



City Facilities Project

Fire Station Location Analysis

Project Definition:

- Pre-design for New Station:
 - Development of a space program with conceptual site and floor plans to facilitate updated cost estimation.
- Site Location Analysis:
 - Objective evaluation of potential station location sites, providing complimentary response time coverage to that of Downtown Fire Station #1.

Project Objectives:

- Inform continued project development, expanding on the recommendations of the 2021 Municipal Facilities Study and the 2016 Fire Services Study.
- Affirm space program requirements, including defining proposed facility size (Approximately 21,000 GSF) and site requirements (Approximately 2.3 Acres for a 1-Story Site).
- Utilize objective site analysis to identify a shortlist of potential sites for further City action



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City Facilities Project

Fire Station Location Analysis

Critical Commitments:

Public Safety: Prioritize timely protection of the safety, wellbeing, and security of all Golden Valley residents, businesses, visitors, and their property, in all areas of the city.

Firefighter Safety and Health: Respect the service and sacrifice of firefighters with facilities and resources that meet modern best practices for firefighter safety, health, wellness, and equity.

Station Location Selection Priorities:

Maximize Safety of Residents and Property: Facilitate prompt and consistent emergency response to all Golden Valley residents, businesses, visitors, and their property, in all areas of the city, with a location that complements the service area of Downtown Fire Station #1.

Stewardship of Taxpayer and Public Resources: Integrate consideration of project cost priorities – acquisition, development, construction, operations, and maintenance – for long-term life-cycle cost value.



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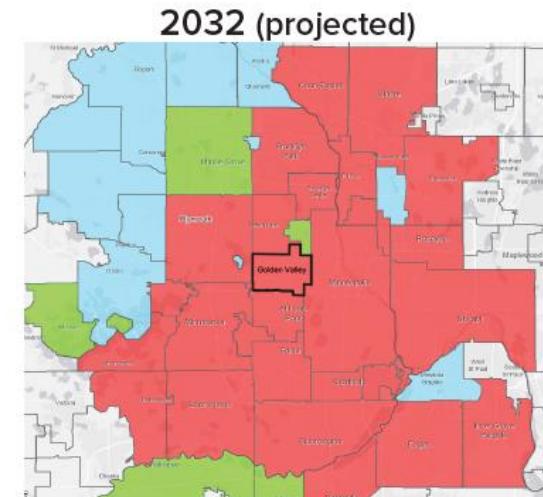
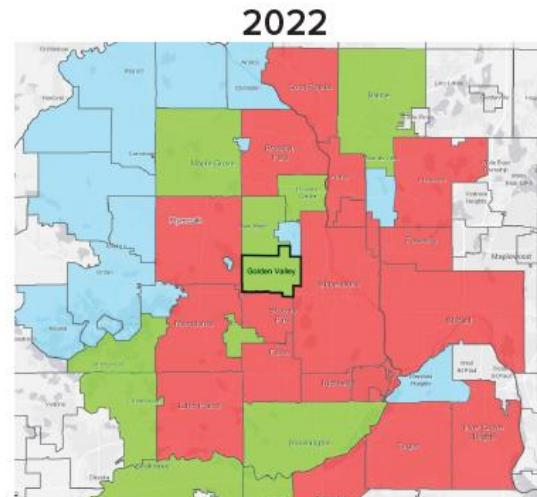
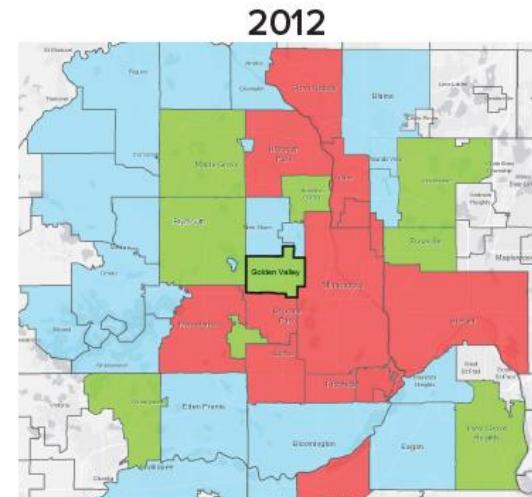
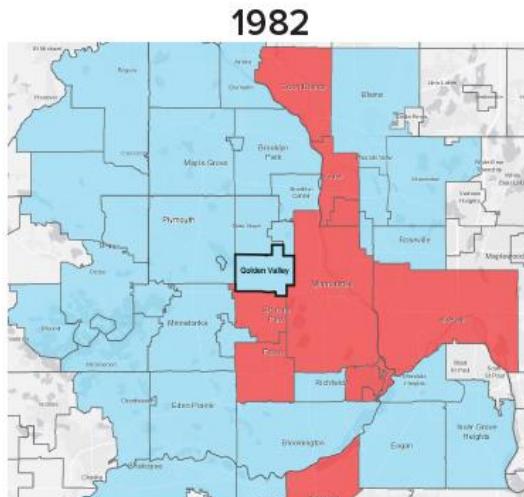
City Facilities Project

Fire Department Operations in Transition

Why Now?

1. Operational Transition: Supporting Hiring & Retention

Golden Valley is facing challenges at hiring and retaining staff. A transition from a paid-on-call 3-station model to a 24/7 duty-crew 2-station model would ensure service consistency and quality and do so most cost-effectively.



Paid On-Call, No Duty Crews
 Combination (Paid On-Call & Full-Time Staff, Some Duty Crews)
 Career (All Full-Time Staff) or Combination With 24/7 Duty Crews





City Facilities Project

Fire Department Operations in Transition

Why Now?

2. Facilities for 24/7 Duty Crew Services

Duty Crew operations staff stations on a shift model, ensuring firefighters are at a station to immediately respond when calls come in. Fire Stations must provide facilities that support this, with dedicated kitchens for meal preparation, locker and shower spaces for all genders, sleeping quarters, and onsite training opportunities that allow firefighters to skills and team-build on-shift.



Dedicated locker area for firefighter turnout gear



Day room and kitchen with features to support healthy eating and camaraderie-building



Training opportunities integrated into apparatus bay architecture



Well-designed sleeping quarters provide privacy and high-quality sleep for 24/7 resiliency





City Facilities Project

Fire Department Operations in Transition

Why Now?

3. Firefighter Health & Safety: Existing Facilities Do Not Comply

Contaminant Management: Building plan zoning and separation of mechanical systems to restrict movement of contaminants within the building reduces firefighter exposure to carcinogens.

Sleep Deprivation: Sleep deprivation and sleep disorders impact firefighter cognition, motor function, reaction time, and long-term health; sleep quarters with privacy and acoustic separation and individual control of daylight, lighting, temperature provide a healthy sleep environment.

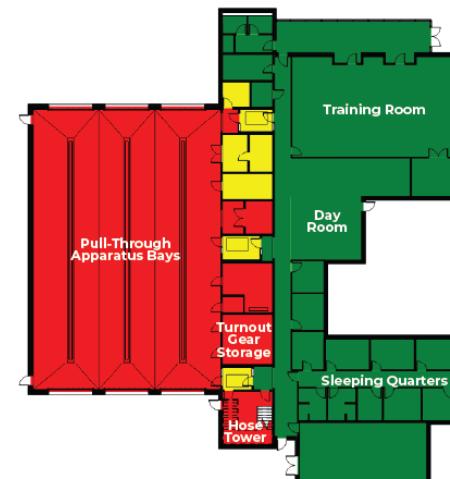
Building Personal Connections: Because of trauma experienced on the job, first responders are at an elevated risk for post traumatic stress and suicide. Communal spaces encourage socialization, with elements that honor a department's history and sacrifices to build a sense of common identity.



Firefighter turnout gear stored in apparatus bay; little room for turnout



Apparatus bay used for vehicles, turnout gear, cleaning, storage, and historic vehicle storage



Example Fire Station Floor Plan with colored zones for contamination management and function





City Facilities Project

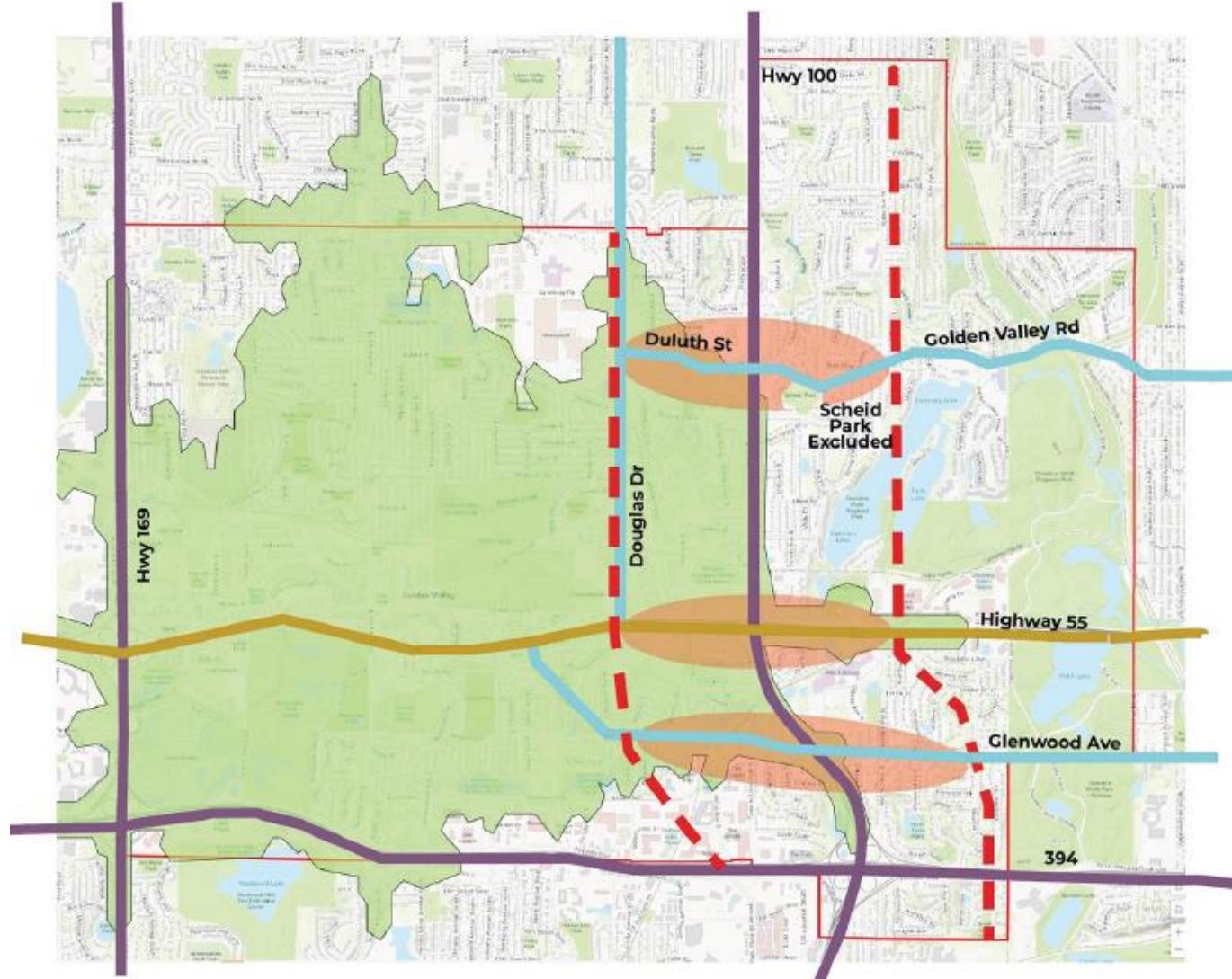
Site Selection Criteria

CORE VALUES	CRITERIA
Location	1 1.1 Location for Response (Calls) 1.2 Location for Response (Area)
Buildable Land	2 2.0 Appropriate Amount of Buildable Land
Cost	3 3.1 Relative Cost to Acquire Site/Land 3.2 Relative Cost to Build
Impact	4 4.1 Civic Presence/Recruitment 4.2 Neighborhood Impact
Traffic	5 5.0 Traffic Issues
Sustainability	6 6.0 Sustainability





City Facilities Project



Provide Complimentary Response-Time Coverage to that of Fire Station #1

The National Fire Protection Association (NFPA) identifies a response time goal of 5 minutes and 20-seconds for fire departments to reach 90 percent of reported incidents. This includes a 4 minute travel time, and 80 seconds of turnout time.

In order to provide complimentary coverage to Fire Station #1, the new station should have good access to Highway 100, facilitating access to the NE, E, and SE parts of the city. The most direct access to Highway 100 is provided by the existing connections at:

- Duluth St. access from the North of the City
- Highway 55 access from the Central part of the City
- Glenwood Ave. access from the South of the City

Within a 4-minute Travel Time, the Downtown Fire Station #1 only:

- Protects 48% of the area within the City Limits
- Reaches 59% of historic calls





City Facilities Project

Anonymous Site Analysis: Process & Outcomes

Working within the Zone of Development centered on Highway 100, and in a half-a-mile on either side (within which a new station would provide complimentary coverage to the Downtown Fire Station #1), BKV Group explored potential parcels within the North, Central, and South Zones, focused on major intersections that facilitate Fire Department speed of access.

PROCESS:

Anonymous Site Identification:

- BKV design team analysis of potential sites using numerical site criteria.
- Presentation of matrix of analysis outcomes presented to Golden Valley staff without addresses or locations.

Analysis Process:

- 13 general site areas, with a total of 37 distinct parcels evaluated within matrix, including the sites for existing Stations 2 and 3.
- Some locations were analyzed with different combinations of parcels
- Anonymized test fits performed on top performing options.

OUTCOMES:

Lowest-Ranked Sites:

- Biggest challenges: poor location for response times (both calls and area), highest costs of land acquisition and/or relocation.

Highest-Ranked Sites:

- Biggest benefits: beneficial location for response (both calls and area), closer to average costs to acquire and build.

Golden Valley Fire Station #2 Site Scoring Matrix						
	Selection Factor	SITE 23f	SITE 21c	SITE 23b	SITE 23c	SITE 23d
1.1	Location for Response (calls)	15.22	10.87	15.22	15.22	15.22
1.2	Location for Response (area)	11.60	10.40	11.60	11.60	11.60
2	Appropriate Amount of "Buildable Land"	3.74	3.56	3.75	5.83	7.00
3.1	Cost to Acquire	-12.89	-8.13	-8.67	-12.07	-17.07
3.2	Relative Cost to Build	-6.50	-6.10	-6.25	-5.00	-1.50
4.1	Civic Presence/ Recruitment	2	5	2	2	2
4.2	Neighborhood Impact	-1	-1	-1	-1	-1
5	Traffic Issues	0	0	0	0	0
6	Sustainability	3.5	0.5	3.5	3.5	3.5
		TOTAL SCORE	15.67	15.10	20.15	20.08
						19.75

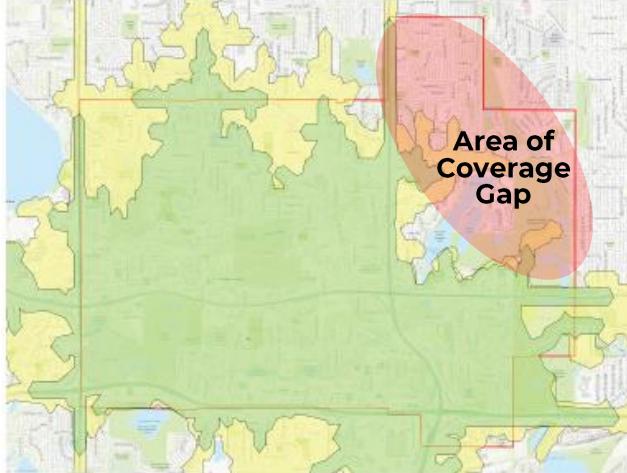
Sites listed above are those that ranked highest in ongoing evaluation, as of parcels in consideration prior to the 1/20/23 City Council Workshop. The City Council requested additional sites be evaluated through this matrix; those are listed as "Under Consideration" in the full matrix.





City Facilities Project

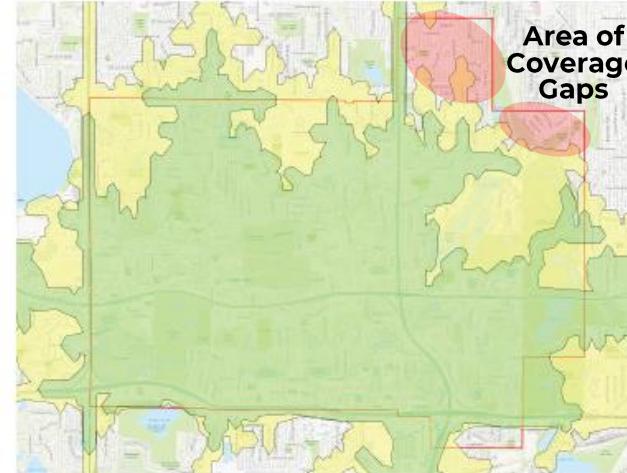
Highest Ranked Sites per Zone



Highest-Ranked Site in the South Zone

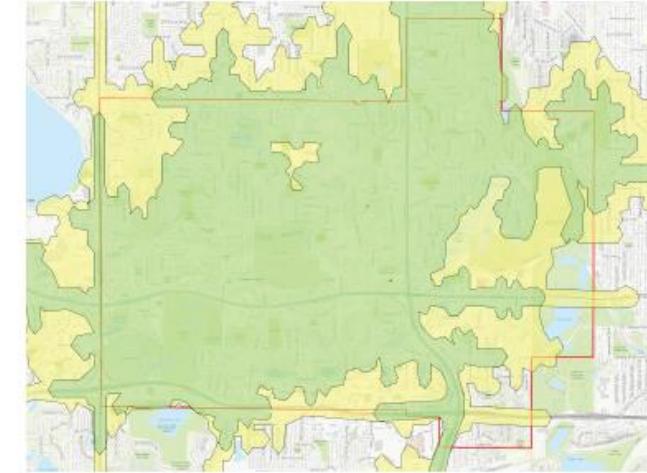
- Site #: 1 - Intersection of Glenwood Ave and Xenia
- Scoring: 9.24
- Amount of City Covered within 4-minute Travel Time (incl. Fire Station #1): 68%
- Amount of Historic Calls Reached (incl. Fire Station #1): 76%

Areas of the City indicated in green represent the amount of the City that can be reached within a 4-minute Travel Time by either Downtown Fire Station #1 or the new station in the location listed. Areas of the City bound in yellow can be reached in an additional 60 seconds of Travel Time.



Highest-Ranked Site in the Central Zone

- Site #: 11a - Intersection of Hwy 55 and Shaper Dr.
- Scoring: 3.84
- Amount of City Covered within 4-minute Travel Time (incl. Fire Station #1): 72%
- Amount of Historic Calls Reached (incl. Fire Station #1): 79%



Highest-Ranked Site in the North Zone

- Site #: 23a - Intersection of Golden Valley Rd. and Regent Ave.
- Scoring: 20.8
- Amount of City Covered within 4-minute Travel Time (incl. Fire Station #1): 76%
- Amount of Historic Calls Reached (incl. Fire Station #1): 86%

Green Indicates a 4-minute Response Time
Yellow Indicates a 5-minute Response Time



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City Facilities Project

Project Timeline





City Facilities Project

Question & Answer



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City Facilities Project Existing Fire Stations



Fire Station #2 (Constructed 1979)

- Constrained from expansion by Laurel Apartments (North and West)
- Location, with no direct access to Highway 100, does not provide 4-minute coverage of sufficient extents of the East and North of the City as a complement to the coverage of Fire Station #1.



Fire Station #3 (Constructed 1979)

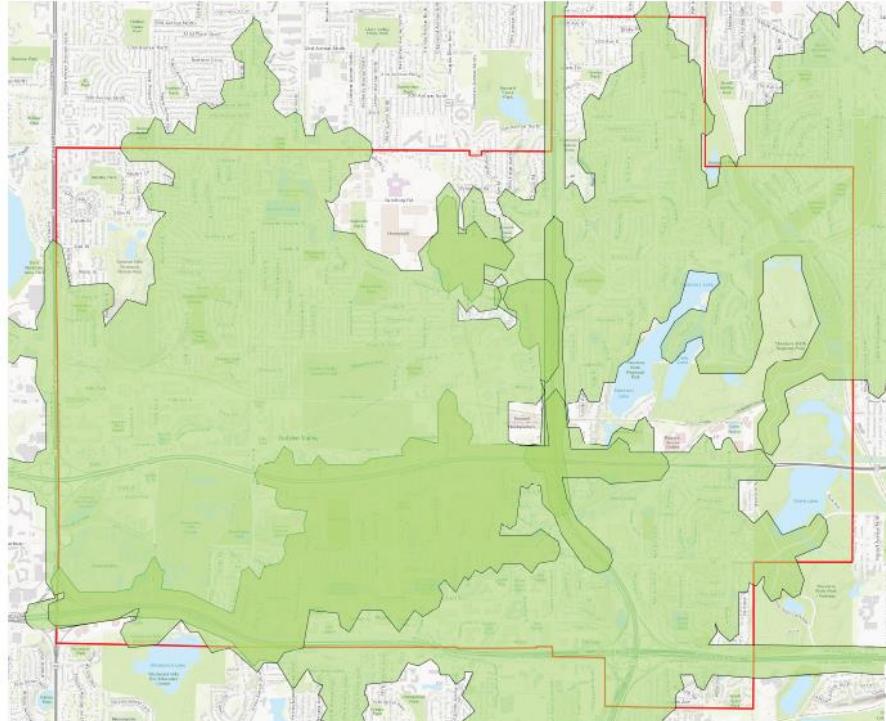
- Constrained from expansion by Bonnie Lane (East), Residential Property (North), and Bassett Creek (West)
- Location is further east than recommended, and would not be able to provide complementary coverage to Station #1





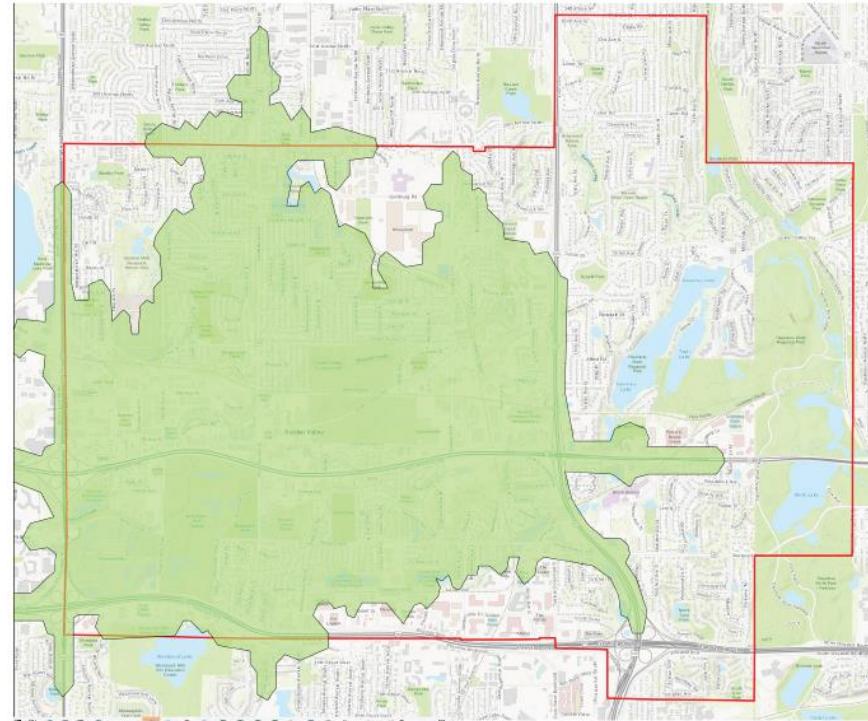
City Facilities Project Existing Response Time Maps

Existing Three-Station Model



This model protects 8.5 square miles and reaches 90.2 percent of the historic calls analyzed within a 4-minute travel time, but response-from-home (paid on-call model) adds 4 minutes+ to overall response.

One-Station Model: Existing Downtown Location

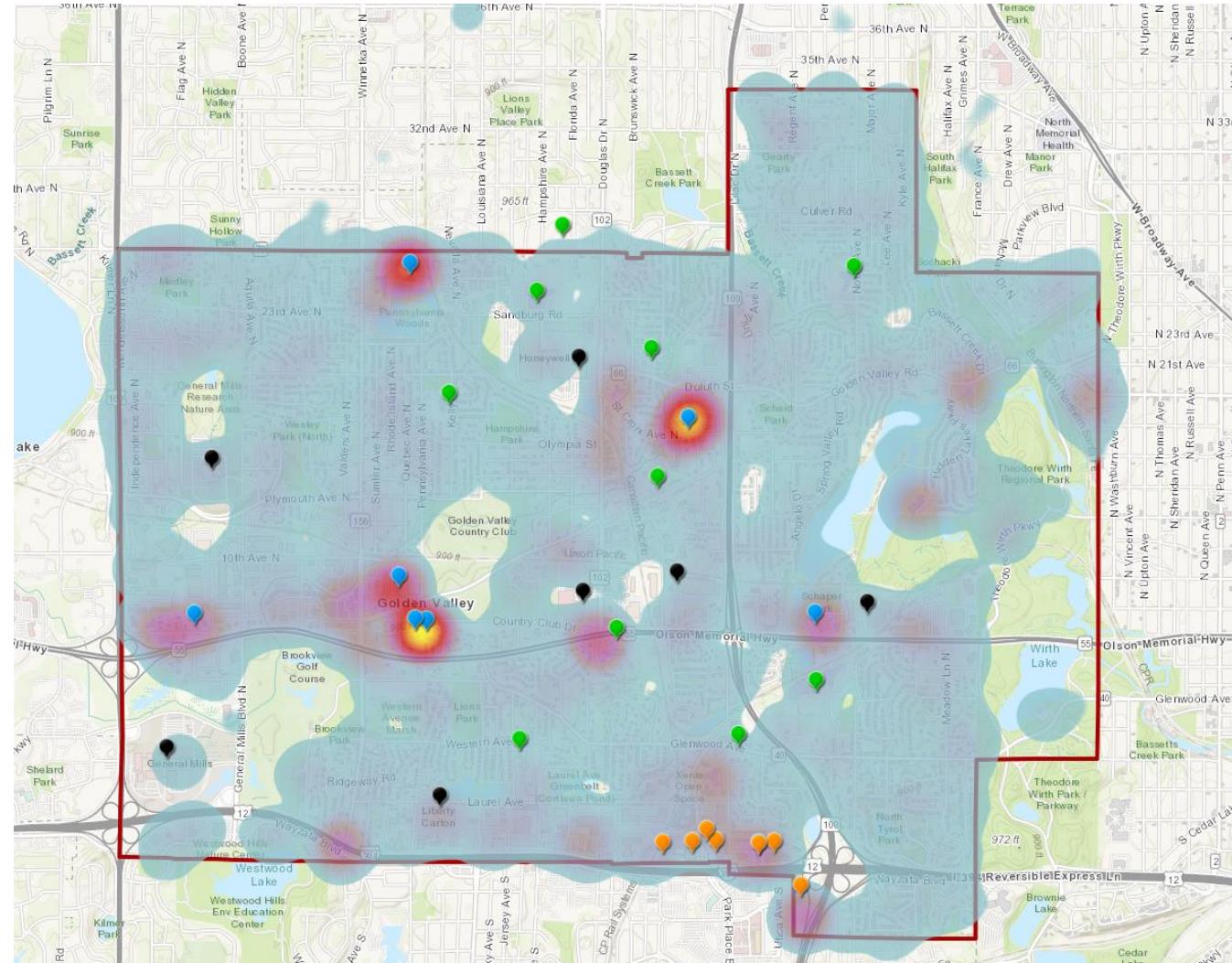


This model protects the smallest amount of the city, 5.07 square miles and reaching only 58.9 percent of calls, with almost no coverage east of Highway 100. While this location is valuable for a centralized Public Safety building, it cannot provide a consistent level of service to all properties across the city.





City Facilities Project Concentration of Historic Calls



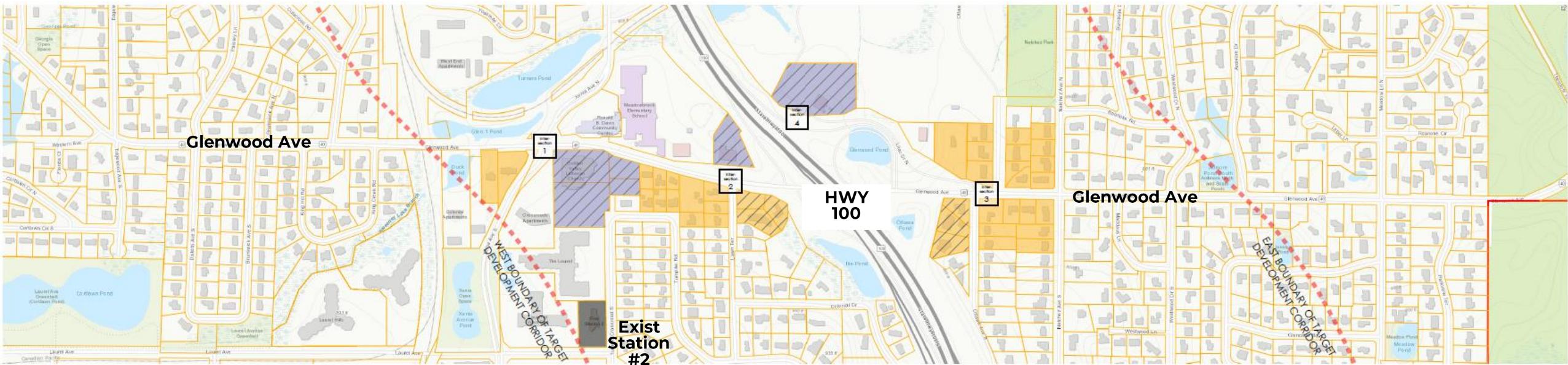
2,885 calls from 2018 through mid-2022

- Large-area Building
- Senior Living Facility
- School
- High-rise Construction





City Facilities Project Development Corridor: Glenwood Ave



LEGEND

- Residential Parcel under consideration
- Commercial Parcel under consideration
- Existing Fire Station Parcel
- \ / Hatch indicates parcel that has been determined to be unworkable because it is too small, inappropriately located, or unobtainable
- The new remote fire station site needs to be sized approximately equal to the red rectangle at left





City Facilities Project Development Corridor: Highway 55

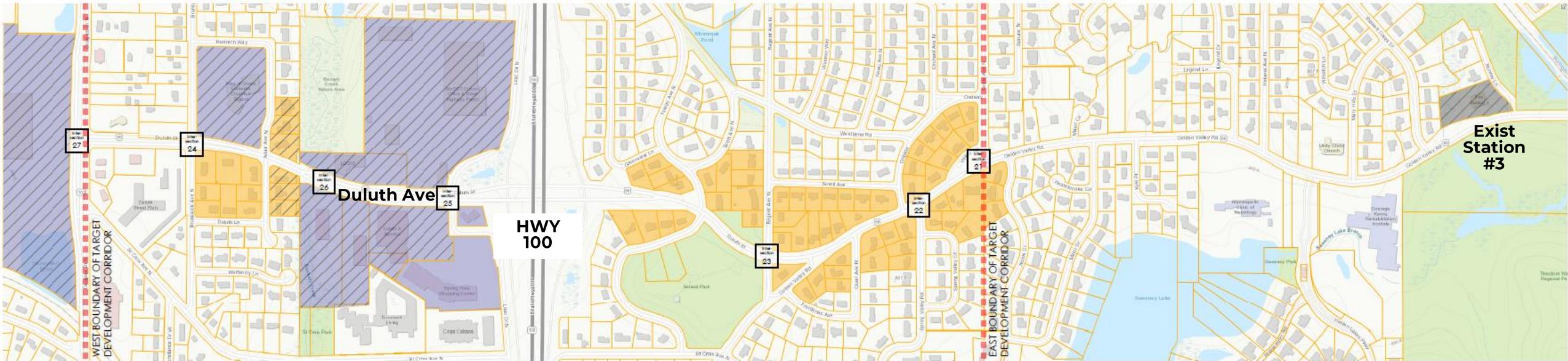
LEGEND

- Residential Parcel under consideration
- Commercial Parcel under consideration
- Existing Fire Station Parcel
- Hatch indicates parcel that has been determined to be unworkable because it is too small, inappropriately located, or unobtainable
- The new remote fire station site needs to be sized approximately equal to the red rectangle at left





City Facilities Project Development Corridor: Duluth Ave



LEGEND

- Residential Parcel under consideration
- Commercial Parcel under consideration
- Existing Fire Station Parcel
- Hatch indicates parcel that has been determined to be unworkable because it is too small, inappropriately located, or unobtainable
- The new remote fire station site needs to be sized approximately equal to the red rectangle at left

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