Include a wetting current of at least 12 mA to be compatible with commonly available control devices and protected against effects of contact bounce and noise.
 - d. Sense "dry contact" closure without external power (other than that provided by controller) being applied.
 - e. Pulse accumulation input points complying with all requirements of BIs and accept up to 10 pulses per second for pulse accumulation. Include buffer to totalize pulses. Pulse accumulator is to accept rates of at least 20 pulses per second. Reset the totalized value to zero on operator's command.
7. BOs:
- a. Include relay contact closures or triac outputs for momentary and maintained operation of output devices.
 - 1) Relay contact closures to have a minimum duration of 0.1 second and at least 180 V of isolation.
 - 2) Include electromagnetic interference suppression on all output lines to limit transients to non-damaging levels.
 - 3) Minimum contact rating to be 1 A at 24 V ac.
 - 4) Triac outputs to have at least 180 V of isolation and minimum contact rating of 1 A at 24 V ac.
 - b. Include BOs with two-state operation or a pulsed low-voltage signal for pulse-width modulation control.
 - c. BOs to be selectable for either normally open or normally closed operation.
 - d. Include tristate outputs (two coordinated BOs) for control of three-point, floating-type electronic actuators without feedback.
 - e. Limit use of three-point floating devices to VAV terminal unit control applications. Control algorithms to operate actuator to one end of its stroke once every 24 hours for verification of operator tracking.

2.15 NETWORK CONTROLLERS

- A. General:
- 1. Include adequate number of controllers to achieve performance indicated.
 - 2. Provide one or more independent, standalone, microprocessor-based network controllers to manage global strategies indicated.
 - 3. Include enough memory to support its operating system, database, and programming requirements with spare memory indicated.
 - 4. Share data between networked controllers and other network devices.
 - 5. Operating system of controller to manage I/O communication signals to allow distributed controllers to share real and virtual object information and allow for central monitoring and alarms.
 - 6. Include network controllers with a real-time clock.
 - 7. Controller to continually check status of its processor and memory circuits. If an abnormal operation is detected, controller is to assume a predetermined failure mode and generate an alarm notification.
 - 8. Make controllers fully programmable.
- B. Communication:
- 1. Network controllers communicate with other devices on DDC system Level 1 network.
 - 2. Network controller to also perform routing if connected to network of programmable application controllers and application-specific controllers.
- C. Operator Interface:
- 1. Equip controllers with a service communications port for connection to POT or mobile device.
 - 2. Local Keypad and Display:

- a. Equip controller with local keypad and digital display for interrogating and editing data.
 - b. Use of keypad and display requires a security password.
- D. Serviceability:
 - 1. Equip controller with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
 - 2. Connect wiring and cable connections to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
 - 3. Maintain Basic Input Output System (BIOS) and programming information in event of power loss for at least 72 hours.

2.16 PROGRAMMABLE APPLICATION CONTROLLERS

- A. General:
 - 1. Include adequate number of controllers to achieve performance indicated.
 - 2. Provide enough memory to support its operating system, database, and programming requirements with spare memory indicated.
 - 3. Share data between networked controllers and other network devices.
 - 4. Include controller with operating system to manage I/O communication signals to allow distributed controllers to share real and virtual object information and allow for central monitoring and alarms.
 - 5. Include controllers with a real-time clock.
 - 6. Controller is to continually check status of its processor and memory circuits. If an abnormal operation is detected, controller assumes a predetermined failure mode and generates an alarm notification.
 - 7. Fully programmable.
- B. Communication:
 - 1. Programmable application controllers are to communicate with other devices on network.
- C. Operator Interface:
 - 1. Equip controllers with a service communications port for connection to POT or mobile device.
 - 2. Local Keypad and Display:
 - a. Equip controller with local keypad and digital display for interrogating and editing data.
 - b. Protect use of keypad and display by security password.
- D. Serviceability:
 - 1. Equip controller with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
 - 2. Connect wiring and cable connections to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
 - 3. Maintain BIOS and programming information in event of power loss for at least 72 hours.

2.17 APPLICATION-SPECIFIC CONTROLLERS

- A. Description: Microprocessor-based controllers, which through hardware or firmware design are dedicated to control a specific piece of equipment or system. Controllers are not fully user-programmable but are configurable and customizable for operation of equipment they are designed to control.
 - 1. Capable of standalone operation and continued control functions without being connected to network.
 - 2. Share data between networked controllers and other network devices.

- B. Communication: Application-specific controllers are to communicate with other application-specific controllers and devices on network, and to programmable application controllers and network controllers.
- C. Operator Interface: Equip controllers with a service communications port for connection to POT or mobile device . Connection is to extend to port on space temperature sensor that is connected to controller.
- D. Serviceability:
 - 1. Equip controller with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
 - 2. Connect wiring and cable connections to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
 - 3. Use nonvolatile memory and maintain all BIOS and programming information in event of power loss.

2.18 SPECIFIC DEVICES

- A. Low Limit Sensors
 - 1. Low Limit sensors shall be of the auto-reset variety
- B. Space sensors
 - 1. Space sensors where called to have user adjustment shall allow the user to make adjustments of +/- 3 deg F

2.19 CONTROLLER SOFTWARE

- A. General:
 - 1. Software applications are to reside and operate in controllers. Edit applications through operator workstations or mobile devices.
 - 2. Identify I/O points by up to 30 -character point name and up to 16 -character point descriptor. Use same names throughout, including at operator workstations.
 - 3. Execute control functions within controllers using DDC algorithms.
 - 4. Configure controllers to use stored default values to ensure fail-safe operation. Use default values when there is a failure of a connected input instrument or loss of communication of a global point value.
- B. Security:
 - 1. Secure operator access using individual security passwords and user names.
 - 2. Passwords restrict operator to points, applications, and system functions as assigned by system manager.
 - 3. Record operator log-on and log-off attempts.
 - 4. Protect from unauthorized use by automatically logging off after last keystroke. Make the delay time operator-definable.
- C. Scheduling: Include capability to schedule each point or group of points in system. Each schedule is to consist of the following:
 - 1. Weekly Schedules:
 - a. Include separate schedules for each day of week.
 - b. Each schedule should include capability for start, stop, optimal start, optimal stop, and night economizer.
 - c. Each schedule may consist of up to 10 events.
 - d. When a group of objects are scheduled together, include capability to adjust start and stop times for each member.
 - 2. Exception Schedules:

- a. Include ability for operator to designate any day of the year as an exception schedule.
 - b. Exception schedules may be defined up to a year in advance. Once an exception schedule is executed, it will be discarded and replaced by regular schedule for that day of week.
- 3. Holiday Schedules:
 - a. Include capability for operator to define up to 99 special or holiday schedules.
 - b. Place schedules on scheduling calendar with ability to repeated each year.
 - c. Operator able to define length of each holiday period.
- D. System Coordination:
 - 1. Include standard application for proper coordination of equipment.
 - 2. Include operator with a method of grouping together equipment based on function and location.
 - 3. Include groups that may be for use in scheduling and other applications.
- E. Binary Alarms:
 - 1. Set each binary point to alarm based on operator-specified state.
 - 2. Include capability to automatically and manually disable alarming.
- F. Analog Alarms:
 - 1. Provide each analog object with both high and low alarm limits.
 - 2. Include capability to automatically and manually disable alarming.
- G. Alarm Reporting:
 - 1. Include ability for operators to determine action to be taken in event of an alarm.
 - 2. Route alarms to appropriate operator workstations based on time and other conditions.
 - 3. Include ability for alarms to start programs, print, be logged in event logs, generate custom messages, and display graphics.
- H. Remote Communication:
 - 1. Include ability for system to notify operators by phone message, text message, and email in event of an alarm.
- I. Sequencing: Include application software based on sequences of operation indicated to properly sequence chillers, boilers, and other applicable HVAC equipment.
- J. Control Loops:
 - 1. Support any of the following control loops, as applicable to control required:
 - a. Two-position (on/off, open/close, slow/fast) control.
 - b. Proportional control.
 - c. Proportional plus integral (PI) control.
 - d. Proportional plus integral plus derivative (PID) control.
 - 1) Include PID algorithms with direct or reverse action and anti-windup.
 - 2) Algorithm to calculate a time-varying analog value used to position an output or stage a series of outputs.
 - 3) Make controlled variable, set point, and PID gains operator-selectable.
 - e. Adaptive (automatic tuning).
- K. Staggered Start: Prevent all controlled equipment from simultaneously restarting after a power outage. Make the order which equipment (or groups of equipment) is started, along with the time delay between starts, operator-selectable.
- L. Anti-Short Cycling:
 - 1. Protect BO points from short cycling.

2. Feature to allow minimum on-time and off-time to be selected.

M. On and Off Control with Differential:

1. Include algorithm that allows BO to be cycled based on a controlled variable and set point.
2. Use direct- or reverse-acting algorithm and incorporate an adjustable differential.

N. Run-Time Totalization:

1. Include software to totalize run-times for all BI and BO points.
2. Assign a high run-time alarm, if required, by operator.

2.20 ENCLOSURES

A. General:

1. House each controller and associated control accessories in single enclosure. Enclosure is to serve as central tie-in point for control devices such as switches, transmitters, transducers, power supplies, and transformers.
2. Do not house more than one controller in single enclosure.
3. Include enclosure door with key locking mechanism. Key locks alike for all enclosures and include one pair of keys per enclosure.
4. Equip doors of enclosures housing controllers and components with analog or digital displays with windows to allow visual observation of displays without opening enclosure door.
5. Individual, wall-mounted, single-door enclosures maximum of 36 inches wide and 48 inches high.
6. Individual, wall-mounted, double-door enclosures maximum of 60 inches wide and 36 inches high.
7. Include wall-mounted enclosures with brackets suitable for mounting enclosures to wall or freestanding support stand as indicated.
8. Supply each enclosure with complete set of as-built schematics, tubing, and wiring diagrams and product literature located in pocket on inside of door.

B. Internal Arrangement:

1. Arrange internal layout of enclosure to group and protect electric, and electronic components associated with controller, but not an integral part of controller.
2. Arrange layout to group similar products together.
3. Include a barrier between line-voltage and low-voltage electrical and electronic products.
4. Factory or shop install products, tubing, cabling, and wiring complying with requirements and standards indicated.
5. Terminate field cable and wire using heavy-duty terminal blocks.
6. Include spare terminals, equal to not less than 20 percent of used terminals.
7. Include spade lugs for stranded cable and wire.
8. Install maximum of two wires on each side of terminal.
9. Include enclosure field electric power supply with toggle-type switch located at entrance inside enclosure to disconnect power.
10. Include enclosure with line-voltage nominal 20 A GFCI duplex receptacle for service and testing tools. Wire receptacle on hot side of enclosure disconnect switch and include with 5 A circuit breaker.
11. Mount products within enclosure on removable internal panel(s).
12. Include products mounted in enclosures with engraved, laminated phenolic nameplates (black letters on a white background). Nameplates are to have at least 1/4-inch- high lettering.
13. Route tubing cable and wire located inside enclosure within a raceway with continuous removable cover.

14. Label each end of cable, wire, and tubing in enclosure following an approved identification system that extends from field I/O connection and all intermediate connections throughout length to controller connection.
15. Size enclosure internal panel to include at least 15 percent spare area on face of panel.

C. Environmental Requirements:

1. Evaluate temperature and humidity requirements of each product to be installed within each enclosure.
2. Calculate enclosure internal operating temperature considering heat dissipation of all products installed within enclosure and ambient effects (solar, conduction, and wind) on enclosure.
3. Where required by application, include temperature-controlled electrical heat to maintain inside of enclosure above minimum operating temperature of product with most stringent requirement.
4. Where required by application, include temperature-controlled ventilation fans with filtered louver(s) to maintain inside of enclosure below maximum operating temperature of product with most stringent requirement.
5. Include temperature-controlled cooling within the enclosure for applications where ventilation fans cannot maintain inside temperature of enclosure below maximum operating temperature of product with most stringent requirement.
6. Where required by application, include humidity-controlled electric dehumidifier or cooling to maintain inside of enclosure below maximum relative humidity of product with most stringent requirement and to prevent surface condensation within enclosure.

2.21 RELAYS

A. General-Purpose Relays:

1. NRTL listed.
2. Heavy-duty, electromechanical type; rated for at least 10 A at 250 V ac and 60 Hz.
3. SPDT, DPDT, or three-pole double-throw, as required by control application.
4. Plug-in-style relay with 8-pin octal or multiblade plug for DPDT relays and 11-pin octal or multiblade plug for three-pole double-throw relays.
5. Construct contacts of silver, silver alloy, or gold.
6. Enclose relay in a clear transparent polycarbonate dust-tight cover.
7. Include LED indication and push-to-test button to test manual operation of relay without power on coil.
8. Performance:
 - a. Mechanical Life: At least 10 million cycles.
 - b. Electrical Life: At least cycles at rated load.
 - c. Pickup Time: 15 ms or less.
 - d. Dropout Time: 10 ms or less.
 - e. Pull-in Voltage: 85 percent of rated voltage.
 - f. Dropout Voltage: 50 percent of nominal rated voltage.
 - g. Power Consumption: 2 VA or less.
 - h. Ambient Operating Temperatures: Minus 40 to 115 deg F.
9. Equip relays with coil transient suppression to limit transients to non-damaging levels.
10. Plug each relay into industry-standard, 35 mm DIN rail socket. Plug all relays located in control panels into sockets that are mounted on a DIN rail.
11. Include relay socket with screw terminals. Mold into socket the coincident screw terminal numbers.

B. Multifunction Time-Delay Relays:

1. NRTL listed.
2. Continuous-duty type, rated for at least 10 A at 240 V ac and 60 Hz.

3. Relay with up to 4 programmable functions to provide on/off delay, interval, and recycle timing functions.
4. Plug-in-style relay with either multi-pin or blade plug.
5. Construct contacts of silver, silver alloy, or gold.
6. Enclose relay in a dust-tight cover.
7. Include knob and dial scale for alternative digital interface for setting delay time.
8. Visual Status Indication: Power "On" and Output "On" status.
9. Performance:
 - a. Mechanical Life: At least 10 million cycles.
 - b. Electrical Life: At least 100,000 cycles at rated load.
 - c. Timing Ranges: Multiple ranges from 0.1 seconds to 100 minutes.
 - d. Repeatability: Within 2 percent.
 - e. Recycle Time: 45 ms.
 - f. Minimum Pulse-Width Control: 50 ms.
 - g. Power Consumption: 5 VA or less.
 - h. Ambient Operating Temperatures: Minus 40 to 115 deg F.
10. Equip relays with transient suppression to limit transients to non-damaging levels.
11. Plug each relay into industry-standard, 35 mm DIN rail socket. Plug all relays located in control panels into sockets that are mounted on a DIN rail.
12. Include relay socket with screw terminals. Mold into socket the coincident screw terminal numbers.

C. Current Sensing Relays:

1. NRTL listed.
2. Monitors ac current.
3. Independent adjustable controls for pickup and dropout current.
4. Energized when supply voltage is present and current is above pickup setting.
5. De-energizes when monitored current is below dropout current.
6. Dropout current is adjustable from 50 to 95 percent of pickup current.
7. Visual indication of contact status.
8. Include current transformer, if required for application.
9. House current sensing relay and current transformer if required in its own enclosure. Use NEMA 250, Type 1 or Type 12 enclosure for indoors applications and NEMA 250, Type 4 or Type 4X for outdoor applications.

2.22 ELECTRICAL POWER DEVICES

A. Control Transformers:

1. Sizing Criteria: Size control transformers for total connected load, plus additional 25 percent of connected load for future spare capacity.
2. Transformer Minimum Capacity: 40 VA.
3. Protection: Provide transformers with both primary and secondary fuses. Integral circuit breaker is acceptable in lieu of fuses.
4. Enclosure: House control transformers in NEMA 250 enclosures, type as indicated in "Performance Requirements" Article for application.

2.23 UNINTERRUPTABLE POWER SUPPLY (UPS) UNITS

A. Furnish local UPS units, of type indicated, installed with DDC system.

B. DIN Rail Mounted UPS:

1. Provide continuous, regulated output power without using batteries during brown-out, surge, and spike conditions.
2. Performance:
 - a. Capacity: Load not to exceed 75 percent of rated capacity.

- b. Efficiency: Minimum 94 percent.
 - c. Input Voltage: Single phase, 120 V ac, compatible with field power source.
 - d. Load Power Factor Range (Crest Factor): 0.65 to 1.0 .
 - e. Output Voltage: 101 to 132 V ac, while input voltage varies between 89 and 152 V ac.
 - f. On Battery Output Voltage: Sine wave.
 - g. Inverter Overload Capacity: Minimum 150 percent for 30 seconds.
 - h. Battery Backup: 10 minutes of operation at full load with battery power.
 - i. Battery Recharge Time: Maximum of four hours to 90 percent capacity after full discharge.
 - j. Transfer Time: 6 ms.
 - k. Surge Voltage Withstand Capacity: IEEE C62.41.1 and IEEE C62.41.2, Categories A and B.
- 3. Automatic bypass operation during fault or overload conditions.
 - 4. Integral line-interactive, power condition topology to eliminate all power contaminants.
 - 5. Include power switch and visual indication of power, battery, fault.
 - 6. Include audible alarm of faults with silence feature.
 - 7. Include dry contacts (digital output points) for low battery condition and battery-on (primary utility power failure) and connect points to DDC system.
 - 8. Batteries: Sealed; maintenance free; replacement without dropping load.
- C. UPS Models through 3000 VA: Rack.
- 1. NRTL Listing: UL 1778.
 - 2. Provide continuous, regulated output power without using batteries during brown-out, surge, and spike conditions.
 - 3. Performance:
 - a. Capacity: Load not to exceed 75 percent of UPS rated capacity.
 - b. Efficiency: Complying with ENERGY STAR requirements; minimum 91 percent.
 - c. Input Voltage: Single phase, 120 V ac, plus 20 to minus 30 percent.
 - d. Power Factor: Minimum 0.95 at full load.
 - e. Output Voltage: Single phase, 120 V ac, within 2 percent.
 - f. Inverter overload capacity to be minimum 150 percent for 30 seconds.
 - g. Battery Backup: 10 minutes of operation at full load with battery power.
 - h. Battery Recharge Time: Maximum of 6 hours to 90 percent capacity.
 - i. Transfer Time: 0 ms.
 - 4. LCD display with operator interface.
 - 5. Receptacles: Minimum 6 , NEMA WD 1, NEMA WD 6 Configuration 5-15R or 5-20R receptacles.
 - 6. Automatic bypass operation during fault or overload conditions.
 - 7. Remote Alarms: Include dry contacts (digital output points) for low battery condition and battery-on (primary utility power failure) and connect points to DDC system.
 - 8. Batteries: Sealed; maintenance free.
 - 9. Enclosures: Install tower models in enclosures rated for location. Install rack models installed on matching racks, as applicable to particular installation location and space availability/configuration.

2.24 PRESSURE INSTRUMENT SIGNAL AIR PIPING AND TUBING

- A. Products in this article are intended for use with the following:
 - 1. Main air and signal air to pneumatically controlled instruments, actuators, and other control devices and accessories.
 - 2. Signal air between pressure instruments, such as sensors, switches, transmitters, controllers, and accessories.
- B. Polyethylene Tubing: (Pressure Instrument Signal Air).

1. Fire-resistant, black virgin polyethylene in accordance with ASTM D1248, Type 1, Class C, and Grade 5.
2. Complying with stress crack test in accordance with ASTM D1693.
3. Diameter, as required by application, of not less than nominal 1/4 inch.
4. Polyethylene Tubing Connectors and Fittings - Brass, Barb Fittings:
 - a. Tapered and beaded hose barbs of push-on design; intended for low-pressure applications only.

2.25 CONTROL WIRE AND CABLE

- A. Single, Twisted-Shielded, Instrumentation Cable 24 V and Less:
 1. Wire Size: Minimum 18 AWG.
 2. Conductors: Twisted, 7/24 soft annealed copper stranding with a 2- to 2.5-inch lay.
 3. Conductor Insulation: Nominal 15-mil thickness, constructed from flame-retardant PVC.
 4. Conductor Insulation Colors:
 - a. Twisted Pair: Black and white.
 - b. Twisted Triad: Black, red, and white.
 5. Shielding: 100 percent type, 1.35-mil aluminum/polymer tape, helically applied with 25 percent overlap, and aluminum side in with tinned copper drain wire.
 6. Outer Jacket Insulation: 300 V, 105 deg C rating, and Type PLTC cable.
 7. Furnish on spools.
- B. LAN and Communication Cable: Comply with DDC system manufacturer requirements for network being installed.

2.26 RACEWAYS

- A. Comply with requirements in Section 26 05 33.13 "Conduits for Electrical Systems" and Section 26 05 33.16 "Boxes and Covers for Electrical Systems" for electrical power raceways and boxes.
- B. Comply with requirements in Section 27 05 28 "Pathways for Communications Systems" for raceways for balanced twisted pair cables and optical fiber cables.

2.27 OPTICAL FIBER CABLE AND CONNECTORS

- A. Comply with requirements in Section 27 13 23 "Communications Optical Fiber Backbone Cabling" for optical fiber backbone cabling and connectors.
- B. Comply with requirements in Section 27 15 23 "Communications Optical Fiber Horizontal Cabling" for optical fiber horizontal cabling and connectors.

2.28 ACCESSORIES

2.29 IDENTIFICATION

- A. Control Equipment, Instruments, and Control Devices:
 1. Self-adhesive label bearing unique identification.
 - a. Include instruments with unique identification identified by equipment being controlled or monitored, followed by point identification.
 2. Letter size as follows:
 - a. Servers: Minimum of 0.5 inch high.
 - b. DDC Controllers: Minimum of 0.5 inch high.
 - c. Gateways: Minimum of 0.5 inch high.
 - d. Repeaters: Minimum of 0.5 inch high.

- e. Enclosures: Minimum of 0.5 inch high.
 - f. Electrical Power Devices: Minimum of 0.25 inch high.
 - g. Accessories: Minimum of 0.25 inch high.
 - h. Instruments: Minimum of 0.25 inch high.
 - i. Control Damper and Valve Actuators: Minimum of 0.25 inch high.
 - 3. Engraved phenolic consisting of three layers of rigid laminate. Top and bottom layers color-coded black with contrasting white center exposed by engraving through outer layer.
 - 4. Fastened with drive pins.
 - 5. Instruments, control devices, and actuators with Project-specific identification tags having unique identification numbers following requirements indicated and provided by original manufacturer do not require additional identification.
- B. Valve Tags:
- 1. Brass tags and brass chains attached to valve.
 - 2. Tag Size: Minimum 1.5 inches in diameter.
 - 3. Include tag with unique valve identification indicating control influence such as flow, level, pressure, or temperature; followed by location of valve, and followed by three-digit sequential number. For example: TV-1.001.
 - 4. Valves with Project-specific identification tags having unique identification numbers following requirements indicated and provided by original manufacturer do not require an additional tag.
- C. Raceway and Boxes:
- 1. Comply with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."
 - 2. Paint cover plates on junction boxes and conduit same color as tape banding for conduits. After painting, label cover plate "HVAC Controls" using engraved phenolic tag.
 - 3. For raceways housing pneumatic tubing, add phenolic tag labeled "HVAC Instrument Air Tubing."
 - 4. For raceways housing air signal tubing, add phenolic tag labeled "HVAC Air Signal Tubing."
- D. Equipment Warning Labels:
- 1. Self-adhesive label with pressure-sensitive adhesive back and peel-off protective jacket.
 - 2. Lettering size at least 14-point type with white lettering on red background.
 - 3. Warning label to read "CAUTION-Equipment operated under remote automatic control and may start or stop at any time without warning. Switch electric power disconnecting means to OFF position before servicing."
 - 4. Lettering to be enclosed in a white line border. Edge of label is to extend at least 0.25 inch beyond white border.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Verify compatibility with and suitability of substrates.
- B. Examine roughing-in for instruments installed in piping to verify actual locations of connections before installation.
- C. Examine roughing-in for instruments installed in duct systems to verify actual locations of connections before installation.

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- D. Examine walls, floors, roofs, and ceilings for suitable conditions where product will be installed.
- E. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install products to satisfy more stringent of all requirements indicated.
- B. Install products level, plumb, parallel, and perpendicular with building construction.
- C. If codes and referenced standards are more stringent than requirements indicated, comply with requirements in codes and referenced standards.
- D. Fabricate openings and install sleeves in ceilings, floors, roof, and walls required by installation of products. Before proceeding with drilling, punching, and cutting, check for concealed work to avoid damage. Patch, flash, grout, seal, and refinish openings to match adjacent condition.
- E. Firestop Penetrations Made in Fire-Rated Assemblies: Comply with requirements in Section 07 84 13 "Penetration Firestopping."
- F. Seal penetrations made in acoustically rated assemblies. Comply with requirements in Section 07 92 00 "Joint Sealants."
- G. Fastening Hardware:
 - 1. Wrenches, pliers, and other tools that damage surfaces of rods, nuts, and other parts are prohibited for work of assembling and tightening fasteners.
 - 2. Tighten bolts and nuts firmly and uniformly. Do not overstress threads by excessive force or by oversized wrenches.
 - 3. Lubricate threads of bolts, nuts, and screws with graphite and oil before assembly.
- H. If product locations are not indicated, install products in locations that are accessible and that will permit service and maintenance from floor, equipment platforms, or catwalks without removal of permanently installed furniture and equipment.

3.3 INSTALLATION OF SERVERS

- A. Install server(s) at location(s) indicated on Drawings.
- B. Install number of servers required to suit requirements indicated. Review Project requirements and indicate layout of proposed server location in Shop Drawings.
- C. Install software indicated on server(s) and verify that software functions properly.
- D. Develop Project-specific graphics, trends, reports, logs, and historical database.
- E. Power servers through dedicated UPS unit. Locate UPS adjacent to server. Install rack-mounted UPS units for powering rack-mounted servers and tower UPS units for tower servers.

3.4 INSTALLATION OF DISPLAY SCREEN

- A. 85" display shall be wall mounted and connected to server for display of all city current alarms

3.5 INSTALLATION OF GATEWAYS

- A. Install gateways if required for DDC system communication interface requirements indicated.
 - 1. Install gateway(s) required to suit indicated requirements.
- B. Test gateways to verify that communication interface functions properly.

3.6 INSTALLATION OF ROUTERS

- A. Install routers if required for DDC system communication interface requirements indicated.
 - 1. Install router(s) required to suit indicated requirements.
- B. Test routers to verify that communication interface functions properly.

3.7 INSTALLATION OF CONTROLLERS

- A. Install controllers in enclosures to comply with indicated requirements.
- B. Connect controllers to field power supply.
- C. Install controllers with latest version of applicable software and configure to execute requirements indicated.
- D. Test and adjust controllers to verify operation of connected I/O to achieve performance indicated requirements while executing sequences of operation.
- E. Installation of Network Controllers:
 - 1. DDC system provider and DDC system manufacturer to determine quantity and location of network controllers to satisfy requirements indicated.
 - 2. Install controllers in a protected location that is easily accessible by operators.
 - 3. Locate top of controller within 72 inches of finished floor.
- F. Installation of Programmable Application Controllers:
 - 1. DDC system provider and DDC system manufacturer to determine quantity and location of programmable application controllers to satisfy requirements indicated.
 - 2. Install controllers in a protected location that is easily accessible by operators.
 - 3. Locate top of controller within 72 inches of finished floor, except where dedicated controllers are installed at terminal units.
- G. Application-Specific Controllers:
 - 1. DDC system provider and DDC system manufacturer to determine quantity and location of application-specific controllers to satisfy requirements indicated.
 - 2. For controllers not mounted directly on equipment being controlled, install controllers in a protected location that is easily accessible by operators.

3.8 INSTALLATION OF ENCLOSURES

- A. Install the following items in enclosures, to comply with indicated requirements:
 - 1. Gateways.
 - 2. Routers.
 - 3. Controllers.
 - 4. Electrical power devices.
 - 5. UPS units.
 - 6. Relays.
 - 7. Accessories.

8. Instruments.
9. Actuators.

- B. Attach wall-mounted enclosures to wall using the following types of steel struts:
 1. For NEMA 250, Type 1 Enclosures: Use painted steel strut and hardware.
 2. For NEMA 250, Type 4 Enclosures and Enclosures Located Outdoors: Use stainless steel strut and hardware.
 3. Install plastic caps on exposed cut edges of strut.
- C. Align top of adjacent enclosures of like size.
- D. Install continuous and fully accessible wireways to connect conduit, wire, and cable to multiple adjacent enclosures. Wireways used for application are to have protection equal to NEMA 250 rating of connected enclosures.

3.9 ELECTRIC POWER CONNECTIONS

- A. Connect electrical power to DDC system products requiring electrical power connections.
- B. Design of electrical power to products not indicated with electric power is delegated to DDC system provider and installing trade to provide a fully functioning DDC system. Work is to comply with NFPA 70 and other requirements indicated.

3.10 INSTALLATION OF IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements in Section 26 05 53 "Identification for Electrical Systems" for identification products and installation.
- B. Install self-adhesive labels with unique identification on face for each of the following:
 1. Server.
 2. Gateway.
 3. Router.
 4. Protocol analyzer.
 5. DDC controller.
 6. Enclosure.
 7. Electrical power device.
 8. UPS unit.
 9. Accessory.
- C. Install unique instrument identification for each instrument connected to DDC controller.
- D. Install unique identification for each control damper and valve actuator connected to DDC controller.
- E. Where product is installed above accessible tile ceiling, also install matching identification on face of ceiling grid located directly below.
- F. Where product is installed above an inaccessible ceiling, also install identification on face of access door directly below.
- G. Warning Labels and Signs:
 1. Permanently attach to equipment that can be automatically started by DDC control system.
 2. Locate where highly visible near power service entry points.

3.11 INSTALLATION OF NETWORKS

- A. Install optical fiber cable when connecting between the following network devices and when located in different buildings on campus, or when distance between devices exceeds 300 ft :
 - 1. Network controllers.
- B. Install balanced twisted pair or optical fiber cable when connecting between the following network devices located in same building:
 - 1. Network controllers.
- C. Install balanced twisted pair or copper cable (as required by equipment) when connecting between the following:
 - 1. Gateways.
 - 2. Gateways and network controllers or programmable application controllers.
 - 3. Routers.
 - 4. Routers and network controllers or programmable application controllers.
 - 5. Network controllers and programmable application controllers.
 - 6. Programmable application controllers.
 - 7. Programmable application controllers and application-specific controllers.
 - 8. Application-specific controllers.
- D. Install cable in continuous raceway.
 - 1. Where indicated on Drawings, cable trays may be used for copper cable in lieu of conduit.

3.12 NETWORK NAMING AND NUMBERING

- A. Coordinate with Owner and provide unique naming and addressing for networks and devices.
- B. ASHRAE 135 Networks:
 - 1. MAC Address:
 - a. Assign and document a MAC address unique to its network for every network device.
 - b. Ethernet Networks: Document MAC address assigned at its creation.
 - c. MS/TP Networks: Assign from 00 to 64.
 - 2. Network Numbering:
 - a. Assign unique numbers to each new network.
 - b. Provide ability for changing network number through device switches or operator interface.
 - c. DDC system, with all possible connected LANs, can contain up to 65,534 unique networks.
 - 3. Device Object Identifier Property Number:
 - a. Assign unique device object identifier property numbers or device instances for each device network.
 - b. Provide for future modification of device instance number by device switches or operator interface.
 - c. LAN is to support up to 4,194,302 unique devices.
 - 4. Device Object Name Property Text:
 - a. Device object name property field to support 32 minimum printable characters.
 - b. Assign unique device "Object Name" property names with plain-English descriptive names for each device.
 - 1) Example 1: Device object name for device controlling heating water boiler plant at Building 1000 would be "Heating Water System Bldg. 1000."
 - 2) Example 2: Device object name for VAV terminal unit controller could be "VAV Unit 102."

5. Object Name Property Text for Other Than Device Objects:
 - a. Object name property field is to support 32 minimum printable characters.
 - b. Assign object name properties with plain-English names descriptive of application.
 - 1) Example 1: "Zone 1 Temperature."
 - 2) Example 2 "Fan Start and Stop."

3.13 INSTALLATION OF AIR SIGNAL PIPING AND TUBING

- A. Above-Grade Air Signal Piping and Tubing Installation:
 1. Material Application:
 - a. Pneumatic Tubing: Install polyethylene tubing for pneumatic main and control signals to instruments including, but not limited to, the following:
 - 1) Sensors.
 - 2) Transmitters.
 - b. Install barbed fittings to connect polyethylene tubing to instruments, control devices, and accessories.
 2. Routing:
 - a. Do not expose tubing in finished spaces, such as spaces with ceilings; occupied spaces, offices, and conference rooms, unless expressly approved in writing by Architect. Tubing may be exposed in areas without ceilings.
 - b. Where tubing is installed in finished occupied spaces, install the tubing in surface metal raceway with appropriate fittings only where not feasible to conceal in wall, above ceiling, or behind architectural enclosures or covers.
 - c. Install piping and tubing plumb and parallel to and at right angles with building construction.
 - d. Install multiple runs of tubing or piping in equally spaced parallel lines.
 - e. Install piping and tubing not to interfere with access to valves, equipment, duct, and equipment access doors, or obstruct personnel access and passageways of any kind.
 - f. Coordinate with other trades before installation to prevent proposed piping and tubing from interfering with pipe, duct, terminal equipment, light fixtures, conduit, and cable tray space. If changes to Shop Drawings are necessary due to field coordination, document changes on Record Drawings.
 3. Support:
 - a. Space supports in accordance with MSS SP-58, except support spacing not to exceed 60 inches.
 - b. Install supports at each change in direction and at each branch take-off.
 - c. Attached supports to building structure independent of work of other trades. Support from ducts, pipes, cable trays, and conduits is prohibited.
 - d. Attached support from building structure with threaded rods, structural shapes, or channel strut.
 - e. Install and brace supports to carry static load plus a safety margin, which will allow tubing to be serviced.
 - f. Brace supports to prevent lateral movement.
 - g. Paint steel support members that are not galvanized or zinc coated.
 4. Do not attach piping and tubing to equipment that may be removed frequently for maintenance or that may impart vibration and expansion from temperature change.
 5. Joining and Makeup:
 - a. Where joining and mating dissimilar metals where galvanic action could occur, install dielectric isolation.
 - b. Install dirt leg with an isolation valve and threaded plug at each main air, connection to panel, pneumatic pilot positioner, and PRV station.
 - c. Make threaded joints for connecting to instrument equipment with connectors with a compression tubing connector on one end and threaded connection on the other end.

- d. Make tubing bends with tube-bending tool. Hard-bends or wrinkled or flattened bends are unacceptable.
- e. Install tube fittings in accordance with manufacturer's written instructions.
- f. Do not make tubing connections to a fitting before completing makeup of the connection.
- g. Align tubing with fitting. Avoid springing tube into position; this may result in excessive stress on both tubing and fitting with possible resulting leaks.
- h. Do not install fittings close to a bend. A length of straight tubing, not deformed by bending, is required for proper connection.
- i. Check tubing for correct diameter and wall thickness.
- j. Cut tube ends square and deburr. Exercise care during cutting to keep tubing round.
- k. Thread pipe on a threading machine. Ream inner edges of pipe ends, and file and grind to remove burrs.
- l. Wrap pipe threads with single wrap of PTFE tape.
- m. Protect piping and tubing from entrance of foreign matter.
- 6. Do not exceed 50 percent fill capacity where tubing is installed in conduit. Support conduit in accordance with NFPA 70 unless otherwise indicated.

3.14 INSTALLATION OF CONTROL WIRE, CABLE, AND RACEWAY

- A. Comply with NECA 1.
- B. Wire and Cable Installation:
 - 1. Install cables with protective sheathing that is waterproof and capable of withstanding continuous temperatures of 90 deg C with no measurable effect on physical and electrical properties of cable.
 - a. Provide shielding to prevent interference and distortion from adjacent cables and equipment.
 - 2. Terminate wiring in a junction box.
 - a. Clamp cable over jacket in a junction box.
 - b. Individual conductors in the stripped section of cable is to be slack between the clamping point and terminal block.
 - 3. Terminate field wiring and cable not directly connected to instruments and control devices having integral wiring terminals using terminal blocks.
 - 4. Install signal transmission components in accordance with IEEE C2, REA Form 511a, NFPA 70, and as indicated.
 - 5. Use shielded cable to transmitters.
 - 6. Use shielded cable to temperature sensors.
 - 7. Perform continuity and meager testing on wire and cable after installation.
- C. Conduit Installation:
 - 1. Comply with Section 26 05 33.13 "Conduits for Electrical Systems," Section 26 05 33.16 "Boxes and Covers for Electrical Systems," and Section 26 05 33.23 "Surface Raceways for Electrical Systems" for control-voltage conductors.
 - 2. Comply with Section 27 05 28 "Pathways for Communications Systems" for balanced twisted pair cabling and optical fiber installation.

3.15 FIELD QUALITY CONTROL

- A. Testing Agency: a qualified testing agency to perform tests and inspections.
- B. Tests and Inspections: Perform the following tests and inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.

2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Testing of Air-Signal Tubing:

1. Test for leaks and obstructions.
2. Disconnect each pipe and tubing line before test is performed, and blowout dust, dirt, trash, condensate, and other foreign materials with compressed air. Use commercially pure compressed air or nitrogen as distributed in gas cylinders. Use of compressed air from oil-free compressor with air dryer is an acceptable alternative for test.
3. After foreign matter is expelled and line is free from obstructions, plug far end of tubing run.
4. Connect pressure source to near end of tubing run with needle valve between air supply and tubing run.
5. Connect pressure gauge accurate to within 0.5 percent of test between shutoff needle valve and tubing run under test.
6. For air signal tubing, apply test pressure of 1.5 times instrument operating pressure range. Record pressure in tubing run every 10 minutes for one hour. Allowable drop in pressure in one-hour period to not exceed 0.1 percent of test pressure.

D. Optical Fiber Cable Testing:

1. Perform preinstallation, in-progress, and final tests, supplemented by additional tests, as necessary.
2. Preinstallation Cable Verification: Verify integrity and serviceability for new cable lengths before installation. This assurance may be provided by using vendor verification documents, testing, or other methods. At a minimum, furnish evidence of verification for cable attenuation and bandwidth parameters.
3. In-Progress Testing: Perform standard tests for correct pair identification and termination during installation to ensure proper installation and cable placement. Perform tests in addition to those specified if there is any reason to question condition of material furnished and installed. Testing accomplished is to be documented by agency conducting tests. Submit test results for Project record.
4. Final Testing: Perform final test of installed system to demonstrate acceptability as installed. Perform testing according to test plan supplied by DDC system manufacturer. Correct defective Work or material and retest. At a minimum, final testing for cable system, including spare cable, to verify compliance of attenuation, length, and bandwidth parameters with performance indicated.
5. Test Equipment: Use optical fiber time-domain reflectometer for testing of length and optical connectivity.
6. Test Results: Record test results and submit copy of test results for Project record.

3.16 DDC SYSTEM I/O CHECKOUT PROCEDURES

- A. Check installed products before continuity tests, leak tests, and calibration.
- B. Check instruments for proper location and accessibility.
- C. Check instruments for proper installation on direction of flow, elevation, orientation, insertion depth, or other applicable considerations that will impact performance.
- D. Check instrument tubing for proper isolation, fittings, slope, dirt legs, drains, material, and support.
- E. For pneumatic products, verify that air supply for each product is properly installed.
- F. Control Damper Checkout:

1. For pneumatic control dampers, verify that pressure gauges are provided in each air line connected to the damper actuator and positioner.
2. Verify that control dampers are installed correctly for flow direction.
3. Verify that proper blade alignment, either parallel or opposed, has been provided.
4. Verify that damper frame attachment is properly secured and sealed.
5. Verify that damper actuator and linkage attachment are secure.
6. Verify that actuator wiring is complete, enclosed, and connected to correct power source.
7. Verify that damper blade travel is unobstructed.

G. Control Valve Checkout:

1. For pneumatic control valves, verify that pressure gauges are provided in each air line connected to the valve actuator and positioner.
2. Verify that control valves are installed correctly for flow direction.
3. Verify that valve body attachment is properly secured and sealed.
4. Verify that valve actuator and linkage attachment are secure.
5. Verify that actuator wiring is complete, enclosed, and connected to correct power source.
6. Verify that valve ball, disc, or plug travel is unobstructed.
7. After piping systems have been tested and put into service, but before insulating and balancing, inspect each valve for leaks. Adjust or replace packing to stop leaks. Replace valve if leaks persist.

H. Instrument Checkout:

1. Verify that instrument is correctly installed for location, orientation, direction, and operating clearances.
2. Verify that attachment is properly secured and sealed.
3. Verify that conduit connections are properly secured and sealed.
4. Verify that wiring is properly labeled with unique identification, correct type, and size and is securely attached to proper terminals.
5. Inspect instrument tag against approved submittal.
6. For instruments with tubing connections, verify that tubing attachment is secure and isolation valves have been provided.
7. For flow instruments, verify that recommended upstream and downstream distances have been maintained.
8. For temperature instruments, verify the following:
 - a. Sensing element type and proper material.
 - b. Length and insertion.

3.17 DDC SYSTEM I/O ADJUSTMENT, CALIBRATION, AND TESTING

- A. Calibrate each instrument installed that is not factory calibrated and provided with calibration documentation.
- B. Provide written description of proposed field procedures and equipment for calibrating each type of instrument. Submit procedures before calibration and adjustment.
- C. For each analog instrument, make three-point test of calibration for both linearity and accuracy.
- D. Equipment and procedures used for calibration to comply with instrument manufacturer's written instructions.
- E. Provide diagnostic and test equipment for calibration and adjustment.
 1. Use field testing and diagnostic instruments and equipment with an accuracy at least twice the instrument accuracy of instrument to be calibrated. For example, test and calibrate an installed instrument with accuracy of 1 percent using field testing and diagnostic instrument with accuracy of 0.5 percent or better.

- F. Calibrate each instrument in accordance with instruction manual supplied by instrument manufacturer.
- G. If after calibration the indicated performance cannot be achieved, replace out-of-tolerance instruments.
- H. Comply with field testing requirements and procedures indicated by ASHRAE's Guideline 11, "Field Testing of HVAC Controls Components," in the absence of specific requirements, and to supplement requirements indicated.
- I. Analog Signals:
 - 1. Check analog voltage signals using a precision voltage meter at zero, 50, and 100 percent.
 - 2. Check analog current signals using a precision current meter at zero, 50, and 100 percent.
 - 3. Check resistance signals for temperature sensors at zero, 50, and 100 percent of operating span using a precision-resistant source.
- J. Digital Signals:
 - 1. Check digital signals using a jumper wire.
 - 2. Check digital signals using an ohmmeter to test for contact making or breaking.
- K. Control Dampers:
 - 1. Stroke and adjust control dampers following manufacturer's recommended procedure, from 100 percent open to 100 percent closed and back to 100 percent open.
 - 2. Stroke pneumatic control dampers with pilot positioners. Adjust damper and positioner following manufacturer's recommended procedure, so damper is 100 percent closed, 50 percent closed, and 100 percent open at proper air pressures.
 - 3. Check and document open and close cycle times for applications with cycle time less than 30 seconds.
 - 4. For control dampers equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.
- L. Control Valves:
 - 1. Stroke and adjust control valves following manufacturer's recommended procedure, from 100 percent open to 100 percent closed and back to 100 percent open.
 - 2. Stroke pneumatic control valves with pilot positioners. Adjust valve and positioner following manufacturer's recommended procedure, so valve is 100 percent closed, 50 percent closed, and 100 percent open at proper air pressures.
 - 3. Check and document open and close cycle times for applications with cycle time less than 30 seconds.
 - 4. For control valves equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.
- M. Meters: Check meters at zero, 50, and 100 percent of Project design values.
- N. Sensors: Check sensors at zero, 50, and 100 percent of Project design values.
- O. Switches: Calibrate switches to make or break contact at set points indicated.
- P. Transmitters:
 - 1. Check and calibrate transmitters at zero, 50, and 100 percent of Project design values.
 - 2. Calibrate resistance temperature transmitters at zero, 50, and 100 percent of span using a precision-resistant source.

3.18 DDC SYSTEM CONTROLLER CHECKOUT

- A. Verify power supply.
 - 1. Verify voltage, phase, and hertz.
 - 2. Verify that protection from power surges is installed and functioning.
 - 3. Verify that ground fault protection is installed.
 - 4. If applicable, verify if connected to UPS unit.
 - 5. If applicable, verify if connected to backup power source.
 - 6. If applicable, verify that power conditioning units are installed.
- B. Verify that wire and cabling are properly secured to terminals and labeled with unique identification.
- C. Verify that spare I/O capacity is provided.

3.19 DDC CONTROLLER I/O CONTROL LOOP TESTS

- A. Testing:
 - 1. Test every I/O point connected to DDC controller to verify that safety and operating control set points are as indicated and as required to operate controlled system safely and at optimum performance.
 - 2. Test every I/O point throughout its full operating range.
 - 3. Test every control loop to verify that operation is stable and accurate.
 - 4. Adjust control loop proportional, integral, and derivative settings to achieve optimum performance while complying with performance requirements indicated. Document testing of each control loop's precision and stability via trend logs.
 - 5. Test and adjust every control loop for proper operation according to sequence of operation.
 - 6. Test software and hardware interlocks for proper operation. Correct deficiencies.
 - 7. Operate each analog point at the following:
 - a. Upper quarter of range.
 - b. Lower quarter of range.
 - c. At midpoint of range.
 - 8. Exercise each binary point.
 - 9. For every I/O point in DDC system, read and record each value at operator workstation, at DDC controller, and at field instrument simultaneously. Value displayed at operator workstation, at DDC controller, and at field instrument must match.
 - 10. Prepare and submit report documenting results for each I/O point in DDC system and include in each I/O point a description of corrective measures and adjustments made to achieve desired results.

3.20 DDC SYSTEM VALIDATION TESTS

- A. Perform validation tests before requesting final review of system. Before beginning testing, first submit Pretest Checklist and Test Plan.
- B. After review of Pretest Checklist and Test Plan, execute all tests and procedures indicated in plan.
- C. After testing is complete, submit completed Pretest Checklist.
- D. Pretest Checklist: Submit the following list with items checked off once verified:
 - 1. Detailed explanation for any items that are not completed or verified.
 - 2. Required mechanical installation work is successfully completed and HVAC equipment is working correctly.

3. HVAC equipment motors operate below full-load amperage ratings.
4. Required DDC system components, wiring, and accessories are installed.
5. Installed DDC system architecture matches approved Drawings.
6. Control electric power circuits operate at proper voltage and are free from faults.
7. Required surge protection is installed.
8. DDC system network communications function properly, including uploading and downloading programming changes.
9. Using BACnet protocol analyzer, verify that communications are error free.
10. Each controller's programming is backed up.
11. Equipment, products, tubing, wiring cable, and conduits are properly labeled.
12. All I/O points are programmed into controllers.
13. Testing, adjusting, and balancing work affecting controls is complete.
14. Dampers and actuators zero and span adjustments are set properly.
15. Each control damper and actuator goes to failed position on loss of power and loss of signal.
16. Valves and actuators zero and span adjustments are set properly.
17. Each control valve and actuator goes to failed position on loss of power and loss of signal.
18. Meter, sensor, and transmitter readings are accurate and calibrated.
19. Control loops are tuned for smooth and stable operation.
20. View trend data where applicable.
21. Each controller works properly in standalone mode.
22. Safety controls and devices function properly.
23. Interfaces with fire-alarm system function properly.
24. Electrical interlocks function properly.
25. Operator workstations and other interfaces are delivered, all system and database software is installed, and graphics are created.
26. Record Drawings are completed.

E. Test Plan:

1. Prepare and submit validation Test Plan including test procedures for performance validation tests.
2. Address all specified functions of DDC system and sequences of operation in Test Plan.
3. Explain detailed actions and expected results to demonstrate compliance with requirements indicated.
4. Explain method for simulating necessary conditions of operation used to demonstrate performance.
5. Include Test Checklist to be used to check and initial that each test has been successfully completed.
6. Submit Test Plan documentation 10 business days before start of tests.

F. Validation Test:

1. Verify operating performance of each I/O point in DDC system.
 - a. Verify analog I/O points at operating value.
 - b. Make adjustments to out-of-tolerance I/O points.
 - 1) Identify I/O points for future reference.
 - 2) Simulate abnormal conditions to demonstrate proper function of safety devices.
 - 3) Replace instruments and controllers that cannot maintain performance indicated after adjustments.
2. Simulate conditions to demonstrate proper sequence of control.
3. Readjust settings to design values and observe ability of DDC system to establish desired conditions.
4. 24 hours after initial validation test, do as follows:
 - a. Re-check I/O points that required corrections during initial test.

- b. Identify I/O points that still require additional correction and make corrections necessary to achieve desired results.
5. 24 Hours after second validation test, do as follows:
 - a. Re-check I/O points that required corrections during second test.
 - b. Continue validation testing until I/O point is normal on two consecutive tests.
6. Completely check out, calibrate, and test all connected hardware and software to ensure that DDC system performs according to requirements indicated.
7. After validation testing is complete, prepare and submit report indicating results of testing. For all I/O points that required correction, indicate how many validation re-tests it took to pass. Identify adjustments made for each test and indicate instruments that were replaced.

G. DDC System Response Time Test:

1. Simulate HLC.
 - a. Heavy load to be occurrence of 50 percent of total connected binary COV, one-half of which represents "alarm" condition, and 50 percent of total connected analog COV, one-half of which represents "alarm" condition, that are initiated simultaneously on a one-time basis.
2. Initiate 10 successive occurrences of HLC and measure response time to typical alarms and status changes.
3. Measure with timer having at least 0.1-second resolution and 0.01 percent accuracy.
4. Purpose of test is to demonstrate DDC system, as follows:
 - a. Reaction to COV and alarm conditions during HLC.
 - b. Ability to update DDC system database during HLC.
5. Passing test is contingent on the following:
 - a. Alarm reporting at printer beginning no more than two seconds after initiation (time zero) of HLC.
 - b. All alarms, both binary and analog, are reported and printed; none are lost.
 - c. Compliance with response times specified.
6. Prepare and submit report documenting HLC tested and results of test including time stamp and print out of all alarms.

H. DDC System Network Bandwidth Test:

1. Test network bandwidth usage on all DDC system networks to demonstrate bandwidth usage under DDC system normal operating conditions and under simulated HLC.
2. To pass, none of DDC system networks are to use more than 70 percent of available bandwidth under normal and HLC operation.

3.21 FINAL REVIEW

- A. Submit written request to Architect Owner when DDC system is ready for final review. State the following:
 1. DDC system has been thoroughly inspected for compliance with Contract Documents and found to be in full compliance.
 2. DDC system has been calibrated, adjusted, and tested and found to comply with requirements of operational stability, accuracy, speed, and other performance requirements indicated.
 3. DDC system monitoring and control of HVAC systems results in operation according to sequences of operation indicated.
 4. DDC system is complete and ready for final review.
- B. Upon receipt of written request for final review, Architect and to start review within reasonable period and upon completion issue field report(s) documenting observations and deficiencies.

- C. Take prompt action to remedy deficiencies indicated in reviewer's field report(s) and submit second written request after all deficiencies have been corrected. Repeat process until no deficiencies are reported.
- D. Compensation for Subsequent Reviews: Should more than two reviews be required, DDC system manufacturer and Installer to compensate entity/entities performing reviews for total costs (labor and expenses) associated with subsequent reviews. Estimated cost of each subsequent review to be submitted and approved by DDC system manufacturer and Installer before review.
- E. Prepare and submit closeout submittals when no deficiencies are reported.
- F. Part of DDC system final review to include demonstration to parties participating in final review.
 - 1. Provide staff familiar with DDC system installed to demonstrate operation of DDC system during final review.
 - 2. Provide testing equipment to demonstrate accuracy and other performance requirements of DDC system that is requested by reviewers during final review.
 - 3. Demonstration to include, but not be limited to, the following:
 - a. Accuracy and calibration of 10 I/O points randomly selected by reviewers. If review finds that some I/O points are not properly calibrated and not satisfying performance requirements indicated, additional I/O points may be selected by reviewers until total I/O points being reviewed that satisfy requirements equals quantity indicated.
 - b. HVAC equipment and system hardwired and software safeties and life-safety functions are operating according to sequence of operation. Up to 10 I/O points to be randomly selected by reviewers. Additional I/O points may be selected by reviewers to discover problems with operation.
 - c. Correct sequence of operation after electrical power interruption and resumption after electrical power is restored for randomly selected HVAC systems.
 - d. Operation of randomly selected dampers and valves in normal-on, normal-off, and failed positions.
 - e. Reporting of alarm conditions for randomly selected alarms, including different classes of alarms, to ensure that alarms are properly received by operators and operator workstations.
 - f. Trends, summaries, logs, and reports set up for Project.
 - g. For up to three HVAC systems randomly selected by reviewers, use graph trends to show that sequence of operation is executed in correct manner and that HVAC systems operate properly through complete sequence of operation including different modes of operations indicated. Show that control loops are stable and operating at set points and respond to changes in set point of 20 percent or more.
 - h. Software's ability to communicate with controllers, operator workstations, and uploading and downloading of control programs.
 - i. Software's ability to edit control programs offline.
 - j. Data entry to show Project-specific customizing capability including parameter changes.
 - k. Step through penetration tree, display all graphics, demonstrate dynamic update, and direct access to graphics.
 - l. Execution of digital and analog commands in graphic mode.
 - m. Spreadsheet and curve plot software and its integration with database.
 - n. Online user guide and help functions.
 - o. Multitasking by showing different operations occurring simultaneously on four quadrants of split screen.
 - p. System speed of response compared to requirements indicated.
 - q. For Each Controller: Applies to network and programmable application controllers.

- 1) Memory: Programmed data, parameters, trend, and alarm history collected during normal operation are not to be lost during power failure.
 - 2) Operator Interface: Ability to connect directly to each type of digital controller with portable workstation and mobile device. Show that maintenance personnel interface tools perform as indicated in manufacturer's technical literature.
 - 3) Standalone Ability: Demonstrate that controllers provide stable and reliable standalone operation using default values or other method for values normally read over network.
 - 4) Wiring Labels: Match control drawings.
 - 5) Network Communication: Ability to locate controller's location on network and communication architecture matches Shop Drawings.
 - 6) Nameplates and Tags: Accurate and permanently attached to control panel doors, instrument, actuators, and devices.
- r. For Each Operator Workstation:
- 1) I/O points lists agree with naming conventions.
 - 2) Graphics are complete.
 - 3) UPS unit, if applicable, operates.
- s. Communications and Interoperability: Demonstrate proper interoperability of data sharing, alarm and event management, trending, scheduling, and device and network management. Use ASHRAE 135 protocol analyzer to help identify devices, view network traffic, and verify interoperability. Requirements must be met even if only one manufacturer's equipment is installed.
- 1) Data Presentation: On each operator workstation, demonstrate graphic display capabilities.
 - 2) Reading of Any Property: Demonstrate ability to read and display any used readable object property of any device on network.
 - 3) Set-Point and Parameter Modifications: Show ability to modify set points and tuning parameters indicated. Modifications are made with messages and write services initiated by operator using workstation graphics, or by completing a field in menu with instructional text.
 - 4) Peer-to-Peer Data Exchange: Network devices are installed and configured to perform without need for operator intervention to implement Project sequence of operation and to share global data.
 - 5) Alarm and Event Management: Alarms and events are installed and prioritized according to Owner. Demonstrate that time delays and other logic are set up to avoid nuisance tripping. Show that operators with sufficient privileges are permitted.
 - 6) Schedule Lists: Schedules are configured for start and stop, mode change, occupant overrides, and night setback as defined in sequence of operations.
 - 7) Schedule Display and Modification: Ability to display any schedule with start and stop times for calendar year. Show that all calendar entries and schedules are modifiable from any connected operator workstation by an operator with sufficient privilege.
 - 8) Archival Storage of Data: Data archiving is handled by operator workstation and server and local trend archiving and display is accomplished.
 - 9) Modification of Trend Log Object Parameters: Operator with sufficient privilege can change logged data points, sampling rate, and trend duration.
 - 10) Device and Network Management:
 - a) Display of network device status.
 - b) Display of BACnet object information.
 - c) Silencing devices transmitting erroneous data.
 - d) Time synchronization.
 - e) Remote device re-initialization.

- f) Backup and restore network device programming and master database(s).
- g) Configuration management of routers.

3.22 EXTENDED OPERATION TEST

- A. Operate DDC system for operating period of 28 consecutive calendar days following Substantial Completion. Coordinate exact start date of testing with Owner.
- B. Provide operator familiar with DDC system installed to man an operator workstation while on-site during eight hours of each normal business day occurring during operating period.
- C. During operating period, DDC system to demonstrate correct operation and accuracy of monitored and controlled points as well as operation capabilities of sequences, logs, trends, reports, specialized control algorithms, diagnostics, and other software indicated.
 - 1. Correct defects of hardware and software when they occur.
- D. Definition of Failures and Downtime during Operating Period:
 - 1. Failed I/O point constituting downtime is I/O point failing to perform its intended function consistently and a point physically failed due to hardware and software.
 - 2. Downtime is when any I/O point in DDC system is unable to fulfill its required function.
 - 3. Calculate downtime as elapsed time between detected point failure as confirmed by operator, and time point is restored to service.
 - 4. Maximum time interval allowed between DDC system detection of failure occurrence and operator confirmation is to be 0.5 hours.
 - 5. Log downtime in hours to nearest 0.1 hour.
 - 6. Power outages do not count as downtime, but do suspend test hours unless systems are provided with UPS and served through a backup power source.
 - 7. Hardware or software failures caused by power outages do count as downtime.
- E. During operating period, log downtime and operational problems are encountered.
 - 1. Identify source of problem.
 - 2. Provide written description of corrective action taken.
 - 3. Record duration of downtime.
 - 4. Maintain log showing the following:
 - a. Time of occurrence.
 - b. Description of each occurrence and pertinent written comments for reviewer to understand scope and extent of occurrence.
 - c. Downtime for each failed I/O point.
 - d. Running total of downtime and total time of I/O point after each problem has been restored.
 - 5. Make log available to Owner for review at any time.
- F. For DDC system to pass extended operation test, total downtime is limited to 1 percent of total point-hours during operating period.
 - 1. If DDC system testing results fail to comply with minimum requirements of passing at end of operating period indicated, extend operating period one consecutive day at a time until DDC system passes requirement.
- G. Base evaluation of DDC system passing test on the following calculation:
 - 1. Count downtime on point-hour basis where total number of DDC system point-hours is equal to total number of I/O points in DDC system multiplied by total number of hours during operating period.

2. One point-hour of downtime is one I/O point down for one hour. For example, three I/O points down for five hours is total of 15 point-hours of downtime. Four points down for one-half hour is two point-hours of downtime.
3. Example Calculation: Maximum allowable downtime for 30-day test for DDC system with 1000 total I/O points (combined analog and binary) and passing score of 1 percent downtime is computed by 30 days x 24 h/day x 1000 points x 1 percent equals 7200 point-hours of maximum allowable downtime.

H. Prepare test and inspection reports.

3.23 ADJUSTING

- A. Complete post construction air and water balance and adjust to match pre-balance readings
- B. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.24 MAINTENANCE SERVICE

- A. Beginning at Substantial Completion, verify that maintenance service includes 12 months' full maintenance by DDC system manufacturer's authorized service representative. Include monthly preventive maintenance, repair or replacement of worn or defective components, cleaning, calibration, and adjusting as required for proper operation. Use only manufacturer's authorized replacement parts and supplies.

3.25 SOFTWARE SERVICE AND LICENSE AGREEMENT

- A. Technical Support: Beginning at Substantial Completion, verify that service agreement includes software support for two year(s).
- B. Software licensing shall allow for a minimum of seven simultaneous users with various permission levels
- C. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two year(s) from date of Substantial Completion. Verify that upgrading software includes operating system and new or revised licenses for using software.
 1. Upgrade Notice: No fewer than 30 days to allow Owner to schedule and access system and to upgrade computer equipment if necessary.

3.26 DEMONSTRATION

- A. Engage a factory-authorized service representative with complete knowledge of Project-specific system installed to train Owner's maintenance personnel to adjust, operate, and maintain DDC system.
- B. Extent of Training:
 1. Base extent of training on scope and complexity of DDC system indicated and training requirements indicated. Provide extent of training required to satisfy requirements indicated even if more than minimum training requirements are indicated.
 2. Inform Owner of anticipated training requirements if more than minimum training requirements are indicated.
 3. Minimum Training Requirements:
 - a. Provide not less than five days of training total.

- b. Stagger training over multiple training classes to accommodate Owner's requirements. All training to occur before end of warranty period.
 - c. Break down total days of training into not more than two separate training classes.
 - d. Schedule training so each training class is not less than two consecutive day(s).
- C. Training Schedule:
 - 1. Schedule training with Owner 20 business days before expected Substantial Completion.
 - 2. Schedule training to provide Owner with at least 10 business days of notice in advance of training.
 - 3. Training to occur within normal business hours at mutually agreed on time. Unless otherwise agreed to, training to occur Monday through Friday, except on U.S. Federal holidays, with two morning sessions and two afternoon sessions. Each morning session and afternoon session to be split in half with -minute break between sessions. Morning and afternoon sessions to be separated by 30 -minute lunch period. Training, including breaks and excluding lunch period, are not to exceed eight hours per day.
 - 4. Provide staggered training schedule as requested by Owner.
- D. Training Attendee List and Sign-in Sheet:
 - 1. Request from Owner in advance of training a proposed attendee list with name, phone number, and email address.
 - 2. Provide preprinted sign-in sheet for each training session with proposed attendees listed and no fewer than six blank spaces to add additional attendees.
 - 3. Include preprinted sign-in sheet with training session number, date and time, instructor name, phone number, email address, and brief description of content to be covered during session. List attendees with columns for name, phone number, and email address and a column for attendee signature or initials.
 - 4. Circulate sign-in sheet at beginning of each session and solicit attendees to sign or initial in applicable location.
 - 5. At end of each training day, send Owner an email with attachment of scanned copy (PDF) of circulated sign-in sheet for each session. Indicate which attendees, if any, joined for only part of training sessions.
- E. Training Attendee Headcount:
 - 1. Plan in advance of training for five attendees.
 - 2. Make allowance for Owner to add up to one attendee(s) at time of training.
 - 3. Headcount may vary depending on training content covered in session. Attendee access may be restricted to some training content for purposes of maintaining system security.
- F. Attendee Training Manuals:
 - 1. Provide each attendee with color hard copy of all training materials and visual presentations.
 - 2. Organize hard-copy materials in three-ring binder with table of contents and individual divider tabs marked for each logical grouping of subject matter. Organize material to provide space for attendees to take handwritten notes within training manuals.
 - 3. In addition to hard-copy materials included in training manual, provide each binder with a sleeve or pocket that includes DVD or flash drive with PDF copy of all hard-copy materials.
- G. Instructor Requirements:
 - 1. One or multiple qualified instructors, as required, to provide training.
 - 2. Use instructors who have provided not less than five years of instructional training on not less than five past projects with similar DDC system scope and complexity to DDC system installed.
- H. Organization of Training Sessions:

1. Organize training sessions into logical groupings of technical content and to reflect different levels of operators having access to system. Plan training sessions to accommodate the following three levels of operators:
 - a. Daily operators.
 - b. Advanced operators.
 - c. System managers and administrators.
 2. Plan and organize training sessions to group training content to protect DDC system security. Some attendees may be restricted to some training sessions to ensure DDC system security.
- I. Training Outline:
1. Submit training outline for Owner review at least 10 business day before scheduling training.
 2. Include in outline a detailed agenda for each training day that is broken down into each of four training sessions that day, training objectives for each training session, and synopses for each lesson planned.
- J. On-Site Training:
1. Owner will provide conditioned classroom or workspace with ample desks or tables, chairs, power, and data connectivity for instructor and each attendee.
 2. Provide training materials, projector, and other audiovisual equipment used in training.
 3. Provide as much of training located on-site as deemed feasible and practical by Owner.
 4. Include on-site training with regular walk-through tours, as required, to observe each unique product type installed with hands-on review of operation, calibration, and service requirements.
 5. Use operator workstation that is to be used with DDC system in the training. If operator workstations are unavailable, provide temporary workstation to convey training content.
- K. Training Content for Daily Operators:
1. Basic operation of system.
 2. Understanding DDC system architecture and configuration.
 3. Understanding each unique product type installed including performance and service requirements for each.
 4. Understanding operation of each system and equipment controlled by DDC system including sequences of operation, each unique control algorithm, and each unique optimization routine.
 5. Operating operator workstations, printers, and other peripherals.
 6. Logging on and off system.
 7. Accessing graphics, reports, and alarms.
 8. Adjusting and changing set points and time schedules.
 9. Recognizing DDC system malfunctions.
 10. Understanding content of operation and maintenance manuals including control drawings.
 11. Understanding physical location and placement of DDC controllers and I/O hardware.
 12. Accessing data from DDC controllers.
 13. Operating portable operator workstations.
 14. Review of DDC testing results to establish basic understanding of DDC system operating performance and HVAC system limitations as of Substantial Completion.
 15. Running each specified report and log.
 16. Displaying and demonstrating each data entry to show Project-specific customizing capability. Demonstrating parameter changes.
 17. Stepping through graphics penetration tree, displaying all graphics, demonstrating dynamic updating, and direct access to graphics.
 18. Executing digital and analog commands in graphic mode.

19. Demonstrating control loop precision and stability via trend logs of I/O for not less than 10 percent of I/O installed.
20. Demonstrating DDC system performance through trend logs and command tracing.
21. Demonstrating scan, update, and alarm responsiveness.
22. Demonstrating spreadsheet and curve plot software, and its integration with database.
23. Demonstrating on-line user guide, and help function and mail facility.
24. Demonstrating multitasking by showing dynamic curve plot, and graphic construction operating simultaneously via split screen.
25. Demonstrating the following for HVAC systems and equipment controlled by DDC system:
 - a. Operation of HVAC equipment in normal-off, normal-on, and failed conditions while observing individual equipment, dampers, and valves for correct position under each condition.
 - b. For HVAC equipment with factory-installed software, show that integration into DDC system is able to communicate with DDC controllers or gateways, as applicable.
 - c. Using graphed trends, show that sequence of operation is executed in correct manner, and HVAC systems operate properly through complete sequence of operation including seasonal change, occupied and unoccupied modes, warm-up and cool-down cycles, and other modes of operation indicated.
 - d. Hardware interlocks and safeties function properly and DDC system performs correct sequence of operation after electrical power interruption and resumption after power is restored.
 - e. Reporting of alarm conditions for each alarm, and confirm that alarms are received at assigned locations, including operator workstations.
 - f. Each control loop responds to set-point adjustment and stabilizes within time period indicated.
 - g. Sharing of previously graphed trends of all control loops to demonstrate that each control loop is stable and set points are being maintained.

L. Training Content for Advanced Operators:

1. Making and changing workstation graphics.
2. Creating, deleting, and modifying alarms including annunciation and routing.
3. Creating, deleting, and modifying point trend logs including graphing and printing on an ad-hoc basis and operator-defined time intervals.
4. Creating, deleting, and modifying reports.
5. Creating, deleting, and modifying points.
6. Creating, deleting, and modifying programming including ability to edit control programs offline.
7. Creating, deleting, and modifying system graphics and other types of displays.
8. Adding DDC controllers and other network communication devices such as gateways and routers.
9. Adding operator workstations.
10. Performing DDC system checkout and diagnostic procedures.
11. Performing DDC controllers operation and maintenance procedures.
12. Performing operator workstation operation and maintenance procedures.
13. Configuring DDC system hardware including controllers, workstations, communication devices, and I/O points.
14. Maintaining, calibrating, troubleshooting, diagnosing, and repairing hardware.
15. Adjusting, calibrating, and replacing DDC system components.

M. Training Content for System Managers and Administrators:

1. DDC system software maintenance and backups.
2. Uploading, downloading, and offline archiving of all DDC system software and databases.
3. Interface with Project-specific, third-party operator software.

4. Understanding password and security procedures.
5. Adding new operators and making modifications to existing operators.
6. Operator password assignments and modification.
7. Operator authority assignment and modification.
8. Workstation data segregation and modification.

N. Video of Training Sessions:

1. Provide digital video and audio recording of each training session. Create separate recording file for each session.
2. Stamp each recording file with training session number, session name, and date.
3. Provide Owner with two copies of digital files on cloud and flash drives for later reference and for use in future training.
4. Owner retains right to make additional copies for intended training purposes without having to pay royalties.

END OF SECTION 23 09 23

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Labels.
 - 2. Tapes and stencils.
 - 3. Tags.
 - 4. Miscellaneous identification products.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.
- B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.
- C. Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Comply with NFPA 70E requirements for arc-flash warning labels.
- F. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F , ambient; 180 deg F , material surfaces .

2.2 LABELS

- A. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil- thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Panduit Corp.
 - c. Seton Identification Products; a Brady Corporation company.
 2. Minimum Nominal Size:
 - a. 1-1/2 by 6 inches for raceway and conductors.
 - b. 3-1/2 by 5 inches for equipment.
 - c. As required by authorities having jurisdiction.

2.3 TAPES AND STENCILS

- A. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils thick by 1 to 2 inches wide; compounded for outdoor use.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Carlton Industries, LP.
- B. Underground-Line Warning Tape:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Ideal Industries, Inc.
 - c. Seton Identification Products; a Brady Corporation company.
 2. Tape:
 - a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
 - b. Printing on tape shall be permanent and shall not be damaged by burial operations.
 - c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
 3. Color and Printing:
 - a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
 - b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE" .
 - c. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE" .
 4. Tape Type I :
 - a. Width: 3 inches.
 - b. Thickness: 4 mils.
 - c. Weight: 18.5 lb/1000 sq. ft..
 - d. Tensile according to ASTM D882: 30 lbf and 2500 psi.
- C. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch .

2.4 TAGS

- A. Nonmetallic Preprinted Tags: Polyethylene tags, 0.023 inch thick, color-coded for phase and voltage level, with factory printed permanent designations; punched for use with self-locking cable tie fastener.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Panduit Corp.
 - c. Seton Identification Products; a Brady Corporation company.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of each item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.
- G. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
 - 1. Secure tight to surface of conductor, cable, or raceway.
- H. System Identification for Raceways and Cables over 600 V: Identification shall completely encircle cable or conduit. Place adjacent identification of two-color markings in contact, side by side.
 - 1. Secure tight to surface of conductor, cable, or raceway.
- I. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.

- K. Accessible Fittings for Raceways: Identify the covers of each junction and pull box of the following systems with the wiring system legend and system voltage. System legends shall be as follows:
 - 1. "EMERGENCY POWER."
 - 2. "POWER."
 - 3. "UPS."
- L. Self-Adhesive Labels:
 - 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
 - 2. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high.
- M. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
 - 1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
- N. Nonmetallic Preprinted Tags:
 - 1. Place in a location with high visibility and accessibility.
 - 2. Secure using cable ties.

3.3 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits, More Than A and 120 V to Ground: Identify with self-adhesive raceway labels vinyl tape applied in bands.
 - 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- D. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use self-adhesive vinyl tape to identify the phase.
 - 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- E. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive labels with the conductor or cable designation, origin, and destination.

END OF SECTION 26 05 53

Quotation

September 5, 2025
Quote2024 04021RD Rev.5

To: Tom McDonald
Building Maintenance
City of Livonia

For: Building Controls Upgrade Phase 2
Excel Controller and Building Supervisor Upgrade
City of Livonia

We propose to furnish and install a **Tridium Niagara N4 / BACnet IP** direct digital system of automatic temperature control and building automation per the following description:

- Furnish and install two (2) JACE Network Controllers based on the existing Honeywell building groups
 - DPW Garage and Housing Commission
 - Fire Stations 1, 3, 4, 5, and 6
- Furnish and install BACnet IP field controllers and expansion modules to replace seven (7) existing non-supported Honeywell Excel controllers and associated IO cards
- Replace existing proprietary Honeywell space, duct, and immersion temperature sensors with industry standard 10K type 3 thermistor sensors. All other field devices and all input/output wiring will be reused
- Add a BACnet IP controller located in the City Hall rooftop boiler room for control of the existing pump VFDs. Integrate the new controller into the existing 4th Floor JACE-8000
- Add floorplans, equipment graphics, scheduling, alarming, and trending to the Phase 1 Niagara N4 Supervisor

All for the net sum not to exceed

\$112,582.00

All pricing is based on **OMNIA Partners Public Sector contract: R220703**. Schneider Electric is an OMNIA Partners supplier. Havel is a Schneider Electric EcoXpert Partner. EcoXpert Partners have been added as "authorized vendors" to contract: R220703. **All savings from the not to exceed amount will be deducted from the total contract amount or used for mutually agreed upon additional scope.**

Breakdown by Building:

DPW Garage	\$15,964.00
Fire Station 1	\$30,270.00
Fire Station 3	\$12,982.00
Fire Station 4	\$12,982.00
Fire Station 5	\$9,456.00
Fire Station 6	\$14,209.00
Housing Commission	\$11,447.00
City Hall	\$5,272.00

Quotation

September 5, 2025
Quote2024 04021RD Rev.5

Under this proposal we will furnish the necessary shop drawings, wiring diagrams, and submittals; select the proper controls and deliver to the job site; furnish the necessary labor; make all calibrations, adjustments, and a final check up of the operation of this equipment; instruct the operating personnel and guarantee the equipment and its operation for a period of one year.

This proposal **does not** include the following which can be provided by others or Havel for additional cost:

- Repair or replacement of existing field devices (other than temperature sensors) and/or control wiring if required

This proposal requires data ports on the City of Livonia IT network for the two (2) JACE Network Controllers and seven (7) BACnet IP field controllers and IP addresses mapped to the BAS VLAN

Thank you.

Havel An EMCOR Company

Rod DeVries

(269) 207-4288

rdevries@Shambaugh.com

Quotation

September 5, 2025
Quote2024 04021RD Rev.5

Terms and Conditions

General

1. Havel agrees to perform all work in a careful and workman-like manner and to furnish only materials of good quality.
2. The customer will provide reasonable access to all areas and equipment and will allow Havel to stop and start equipment as may be necessary to fulfill the terms of the project.
3. All work will be performed during normal working hours, 7:30 a.m. to 4:00 p.m., Monday through Friday, unless otherwise stated.
4. The customer will promptly pay invoices upon receipt. Should a payment become thirty (30) days or more delinquent, Havel may stop all work under this project without notice and/or cancel this project, and the entire project amount shall become due and payable immediately upon demand.
5. In addition to any price specified on the face hereof, the customer shall pay and be responsible for the gross amount of any present or future sales, use, excise, value-added, or other similar tax, however designated, applicable to the price, sale or delivery or any products, services or the work furnished hereunder or for their use by Havel on behalf of the customer whether such tax shall be local, state, or federal in nature.
6. In the event Havel must commence legal action in order to recover any amount payable under this Agreement, the customer shall pay Havel all court costs and attorney's fees incurred by Havel.
7. Any legal action relating to this agreement, or the breach thereof, shall be commenced within one (1) year from the date of the work.

Limitations of Liability and Indemnities

1. Havel will not be liable for damage or loss caused by delay in installation or interrupted service due to fire, flood, corrosive substance in the air, strike lockout, dispute with workmen, inability to obtain material or services, commotion, war, act of God, or any other cause beyond Havel reasonable control.
2. In no event, whether as a result of breach of contract, or any tort including negligence or otherwise shall Havel or its suppliers, employees or agents be liable for any special, consequential, incidental, or penal damage including, but not limited to loss of profit or revenues, loss of use of any products, machinery, equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, down time costs, lost profits, or claims of Buyer's customers for such damages.
3. No other warranty expressed, or other liability is given and no other affirmation of Havel, by word or action, shall constitute a warranty. This warranty is expressly in lieu of any other express or implied warranty including any implied warranty of merchantability of fitness, and any other obligation on the part of Havel.
4. Havel warrants materials only to the extent and for the time period said materials are warranted to Havel by the manufacturer(s) of the same. Havel liability, if any, upon any warranty, either expressed or implied, shall be limited to replacement of defective materials and correction of faulty workmanship which is in violation of local, state, or federal building codes at the time of performance of the work by Havel.

Due to current and forecasted price fluctuations of raw materials, many finished products are experiencing constant and unprecedented price escalations. Finished products affected may include: Mechanical/Electrical equipment, structural and sheet steel, all pipe products and corresponding fittings, stainless/carbon steel, all brass/bronze valves & fire sprinkler devices, copper pipe and wire. Inherently, these unforeseeable changes bring with them a potential cost and schedule impact. This shall serve as formal notification that, as a result of these unforeseeable events beyond our control, Havel hereby reserves the right to add the corresponding price increases to our proposal."

Quotation subject to negotiation after 60 days

#098-23 RESOLVED, that having considered the report and recommendation of the Capital Outlay and Infrastructure Committee, dated March 1, 2023, submitted pursuant to Council Resolution 48-23, and further having considered a communication from the Assistant Director of Public Works, dated January 17, 2023, which bears the signatures of the Director of Public Works, the Director of Finance and the City Attorney, and is approved for submission by the Mayor, in connection with the **Building Controls System Upgrade Project** of four (4) Livonia City buildings, the Council does hereby accept the bid of Havel, a Division of **Shambaugh & Son**, LP, 21661 Melrose Avenue, Southfield, MI 48075, for completing all work required in connection with the Building Controls System Upgrade Project of four (4) Livonia City buildings, to include the Police Department Headquarters, Bennett Civic Center Library, Carl Sandburg Branch Library and the 16th District Courthouse, including all labor, materials and equipment, for a total amount not to exceed \$981,662.00; the same having been in fact the lowest bid received which meets all specifications; FURTHER, the Council does hereby authorize the Mayor and City Clerk, for and on behalf of the City of Livonia, to execute an amendment to the contract adopted pursuant to CR 378-20, between the City of Livonia and OHM Advisors, 34000 Plymouth Road, Livonia, Michigan 48150, to provide construction administration services for the Building Controls System Upgrade Project in an amount not to exceed \$55,000.00, subject to approval as to form and substance by the Department of Law; FURTHER, the Council does hereby authorize an expenditure in the amount of \$646,505.00 from budgeted funds in Account No. 401-000-987-000 and authorizes an additional appropriation from the unexpended fund balance of the Capital Projects Fund (401) in the amount of \$390,157.00, for a total amount not to exceed \$1,036,662.00 for this purpose; and the Mayor and City Clerk are hereby authorized to execute a contract, approved as to form and substance by the Department of Law, for and on behalf of the City of Livonia, with the aforesaid bidder and to do all other things necessary or incidental to the full performance of this resolution.



About the EECBG Program

The U.S. Department of Energy (DOE) received funding from the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) to create or expand key agency programs. One of those programs is the Energy Efficiency and Conservation Block Grant (EECBG) Program that received \$550M through BIL and is administered by DOE's Office of State and Energy Community Programs (SCEP). Through the EECBG Program, DOE is offering eligible local and Tribal governments the option to select an equipment rebate and/or technical assistance voucher in lieu of a traditional formula grant.

The goal of the vouchers is to simplify and streamline the process of accessing EECBG Program formula awards. Vouchers can be used for two primary purposes:

1. Technical assistance vouchers are used to access support from experts across a wide array of high-value opportunities in energy efficiency, renewable energy, transportation, and related areas.
2. Equipment rebates are used for the purchase and installation of energy-related equipment used to meet EECBG Program goals.

EECBG Program local and Tribal governments interested in the voucher option must apply through this website. Entities who have NOT turned in a Pre-Award Information Sheet should begin their voucher application by registering. Once your account has been verified, you will receive an invitation from EECBGVouchers@icf.com (<mailto:EECBGVouchers@icf.com>).

If you turned in a Pre-Award Information Sheet, you should have received an invitation from EECBGVouchers@icf.com (<mailto:EECBGVouchers@icf.com>) to login and do not need to register. Please follow the instructions provided in this email to login and begin your application. If you have not received an invitation to login and believe you should have, please contact EECBGVouchers@icf.com (<mailto:EECBGVouchers@icf.com>) for assistance.

To apply, registered users should login to the portal and navigate to either the equipment rebate or the technical assistance voucher page to complete an application and submit all required documentation. If you are pursuing both voucher options, you must fill out each application separately. Once submitted, applicants can visit the portal to check the status of their application and to view program updates.

Additional resources and information about the EECBG Program vouchers, including detailed application information, program webinars, and FAQs, are available on the program website.

For questions about rebate and technical assistance guidelines or if you need assistance with the registration or application, please contact EECBGVouchers@icf.com (<mailto:EECBGVouchers@icf.com>).

Department of Energy EECBG Voucher Preapproval – Livonia

From EECBG Vouchers <EECBGvouchers@emailicf.com>

Date Tue 12/31/2024 10:35 AM

To Drzewicki, Robb <rdrzewicki@livonia.gov>; Lichtenberg, Debra <dlichtenberg@livonia.gov>; Rohraff, Don <drohr Raff@livonia.gov>; Rohraff, Don <drohr Raff@livonia.gov>; Slater, Michael <mslater@livonia.gov>

Cc Stout, Ian <Ian.Stout@icf.com>

 2 attachments (1 MB)

FARC 6.17.24.pdf; Post-Installation User Guide.pdf;

Hello,

Congratulations! The U.S. Department of Energy has approved your Energy Efficiency and Conservation Block Grant (EECBG) Program Equipment Rebate Voucher application. **This email serves as the official notice that you may now proceed with equipment purchase and installation.**

Next steps:

- Start your project! For information, please refer to the [EECBG Voucher Handbook](#) and the [EECBG Program website](#).
- We recommend that all entities review their state's executed historic preservation programmatic agreement (PA) by visiting [DOE's website](#) that lists out each state's executed PA. If your application includes activities that require consultation with your state historic preservation office, you are responsible for reaching out to your state's SHPO contact to complete any required reviews.
- For information on reporting requirements, please review these resources:
 - **Reporting** tab of the [Voucher Portal](#)
 - DOE's Equipment Voucher Reporting webinar [recording](#) and [slides](#)
 - Attached Federal Assistance Reporting Checklist (FARC)
- Per the Handbook: "Following application approval, eligible entities have up to two years to use their EECBG Program voucher funds with the option to request a no-cost extension."
- Once your entire project is complete and all costs paid, see the attached Post-Installation User Guide for instructions on requesting voucher reimbursement.
- You are invited to join an [EECBG Program Blueprint Cohort](#) to meet monthly with other EECBG governments across [13 clean energy topic areas](#) and learn from experts, discuss challenges/best practices, and answer questions. [Sign up here](#) to join a cohort relevant to your EECBG Program project or your community's broader clean energy goals. *Have a question about the cohorts? Reach out to TechnicalAssistance@hq.doe.gov.*

If you need additional assistance or have any questions, please get in touch with us at this email address (EECBGVouchers@icf.com) and reference your application number below:

Application Number: IA-0000001334

Best,
Ian

EECBG Rebate & Portal Administrator

ICF – Supporting DOE's Energy Efficiency and Conservation Block Grant (EECBG) Program

Email: EECBGVouchers@icf.com

Portal: <https://doerebates.my.site.com/eecbgvouchers>

US Department of Energy

EECBG Equipment Rebates Application

Application Status: Project In-Progress	PDF Creation Date: 2025-06-13
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Application Information	Project Information
Application ID: IA-0000001334	Sectors Served: Local Government
Application Number: EECEQ-01334	Other Project Sector:
Contact: Robb Drzewicki	Eligible Activities: Energy Efficiency Retrofit Grants for Government Agencies and Non-profits
Primary Contact: Robb Drzewicki	Serves Disadvantaged Communities? No
Organization Name: Livonia	How Project Serves DACs:
Teaming With Other Entities?: No	Summary: The City of Livonia is upgrading HVAC controllers for a number of our municipal buildings including: a portion of City Hall, several DPW buildings, the Housing Commission headquarters, and all 5 fire stations.

Budget Information	Program Metrics & Compliance Requirements:
EECBG Formula Allocation: 155220	Program Metrics: Retrofits;Equipment Purchased
Using Multiple Recipients?: No	Other Program Metric:
Total Teaming Formula Allocation:	Applicable NEPA SOW: NEPA SOW 2
Total Leveraged Funding: 0	Davis-Bacon Signature: Robert A. Drzewicki
Total Voucher Estimate: 155220	Davis-Bacon Signature Date: 2024-10-28
Total Budget Summary: 155220	

Application Team:

No application teams submitted

Budget Summary:

Budget Summary Entry Details
Budget Summary Name: Budget-001609
Budget Category: Third-Party Contractor (E.G. HVAC Technician or Lighting Installer)
EECBG-BIL: 155220
Other Leveraged Funds (if applicable):
Total:

Other Leveraged Funds:

No other leveraged funds submitted

Equipment Submitted:

Equipment Entry Details
EECBG Equipment Category: Retrofit Technologies
EECBG Equipment Type: HVAC equipment - Building Automation Systems (BAS)
EECBG Equipment Type Other Explanation:
Address of Equipment Installation: 33000 Civic Center Dr, Livonia, 48154-3097
Estimated Installation Completed Date: 2025-03-31
Quantity: 10
Equipment Rebate Covers Install Cost?: Yes
EECBG Other Type Explanation:
In-House Staff to Conduct Installation?: No

Detailed Equipment Information: We propose to furnish and install a Tridium Niagara N4 / BACnet IP direct digital system of automatic temperature control and building automation per the following description: • Furnish and install (3) JACE Network Controllers based on the existing Honeywell building groups □ Civic Center (City Hall, Annex) □ DPW (Building 12, Building 13, Garage) □ Remote Sites (Fire Stations 1, 3, 4, 5, 6, Housing Commission) • Furnish and install BACnet IP field controllers and expansion modules to replace (14) existing non-supported Honeywell Excel controllers and (60) IO cards • Replace existing proprietary Honeywell space, duct, and immersion temperature sensors with industry standard 10K type 3 thermistor sensors. All other field devices and all input/output wiring will be reused • Add floorplans, equipment graphics, scheduling, alarming, and trending to the Phase 1 Niagara N4 Supervisor

Fuel Source of Existing Equipment: Natural Gas

Fuel Source of New Equipment: Natural Gas

Other Fuel Source of Existing Equipment:

Other Fuel Source of New Equipment:

LIVONIA CITY CENTER PROGRAM

NEW POLICE STATION FACILITY

July 9, 2025



HOBBS + BLACK ARCHITECTS



Our Project Goals

- **Recruiting & retention** (your people)
- **Consensus-building** (multiple users)
- **Flexibility** (future proofing)
- **Constructability** (delivery)
- **Expansive capacity** (future growth)
- **Adaptability** (Multifunctional spaces)
- **Versatility** (new methods)
- **Efficiency** (minimizing costs)

Goals Of a New Police Headquarters

- Streamlined officer effectiveness, showcased best practices, latest equipment and technology, coordinated phasing.
- Inviting with discreet security, highly functional space.
- Designed to fit within the desired context, essential facility, inviting to the public.
- Responding to the unique context, focus on the effectiveness of staff, being approachable by the community.



Components of Livonia PD



First Floor

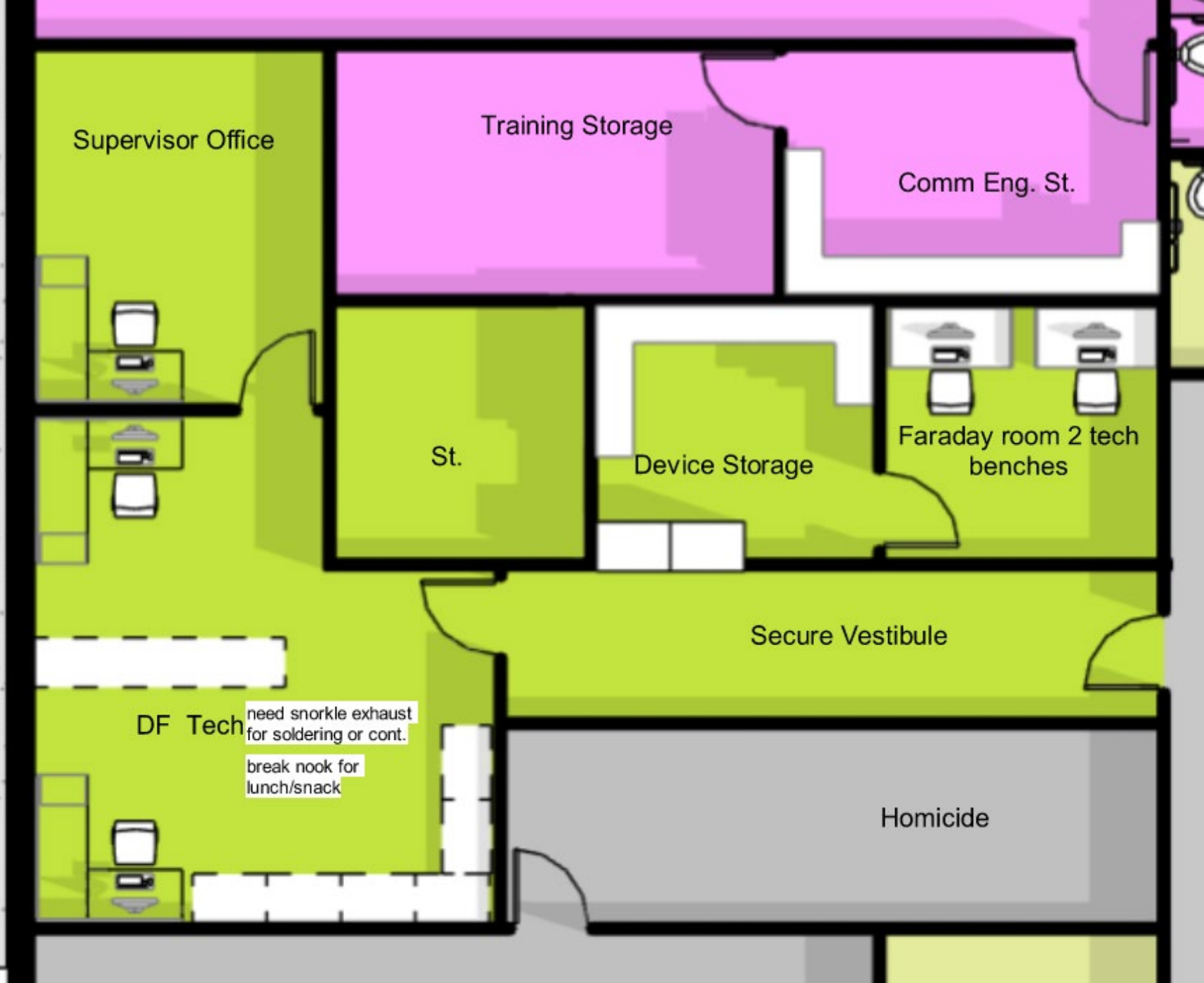


Second Floor

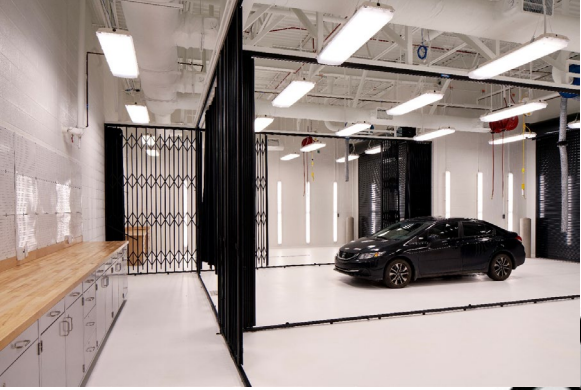






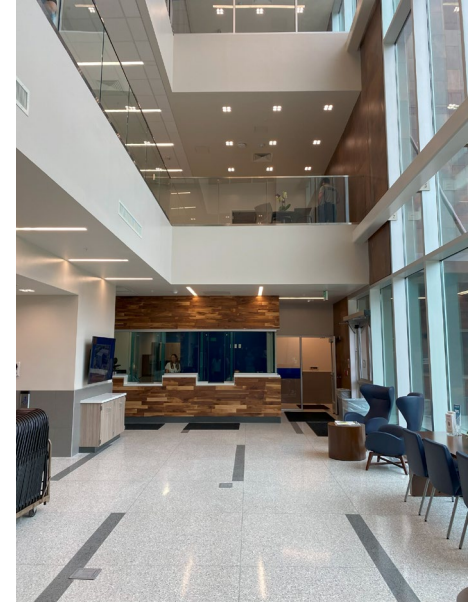










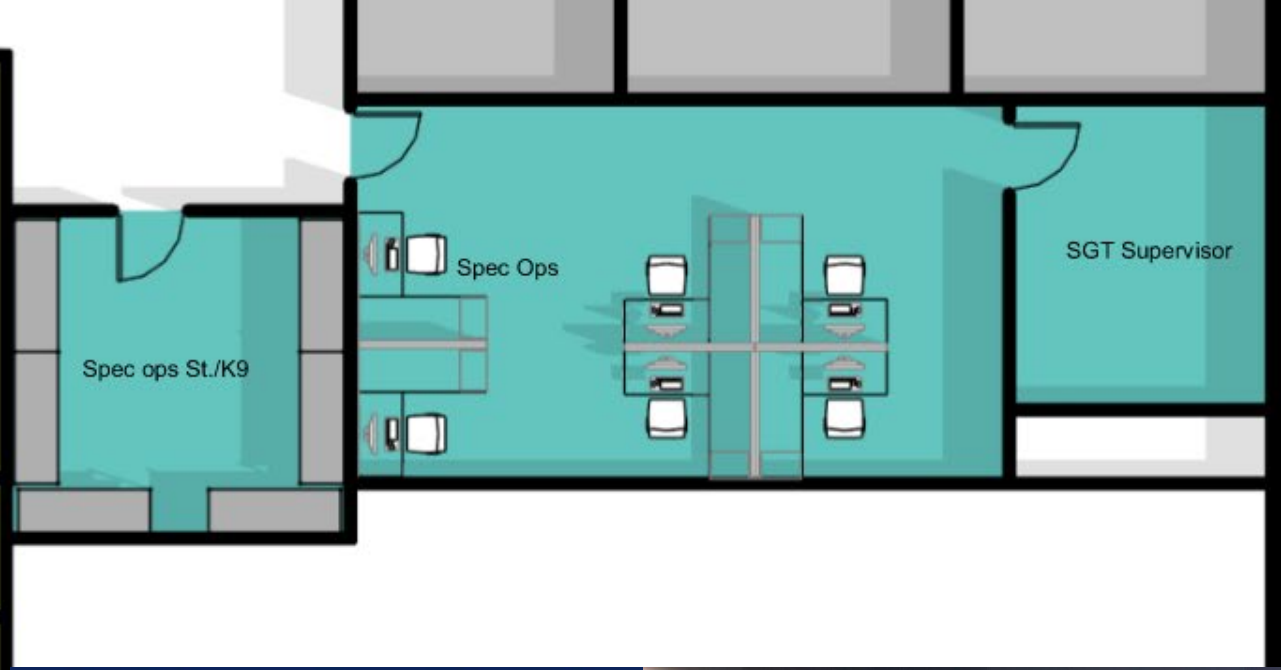
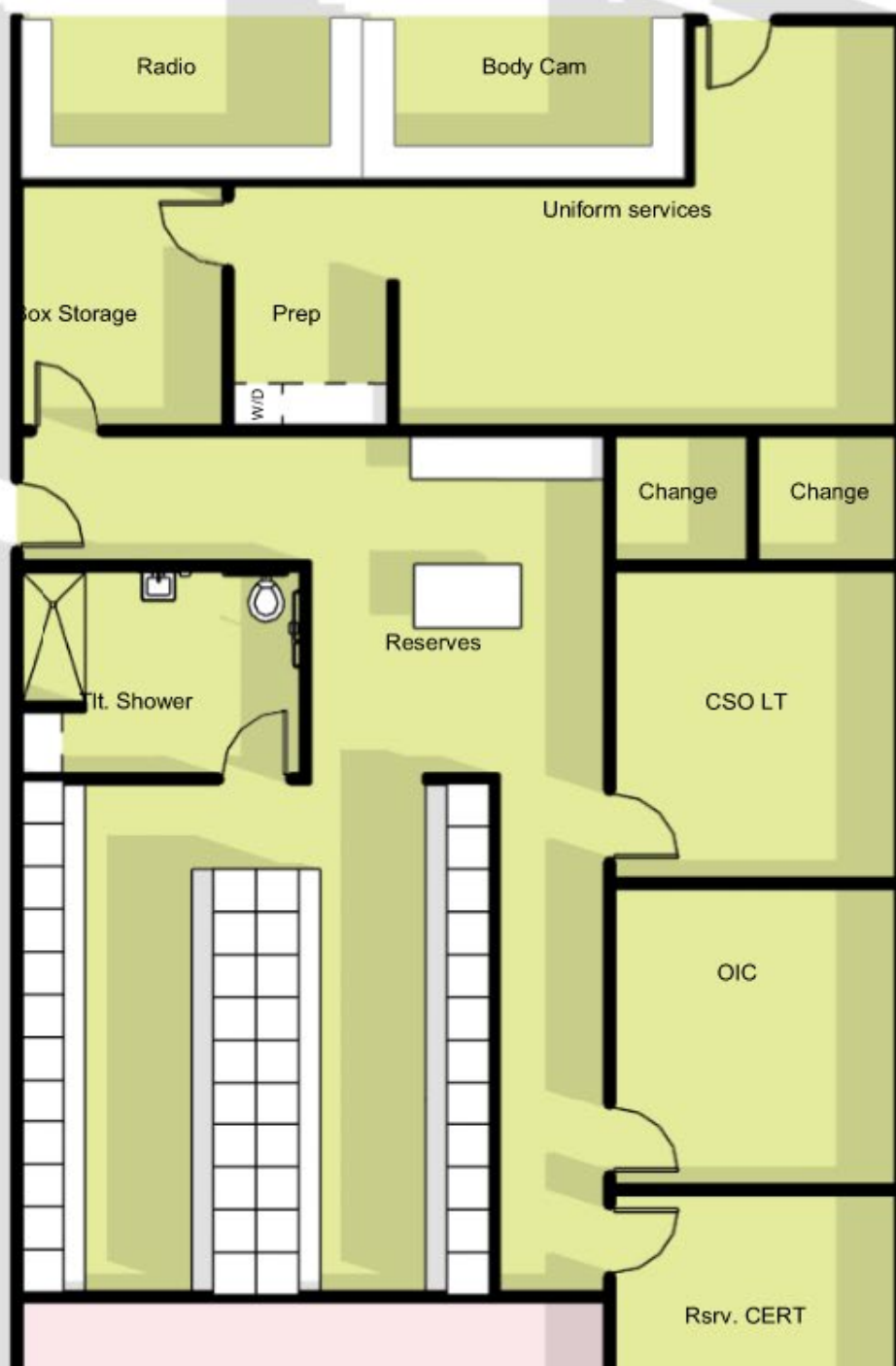














MEMORIALS



MUSEUM SPACE



RENDERINGS













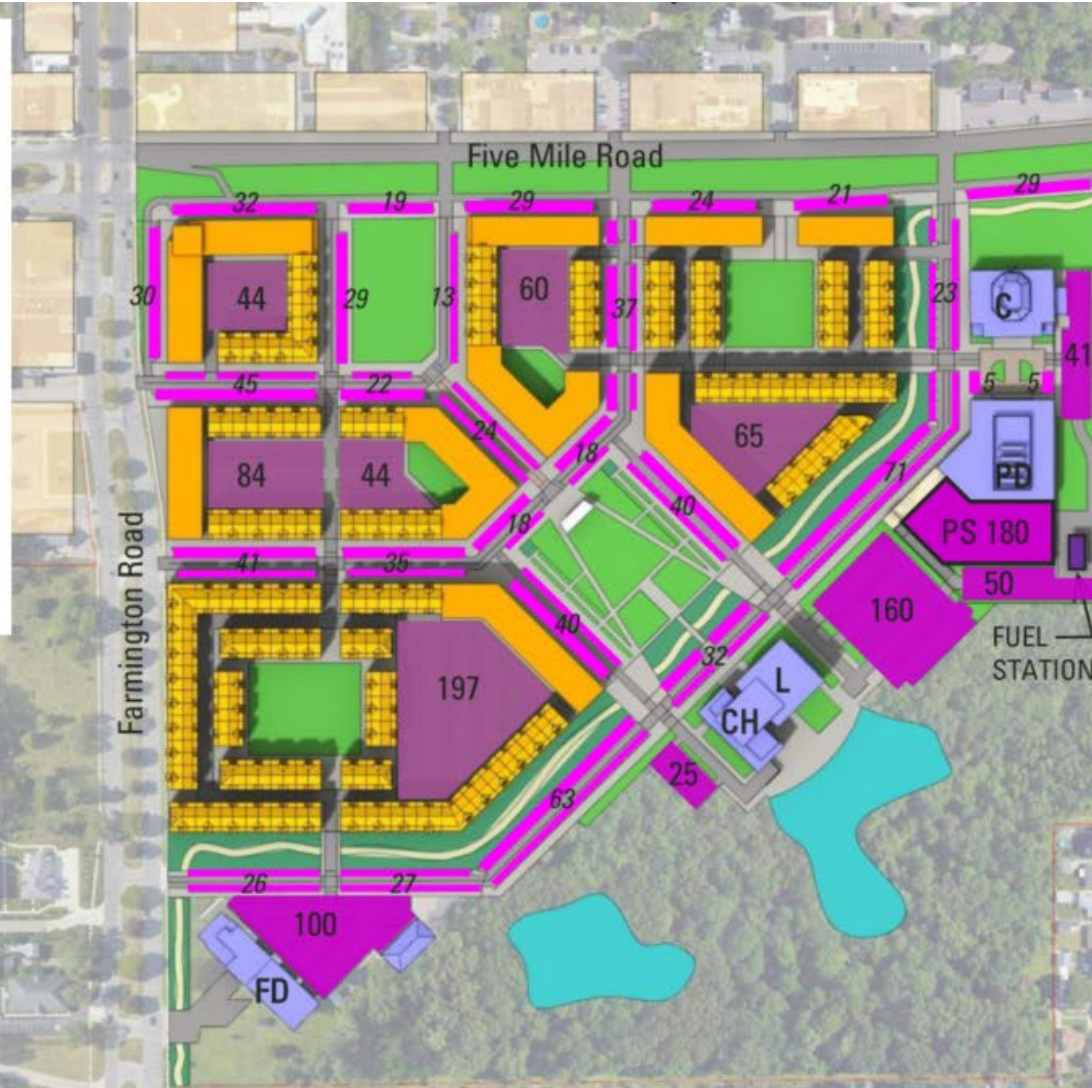


Thank You!

Questions?

Required Civic Uses Parking

Courthouse Secured	41
Police Enclosed Secured	80
Police Secured (roof)	80
City Hall staff	116
City Hall secured	34
Library	43
Fire Dept + DPW	57
Sub-Total	451
Visitors:	
Library, Police & Court	<u>150 (on-street)</u>
Total with Visitors	601



Note: Parking space figures do NOT include Townhome garage parking, which adds another 678 spaces to the total count

PARKING PROVISIONS

On-Street Parking

Greenway Street Parking	236 spaces
New Internal Street Parking	390 spaces
5 Mile Road Street Parking	<u>184 spaces</u>

Sub-Total Parking 810 spaces

Off-Street Parking - Civic

Police Parking Structure (2 levels, 80sp + 100sp)	180 spaces
Courthouse Surface Lot	41 spaces
Police/City Hall Surface Lot	50 spaces
Fire Department Surface Lot	100 spaces
Assigned Surface Lot NE	160 spaces
Assigned Surface Lot SW	<u>25 spaces</u>

Sub-Total Parking 556 spaces

Off-Street Parking - Private Development

Surface Lots (6)	<u>494 spaces</u>
------------------	-------------------

Sub-Total Parking 494 spaces

Total Available Parking

Unassigned, Public	810 spaces
Assigned, Civic use	556 spaces
Private, Residential	<u>494 spaces</u>

Total Parking 1,860 spaces



LETTER TO THE LIVONIA CITY COUNCIL

1.

Council Office
June 23, 2025

MEETING DATE

COI070925/R072125

PRESENTED BY

AGENDA ITEM

The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)

BACKGROUND DETAILS

At the Regular Meeting of April 14, 2025:

Councilmember Donovic reported on the COI meetings of March 12 and April 2, 2025 on the subject of planning, design and construction of new Civic Center Campus.

At the Regular Meeting of February 10, 2025:

Councilmember Donovic reported on the COI meetings of January 22 and February 5, 2025 on the subject of planning, design and construction of new Civic Center Campus.

At the Regular Meeting of December 18, 2024:

Councilmember Donovic reported on the COI meeting of December 11, 2024 on the subject of planning, design and construction of new Civic Center Campus.

At the Regular Meeting of November 6, 2024:

Councilmember Donovic reported on the COI meeting of October 14, 2024 on the subject of planning, design and construction of new Civic Center Campus.

At the Regular Meeting of October 7, 2024:

#330-24 RESOLVED, that upon the motion by Councilmember Rob Donovic, seconded by Council Vice President Martha Ptashnik, at the Regular Meeting held October 7, 2024, the Council does hereby refer the subject matter of the planning, design, and construction of the New Civic Center Campus to the Capital Outlay and Infrastructure Committee for its report and recommendation.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To discuss the subject matter as presented.

ATTACHMENTS

1. COI070925 Central ParkPlaza Renderings Recd 06-26-25
2. COI040225 Minutes - RD
3. COI040225 Livonia Vision 21 - Financing Discussion AS PRESENTED

4. COI040225 Ballot Language - DRAFT ONLY
5. COI031225 Minutes - RD
6. COI031225 City Center Community Presentation 3-12-25
7. COI020525 Minutes - RD
8. COI020525 - presented at COI020525
9. Senior Wellness Center - Update presented at COI020525
10. COI012225 Minutes
11. COI012225 Technolgy Consulting Services_Contract Award Recommendation Letter
12. COI012225 LCCP_Tech Consultanting Services_Proposal and CBS Summary
13. R121824 FRS new Livonia City Hall CR 432-24
14. R121824 Hobbs + Black new PD CR 433-24
15. COI121124 20241206_LCCP_Police Station_AE_Contract Award Recommendation Letter
16. COI121124 20241206_LCCP_City Hall_CM_Contract Award Recommendation Letter
17. R102124 (X1) CE w proposed conctract res - New Data recd 10-21-24
18. R102124 (X1) ProfSurvey w proposed contract res - - New Data recd 10-21-24
19. R102124 (X1) HED - Master Plan w proposed contract res - New Data recd 10-21-24
20. COI101424 Minutes
21. COI101424 LTC plan design construction of CC Campus
22. COI101424 Email RE_Award Recommendation Letters and Proposal Summaries
23. COI101424 LCC_City Hall_AE_Contract Award Recommendation Letter_AE- Updated
24. COI101424 LCC_Contract Award Recommendation Letter_CE-Updated
25. COI101424 LCC_Contract Award Recommendation Letter_MP- Updated
26. COI101424 LCC_Survey_Contract Award Recommendation Letter- Updated
27. COI101424 LCC_Traffic Study_Contract Award Recommendation Letter- Updated
28. R100724 Subject matter of plan, design, and construct New Civic Center Campus CR 330-24

APPROVED BY







ROBERT & JANET BENNETT LIBRARY

CAPITAL OUTLAY AND INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, APRIL 2, 2025
7:00PM

A Capital Outlay and Infrastructure Committee meeting was held on Wednesday, April 2, 2025, in the Livonia City Hall Auditorium.

Committee Members Present: Robert Gjonaj Donovic, Chair
Martha Ptashnik, Vice Chair

Committee Members Absent: Carrie Budzinski, Member (Excused)

City Council Members Present: Brandon McCullough, President
Lynda L. Scheel

**City Officials
and Others Present:** Maureen Miller Brosnan, Mayor
Carter Fisher, City Attorney
Dave Varga, Chief of Staff
Debbie Lichtenberg, Finance Director
Mark Taormina, Planning and Economic Development Director
Ted Davis, Superintendent of Parks and Recreation
Thomas Goralski, Police Chief
Robert Jennison, Fire Chief
Kristen Edson, Library Director
Plante Moran Realpoint Representatives
HED Representative, Master Planner & Architect
Frank Rewald and Sons, Construction Manager

1. The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)

The meeting was convened at 7:02 PM.

The meeting began with a discussion of the following:

- Mayor started meeting with a presentation of the Civic Center Project
- Ballot proposal would be August 5th if the Council approves Ballot language
- In 2017, Livonia started talking about a downtown in Livonia Vision 21 and was drafted by hundreds of residents and officials. The Civic Center proposal is not new, this stems from Vision 21, which the Council approved in 2021
- Roughly 97 million dollars in deferred maintenance and general upkeep/ updates to city buildings
- Phase 1 was to relocate Senior Center, which was primarily funded by Federal, State, and the County, all of which wanted to specifically fund a Senior Center project
- Phase 2 is to build City Hall and Library. Currently is roughly 97,000 sqft, the city only needs roughly 55,000 sqft. Civic Center Library is roughly 72,000 sqft, we only need roughly 50,000 sqft. These numbers come from the Space Needs Assessment conducted by Plante Moran Real Point, our real estate advisor, working with Department Heads and respective staff.
- Phase 3 is constructing a new Police Department, renovations to 5 Fire Stations, construct Civic Center Campus for infrastructure, park and gathering area
- Building a connected greenway and central gathering area which is roughly 2 acres that will host concerts and other activities
- The last municipal millage was passed by voters in 1999, for the Jack E. Kirksey Recreational Center
- Phase 4 would be the private development portion of the project, built and funded by the private business community. The city is not paying for the private development.
- The city is asking for a 150-million-dollar millage to fund the Civic Center Campus improvements
- This bond would be paid over 25 years and be borrowed in 2 series or draws
- 50% of residential homes would pay roughly \$12 a month
- 85% of residential homes would pay roughly \$18 a month
- 55% of commercial buildings around 350,000 taxable values would pay roughly \$42 a month
- 85% of commercial buildings around 1 million taxable values would pay roughly \$120 a month
- There was conversation around renovating existing Civic Center library compared to constructing a new Civic Center Library and those pros and cons
- Relocating and combined the library energizes the entire Civic Center Campus
- The public can go online to LivoniaBuilt.org
- The city can refinance the bond after 10 years, depending on rates

The meeting adjourned at 9:26 PM.

The Committee recommends:

- The Administration to formally present the item to the City Council

Note: This item will remain in Committee for further discussion.

This meeting will be reported at the **Regular Meeting of April 14, 2025.**

A handwritten signature in black ink, appearing to read 'R. Gjonaj-Donovic', is written over a horizontal line.

Robert Gjonaj-Donovic, Chair

CAPITAL OUTLAY & INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, APRIL 2, 2025, 7:00PM

NAME

DEPT OR CONTACT INFO FOR NOTIFICATIONS*
*PERTAINING TO THE SUBJECT MATTER OF THIS MEETING

Denise Mika

Jim Biga

Mary Kay Heidtke

DAVID CORDS

Jennifer Blaisden

Lauren Ladd

PATRICIA JASON

DANIEL JASON

Barbara Glower

Andy Fleming

Sandra + Ken Moore

Gerald Karasinski Jr.

Jenny O'Connor

Alex King

Justin Gabel

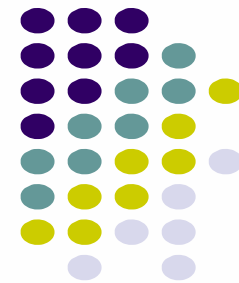
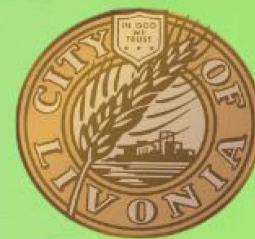
Lynn Miller

Deb Christensen

Kathleen Jorgensen

Eileen McDonnell

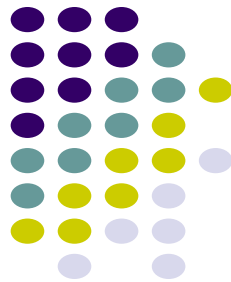
TOGETHER WE BUILD TOMORROW



DEFINING THE CHALLENGE

In 2017 thousands of Livonia residents came together around a problem

Livonia's population was decreasing.

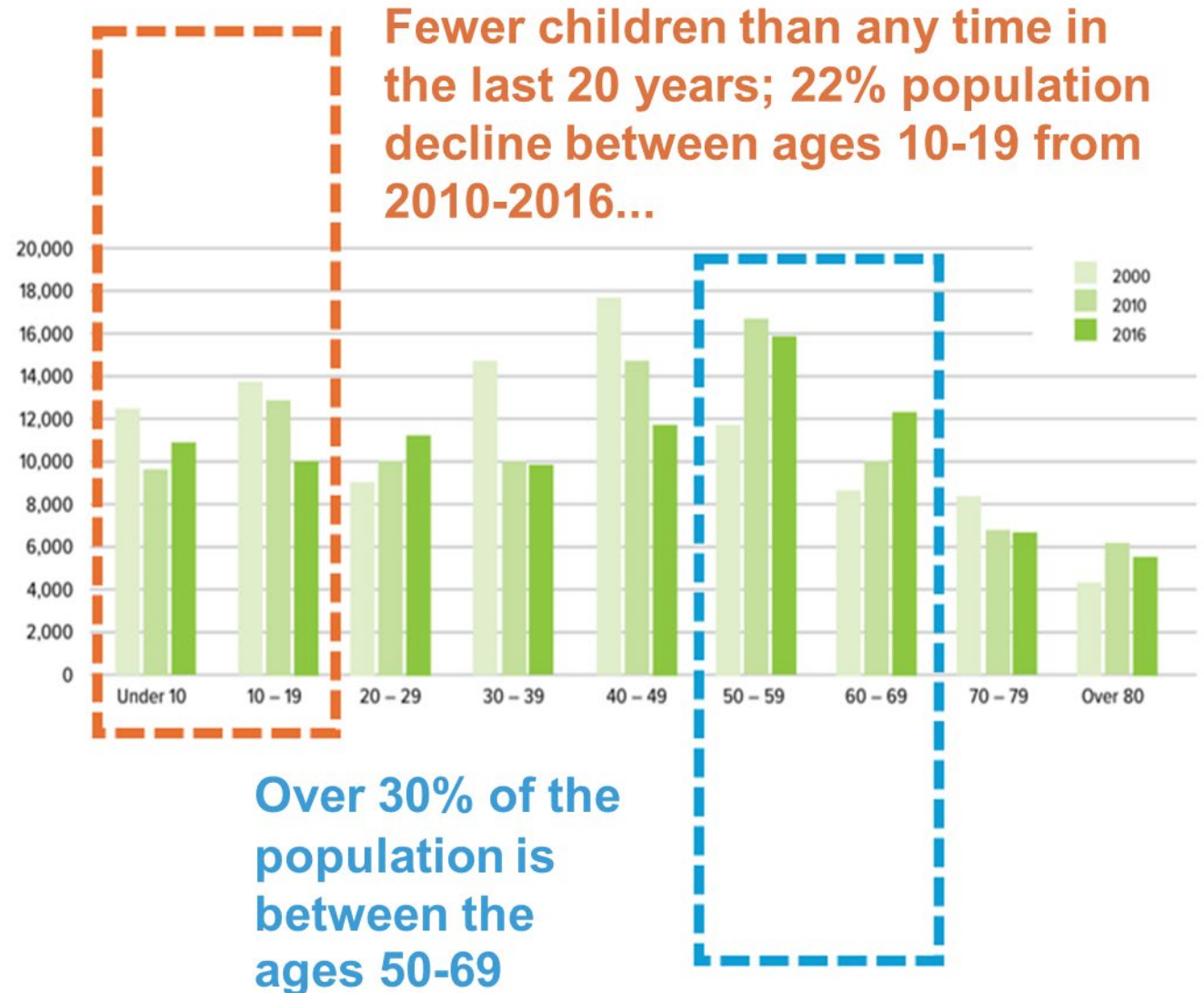


Livonia	-2.8%	(2,747 residents)
Plymouth Twp.	+0.2%	(+42)
Northville Twp.	+7.9%	(+2,253)
Canton Twp.	+4.0%	(+3,618)
Farmington Hills	-0.3%	(-243)
Lyon Twp.	+28.6%	(+4,163)
All of Wayne County	-1%	(-8,244)

DEFINING THE CHALLENGE

...while at the same time the age of our population was increasing.

The **median age** of residents is 44.7 years old, an increase from 40.2 years old in 2000.





\$107 million
required repairs and maintenance

[ca 1967]

New City Hall for Livonia

By JOHN J. CAMPER

Detroit News Metropolitan Bureau

LIVONIA — Construction should begin next year on Livonia's new city hall.

The building, expected to be at least five stories high, will be built behind the police station and water department buildings, immediately south of Five Mile and east of Farmington road.

It is to be the focal point of an ambitious civic center plan drawn by the city's planning department.

The civic center scheme, which will be released within a few weeks, will include a city hall, courthouse, auditorium and convention center. There are provisions for hotels and high-rise apartments.

THE CITY'S Municipal Building Authority recently hired the architectural firm of Alden B. Dow Associates Inc., of Midland, to design the city hall.

The firm will begin interviewing city department heads next week to determine space needs.

Harvey C. Allison, vice-president of the firm, said the architects should have schematic drawings of the city hall ready this summer.

The new building actually will be owned by the Municipal Building Authority, which technically is not part of the city government.

The authority will sell 40-year bonds to finance the city hall. It will then rent the building back to the city at a rental rate sufficient to cover interest and principal on the bonds.

WHEN THE BONDS have been paid off through the rental, the building will become the city's property.

The advantage of this type of financing is that the city could raise property taxes to pay the rent without a vote of

the people, said David L. Jones, chairman of the authority.

After the architect has placed a price tag on the building, it probably will take about six months to get approval of the bonds from the state's Municipal Finance Commission, Jones said.

If everything goes according to schedule, Jones said, the building could be completed in about three years.

Dow officials are refraining from estimating cost or size of the new building until their needs studies are complete.

BUT BY COMPARISON, the firm designed a seven-story, \$2.5-million city hall for Ann Arbor, which was completed in 1953. Ann Arbor has an estimated population of 95,000, including 32,000 University of Michigan students. Livonia's population is about 100,000.

The Dow firm was chosen over 11 others, Jones said,

because of its extensive experience in designing high-rise buildings.

It designed the Matthai Recreation Building and the student center at Wayne State University and the U-M's Institute of Social Research and botanical gardens at Ann Arbor.

Dow agreed to do the initial work and schematic drawings for a fee of not more than \$12,000. If the building plans are approved by the city council, Dow will receive a percentage of the building costs.

Livonia's city offices are located in a half-dozen buildings scattered along Farmington and Five Mile. The present city hall probably would become part of the city's library system when the new building is complete, Jones said.

SINCE LIVONIA is expected to reach a population of 175,000 by 1985, one of Dow's major headaches will be pro-

viding for expansion of city offices.

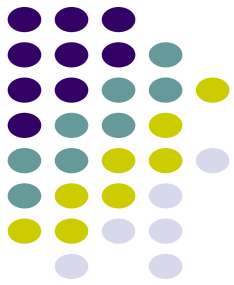
City officials had advised against incorporating courtrooms into the city hall, since Livonia's municipal court may be replaced by a district court under the state constitution's proposed judicial reorganization.

But Allison suggested letting the court use the new building "until 1973 or so. Then it could go into a separate court building and expanding city offices could take over the space the court vacated."

A suggestion that the plans provide for additional floors at a later date was rejected by Alden B. Dow, president of the firm, as "an awkward thing to do gracefully."

But Jones has suggested building the building several stories higher than presently needed and renting the vacant floors to private firms. The firms could be asked to leave as the city needed extra space.

Alden B. Dow Archives
315 Post Street, Midland, MI
Copied for reference only.
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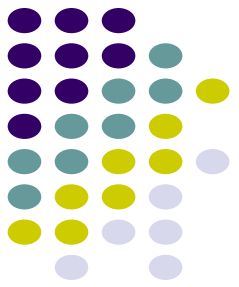


70%

of Livonia
residents want a
**CITY
CENTER**

Based on the 2024 Livonia Community
Satisfaction Survey of ~4000 Livonia residents

Livonia











AUTHENTIC MOVES / Be the center of a connected, healthy community



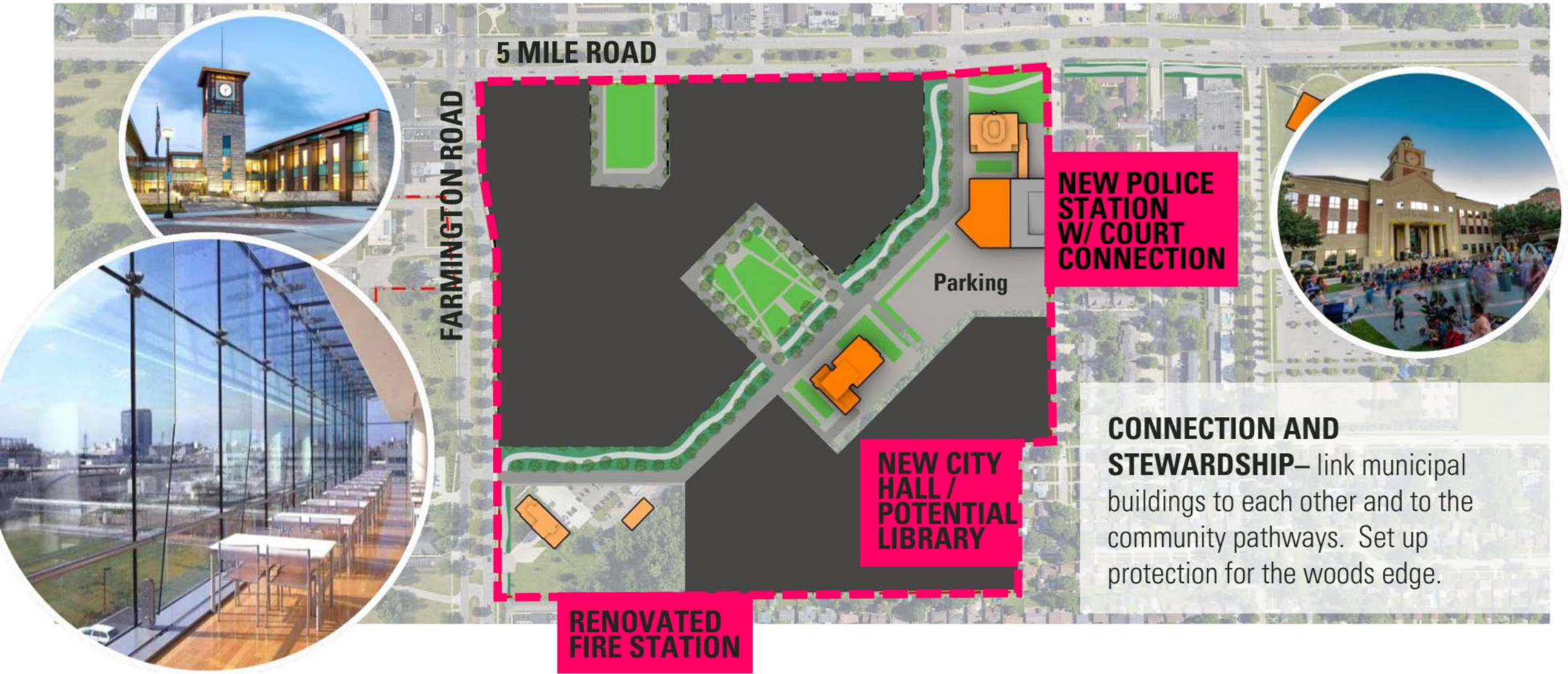
AUTHENTIC MOVES / Be the heart of Livonia's celebrations and traditions



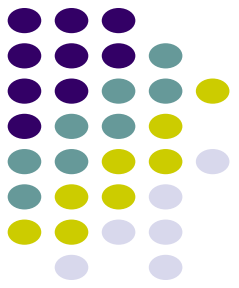
AUTHENTIC MOVES / Maximize investment for community impact



AUTHENTIC MOVES / Grant municipal facilities stewardship of the woods edge along the greenway



The Last Time the City Invested 1999



**GRATE PHOTO BY
BRIAN KIRKSEY**
**Livonia
Mayor
Jack Kirk-
sey and
city coun-
cil shovel
dirt dur-
ing the
ground-
breaking
ceremony
of the new
rec center
Thursday.**



Officials break ground for recreational cornerstone

**BY ALICE ASHMORE
STAFF WRITER
aashmore@ee.homecomm.net**

A row of polished shovels – that no construction worker would be caught dead with – gleamed in the afternoon sun as local dignitaries officially broke ground for the Livonia community recreation center.

More than 100 people gathered in the sweltering heat on Thursday to celebrate the beginning of the project.

“We’re here to celebrate a very special occasion – full of excitement and full of promise,” Livonia Mayor Jack Kirksey said.

“We will have the ability to meet community and recreation needs of our community.”

The most important aspect of the project is that it is expected to help influence the demographics of the city, the mayor said.

“We can continue to attract young families,” Kirksey said. “We are trying to balance the demographics of the community and we will do it with this institution.”

The rec center is being built adjacent to Five Mile and Hubbard, near the old Bentley High School.

Superintendent of Schools Ken Watson was the last principal at Bentley High School.

“It’s a very sentimental and historical site for me,” Watson said.

“The best legacy for Bentley High School will be the recreation center. It represents what Livonia is all about.”

City Council Member Jack Engbretson declared it, “A great day for our community.” The rec center

will continue to make Livonia a great place to live and raise families, the councilman said.

“On the quality of life issue, this is the finishing touch,” Engbretson said.

Wayne County Prosecutor Mike Duggan, who chaired the millage campaign for the rec center, said “Wow, this is a great day for me. I grew up a mile from here.”

Duggan shared fond recollections of playing youth baseball on fields near the site.

The rec center will keep kids busy with healthy activities, which is important, Duggan noted.

“Whether parents want to face it or not, the harsh realities are that by eighth grade, one-half of students will try alcohol; and by 10th grade, one-half will try illegal drugs,” he said.

Duggan said having a place for families to spend time together helps combat those problems.

Engbretson added, “The mayor deserves great accolades for having the vision to have promoted this idea.”

The project is not a matter of trying to compete with rec centers in neighboring communities, Duggan said.

The new rec center will include two gymsnasiums, a lap pool and a leisure pool, a gymnastics center, a fitness center, a running track, a climbing wall, a children’s play area and a senior citizens lounge.

Kenneth Noumann, architect for the project, believes the new center will be visually stunning.

“We believe the building will have a ‘Wow’ factor,” he said.

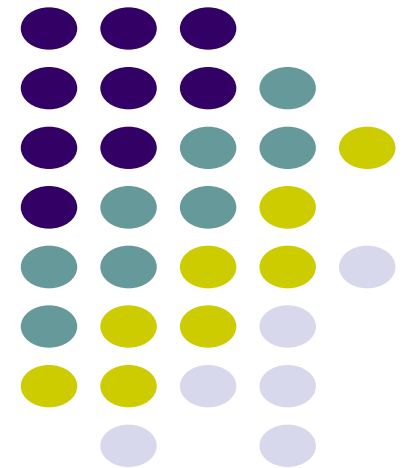
The \$30 million project is expected to be completed in early 2003.



Livonia Vision 21

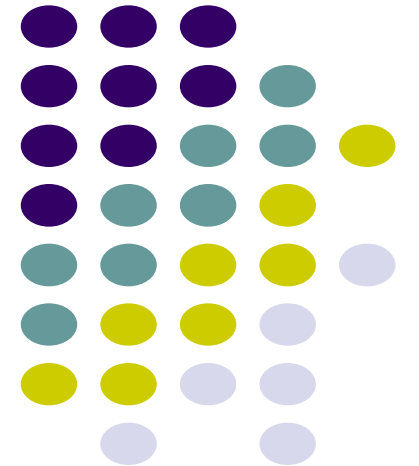
Financing the Vision

Responsibly, Sustainably and Community-Focused



Project Overview

Livonia Vision 21
Project Catalyst to City Center



Livonia Vision 21 City Center Timeline

Together We Build Tomorrow

Phase
1

2025
**NEW LIVONIA
SENIOR WELLNESS
CENTER**

Grant Funding
Secured

Phase
2

2026-27
NEW CITY HALL

Bond Funding
Secured

Phase
3

2028
**NEW POLICE
STATION,
FIRE STATION
RENOVATIONS,
NEW LIBRARY, PARK
SPACE, BIKE LOOP**

Millage Funding
Needed

Phase
4

2028 +
**NEW
RESTAURANTS,
RETAIL,
RESIDENTIAL**

Public-Private
Partnerships

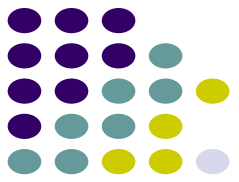
LivoniaBuilt.org

**#Livonia
BUILT**

LivoniaBuilt.org



PHASE 1: Funding the Senior Wellness Center



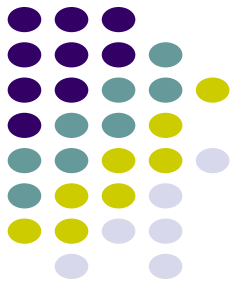
Source		Investment	% of Total
Grants:			
	Wayne County	\$8,000,000	29.6%
	Michigan Department of Health & Human Services	\$4,500,000	16.7%
	U.S. Department of Housing & Urban Development	\$4,250,000	15.7%
	ARPA Funds	\$4,000,000	14.8%
	Total Grant Funding	\$20,750,000	76.8%
Internal Funding:			
	Contribution from the Building Improvement Fund	\$2,000,000	7.4%
	Accumulated Fund Balance – Senior Center Construction Fund	\$4,000,000	14.8%
	Interest Earnings	\$250,000	1.0%
	Total Internal Funding	\$6,250,000	23.2%
	TOTAL SENIOR WELLNESS CENTER FUNDING	\$27,000,000	100.0%



**PHASE 1 - FUNDING SECURED – NO
ADDED COST TO TAXPAYERS**

PHASE 2: Funding City Hall

Later this year the City will issue up to \$45 million in bonds to finance the investment in constructing a new City Hall.



City of Livonia
Limited Tax General Obligation Bonds
Projected Bond Issuance, based on annual debt service available

\$2,400,000 Annual Debt Service target

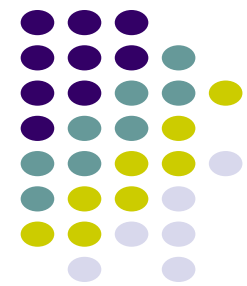
Annual Debt Service	Bond Term	Interest Rate*	Estimated Total Interest	Bond Amount	Additional existing funds available in Building Improvement Fund = ~\$9,000,000 Est. Investment - new City Hall = \$40,000,000
\$2,400,000	20 years	4.50%	\$16,675,200	\$31,280,000	
\$2,400,000	25 years	4.75%	\$25,252,663	\$34,680,000	
\$2,400,000	30 years	5.00%	\$35,121,688	\$36,805,000	

**Estimated rates – actual rates determined at time of sale.*



FUNDING SECURED – NO ADDED COST TO TAXPAYERS

PHASE 3: Funding The Future With a Bond Proposal Supported by Voters



Bonds supported by a new debt millage will be used to build or renovate:

<u>Project Area:</u>	<u>Investment Estimate</u>
Library	\$37,500,000
Police Station	\$66,700,000
Renovate Fire Stations	\$16,000,000
City Center Plaza with Public Amenities	\$19,100,000
Infrastructure & Parking	<u>\$10,700,000</u>
Investment Needed	\$150,000,000

LIVONIA VISION 21

Proposed Sources of Funding – Project Catalyst to City Center

Funding Required

PHASE 1 - Grants from Wayne County, State of Michigan and Federal Funding (\$20.75M) + EXISTING CITY FUNDS (\$6.25M) – No new cost to taxpayers:

Senior Wellness Center	\$27,000,000
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PHASE 2 - Bonds from EXISTING REVENUE SOURCES – No new cost to taxpayers:

City Hall	\$40,000,000
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PHASE 3 - Bonds paid from a voted debt millage would be invested in:

Library	\$37,500,000
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Police Station	\$66,700,000
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Fire Stations	\$16,000,000
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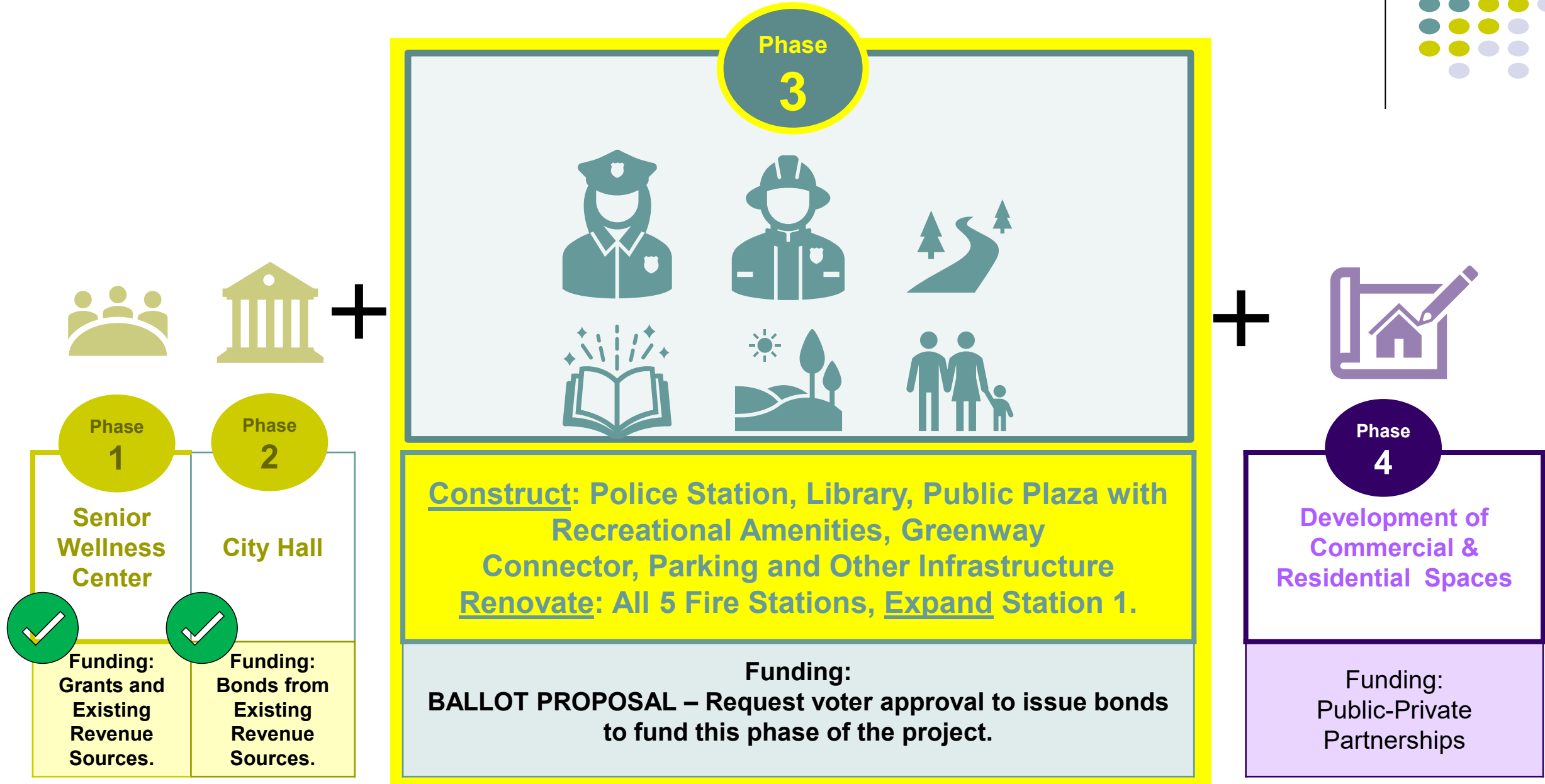
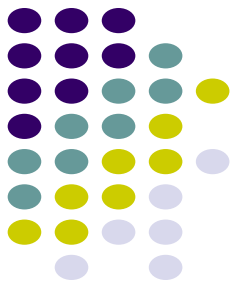
City Center Plaza with Public Amenities	\$19,100,000
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Other Infrastructure & Parking	<u>\$10,700,000</u>
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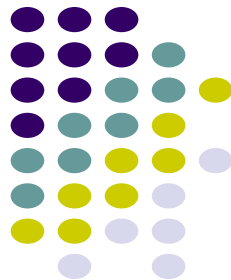
Bonds supported by Voted Debt Millage	\$150,000,000
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ESTIMATED TOTAL LIVONIA VISION 21 PROJECT INVESTMENTS	\$217,000,000
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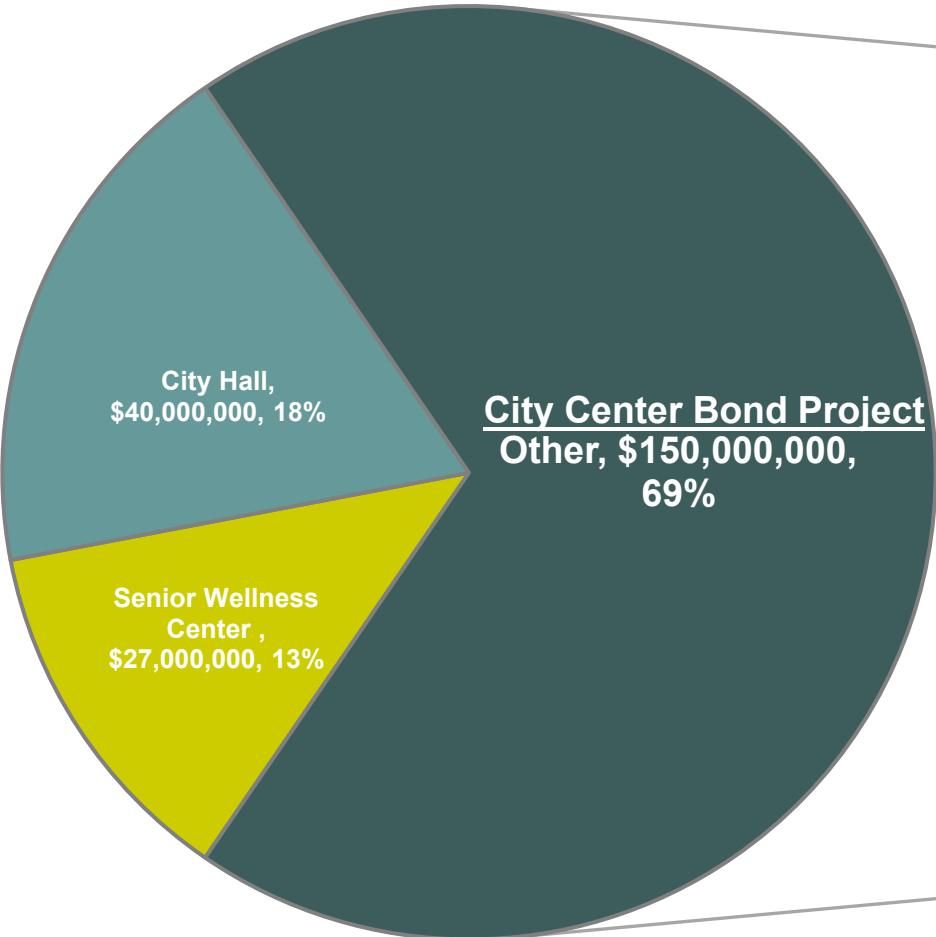
Defining the City Center Project



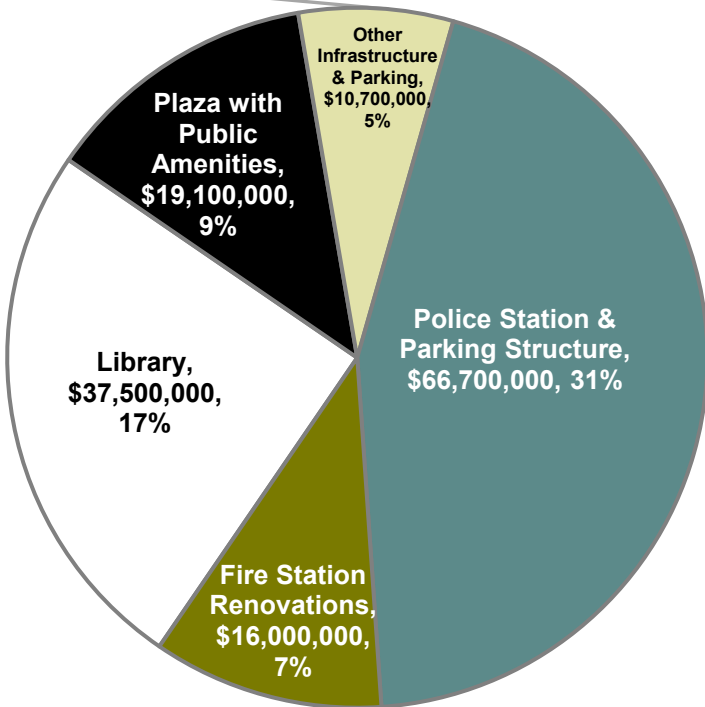
Here's Where We Are Investing



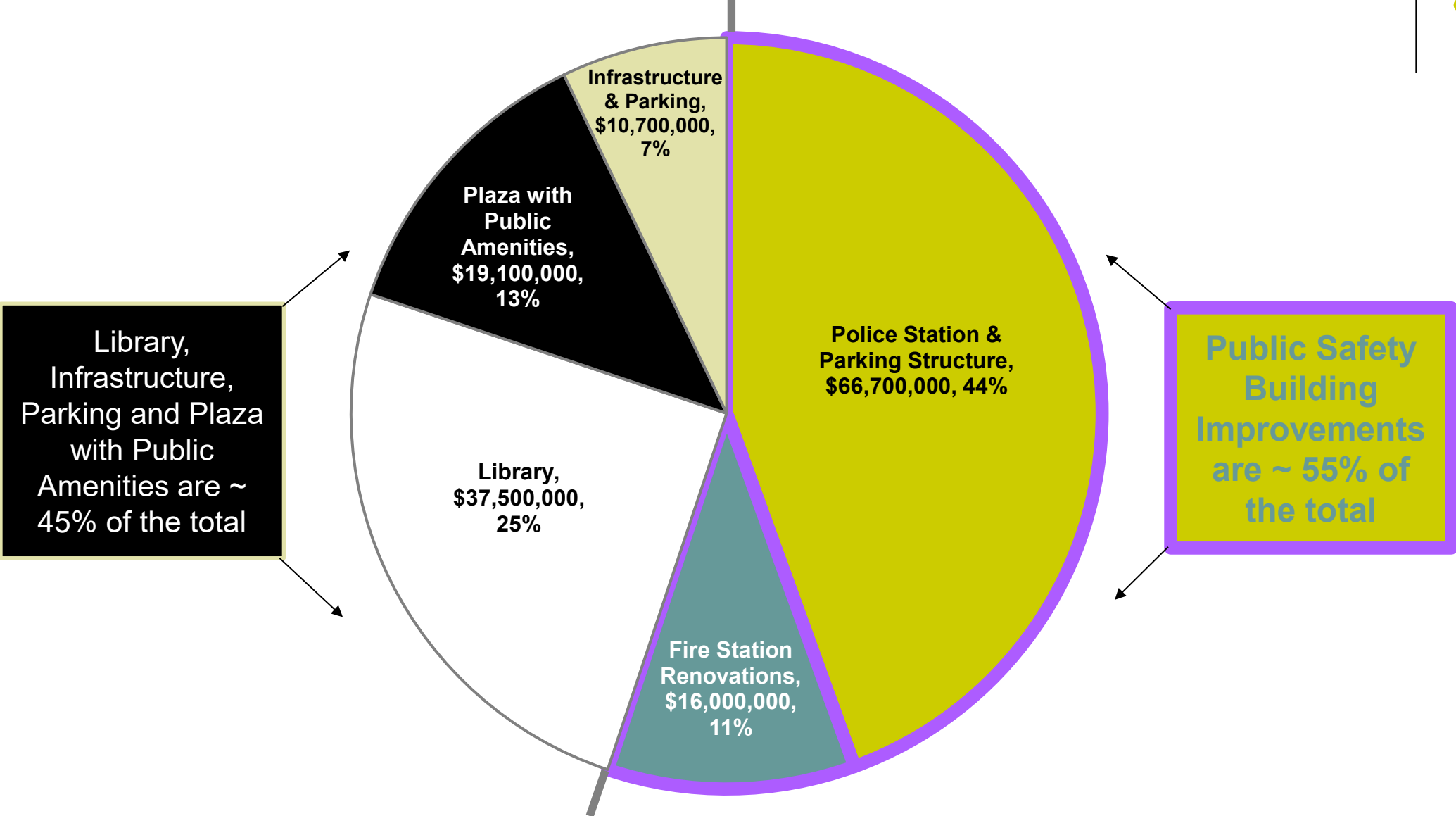
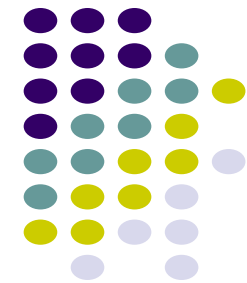
Total Investment – Project Catalyst to City Center
\$217,000,000



Investment Amount Included in the Ballot Proposal
\$150,000,000



Breakdown of Investments Included in the Ballot Proposal

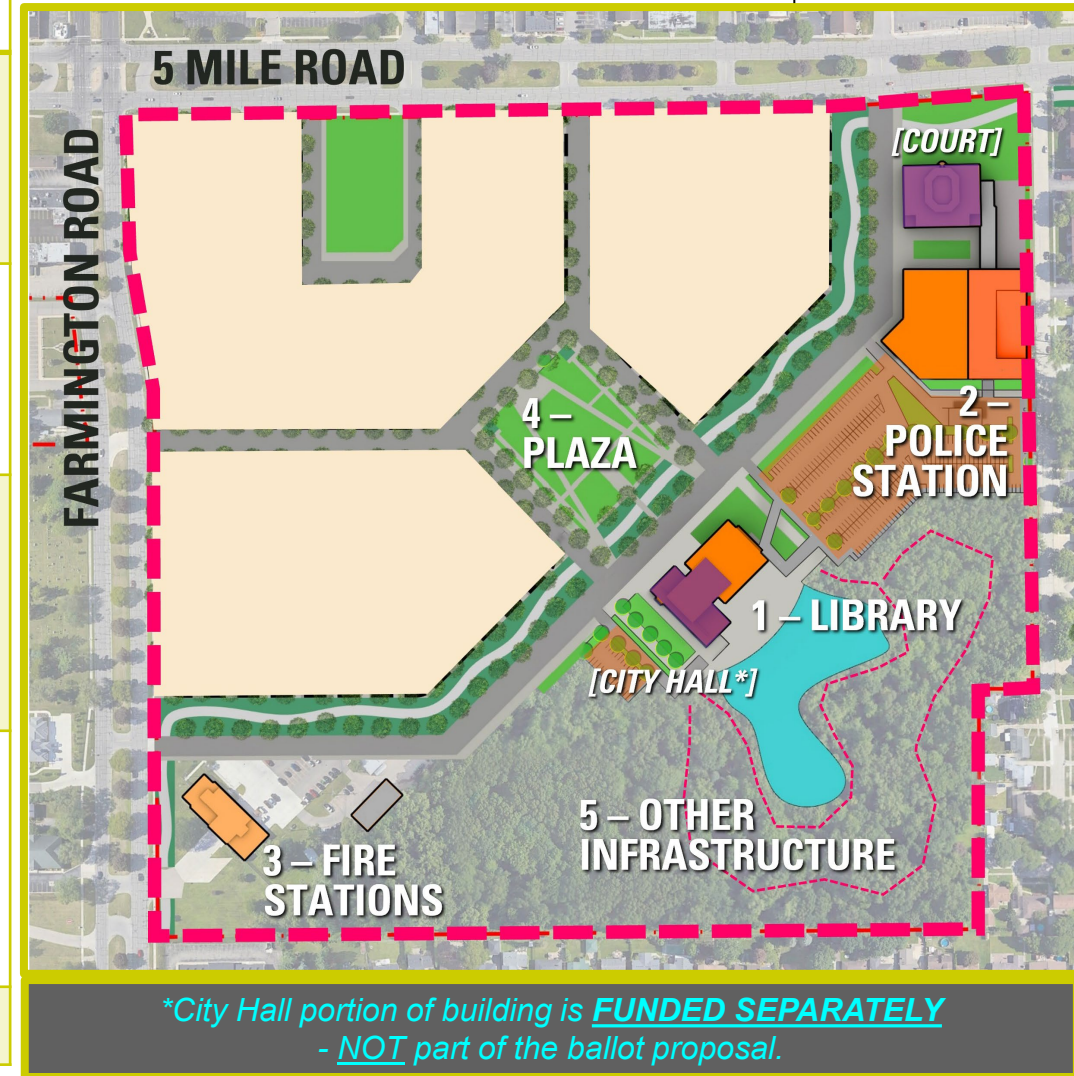


What is included in the current PHASE 3 budget?



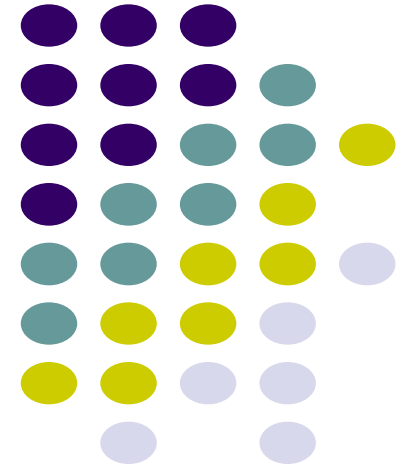
1	<u>Library</u> - New Library - Demolition of existing building	\$37,500,000
2	<u>Police Station</u> - New Police Headquarters - Secured parking deck for patrol vehicles - Moving cell tower and fuel station	\$66,700,000
3	<u>Fire Stations</u> - Station 1 Renovation & Expansion - Station 3-6 Renovation - Enhanced technology upgrades to all stations	\$16,000,000
4	<u>City Center Plaza & Public Amenities</u> - Creation of Plaza - Pathways, lighting, public Wi-Fi, etc. - Park amenities for public use – active & passive - Greenway, bike loop, recreation pond, nature trail, etc.	\$19,100,000
5	<u>Other Infrastructure & Parking</u> - Surface parking - Demolition of existing City Hall - Stormwater detention - Streets, landscape, paths, lighting, utilities, etc.	\$10,700,000
Total Investment		\$150,000,000

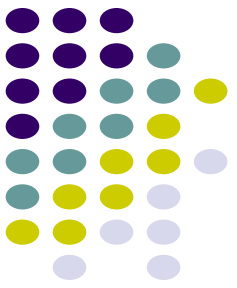
Phase 3



Project Financing – City Center

Debt Service Costs and Millage Impact





Good Question: What is a bond?

A **bond is a financing tool** that allows the City to borrow money for a specific use and pay it back over time.

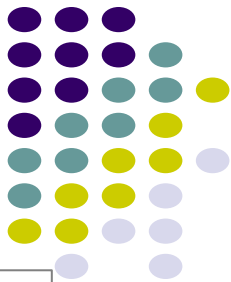
- *This is like a mortgage on a home.*

The **annual debt service** is the amount that needs to be paid each year for both interest and principal.

The **annual payment** depends on:

- *The amount borrowed*
- *The length of the bonds*
- *The interest rate at the time of the bond sale*

Sample Ballot Language



MUNICIPAL FACILITIES PROPOSAL

Shall the City of Livonia, County of Wayne, Michigan, borrow the principal sum of not to exceed _____ Dollars (\$_____) and issue its general obligation unlimited tax bonds, in one or more series, payable in not to exceed _____ (____) years from the date of issuance of each series, for the purpose of paying the cost of [acquiring land and buildings for use by the City, and acquiring, constructing, renovating, furnishing, and equipping various municipal facilities in the City], including, but not limited to, _____, together with all related site improvements, appurtenances and attachments?

If approved, the estimated millage to be levied in [2025] is _____ mills (\$_____ per \$1,000 of taxable value) and the estimated simple average millage rate required to retire the bonds is _____ mills (\$_____ per \$1,000 of taxable value).

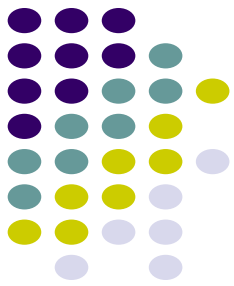
Total Principal to be borrowed

Maximum length of the bond repayment

What can the bond proceeds be used for?

When will the levy first appear on the tax bill?

What is the estimated millage rate in year one?

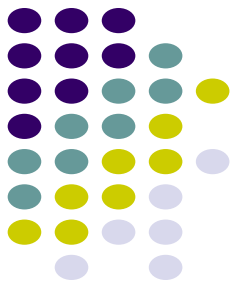


FINANCING STRUCTURE:

Debt Service - \$150M Bond Issue – Single Series

Over The Full Duration of the Bond					First Year	
Duration	Est. Interest Rate*	Principal	Interest	P&I Total	Debt Service Payments	Millage Required to Support Debt Service
25 years	4.75%	\$150M	\$118.4M	\$268.4M	\$8.3M	1.49 mills

**Actual interest rate will be determined at time of bond sale.*



FINANCING STRUCTURE :

Debt Service - \$150M Bond Issue – Two Series

Series 1 = \$100M, issued November 2025

Series 2 = \$50M, issued November 2027

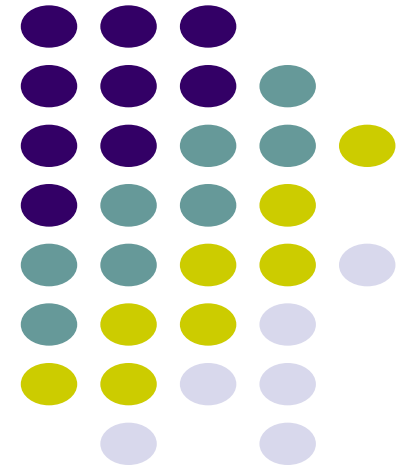


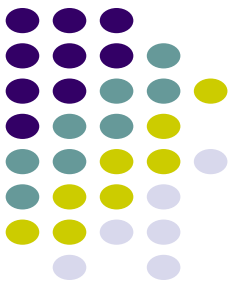
Over The Full Duration of the Bond					First Year	
Duration	Est. Interest Rate*	Principal	Interest	P&I Total	Debt Service Payments	Millage Required to Support Debt Service
25 years	4.75%	\$150M	\$111.2M	\$261.2M	\$8.0M	1.43 mills

**Actual interest rate will be determined at time of bond sale.*

Impact on Livonia Homeowners

Annual and Monthly Changes to Property Taxes

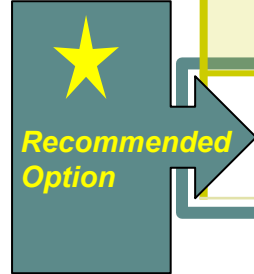




INVESTMENT BY THE AVERAGE RESIDENT:

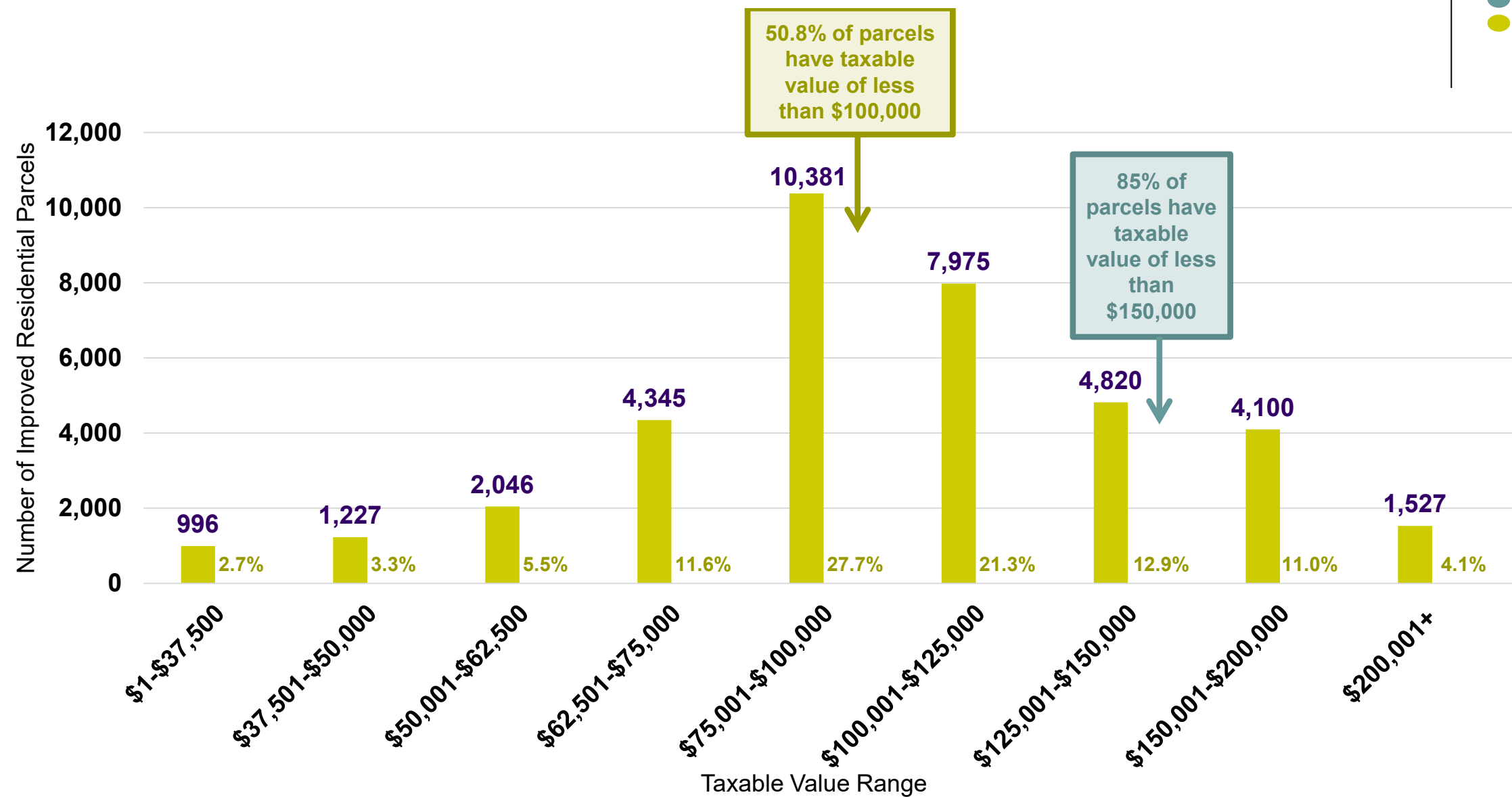
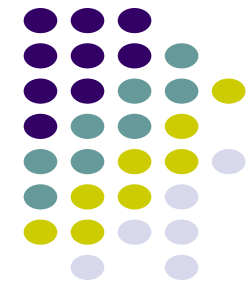
Debt Service - \$150M Bond Issue

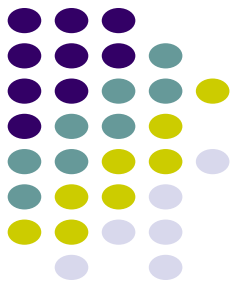
Based on Average 2025 Taxable Value of Improved Residential Property = \$107,055



Duration	Debt Service Payments	Millage Required to Support Debt Service	Additional Annual Property Tax	Monthly Investment
25 years	\$8.0M	1.43 mills	\$153.09	\$12.76

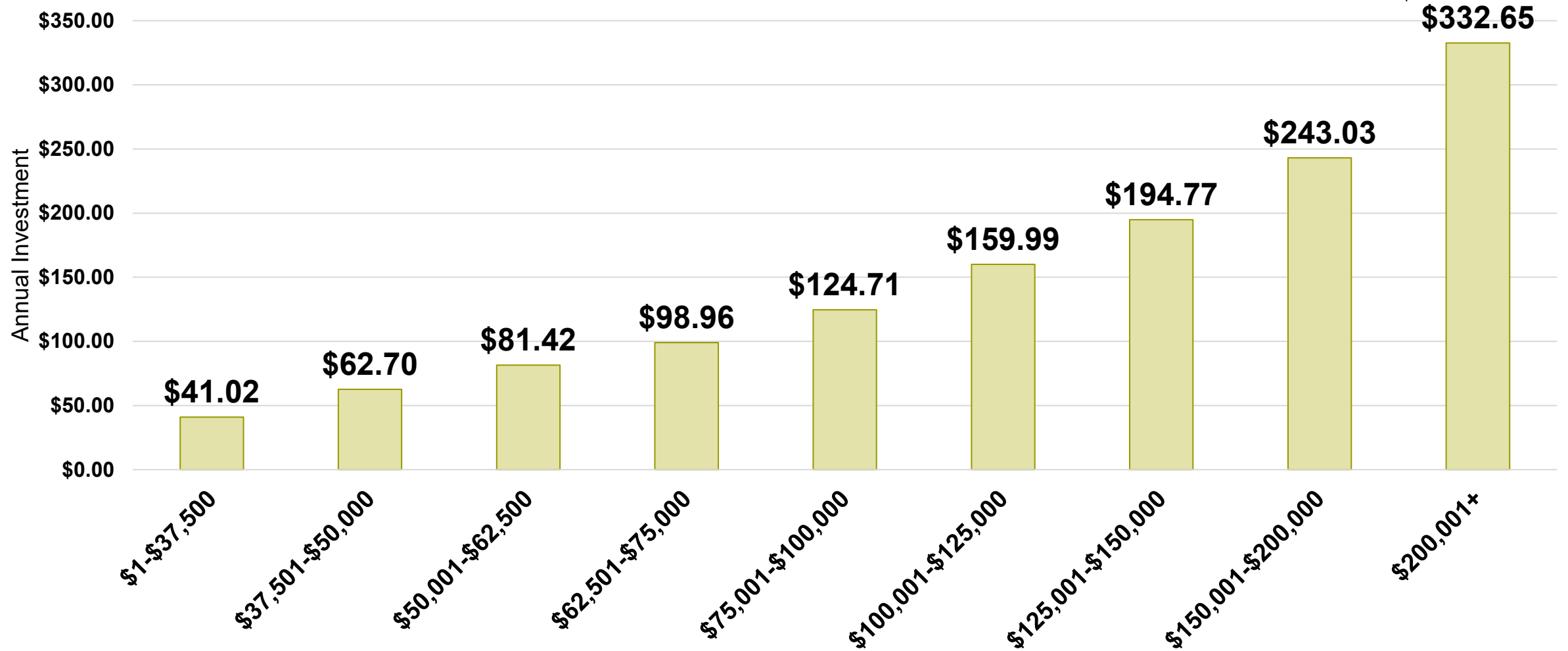
Residential Parcel Count – Improved Properties



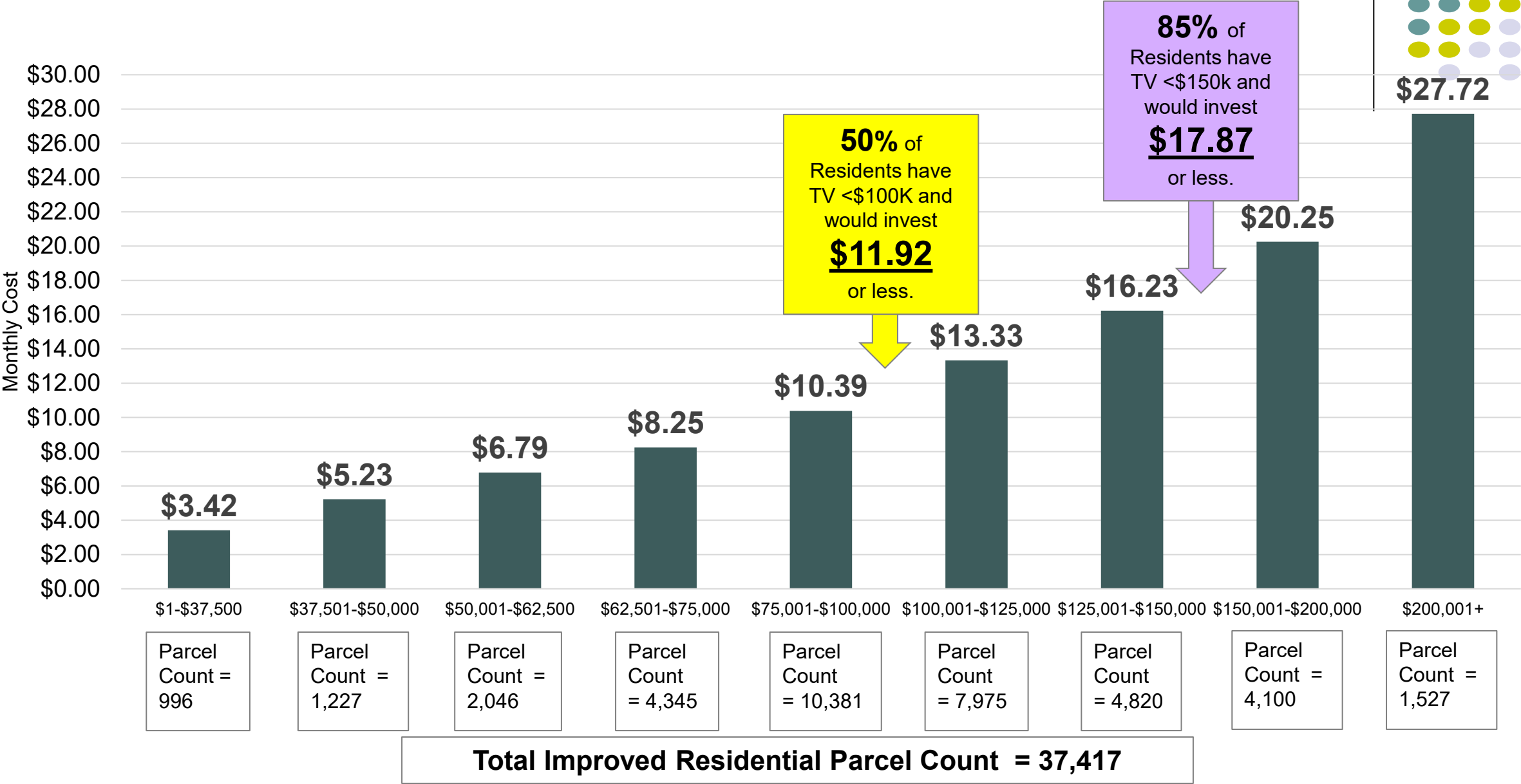


Annual Investment by Residents

Based on Average Taxable Value within each Range

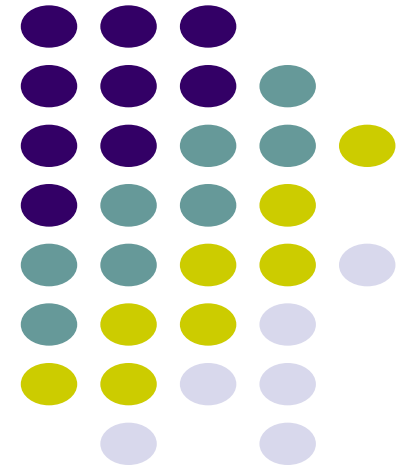


Monthly Investment by Residents

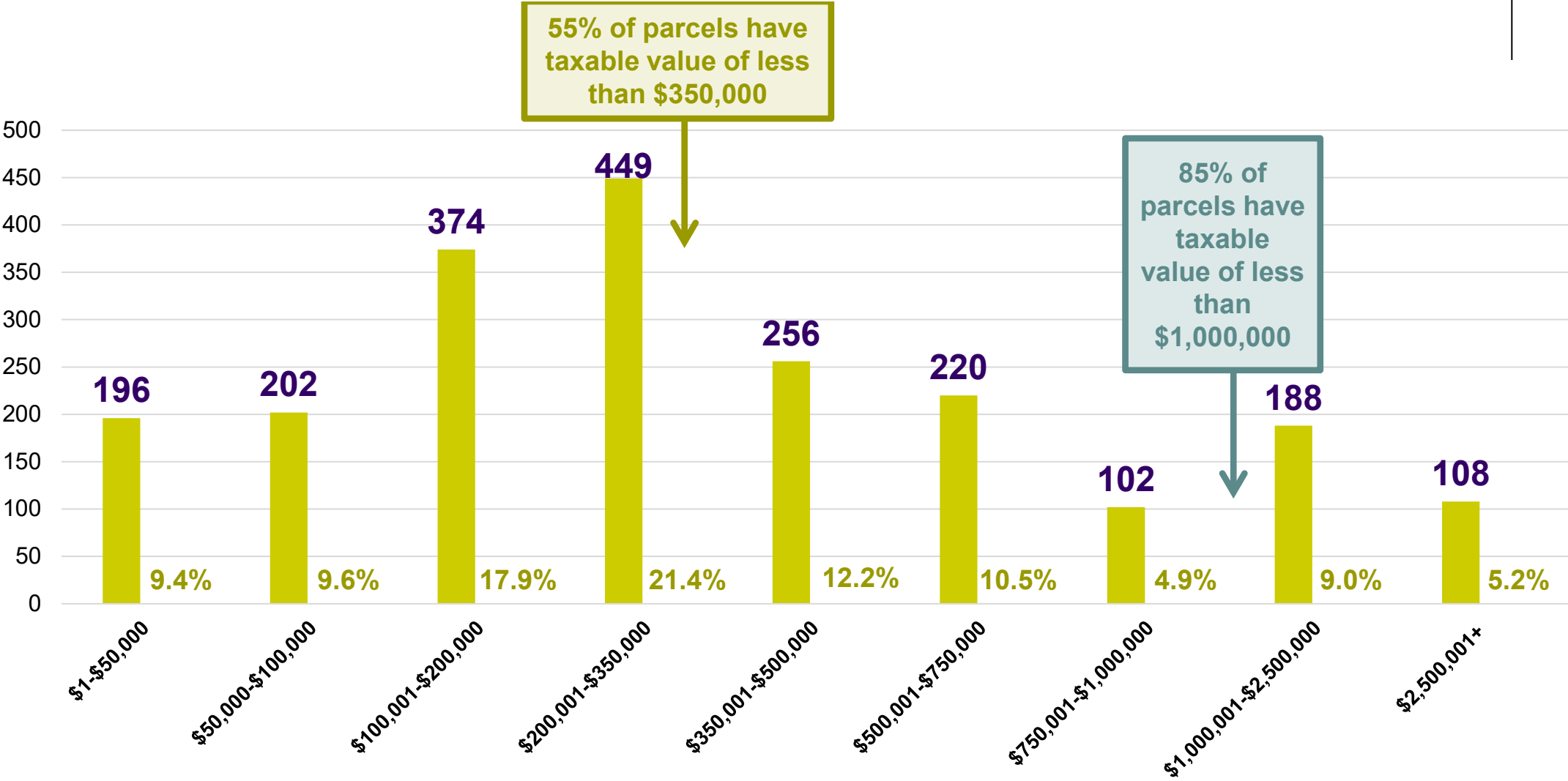
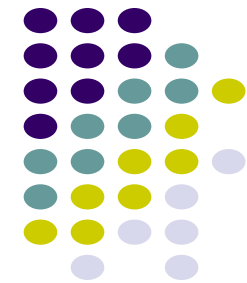


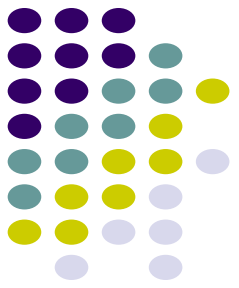
Impact on Livonia Business Owners

Annual and Monthly Changes to Property Taxes



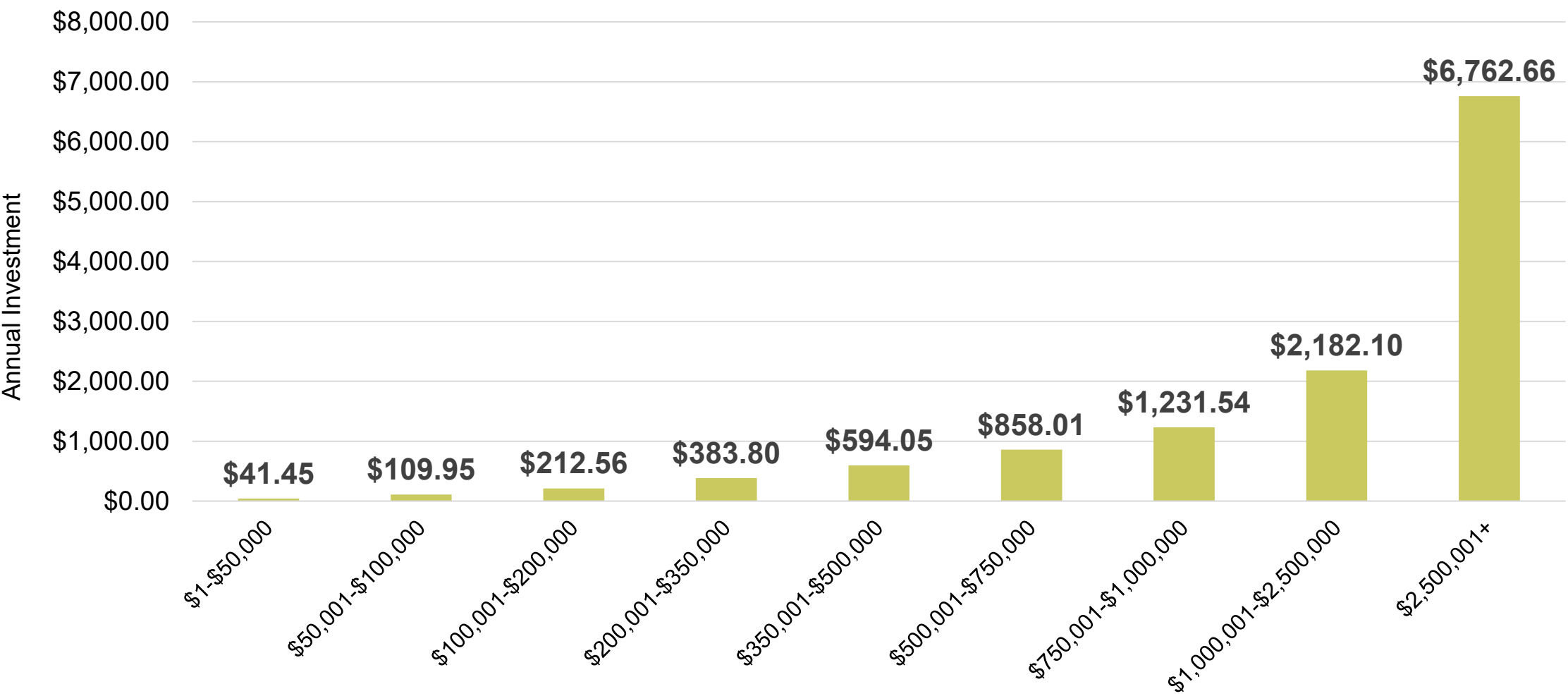
Commercial & Industrial Parcel Count



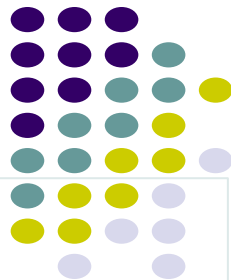


Annual Investment by Commercial & Industrial Properties

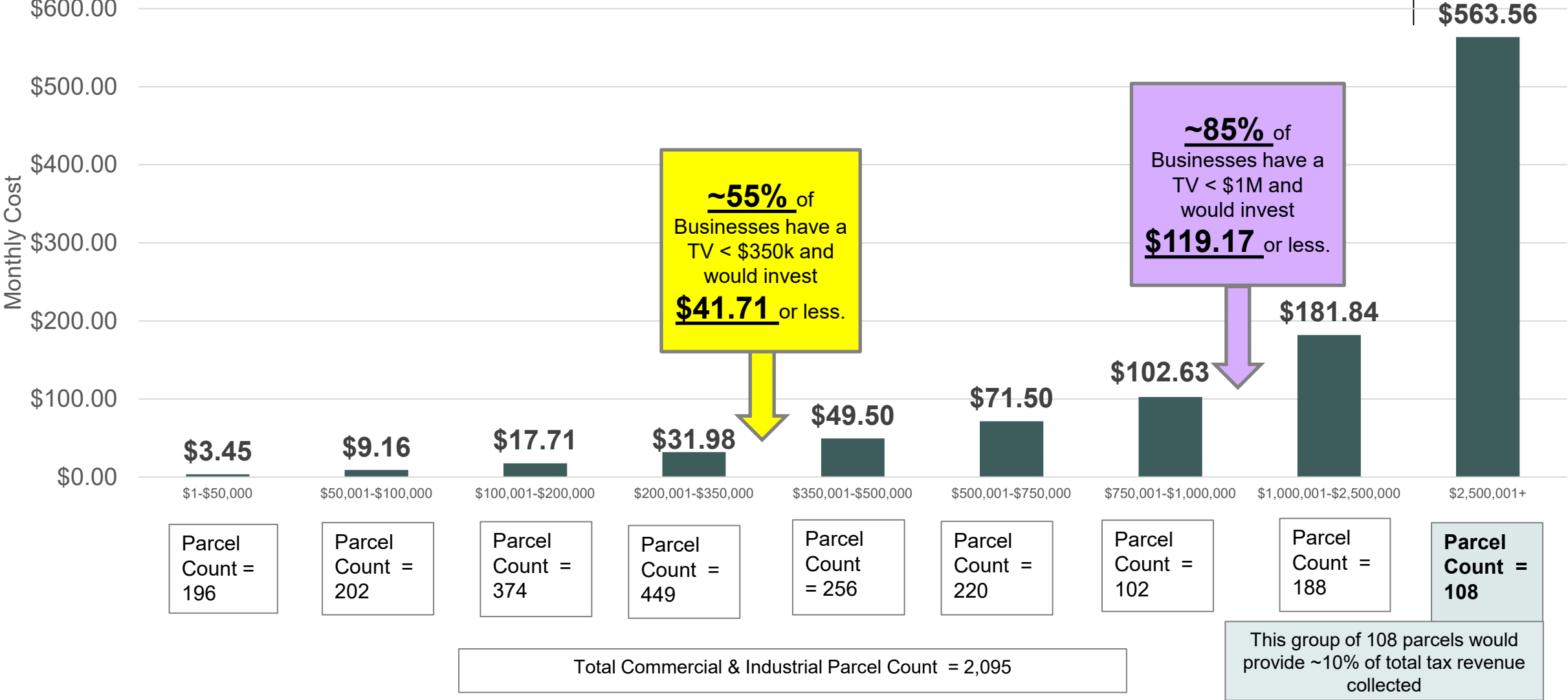
Based on Average Taxable Value within each Range



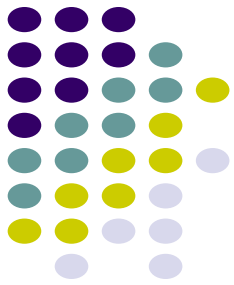
Monthly Investment by Commercial & Industrial Properties



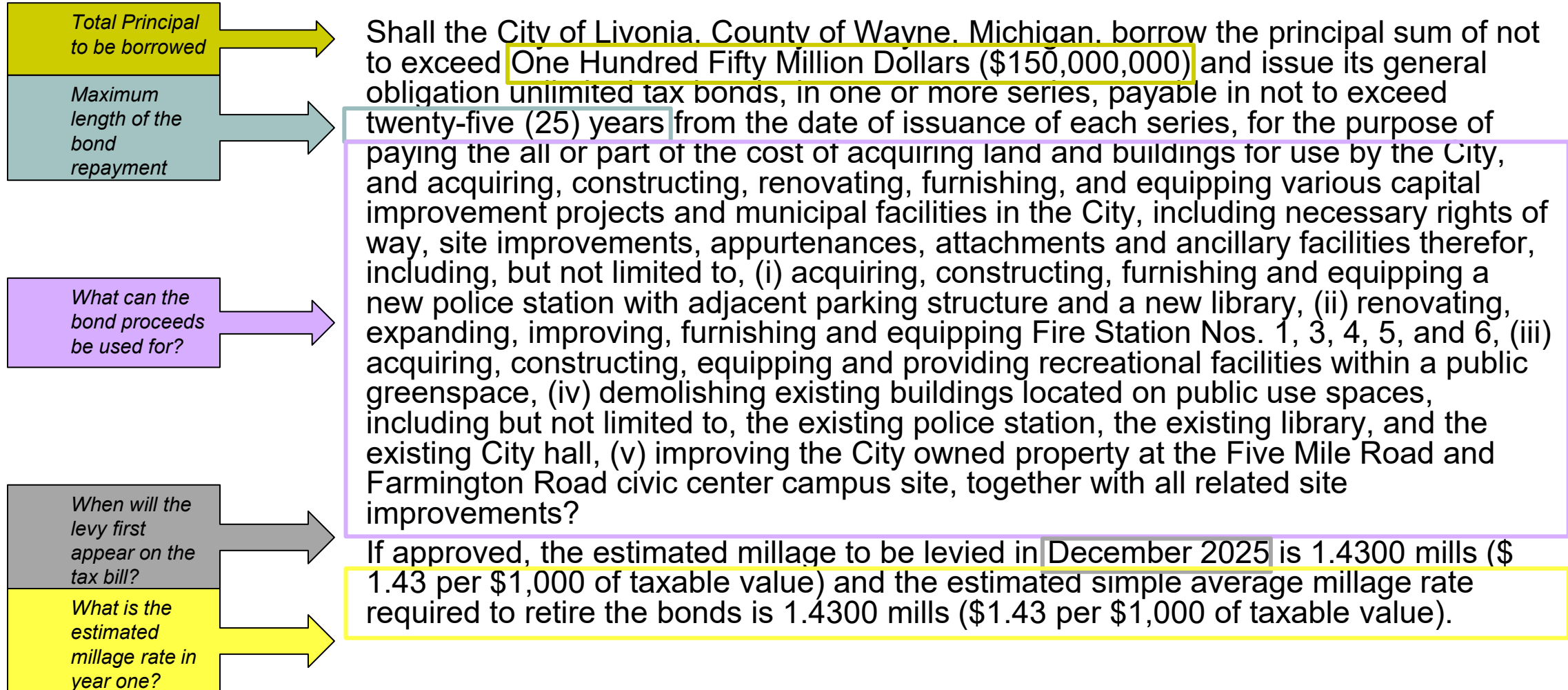
Based on Average Taxable Value within each Range



Proposed Ballot Language - based on Recommendation from Administration:

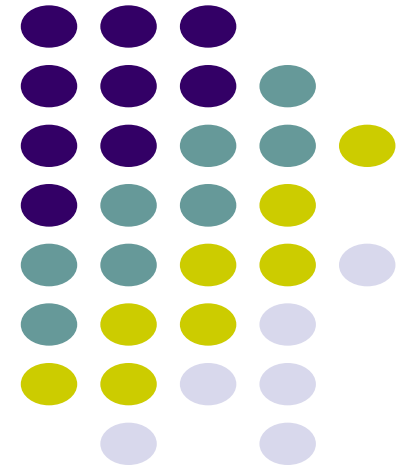


MUNICIPAL FACILITIES PROPOSAL



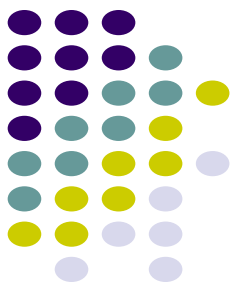
Repair, Renovate or Build New

Civic Center Library





**SERVICES EVOLVE, BUT
LIBRARIES ARE MORE THE
HEART OF THE COMMUNITY
THEN EVER.**



Investments Scenarios for Library Improvements

- The ballot proposal will be asking for funding for the Bennett Library to either:
 - Perform basic repairs and maintenance required – no structural improvements
 - Fully renovate
 - Construct a new library

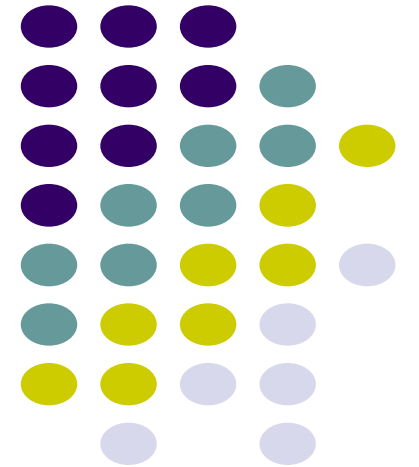
What is the difference in the investment needed?

Option	Investment Needed	Tax Amount for Average Taxpayer	
		Annual	Monthly
Perform repairs and maintenance required at the existing Bennett Library – no structural improvements	\$16,500,000	\$16.84	\$1.40
Fully renovate existing Bennett Library	\$31,500,000	\$32.15	\$2.68
Construct New Library*	\$37,500,000	\$38.27	\$3.19

**Amount Included in Bond Scenarios*

Millage Comparison

All Wayne County Cities

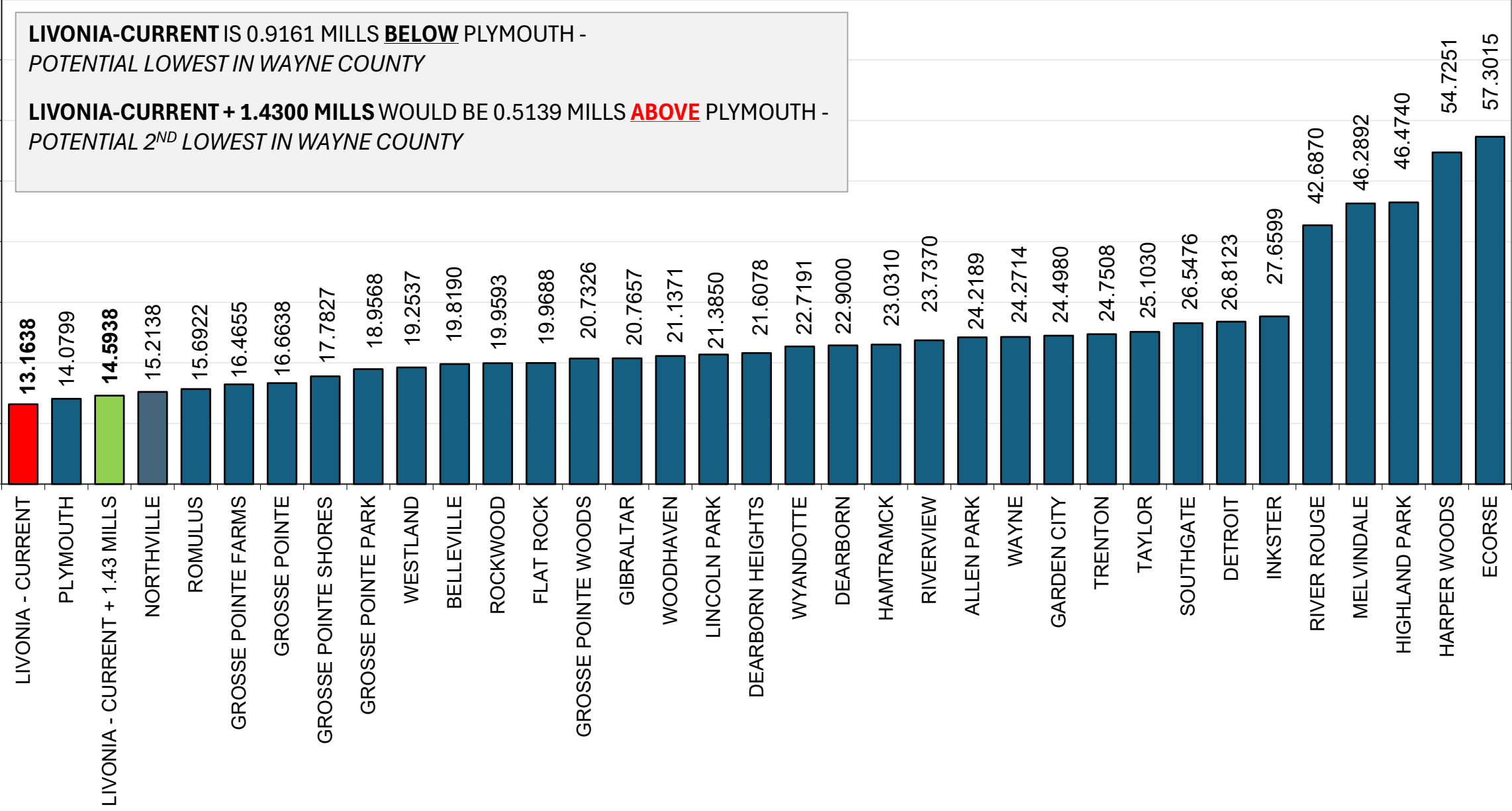


CITY TAX RATE COMPARISON (2024)
WAYNE COUNTY, MICHIGAN
BY MUNICIPALITY

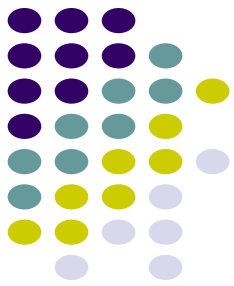
Mills Levied (2024)

LIVONIA-CURRENT IS 0.9161 MILLS **BELOW** PLYMOUTH -
POTENTIAL LOWEST IN WAYNE COUNTY

LIVONIA-CURRENT + 1.4300 MILLS WOULD BE 0.5139 MILLS **ABOVE** PLYMOUTH -
POTENTIAL 2ND LOWEST IN WAYNE COUNTY



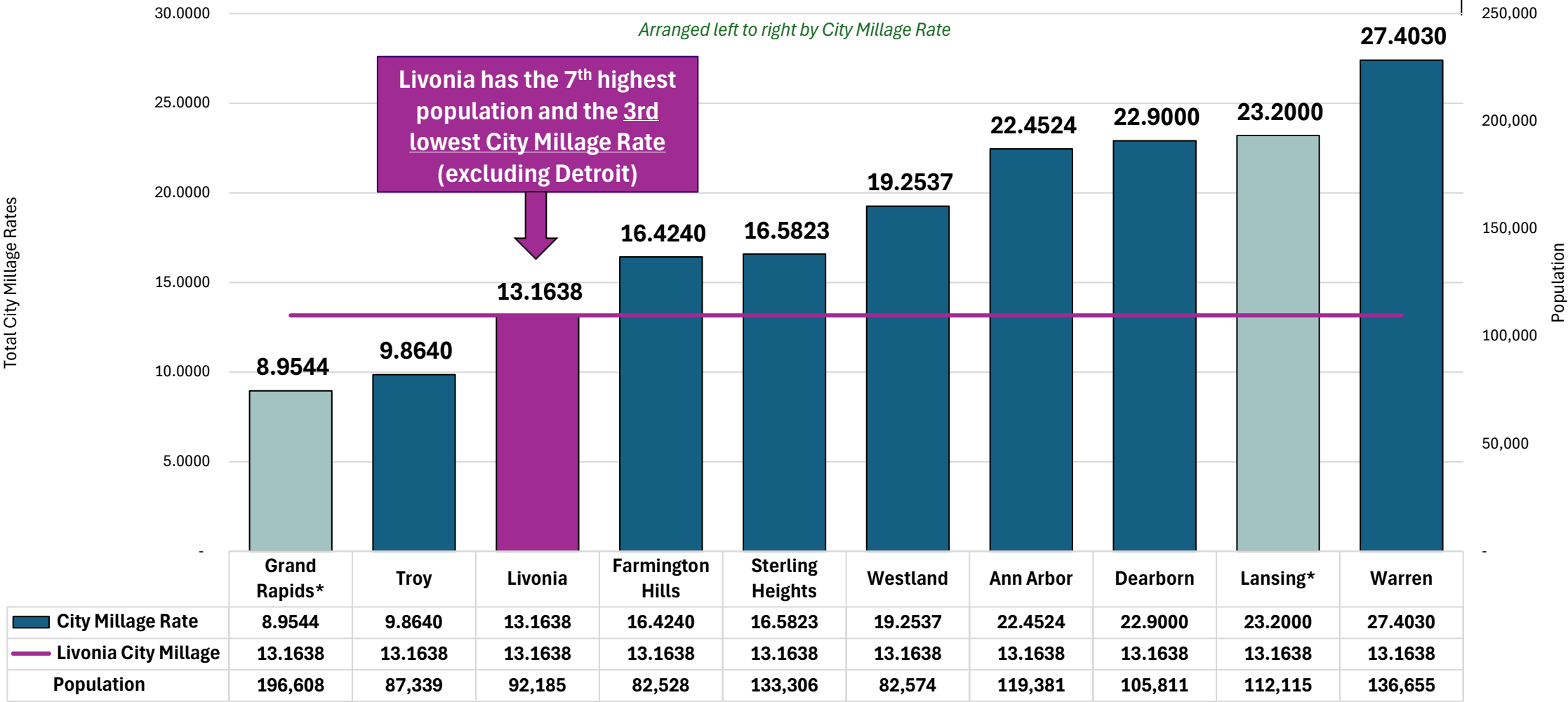
Total Millage Rates – Including City, Schools, County, and other taxing units (2024)



Township / City	School Code	Local School District	Total Homestead Property Tax Rate	Total Homestead Property Tax Rate Gap vs. Livonia (LPS)
Livonia	63090	CLARENCEVILLE SCHOOL DIST	37.0185	(3.7482)
Livonia	82095	LIVONIA PUBLIC SCHOOLS	40.7667	-
Plymouth	82100	PLYMOUTH CANTON COMM SCHS W/SCC	41.4368	0.6701
Northville	82390	NORTHVILLE PUBLIC SCHOOLS	42.5710	1.8043
Westland	82131	ROMULUS (INKSTER DEBT)	43.1085	2.3418
Westland	82151	TAYLOR (INKSTER DEBT)	43.1085	2.3418
Westland	82150	TAYLOR SCHOOL DISTRICT	43.9585	3.1918
Romulus	82160	WAYNE-WESTLAND COMMUNITY S/D	45.0214	4.2547
Belleville	82430	VAN BUREN PUB SCHOOLS	45.3072	4.5405
Dearborn Heights	82150	TAYLOR SCHOOL DISTRICT	46.3127	5.5460
Romulus	82365	WOODHAVEN SCHOOL DISTRICT	47.5241	6.7574
Dearborn Heights	82230	CRESTWOOD SCHOOL DISTRICT	47.5429	6.7762
Westland	82095	LIVONIA PUBLIC SCHOOLS	47.8482	7.0815
Allen Park	82045	MELVINDALE ALLEN PARK SCHS	48.0737	7.3070
Westland	82160	WAYNE-WESTLAND COMMUNITY S/D	48.5829	7.8162
Riverview	82400	RIVERVIEW COMMUNITY SCH DIST	49.4586	8.6919
Taylor	82150	TAYLOR SCHOOL DISTRICT	49.8078	9.0411
Rockwood	82290	GIBRALTAR SCHOOL DISTRICT	49.8262	9.0595
Grosse Pointe Farms	82055	GROSSE POINTE PUBLIC SCHS	50.0460	9.2793
Flat Rock	82290	GIBRALTAR SCHOOL DISTRICT	50.1437	9.3770
Grosse Pointe	82055	GROSSE POINTE PUBLIC SCHS	50.2443	9.4776
Westland	82050	GARDEN CITY SCHOOL DISTRICT	50.2863	9.5196
Flat Rock	82365	WOODHAVEN SCHOOL DISTRICT	50.8091	10.0424

●Note: This is a partial list of Wayne County cities, sorted in increasing order. Other Wayne County communities not shown here have total millage rates that are more than 10 mills higher than Livonia.

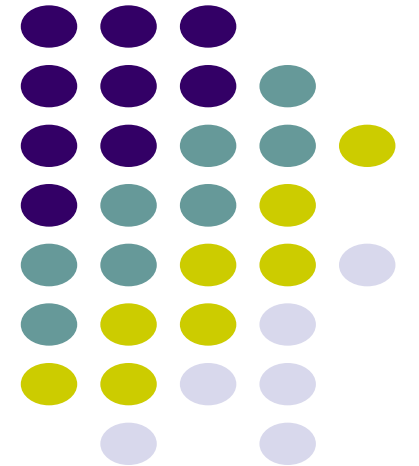
Top 10 Largest Cities in Michigan *(excluding Detroit)*



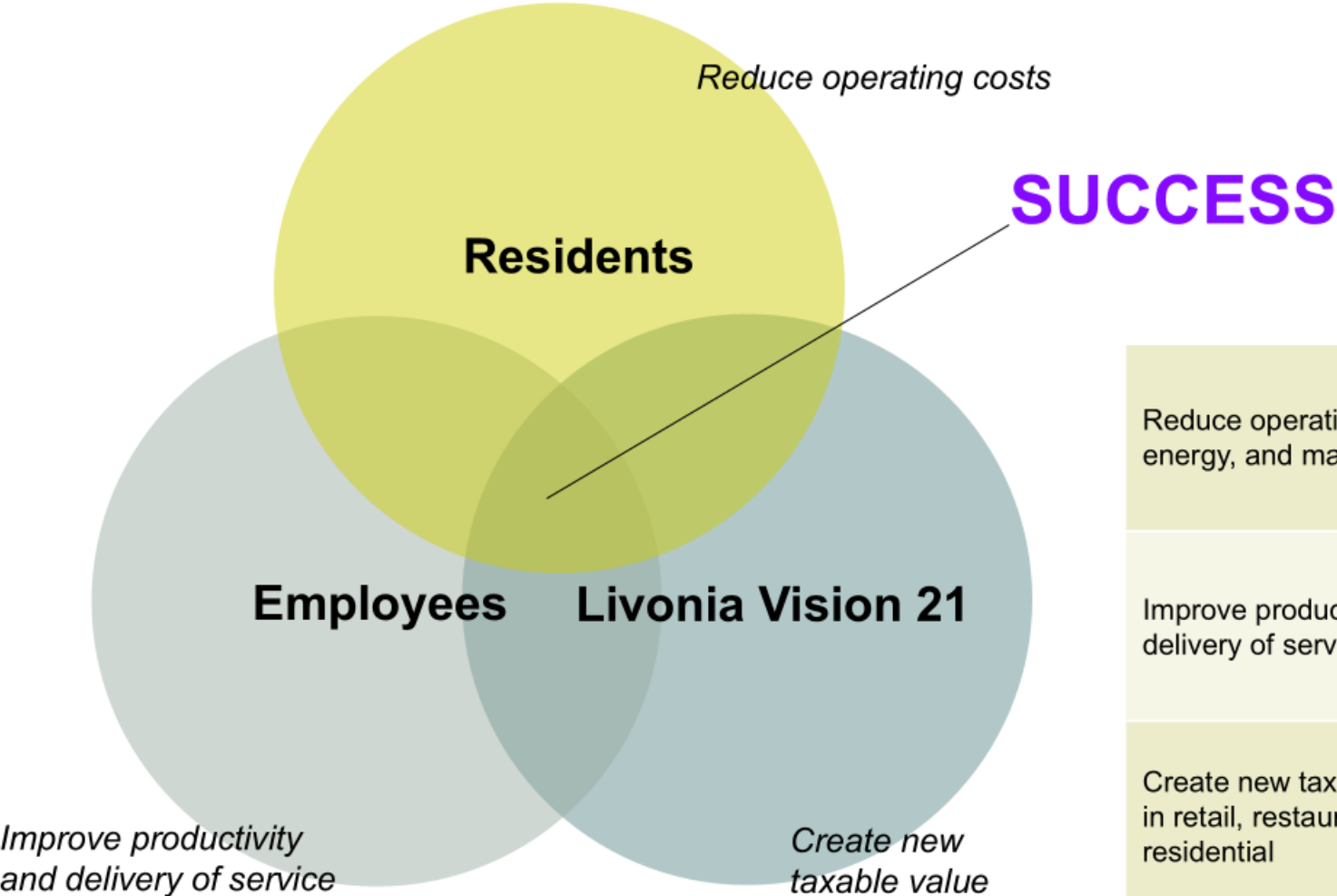
**Local unit imposes a City Income Tax in addition to property tax assessments*

What if...?

We can step up to all three challenges and make Livonia a city our children want to come home to



THE TRIPLE WIN METHOD OF ANALYSIS



	City Hall	Police HQ	Library
Reduce operating costs, energy, and maintenance	✓	✓	✓
Improve productivity and delivery of services	✓	✓	✓
Create new taxable value in retail, restaurants, residential	✓	✓	✓

Our Neighbors are Investing in Their Futures



Canton Township could be on path to building Michigan's first net-zero fire station



Laura Colvin
Hometownlife.com

Published 1:42 p.m. ET May 10, 2024



Canton Township's Fire Station No. 4, proposed at the southwest corner of Michigan Avenue and South Lilley Road, would look architecturally identical to Station No. 2, shown here 41440 Warren Road. *Courtesy Canton Township Fire Department*

CANTON TWP. — A new addition to the township's lineup of fire stations could also be Michigan's first net-zero fire station.

Although engineering is still in the research and planning phases, the

Novi police, fire stations would be demolished, new facilities built in \$120M ballot proposal



Susan Bromley
Hometownlife.com

Published 6:01 a.m. ET March 14, 2025



The Novi Police Department. *JOHN HEIDER | Hometownlife.com*

Key Points AI-assisted summary

- Novi voters will decide on a \$120 million bond proposal in August to fund new public safety facilities.
- The proposal includes a new public safety complex for police and fire, two stand-alone fire stations, and renovations to a fourth fire station.
- If approved, the bond would be funded by a 1 mill levy in the first year, averaging .95 mills annually over 25 years.
- City officials say the investment is necessary to replace outdated and inadequate facilities with state-of-the-art resources.

Northville Twp. breaks ground on \$44M 'Essential Services Complex' at old hospital site



Laura Colvin
Hometownlife.com

Published 2:07 p.m. ET May 16, 2024 | Updated 2:41 p.m. ET May 16, 2024

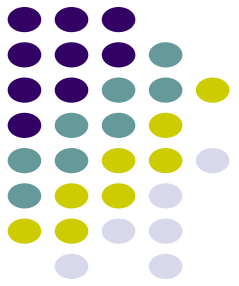


A drone shot from the May 14 groundbreaking shows the construction site for the new Essential Services Complex in Northville Township. *Courtesy Northville Township*

NORTHVILLE TWP. — Construction of the township's new \$44 million "Essential Services Complex" is officially underway following a groundbreaking ceremony May 14 at the site of the former state psychiatric hospital on Seven Mile Road.

Under construction west of Haggerty Road, the complex will include a second fire station for the township, which officials say is needed to reduce response times to the northeast quadrant of the community, along with a

Our Neighbors are Investing in Their Futures



Plymouth Township considers \$8.4 million replacement of 1976 fire station



Laura Colvin
Hometownlife.com

Published 10:56 a.m. ET March 15, 2024



A draft rendering by Partners in Architecture shows a potential plan for a new fire station on Wilcox Road in Plymouth Township. Plymouth Township

PLYMOUTH TWP. — Preliminary plans to replace the aging No. 2 fire station with a new \$8.4 million facility include modern accommodations designed to take the department into the future, but township officials haven't yet voted on whether they will or won't build it.

At a meeting March 12, the Plymouth Township Board of Trustees reviewed draft designs and cost considerations for a 10,455-square-foot facility to replace the current fire station built in 1976 at 41212 Wilcox Road. A final decision is likely coming in the months ahead.

Westland expected to break ground on nearly \$12M park this month



Shelby Tankersley
Hometownlife.com

Published 7:00 p.m. ET Aug. 5, 2024



A rendering shows the coming Nankin Square Park in Westland. The park is planned to include space for events, a walking path and play areas for children. Courtesy Of The City Of Westland

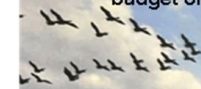
WESTLAND — City officials are planning a nearly \$12 million park that they hope will help spark a downtown-like environment.

The park, named Nankin Square, is slated for 3.9 acres between the Westland Community Health Center, 35700 Warren Road, and the city's main fire station at 35701 Central City Parkway. The project is expected to break ground this month and be completed in September 2025.

Officials hope the park will help revitalize the nearby Westland Mall property, which residents have [described as an eyesore](#) for years.

"We're using this as an economic development catalyst for the mall property," said Alex Garza, the city's chief business development officer. "With that property being what it is, we're looking for the mall ownership to hopefully redevelop the property."

Westland Fire Station No. 2 Construction to Begin This Fall
Westland, MI - The Westland City Council has approved the construction of a new fire station. The new Fire Station No. 2, spanning 13,100 square ft. will be strategically located north of the Hines Park Bridge on Merriman Road, to ensure optimal response times for emergency services. The project has a budget of \$6,575,000, covering construction costs and a contingency fund for unforeseen expenses.



New splash pad, inclusive playground coming to Westland's beloved Tattan Park



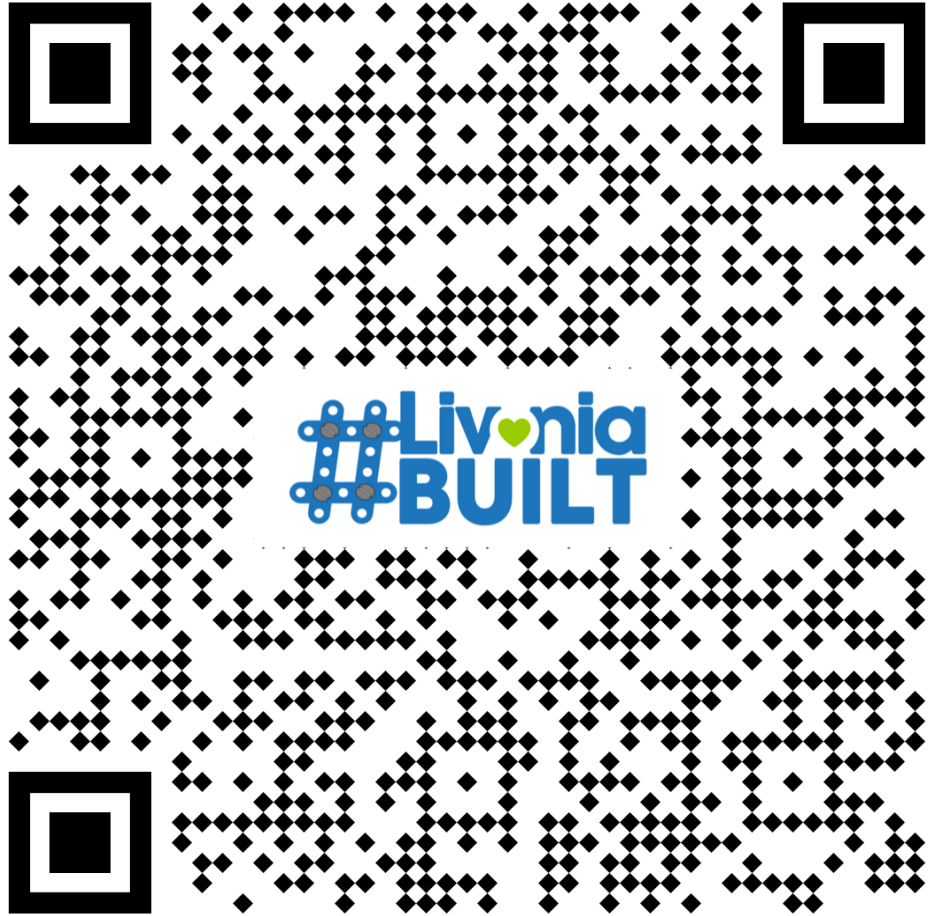
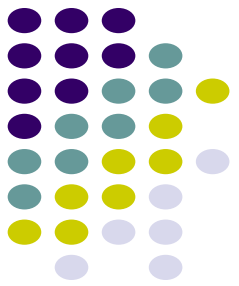
Shelby Tankersley
Hometownlife.com

Published 8:09 a.m. ET April 22, 2022



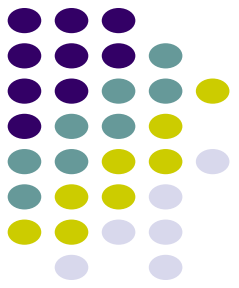
A rendering of what Tattan Park in Westland will look like in 2023. Courtesy Of The City Of Westland

A Tax Calculator for Residents Coming Soon



LivoniaBuilt.org

The Last Time the City Invested 1999



**GRATE PHOTO BY
BRIAN KIRKSEY**
**Livonia
Mayor
Jack Kirk-
sey and
city coun-
cil shovel
dirt dur-
ing the
ground-
breaking
ceremony
of the new
rec center
Thursday.**



Officials break ground for recreational cornerstone

**BY ALICE ASHMORE
STAFF WRITER
aashmore@ee.homecomm.net**

A row of polished shovels – that no construction worker would be caught dead with – gleamed in the afternoon sun as local dignitaries officially broke ground for the Livonia community recreation center.

More than 100 people gathered in the sweltering heat on Thursday to celebrate the beginning of the project.

“We’re here to celebrate a very special occasion – full of excitement and full of promise,” Livonia Mayor Jack Kirksey said.

“We will have the ability to meet community and recreation needs of our community.”

The most important aspect of the project is that it is expected to help influence the demographics of the city, the mayor said.

“We can continue to attract young families,” Kirksey said. “We are trying to balance the demographics of the community and we will do it with this institution.”

The rec center is being built adjacent to Five Mile and Hubbard, near the old Bentley High School.

Superintendent of Schools Ken Watson was the last principal at Bentley High School.

“It’s a very sentimental and historical site for me,” Watson said.

“The best legacy for Bentley High School will be the recreation center. It represents what Livonia is all about.”

City Council Member Jack Engbretson declared it, “A great day for our community.” The rec center

will continue to make Livonia a great place to live and raise families, the councilman said.

“On the quality of life issue, this is the finishing touch,” Engbretson said.

Wayne County Prosecutor Mike Duggan, who chaired the millage campaign for the rec center, said “Wow, this is a great day for me. I grew up a mile from here.”

Duggan shared fond recollections of playing youth baseball on fields near the site.

The rec center will keep kids busy with healthy activities, which is important, Duggan noted.

“Whether parents want to face it or not, the harsh realities are that by eighth grade, one-half of students will try alcohol; and by 10th grade, one-half will try illegal drugs,” he said.

Duggan said having a place for families to spend time together helps combat those problems.

Engbretson added, “The mayor deserves great accolades for having the vision to have promoted this idea.”

The project is not a matter of trying to compete with rec centers in neighboring communities, Duggan said.

The new rec center will include two gyms, a lap pool and a leisure pool, a gymnastics center, a fitness center, a running track, a climbing wall, a children’s play area and a senior citizens lounge.

Kenneth Noumann, architect for the project, believes the new center will be visually stunning.

“We believe the building will have a ‘Wow’ factor,” he said.

The \$30 million project is expected to be completed in early 2003.



DRAFT ONLY

MUNICIPAL FACILITIES PROPOSAL

Shall the City of Livonia, County of Wayne, Michigan, borrow the principal sum of not to exceed One Hundred Fifty Million Dollars (\$150,000,000) and issue its general obligation unlimited tax bonds, in one or more series, payable in not to exceed twenty-five (25) years from the date of issuance of each series, for the purpose of paying the all or part of the cost of acquiring land and buildings for use by the City, and acquiring, constructing, renovating, furnishing, and equipping various capital improvement projects and municipal facilities in the City, including necessary rights of way, site improvements, appurtenances, attachments and ancillary facilities therefor, including, but not limited to, (i) acquiring, constructing, furnishing and equipping a new police station with adjacent parking structure and a new library, (ii) renovating, expanding, improving, furnishing and equipping Fire Station Nos. 1, 3, 4, 5, and 6, (iii) acquiring, constructing, equipping and providing recreational facilities within a public greenspace, (iv) demolishing existing buildings located on public use spaces, including but not limited to, the existing police station, the existing library, and the existing City hall, (v) improving the City owned property at the Five Mile Road and Farmington Road civic center campus site, together with all related site improvements?

If approved, the estimated millage to be levied in December 2025 is 1.4300 mills (\$ 1.43 per \$1,000 of taxable value) and the estimated simple average millage rate required to retire the bonds is 1.4300 mills (\$1.43 per \$1,000 of taxable value).

CAPITAL OUTLAY AND INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, MARCH 12, 2025
7:00PM

A Capital Outlay and Infrastructure Committee meeting was held on Wednesday, March 12, 2025, in the Livonia City Hall Auditorium.

Committee Members Present: Rob Gjonaj Donovic, Chair
Martha Ptashnik, Vice Chair
Carrie Budzinski, Member

Committee Members Absent: None

City Council Members Present: Brandon McCullough
Lynda L. Scheel
Laura M. Toy

**City Officials
and Others Present:** Maureen Miller Brosnan, Mayor
Susan Nash, Treasurer
Lori Miller, Clerk
Sean Kavanagh, Judge
James Jolly, Judge
Carter Fisher, City Attorney
Dave Varga, Chief of Staff
Debbie Lichtenberg, Finance Director
Mark Taormina, Planning and Economic Development Director
Ted Davis, Superintendent of Parks and Recreation
Thomas Goralski, Police Chief
Robert Jennison, Fire Chief
Linda Gosselin, Assessor
Jerome Hanna, Director of Inspection
Kristen Edson, Library Director
Kristin Houchins, Director of Communications
Anthony Hall, Police Union President
Scott Heraty, Fire Fighter Union President
Plante Moran Realpoint Representatives

1. The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)

The meeting convened at 7:02 PM.

The meeting began with a discussion of the following:

- Chairman Donovic explained Council meeting structures and procedures to significant audience size and how the meeting agenda was going to proceed.
- Chairman Donovic explained that this isn't the first meeting held on this item, and that this project was first established back in 2018 through Livonia Vision 21.
- Multiple members of the Council gave remarks around the meeting.
- Project management team was introduced by Administration.
- Multiple vendors were introduced from HED (Master Planner & Architect for City Hall).
- Mayor explained the first phase in the project was the building of the new Senior Wellness Center, (Project Catalyst) primarily funded by Federal, State, and County dollars that wanted to fund a senior center specifically.
- This is a long-range plan, first established in Vision 21, unanimously voted on by the Council in 2020 that specifically calls for 5 Mile & Farmington Rd to be a Civic Center/ Downtown campus.
- The city owns roughly 70 acres at this corner.
- Livonia Vision 21 surveyed thousands of residents in 2017/18, held countless Open Houses, dozens and dozens of residents and vendors drafted Vision 21 years ago, now the Administration wants to implement the plan, not just let it sit on a shelf.
- There was a study conducted in the 1980's that talked about building a downtown area to attract younger families to our community.
- This planning has been going on for longer than a year and a half with many public open meetings.
- Vision 21 is a city-wide policy for all things zoning and future land use planning and guidance for the future of our community.
- The Administration has exhausted all federal, state, and county funding sources, which was important to the Administration. They have also looked for areas to cut within the general fund and be fiscally responsible.
- The Administration talked about the city hall, police department, and library reaching the end of their useful life. It would be more economical to demo these old, poorly built buildings, than to reinvest into them and continue to spend tax dollars on aging functionally obsolete city buildings that are too large, not ADA accessible, and poorly built.
- The city conducted an asset management plan of all city buildings to inventory building issues and capital expenditures. This is the first time the city has conducted an asset management plan in city history.
- The Administration talked about how much it will take to update and maintain existing buildings, which is north of 97 million dollars over the next 10 years.
- This means just updating these city buildings to "Good Status."
- Every year that goes by, the cost to renovate city buildings to good status goes up.
- The Administration is proposing to build smaller, more efficient buildings.
- The city is building the senior center next door to the rec center, relocating it.

- Survey hundreds of seniors, had representatives from the aging commission, and senior center staff all served on the planning committee for the Senior Wellness Center.
- The vacant courthouse has been vacant since 2015.
- The Administration is purposing to clear roughly 9.5 acres in the first phase, which is the first block that can be cleared.
- Plante Moran Real-Pointe, the cities real estate advisor says for a successfully project, the city needs to make at least 20 acres available.
- City Hall will be roughly 40 million dollars to be built, being designed by HED. Council approved Frank Rewald & Sons as the general contractor to build.
- City Hall is roughly 96,000 sqft, the space needs assessment conducted by PMR, says we only need roughly 50,000 sqft.
- Savings from the shift in retiree healthcare to Medicare advantage plus, freeing up roughly 2.4 million a year in annual city contributions that now are unapproached in the general fund. These funds were cover the bond payment (mortgage payment) to build city hall.
- In December of 2023, Council took the initial step to approve bond language up to 47 million dollars. Council will formally approve or deny this bond later this year.
- Phase 2 of land clearing would include the clearing of City Hall proper.
- In 1967, there were new articles of City of Livonia planning to build this area as a downtown, but no one ever formally acted on these plans.
- Phase 3 would be to demo the police department, see a new library, central park, bike loop, and significant updates to the various fire stations.
- The existing Police Department is built on a high-water table and is an addition to a former water department building.
- Is not ADA accessible, doesn't have proper facilities for women, inadequate training facilities for officers to do physical fitness training and various other issues.
- The fire stations are in good locations, proper sizing, but need updating to existing faculties.
- The Robert & Janet Bennet Civic Center Library is many years behind similar communities in metro Detroit.
- It is far too big and inefficient, can be roughly 50,000 sqft.
- Phase 4 would be to attract private sector developers for residential and commercial/ retail.
- City builds the central gathering/ park area, private developers build their residential and retail projects.
- HED is currently working on conceptual plans that will continue to evolve and grow/ change. Nothing is finalized yet.
- There was significant discussion about combined a new City Hall and Library into one building. There are cost savings by combined various building systems, stairwells, elevators, HVAC, electrical, and plumbing systems.
- There are still significant discussions that need to take place, but the goal is to activate the municipal building and that there are many pros to a combined building. They would still maintain their unique services but provide great amenities to the community and be a fiscally responsible building.
- HED (hired master planner) has over 25 years of public planning projects, they have partnered with Design Works, to bring high-level design to the entire plan.
- The Administration talked about the potential bond would only found city buildings, city infrastructure and greenspace, not private development.

- The city wants to improve library services and programming with a new combined City Hall and Library. This provides more flexibly.
- The private development community will analyze the master plan and build private development, guided by our master plan.
- We want to promote people on streets, street parking, city center environment.
- There was a lot of talk about green space and how large the central gathering area will be.
- A lot of discussion around parking and biking.
- There was a lot of discussion around funding and what that could potentially look like.
- The city wants a destination for not only Livonia residents, but for people in Metro Detroit to come to our city, shop in this district and live nearby.
- The potential millage would fund city buildings, gathering area, and underground infrastructure. Those numbers will be explained at the next Committee meeting, April 2nd, 7:00pm at City Hall.

The meeting adjourned at 10:26 PM.

The Committee recommends:

- Item will stay in community for further discussion.

Note: This item will remain in Committee.

This meeting will be reported at the **Regular Meeting of April 14, 2025.**



Robert Gjonaj-Donovic, Chair

CAPITAL OUTLAY & INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, MARCH 12, 2025, 7:00PM

NAME

DEPT OR CONTACT INFO FOR NOTIFICATIONS*
*PERTAINING TO THE SUBJECT MATTER OF THIS MEETING

Jennifer Kankula	7344662491 Library
April Bornusch	313-303-8659 Library
Nicholas Pickard	313-638-0352

DAVID CORDS

Deeuge Miller	248-231-1943
Alex King	248-884-6460
Frances Tunny	213-910-6037
CHERR BERNHARD	734-744-7964
Spencer Meeks	734-542-1307
Kathryn Huyghe	313-247-8389
DONNA WALKER	734-634-8888
Bill McEvoy	734 427 2633

Mike Obk.

Patricia Rabichue

Gini Krenz

Burt Iovan

Marilyn Stuenkel

John Schaler

USF Fresh

DAVE MacFARLAND

CAPITAL OUTLAY & INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, MARCH 12, 2025, 7:00PM

NAME

DEPT OR CONTACT INFO FOR NOTIFICATIONS*
*PERTAINING TO THE SUBJECT MATTER OF THIS MEETING

Eileen McDonnell

Lauren + Stephanie Ladd

DAVE LUNCEY

Cindy Fleming

Meghan Rokita

Jenny O'Connor

Jeanette & Chris Oswell

Clare Shelton

CAKIE RICKMAN

Chris Hensch

Peter Dale

Barla Tuxall

Diane Wilson

ELON MCK

Patty Riggio

Julia Peronis

JIM BRUNGWALDUS



Project Catalyst

REALIZING LIVONIA VISION21



70%

of Livonia
residents want a
**CITY
CENTER**

Based on the 2024 Livonia Community
Satisfaction Survey of ~4000 Livonia residents

Livonia



Livonia experienced a **2.8% decline in population size** (2,747 people) from 2010 to 2017. which was not mirrored by western peer suburbs.

DEFINING THE CHALLENGE

In 2017 thousands of Livonia residents came together around a problem –

Livonia's population was decreasing, while at the same time the age of our population was increasing.

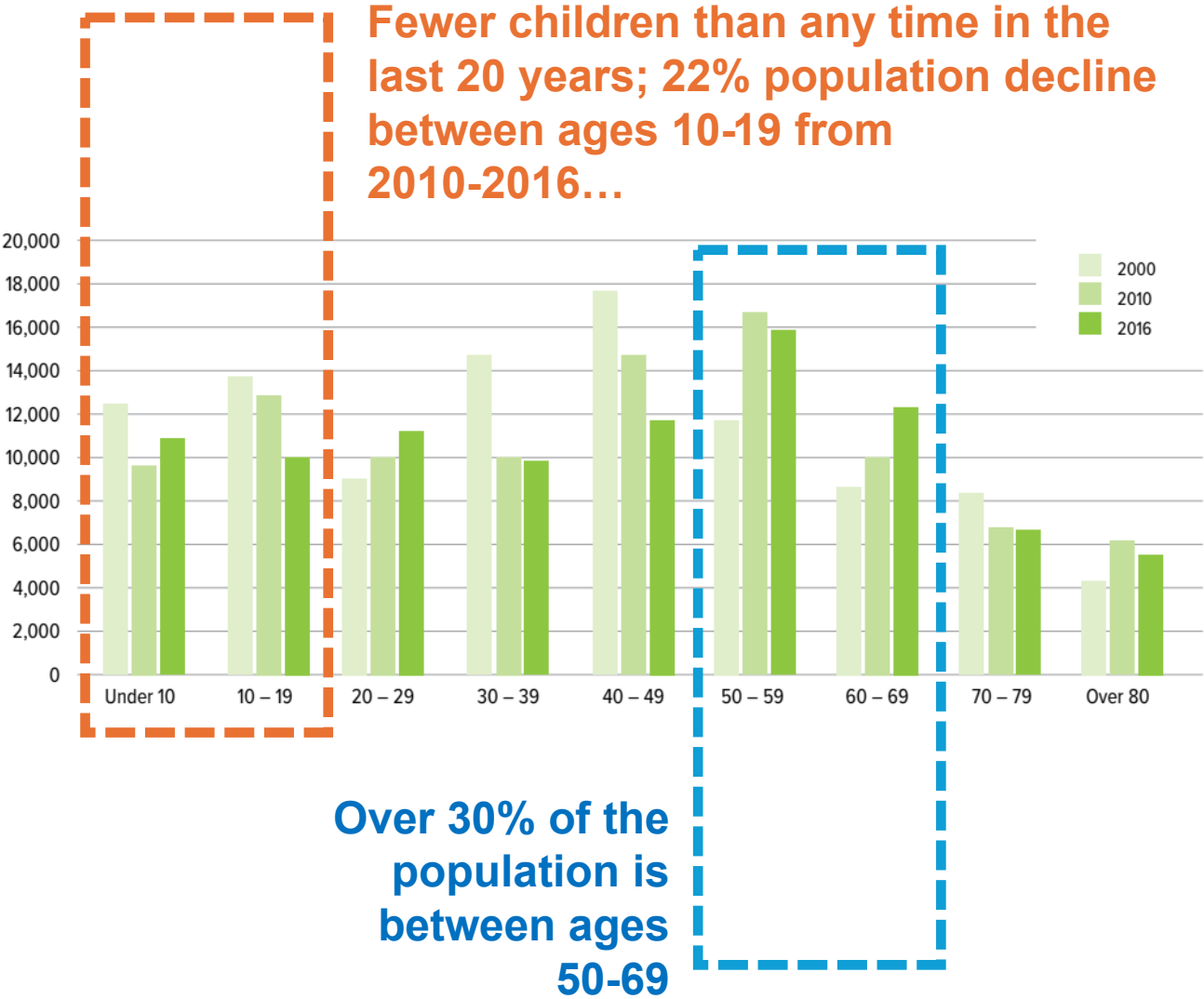
Livonia	-2.8%	(-2747 residents)
Plymouth Township	+0.2%	(+42)
Northville Township	+7.9%	(+2253)
Canton Township	+4.0%	(+3618)
Farmington Hills	-0.3%	(-243)
Lyon Township	+28.6%	(+4163)
All of Wayne County	-1%	(-8244)

DEFINING THE CHALLENGE

In 2017 thousands of Livonia residents came together around a problem –

Livonia's population was decreasing, while at the same time the age of our population was increasing.

The **median age** of residents is 44.7 years old, an increase from 40.2 years old in 2000.





Focus of Livonia Vision 21: Blueprint for the Future



Mark Taormina
Planning and Economic Development
Director City of Livonia



LIVONIA V21
STARTS NOW



Signing the Livonia Vision 21 Zoning
Ordinance October 12, 2021



DRAFT

FEBRUARY 2024

Highest and Best Use Options Study

Livonia City Center Site - 5 Mile & Farmington Road

Presented to: City of Livonia





LivoniaBuilt.org

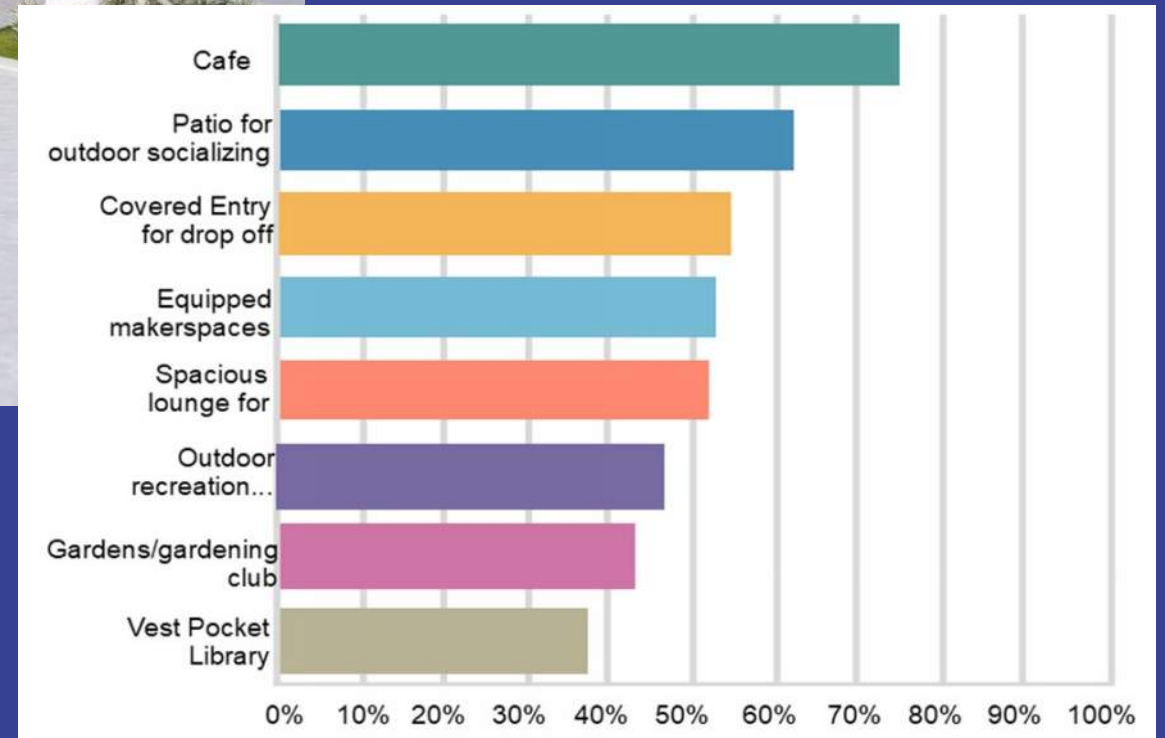
The American Rescue Plan Act initiated \$1.9 trillion in economic stimulus funds and we worked to secure \$20.75 million for Livonia





PROJECT CATALYST

LIVONIA SENIOR WELLNESS CENTER



PHASE ONE – NEW SENIOR WELLNESS CENTER



- Coming Winter 2025
- \$27.8 million investment
- Funded by American Rescue Plan funds from federal, state, county and city government
- 30,000-square-foot Wellness Center and Rec Center improvements
- Hubbell Roth & Clark Architects
- PCI Dailey Construction Manager



Livonia Police
Department

Larry Nehasil Park





Livonia Police
Department

Larry Nehasil Park

2D

PHASE TWO – NEW CITY HALL & CITY CENTER MASTER PLAN



- Coming 2027-28
- \$40 million investment
- Funded by bonds issued by the City of Livonia
- HED (Harley Ellis Devereaux) Architecture and Engineering
- Frank Rewold & Sons Construction Management



» MOMENTUM BUILDS

CRAIN'S DETROIT BUSINESS
A CRAIN FAMILY BRAND

Livonia wants to build a downtown. First, it has to tear down city hall.

By Elizabeth Schanz/Crain's Detroit Business/02.04.25

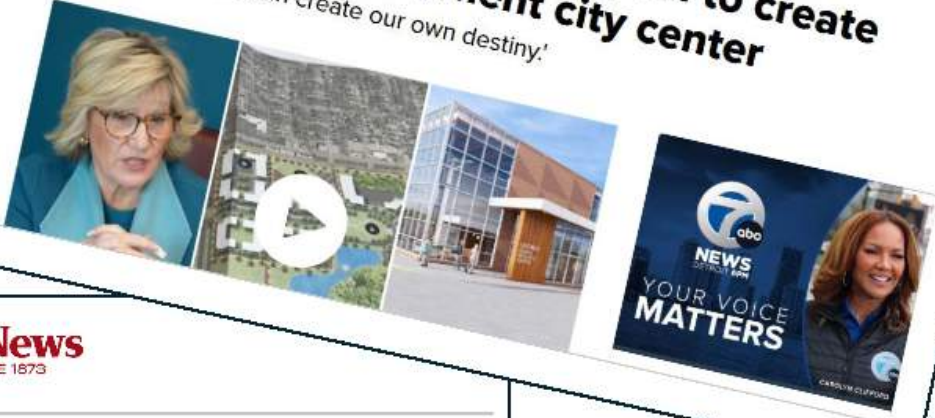


7abc WXYZ DETROIT

NEWS

Livonia moves ahead with plan to create mixed-use development city center

'This is where we can create our own destiny.'



The Detroit News
SERVING MICHIGAN SINCE 1873

WAYNE COUNTY

Town without a downtown: Livonia looks to develop a Main Street after 75 years

 **Julia Cardi**
The Detroit News

Published 11:00 p.m. ET Jan. 14, 2025 | Updated 11:59 p.m. ET Jan. 14, 2025

LIVONIA V21
STARTS NOW

New City Hall for Livonia

By JOHN J. CAMPER

Detroit News Metropolitan Bureau

LIVONIA — Construction should begin next year on Livonia's new city hall.

The building, expected to be at least five stories high, will be built behind the police station and water department buildings, immediately south of Five Mile and east of Farmington road.

It is to be the focal point of an ambitious civic center plan drawn by the city's planning department.

The civic center scheme, which will be released within a few weeks, will include a city hall, courthouse, auditorium and convention center. There are provisions for hotels and high-rise apartments.

THE CITY'S Municipal Building Authority recently hired the architectural firm of Alden B. Dow Associates Inc., of Midland, to design the city hall.

The firm will begin interviewing city department heads next week to determine space needs.

Harvey C. Allison, vice-president of the firm, said the architects should have schematic drawings of the city hall ready this summer.

The new building actually will be owned by the Municipal Building Authority, which technically is not part of the city government.

The authority will sell 40-year bonds to finance the city hall. It will then rent the building back to the city at a rental rate sufficient to cover interest and principal on the bonds.

WHEN THE BONDS have been paid off through the rental, the building will become the city's property.

The advantage of this type of financing is that the city could raise property taxes to pay the rent without a vote of

the people, said David L. Jones, chairman of the authority.

After the architect has placed a price tag on the building, it probably will take about six months to get approval of the bonds from the state's Municipal Finance Commission, Jones said.

If everything goes according to schedule, Jones said, the building could be completed in about three years.

Dow officials are refraining from estimating cost or size of the new building until their needs studies are complete.

BUT BY COMPARISON, the firm designed a seven-story, \$2.5-million city hall for Ann Arbor, which was completed in 1963. Ann Arbor has an estimated population of 95,000, including 32,000 University of Michigan students. Livonia's population is about 100,000.

The Dow firm was chosen over 11 others, Jones said,

because of its extensive experience in designing high-rise buildings.

It designed the Matthai Recreation Building and the student center at Wayne State University and the U-M's Institute of Social Research and botanical gardens at Ann Arbor.

Dow agreed to do the initial work and schematic drawings for a fee of not more than \$12,000. If the building plans are approved by the city council, Dow will receive a percentage of the building costs.

Livonia's city offices are located in a half-dozen buildings scattered along Farmington and Five Mile. The present city hall probably would become part of the city's library system when the new building is complete, Jones said.

SINCE LIVONIA is expected to reach a population of 175,000 by 1985, one of Dow's major headaches will be pro-

viding for expansion of city offices.

City officials had advised against incorporating courtrooms into the city hall, since Livonia's municipal court may be replaced by a district court under the state constitution's proposed judicial reorganization.

But Allison suggested letting the court use the new building "until 1973 or so. Then it could go into a separate court building and expanding city offices could take over the space the court vacated."

A suggestion that the plans provide for additional floors at a later date was rejected by Alden B. Dow, president of the firm, as "an awkward thing to do gracefully."

But Jones has suggested building the building several stories higher than presently needed and renting the vacant floors to private firms. The firms could be asked to leave as the city needed extra space.

Alden B. Dow Archives
315 Post Street, Midland, MI
Copied for reference only.
Copyright restrictions apply.

PHASE THREE – NEW POLICE STATION, RENOVATED FIRE STATIONS, NEW LIBRARY, NEW CENTRAL PARK, NEW BIKE LOOP



- Coming Winter 2028
- Funded by resident-supported millage
- NEW Police Station
- NEW Robert and Janet Bennett Library
- RENOVATION of Main Fire Station and all four secondary fire stations
- ADD central park with amenities including a passive nature area and bike loop

PHASE THREE – PROJECT UPDATE



- Plante Moran Realpoint, owner's representative
- HED (Harley Ellis Devereaux), architect/city center master plan
- Hobbs & Black, architect/police station
- Spalding DeDecker, site survey and traffic study
- OHM (Orchard Hiltz McCliment), civil engineering
- Plante Moran, PLLC, technology consultant services



PHASE FOUR – RESTAURANTS, RETAIL AND RESIDENTIAL DEVELOPMENT



Suwanee, GA Town Center

- Coming Winter 2028/29
- Funding to be determined; options include public private partnerships, lease, sale or any combination of the above
- Restaurants, retail and more places for people of all ages to live

Livonia Vision 21 City Center Timeline

Together We Build Tomorrow

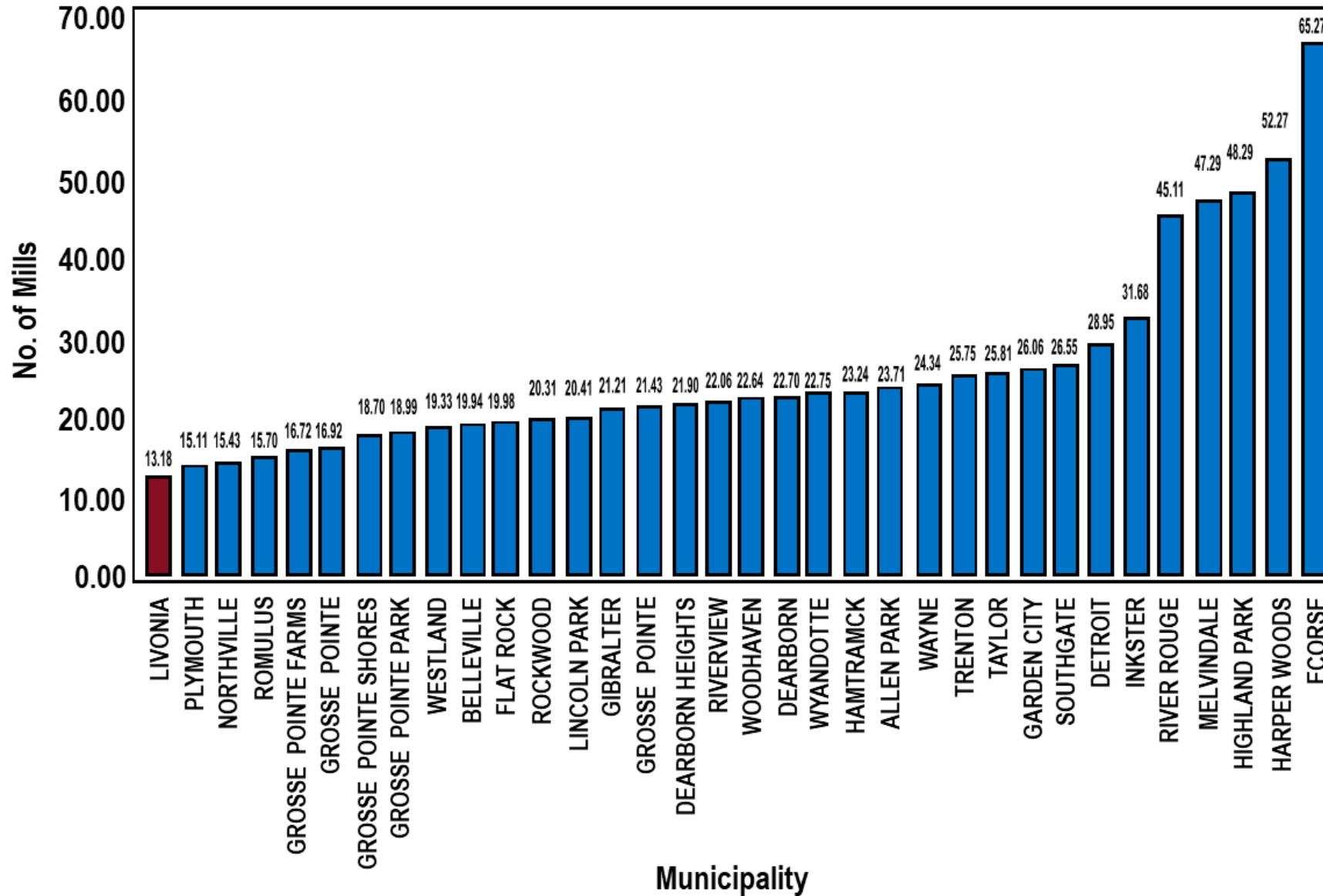


Visit
LivoniaBuilt.org
for details

**#Livonia
BUILT**



CITY TAX RATE COMPARISON (2022) WAYNE COUNTY, MICHIGAN

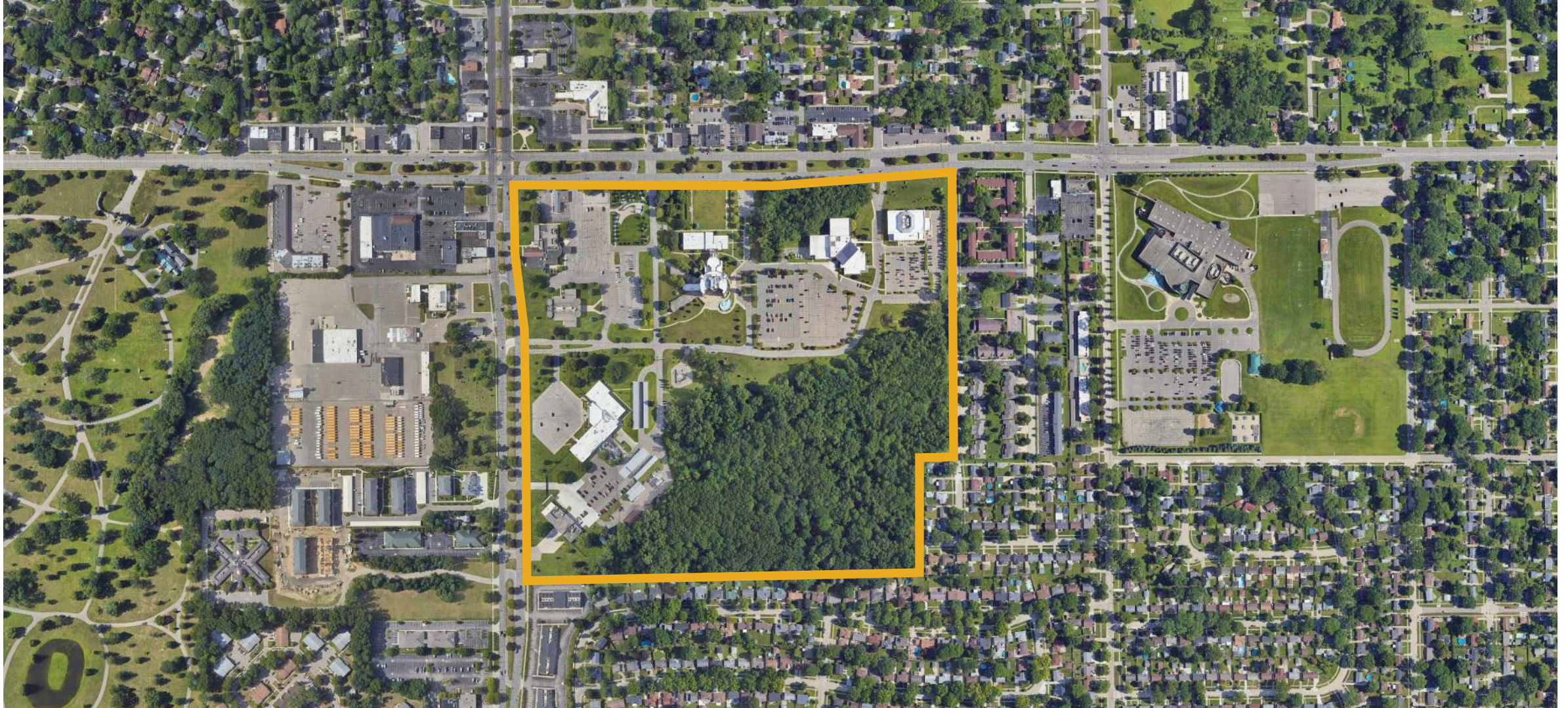




CITY OF LIVONIA: COUNCIL AND COMMUNITY UPDATE

AUTHENTIC MOVES

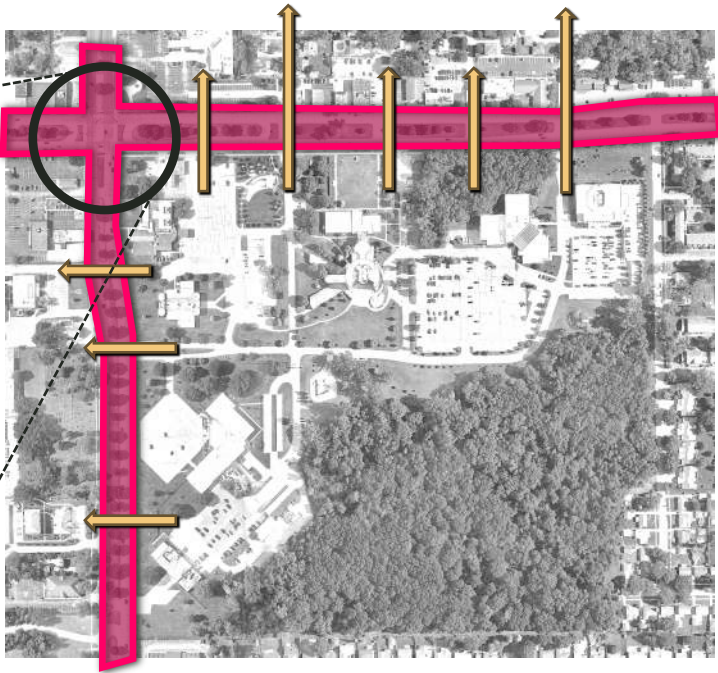
APPROACH / The Master Plan is built around existing site assets and Livonia's "WHY".



FRAMEWORK / Existing local and regional conditions inform the plan's strategic direction

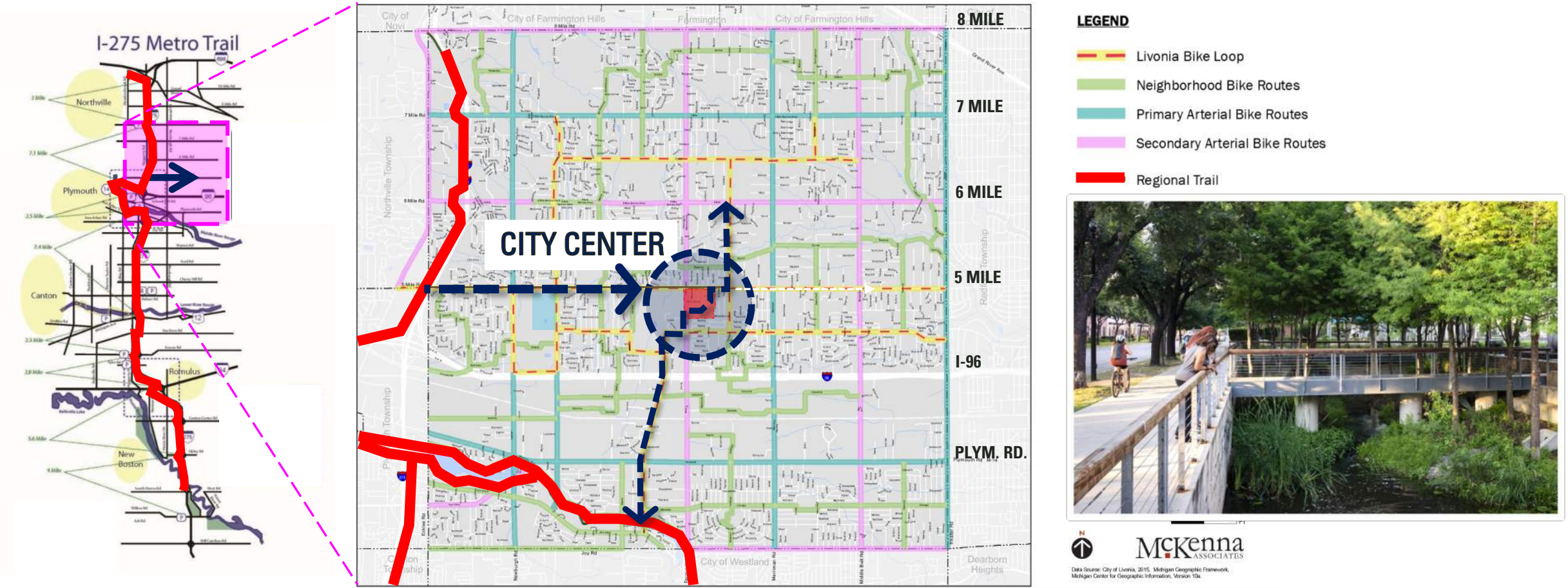


The **woods** are a unique asset, and a buffer to the **surrounding neighborhood**

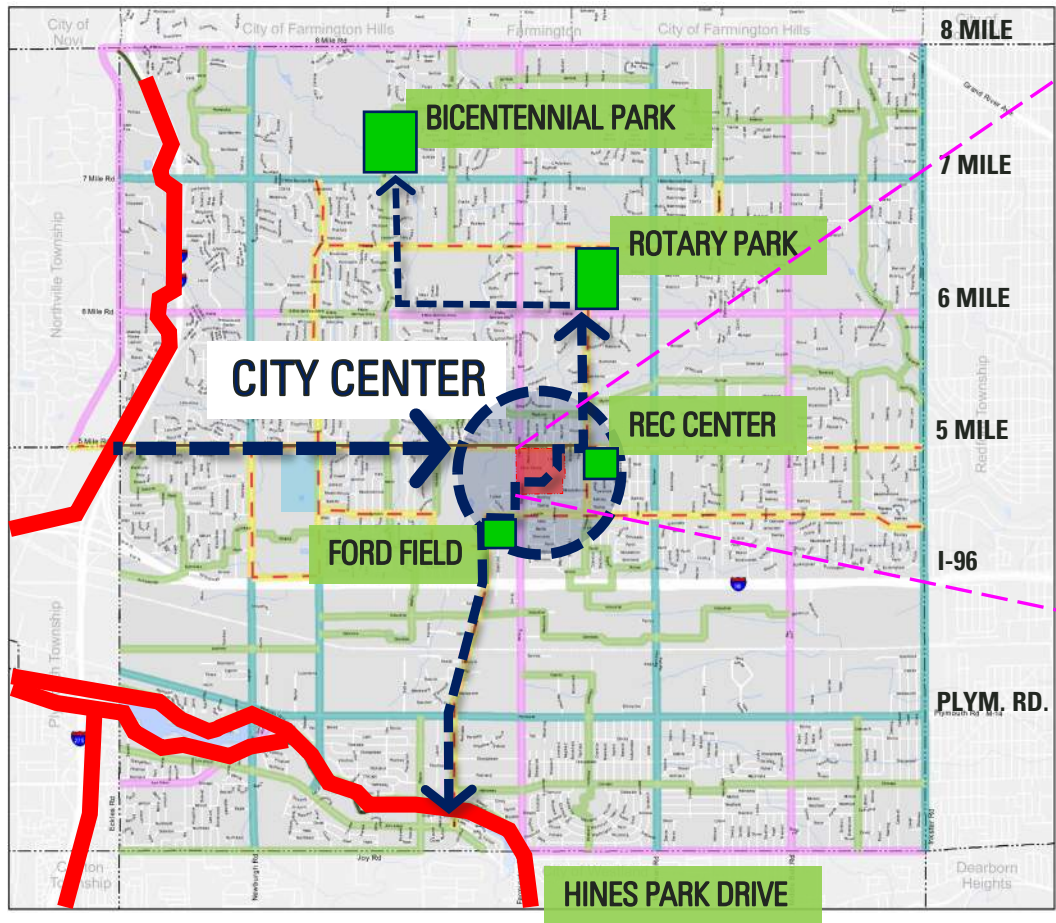


The intersection of 5 Mile/Farmington offers **high visibility** with many direct connections to the existing **street grid matrix** to help the plan expand over time...

FRAMEWORK / Existing local and regional conditions inform the plan's strategic direction



FRAMEWORK / Existing local and regional conditions inform the plan's strategic direction



THE GREEN CONNECTOR
Prioritizes connection to other civic sites in the community and sets up stewardship of the woods edge

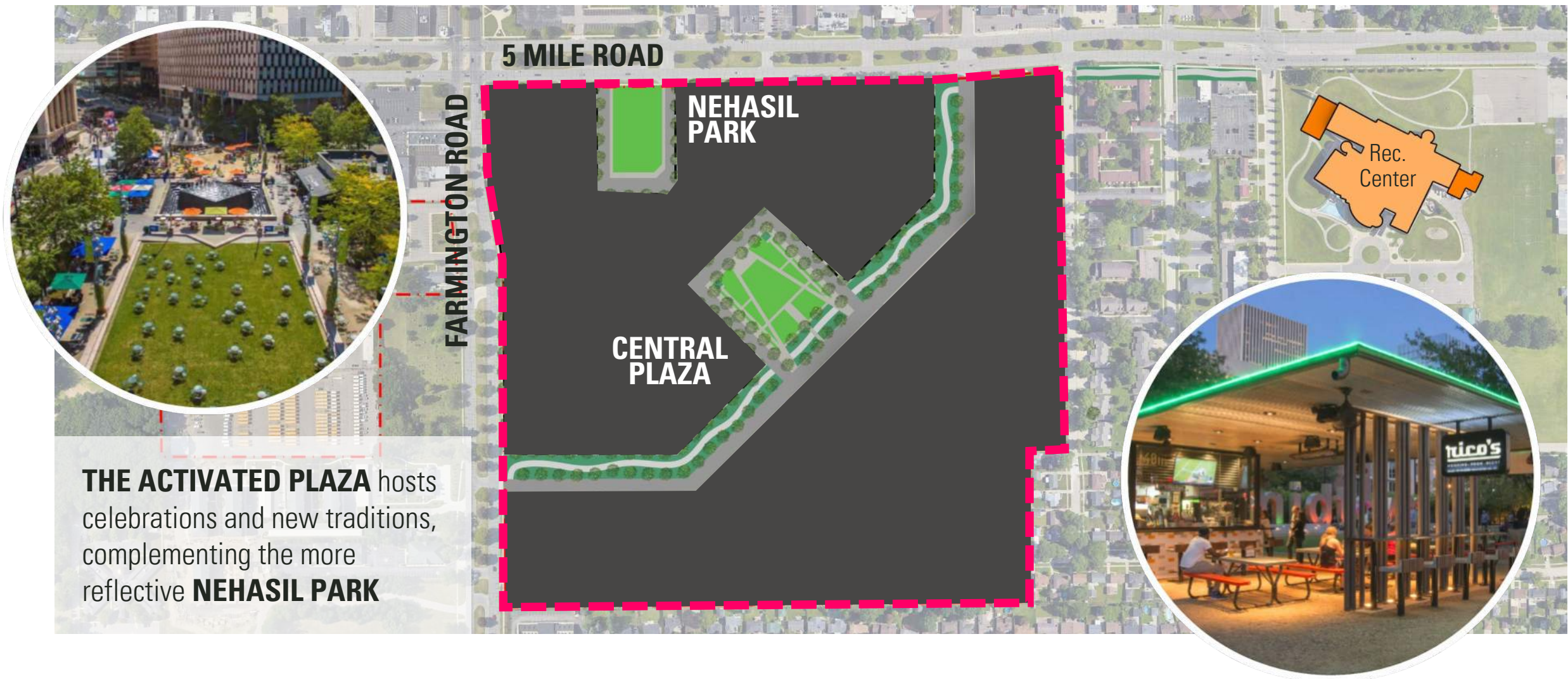
AUTHENTIC MOVES / Look at ways to make the project “uniquely Livonia”



AUTHENTIC MOVES / Be the center of a connected, healthy community

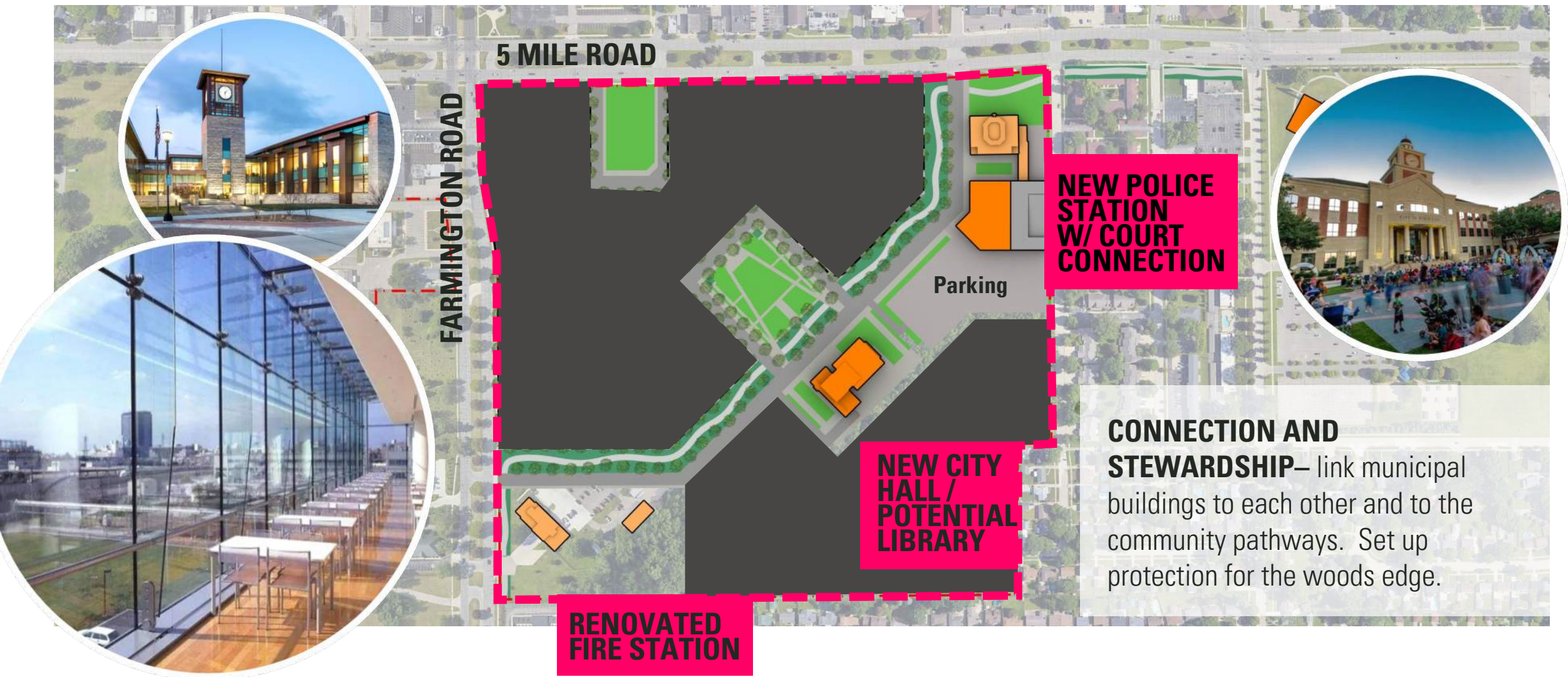


AUTHENTIC MOVES / Be the heart of Livonia's celebrations and traditions



THE ACTIVATED PLAZA hosts celebrations and new traditions, complementing the more reflective **NEHASIL PARK**

AUTHENTIC MOVES / Grant municipal facilities stewardship of the woods edge along the greenway



AUTHENTIC MOVES / Maximize investment for community impact



AUTHENTIC MOVES / Smart moves set up for private sector investment



**SERVICES EVOLVE, BUT
LIBRARIES ARE MORE THE
HEART OF THE COMMUNITY
THAN EVER.**



**PROGRAMMING
FOR ALL AGES**

**COLLABORATION;
NEW WAYS OF
WORKING**

**CULTURE AND
TECHNOLOGY**

**PERSONAL
INTERESTS AND
DEVELOPMENT**

**CAMPUS AND
OUTDOOR
INTEGRATION**

**LIBRARIES
ARE DOING
*MORE.***

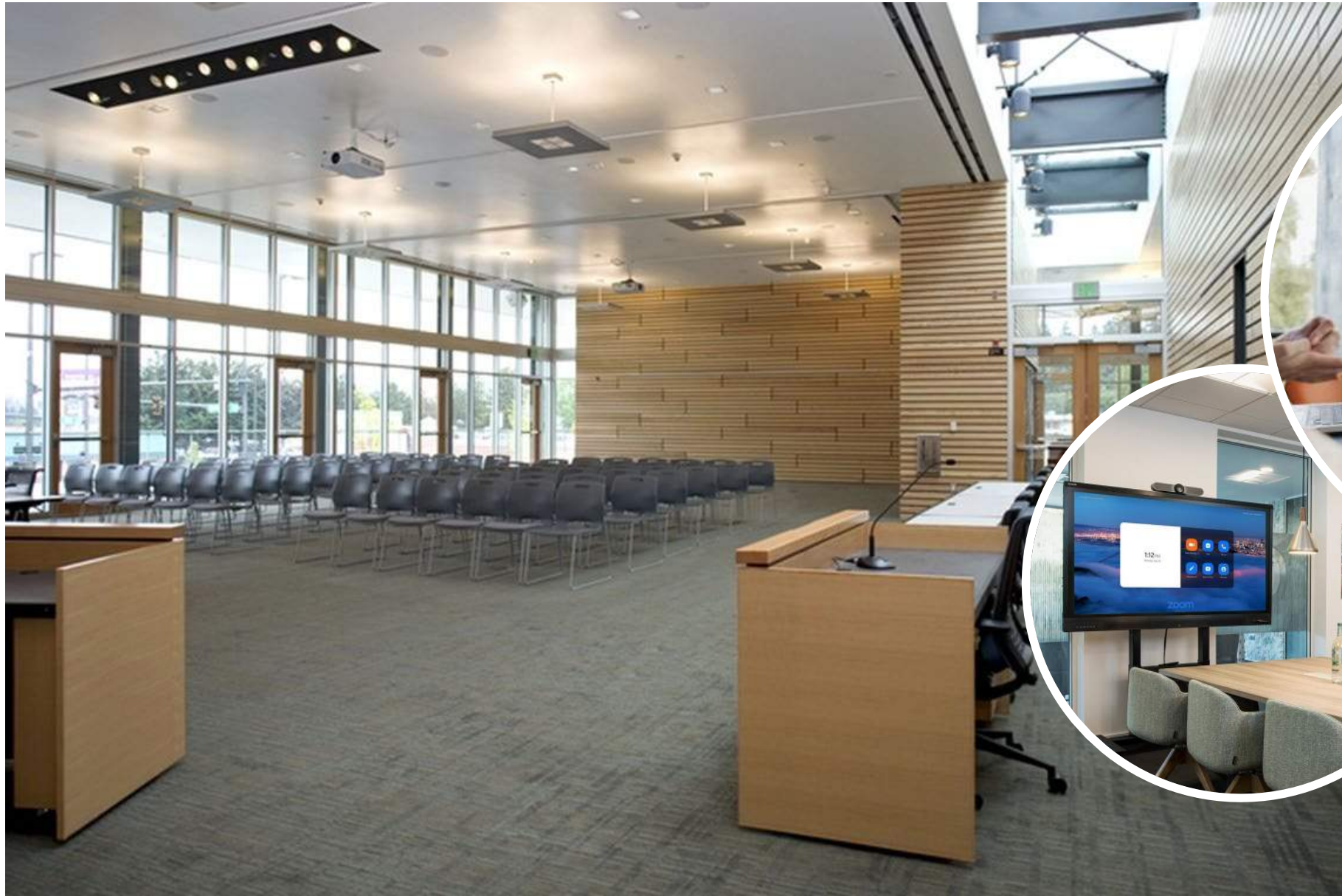
**AN \$18M INVESTMENT
WOULD UPDATE TO
CORRECT DEFICIENCIES, BUT
FALL SHORT OF KEY SERVICE
GOALS...**



**FULLY
ACCESSIBLE
FOR ALL -
SENIORS,
FAMILIES...**



**USER
FRIENDLY,
PLUG-AND-
PLAY**



**APPROPRIATE,
FLEXIBLE
MEETING
SPACE**

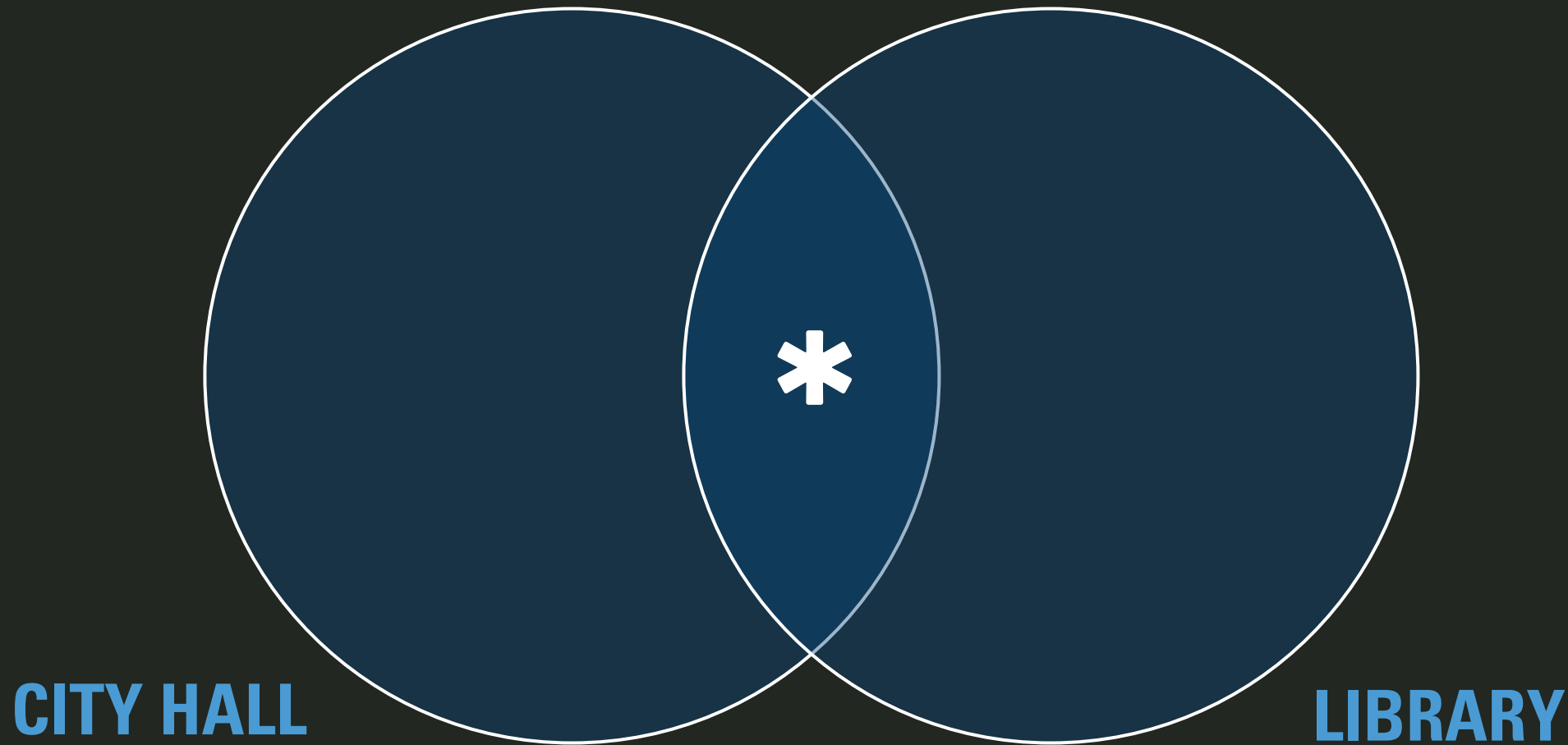


BRINGING IN
**CULTURE, ARTS
AND EXHIBITS**



ENGAGING
**OUTDOOR
PROGRAM
AREAS**

***GETTING SOMETHING MORE
THAN THE SUM OF THE PARTS.**



Why combine Library and City Hall / Impacts and Efficiencies

Combining the Library with City Hall offers synergies:

- **Activation of master plan public space:**
 - A single, more prominent building to define the plaza
 - A way to address diverse hours of operation
- **Flexibility:**
 - Potential to share program functions (meeting space, common space)
 - More flexibility in future use of total square footage
- **Savings:**
 - Leverage a “focal point” approach to right-size investment in costlier materials
 - Reduction in building envelope and shared systems
 - Combine infrastructure / elevators and circulation / toilets

FUTURE VISION

AUTHENTIC MOVES / Smart moves set up for private sector investment





Jonathan Adler

JONATHAN ADLER

CHERRY CREEK NORTH
FOOD & WINE

CHERRY CREEK NORTH
Welcome
FOOD & WINE
CherryCreekNorth.com

2015
FESTIVAL

outh St.
ivate Drive

king P
th Garage

STINGRAY
SUSHI • BAR • RESTAURANT

GRIMALDI'S

READY FOR SCHOOL
SET FOR LIFE

ready2go.com

STINGRAY
SUSHI • BAR • RESTAURANT





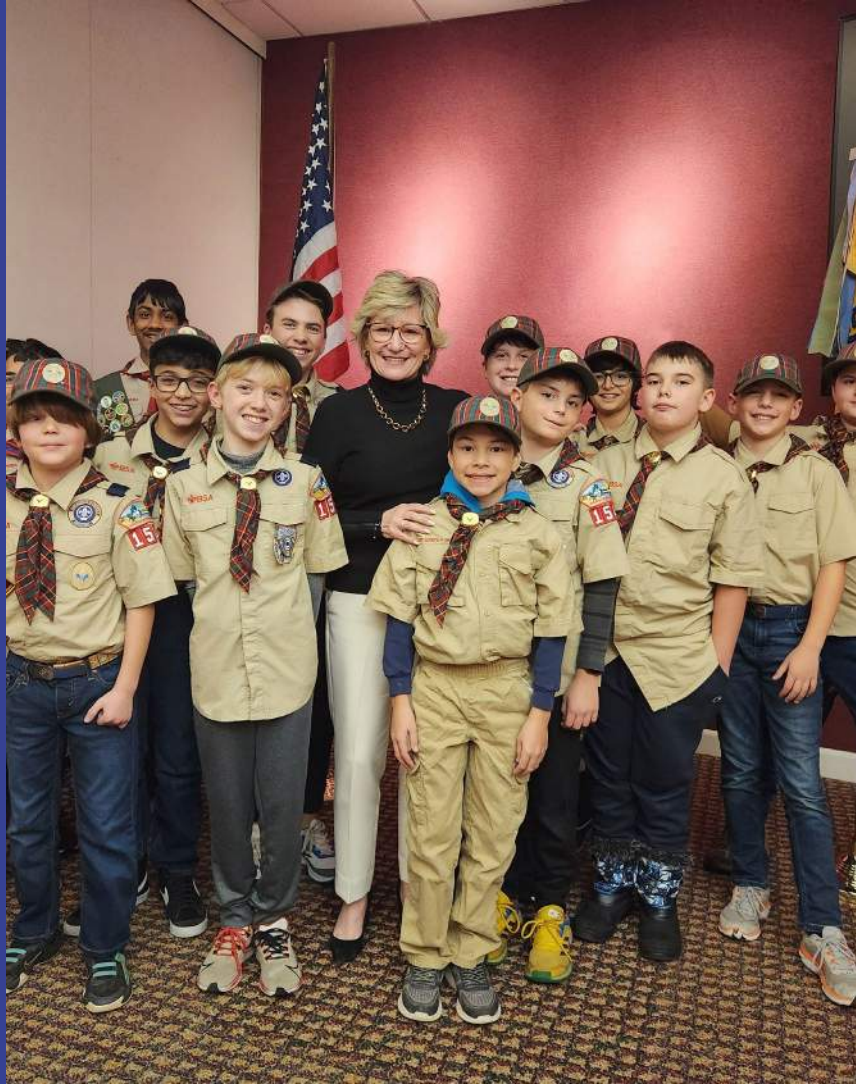










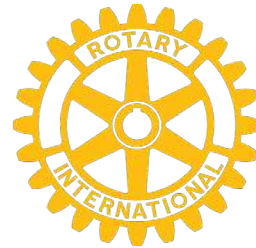


Together We Build TOMORROW



RESPONDING TO THE CALL

TOGETHER WE BUILD TOMORROW



CAPITAL OUTLAY AND INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, FEBRUARY 5, 2025
7:00PM

A Capital Outlay and Infrastructure Committee meeting was held on Wednesday, February 5, 2025, at Livonia City Hall in the City Council Chambers on the 2nd floor.

Committee Members Present: Rob Gjonaj Donovic, Chair
Martha Ptashnik, Vice Chair
Carrie Budzinski, Member

Committee Members Absent: None

City Council Members Present: Lynda L. Scheel
Brandon McCullough

**City Officials
and Others Present:** Maureen Miller Brosnan, Mayor
Carter Fisher, City Attorney
Dave Varga, Chief of Staff
Debbie Lichtenberg, Finance Director
Mark Taormina, Planning and Economic Development Director
Ted Davis, Superintendent of Parks and Recreation
Plante Moran Realpoint Representatives
Plante Moran Technologies Representatives

1. The subject matter of the planning, design and construction of the new Civic Center Campus.
(CR 330-24)

The meeting convened at 7:04 PM.

The meeting began with a discussion of the following:

- Introduction of conceptual master plan
- The Administration and vendors are looking for cost savings and value engineering while maintaining integrity of new city buildings.
- There was talk about the future of the Civic Center Library and why or why not to invest into an aging outdated library.
- The administration is discussing potential ballot language to present to the City Council to fund the building of a Police Department, potential library, renovation to the fire stations, central gathering area, and underground infrastructure.
- The language needs to be sent to Council first, if Council approves the language, it is sent to the State and then County to be voted on by residents in August of 2025.
- Significant work is still needed. The administration is actively working on bringing all info to the Council and community.
- Renderings are only conceptual and will continue to evolve and grow with time.
- All meetings are open to the public and encourage the community to participate.

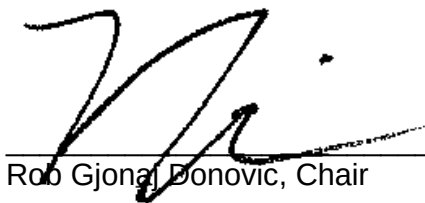
The meeting adjourned at 9:34 PM.

The Committee recommends:

- The item will stay in committee for further discussion.

Note: This item will remain in Committee.

This meeting will be reported at the Regular Meeting of February 10, 2025.



Rob Gjonaj, Chair

CAPITAL OUTLAY & INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, FEBRUARY 5, 2025, 7:00PM

NAME

DEPT OR CONTACT INFO FOR NOTIFICATIONS*
*PERTAINING TO THE SUBJECT MATTER OF THIS MEETING

Ted Bant

P+R

MARY TACOMINA

PLANNING DEPT.

Betsy Calhoun

Greenleaf Commission

Dave Karga

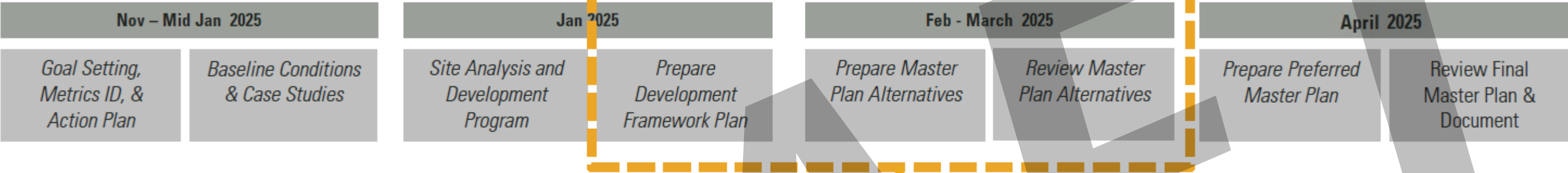
FEBRUARY 5, 2025

Capital Outlay and Infrastructure Committee Meeting

Livonia City Center Program Project Update

Master Plan Process Timeline

Long-Term Timeline



Near-Term Timeline



Key Design Strategies

DELIVER A NEW CITY CENTER THAT TRANSFORMS LIVONIA FOR RESIDENTS, BUSINESSES and GUESTS

Programming and activation that elevates and attracts

BEGIN BY MAKING A GREAT MIXED-USE EXPERIENCE FIRST

Discussion on the potential program and offering to the community

DESIGN TO UNLOCK THE SITE'S GREATEST ASSETS

Leverage this parcel to optimize services and engagement

PAVE A WAY FOR FUTURE DEVELOPMENT ALONG FIVE MILE ROAD AND FARMINGTON ROAD

Foundation of elements that build momentum and spur development

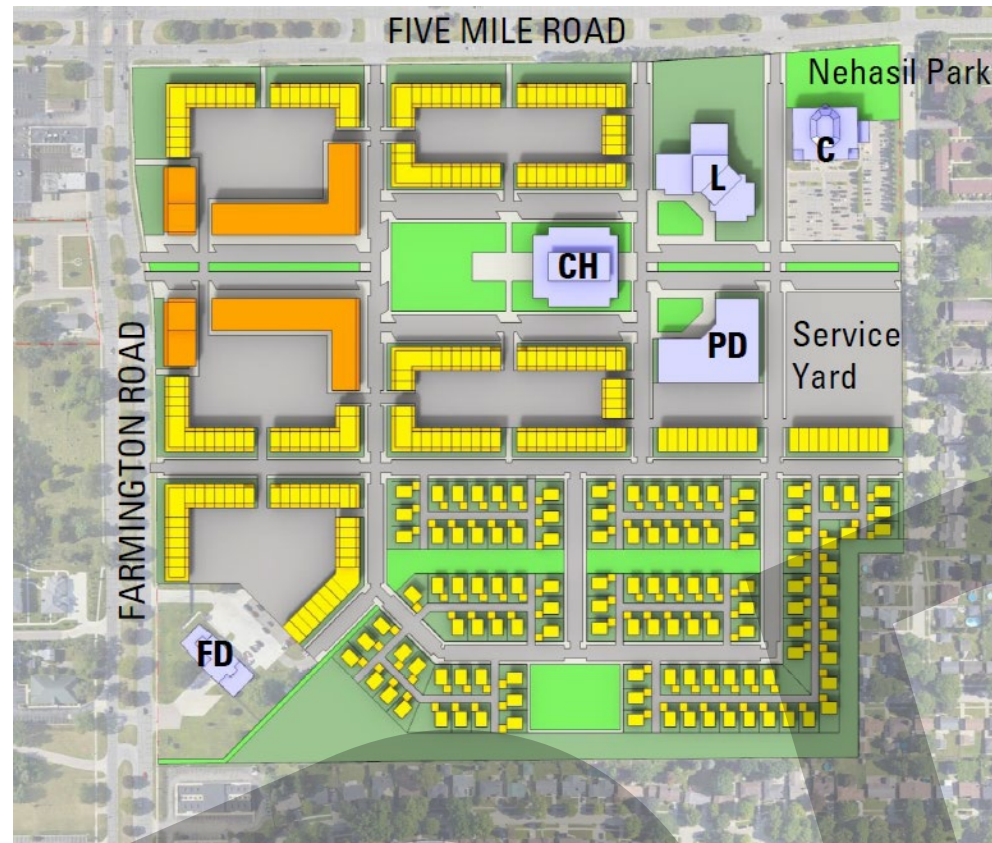
Master Plan Goals and Objectives:

The following tactical objectives from Vision 21 are evolving into application in the Master Plan:

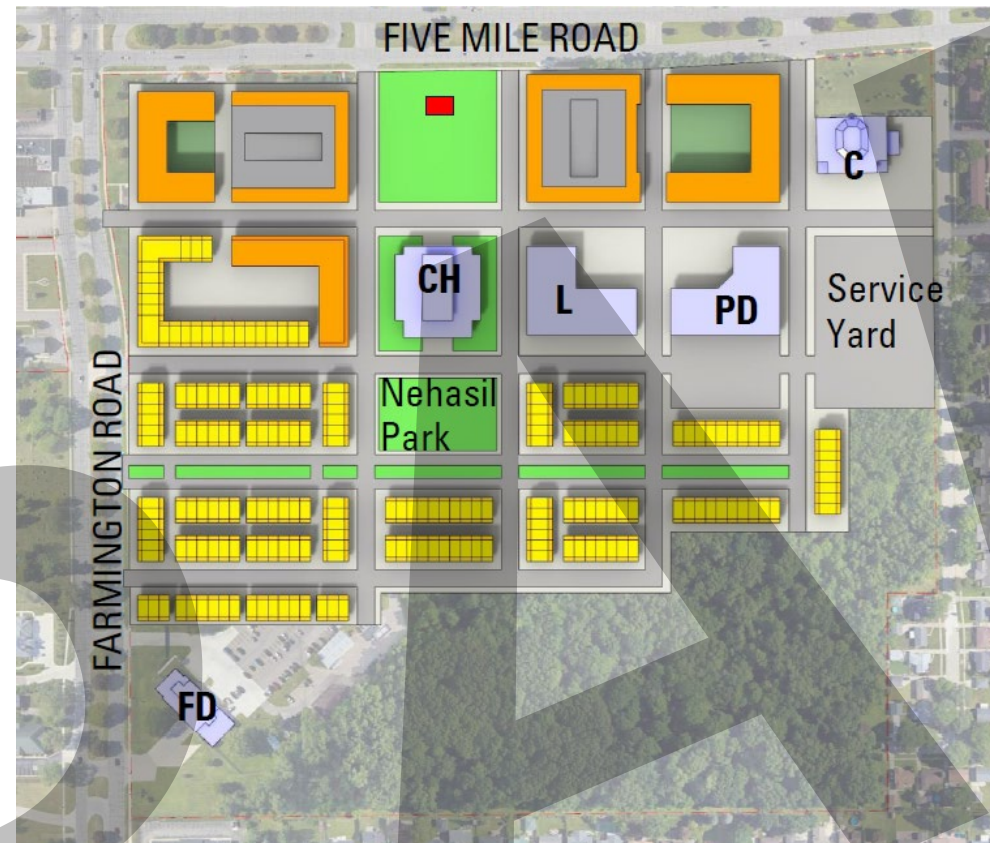
- Housing and Neighborhood
- Transportation
- Sustainability and Resiliency
- Healthy Communities
- Economic Development
- Parks, Trails, and Open Spaces
- Infrastructure
- Urban Design

DRAFT

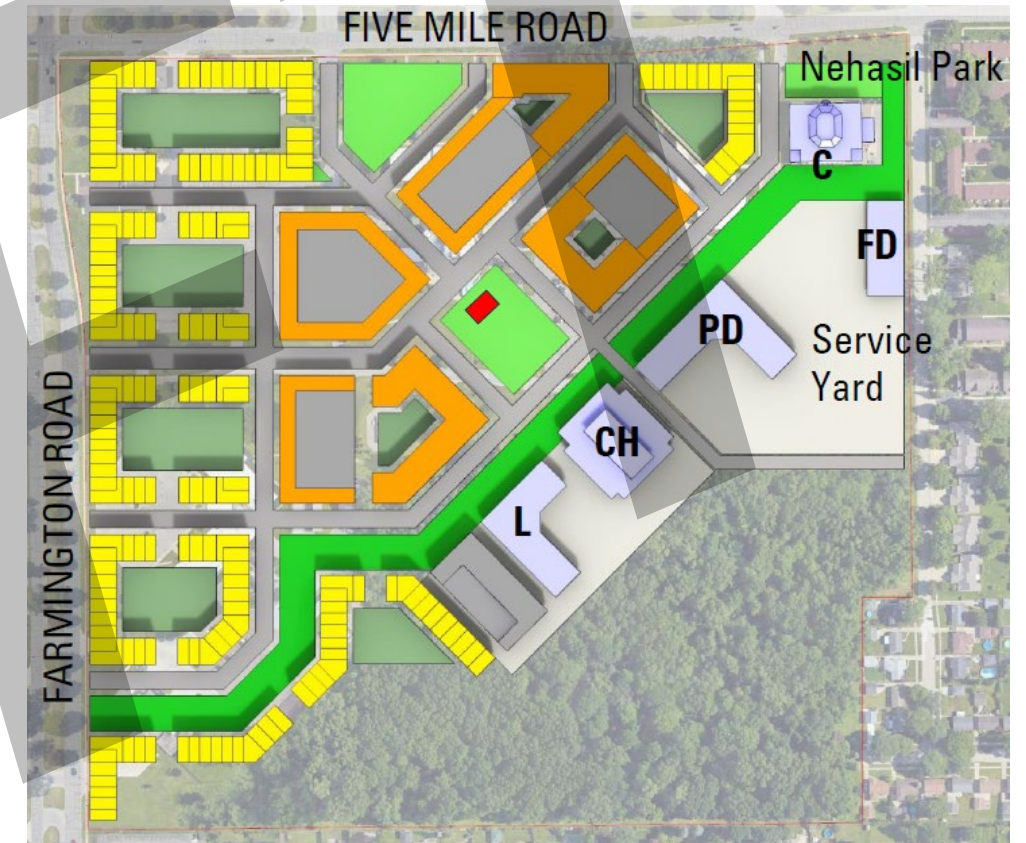
Evolution of City Center Master Plan



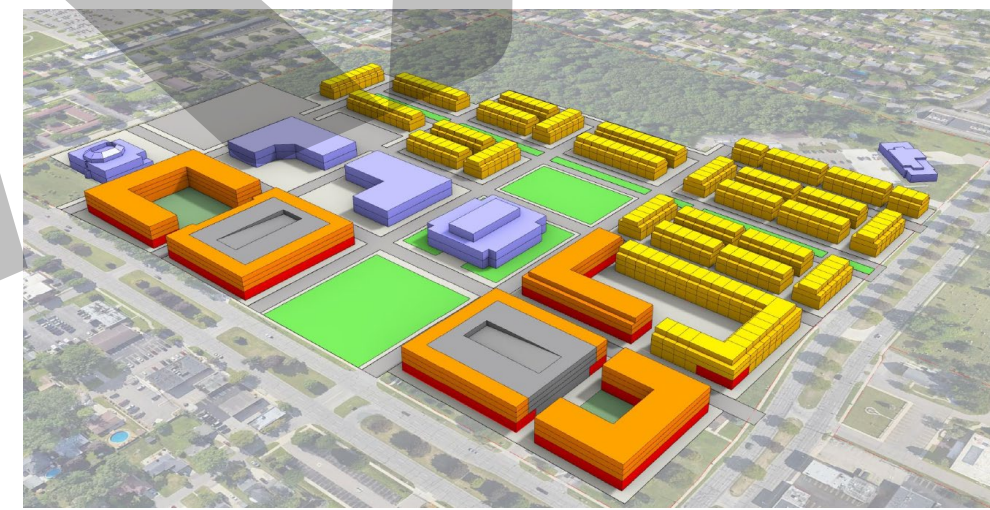
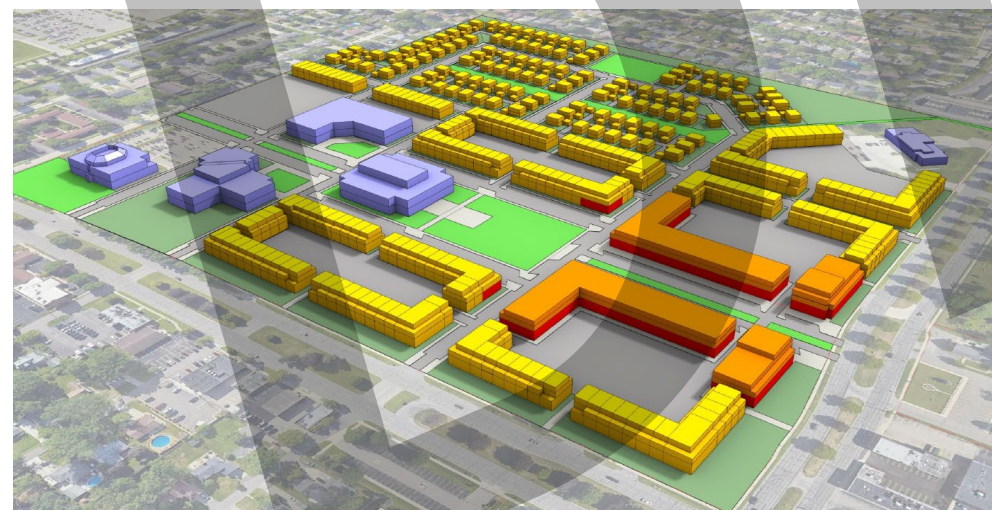
Option 1



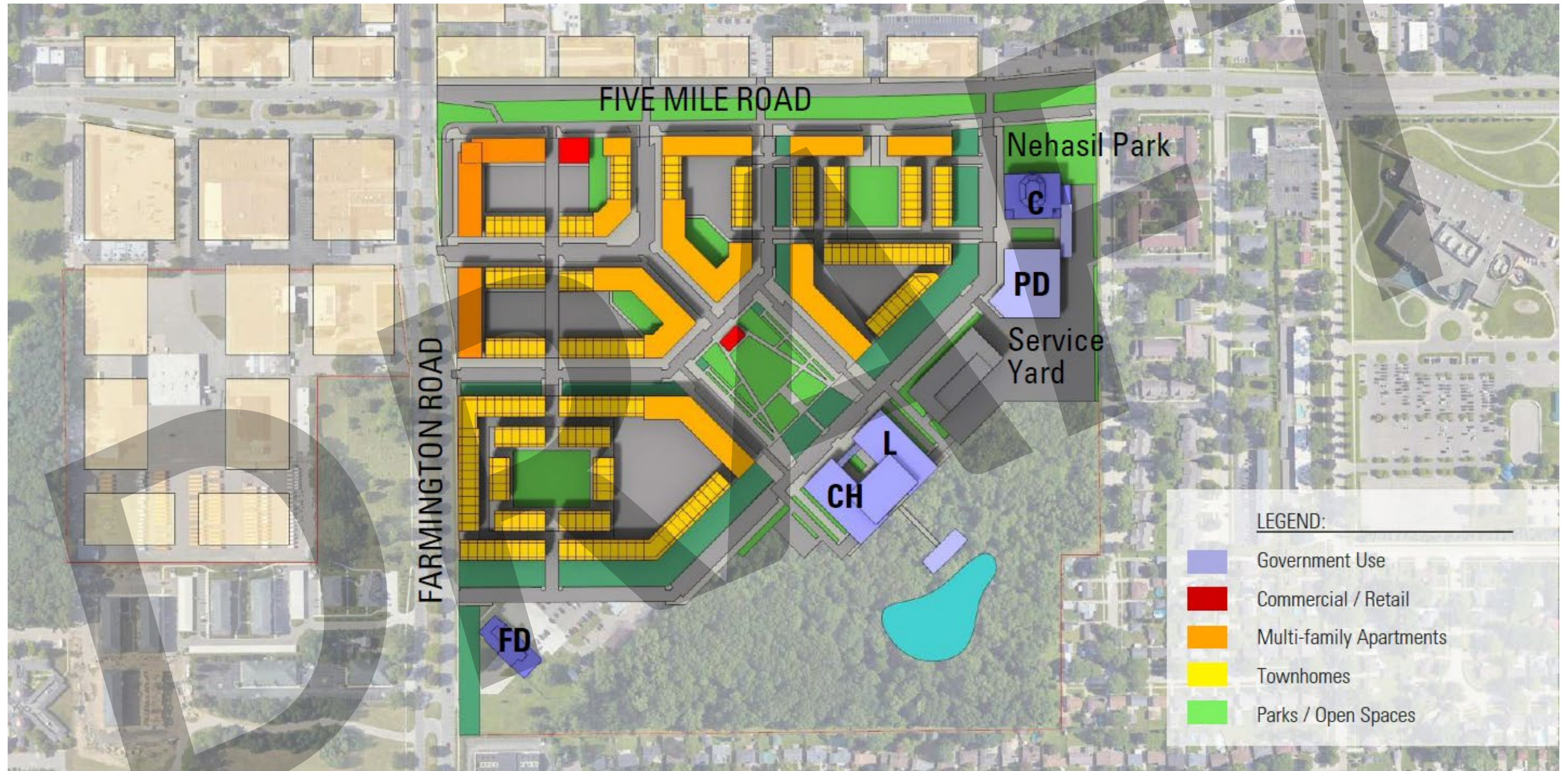
Option 2



Option 3



Stewards of the Woods Concept- Revision of Option 3



Stewards of the Woods Concept- 3D



I-HED

DESIGNWORKSHOP



Some of the Benefits of a New Library

Even with a sizable refresh, the existing Library would be challenged to provide...

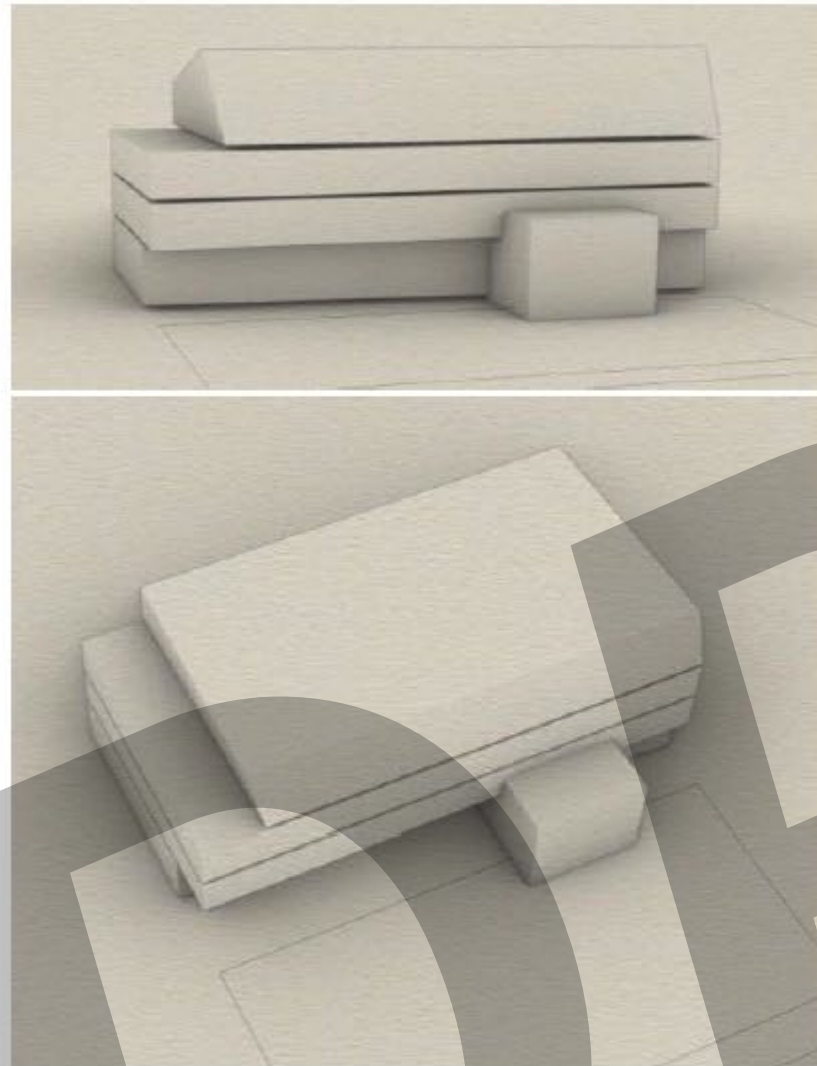
- **APPROPRIATE MEETING SPACE**
- **DRIVE-UP BOOK RETURN (DIRECT TO STAFF AREA) AND RFID IMPLEMENTATION TO FREE UP STAFFING**
- **ENGAGING OUTDOOR PROGRAM SPACE**
- **EXHIBITS, ART, PUBLIC INTERACTIVE ENGAGEMENT**
- **POWER/INFRASTRUCTURE-RELATED IMPROVEMENTS**

Some of the Benefits of a joint Library- City Hall

Potential synergies exist with...

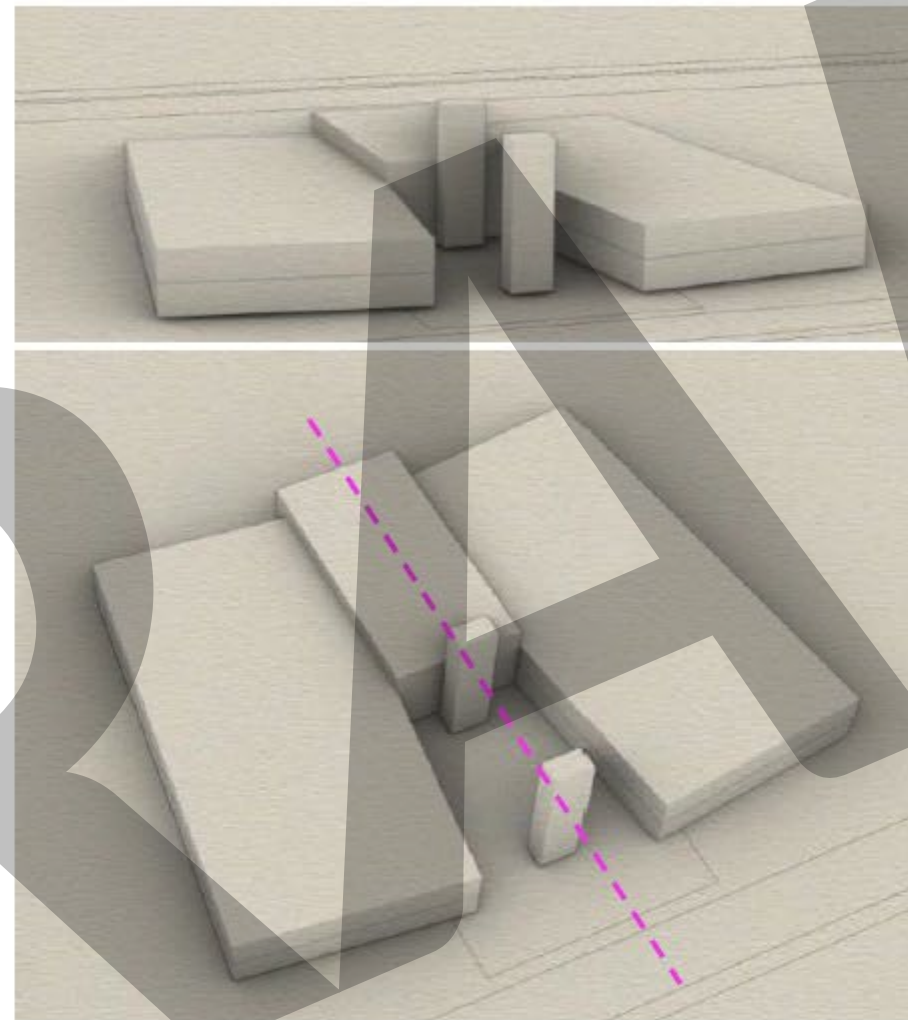
- **REDUCTION IN BUILDING ENVELOPE**
- **COMBINING NEEDS FOR INFRASTRUCTURE/VERTICAL CIRCULATION CORE / TOILET ROOMS COULD MAKE LIBRARY SPACE MORE FLEXIBLE**
- **SHARING OF PROGRAM FUNCTIONS (MEETING SPACE, COMMON ATRIUM)**
- **DIVERSITY OF HOURS OF OPERATION, ACTIVATION OF PUBLIC OUTDOOR SPACE**

Library/ City Hall Combo Options



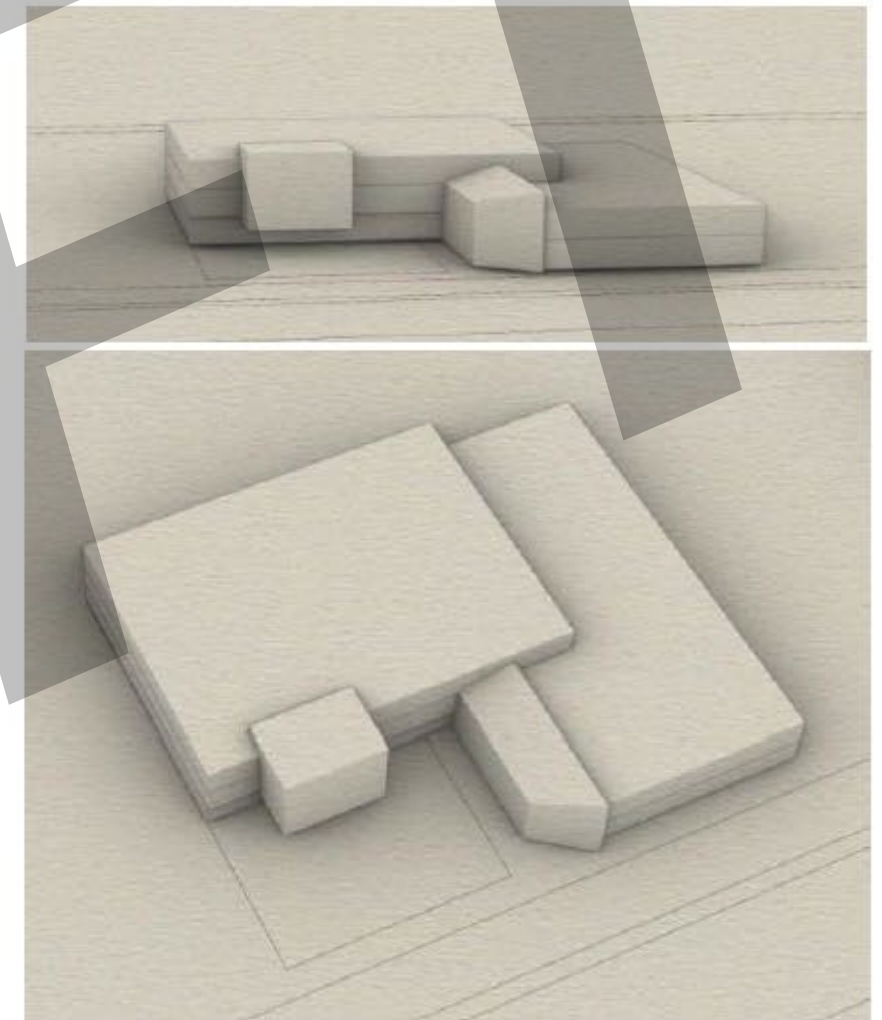
VALUE OF HEIGHT

- More presence on public space
- Compressed footprint
- Ability to elevate key space for longer views



VALUE OF VISIBLE AXIS

- Aligns with axis of plaza
- See through option to woods beyond
- Focal point opportunity



VALUE OF VARIED VOLUMES

- 3story-2story combo could have usable roof space
- Visible differentiation of functions

Library/ City Hall Combo Visuals



Cedar Rapids, IA



Oak Creek, WI

Plaza Ideations



Goal 1 – Wide Appeal

- Park amenities should cater to a variety of users; from families to young professionals, and active adults

Goal 2 – Community First

- Park amenities should focus on the service population of the City Center first

Goal 3 – Right-Sized

- Park amenities should be sized appropriate to the needs of the service population.

Goal 4 – Acknowledge Adjacencies

- Park amenities should complement the site conditions and adjacent land uses.

Goal 5 – Seasonally Appropriate

- Park amenities should be useable, year-round.

Goal 6 – Durable and Cost-Effective

- Park amenities should be cost effective, durable, and maintainable.



“Be the host of the party not the life of the party.”

PURPOSE

To model the current usage of an
OUTDOOR civic gathering space



To model the current usage of an INDOOR
gathering space.



RESOURCES

Include city activities sponsored by the library, parks and recreation, police, fire, DPW and housing.

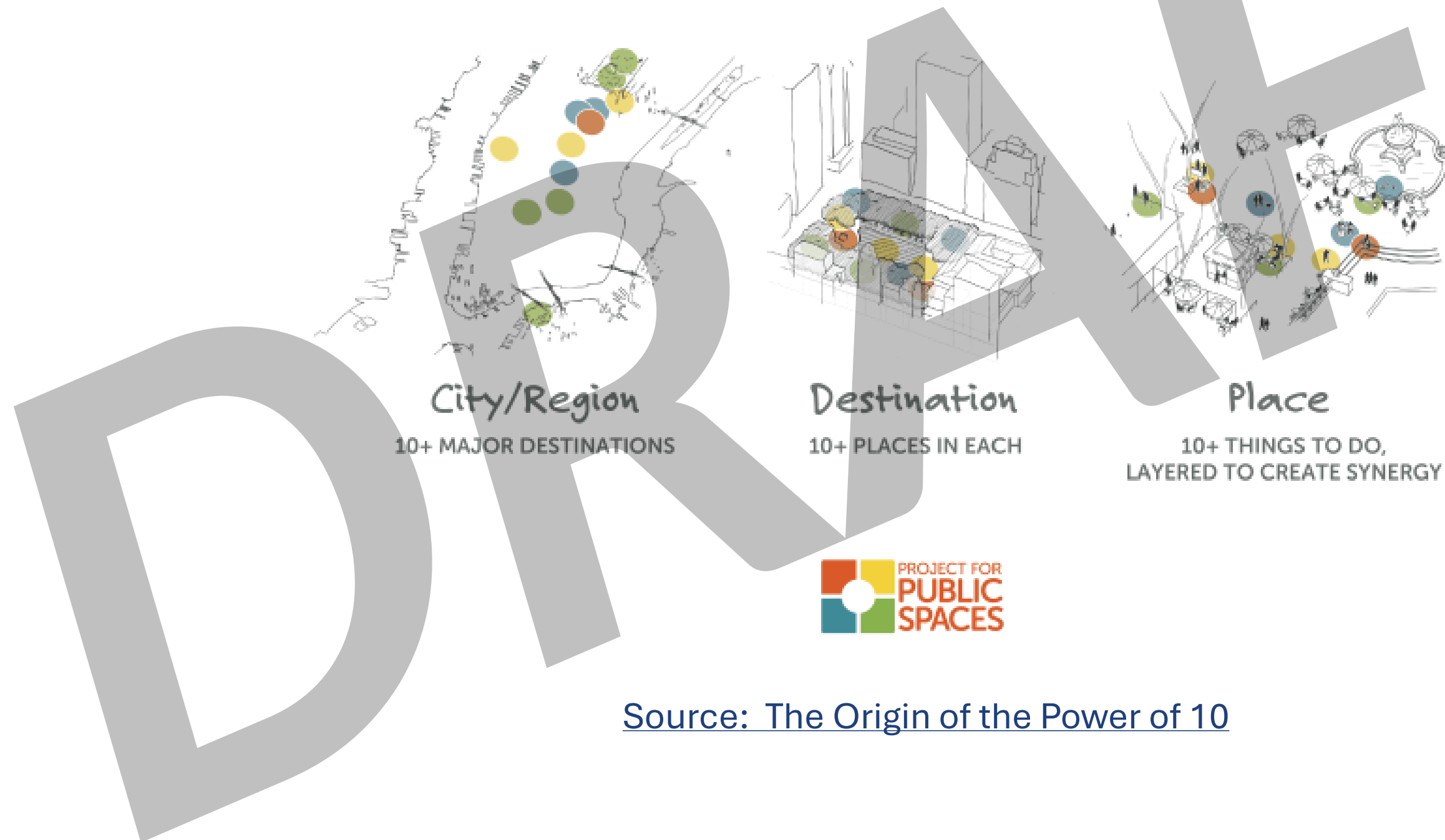


Include non-profit activities sponsored by community-based organizations.



POWER OF 10+

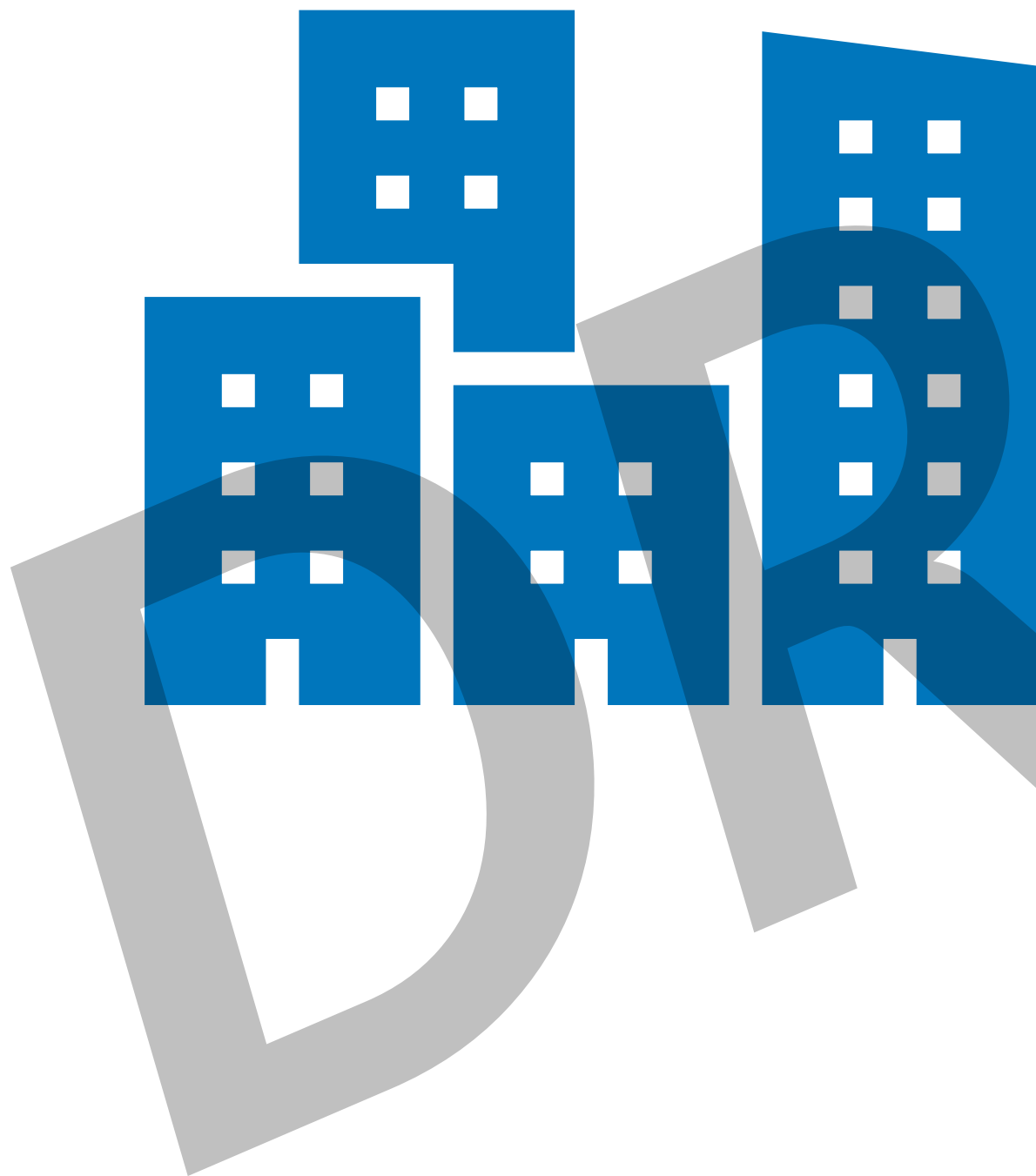
HOW CITIES TRANSFORM THROUGH PLACEMAKING



[Source: The Origin of the Power of 10](#)

WHAT IS THE POWER OF 10?

It's an urban planning principle that says places thrive when there are at least 10 things to do, arranged in such a way as to create social linkages. Scaling this up, a specific destination or neighborhood needs at least 10 places, that offer people a reason to visit and spend time there. One more level up, a city needs at least 10 major destinations, creating a powerful network of a thousand things to do.



City Center Program Update

Due Diligence completed to date:

Site Wide

- Title Work - *American Title*
- Property Survey - *Spalding DeDecker*
- Traffic Study - *Spalding DeDecker*
- Wetland Report - *Brooks Williamson & Associates*
- Phase I Environmental Report - *NTH Consultants*
- PMR Parking Study - *Complete*
- Cell Tower Lease Analysis - *Ongoing*
- HED Parking Validation - *Ongoing*
- Additional Survey Work - *Ongoing*
- Additional Title Work - *Ongoing*

City Hall

- HED Validation of PMR Program - *Complete*

Police Station

- PMR Program Validation - *Complete*

Library

- PMR Space Program draft - *Complete*
- Space Program Adjustments - *Ongoing*

Economics

- PMR discussions with Stokas Bieri, Jordan Jonna, MML, MEDC, MEDA, etc.
- Developed Sources & Uses- possible incentives, grants, and other sources of capital to facilitate plan
- Discussions with Miller Canfield on bond mechanics and ballot proposal language

Major Vendors:

HED

- Completed City Hall Program Validation
- City Hall Schematic Design is underway
- Master *Planning* effort with collaboration from Design Workshop

OHM

- Advising on Civil Engineering for Master Plan in collaboration with HED
- Developing 5 Mile and Farmington, as well as interior road concepts

Hobbs + Black

- Program Validation meetings for the police station have been scheduled

Frank Rewold & Sons

- Preparing to begin pre-construction services on City Hall once schematic design phase is complete

City Center Program Update

Upcoming Dates:

Capital Outlay and Infrastructure Committee Meetings:

Wednesday, February 5 - Today!

Wednesday, March 12 - Preferred Master Plan validation

Wednesday, April 2 - Final Master Plan refinement before City Council approval

City Council Meetings:

Monday, February 10- Technology Consultant approval

Monday, April 14- Master Plan presentation 1

Monday, April 28- Master Plan approval

From: [Varga, Dave](#)
To: [CityCouncil](#)
Cc: [Mayor Staff](#); [Davis, Ted](#); [Lichtenberg, Debra](#); [Taormina, Mark](#); [Kasprowicz, Sara](#); [Fisher, Carter](#)
Subject: Senior Wellness Center budget
Date: Friday, February 7, 2025 11:44:39 AM
Attachments: [2025 01 08 LivoniaSeniorWellnessCtr.pdf](#)

Good morning, Council Members:

Several questions were raised at the Capital Outlay and Infrastructure meeting Wednesday regarding the Senior Wellness Center and the quoted cost of the project included in the Crain's story. As indicated, did not provide them the \$28 million figure.

Attached is a document that outlines the various costs and the Council Resolutions approving those costs. As you can see, beyond the GMP Construction cost of \$25.5 million, there are also architectural costs of \$1 million, land purchase at \$415,660, and the owner's rep fee of \$100,000, putting the cost at \$27 million.

Additionally, the PowerPoint showing the renderings from that presentation is included here.

I have requested a copy of the PowerPoint presented by PMR, which is still a very preliminary, working document. I will share it when it's available.

All the best,

Dave Varga
Chief of Staff
City of Livonia | Mayor's Office
(734) 466-2203
dvarga@livonia.gov

Contracts	CR #	Vendor	Est Cost
Architectural Design	342-22	HRC	696,678.00
Architectural Construction Admin	342-22	HRC	349,322.00
<i>(CR# 342-22 = Not to exceed \$1,046,000)</i>			
Land Purchase from LPS	115-24	LPS	415,660.00
Construction Manager Services	070-24	PCI Dailey	1,065,600.00
<i>GMP - COST OF WORK:</i>			
Cost of Work (except as itemized below)	233-24	PCI Dailey	18,689,585.40
Furniture Allowance	233-24	PCI Dailey	1,250,000.00
Food Service Equipment	233-24	PCI Dailey	408,900.00
Athletic Equipment Allowance	233-24	PCI Dailey	200,000.00
Other Equipment and Furniture - *Remaining Non-Construction balance for MIDHHS	233-24	PCI Dailey	210,518.00
<i>(Total Cost of Work, per GMP = \$20,759,003.40)</i>			
<i>OTHER FEES & CONTINGENCIES:</i>			
Fees & Allowances	233-24	PCI Dailey	559,500.00
Fees over \$18M	233-24	PCI Dailey	210,695.08
Contingencies	233-24	PCI Dailey	2,910,811.85
Owner's Representative	372-24	M. Slater	100,000.00
			-
Total Projected			27,067,270.33
Total Project (GMP + City of Livonia Costs), per CR 233-24 doc.			26,951,610.33
Difference			115,660.00
Land Cost in excess of GMP Summary			(15,660.00)
Owner's Rep Services (not in GMP Summary)			(100,000.00)
			-

LIVONIA SENIOR WELLNESS CENTER

INTERIOR DESIGN REVIEW | EXTERIOR FAÇADE CANOPY

01.08.2025

iDs

INTERIOR SPACES

SENIOR CENTER

FIRST FLOOR PLAN



ENTRANCE LOBBY



ENTRANCE LOBBY



ENTRANCE CORRIDOR

IDS REFERENCE

IDS



ENTRANCE CORRIDOR

IDS REFERENCE

IDS



ENTRANCE CORRIDOR

IDS REFERENCE



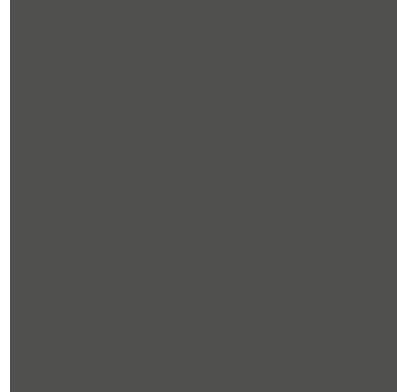
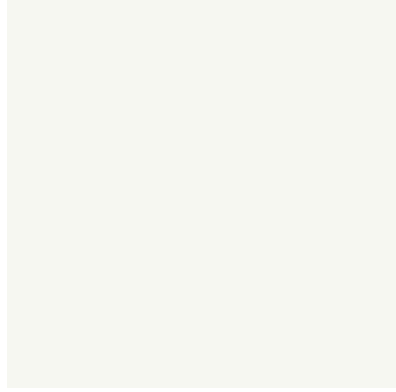






INTERIOR FINISHES

SENIOR CENTER



FIELD PAINT
PT-01

ACCENT PAINT
PT-02

PAINT
(DOOR / FRAMES)
PT-03

PAINT
(GYP CEILINGS)
PT-04

ARCHITECTURAL FINISH – DI NOC
WC-01

RUBBER BASE
RB-01



SOLID SURFACE COUNTERTOP
(RECEPTION DESK /
CAFÉ COUNTER / RESTROOM
COUNTER)
SSM-01

PLASTIC LAMINATE
MILLWORK
PLAM-01



WALK OFF CARPET TILE
TANDUS / ASSERTIVE STRIA / FORGE
CPT-01



CARPET PLANK
CPT-02



KINETEX FLOORING (2ND FLOOR)
CPT-03



FIREPLACE FAÇADE
LS-01



RESILIENT FLOORING MCT
RF-01



RESILIENT FLOORING MCT
RF-02



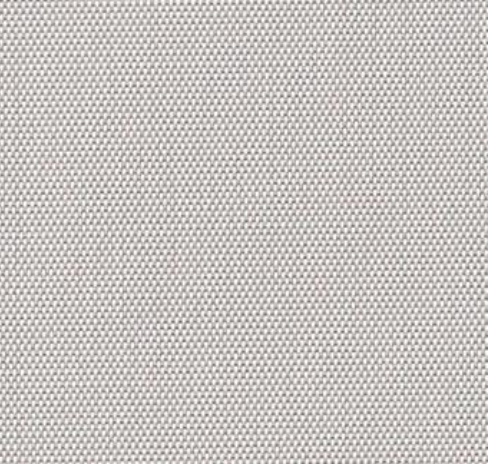
PLASTIC LAMINATE
TOILET PARTITIONS / INTERIOR ELEVATOR PANELS



ACCENT WALL TILE
CT-04 (CHARCOAL GROUT)



INTERIOR WOOD DOORS
ST-02



WINDOW SHADE
SC-01



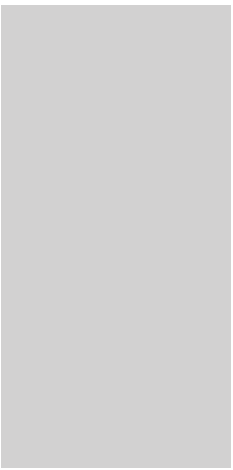
FELT BAFFLES
BF-01



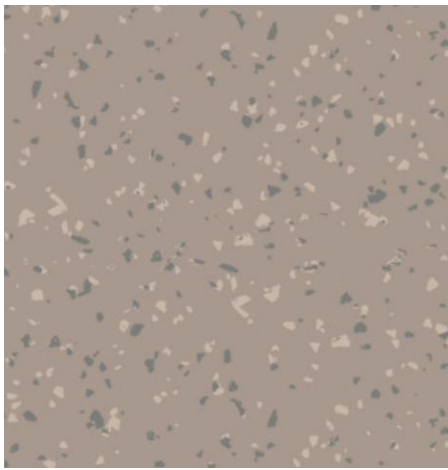
ACOUSTICAL CEILING TILES
ACT-01



RESTROOM FLOOR TILE
CHARCOAL GROUT
12" X 24"
CT-04
6" H WALL BASE
CTB-01



RESTROOM WALL TILE (WET WALLS)
CHARCOAL GROUT
3' X 9' LARGE FORMAT
CT-02



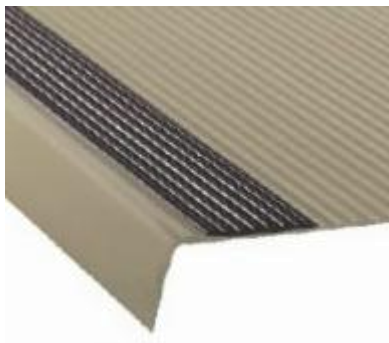
RUBBER STAIR TREADS / RISERS



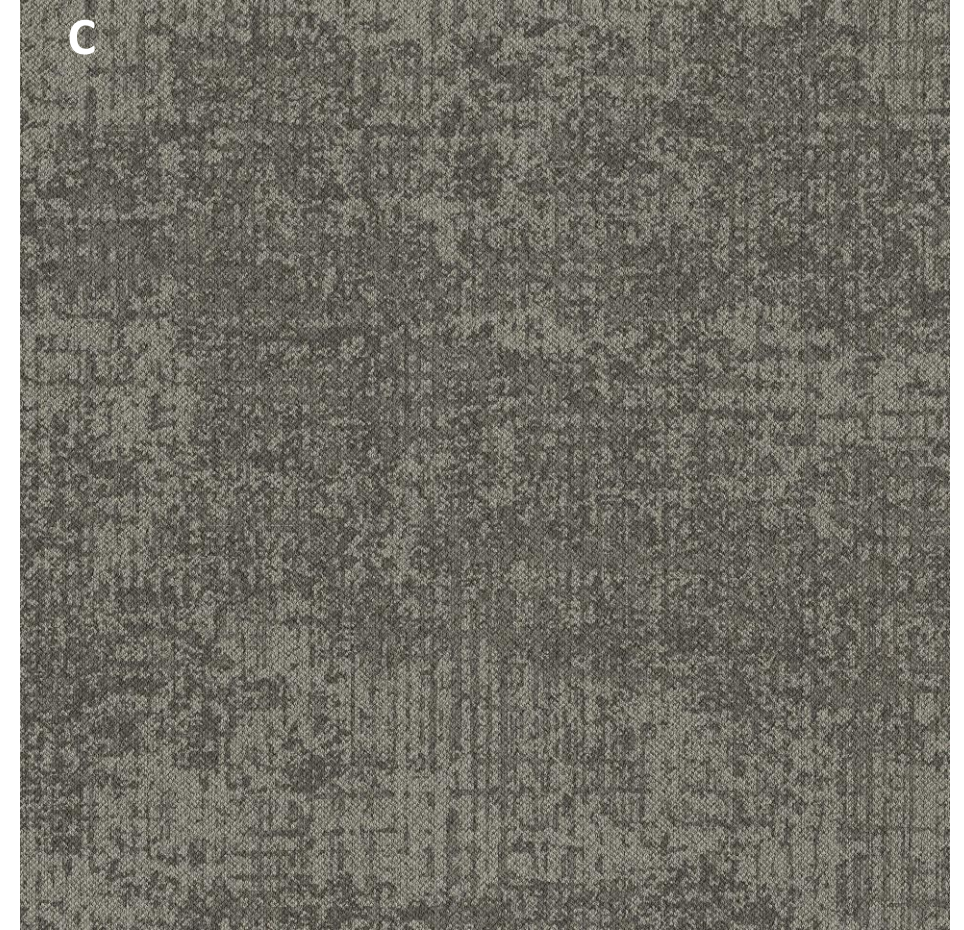
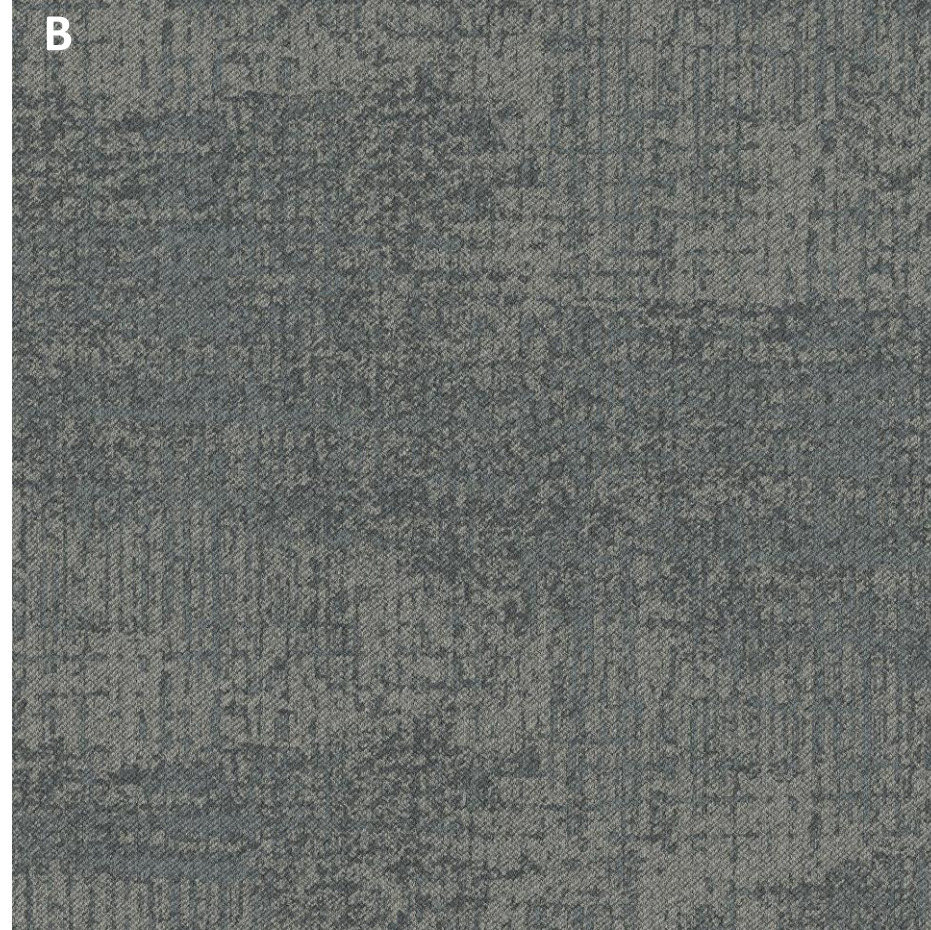
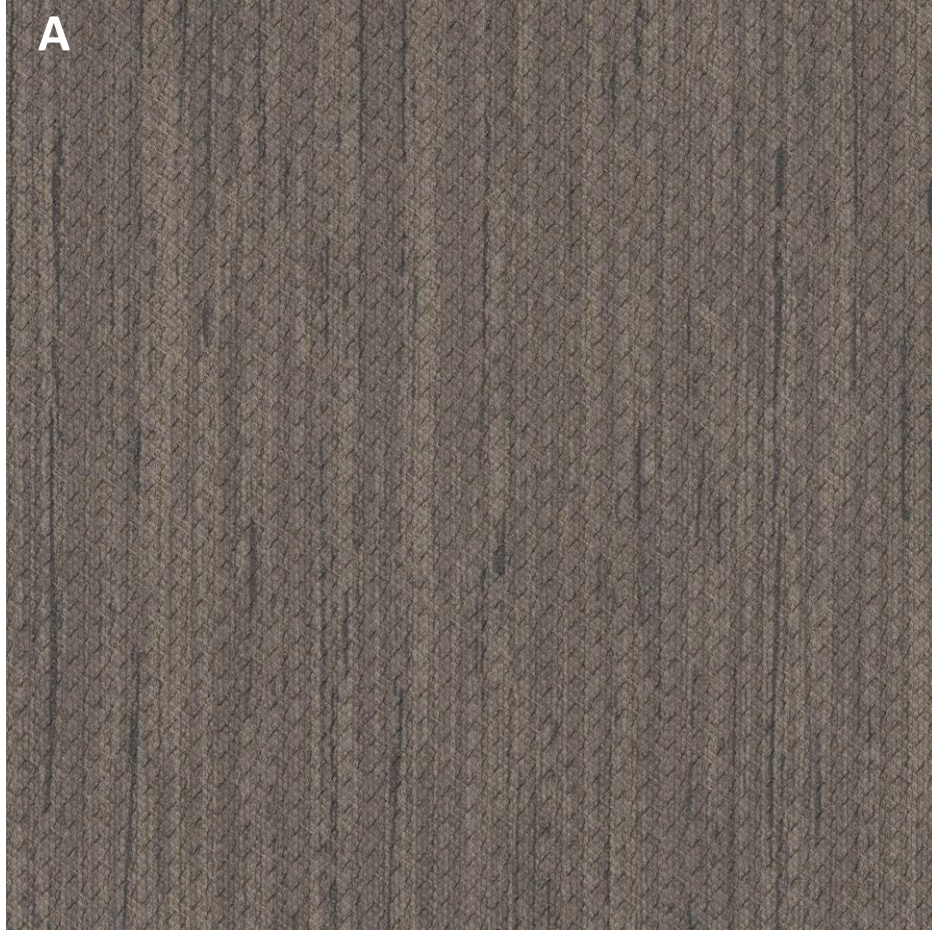
RAISED ROUND

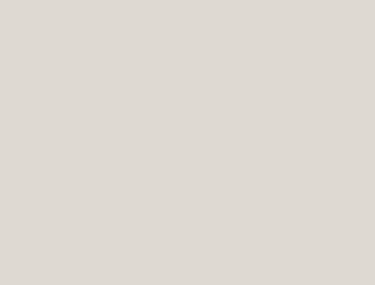
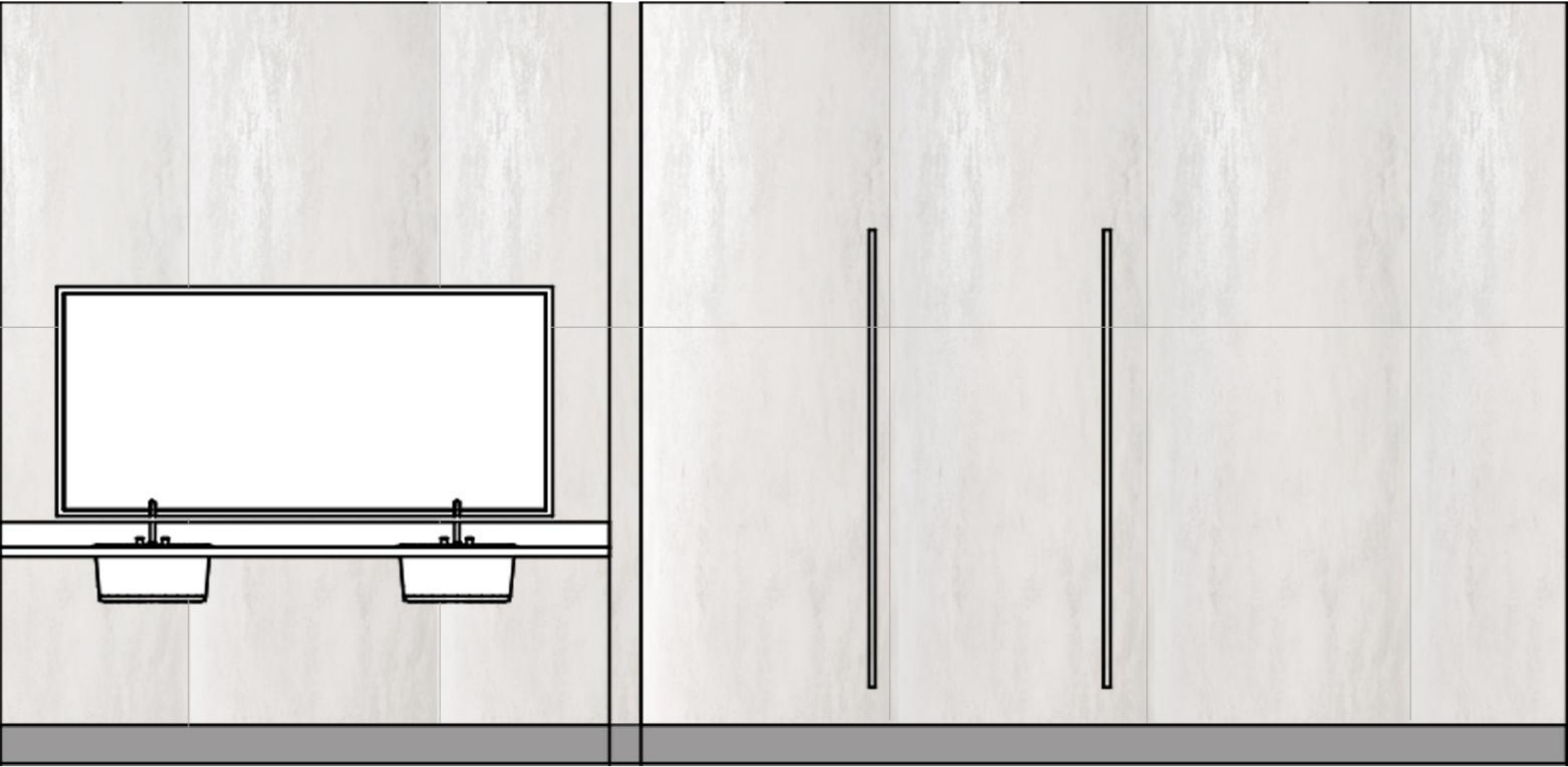


CONTRASTING RUBBER INSERT

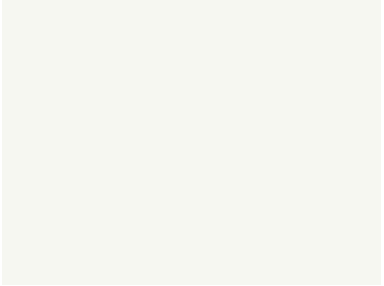


WINDOW FILM @ CONFERENCE
ROOM DOOR (SEMI-PRIVATE)
(IMAGE IS REFERENCE ONLY)
PROPOSED IMAGE – LIVONIA MAP
WF-01





FIELD PAINT PT-01



GYP CEILING PAINT PT-04



LARGE FORMAT WALL TILE @ WET WALLS
3' x 9'
LAMINAM
DARK GROUT
CT-02



SOLID SURFACE COUNTERTOP
SSM-01



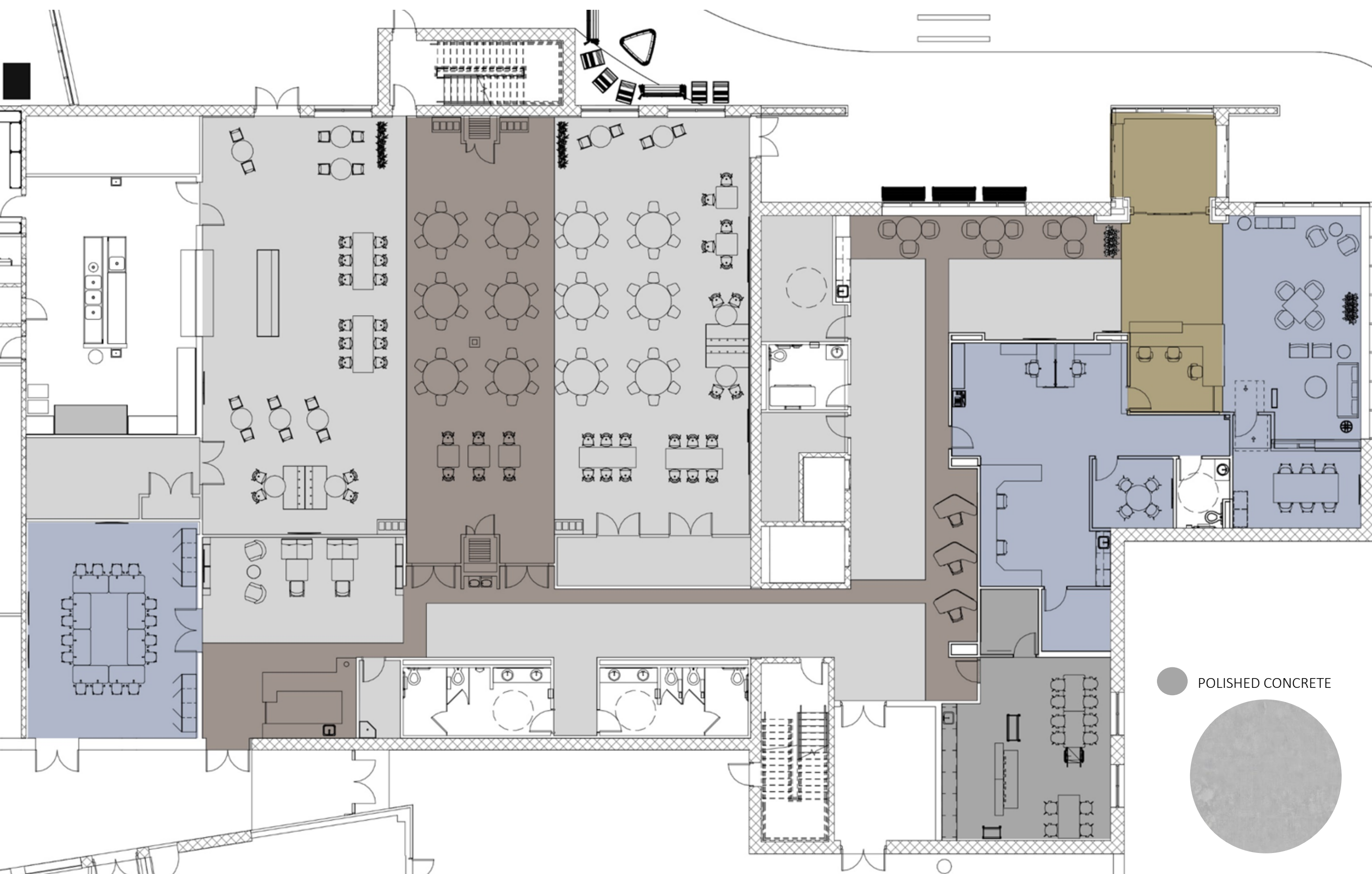
PLASTIC LAMINATE TOILET PARTITIONS
PLAM-01



FLOOR TILE / WALL BASE
12" X 24" / 6" H BASE
COLOR" ASH UNPOLISHED WITH CROSS SHEEN
DARK GROUT
INSTALL STACKED
CT-04 / CTB-01

MANUFACTURER: SNAPCAB
TIER 1 – CLASSIC 1 MODEL
PLASTIC LAMINATE WALL PANELS - LIMBER MAPLE
PANEL LAYOUT AS SHOWN
FRAME CEILING
ROUND HANDRAIL
FLOORING – MCT
ELEVATOR DOORS - PAINTED

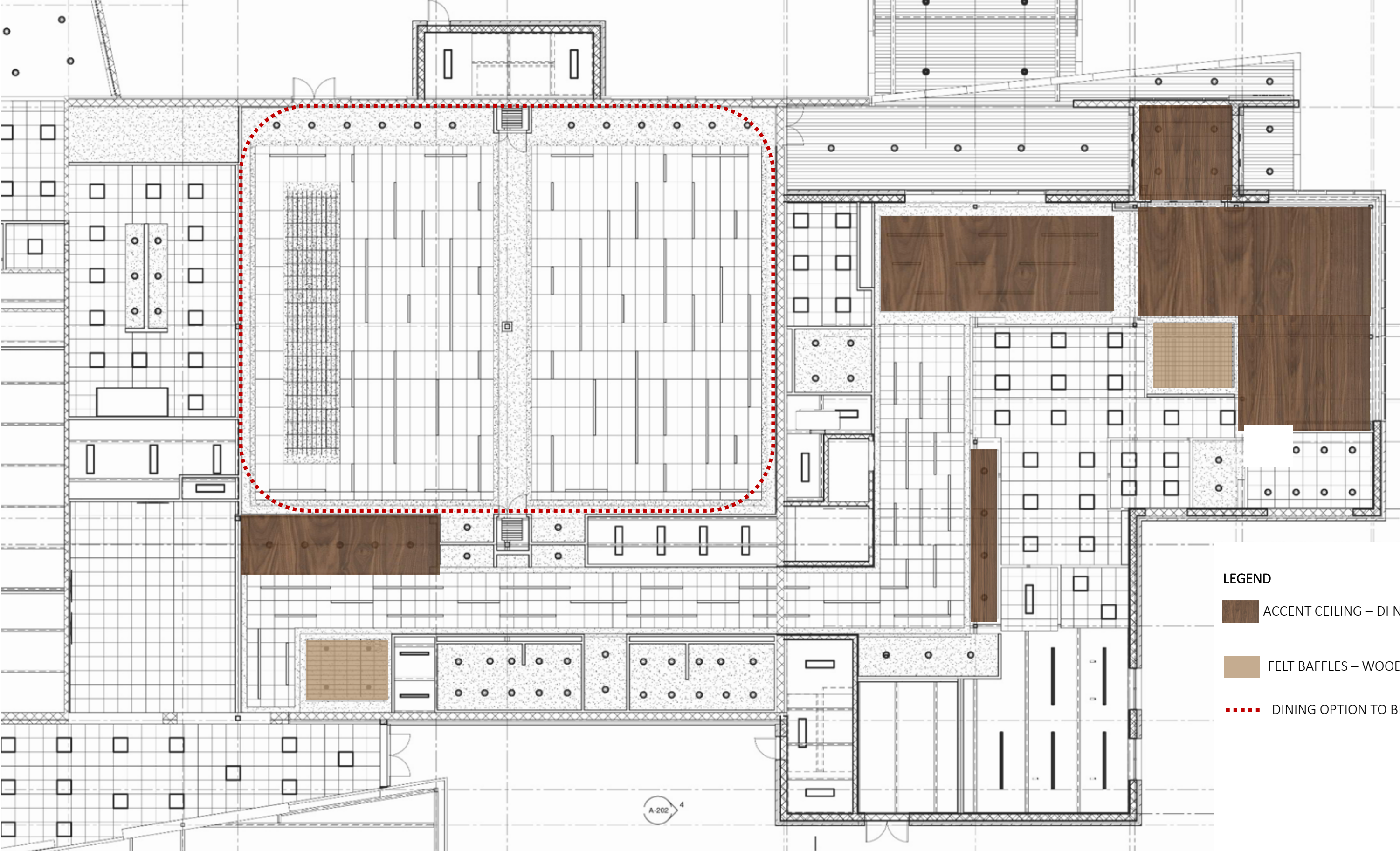




- CARPET TILE
- WALK OFF CARPET TILE
- MCT
- MCT
- POLISHED CONCRETE
- MCT

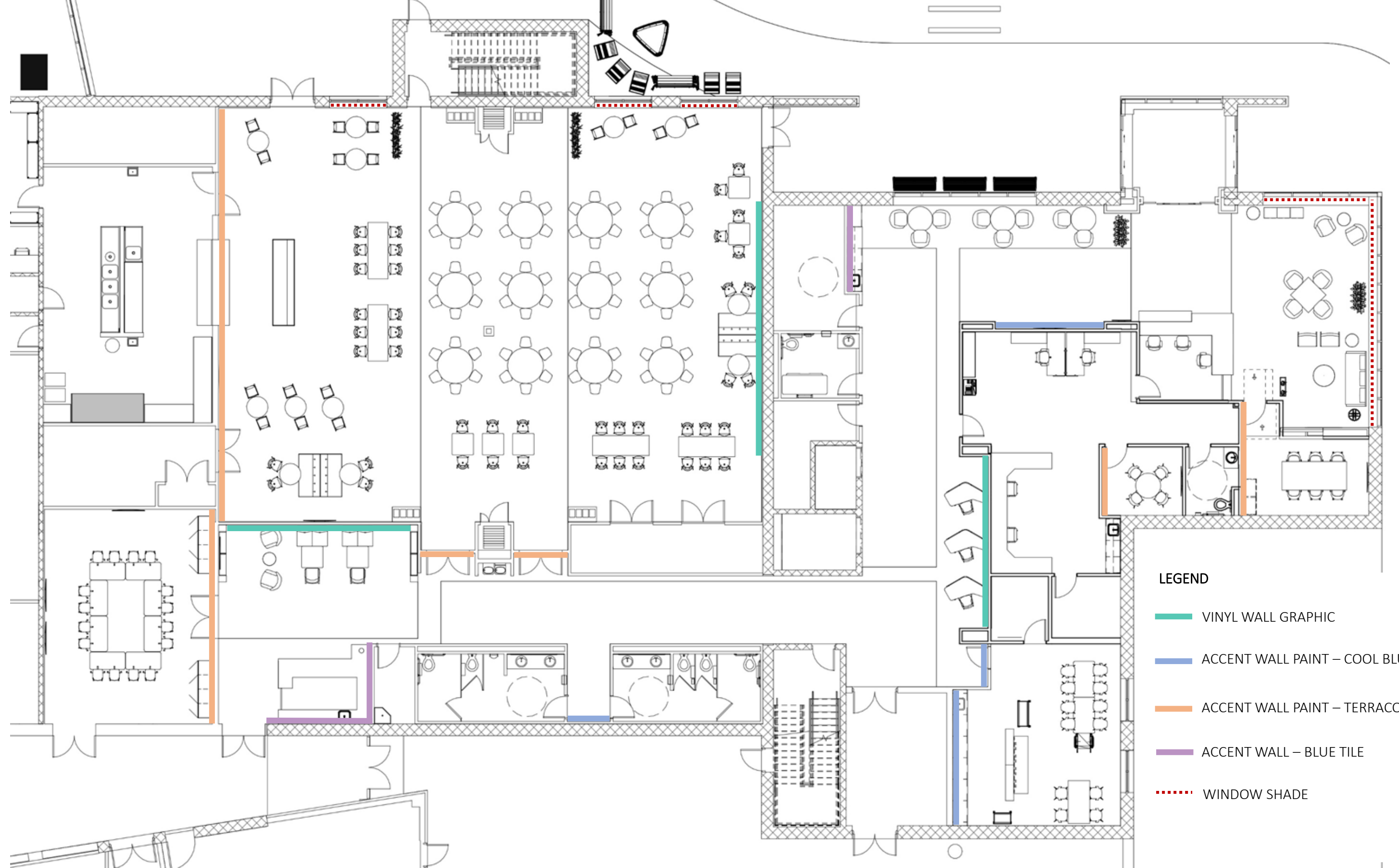
FIRST FLOOR PLAN

MATERIALS | FINISH FLOOR PLAN - SENIOR CENTER



FIRST FLOOR PLAN

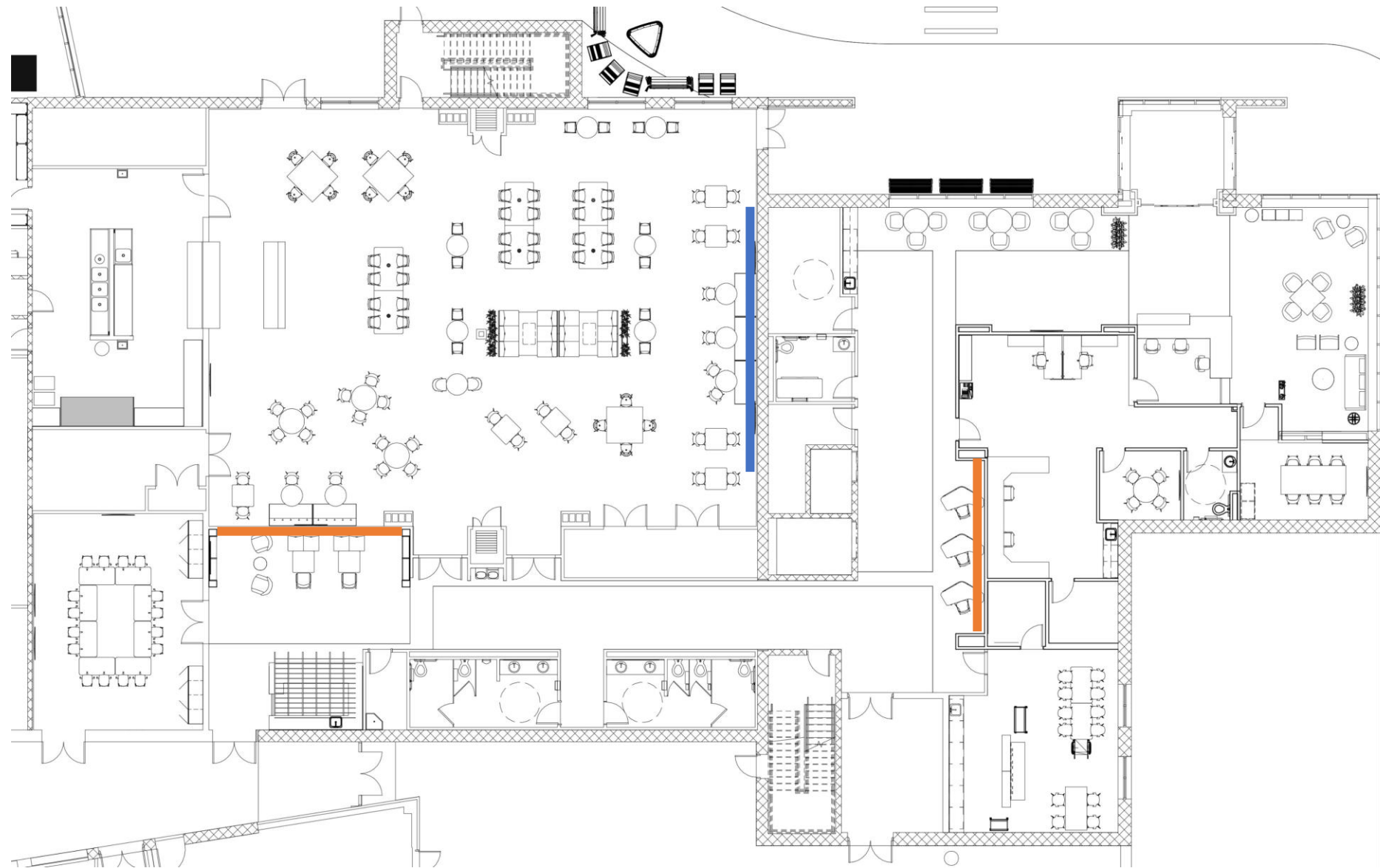
MATERIALS | FINISH CEILING PLAN - SENIOR CENTER



FIRST FLOOR PLAN

MATERIALS | FINISH PLAN - SENIOR CENTER



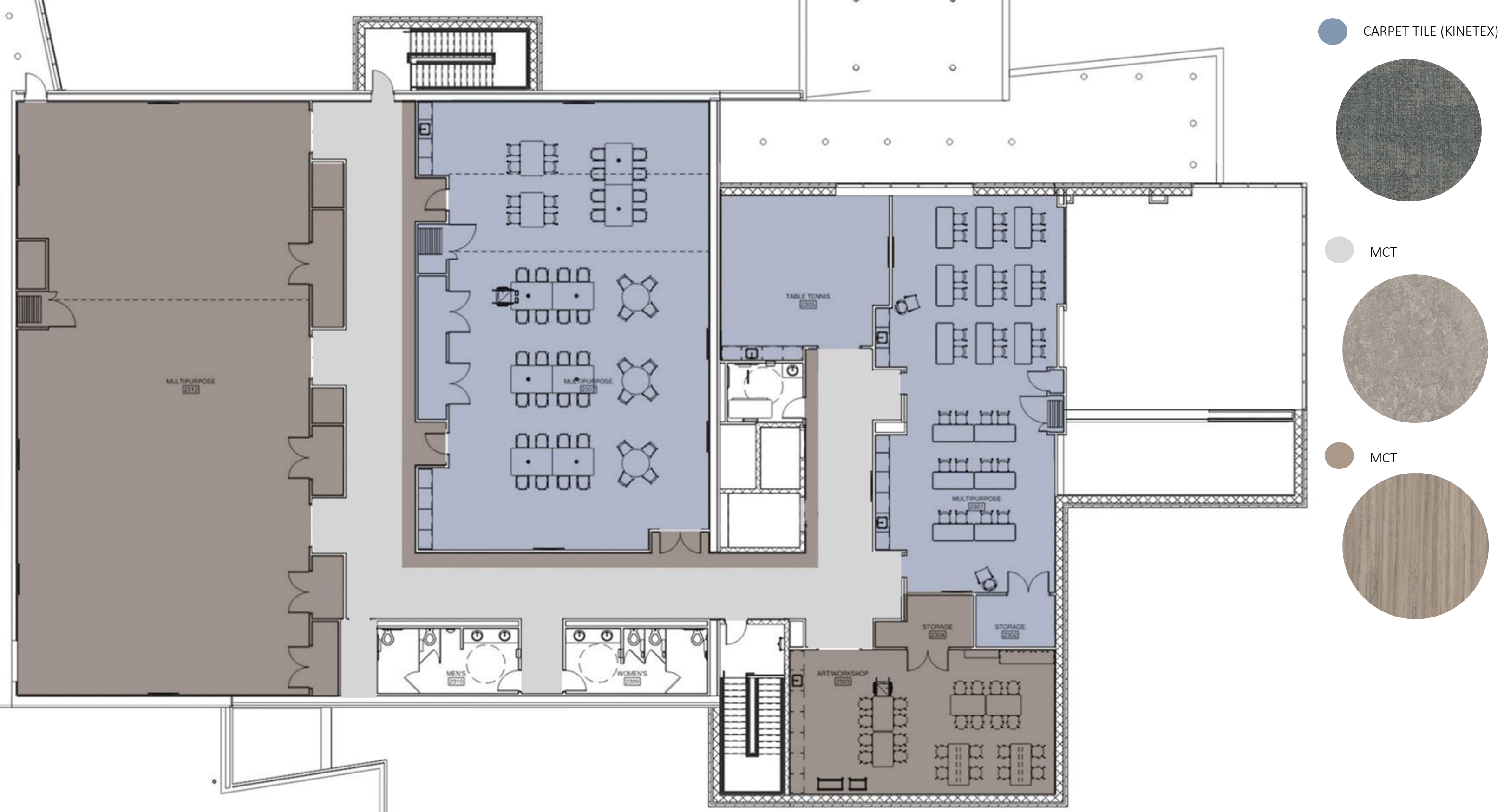


WC-02



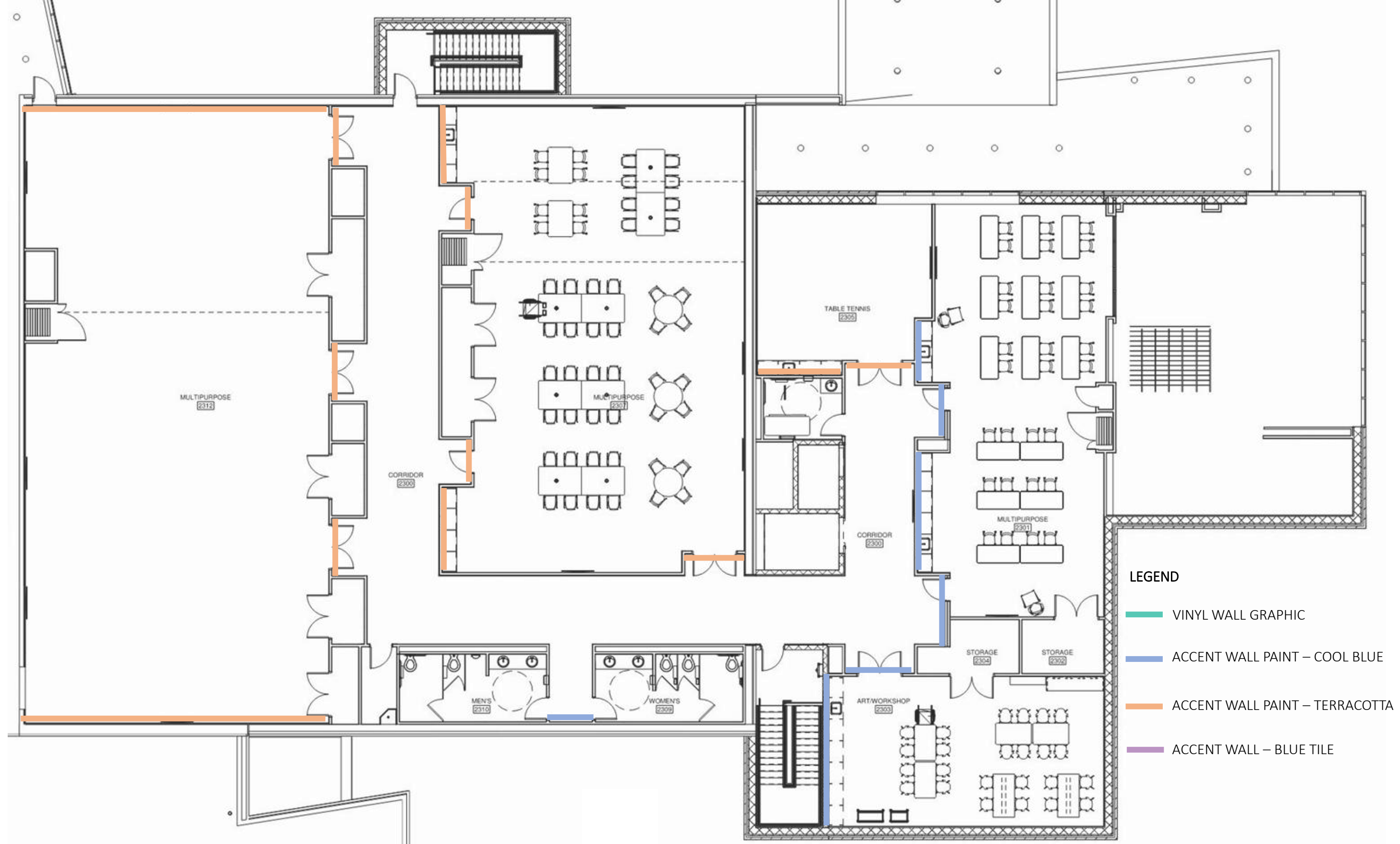
WC-03

VINYL WALL GRAPHIC FOR REFERENCE (CUSTOM)



SECOND FLOOR PLAN





SECOND FLOOR PLAN

DINING

SENIOR CENTER



DINING ROOM – OPTIONS 1 & 2



DINING ROOM – OPTION 3



DINING ROOM – OPTIONS 1 & 2



DINING ROOM – OPTION 3



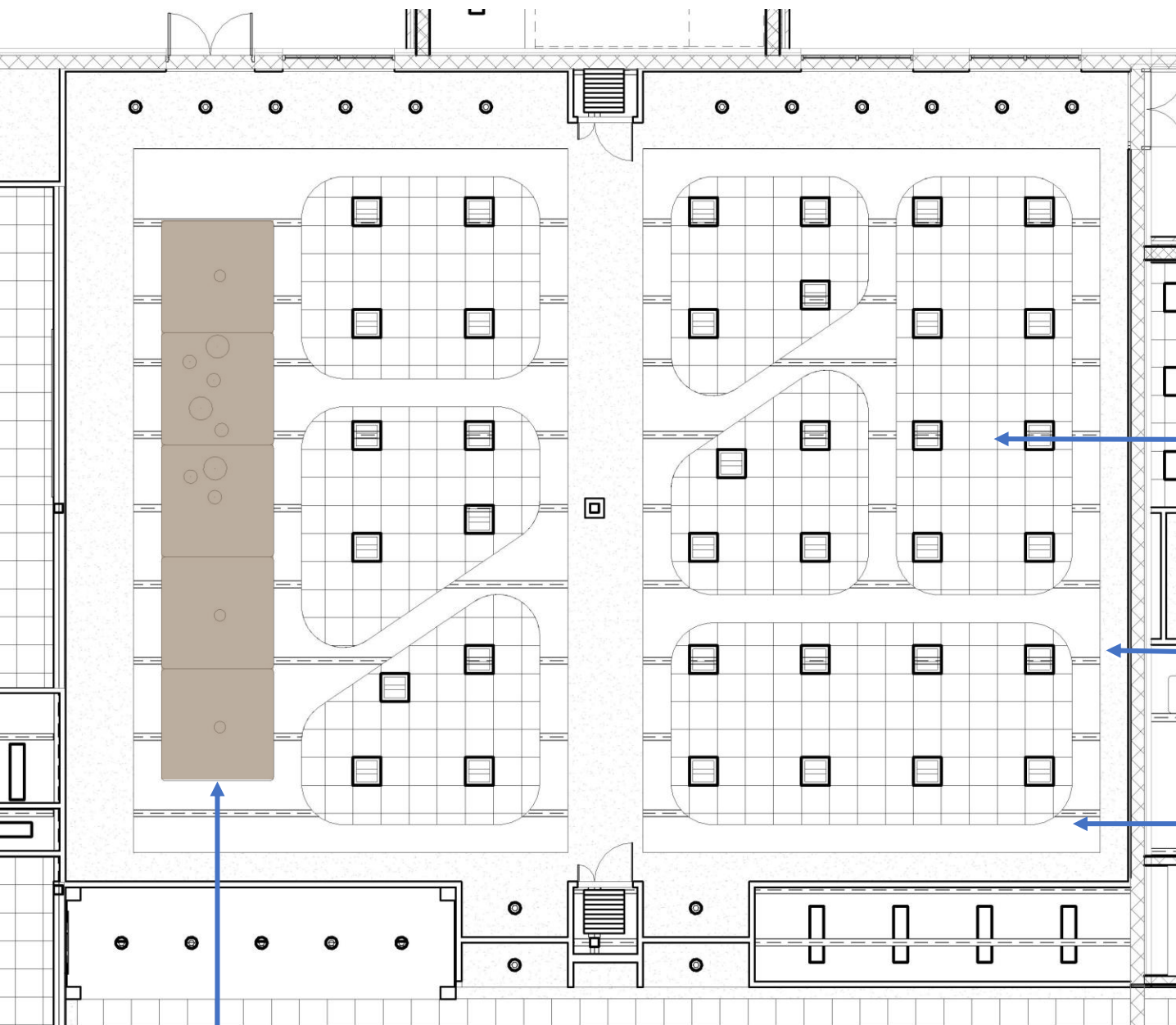
DINING ROOM – OPTION 1



DINING ROOM – OPTION 2



DINING ROOM – OPTION 3



SUSPENDED 2' X 2' ACT

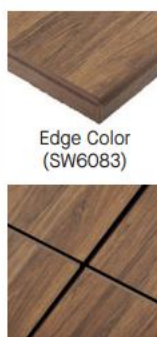
PAINTED GYPSUM SOFFIT

EXPOSED STRUCTURE (BLACK PAINT)

ARMSTRONG LYRA PLANT BASED
WOOD LOOK CEILING PANELS



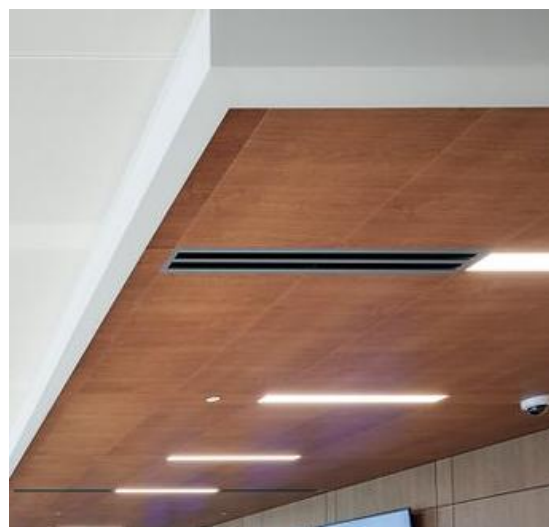
Brown Sugar Walnut (WBS)



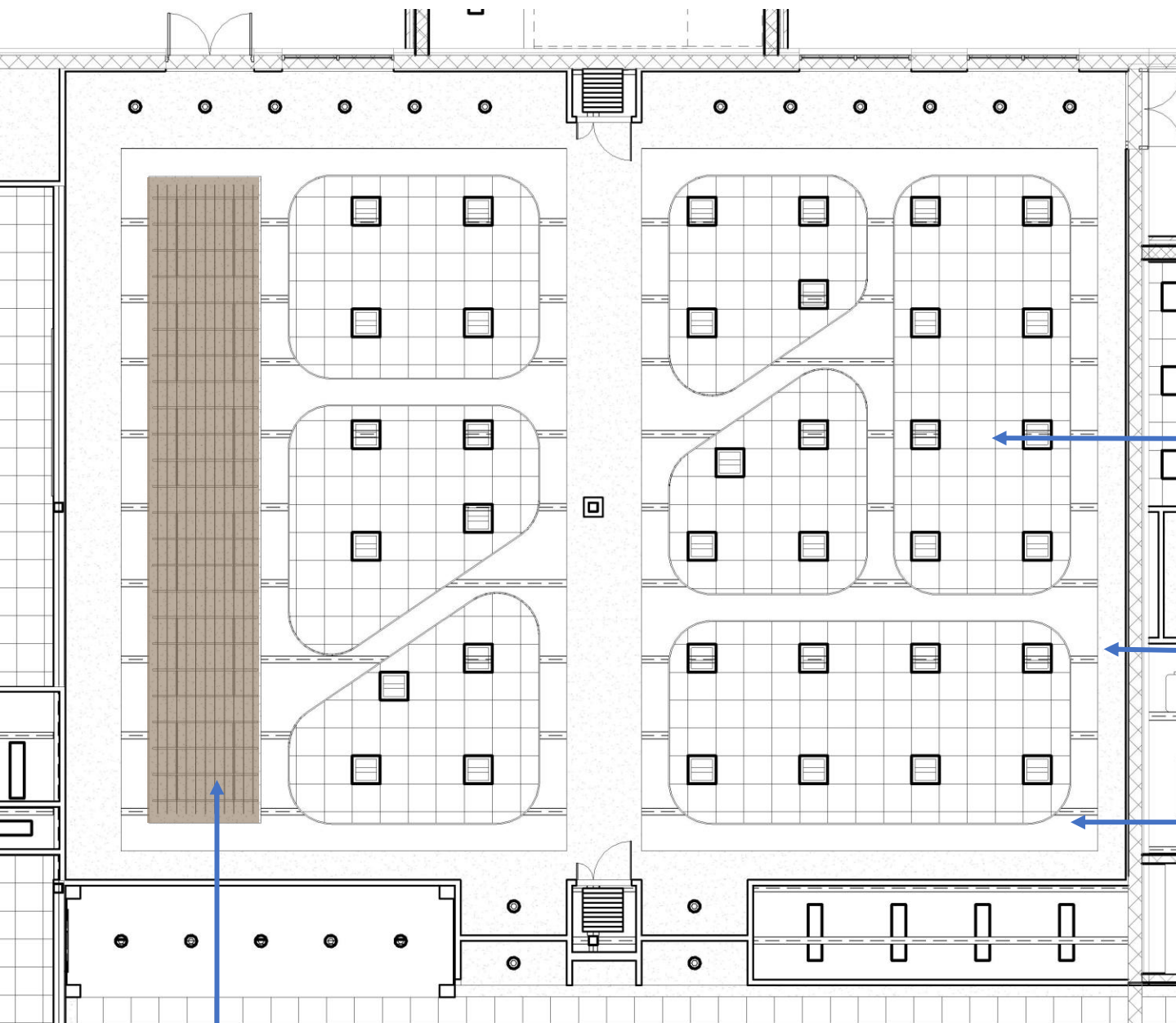
Edge Color
(SW6083)



Suprafine XL
Suspension System
in Black (BL)



MATERIALS | FINISH CEILING PLAN – DINING ROOM OPTION 1

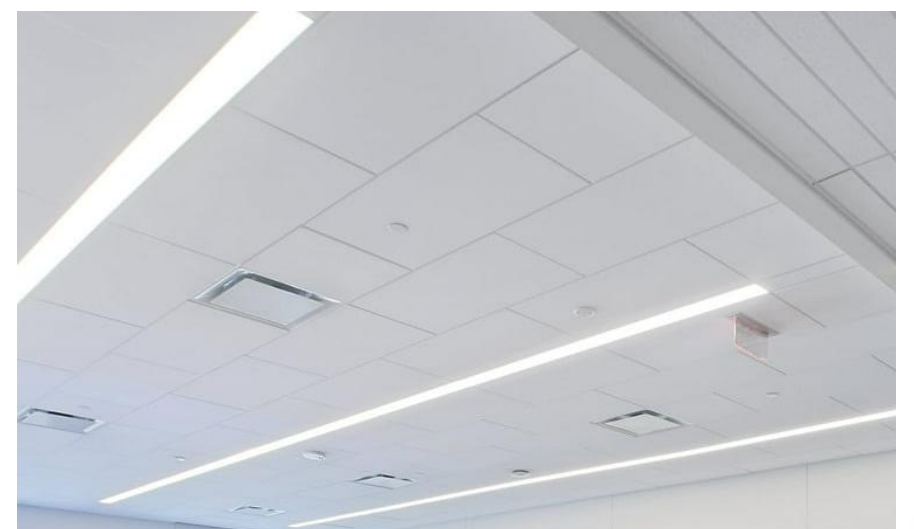
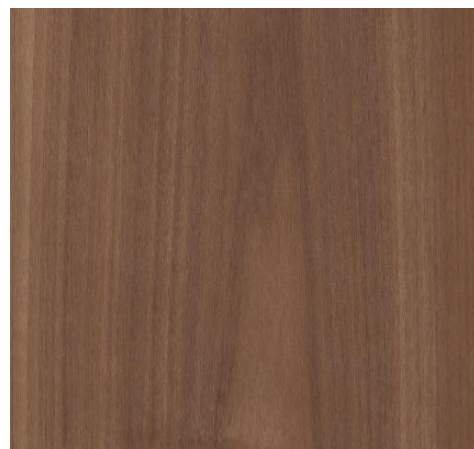
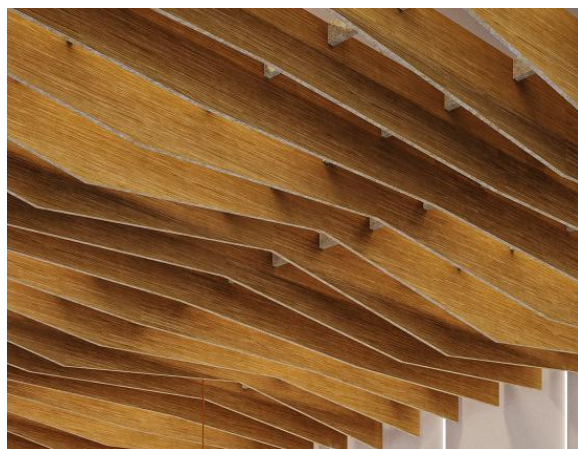


SUSPENDED 2' X 2' ACT

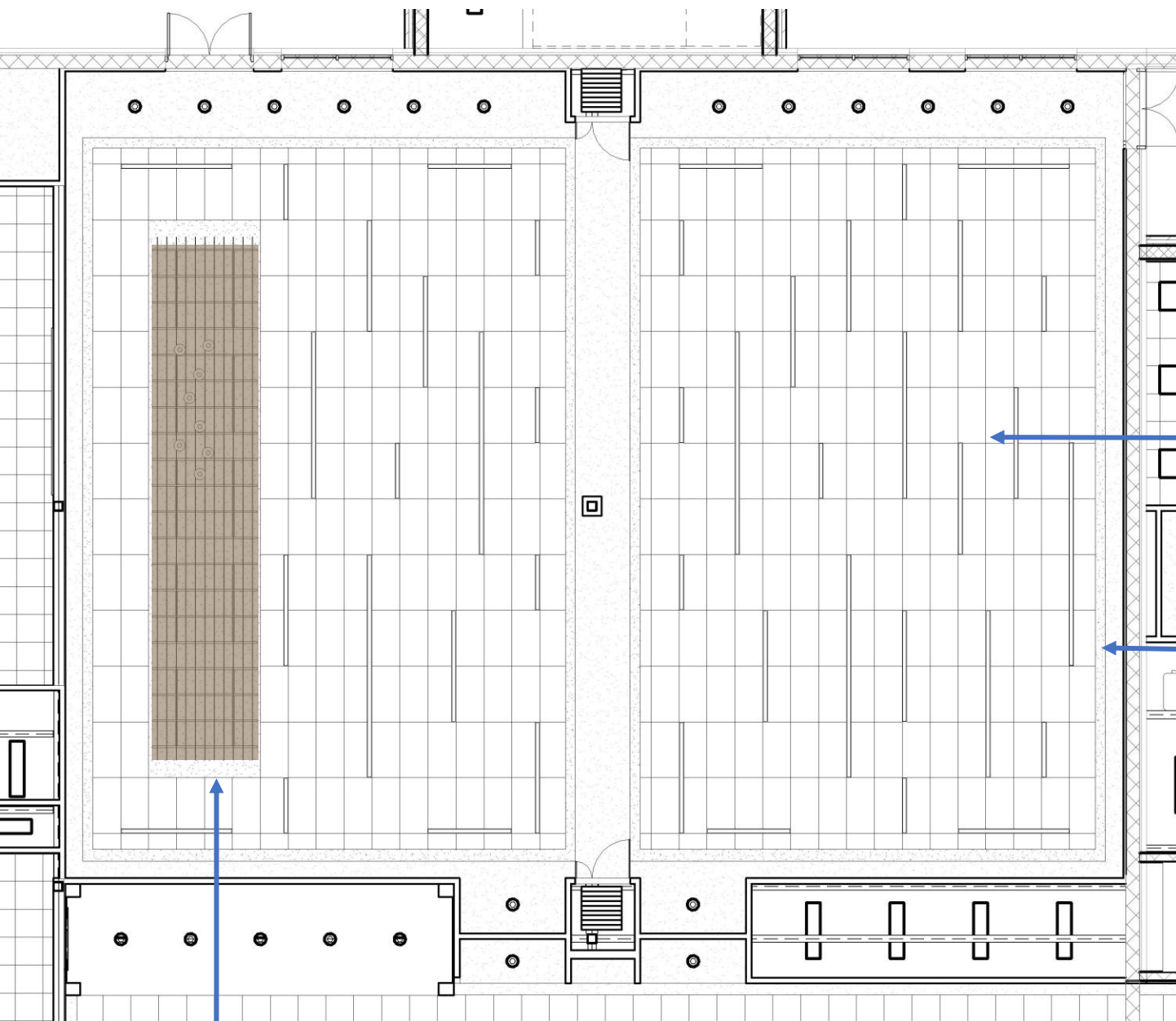
PAINTED GYPSUM SOFFIT

EXPOSED STRUCTURE (BLACK PAINT)

FELT BAFFLES



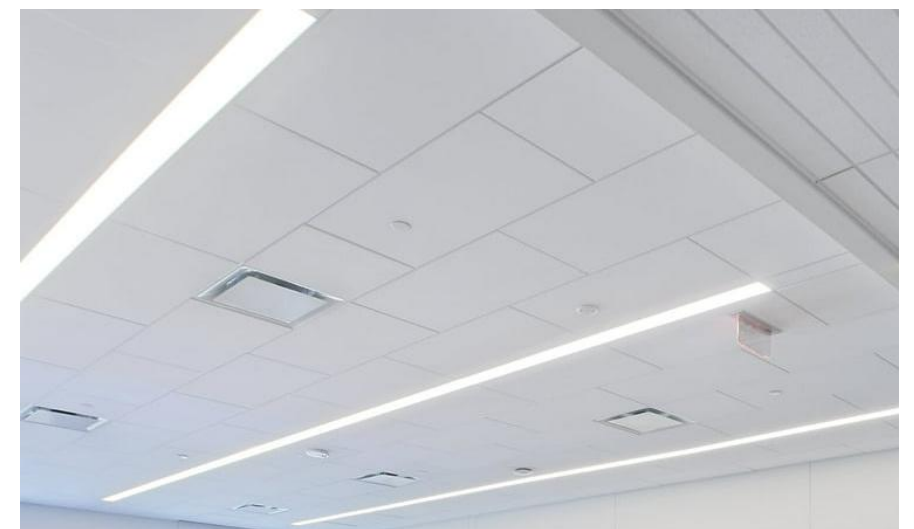
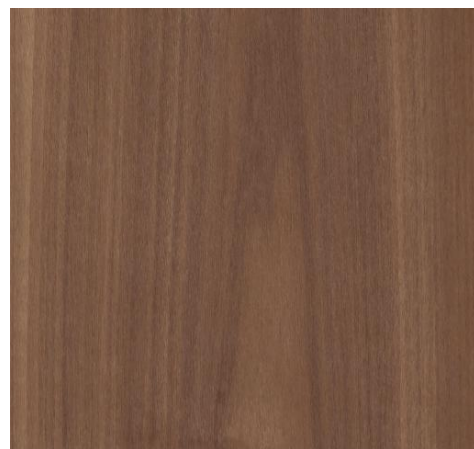
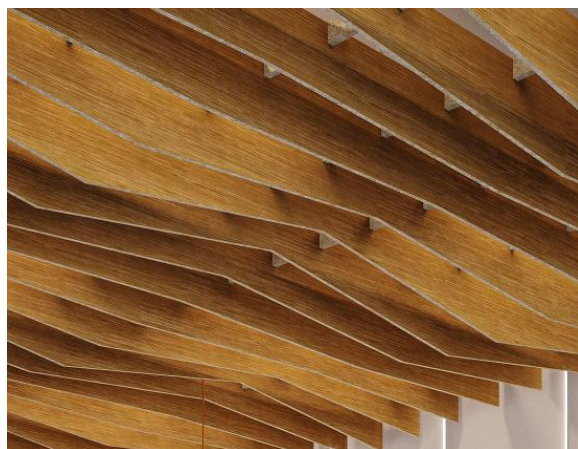
MATERIALS | FINISH CEILING PLAN – DINING ROOM OPTION 2



SUSPENDED 2' X 4' ACT

PAINTED GYPSUM SOFFIT

FELT BAFFLES



MATERIALS | FINISH CEILING PLAN – DINING ROOM OPTION 3

OPTION COMPARISON

OPTIONS 1 & 2



OPTION 3



OPTION COMPARISON

OPTIONS 1 & 2



OPTION 3



OPTION COMPARISON

OPTION 1



OPTION 2



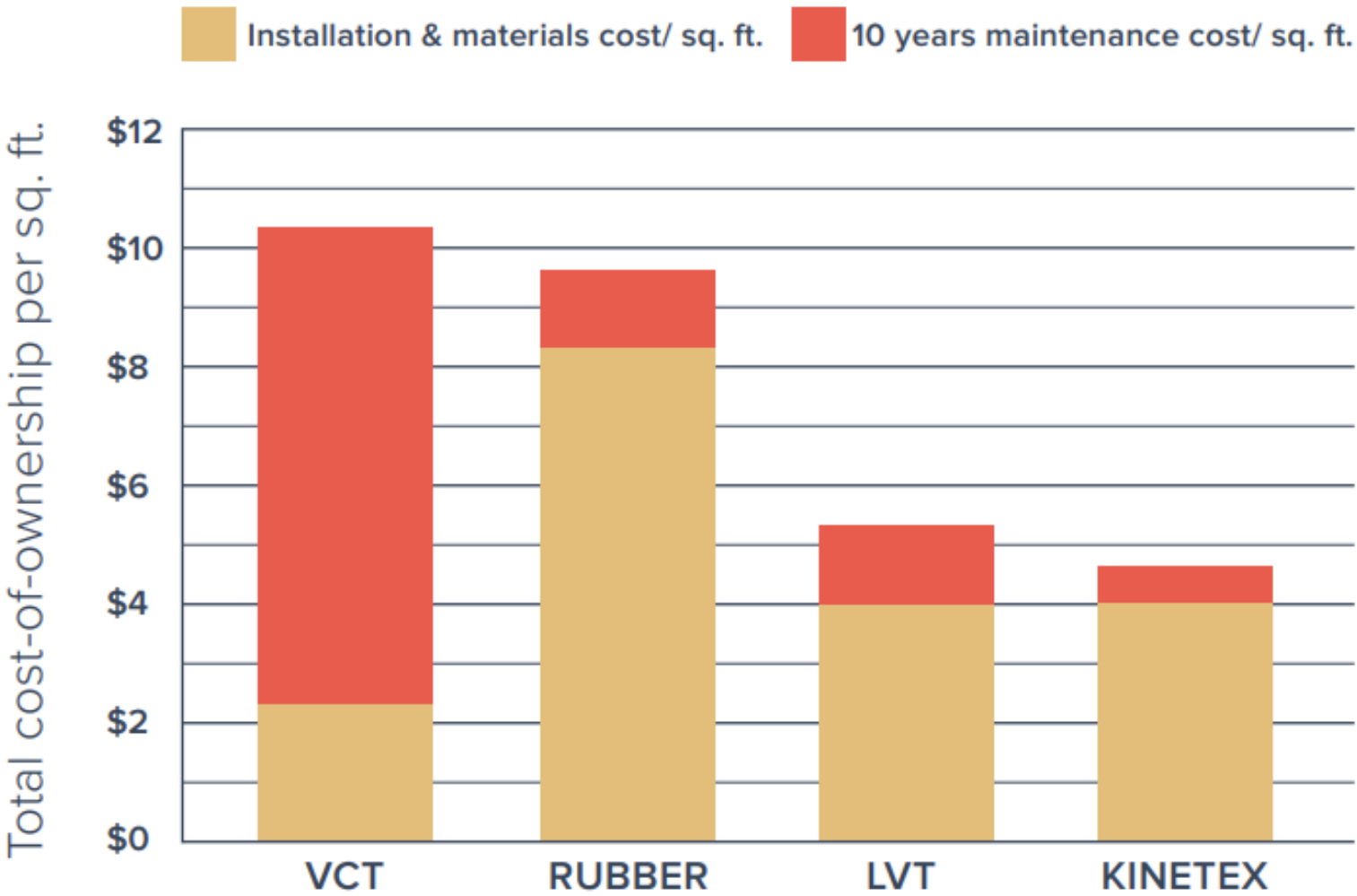
OPTION 3



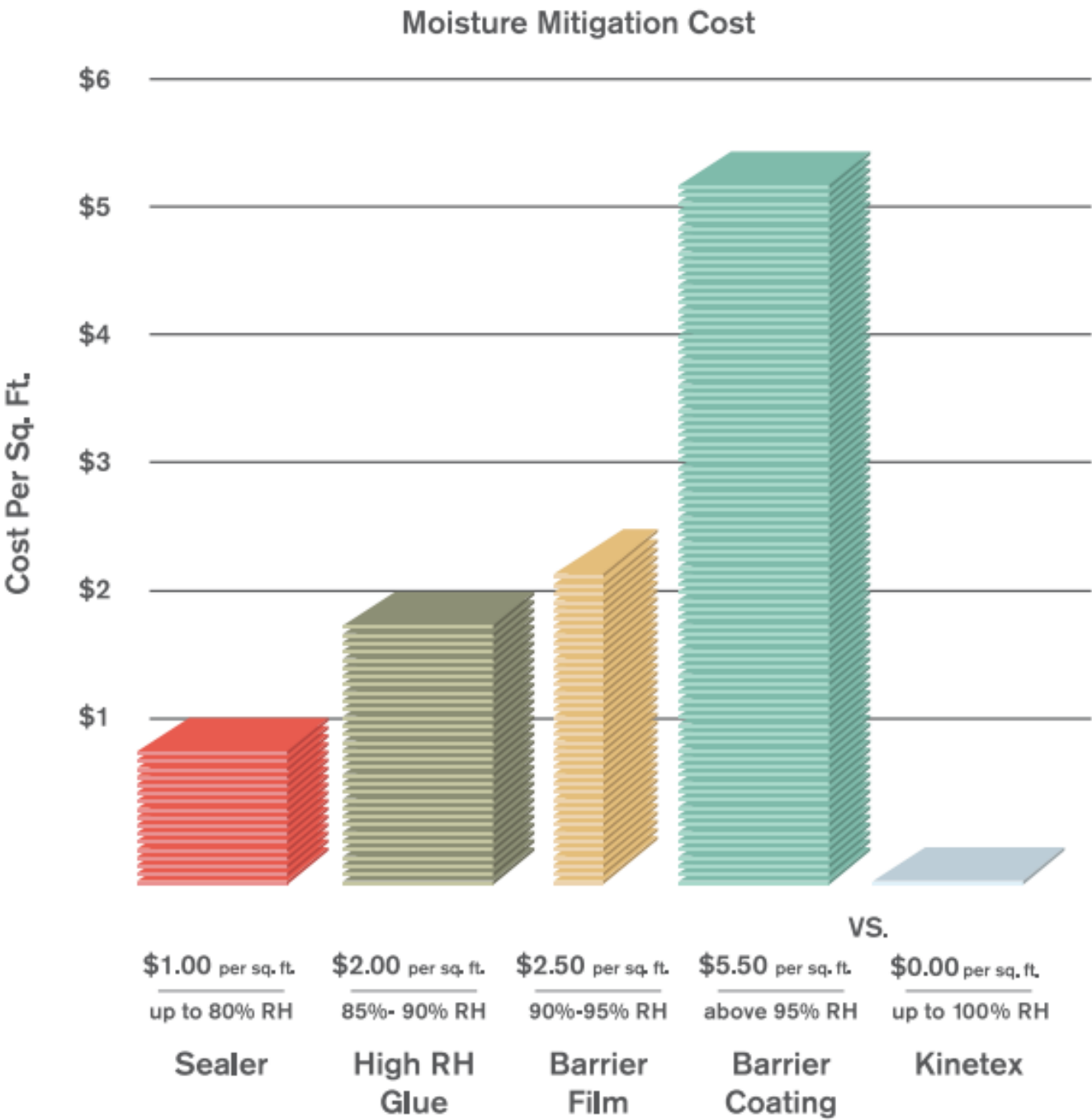
THANK YOU

iDs

Life Cycle Costs: Installation & Maintenance



Mitigate No More





leVel DIGITAL WALLCOVERINGS

Design #: L60501
Name: Canopy
Color/Style: Greige

SCALABILITY
This design is a raster-based image. It is created to be as scalable as possible, but the image may begin to degrade when scaled beyond 12 feet in height.

REPEAT
This design is not a repeating pattern. For significantly wide or tall installations, we will normally crop, stretch, or mirror the design to fit your space.

COLOR
This design primarily features colors that are textured, layered, transparent, or tonal in nature. As a result, custom colors may not reproduce entirely as expected.

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leVel DIGITAL WALLCOVERINGS

Design #: L405801
Name: Word Play
Color/Style: Black & White "Welcome"

SCALABILITY
This design is a raster-based image. It is created to be as scalable as possible, but the image may begin to degrade when scaled beyond 12 feet in height.

REPEAT
This design is not a repeating pattern. For significantly wide or tall installations, we will normally crop, stretch, or mirror the design to fit your space.

COLOR
This design features relatively solid, opaque colors, which lend themselves to customization. Custom colors will therefore mostly reproduce as expected.

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EXTERIOR

CANOPY AND FACADE REVIEW



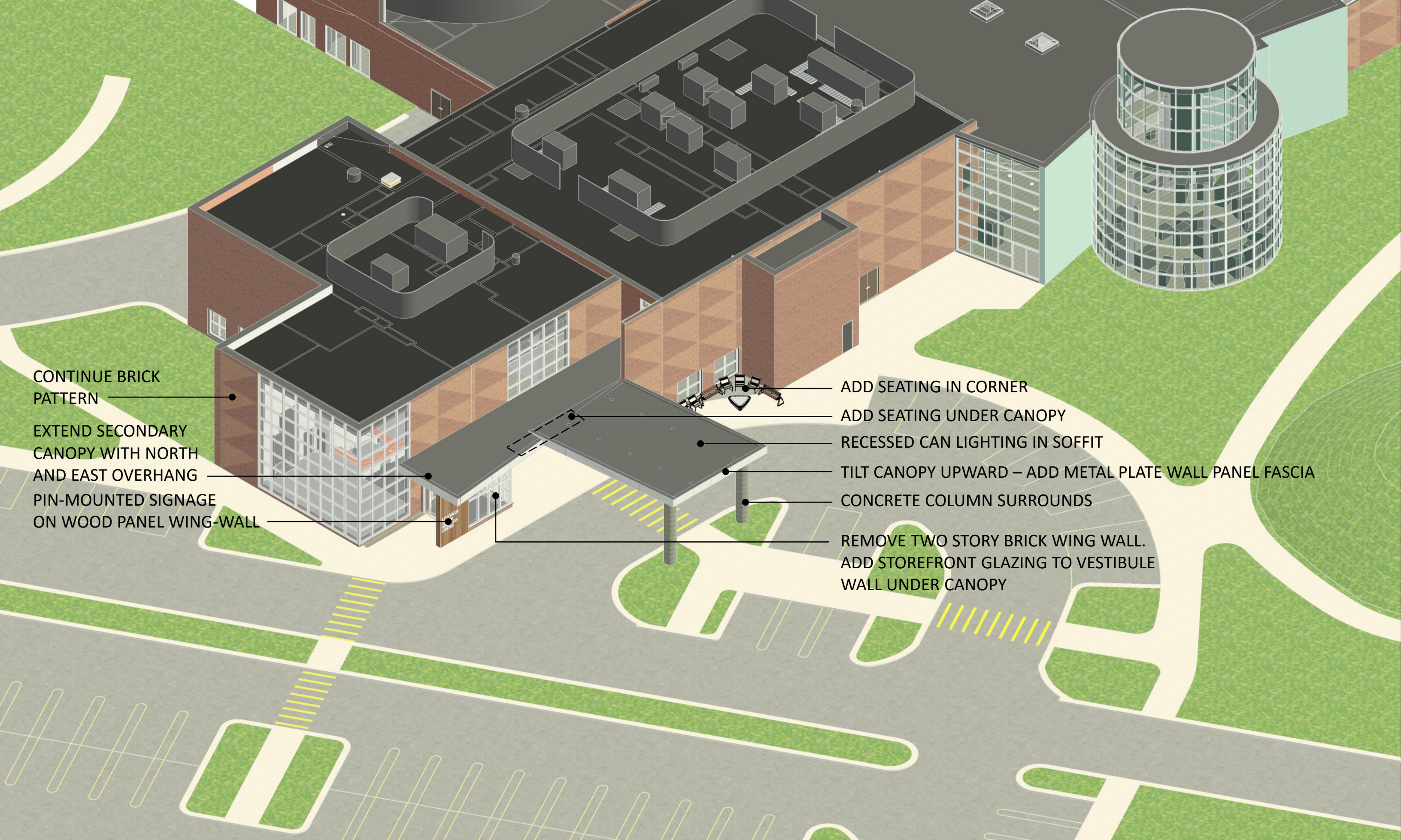
HRC

SENIOR CENTER ADDITION



CURRENT DESIGN

TDS



CONTINUE BRICK
PATTERN

EXTEND SECONDARY
CANOPY WITH NORTH
AND EAST OVERHANG

PIN-MOUNTED SIGNAGE
ON WOOD PANEL WING-WALL

ADD SEATING IN CORNER

ADD SEATING UNDER CANOPY

RECESSED CAN LIGHTING IN SOFFIT

TILT CANOPY UPWARD – ADD METAL PLATE WALL PANEL FASCIA

CONCRETE COLUMN SURROUNDS

REMOVE TWO STORY BRICK WING WALL.
ADD STOREFRONT GLAZING TO VESTIBULE
WALL UNDER CANOPY





EXTERIOR | PROPOSED DESIGN

KINETEX FLOORING

- HIGH PERFORMANCE SOFT FLOOR
- HIGH DURABILITY (HIGH DIMENSIONAL STABILITY AND CRUSH RESISTANCE)
- ACOUSTICAL PROPERTIES, CUSHIONED BACK (NRC)
- DESIGN OPPORTUNITIES IN PATTERN AND COLOR
- REDUCED ENVIRONMENTAL IMPACT
- DRY VACUUM MAINTENANCE
- STAIN RESISTANT
- CAN BE INSTALLED ON HIGH MOISTURE SLAB



**CAPITAL OUTLAY AND INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, JANUARY 22, 2025
7:00PM**

A Capital Outlay and Infrastructure Committee meeting was held on Wednesday, January 22, 2025, at Livonia City Hall in the City Council Chambers on the 2nd floor.

Committee Members Present: Martha Ptashnik, Vice Chair
Carrie Budzinski, Member

Committee Members Absent: Rob Gjonaj-Donovic, Chair

City Council Members Present: Lynda L. Scheel

**City Officials
and Others Present:** Maureen Miller Brosnan, Mayor
Lori Miller, City Clerk
Eric Goldstein, Assistant City Attorney
Dave Varga, Chief of Staff
Debbie Lichtenberg, Finance Director
Mark Taormina, Planning and Economic Development Director
Todd Zilincik, City Engineer
Plante Moran Realpoint Representatives
Plante Moran Technologies Representatives

1. The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)

The meeting convened at 7:02PM

The meeting began with a discussion of the IT contract and where we are at in the Master Plan.

Plante Moran Realpoint (PMR) Representative, Paul Theriault, explained the IT contract process to hire a separate outside tech company, needed to design and consult on the project. It was posted on MITN with five proposals submitted and three firms were interviewed.

Plante Moran Technologies (PMT) was the recommended firm, offering a \$384,500 contract to provide around \$5M in technology.

PMT was noted to be wholly separate from PMR and spoke about adaptability and growth of technology within the city.

Councilmember Carrie Budzinski offered an approving motion for PMT to be awarded the contract.

PMR Representative, Doug Smith, spoke on the Master Plan process and timeline:

- November 2024: Master Plan launched
- January 2025: Site analysis and Development Program to prepare the Framework Plan, with studies completed for the survey, traffic and environmental
- April/May 2025: PMR to present the final Master Plan, to include many interim meetings between now and then to provide updates

PMR is currently working on the Framework Plan to consider City Hall as the anchor. A decision will need to be made on the layout that makes the most sense to align with Vision 21.

A dynamic City Center is the vision for this project, which is guided by Vision 21, consisting of the following key design strategies:

- New City Center
- Great Mixed Use
- Design to unlock the site's greatest assets
- Pave the way for future development at Five and Farmington

Goals for the project were discussed:

- Livonia Community Green Connectors to allow for a bikeable and walkable area from Rotary Park to Hines, going through the City Center with options for transit
- A welcoming City Center with City Hall, Fire and Police Departments, Library, plazas and parks
- To provide experiential living with branded edges at Five and Farmington, with a possibility of a culinary street and a merchant market

Everything is driven by the budget with important points to consider:

- Decisions must be feasible and sustainable
- City Hall and the Senior Center are the important first steps
- Start small

- First phase must be meaningful and economically viable
- Move existing City Hall and Police Department buildings in order to rebuild
- Clear rules and expectations
- Use of public financing tools

A 20-year phasing strategy must be created for the development. Everyone should understand where we are headed.

Site-planning factors for City Hall:

- Developing an activated plan for the park/plaza connected to City Hall
- Welcoming
- Flexible
- Sustainability/stewardship
- Currently 54,500 sq. ft, down by approximately 40% to be fiscally responsible
- Focus on healthy spaces
- Daylight
- Effective resource management

City plaza to include:

- Wide appeal
- Community first
- Right sized
- Acknowledge adjacencies
- Seasonally appropriate
- Durable and cost effective

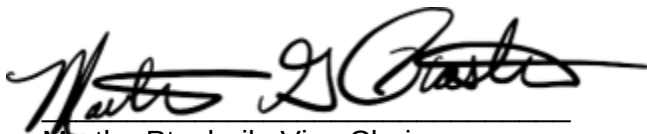
The meeting adjourned at 8:17PM.

The Committee recommends:

For the Law Department to draft an approving resolution awarding the IT contract to PM Technologies.

Note: This item will remain in Committee.

This meeting will be reported at the Regular Meeting of February 10, 2025.



Martha Ptashnik, Vice Chair

CAPITAL OUTLAY & INFRASTRUCTURE COMMITTEE MEETING
WEDNESDAY, JANUARY 22, 2025, 7:00PM

NAME

DEPT OR CONTACT INFO FOR NOTIFICATIONS*
*PERTAINING TO THE SUBJECT MATTER OF THIS MEETING

Marlene Kubafer

Lori Miller

City Clerk

Ava Wisniewski

PMR

Doug Smith

" "

Paul Theriault

" "

Dave Varga

Mayor's Office

TOO ZILINIK

CITY ENGINEER

Stephanie Corona Gilbane Building Co. - Livonia Res.

December 17, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

**RE: Livonia City Center Program – Technology Consulting Services Contract Award
Recommendation**

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional technology consulting firm for the Livonia City Center Program (LCCP). This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend the most qualified firm.

The Technology Consulting Services for the LCCP includes the new City Hall, new Police Station, Fire Station No. 1 expansion and renovation, and outdoor gathering spaces; and is critical for establishing standardization of technology related systems throughout all LCCP facilities. It is also paramount to begin this process quickly in order to meet the program's overall timeline and budget.

SELECTION PROCESS

In October, the Project Team drafted a Scope of Work and request for proposal (RFP). This Scope of Work was also reviewed on several occasions in detail by the project team. PMR also reached out to approximately six technology consulting firms to garner interest in the RFP.

On November 12, 2024, the COL formally posted the RFP documents to MITN. The Project Team conducted a pre-proposal meeting on November 19, 2024, which six (6) firms participated in. After receiving proposals from five (5) firms on December 11, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each firm's Proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals and objectively shortlist three (3) firms for interviews. Selection criteria included the firm's relevant

project experience, proposed team's experience, available manpower, proposed fee, client references, and firm approach to the project.

The Project Team conducted interviews with the shortlisted firms on December 13, 2024. The selection committee consisted of staff from PMR as well as Dave Varga, Mark Taormina, Debbie Lichtenberg, Casey O'Neil, and Nathan Shaw. Upon completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to the firm's experience, team experience, the firm's approach to completing the project on schedule and within budget, and strong presentation/interview.

RECOMMENDATION

The Project Team recommends awarding the contract for Technology Consulting services for the Livonia City Center Program to Plante Moran (separate firm than Plante Moran Realpoint), pending final review of terms by legal counsel.

The total contract award recommendation is **\$384,500** and is further defined as follows:

\$383,500	Proposed Fee 7.67% of the cost of the work
\$ 1,000	Not-to-Exceed Reimbursables
\$384,500	Total Contract Award Recommendation

The fee will be a fixed lump-sum amount based upon the scope, budget, and timeline established in the RFP. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 227-4691 or rick.erickson@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Rick Erickson, AIA
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia
Paul Theriault, Plante Moran Realpoint

Andy Fountain, Plante Moran Realpoint
ENCLOSURES: Proposal/CBS Scoring Summary

**LIVONIA CITY CENTER PROGRAM
TECHNOLOGY CONSULTING SERVICES
PROPOSAL + CBS SUMMARY
DECEMBER 16, 2024**

Category	Communications By Design	Malor + Co.	Metro Technology Services	Plante Moran	Tower Pinkster	AVERAGES
General Information						
Local Office	Grand Rapids, MI	New York, NY	Mt. Clemens, MI	Southfield, MI	Kalamazoo, MI	
Full-Time Personnel at Local Office	11		6	100+		
Headquarters	Grand Rapids, MI		Mt. Clemens, MI	Southfield, MI	Kalamazoo, MI	
Full-Time Personnel for Entire Firm	11		6	100+		
Contact	Sara Easter (616) 304-0044	Garly Benoit (212) 498-9732	Tom Giachino (248) 321-5242	Mark Warner (248) 223-3799	Eric Rinehart (269) 491-1909	
Acknowledge Addenda	Yes	Yes	Yes	Yes	Yes	
Agree to Contract Terms	Yes	Yes	Yes	No	No	
Alternate Contract Language Provided	N/A	N/A	N/A	Yes	Yes	
Required Documents Submitted	Yes	No	Yes	Yes	Yes	
Consultants:	Geotech-Ghassen Gareeb-External Fiber Engineering	None	None	None	Buist Electric	
Firm has proven that they meet the Minimum Qualifications	Yes		Yes	Yes	Yes	
1. In business for ten consecutive years	Yes		Yes	Yes	Yes	
2. Licensed in State of Michigan	Yes		Yes	Yes	Yes	
3. Five public sector clients in last ten years	Yes		Yes	Yes	Yes	
4. Completed \$1M for five public sector clients in ten years	Yes		Yes	Yes	Yes	
Attended Pre-proposal Meeting	Yes	No	No	Yes	Yes	
Proposed Fee/ Hours Information						
Stated Limitation on the Cost of the Work (SLCW)	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
Fixed Fee	\$325,000	\$275,000	\$275,000	\$383,500	\$480,000	\$347,700
Percentage Fee (%) for addition or reduction of project scope	6.50%	5.50%	5.50%	7.67%	9.60%	6.95%
Markup on Reimbursables (%)	0.00%	15.00%	0.00%	0.00%	0.00%	3.00%
Not-to exceed reimbursable allowance (\$)	\$2,000	\$10,000	\$0.00	\$1,000	\$30,000	\$8,600
Criteria Based Selection (Criteria / Scores)						
Firm's experience as related to similar projects	100	0	60	100	60	64
Firm's proposed team experience as related to similar projects	60	0	60	60	80	52
Evidence of capabilities to perform all requirements reflected in the RFP	45	0	45	45	45	36
Proposed fees and costs	60	80	80	40	0	52
Client References	15	15	15	15	15	15
Project approach	100	20	60	100	100	76
Total (unfactored)	380	115	320	360	300	295
Quantitative Score (Factored at 70%)	266	81	224	252	210	207
Pre-Interview Ranking	1	5	3	2	4	3
Interview Scores	30	0	138	150	0	64
Total Weighted Scores (Proposal + Interview)	296	81	362	402	210	270
Final Ranking / Scoring	3	5	2	1	4	3
Additional Information						

LIVONIA CITY CENTER PROGRAM
TECHNOLOGY CONSULTING SERVICES
PROPOSAL + CBS SUMMARY
DECEMBER 16, 2024

Relevant Projects	Anchor Bay School District; Caledonia Community Schools; Clarkston Community Schools; Detroit Public Schools; Eastpointe Community Schools; Hudsonville Public Schools; Kentwood Public Schools; Lake Shore Public Schools; Ludington Area School District; Rockford Public Schools; Southfield Public Schools; Woodhaven-Brownstown School District		Macomb County Central Campus Renovation; Macomb County Central Intake and Assessment Center; Chippewa Valley Schools; Warren Woods Public Schools	Birmingham Public Schools; Cerritos College, CA; City of Fort Walton Beach, FL; City of Independence, MO; City of Oregon City, OR; City of Panama City Beach, FL; City of Plainview, TX; City of Wayne, MI; Contra Costa Water District, CA; County of Forsyth, GA; County of Garfield, CO; County of Kent, MI; County of Lee, FL; County of Osceola, FL; DeKalb County Schools District, GA; Detroit Public Schools, MI; Kentwood Public Schools, MI; Lake Orion Community Schools, MI; Southgate Community Schools, MI	Kalamazoo Public Schools district-wide ISIS services; Okemos Public Schools district-wide security upgrades; Judge Charles Pratt Justice Center; WMU miscellaneous ISID security design projects; Catalyst Development tech + security design; New Buffalo Township FD + PD technology; WMU Dunbar Hall renovation	N/A
Experience with PMR	Southfield Schools, Woodhaven Schools, Taylor Schools, Detroit Public Schools, Caledonia Schools	N/A	Macomb County, Oak Park Schools, Madison Schools	Farmington Schools; Novi Schools, Clark Retirement, Grosse Pointe Schools, Lincoln Schools, Harbor Springs Schools	Northview Schools, Grand Rapids Public Schools, Caledonia Schools	N/A

Councilmember Donovic reported on the subject of planning, design and construction of new Civic Center Campus as discussed at the Capital Outlay & Infrastructure Committee meeting of December 11, 2024, and indicated the matter will remain in committee. (CR 330-24)

On a motion by Vice President Ptashnik, supported by Councilmember Morgan, and unanimously adopted, it was:

#432-24 RESOLVED, that having considered correspondence from Plante Moran Realpoint, LLC ("PMR"), dated December 5, 2024, submitted pursuant to PMR's assignment to assist the City in selecting a firm to perform construction management services for the Livonia City Hall Project (the "Project"), setting forth the process by which a Project Team consisting of representatives of PMR, and the City's administration, staff and legal counsel posted a request for proposal and evaluated proposals received, including interviews with short-listed firms, and now recommends awarding the contract for construction management services to Frank Rewold and Sons ("FRS") for a total contract price to be 6.87% of the to be agreed guaranteed maximum price for construction in addition to the pre-construction services which are to be priced at a value not to exceed \$81,380.00, the Council does hereby approve the recommendation and authorizes the Mayor and City Clerk, for and on behalf of the City of Livonia, to execute a contract between the City of Livonia and Frank Rewold and Sons, 303 E. Third Street, Suite 300, Rochester, MI 48307, subject to approval as to form and substance by the City's Department of Law, in an aggregate amount of fees and reimbursables not to exceed \$81,380.00 for pre-construction services and 6.87% of the to be determined guaranteed maximum price for overall construction of the new city hall; FURTHER, the Council does hereby authorize an expenditure of such amounts for such purposes as incurred from Account No. 418-000-813-000 (Professional Fees).

<i>UNFINISHED BUSINESS ITEM 14. (Regular Meeting of December 18, 2024)</i>
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Motion:	Ptashnik
Second:	Morgan
Ayes:	Ptashnik, Budzinski, Morgan, Donovic and McCullough
Nays:	None
Absent:	Toy

On a motion by Councilmember Donovic, supported by Vice President Ptashnik, and unanimously adopted, it was:

#433-24 RESOLVED, that having considered correspondence from Plante Moran Realpoint, LLC ("PMR"), dated December 5, 2024, submitted pursuant to PMR's assignment to assist the City in selecting a firm to perform professional architectural/engineering services for the construction of a new Police Headquarters, setting forth the process by which a Project Team consisting of representatives of PMR, and the City's administration, staff and legal counsel posted a request for proposal and evaluated proposals received, including interviews with short-listed firms, and now recommends awarding the contract for professional architectural/engineering services to Hobbs + Black for a total contract price of \$1,658,000.00, with the architectural/engineering services priced at a value of 4.79% of the cost of the overall construction of the building, which fee projects to be \$1,628,000.00, and reimbursables priced at a not to exceed value of \$30,000.00, the Council does hereby approve the recommendation and authorizes the Mayor and City Clerk, for and on behalf of the City of Livonia, to execute a contract between the City of Livonia and Hobbs + Black, 100 N. State St., Ann Arbor, MI 48104, subject to approval as to form and substance by the City's Department of Law, in an aggregate amount of fees and reimbursables of \$1,658,000.00; FURTHER, the Council does hereby authorize an expenditure of such amounts for such purposes as incurred from Account No. 418-000-813-000 (Professional Fees).

A representative from Plante Moran Realpoint, LLC, was present to answer any questions of Council.

<i>UNFINISHED BUSINESS ITEM 14. (Regular Meeting of December 18, 2024)</i>
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Motion:	Donovic
Second:	Ptashnik
Ayes:	Ptashnik, Budzinski, Morgan, Donovic and McCullough
Nays:	None
Absent:	Toy

December 5, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

RE: Livonia City Center – New Police Station Facility
Architectural/Engineering Services Contract Award Recommendation

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional architectural/engineering (A/E) firm for the new Police Station facility. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the new Police Station facility.

The Architectural and Engineering Services for the Police Station Scope of Work is critical to designing the new facility. It is also paramount to begin this process quickly in order to meet the program's overall timeline and budget.

SELECTION PROCESS

In October, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed on several occasions in detail by the project team. PMR also reached out to roughly a dozen architectural/ engineering firms to garner interest in the RFP.

On November 1, 2024, the COL formally posted the RFP documents to MITN. The Project Team conducted a pre-proposal meeting on November 7, 2024, which twelve (12) firms participated in. After receiving proposals from eight (8) firms on November 22, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each A/E firm's Proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals and objectively shortlist three (3) A/E firms for interviews. Selection criteria included the firm's relevant project experience, proposed team's experience, past experience with the COL, available manpower, proposed fee, and firm approach to the project.

The Project Team conducted interviews with the shortlisted firms on December 3, 2024. The selection committee consisted of staff from PMR as well as Mayor Maureen Miller Brosnan, Dave Varga, Martha Ptashnik, Mark Taormina, Dave Lear, Chief Thomas Goralski and Brandon McCullough. Upon completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to the firm's experience, team experience, the firm's approach to completing the project on schedule and within budget, and strong presentation/interview.

RECOMMENDATION

The Project Team recommends awarding the A/E services contract for the new Police Station Facility to Hobbs + Black, pending final review of terms by legal counsel.

The total contract award recommendation is **\$1,658,000** and is further defined as follows:

\$1,628,000	Proposed Fee 4.79% of the cost of the work
\$ 30,000	Not-to-Exceed Reimbursables
\$1,658,000	Total Contract Award Recommendation

The A/E fee will be a fixed lump-sum amount based upon the scope, budget, and timeline established in the RFP. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 227-4691 or rick.erickson@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Rick Erickson, AIA
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia
Paul Theriault, Plante Moran Realpoint
Andy Fountain, Plante Moran Realpoint

ENCLOSURES: A/E Proposal/CBS Scoring Summary

December 6, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

RE: Livonia City Center – New City Hall Facility
Construction Management Services Contract Award Recommendation

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional Construction Management (CM) firm for the new City Hall facility. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the new City Hall facility.

The Construction Management Services for the new City Hall facility play a critical role in ensuring the scope of work reflected in the design/construction documents aligns with the defined project budget; expediting material procurement, and ensuring construction is completed within the schedule parameters. It is also paramount to begin this process quickly to meet the program's overall timeline and budget.

SELECTION PROCESS

In October, the Project Team drafted a Request for Proposal (RFP) outlining the Construction Managers Scope of Work and project parameters. This RFP was reviewed on several occasions in detail by the project team. PMR reached out to approximately ten Construction Management firms to garner interest in the RFP.

On November 1, 2024, the COL formally posted the RFP documents to MITN. The Project Team conducted a pre-bid meeting on November 7, 2024; which twelve (12) firms participated in. After receiving proposals from nine (9) firms on November 22, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each firm's Proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals and

objectively shortlist three (3) firms to interview. Selection criteria included firm's experience as related to similar projects, firm's proposed team as related to similar projects, proposed fees/costs, client references, Experience Modification Rating, and project approach.

The Project Team conducted interviews with the shortlisted firms on November 26, 2024. The selection committee consisted of staff from PMR as well as Dave Varga, Debra Lichtenberg, Mark Taormina, and Brandon McCullough. Upon completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to the firm's experience, team experience, approach to completing the project on schedule and within budget, and strong presentation/interview.

RECOMMENDATION

Based on the information noted above, the Project Team recommends awarding the contract for Construction Management services for the new City Hall Facility to Frank Rewold and Sons (FRS), pending final review of terms by legal counsel.

The total contract award recommendation is **\$81,380** and is further defined as follows:

\$ 81,380	Preconstruction Services
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Construction Services Personnel Costs and Reimbursable Expenses will be determined and submitted for approval upon completion of the Guaranteed Maximum Price (GMP). The Construction Manager's overhead and profit will be 1.9% of the cost of the work. The CM fee will be a percentage of the Cost of the Work as defined in the RFP. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 227-4691 or rick.erickson@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Rick Erickson, AIA
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia

Debbie Lichtenberg, City of Livonia
Paul Theriault, Plante Moran Realpoint
Andy Fountain, Plante Moran Realpoint

ENCLOSURES: CM Proposal/CBS Scoring Summary

AWARD OF CONTRACT: The Mayor's Office, re: for Civil Engineering services to be performed on the Civic Center campus

BACKGROUND:

As part of the process of creating a City Center per the Livonia Vision 21 plan, the City has requested bids from various design professionals to craft the necessary design and construction documents. The City has selected OHM (Orchard, Hiltz & McCliment, Inc.) to perform the required civil engineering services for the project.

The Civil Engineer will develop and convey an understanding of the site's physical characteristics, including opportunities and challenges, through their initial due diligence. As a result, the Civil Engineer will help take the City Center Master Plan's infrastructure from drawing board to reality through their assistance in the design of innovative corridor improvements, phased infrastructure including stormwater management and public spaces that facilitate an economically feasible and sustainable site redevelopment. After working collaboratively with the Master Planner, the Civil Engineer will be expected to engineer site work and utilities including, but not limited to, building pads and utilities within five feet of civic buildings separately designed by Architecture/ Engineer firms whose selection may be simultaneous and/or subsequent to the Master Planner and Civil Engineer. Additionally, they will be expected to coordinate the completion of required due diligence should site issues be uncovered.

Recommended Resolution

RESOLVED, that having considered correspondence from Plante Moran Realpoint, LLC ("PMR"), dated October 14, 2024, submitted pursuant to PMR's assignment to assist the City in selecting a firm to perform civil engineering services for the Livonia City Center Project, setting forth the process by which a Project Team consisting of representatives of PMR, and the City's administration, staff and legal counsel posted a request for proposal and evaluated proposals received, including interviews with short-listed firms, and now recommends awarding the contract for civil engineering services to Orchard, Hiltz & McCliment, Inc. ("OHM"), for a total contract price not to exceed 6.5% of the cost of work, THE COUNCIL DOES HEREBY APPROVE THE RECOMMENDATION AND AUTHORIZES THE MAYOR AND CITY CLERK, FOR AND ON BEHALF OF THE CITY OF LIVONIA, TO EXECUTE A CONTRACT BETWEEN THE CITY OF LIVONIA AND OHM, 34000 PLYMOUTH ROAD, LIVONIA, MICHIGAN 48150, SUBJECT TO APPROVAL AS TO FORM AND SUBSTANCE BY THE CITY'S DEPARTMENT OF LAW, IN AN AGGREGATE AMOUNT OF FEES AND REIMBURSEABLES NOT TO EXCEED 6.5% OF THE COST OF WORK; FURTHER, the Council does hereby authorize an expenditure of such amounts for such purposes as incurred from Account No. 418-000-813-000 (Professional Fees); FURTHER, the Council does hereby authorize such action without competitive bidding because the City undertook an extensive Request for Proposal to develop the foregoing recommendation, and no advantage to the City would result from requiring competitive bidding, and such action is taken in accordance with Section 3.04.140.E.2.b of the Livonia Code of Ordinances, as amended.

AWARD OF CONTRACT: The Mayor's Office, re: for Surveying services to be performed on the Civic Center campus

BACKGROUND:

As part of the process of creating a City Center per the Livonia Vision 21 plan, the City has requested bids from various design professionals to craft the necessary design and construction documents. The City has selected Spalding DeDecker to perform the required surveying services for the project.

The Surveyor will develop a full site map for the project that includes the locations and layout of the site and all built infrastructure. The surveyor will identify utilities, and topographical and other environmental features that might impact the eventual site plan and buildout of the City Center. The Surveyor's work will inform the Civil Engineer and the Master Planner on design requirements for the site and the Survey will be available for future reference on all required buildout and repairs conducted on the campus.

Recommended Resolution

RESOLVED, that having considered correspondence from Plante Moran Realpoint, LLC ("PMR"), dated October 14, 2024, submitted pursuant to PMR's assignment to assist the City in selecting a firm to perform professional survey services for the Livonia City Center Project, setting forth the process by which a Project Team consisting of representatives of PMR, and the City's administration, staff and legal counsel posted a request for proposal and evaluated proposals received, including interviews with short-listed firms, and now recommends awarding the contract for professional survey services to Spalding DeDecker for a total contract price not to exceed \$67,750.00, THE COUNCIL DOES HEREBY APPROVE THE RECOMMENDATION AND AUTHORIZES THE MAYOR AND CITY CLERK, FOR AND ON BEHALF OF THE CITY OF LIVONIA, TO EXECUTE A CONTRACT BETWEEN THE CITY OF LIVONIA AND SPALDING DEDECKER, 27333 MEADOWBROOK ROAD, SUITE 210, NOVI, MICHIGAN 48377, SUBJECT TO APPROVAL AS TO FORM AND SUBSTANCE BY THE CITY'S DEPARTMENT OF LAW, IN AN AGGREGATE AMOUNT OF FEES AND REIMBURSEABLES NOT TO EXCEED \$67,750.00; FURTHER, the Council does hereby authorize an expenditure of such amounts for such purposes as incurred from Account No. 418-000-813-000 (Professional Fees); FURTHER, the Council does hereby authorize such action without competitive bidding because the City undertook an extensive Request for Proposal to develop the foregoing recommendation, and no advantage to the City would result from requiring competitive bidding, and such action is taken in accordance with Section 3.04.140.E.2.b of the Livonia Code of Ordinances, as amended.

AWARD OF CONTRACT - The Mayor's Office, re: for Master Planning services for the new Civic Center and for Architectural and Engineering services for a new City Hall

BACKGROUND:

As part of the process of creating a City Center per the Livonia Vision 21 plan, the City has requested bids from various design professionals to craft the necessary design and construction documents. The City has selected HED as the most qualified candidate to provide both the Master Plan and Architectural work required for this project.

The master planning scope of work will involve collaborating with City Administration, City Council, PMR, other city consultants, and community stakeholders to craft a master plan for the development of the Livonia Civic Center. The Master Plan will become the framework for future redevelopment of the site which is expected to commence in multiple phases over the next several years. The planner is tasked with leveraging 5 Mile and Farmington Road corridor improvements to spur commercial development and redevelopment, along with a mix of new housing alternatives, active and passive public space as well as civic infrastructure.

The vendor will also provide architectural and engineering work including the creation of schematic, design, and construction documents for the new City Hall building. Their work will include all designs for the building's exterior envelope, interior, elevators, HVAC, plumbing, electrical, mechanical, lighting and security systems. The Architect will also coordinate work with the project's civil engineer, construction manager and various specialized consultants such as the City's technology consultant to ensure that all design requirements are being met.

Recommended Resolution

RESOLVED, that having considered correspondence from Plante Moran Realpoint, LLC ("PMR"), dated October 14, 2024, submitted pursuant to PMR's assignment to assist the City in selecting a firm to perform master planning services for the Livonia Civic Center Project (the "Project") and a professional architectural/engineering firm for the Project, setting forth the process by which a Project Team consisting of representatives of PMR, and the City's administration, staff and legal counsel posted a request for proposal and evaluated proposals received, including interviews with short-listed firms, and now recommends awarding the contract for master planning and professional architectural/engineering services to Harley Ellis Devereaux ("HED") for a total contract price not to exceed \$1,839,050.00 with the master planning services priced at a value not to exceed \$322,500.00, and the architectural/engineering services priced at a value not to exceed \$1,516,550.00, THE COUNCIL DOES HEREBY APPROVE THE RECOMMENDATION AND AUTHORIZES THE MAYOR AND CITY CLERK, FOR AND ON BEHALF OF THE CITY OF LIVONIA, TO EXECUTE A CONTRACT BETWEEN THE

CITY OF LIVONIA AND HED, 123 WEST FIFTH STREET, ROYAL OAK, MICHIGAN 48067, SUBJECT TO APPROVAL AS TO FORM AND SUBSTANCE BY THE CITY'S DEPARTMENT OF LAW, IN AN AGGREGATE AMOUNT OF FEES AND REIMBURSEABLES NOT TO EXCEED \$1,839,050.00; FURTHER, the Council does hereby authorize an expenditure of such amounts for such purposes as incurred from Account No. 418-000-813-000 (Professional Fees); FURTHER, the Council does hereby authorize such action without competitive bidding because the City undertook an extensive Request for Proposal to develop the foregoing recommendation, and no advantage to the City would result from requiring competitive bidding, and such action is taken in accordance with Section 3.04.140.E.2.b of the Livonia Code of Ordinances, as amended.

CAPITAL OUTLAY AND INFRASTRUCTURE COMMITTEE MEETING
MONDAY, OCTOBER 14, 2024
7:00PM

A Capital Outlay and Infrastructure Committee meeting was held on Monday, October 14, 2024, at Livonia City Hall in the City Council Chambers on the 2nd floor.

Committee Members Present: Rob Gjonaj-Donovic, Chair
Jim Jolly, Vice Chair
Carrie Budzinski, Member

Committee Members Absent: Brandon McCullough, Council President
Scott Morgan, City Councilmember
Laura Toy, Councilmember

City Council Members Present: Martha Ptashnik, Council Vice President

**City Officials
and Others Present:** Maureen Miller Brosnan, Mayor
Carter Fisher, City Attorney
Dave Varga, Chief of Staff
Debbie Lichtenberg, Finance Director
Mark Taormina, Planning and Economic Development
Director
Todd Zilincik, City Engineer
Dave Lear, Assistant City Engineer
Paul Theriault, Plante Moran Realpoint
Doug Smith, Plante Moran Realpoint
Ava Wisniewski, Plante Moran Realpoint

1. The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)
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The meeting convened at 7:02 pm, led by Committee Chair, Rob Gjonaj-Donovic.

The Mayor started off the meeting giving us an update on the Civic Center Campus project and the recent interviews of key partners in Professional Services contracts.

Plante Moran Realpoint (PMR), on behalf of the city explained the bids that went out to public bid for multiple professional services.

The Administration is ultimately recommending companies HED for Master Planning services for the entire site and OHM for Civil Engineering for the entire city site. HED for architectural and engineering services for the City Hall project specifically, and Spalding DeDecker for site surveying services and for a traffic study of the existing intersection.

The Project Team, made up of city staff and PMR conducted preproposal meetings with dozens of local and national firms for the above professional services that were all publicly bided.

The traffic study will go out a mile in each direction and is an initial study of current traffic flows and patterns to gather base line data.

PMR explained that as the Project Team creates the master plan, the traffic study vendor will conduct another study to analyze the impact to traffic flows.

There was concealable discussion about the future of the 5 Mile and Farmington Roads intersection and that the 6 lanes of roadway in each direction should be considered for changes to the number of lanes and flow of traffic.

Some mentioned that these lanes and this intersection would need to be altered to capture the identity of a downtown area with walkability and safer access to pedestrian foot traffic for the success of the future Civic Center Campus. But most importantly the safety of pedestrians walking, running, biking, shopping, and living.

Multiple firms bid on the traffic study contract; the administration is recommending the contract be awarded to Spalding DeDecker in the amount of \$17,700. This is under the \$20,000 City Council purchasing threshold, so it doesn't need a Council vote.

This vendor, Spalding DeDecker is a part of the cities already pre-qualified bidders, and our engineering department works with this vendor.

The next item was for Survey Services for the entire Civic Center Campus. Multiple companies publicly bid on the survey services professional contract.

The survey helps the master planners, architects, and engineers determine where underground utilities are. Helps determine where the boundary lines are and determine the topographical layout of the entire site.

Multiple firms bid on the survey services contract; the administration is recommending the contract be awarded to Spalding DeDecker in the amount of \$67,750. This vendor, Spalding

DeDecker is also a part of the cities already pre-qualified bidders, and our engineering department works with this vendor.

The next item was for Civil Engineering firms for the entire Civic Center Campus. Multiple firms publicly bid on Civil Engineering work, they were interviewed by a panel of city staff and PMR.

OHM talked about the future of the 5 mile and Farmington Roads intersection. They would work with Wayne County, who owns the roads, to rework the intersection, boulevards, and thoroughfares. They are very experienced with roads and dealing with the county authorities.

They look for ways to yes as opposed to no. They will work on storm water sewers, and other various utilities services. They work on pedestrian walkways to keep the residents safe and help with the layout of builds in conjunction with our city engineering department and other professional services.

PMR explained the going rate is 5% to 15% for civil engineering services of the project, OHM is 6.5%. The final price is not known yet, PMR explained the city can change to a fixed fee as opposed to percentage base if determinized to be the best deal for the city.

Multiple firms bid on the Civil Engineering services contract; the Administration is recommending the contract be awarded to OHM. This vendor, OHM is also a part of the cities already pre-qualified bidders, and our engineering department works with this vendor. OHM also worked on the Livonia Vision 21 Master Plan.

The next item was for Master Planning firms for the entire Civic Center Campus. Multiple firms publicly bid on Master Planning work, they were interviewed by a panel of city staff and PMR.

HED does a lot of local work but also national, so they have vast experience and creative abilities.

HED is bringing on a sub consultant to assist with the work, Design Works is experienced on the national scale and do a lot of work in neighborhood communities like Livonia.

There was a focus on this project being economically realistic and feasible to the marketplace.

Very throughout scope of work, focused on discovery and focal points of our community and identity. They help set the realistic tone for this project and have worked with other cities in Michigan.

HED will begin working on rendering and plan to bring multiple plans to the City Council in April of 2025. There will be input from the community and Council at multiple points.

Multiple firms bid on the Master Planning services contract; the Administration is recommending the contract be awarded to HED for \$345,000.

HED was also selected by the panel for architectural and engineering services for the design of City Hall. Multiple firms publicly bid on architectural and engineering services work.

This would specifically be for the City Hall.

HED would analyze the Space needs Assessment conducted by PMR over the last few years to design the City Hall. HED has multiple divisions and bandwidth to do both the master planning work for the Campus and architectural and engineering for City Hall.

Council talked about this project price being under control and not being too expensive. Keeping this building under a controlled budget is very important, and this building isn't just an office building, but the people's house, and having a Council Chambers for the Council to meet residents and provide a space for the residents to have their voices heard.

HED architectural is very creative and listen to what our city wants. They recently worked with Redford Township to design some new municipal buildings.

HED should be bringing Council a rendering in summer to fall of 2025, hopefully breaking ground in late 2025 or early 2026.

The funds for these above contracts would come for the 418 fund, Building Improvement Fund.

Bond dollars would cover these professional service expenditures, and the 418 Fund would be reimbursed.

The Bond proposal will come back to the Council in summer of 2025.

All these bids and documents are included in the packet and available to the public. Council explained to the Administration and Mayor it's important to continue to have committee meetings keeping the City Council updated on the status of the Civic Center Campus project.

Councilman Jim Jolly recommended four Council approvals.

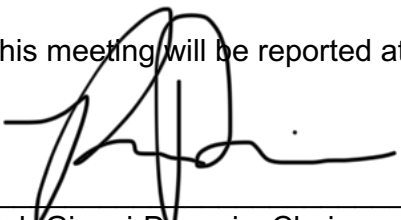
The meeting adjourned at 8:27 pm.

The Committee recommends:

1. For the Law Department to draft the following resolutions for the Civic Center Campus:
 - a. Survey services
 - b. Master Planning services
 - c. Civil Engineering services
 - d. City Hall Architectural services

Note: This item will remain in Committee.

This meeting will be reported at the Regular Meeting of November 6, 2024.



Rob Gjonaj-Donovic, Chair



LETTER TO THE LIVONIA CITY COUNCIL

1.

Council Office
October 7, 2024

MEETING DATE

COI101424/R110624

PRESENTED BY

AGENDA ITEM

The subject matter of the planning, design and construction of the new Civic Center Campus. (CR 330-24)

BACKGROUND DETAILS

At the Regular Meeting of October 7, 2024:

RESOLVED, that upon the motion by Councilmember Rob Donovic, seconded by Council Vice President Martha Ptashnik, at the Regular Meeting held October 7, 2024, the Council does hereby refer the subject matter of the planning, design and construction of the new Civic Center campus to the Capital Outlay and Infrastructure Committee for its report and recommendation.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To discuss the subject matter as presented.

ATTACHMENTS

1. COI101424 Email RE_ Award Recommendation Letters and Proposal Summaries
2. COI101424 LCC_City Hall_AE_Contract Award Recommendation Letter_AE- Updated
3. COI101424 LCC_Contract Award Recommendation Letter_CE-Updated
4. COI101424 LCC_Contract Award Recommendation Letter_MP- Updated
5. COI101424 LCC_Survey_Contract Award Recommendation Letter- Updated
6. COI101424 LCC_Traffic Study_Contract Award Recommendation Letter- Updated

APPROVED BY

From: [Lichtenberg, Debra](#)
To: [Kasprowicz, Sara](#)
Cc: [Doug.Smith](#); [Andy.Fountain](#); [Paul Theriault](#); [Rick.Erickson](#); [Taormina, Mark](#); [Kandah, Gus](#); [Fisher, Carter](#); [Varga, Dave](#); [Ava Wisniewski](#)
Subject: RE: Award Recommendation Letters and Proposal Summaries
Date: Monday, October 14, 2024 12:12:06 PM
Attachments: [LCC Contract Award Recommendation Letter MP- Updated.pdf](#)
[LCC Contract Award Recommendation Letter CE-Updated.pdf](#)
[LCC City Hall AE Contract Award Recommendation Letter AE- Updated.pdf](#)
[LCC Survey Contract Award Recommendation Letter- Updated.pdf](#)
[LCC Traffic Study Contract Award Recommendation Letter- Updated.pdf](#)
[image001.png](#)

Sara,

CORRECT VERSIONS ATTACHED.

Attached please find the updated information relevant to the Capital Outlay and Infrastructure Committee Meeting to be held this evening. Please distribute and post the information accordingly.

Thank you!
Debbie

Debra Peck Lichtenberg, CPA
Finance Director
City of Livonia | Finance Department
(734) 466-2260
dlichtenberg@livonia.gov

Debra Peck Lichtenberg, CPA
Finance Director
City of Livonia | Finance Department
(734) 466-2260
dlichtenberg@livonia.gov

From: Ava Wisniewski <Ava.Wisniewski@plantemoran.com>
Subject: Award Recommendation Letters and Proposal Summaries

Good afternoon Livonia City Center team,

Plante Moran Realpoint is pleased to present the award recommendation letters for five services related to the new City Center Program.

1. Master Planning Services- HED
2. Civil Engineering Services- OHM

3. Architect Engineer Services of City Hall- HED
4. Traffic Study Services- Spalding DeDecker
5. Surveying Services- Spalding DeDecker

Please see the attached documents related to these recommendations. We will be there to present these at the Capital Outlay Committee meeting on Monday, October 14.

If there are any questions in the meantime please let us know. Thank you for your time over the last few weeks during this process.

Best,
Ava

Ava Wisniewski | Consultant

Plante Moran Realpoint, 3000 Town Center, Suite 100, Southfield, MI 48075

Direct Dial: 248.223.3998 | Mobile: 313.520.1364

[Plante Moran Realpoint](#) | [Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Subscribe](#)

Plante Moran Cresa and Plante Moran REIA are now Plante Moran Realpoint. [Learn more.](#)



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October 14, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

RE: Livonia City Center – New City Hall Facility
Architectural/Engineering Services Contract Award Recommendation

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional architectural/engineering (A/E) firm for the new City Hall facility. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the new City Hall facility.

The Architectural Engineering Services for City Hall Scope of Work is critical to designing the new facility. It is also paramount to begin this process quickly in order to meet the program's overall timeline and budget.

SELECTION PROCESS

In August and early September, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed on several occasions in detail by the project team. PMR also reached out to roughly a dozen architectural/ engineering firms to garner interest in the RFP.

On September 9, 2024, the COL formally posted the RFP documents to MITN. The Project Team conducted a pre-proposal meeting on September 16, 2024, which twenty-five (25) firms participated in. After receiving proposals from twelve (12) firms on September 30, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each A/E firm's Proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals to objectively shortlist four (4) A/E firms for interviews. Selection criteria included relevant project

experience, proposed staff and team experience, past experience with the COL, available manpower, proposed fee, and firm approach to the project.

The Project Team conducted interviews with the shortlisted firms on October 8, 2024. The selection committee consisted of staff from PMR as well as Mayor Maureen Miller Brosnan, Dave Varga, Debra Lichtenberg, Mark Taormina, Jeannine Laible, and Brandon McCullough along with other City staff. Upon completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to their firm experience, team experience, the firm's approach to completing the project on schedule and within budget, and strong presentation/interview.

RECOMMENDATION

The Project Team recommends awarding the A/E services contract for the new City Hall Facility to HED (Harley Ellis Devereaux), pending final review of terms by legal counsel.

The total contract award recommendation is \$1,516,550 and is further defined as follows:

\$1,510,550	Fixed Lump-Sum Fee (approximately 6.43%)
\$ 6,000	Not-to-Exceed Reimbursables
\$1,516,550	Total Contract Award Recommendation

The A/E fee will be a fixed lump-sum amount based upon the scope, budget, and timeline established in the RFP. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 227-4691 or rick.erickson@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Rick Erickson, AIA
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia

Paul Theriault, Plante Moran Realpoint
Andy Fountain, Plante Moran Realpoint

ENCLOSURES: A/E Proposal/CBS Scoring Summary

October 14, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

RE: Livonia City Center
Civil Engineering Services Contract Award Recommendation

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a firm to perform civil engineering (CE) services for the Livonia City Center Program. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the City Center Program.

The Civil Engineering Services Scope of Work is critical to taking the Master Planner's vision from drawing board to reality. It is also paramount to begin this process quickly in order to meet the program's overall timeline and budget.

SELECTION PROCESS

In August and early September, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed on several occasions in detail by the project team. PMR also reached out to roughly a dozen civil engineering firms to garner interest in the RFP.

On September 9, 2024, the COL formally posted the request for proposal (RFP) documents to MITN. The Project Team conducted a pre-proposal meeting on September 16, 2024, which fourteen (14) firms participated in. After receiving proposals from eight (8) firms on September 30, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each CE firm's proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals to objectively shortlist two (2) firms for interviews. Selection criteria included relevant project

experience, proposed staff and team experience, local presence and experience, available manpower, proposed fee, and firm approach to the project.

The Project Team conducted interviews with the shortlisted firms on October 9, 2024. The selection committee consisted of staff from PMR as well as Mayor Maureen Miller Brosnan, Dave Varga, Debra Lichtenberg, Mark Taormina, David Lear, Jeannine Laible, and Rob Donovic along with other City staff. completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to their firm experience, the team's experience working together, the firm's competitive proposed fee, and strong presentation/ interview.

RECOMMENDATION

The Project Team recommends awarding the CE services contract for the Livonia City Center Program to OHM (Orchard, Hiltz & McCliment, Inc.), pending final review of terms by legal counsel.

The total contract award recommendation is 6.5% of the Cost of Work. The CE fee will be converted to a fixed lump-sum amount based upon the scope, budget, and timeline established in an amendment to the contract at a later date. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 603-5356 or doug.smith@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Doug Smith
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia
Gus Kandah, City of Livonia
Paul Theriault, Plante Moran Realpoint
Andy Fountain, Plante Moran Realpoint

ENCLOSURES: CE Proposal/ CBS Scoring Summary

October 14, 2024

Ms. Maureen Miller Brosnan
Mayor
City of Livonia
3300 Civic Center Dr., Livonia, MI 48154

RE: Livonia City Center
Master Planning Services Contract Award Recommendation

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a firm to perform master planning (MP) services for the Livonia City Center Program. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the City Center Program.

The Master Planning Services Scope of Work is critical to bringing the City's vision for the City Center to life. It is also paramount to begin this process quickly in order to meet the program's overall timeline and budget.

SELECTION PROCESS

In August and early September, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed on several occasions in detail by the project team. PMR also reached out to roughly a dozen master planning firms to garner interest in the RFP.

On September 9, 2024, the COL formally posted the request for proposal (RFP) documents to MITN. The Project Team conducted a pre-proposal meeting on September 16, 2024; which fourteen (14) firms participated in. After receiving proposals from eight (8) firms on September 30, 2024, the Project Team evaluated them over the ensuing days.

The Project Team utilized a criteria-based selection (CBS) process to evaluate each MP firm's proposal. The CBS process used pre-established and weighted criteria to evaluate the proposals to objectively shortlist four (4) firms for interviews. Selection criteria included relevant project

experience, proposed staff and team experience, local presence and experience, available manpower, proposed fee, and firm approach to the project.

The Project Team conducted interviews with the shortlisted firms on October 9, 2024. The selection committee consisted of staff from PMR as well as Mayor Maureen Miller Brosnan, Dave Varga, Debra Lichtenberg, Mark Taormina, David Lear, Jeannine Laible, and Rob Donovic along with other City staff. Upon completion of the interviews and after subsequent discussion, the Project Team completed the CBS scoring process.

This recommendation is based on the fact that the firm achieved the highest CBS score for the proposed Project. This score was achieved due to their firm experience, the team's experience working together, the firm's approach to completing the project on schedule and within budget, and strong presentation/ interview.

RECOMMENDATION

The Project Team recommends awarding the MP services contract for the Livonia City Center Program to HED (Harley Ellis Devereaux), pending final review of terms by legal counsel.

The total contract award recommendation is \$322,500.00 and is further defined as follows:

\$ 345,000.00	Fixed Lump-Sum Fee
- \$25,000	Credit to proposed fee (awarded both MP and AE for City Hall)
\$ 2,500.00	Not-to-Exceed Reimbursables
\$ 322,500.00	Total Contract Award Recommendation

The MP fee will be a fixed lump-sum amount based upon the scope, budget, and timeline established in the RFP. The reimbursables are a not-to-exceed amount and will be billed as incurred.

If you have any questions regarding the above information, please feel free to contact me at (248) 603-5356 or doug.smith@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Doug Smith
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia

Debbie Lichtenberg, City of Livonia

Gus Kandah, City of Livonia

Paul Theriault, Plante Moran Realpoint

Andy Fountain, Plante Moran Realpoint

ENCLOSURES: MP Proposal/ CBS Scoring Summary

October 14, 2024

Ms. Maureen Miller Brosnan
Mayor, City of Livonia
3300 Civic Center Dr.
Livonia, MI 48154

RE: Livonia City Center Program
Contract Award Recommendation - Survey Services

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional surveying firm for the Livonia City Center Program. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the Livonia City Center Program.

The Surveying Scope of Work is an important one in helping the Project Team understand the boundaries of the property, any easements or restrictions contained within, the location and condition of site utilities as well as the site topography.

SELECTION PROCESS

In early September, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed in detail by David Lear and Todd Zilincik with the City, who had great insights into some of the historical conditions on site. PMR also reached out to all four (4) civil engineering firms, which are pre-qualified by the City, to garner interest in the RFP.

On September 18, 2024, the Project Team issued an RFP to the City of Livonia's four (4) pre-qualified civil engineering firms. After clarifying a few questions and issuing responses, three of the four firms submitted proposals on September 27, 2024, and the Project Team evaluated them over the ensuing days.

As the firms were pre-qualified, the Project Team did not utilize a criteria-based selection (CBS) process but did review the proposals for completeness of scope, fees/costs and acceptance of contract terms/conditions.

RECOMMENDATION

For this Project the selection team included staff from PMR as well as Dave Varga, Mark Taormina, David Lear, Todd Zilincik as well as other City staff. The Project Team recommends awarding the surveying services contract for the Livonia City Center Program to Spalding DeDecker, pending final review of terms by legal counsel.

The total contract award recommendation is \$67,750.00 and is further defined as follows:

\$ 67,750	Fixed Lump-Sum Fee
\$ 0	Not-to-Exceed Reimbursables
\$ 67,750	Total Contract Award Recommendation

This recommendation is due to the fact that Spalding DeDecker is pre-qualified by the City, had a very competitive fee, which was within budget, is one of the largest surveying firms in the state, can meet the proposed schedule and that they have previously surveyed several areas of the Civic Center property.

The surveying work is anticipated to be completed by the end of the calendar year, if not sooner.

If you have any questions regarding the above information, please feel free to contact me at (248) 223-3380 or paul.theriault@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Paul Theriault, PE LEED AP
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia
Gus Kandah, City of Livonia
Andy Fountain, Plante Moran Realpoint

ENCLOSURES: Proposal Summary

October 14, 2024

Ms. Maureen Miller Brosnan
Mayor, City of Livonia
3300 Civic Center Dr.
Livonia, MI 48154

RE: Livonia City Center Program
Contract Award Recommendation – Traffic Study Services

Dear Ms. Miller Brosnan:

Please find in this letter an update from Plante Moran Realpoint (PMR) regarding our assignment to assist and advise the City of Livonia (COL) in selecting a professional traffic study firm for the Livonia City Center Program. This update represents the mutual efforts of PMR, COL administration, staff, and legal counsel (the Project Team) to identify, evaluate, and recommend a firm for the Livonia City Center Program.

The Traffic Study Scope of Work is another important piece of information that is essential to the Project Team to understand any existing traffic flow issues in and around the Civic Center site and to assist in the Master Planning and Civil Engineering. This study will extend up to 1 mile in each direction from the corner of 5 Mile and Farmington Roads.

SELECTION PROCESS

In early September, the Project Team drafted a Scope of Work and request for proposals (RFP). This Scope of Work was also reviewed in detail by David Lear and Todd Zilincik with the City, who had good perspective on how far to extend the limits of the study. PMR also reached out to all four (4) civil engineering firms, which are pre-qualified by the City, to garner interest in the RFP.

On September 18, 2024, the Project Team issued an RFP to the City of Livonia's four (4) pre-qualified civil engineering firms. After clarifying a few questions and issuing responses, two of the four firms submitted proposals on September 27, 2024, and the Project Team evaluated them over the ensuing days.

As the firms were pre-qualified, the Project Team did not utilize a criteria-based selection (CBS) process but did review the proposals for completeness of scope, fees/costs and acceptance of contract terms/conditions.

RECOMMENDATION

For this Project the selection team included staff from PMR as well as Dave Varga, Mark Taormina, David Lear, Todd Zilincik as well as other City staff. The Project Team recommends awarding the traffic study services contract for the Livonia City Center Program to Spalding DeDecker, pending final review of terms by legal counsel.

The total contract award recommendation is \$17,700.00 and is further defined as follows:

\$ 17,700	Fixed Lump-Sum Fee
\$ 0	Not-to-Exceed Reimbursables
\$ 17,700	Total Contract Award Recommendation

This recommendation is due to the fact that Spalding DeDecker is pre-qualified by the City, had a very competitive fee, which was within budget, and can meet the proposed schedule.

The traffic study work is anticipated to be completed by the end of the calendar year, if not sooner.

If you have any questions regarding the above information, please feel free to contact me at (248) 223-3380 or paul.theriault@plantemoran.com. The Project Team is also available at the COL's convenience to answer any questions.

Sincerely,

Paul Theriault, PE LEED AP
Plante Moran Realpoint

CC: Dave Varga, City of Livonia
Mark Taormina, City of Livonia
Debbie Lichtenberg, City of Livonia
Gus Kandah, City of Livonia

Andy Fountain, Plante Moran Realpoint

ENCLOSURES: Proposal Summary

Regular Meeting Minutes of October 7, 2024

On a motion by Councilmember Jolly, supported by Vice President Ptashnik and unanimously adopted, it was:

#330-24 RESOLVED, that upon the motion by Councilmember Rob Donovic, seconded by Council Vice President Martha Ptashnik, at the Regular Meeting held October 7, 2024, the Council does hereby refer the subject matter of the planning, design, and construction of the New Civic Center Campus to the Capital Outlay and Infrastructure Committee for its report and recommendation.

<i>RESOLUTION REQUESTED BY COUNCIL (Regular Meeting of October 7, 2024)</i>

Motion:	Jolly
Second:	Ptashnik
Present:	Ptashnik, Donovic, Budzinski, Morgan, Jolly, and McCullough
Absent:	Toy

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

1. BLOCK PARTY: Malgorzata Simmons, re: to be held Saturday, October 25, 2025, from 3:00 p.m. to 6:00 p.m., on Melrose Street between Elsie Street and Jamison Avenue.

Petitioner was not present.

Motion was made by Councilmember Budzinski to put the matter on the Regular portion of the next Regular Agenda.

DIRECTION:

APPROVING

REGULAR



LETTER TO THE LIVONIA CITY COUNCIL

1.

Clerk
September 8, 2025

MEETING DATE

PRESENTED BY

S092225

AGENDA ITEM

BLOCK PARTY: Malgorzata Simmons, re: to be held Saturday, October 25, 2025, from 3:00 p.m. to 6:00 p.m., on Melrose Street between Elsie Street and Jamison Avenue.

BACKGROUND DETAILS

This will be a Halloween block party with approximately 100 people.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

Approve as submitted.

ATTACHMENTS

1. 092225, Block Party, Malgorzata Simmons, Melrose St

APPROVED BY

Doris DeMarco, Deputy Clerk

Date: September 09, 2025

**REQUEST FOR NOISE WAIVER BLOCK PARTY and/or
BARRICADING OF CITY STREETS**

Send to: Livonia City Council, c/o City Clerk, 33000 Civic Center Drive, Livonia, MI 48154-3097
or hand deliver to the City Clerk's Office at least 8 weeks prior to the planned event

PLEASE PRINT

Date of Application: 9/8/25 Date to appear at a Council Meeting: _____

Name of Neighborhood Representative: MALGORZATA SIMMONS

Address (please include zip code): 15233 MELROSE ST LIVONIA 48154

Telephone Number with area code: Home: 3134185399 Office: _____

Email: SIMMONSGOSIA@GMAIL.COM

Please circle what is being requested - **"BLOCK PARTY"** and/or **"STREET BARRICADING"**

<u>10/25/25</u>	<u> </u>	<u>3-6 pm</u>
Date of Block Party and/or Barricading	Rain Date	Start/end time of Block Party and/or Barricading End time is no later than 10:00 p.m.

Location of Block Party and/or Barricading: (Be specific. Indicate which streets and between which boundaries).

MELROSE ST between ELSIE and JAMISON

Type of Event: Briefly (Describe activities planned. Music, barbecue, games, etc.) _____

Halloween Party

How many barricades are you requesting (max. 10)? 4

Approximate Number Attending: 100

Date of Council Approval/Denial: _____

Council Resolution Number: _____

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:34 p.m. by President McCullough. Present: Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, Lynda Scheel and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Jacob Uhazie, Assistant Planning Director.

Councilmember Toy led the meeting with the Pledge of Allegiance.

2. BLOCK PARTY AND STREET BARRICADING: Danielle Greason, re: to be held Friday, October 31, 2025, from 5:00 p.m. to 9:30 p.m., on Emerson Court to West Chicago and on Tulipwood from Emerson Court to Harrison Street.

Petitioner was not present.

Motion was made by Councilmember Toy to put the matter on the Regular portion of the next Regular Agenda.

DIRECTION:

APPROVING

REGULAR



LETTER TO THE LIVONIA CITY COUNCIL

2.

Clerk
September 9, 2025

MEETING DATE

S092225/R100625

PRESENTED BY

AGENDA ITEM

BLOCK PARTY AND STREET BARRICADING: Danielle Greason, re: to be held Friday, October 31, 2025, from 5:00 p.m. to 9:30 p.m., on Emerson Court to West Chicago and on Tulipwood from Emerson Court to Harrison Street.

BACKGROUND DETAILS

The Emerson Oaks subdivision is requesting that traffic be closed to block Tulipwood from Harrison Road and Emerson Court from West Chicago for a Halloween block party. The event will have games, food, and music, with approximately 50 people.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

Approve as submitted.

ATTACHMENTS

1. S092225, Block Party Danielle Greason Emerson Oaks

APPROVED BY

Doris DeMarco, Deputy Clerk

Date: September 09, 2025

**REQUEST FOR NOISE WAIVER BLOCK PARTY and/or
BARRICADING OF CITY STREETS**

Send to: Livonia City Council, c/o City Clerk, 33000 Civic Center Drive, Livonia, MI 48154-3097
or hand deliver to the City Clerk's Office at least 8 weeks prior to the planned event

PLEASE PRINT

Date of Application: 9/8/25 Date to appear at a Council Meeting: 9/22

Name of Neighborhood Representative: Emerson Oaks - Danielle Greason

Address (please include zip code): 9645 Emerson Ct, Livonia, MI 48150

Telephone Number with area code: Home: 313 850 0845 Office: _____

Email: emersonoakshoa@gmail.com

Please circle what is being requested – **“BLOCK PARTY”** and/or **“STREET BARRICADING”**

<u>10/31/2025</u>	<u>n/a</u>	<u>5pm - 9:30pm</u>
Date of Block Party and/or Barricading	Rain Date	Start/end time of Block Party and/or Barricading End time is no later than 10:00 p.m.

Location of Block Party and/or Barricading: (Be specific. Indicate which streets and between which boundaries).

Block access to Tulipwood from Harrison
Block access to Emerson Ct from West Chicago

Type of Event: Briefly (Describe activities planned. Music, barbecue, games, etc.) music, games, food & candy of course.

How many barricades are you requesting (max. 10)? 4

Approximate Number Attending: 50+

Date of Council Approval/Denial: _____

Council Resolution Number: _____

RECEIVED
OFFICE OF THE CITY CLERK
2025 SEP -8 PM 4:57

SHOPPES AT COLLEGE PARK
LIVONIA MICHIGAN

FIRST AMENDMENT TO PLANNED GENERAL DEVELOPMENT AGREEMENT

This First Amendment to Planned General Development Agreement ("First Amendment") is entered into between the CITY OF LIVONIA, a Michigan municipal corporation, with its principal address at 33000 Civic Center Dr, Livonia, MI 48154 (the "City"), and HAGGERTY SIX PARTNERS, LLC, a Michigan limited liability company, with its principal address at 251 E Merrill Suite 236, Birmingham, Michigan 48009 ("Developer").

RECITALS:

A. Developer and the ~~Township-City~~ entered into a Planned General Development Agreement, signed April 17, 2025, which was recorded in Liber _____, Page ____ of the Wayne County Records, ~~as administratively amended~~ (the "PGD Agreement"), with respect to certain real property located in the City of Livonia, Wayne County, Michigan, which is more particularly described on **Exhibit A** attached hereto. Capitalized terms used in this First Amendment and not otherwise defined, shall have the meanings given to such terms in the PGD Agreement.

B. ~~Developer and the Township desire to amend the PGD Agreement.~~The Developer and the City ~~desire to amend the PGD Agreement~~ upon the terms and conditions set forth below.

THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

1. **Signage.** Section 4.7 of the ~~PUD-PGD~~ Agreement is hereby deleted and replaced in its entirety with the following:

4.7 **Signage.** —Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City's Zoning Ordinance, unless otherwise provided in this PGD Agreement.

4.7.1 Monument Signs. Given the unique layout of the Development ~~and the desire to have "four sided" architecture, one (1) six (6) monument signs~~ shall be permitted to be constructed at ~~each of the three (3) main entrances into the development, which include the two (2) on Haggerty Road and one (1) on Six Mile Road, identified as Sign A, Sign B and Sign E on Exhibit F, attached hereto. Signs A, B, and E shall be limited to twelve (12) feet in height and one hundred (100) square feet in sign area as determined in the Livonia Zoning Ordinance locations shown on Exhibit F and depicted on Exhibit G attached hereto. In addition,~~ Buildings C, D, and E, combined, shall be considered a single Business Center (as defined in the City of Livonia Zoning Ordinance), and shall be entitled to one (1) Business Center sign having a maximum height of eight (8) feet and a maximum area of forty (40) square feet. Building F and Building Pads H and I shall each be allowed one (1) monument sign measuring a maximum of six (6) feet in height and thirty (30) square feet in area. If Building F contains four (4) or more tenants, the permitted monument sign height shall be eight (8) feet, and the permitted sign area shall be forty (40) square feet.

4.7.2 Wall Signs. ~~For Buildings C, D, E, and F, and Building Pads G, H, and I, as shown on Exhibit F, the following area limitations shall apply to all tenant wall signage:~~

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(acknowledgments on the following page)

STATE OF MICHIGAN)
) SS.
COUNTY OF)

The foregoing was acknowledged before me this _____ day of _____, 2025, by Doraid Markus, the Manager of Haggerty Six Partners, LLC, a Michigan limited liability company.

Notary Public,
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

STATE OF MICHIGAN)
) SS.
COUNTY OF)

The foregoing was acknowledged before me this _____ day of _____, 2025, by _____ and _____, the respective _____ and City Clerk of the City of Livonia, a Michigan municipal corporation, on behalf of the corporation.

Notary Public,
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

Drafted by and when recorded return to:

Bradley F. Scobel, Esq.
SK Detroit Law Partners, P.C.
2000 Town Center, Suite 1500
Southfield, Michigan 48075

Exhibit A

Legal Description

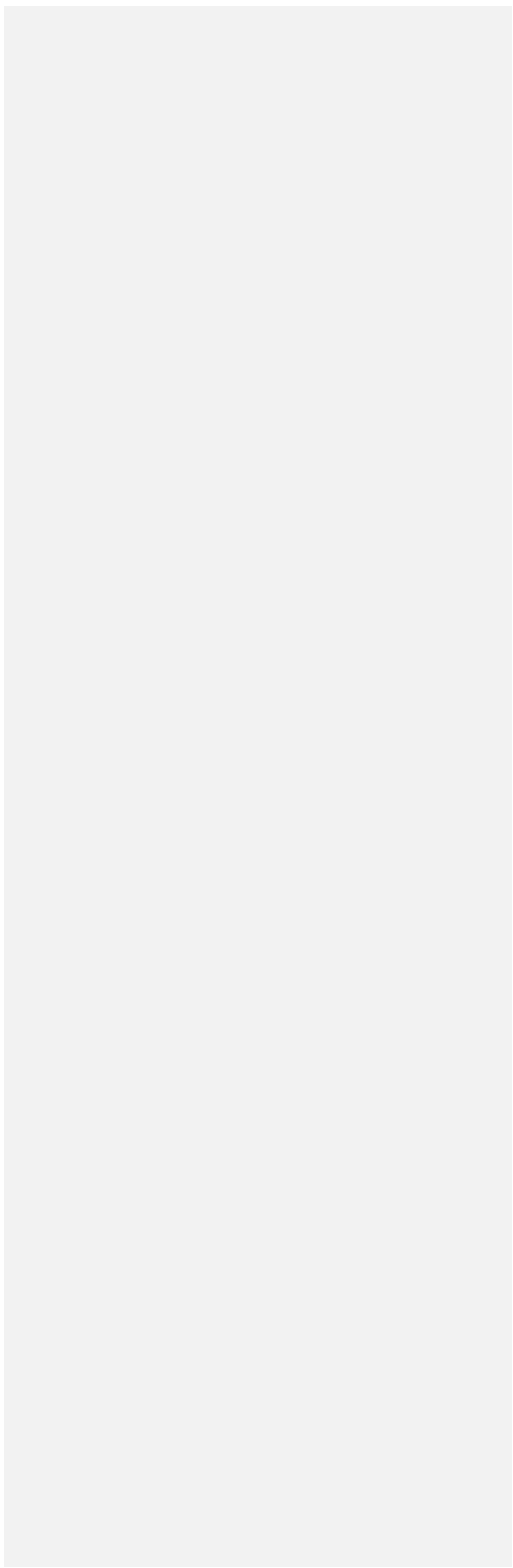
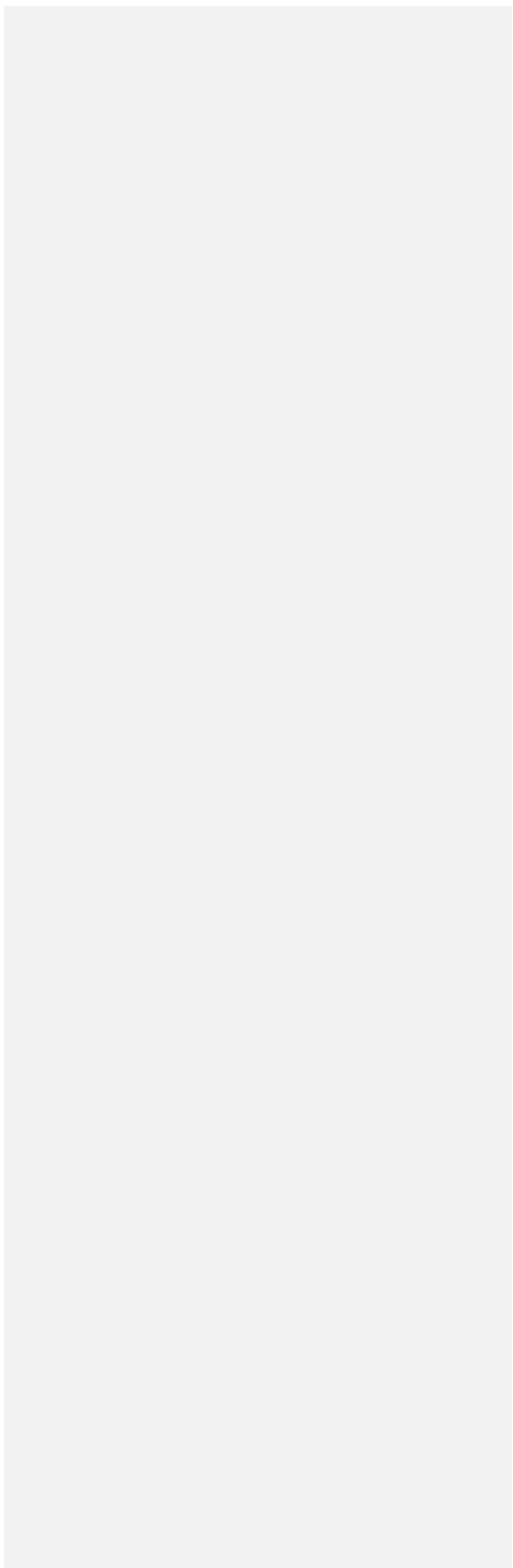


Exhibit F
Signage Plan

Exhibit G
Monument Sign Depictions





LETTER TO THE LIVONIA CITY COUNCIL

8.

Planning
September 9, 2025

MEETING DATE

S090825/R092225

PRESENTED BY

Mark Taormina, Planning and Economic Development Director
Carter Fisher, City Attorney

AGENDA ITEM

REQUEST TO APPROVE FIRST AMENDMENT TO THE SHOPPES AT COLLEGE PARK PLANNED GENERAL DEVELOPMENT AGREEMENT BETWEEN THE CITY OF LIVONIA AND HAGGERTY SIX PARTNERS, LLC: Doraid Markus on behalf of Haggerty Six Partners, LLC, re: Petition 2024-02-02-03, to amend the signage provisions of paragraph 4.7 of the Agreement. (CR 135-24)

BACKGROUND DETAILS

BACKGROUND INFORMATION FOR THE 10/06/2025 COUNCIL REGULAR MEETING

At the September 8, 2025, Study Meeting, the Council asked the Planning Department to work with the Developer to revise the Agreement so that the sign package is more consistent with the City's sign regulations and other regional shopping centers. The latest proposal aims to achieve this, which the Council will hopefully find acceptable.

The site overall has approximately 1,000 feet of frontage on Haggerty Road, 670 feet along Six Mile Road, and another 1,263 feet on Fox Drive. The complex will have three (3) major entry points, including two (2) on Haggerty Road and one (1) on Six Mile Road. Under the proposed Agreement, a monument sign will be allowed at each entry drive, with the height of the signs limited to twelve (12) feet, eight (8) feet shorter than what the Ordinance provides for regional shopping centers. The primary purpose of the main entry signs is to identify the largest tenants of the complex, including Whole Foods, Club Studio, the apartment complex, and a few other interior tenants that won't have visibility from the public thoroughfares.

The modified Agreement would also allow two (2) monument signs for the multi-tenant retail buildings: one (1) along Haggerty Road in front of Buildings "C," "D," and "E," and the other on Six Mile Road in front of Building "F." The signs at these locations would conform to the city's zoning standards in size. Buildings "C," "D," and "E," combined, contain more than four (4) tenants, thus qualifying as a Business Center, where sign height is allowed to be eight (8) feet and sign area forty (40) square feet. Should Building "F" also contain four (4) or more tenants, it too would qualify for a Business Center sign; otherwise, the sign size would be restricted to six (6) feet in height and (30) square feet in area.

Building Pad "H" and Building Pad "I" will be freestanding, full-service restaurants. The proposed Agreement effectively treats these as separate parcels, where each would be entitled to a single tenant identification sign measuring no more than six (6) feet in height and thirty (30) square feet in area.

For the wall signs, the Agreement would adopt an approach similar to the one used at Livonia Marketplace, where the multi-tenant retail buildings are positioned close to the access roads, with the parking and store entrances on the opposite side, not readily visible from the streets. These buildings are designed with "four-sided" architecture and have two and, in some cases, three sides, where sign identification is crucial, both from the vantage point of the abutting road and the parking lot where the store entrances are located. The proposed Agreement thus incorporates a formula similar to the one used for Livonia Marketplace, which is based on the tenant's lineal frontage, allowing for signs on both sides of the building.

PROPOSED NEW LANGUAGE **4.7 Signage.** *Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City's Zoning Ordinance, unless otherwise provided in this PGD Agreement.*

4.7.1 Monument Signs. *Given the unique layout of the Development, one (1) monument sign shall be permitted to be constructed at each of the three (3) main entrances into the development, which include the two (2) on Haggerty Road and one (1) on Six Mile Road, identified as Sign A, Sign B and Sign E on Exhibit F, attached hereto. Signs A, B, and E shall be limited to twelve (12) feet in height and one hundred (100) square feet in sign area as determined in the Livonia Zoning Ordinance. Buildings C, D, and E, combined, shall be considered a single Business Center (as defined in the City of Livonia Zoning Ordinance), and shall be entitled to one (1) Business Center sign having a maximum height of eight (8) feet and a maximum area of forty (40) square feet. Building F and Building Pads H and I shall each be allowed one (1) monument sign measuring a maximum of six (6) feet in height and thirty (30) square feet in area. If Building F contains four (4) or more tenants, the permitted monument sign height shall be eight (8) feet, and the permitted sign area shall be forty (40) square feet. The signs for Building Pads H and I shall identify the respective tenants for each of the multi-tenant retail buildings.*

4.7.2. Wall Signs. *For Buildings C, D, E, and F, and Building Pads G, H, and I, as shown on Exhibit F, the following area limitations shall apply to all tenant wall signage:*

(a) Along each of the front elevations facing either Haggerty Road or Six Mile Road, the sign area permitted shall not exceed one (1) square foot of sign area for each one (1) lineal foot of building frontage that the tenant occupies.

(b) Along each of the rear elevations, the sign area permitted shall not exceed one (1) square foot of sign area for each one (1) lineal foot of building length that the tenant occupies.

(c) Along each of the side elevations, the sign area permitted shall not exceed one-half ($\frac{1}{2}$) of a square foot of sign area for each one (1) lineal foot of building length that the tenant occupies along the exterior portion of the side of the building.

(d) The outer limits of a tenant sign shall not exceed 80% of the total storefront width that the tenant occupies.

BACKGROUND INFORMATION FOR THE 09/08/2025 COUNCIL STUDY MEETING

Doraid Markus, developer of The Shoppes at College Park (Petition 2024-02-02-03), is requesting to amend the Development Agreement approved by the Council on December 18, 2024. The proposed change only affects Paragraph 4.7, which addresses signage. The revised language would allow a total of six (6) monument signs, including three (3) along Haggerty Road and three (3) along Six Mile Road. Under the current ordinance standards, the development overall is allowed only two (2) monument signs, each a maximum of 100 square feet in area and at a maximum height of 20'-0". The six (6) proposed monument signs would each measure approximately 100 square feet in area and 12'-0" in height.

The current language of Paragraph 4.7 is:

CURRENT 4.7. **Signage.** *Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City's Zoning Ordinance. Given the unique layout of the Development and the desire to have "four-sided" architecture, each tenant in Buildings B, C.1, and C-2, as shown on the Site Plan, shall be allowed an additional wall sign on the north side of the building, above the unit's entrance. An additional wall sign shall also be permitted on the west side of Building D. The additional wall signs provided herein shall be limited to one-half of the area allowed for each unit's main identification wall sign.*

The proposed language of Paragraph 4.7 is:

PROPOSED 4.7 **Signage.** *Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City's Zoning Ordinance, unless otherwise provided in this PGD Agreement. Given the unique layout of the development and the desire to have "four-sided" architecture, six (6) monument signs shall be permitted to be constructed at the locations shown in Exhibit F and depicted in Exhibit G, which is attached hereto. In addition, buildings C, D, E, and F shall be permitted to have exterior building signage installed in each of the locations shown on **Exhibit F** attached hereto with red lines.*

Exhibit F shows the site overall and the approximate placement of the six (6) proposed monument signs labeled 'A' through 'F.' It also shows the desired placement of building wall signs for the multi-tenant retail buildings. Exhibit G provides additional details. Each monument sign would contain multiple panels to identify the various tenants of the shopping complex.

The Planning Department agrees with the Developer that this site is unique and warrants consideration of a master sign plan that may deviate from the city's sign regulations. However, the proposed number and size of the signs are excessive compared with other regional shopping

centers. Thus, we are requesting that the Petitioner work with us to develop an alternative plan for the Council to consider.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To approve as submitted.

ATTACHMENTS

1. S090825 6-Haggerty Planned Agr Amendment Minutes
2. S090825 39200 Six Mile New Data Recd 09-05-25
3. R090825 LTC 6Haggerty Planned Agr Amendment
4. Exhibit F
5. Exhibit G
6. First Amendment to PGD Agreement 4900-0811-4524.1 (004)
7. R041425 Six and Haggerty Item New Data Recd 4-14-25
8. R041425 LTC 6Haggerty Planned Agr Amendment
9. R041425 Haggerty Six Partners Agr Amend CR 107-25
10. R041524 Petition 2024-02-02-03 (Stonefield Eng) CR 135-24

APPROVED BY

Mark Taormina, Planning and Economic Development Director

Date:

Maureen Miller Brosnan, Mayor

Date:

**CITY OF LIVONIA – CITY COUNCIL
MINUTES OF STUDY MEETING HELD SEPTEMBER 8, 2025**

Meeting was called to order at 8:20 p.m. by President McCullough. Present: Lynda Scheel, Scott Morgan, Laura Toy, Rob Donovic, Vice President Ptashnik, Carrie Budzinski, and President McCullough. Absent: None.

Elected and appointed officials present: Carter Fisher, City Attorney; Lori L. Miller, City Clerk; Mark Taormina, City Planner and Economic Development Director; David Lear, Assistant City Engineer.

Councilmember Morgan led the meeting with the Pledge of Allegiance.

4. REQUEST TO APPROVE FIRST AMENDMENT TO THE SHOPPES AT COLLEGE PARK PLANNED GENERAL DEVELOPMENT AGREEMENT BETWEEN THE CITY OF LIVONIA AND HAGGERTY SIX PARTNERS, LLC: Doraid Markus on behalf of Haggerty Six Partners, LLC, re: Petition 2024-02-02-03, to amend the signage provisions of paragraph 4.7 of the Agreement. (CR 135-24)

Mark Taormina, Planning and Economic Development Director, noted the revision addresses additional signage at the development and hopes to have a modified plan to review for the next meeting.

Doraid Markus, Petitioner, stated his intent to work with the Planning Department to produce a modified plan that isn't excessive but appeases the tenants.

Motion was made by Councilmember Donovic to put the matter on the Regular portion of the next Regular Agenda.

DIRECTION:

APPROVING

REGULAR

OFFICE OF THE TREASURER

SUSAN M. NASH
CITY TREASURER



33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3060
(734) 466-2245
FAX: (734) 421-7230

September 5, 2025

New Data Study Meeting September 8, 2025, Item #4

RE: 39200 Six Mie Rd

Attention: City Council Members

The summer 2025 taxes of \$271,994.37 are due September 15, 2025
All past taxes have been paid

If you have any further questions, please contact me

Thank you

Susan Nash
Livonia City Treasurer



LETTER TO THE LIVONIA CITY COUNCIL

4.

Planning
August 28, 2025

MEETING DATE

S090825/R092225

PRESENTED BY

Mark Taormina, Planning and Economic Development Director
Carter Fisher, City Attorney

AGENDA ITEM

REQUEST TO APPROVE FIRST AMENDMENT TO THE SHOPPES AT COLLEGE PARK PLANNED GENERAL DEVELOPMENT AGREEMENT BETWEEN THE CITY OF LIVONIA AND HAGGERTY SIX PARTNERS, LLC: Doraid Markus on behalf of Haggerty Six Partners, LLC, re: Petition 2024-02-02-03, to amend the signage provisions of paragraph 4.7 of the Agreement. (CR 135-24)

BACKGROUND DETAILS

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The proposed language of Paragraph 4.7 is:

PROPOSED 4.7 **Signage.** *Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other*

*signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City's Zoning Ordinance, unless otherwise provided in this PGD Agreement. Given the unique layout of the Development and the desire to have "four-sided" architecture, six (6) monument signs shall be permitted to be constructed at the locations shown on **Exhibit F** and depicted on **Exhibit G** attached hereto. In addition, buildings C, D, E, and F shall be permitted to have exterior building signage installed in each of the locations shown on **Exhibit F** attached hereto with red lines.*

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PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To approve as submitted.

ATTACHMENTS

1. Exhibit F
2. Exhibit G
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4. R041425 Six and Haggerty Item New Data Recd 4-14-25
5. R041425 LTC 6Haggerty Planned Agr Amendment
6. R041425 Haggerty Six Partners Agr Amend CR 107-25
7. R041524 Petition 2024-02-02-03 (Stonefield Eng) CR 135-24

APPROVED BY



Mark Taormina, Planning and Economic Development Director

Date: September 02, 2025



Date: September 02, 2025

Maureen Miller Brosnan, Mayor





BIA
BOWERS+ASSOCIATES, INC.
2400 SOUTH HURON PARKWAY
ANN ARBOR, MI 48104
P: 734.979.2400
WWW.BOWERSARCH.COM

CONSULTANT + NAME

PROJECT + INFORMATION

SHOPPES AT COLLEGE PARK
FOX DRIVE
LIVONIA, MI

PROJECT + NUMBER

23-211

ISSUE + DATE

06 MAY 2025 OREV
16 JUN 2025 OREV

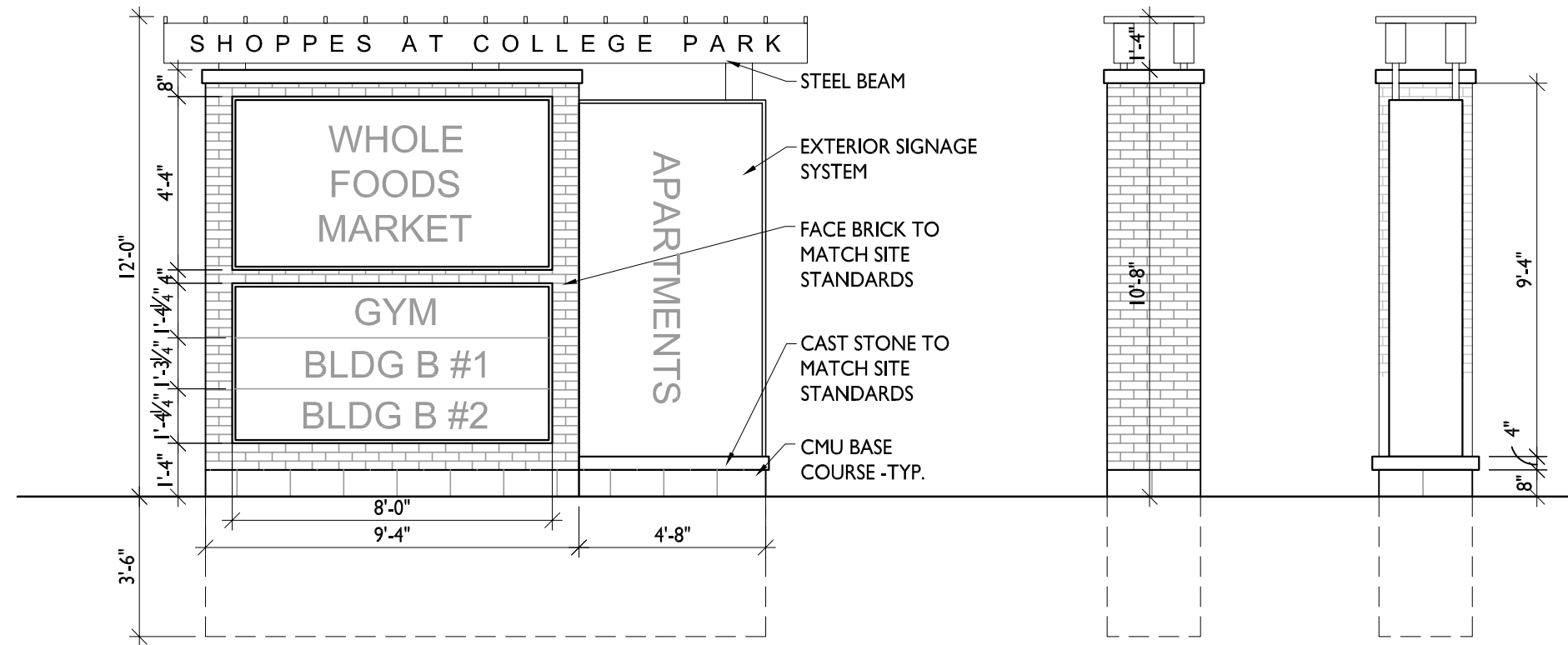
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ARCHITECTURAL
SITE PLAN

SHEET + NUMBER

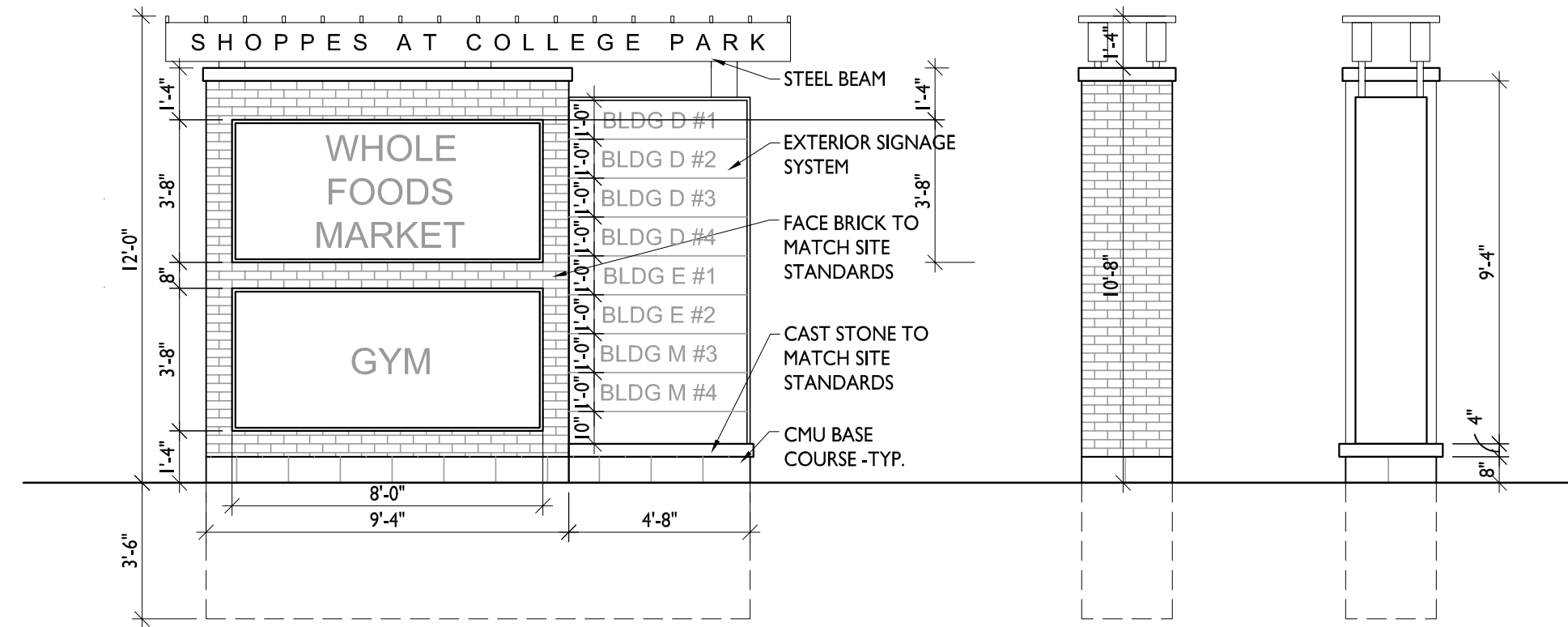
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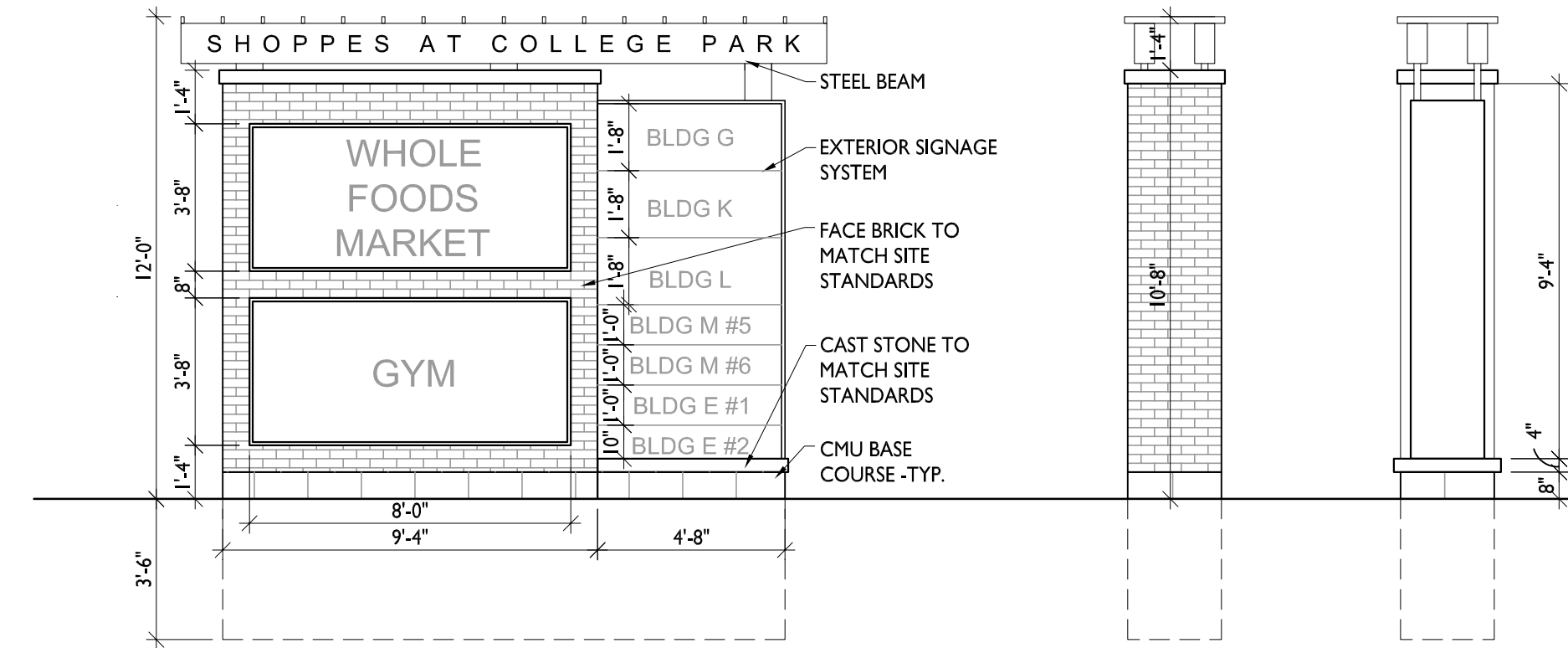
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SIGN A

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A-002 A-001 SCALE: 1/2" = 1'-0"



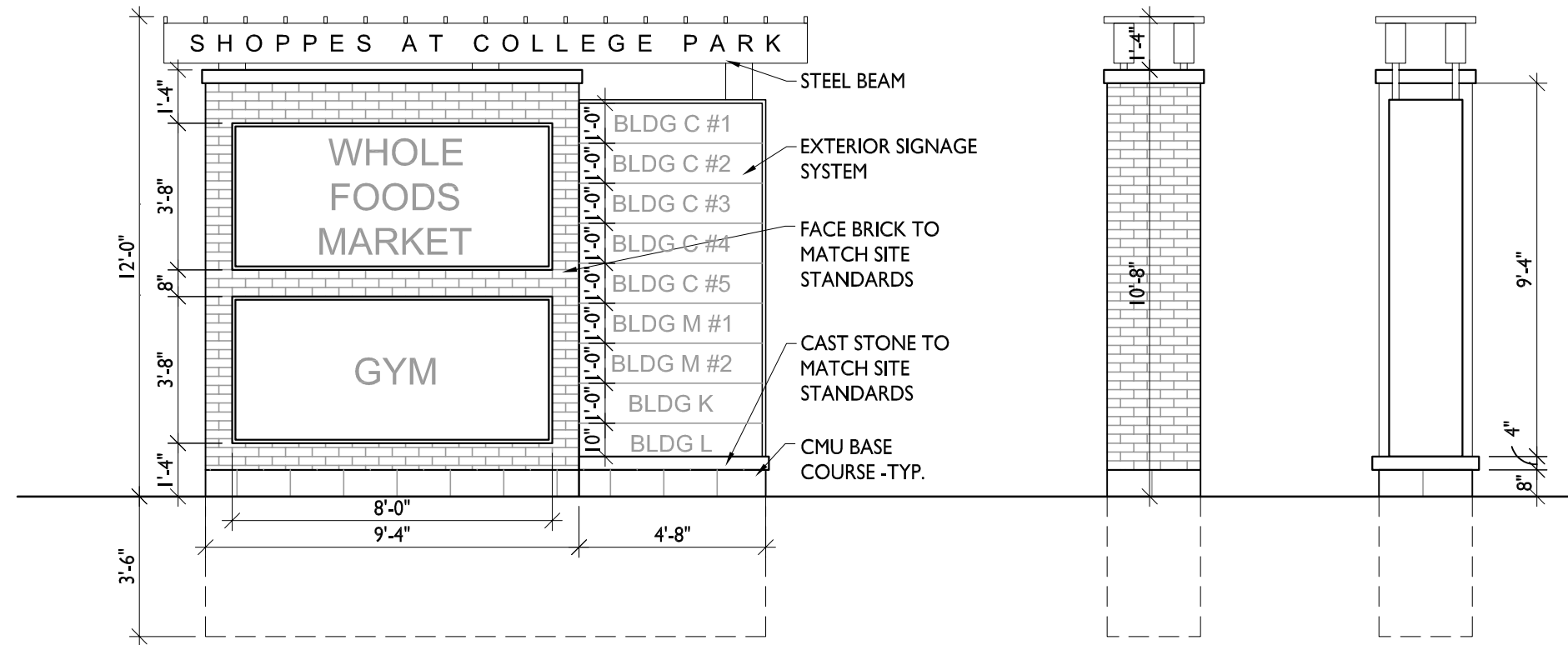
MONUMENT
SIGN C

3
A-002 A-001 SCALE: 1/2" = 1'-0"



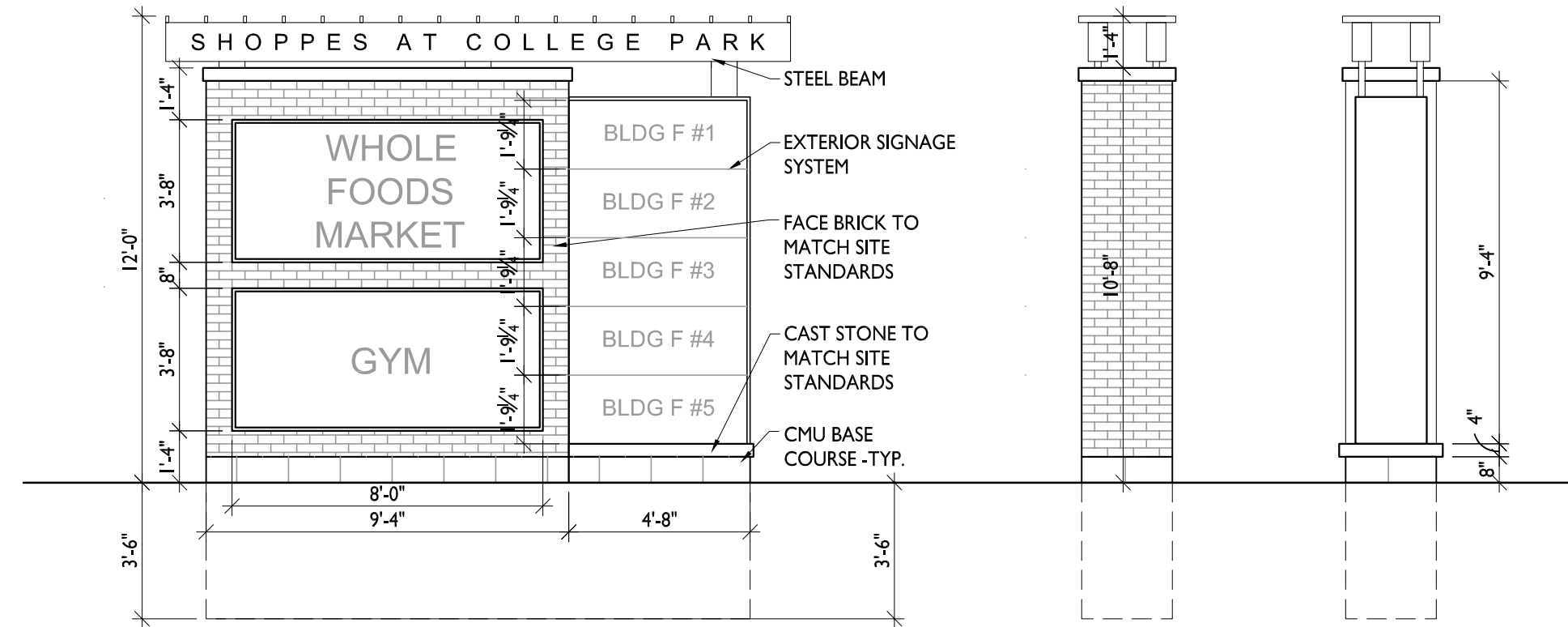
MONUMENT
SIGN E

5
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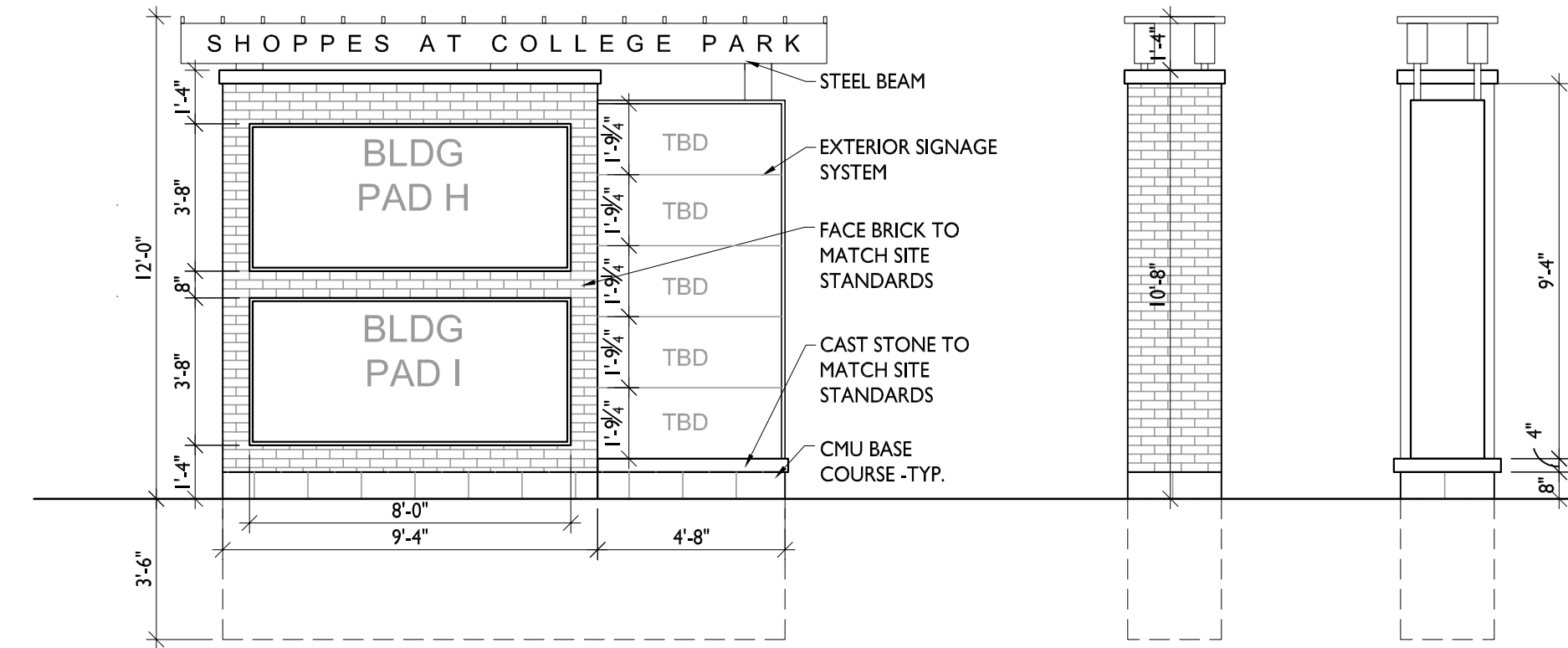
MONUMENT
SIGN B

2
A-002 A-001 SCALE: 1/2" = 1'-0"



MONUMENT
SIGN D

4
A-002 A-001 SCALE: 1/2" = 1'-0"



MONUMENT
SIGN F

6
A-002 A-001 SCALE: 1/2" = 1'-0"



BOWERS+ASSOCIATES, INC.
2400 SOUTH HURON PARKWAY
ANN ARBOR, MI 48104
P: 734.979.2400
WWW.BOWERSARCH.COM

CONSULTANT + NAME

PROJECT + INFORMATION
HAGGERTY
COMMONS
FOX DRIVE
LIVONIA, MI

PROJECT + NUMBER

23-211

ISSUE + DATE

25 JAN 2024	REVIEW
11 APR 2025	OREV
23 JUN 2025	OREV
2 JULY 2025	

SHEET + TITLE

MONUMENT
SIGN PLAN

23211z100.dwg

SHEET + NUMBER

A-002

SHOPPES AT COLLEGE PARK
LIVONIA MICHIGAN

FIRST AMENDMENT TO PLANNED GENERAL DEVELOPMENT AGREEMENT

This First Amendment to Planned General Development Agreement (“**First Amendment**”) is entered into between the CITY OF LIVONIA, a Michigan municipal corporation, with its principal address at 33000 Civic Center Dr, Livonia, MI 48154 (the “**City**”), and HAGGERTY SIX PARTNERS, LLC, a Michigan limited liability company, with its principal address at 251 E Merrill Suite 236, Birmingham, Michigan 48009 (“**Developer**”).

RECITALS:

A. Developer and the Township entered into a Planned General Development Agreement, signed April 17, 2025, which was recorded in Liber _____, Page ____ of the Wayne County Records, as administratively amended (the "**PGD Agreement**"), with respect to certain real property located in the City of Livonia, Wayne County, Michigan, which is more particularly described on **Exhibit A** attached hereto. Capitalized terms used in this First Amendment and not otherwise defined, shall have the meanings given to such terms in the PGD Agreement.

B. Developer and the Township desire to amend the PGD Agreement, upon the terms and conditions set forth below.

THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

1. **Signage.** Section 4.7 of the PUD Agreement is hereby deleted and replaced in its entirety with the following:

4.7 **Signage.** Freestanding signs for the Development shall be ground-mounted (monument) signs. No pole signs shall be permitted. All freestanding signs shall have a base constructed of materials that coordinate and are not inconsistent with the building and other signs within the Development. All freestanding lighted signs shall be internally lit. Wall-mounted and other signs, including directional signs, shall be permitted as authorized in the City’s Zoning Ordinance, unless otherwise provided in this PGD Agreement. Given the unique layout of the Development and the desire to have “four-sided” architecture, six (6) monument signs shall be permitted to be constructed at the locations shown on **Exhibit F** and depicted on **Exhibit G** attached hereto. In addition, buildings C, D, E and F, shall be permitted to have exterior building signage installed in each of the locations shown on **Exhibit F** attached hereto with red lines.

2. **Ratification.** Except as amended by this First Amendment, the PGD Agreement is hereby ratified by the parties and shall continue in full force and effect.

3. **Counterparts; Facsimile Signatures.** This First Amendment may be executed in any number of counterparts and it shall be sufficient that the signature of each party appear on one or more such

counterparts. All counterparts shall collectively constitute a single Amendment. A facsimile signature to this First Amendment shall have the same effect as an original signature.

The parties hereto have set their hands and seals as of the day and year first above written.

Haggerty Six Partners, LLC, a Michigan limited liability company

By: _____
Doraid Markus
Its: Manager

City of Livonia,
A Michigan municipal corporation

By: _____
Its:

By: _____
Its:

(acknowledgments on following page)

STATE OF MICHIGAN)
) SS.
COUNTY OF)

The foregoing was acknowledged before me this _____ day of _____, 2025, by Doraid Markus, the Manager of Haggerty Six Partners, LLC, a Michigan limited liability company.

Notary Public,
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

STATE OF MICHIGAN)
) SS.
COUNTY OF)

The foregoing was acknowledged before me this _____ day of _____, 2025, by _____ and _____, the respective _____ and City Clerk of the City of Livonia, a Michigan municipal corporation, on behalf of the corporation.

Notary Public,
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

Drafted by and when recorded return to:

Bradley F. Scobel, Esq.
SK Detroit Law Partners, P.C.
2000 Town Center, Suite 1500
Southfield, Michigan 48075

Exhibit A

Legal Description

Exhibit F
Signage Plan

Exhibit G

Monument Sign Depictions

From: [Nash, Susan M.](#)
To: [Kasprowicz, Sara](#)
Cc: [Taormina, Mark](#)
Subject: New Data Item #13 39200 Six Mile
Date: Monday, April 14, 2025 10:39:09 AM

Councilmembers,

I'm letting you know that as of today all taxes and water bills have been paid

Any questions please reach out to me

Thank you

Susan Nash

Susan Nash
City Treasurer
City of Livonia | Treasurer's Office
(734) 466-2244
snash@livonia.gov



LETTER TO THE LIVONIA CITY COUNCIL

13.

Planning
April 8, 2025

MEETING DATE

R041425

PRESENTED BY

Mark Taormina, Planning and Economic Development Director
Carter Fisher, City Attorney

AGENDA ITEM

REQUEST TO APPROVE AN AMENDMENT TO THE SHOPPES AT COLLEGE PARK PLANNED GENERAL DEVELOPMENT AGREEMENT BETWEEN THE CITY OF LIVONIA AND HAGGERTY SIX PARTNERS, LLC: Doraid Markus on behalf of Haggerty Six Partners, LLC, re: Petition 2024-02-02-03, to amend the timing of construction of the project's residential and retail components. (CR 135-24)

BACKGROUND DETAILS

Doraid Markus, developer of The Shoppes at College Park (Petition 2024-02-02-03), requests to amend the previously approved Development Agreement. The change only affects Paragraph 1.6 of the Agreement, which addresses the timing of construction of the project's residential and retail components. For Special Waiver Use petitions involving Planned General Developments, Section 5.02(5)(G) of the Zoning Ordinance stipulates: "No structure designed or intended to be used in part or in whole, for commercial purposes shall be constructed prior to the construction of not less than thirty (30) percent of the dwelling units, if any, proposed for the development."

On December 18, 2024, the Council approved the Agreement with Paragraph 1.6 reading as follows:

CURRENT 1.6 *The parties recognize that a development of this size typically includes project phases. Under Section 5.02(5)(G) of the City's Zoning Ordinance, no commercial structure shall be constructed before the construction of not less than thirty (30) percent of the dwelling units approved as part of the development. To expedite the opening of the grocery tenant, the developer shall be permitted to open the grocery store so long as the foundations of the apartment building have been installed.*

The language below would give the Developer the flexibility to open any portion of the retail phase of the project ahead of constructing the foundations of the apartment building, subject to the posting of a bond to the City for \$1M.

PROPOSED 1.6 *The parties recognize that a development of this size typically includes project phases. Under Section 5.02(5)(G) of the City's Zoning Ordinance, no commercial structure shall be constructed before the construction of not less than thirty (30) percent of the dwelling units approved as part of the development. To expedite the opening of the ~~grocery tenant~~ **retail buildings**, the developer shall be permitted ~~to open the grocery store so long as the foundations of the apartment building have been installed~~ **to construct and open the commercial structures (including the retail buildings and grocery store) after (i) the installation of the foundation for the apartment building; or (ii) the posting of a bond***

with the City in an amount of One Million Dollars(\$1,000,000).

The Planning and Law Departments have met with the Developer and his legal counsel and are satisfied with the surety proposed under the revised language to Paragraph 1.6 of the Development Agreement.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To approve as submitted.

ATTACHMENTS

None

APPROVED BY



Mark Taormina, Planning and Economic Development Director

Date: April 08, 2025



Carter Fisher, City Attorney

Date: April 08, 2025



Maureen Miller Brosnan, Mayor

Date: April 08, 2025

Regular Meeting Minutes of April 14, 2025

On a motion by Councilmember Donovic, supported by Councilmember Toy, and unanimously adopted, it was:

#107-25 RESOLVED, that having considered a communication from the Planning and Economic Development Director, dated April 8, 2025, which bears the signature of the City Attorney, and is approved for submission by the Mayor, regarding a request from Doraid Markus, on behalf of Haggerty Six Partners, LLC, to approve an amendment to The Shoppes at College Park Planned General Development Agreement between the City of Livonia and Haggerty Six Partners, LLC, approved by Council on December 18, 2024, pursuant to CR 431-24, in connection with Petition 2024-02-02-03, previously approved by Council on April 15, 2024, pursuant to CR 135-24, the Council does hereby approve an amendment to the Shoppes at College Park Planned General Development agreement between the City of Livonia and Haggerty Six Partners, LLC, amending paragraph 1.6 of the agreement which addresses the timing of construction of the project's residential and retail components, as follows:

1.6 The parties recognize that a development of this size typically includes project phases. Under Section 5.02(5)(G) of the City's Zoning Ordinance, no commercial structure shall be constructed before the construction of not less than thirty (30) percent of the dwelling units approved as part of the development. To expedite the opening of the retail buildings, the developer shall be permitted to construct and open the commercial structures (including the retail buildings and grocery store) after (i) the installation of the foundation for the apartment building; or (ii) the posting of a bond with the City in an amount of One Million Dollars(\$1,000,000).

and the Mayor and City Clerk are hereby authorized to execute said Amended Agreement, approved as to form and substance by the Department of Law, for and on behalf of the City of Livonia and to do all things necessary or incidental to the full performance of this resolution.

<i>UNFINISHED BUSINESS ITEM 13 (Regular Meeting of April 14, 2025)</i>
--

Motion:	Donovic
Second:	Toy
Ayes:	Scheel, Morgan, Toy, Donovic, Ptashnik and McCullough
Nays:	None
Absent:	Budzinski

Regular Meeting Minutes of April 15, 2024

On a motion by Councilmember Donovic, supported by Councilmember Budzinski, it was:

#135-24 RESOLVED, that having considered a communication from the City Planning Commission, dated March 20, 2024, approved for submission by the Mayor, which transmits its resolution #03-10-2024, adopted on March 19, 2024, with regard to Petition 2024-02-02-03 submitted by Stonefield Engineering & Design on behalf of Haggerty Six Partners, LLC, seeking special waiver use approval for a Planned General Development consisting of eleven (11) buildings, including eight (8) with approximately 143,000 square feet of retail/commercial space, a 4-story hotel with 101 rooms, a 5-story apartment building with 170 dwelling units, and an existing multi-level parking garage, located at 39200 Six Mile Road, on the north side of Six Mile Road between Haggerty Road and Fox Drive in the Southwest $\frac{1}{4}$ of Section 7, the Council does hereby concur in the recommendation made by the City Planning Commission and Petition 2024-02-02-03 is hereby approved and granted, subject to the following conditions:

1. The Site Plan (Overall), Site Plan (North), and Site Plan (South) marked Drawings C-2, C-3, and C-4, respectively, all dated January 31, 2024, as revised, prepared by Stonefield Engineering & Design, are hereby approved, and shall be adhered to; except as modified below;
2. Building D, Building E, and the Hotel are approved in concept only, and more detailed plans, including site, landscaping, floor, and elevations, shall return to the Planning Commission for further review and approval before any building permits are issued;
3. The Landscaping Plans marked Drawings C-7, C-8, C-9, C-10, C-11, and C-12, and the Landscaping Details marked Drawing C-13, all dated January 31, 2024, as revised, prepared by Stonefield Engineering & Design, are hereby approved, and shall be adhered to, except that two (2) additional full-size trees shall be added to the Six Mile Road frontage to meet the ordinance requirements, and modifications shall be made to the area between the grocery store and the apartment building to provide a better visual screen using full-size evergreen trees;
4. That the Exterior Elevations labeled Apartments (Sheets A-300 & A-301), Grocery (Sheet A-300), Retail Building A (Sheet A-300), Retail Building B (Sheets A-300 & A-301), Retail Building C-1 (Sheet A-300), Retail Building C-2 identified as Retail Drive Thru (Sheet A-300), Retail Building G (Sheet A-300) and Retail Building H (Sheet A-300), inclusive, all dated January 25, 2024, prepared by Bowers + Associates, Inc., are hereby approved and shall be adhered to;

Regular Meeting Minutes of April 15, 2024

5. The Exterior Elevations for Building F Proposed Gym dated February 25, 2024, prepared by Club Studio, is hereby approved, and shall be adhered to;
6. This approval is subject to the Petitioner submitting a Development Agreement to be executed between the City and the Developer addressing items pertinent to the construction of the project as well as the long-term operation of the development, such as, but not limited to, project phasing including timing of the construction of the apartments to coincide with occupancy of any portion of the commercial buildings; divisions, leasing, and separation of ownership; parking; site design standards; permitted and prohibited uses; dimensional standards; and maintenance of utilities;
7. All rooftop mechanical equipment shall be concealed from public view on all sides by screening that shall be compatible with the material and color of other exterior materials on the buildings;
8. The walls of the trash/recycle enclosures shall be a minimum of six feet (6') in height and constructed out of the same masonry used in the construction of the buildings, or in the event a poured wall is substituted, the wall's design, texture and color shall match that of the buildings. The enclosure gates shall be solid steel or durable, long-lasting panel fiberglass;
9. This site shall meet the City of Livonia or the Wayne County Storm Water Management Ordinance, whichever applies, and secure any required permits, including soil erosion and sedimentation control permits;
10. All light fixtures shall not exceed a mounting height of thirty feet (30') and shall be aimed and shielded to minimize stray light trespassing across property lines and glaring into adjacent roadways;
11. The overall average illumination level for the parking lots shall be 1.0-foot candle as provided under Section 7.22 of the Zoning Ordinance;
12. Only conforming signage is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals;
13. That no LED light band or exposed neon shall be permitted on this site, including, but not limited to, the buildings or around the windows;

Regular Meeting Minutes of April 15, 2024

14. The final construction drawings shall include the following changes and additions, subject to the review of the Planning and Inspection Departments: a) bike racks and benches throughout the development, b) EV charging stations in the parking lots, c) a fountain in the detention pond, d) sidewalks along Fox Drive and the pond, and e) a sidewalk along the north side of the main entrance drive from Haggerty Road with a second crosswalk between the parking lot of the grocery store and Building B;
15. That the specific plans referenced in this approving resolution shall be submitted to the Inspection Department at the time the building permits are applied for; and
16. Under Section 13.13 of the Livonia Zoning Ordinance, as amended, this approval is valid for one year only from the date of approval by the City Council. Unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

<i>CONSENT AGENDA ITEM 2 (Regular Meeting of April 15, 2024)</i>

Motion:	Donovic
Second:	Budzinski
Ayes:	Donovic, Budzinski, Ptashnik, McCullough
Nays:	None
Absent:	Morgan, Jolly, Toy



LETTER TO THE LIVONIA CITY COUNCIL

8.

Council Office
September 26, 2025

MEETING DATE

R100625

PRESENTED BY

AGENDA ITEM

BLOCK PARTY: Kathy Faitel, re: to be held Sunday, October 19, 2025, from 2:00 p.m. to 5:00 p.m., on Edgewood Street between Perth and Scone Streets.

BACKGROUND DETAILS

Block party request from Kathy Faitel for Sunday, October 19, 2025 from 2p-5p.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

To approve as submitted.

ATTACHMENTS

1. R100625, Block Party, Kathy Faitel, 14058 Edgewood

APPROVED BY

**REQUEST FOR NOISE WAIVER BLOCK PARTY and/or
BARRICADING OF CITY STREETS**

Send to: Livonia City Council, c/o City Clerk, 33000 Civic Center Drive, Livonia, MI 48154-3097
or hand deliver to the City Clerk's Office at least 8 weeks prior to the planned event

PLEASE PRINT

Date of Application: 1/22/25 Date to appear at a Council Meeting: _____

Name of Neighborhood Representative: Kathy Faitel

Address (please include zip code): 14058 Edgewood St.

Telephone Number with area code: Home: 734-748-1161 Office: _____
~~313~~

Email: Kfaitel@mi.rr.com

Please circle what is being requested – **“BLOCK PARTY”** and/or **“STREET BARRICADING”**

10/19/25 _____ 2:00pm - 5:00pm
Date of Block Party _____ Rain Date _____ Start/end time of Block Party and/or Barricading
and/or Barricading _____ **End time is no later than 10:00 p.m.**

Location of Block Party and/or Barricading: (Be specific. Indicate which streets and between which boundaries).

Scone and Edgewood
Perth and Edgewood

Type of Event: Briefly (Describe activities planned. Music, barbecue, games, etc.) _____

neighborhood gathering
food and games

How many barricades are you requesting (max. 10)? 2

Approximate Number Attending: 25-30

Date of Council Approval/Denial: _____

Council Resolution Number: _____



LETTER TO THE LIVONIA CITY COUNCIL

9.

Engineering
September 29, 2025

MEETING DATE

R100625

PRESENTED BY

Todd Zilincik, P.E., City Engineer

AGENDA ITEM

REQUEST TO AUTHORIZE ADDITIONAL EXPENDITURE: Engineering Division, re: in order to close out the West Chicago Reconstruction Project, Harrison Avenue to Inkster Road, in the amount of \$18,499.08 to Anderson, Eckstein & Westrick, Inc. (AEW), from budgeted funds. (CR 207-24)

BACKGROUND DETAILS

Pursuant to Council Resolution No. 207-24, adopted June 3, 2024, the City Council approved the award of a \$224,556.18 contract to Anderson, Eckstein & Westrick, Inc. (AEW), 51301 Schoenherr, Shelby Township, MI 48315 for construction engineering (CE) services for the West Chicago Reconstruction from Harrison Avenue to Inkster Road.

The road construction was completed in the fall of 2024 and required follow-up paperwork and documentation in order to close out project by the Michigan Department of Transportation (MDOT). Additional inspection and contract administration was required from October 21 through September 21, 2025, in the amount of \$18,499.08 by AEW in order to complete and close out the project. The final contract was increased from \$224,556.18 to the new not-to-exceed amount of \$243,055.26.

The City will be reimbursed 81.85% of the additional amount of \$18,499.08 or \$15,141.50 by MDOT.

In order to close out this project, we respectfully request that the City Council approve the following:

- Approve a payment in the amount of \$18,499.08 from Account #101-447-818-005 (Cont Serv Consultant) to Anderson, Eckstein & Westrick (AEW), Inc., 51301 Schoenherr, Shelby Township, Michigan, 48315 for the additional construction engineering and administrative services for the project, increasing their contract from \$224,556.18 to \$243,055.26.

PREFERRED COUNCIL RECOMMENDATION/RESOLUTION (Please complete this field. Attachments are not to be used in lieu of the recommendation)

In order to close out this project, we respectfully request that the City Council approve the following:

- Approve a payment in the amount of \$18,499.08 from Account #101-447-818-005 (Cont Serv Consultant) to Anderson, Eckstein & Westrick (AEW), Inc., 51301 Schoenherr, Shelby Township, Michigan, 48315 for the additional construction engineering and administrative services for the

project, increasing their contract from \$224,556.18 to \$243,055.26.

SPECIFIC NAME OF PRODUCT AND NUMBER TO BE PURCHASED (if more than one)

n/a

CONTRACT: Amount and/or purchase price and length of contract (with dates if applicable)

n/a

DETAILED WORK BEING PERFORMED

n/a

FISCAL CONSIDERATIONS (Amount requested and Account(s) used. If applicable, Grant Funding information)

\$18,499.08 from budget funds in Account No. 101-447-818-005 (Cont Serv Consultant).

ACCEPTANCE OF BID (Please detail the following: Why accepted, why not lowest bidder, company name, contact person, full address)

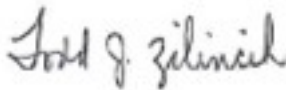
n/a

REASON TO WAIVE BID PROCESS (Emergency, Professional services, No advantage to City and why, Consortium package, etc): n/a

ATTACHMENTS

1. Project 0263-0038-0 Invoice 0160838

APPROVED BY



Todd Zilincik, P.E., City Engineer

Date: September 29, 2025



Don Rohraff, Director of Public Works

Date: September 29, 2025



Debra Peck Lichtenberg, CPA, Finance Director

Date: September 29, 2025



Date: September 29, 2025

Maureen Miller Brosnan, Mayor

DERIVATION OF COST PROPOSAL

CONTROL SECT.-JOB NUMBER

PROJECT DESCRIPTION:

Control Section: 82000

W. Chicago Road - Harrison St. to 125' west of Inkster

Job Number: 215726

Pavement reconstruction with necessary related work

CONSULTANT NAME

Anderson, Eckstein and Westrick, Inc.

DIRECT LABOR:	<u>Person Hours</u>	x	<u>Hourly Rate</u>	=	<u>Labor Cost Per Hour</u>
<u>Classification</u>					
Team Leader - Inspection	1.50		\$44.25		\$66.38
Graduate Engineer	13.00		\$33.00		\$429.00
Team Leader - Survey	2.00		\$40.50		\$81.00
Engineering Aide I - Office Admin	8.70		\$25.25		\$219.68
Engineering Aide I - Office Admin	6.40		\$26.75		\$171.20
Engineering Aide II - Office Admin	1.60		\$24.50		\$39.20
Principal Engineer	6.00		\$70.00		\$420.00
Team Leader - Inspection	14.00		\$42.00		\$588.00
Engineering Aide III - Office Admin	21.40		\$34.50		\$738.30
Engineering Aide III - Office Admin	8.60		\$36.25		\$311.75
Engineering Aide III - Inspection	6.50		\$36.00		\$234.00
Engineering Aide III - Inspection	17.50		\$34.00		\$595.00
Project Manager	28.00		\$55.29		\$1,548.12
Project Manager	8.50		\$62.50		\$531.25
Total Hours	143.70		Total Labor		5,972.87

OVERHEAD:

x 169.32% = Total Overhead \$10,113.26

(Total Labor)

FACILITIES COST OF CAPITAL:

x _____ = Total F.C.C. \$0.00

(Total Labor)

DIRECT EXPENSES:

(Listed by Item at Actual Cost - NO MARKUP)

Total Direct Expenses: _____

Total Consultant Cost \$16,086.16

CONSULTANT FEES

FIXED FEE:

15% = Total Fixed Fee 2,412.92

(Total Labor + Total Overhead) x

SUBCONSULTANT FEES

Total Subconsultant Fees: _____

TOTAL COSTS \$18,499.08



ANDERSON, ECKSTEIN & WESTRICK, INC.
CIVIL ENGINEERS SURVEYORS ARCHITECTS
51301 SCHOENHERR RD. SHELBY TOWNSHIP, MI 48315
www.aewinc.com p(586)726-1234

INVOICE

September 29, 2025

Project No: 0263-0038-0

Invoice No: 160838

CITY OF LIVONIA - ENGINEERING
ATTN: TODD ZILINCIK
12973 FARMINGTON ROAD
LIVONIA 48150-4202

Project 0263-0038-0 W. CHICAGO RECON. (HARRISON-INKSTER)
CONTROL SECT - JOB # 82000 - 215726
FOR: CONSTRUCTION ENGINEERING AND SURVEY STAKING SERVICES

Professional Services from October 21, 2024 to September 21, 2025

Professional Personnel

	Hours	Amount	
CONSTRUCTION STAKEOUT			
TEAM LEADER	2.00	81.00	
RESEARCH/REVIEW			
PRINCIPAL ENGINEER	6.00	420.00	
PRINTS			
ENGINEERING AIDE II	1.60	39.20	
CONTRACT ADMINISTRATION			
LICENSED ENG/SUR/ARC	36.50	2,079.37	
GRADUATE ENG/SUR/ARC	9.50	313.50	
ENGINEERING AIDE III	30.00	1,050.05	
ENGINEERING AIDE I	15.10	390.88	
MEETINGS			
GRADUATE ENG/SUR/ARC	3.50	115.50	
CONSTRUCTION OBSERVATION			
TEAM LEADER	15.50	654.38	
ENGINEERING AIDE III	24.00	829.00	
Totals	143.70	5,972.88	
	2.6932 times	5,972.88	16,086.16
	1.15 times	16,086.16	18,499.08
Total Labor			18,499.08
		Total this Invoice	\$18,499.08

