

City of Golden Valley, Minnesota

Review of
Fire/Rescue Services
FINAL REPORT

September 6, 2016

Prepared by Stephen Brezler

Fire Rescue Analytics LLC

and



ARCHITECTURAL DESIGN FOR PUBLIC SAFETY

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EXECUTIVE SUMMARY

Five Bugles Design and Fire Rescue Analytics LLC were contracted to conduct a facility and operational review of the Golden Valley Fire Department (GVFD). The purpose of the study was to assess the location of the city's three fire stations and consider alternative options, if any, on their locations. The study also was to assess the operation of GVFD, in particular how it might be improved, its sustainability, efficiency and effectiveness. Regarding the location of fire stations and personnel deployment, the following were to be considered:

- Does the 35 year old three station model of fire protection services established in Golden Valley still meet the need of the City? If not, what configuration would provide the best, cost effective and sustainable service model to Golden Valley?
- Review the current and future operations of the fire department and provide information on how services may be impacted in the future because of station realignment or operational changes.

Golden Valley's fire department is cost-efficient. It provides good, reliable service, and its fire equipment is excellent. Personnel are well trained and the city gets a 'big bang for its buck' in fire protection. However, its current staffing model, which is primarily paid-on-call (POC), does not result in *13-15 personnel arriving on scene* at a structure fire within eight minutes, as recommended by the National Fire Protection Association.

The location of three fire stations in the city provides good travel times as the vast majority of the city can be reached within three minutes or less from one of the three stations. However, most of the effective coverage from Existing Stations 2 and 3 is outside of the city. The location of Station 1 (Headquarters) is good. Of Existing Stations 2 and 3, Station 3 is the better situated. It should be noted that POC firefighters must first receive the alert and then respond to the fire stations which adds critical time to all such responses.

National standards for response time recommend a four minute travel time to 90 percent of the calls occurring in a jurisdiction. Four minutes is one of three time segments considered when calculating total response time; call-taking / dispatch and reaction times are the other time segments. To reach a fire within the recommended time for the *first fire unit to arrive at the scene* of a structure fire or medical call of six minutes, twenty seconds requires that personnel be on the apparatus and leave a fire station within one-minute of receiving a call. GVFD can meet this goal when there is a duty crew, at other times it cannot since POC personnel must first drive to the fire station.

Golden Valley has very low historical loss when it comes to structure fires. On average, Golden Valley experiences 11 structure fires each year, the average loss being about \$66,000. Call volumes for GVFD have been stable over the past five years. Call volumes are expected to slowly increase in the future due to increasing population density within the City. Policy changes, such as GVFD becoming responsible for medical response, will also increase call

volume (this condition will become more likely with on-duty crews capable to respond quicker when needed). The study recommends that the police department continue to provide this service, supported by the fire department, when necessary. GVFD handles about 700 calls annually.

Recommendations to improve response time and deployment are:

- Construct a new headquarters station near Duluth Street and Regent Avenue North and maintain a smaller fire station at or near the current headquarters station (7800 Golden Valley Road).
- Staff at least one station with three firefighter's on-duty 24/7, with a goal of eventually providing staffing at two stations. Staffing can include either scheduled part-time or career personnel.

Analysis for this study determined that when duty crews are staffed, units were on-scene two-and-a-half to four minutes faster. By providing staffing, either by scheduled part-time or career firefighters, Golden Valley can eliminate one fire station and still improve response times.

Maintaining a volunteer or POC force is a problem for many communities in Minnesota, which are primarily volunteer or POC. The study determined that of the current 45 POC members in Golden Valley 43 percent are eligible to take retirement in the next 10 years. GVFD does a good job of recruiting though continuing to staff GVFD almost entirely by POC staff is likely to be difficult. Many departments in the Minneapolis metro area are adding scheduled POC or Duty Crews to improve retention and improve response times including Plymouth, Minnetonka, Saint Louis Park, and Eden Prairie. This study recommends that Golden Valley do the same, though facilities will have to be updated as none of the fire stations now have adequate facilities for personnel 24/7.

This study makes the following recommendations regarding the sustainability, effectiveness and efficiency of GVFD operations:

- Transition the fire department to scheduled part-time (duty crews).
- With any changes to existing fire stations or constructing new ones, add sleeping and other accommodations to allow 24/7 staffing.
- Implement a policy to have a command officer on-call 24/7 and provide a command vehicle for this purpose.
- Under a two station deployment model eliminate one engine and one rescue (relocate remaining equipment to other fire stations).
- Explore the possibility of consolidation with the West Metro Fire Department, Robbinsdale, and Plymouth Fire Departments.

These recommendations as well as current facility conditions have an impact on the department's existing stations. The newest of the facilities, Existing Head Quarters Station, was constructed in 1966 with an addition added in 1995; since that time the department has added a number of full time and part-time staff with little or no additional space added. Existing Stations no. 2 and 3 were constructed in the late 1970's and have had minimal maintenance done in the intervening years; both are reaching the end of their useful lives both physically and operationally with existing Station no. 3 in the worst condition. None of these facilities has capacity for 24/7 duty crews that are recommended within the report. Transitioning to a two station model with duty crews will also require the repositioning of some equipment requiring a minimum of 5 bays at one station and 4 bays the second station instead of the 3 bays currently available at each existing station. Further, there is little available space surrounding the existing facilities for substantial additions.

The report recommends the department construct two new stations to support the new operational model of providing for part-time duty crews. As these new facilities are constructed they should include, sufficient office space for recommended command and support functions, living quarters to support 24/7 operations, training, both lecture style and physical, for onsite training programs and adequately sized apparatus bays and support functions for today's larger trucks and equipment.

Recommendations regarding space needs within the report have been developed to support the recommended two station model. Two options are detailed; one provides for a single construction phase to build the requisite facilities and second option that provides for a phased approach.

Facility Option No. 1-Single Project Solution (Preferred Option): Construct a New Main Station in the vicinity of Existing Station 1 and a New East Station near the intersection of Duluth Street and Regent Avenue. Close Existing Station 2. Renovate the Existing Headquarters Station as Police Department space and garage space for Police Department use. This option has a potential project cost of \$15,400,000 to \$17,800,000 and will solve the departments space needs for twenty years including the addition schedule POC or Duty Crew personnel.

Facility Option No. 2-Phased Construction: Construct a New East Station as the Main Station (Department Headquarters). Renovate Existing Station 1 to convert office space to living quarters. Perform required maintenance at Station no. 2. Plan for the eventual closing of Existing Station 2 and the need to construct a new station at or near the existing City Government Campus. This option has an initial potential project cost of \$10,900,000 to \$13,400,000. And will require a future project of 5,500,000 to \$5,700,000 (in 2016 dollars) to construct a new station near the existing Government Campus in 5-10 years to address the need to add scheduled POC or Duty Crew personnel and relocated equipment to this area of Golden Valley.

It is not recommended that the City attempt to add living quarters and the required additional apparatus bay to the existing public safety building without a detailed study of potential impacts to the Government Campus including future growth requirements of the Police Department.

As with all studies of this nature, there is the option to do nothing. If the City follows that option and maintains the current POC, three station model you can expect the following results:

- The current response times will remain and the department will continue to have challenges meeting national standards during unstaffed periods.
- The department will continue to fall behind neighbors such as St. Louis Park who have implemented a combination of full time, part-time and POC staffing.
- Recruitment and retention issues will likely grow as the aging members of the department retire and younger members continue to experience issues with other commitments. A problem being experienced throughout the Minneapolis/St. Paul metro area.
- Expenditures will be necessary at all stations including expanded office space requirements at Station no. 1, maintenance and repair required at Stations 2 and 3, and the likely need to renovate or add space for duty crews at all locations to resolve increasing problems meeting response times.
- This option has a potential project cost of \$755,000 to \$1,325,000 to perform required maintenance on the existing facilities.

ACKNOWLEDGEMENTS

We wish to thank the officials and staff of the City of Golden Valley for their assistance and cooperation during this study. Fire Chief Crelly and others were gracious in assisting us during our initial site visit to Golden Valley. In particular we wish to thank Administrative Assistant Jill Lund. Ms. Lund provided outstanding assistance in getting the necessary data and information together for the study. We also wish to acknowledge Michael Clark, Project Architect for Five Bugles Design. As the prime contractor for the fire station review study, Mr. Clark effectively coordinated this project with the GVFD and city staff. Finally, it was the numerous officers and firefighters that met with us on our site visits that contributed mostly to this project. Their thoughts on the current and future services of the Golden Valley Fire Department were very important for this project.

The following individuals were important contributors to this study.

City of Golden Valley

Tim Cruikshank	City Manager
Jason Sturgis	Police Chief
John Crelly	Fire Chief
Rick Hammerschmidt	Deputy Fire Chief
Steven Baker	Battalion Chief
Jill Lund	Administrative Assistant
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Hennepin County

Jeffrey Schlumpberger	911 Communications
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George Esbensen	Fire Chief
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Saint Louis Park Fire Department

Steve Koering	Fire Chief
John Wolf	Deputy Fire Chief

I. INTRODUCTION

To examine the opportunities to make its fire department more effective and efficient, Golden Valley approved a study to review the department's operation and deployment. In particular, the City sought to answer the following questions regarding deployment of the Golden Valley Fire Department (GVFD) services:

1. Does the 35 year old three station model of fire protection services established in Golden Valley still meet the needs of the City? If not, what configuration would provide the best, cost effective and sustainable service model to Golden Valley?
2. If Station 2 were to be relocated, what would be the best location for a new station?
3. If Station 3 were to be relocated, what would be the best location for a new station?

In parallel with the above questions, the study was to:

1. Review the demand for services, location of responders, major impediments to response and potential hazards in the community.
2. Analyze GIS response time studies and review the possibilities to eliminate one or two stations, and provide commentary regarding the costs of facilities and personnel the City can expect to experience with any such changes. .
3. Review the current and future operations of the fire department and provide information on how services may be impacted in the future because of station realignment or operational changes.

Within the context of the scope of work, this report discusses the following areas:

- Department Organization and Operations
- Staffing
- Response Travel Time
- Calls for service
- Fire station locations
- Mutual & Automatic Aid
- Insurance Services Office
- Training
- Apparatus

Background on the City

Golden Valley is an affluent community with most residents enjoying a high standard of living. The workforce is primarily professional with residents having a median income that is more than the state average. The estimated median household income for Golden Valley in 2013 was 33 percent higher than the state average; \$80,708 versus \$60,702. The estimated median home value for the same year was \$254,040 in Golden Valley versus the state's average of \$158,200. Golden Valley also has a very educated populace, as over 52 percent of its residents have a bachelor's degree or higher.¹

From 1970 to 2010, Golden Valley experienced a population reduction, which since 2010 to 2015 has begun to increase a little. The city's population of 24,246 fell by six percent between 1970 and 1980 and then by another eight percent from 1980 to 1990. Following a smaller population reduction between 1990 and 2000 (three percent), the city's population has stabilized and is expected to increase slightly. The estimated population in 2016 is approximately 21,800 and city planning staff estimates that the city's population will increase to about 25,000 over the next five years, based on new development.

Table 1: Golden Valley Population, 1970-2015²

Year	Population	Percent Change
1970	24,246	-
1980	22,775	(6.1)
1990	20,971	(7.9)
2000	20,281	(3.3)
2010	20,371	.4
2015	21,270	4.4

While the city's resident population has not changed significantly, demographics and the employment situation have, as Golden Valley is clearly an attractive community employment-wise. The Metropolitan Council estimates that an additional 34,000 people work in Golden Valley, increasing the city's daytime population to around 50,000.³ Clearly, the location of Golden Valley with easy access to I-394 and Highways 55, 169 and 100 make Golden Valley

¹ <http://www.city-data.com/city/Golden-Valley-Minnesota.html>

² Ibid.

³ <http://stats.metc.state.mn.us/profile/detail.aspx?c=02394924>

attractive for businesses and commuters. Of the weekday population increase, three employers add about 9,000 employees.

- General Mills 5,500 employees
- Allianz Life 2,047 employees
- Honeywell 1,732 employees

Adding to the potential that fire and rescue services may have to be added or changed is the new development that is already occurring or planned in many areas of the city, especially on its southern border with Saint Louis Park.

Current Development Projects⁴

- Liberty Crossing (Medicine Lake Road and Winnetka Avenue) - Redevelopment of four properties for high density residential, including 55 town home units and a 187 unit apartment building.
- 9000 10th Ave N - Reuse of Gopher News building for call center, conference center, IT department, auto repair and installation, and storage of inventory.
- CenterPoint Energy (6161 Golden Valley Road) - Construction of an office/warehouse building on the property that currently contains the peak shaving equipment and operations. Completed 2016.
- Corner Stone Creek (9280 and 9290 Golden Valley Road) - Consolidation and redevelopment of two parcels for a 45 unit facility for adults with developmental disabilities, administrative offices for Jewish Housing and Programming, and a public multi-purpose space.
- Hello Apartments (9201 Golden Valley Rd) - Redevelopment of two parcels for a 172 unit apartment building with a pool and sixth-floor observation deck looking towards downtown Minneapolis.
- 9000 Golden Valley Road - Construction of a 96 unit senior facility along with the relocation of the Schuett headquarters to a ground floor office.
- Laurel Ponds (305 and 345 Pennsylvania Avenue South) - Construction of 24 detached townhome units with public open space adjacent to Laurel Ave.
- Xenia Apartments (770 Xenia Ave S) - Construction of a multi-generational, market rate apartment building with 372 units located at the northwest corner of Xenia Ave. and Golden Hills Drive.

⁴ <http://www.goldenvalleymn.gov/planning/current-developments/index.php>

- Talo Apartments (5100 and 5200 Wayzata Blvd) - Construction of 303 market rate apartment units and 107 senior living units.
- 5075 Wayzata Blvd – Construction of a 6 story, 126 room Marriott hotel with fitness center, meeting rooms, breakfast bar, and rooftop spa.
- 1601 Utica Ave S, St. Louis Park - Phase 1 Office of the Central Park West project - an 11 story office building (St. Louis Park) with a 7 story parking ramp (Golden Valley).
- 1511 Utica Ave S, St. Louis Park - 6-story, 199-room apartment building and a 38,000-square-foot linear park that straddles the municipal boundary of St Louis Park and Golden Valley.

Fortunately, structure fires do not occur frequently in Golden Valley. However, the city does have some major fire risks such as those where manufacturing and research/ development is conducted. The city also has 16-18 high rise structures, with 17 stories being the tallest. All are sprinkled. The city does have an excellent water supply system; a looped 24-inch system with the smallest main being six inches. Railroad tracks also bisect the city in several locations and can have an impact on response, and may be a hazardous response of their own.

II. REVIEW OF FIRE STATION LOCATIONS, DEMAND AND RESPONSE TIMES

This section begins with the review of fire station locations and the results of the Geographic Information System (GIS) analysis. GIS maps were provided by LOGIS GIS. This chapter concludes with the review of historical demand, fire loss and response times. This section includes recommendations for the fire station deployment based on the analysis.

Fire Station Location Analysis

GVFD provides its services from three fire stations. Its main station (Station 1) is the headquarters station. The fire chief and career staff work at this station where administrative functions are performed. For the purpose of this report stations are referred to as follows:

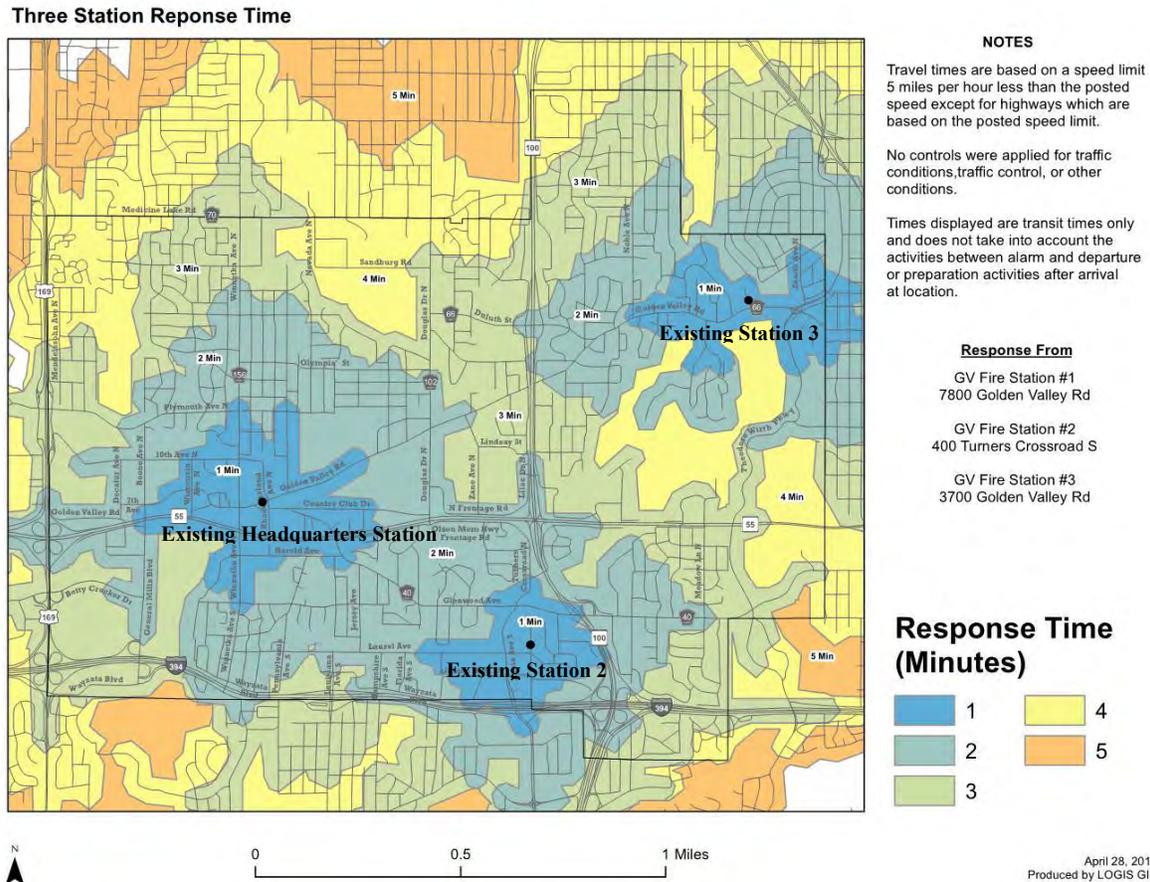
- Existing Station 1 - Existing Headquarters Station, 7700 Golden Valley Road
- Existing Station 2 - Existing Station 2, 400 Turners Cross Road South
- Existing Station 3 - Existing Station 3, 3700 Golden Valley Road
- New Headquarters - New Main Station
- New Station 3 - New East Station

National standards for total response time recommend a six minute, twenty second response time for first truck to arrive on scene for a structure fire with a travel time of four minutes for 90 percent of the calls occurring in a jurisdiction. Four minutes travel time is only one of three time segments considered when calculating total response time; call-taking / dispatch and reaction times are the other time segments. ***Unless noted otherwise Mapping and discussion regarding response time in this report is only considering the travel time. Data shows that Golden Valley call-taking/dispatch and reaction time can add as much as 8-10 minutes when crews are not on duty.***

The analysis shows that Golden Valley can easily meet a four minute travel time from the three existing stations with three minutes or less in most of the city.

Existing Coverage – Excellent coverage is provided from its three fire stations. The vast majority of the city can be reached within three minutes or less from one of the three stations. However, most of the effective coverage from Existing Stations 2 and 3 is outside of the city. This is because the stations are too close to the city’s boundaries. The Existing Headquarters Station is in a good location, coverage wise.

Figure 1: Travel Time Coverage, Existing Station 1, 2 and 3



Analysis shows that it is more effective to have fire stations situated so that most of their travel time coverage is within the city. The benefit to having three stations is that it allows Paid-on-Call (POC) personnel to get to one of the stations faster. If a one or two station model is deployed, the drive time for POC staff may well be a little longer. Most of the POC staff lives closest to Existing Stations 1 and 3, so the time is not likely to change much if these stations are maintained. Of Existing Stations 2 and 3, Station 3 is the better situated.

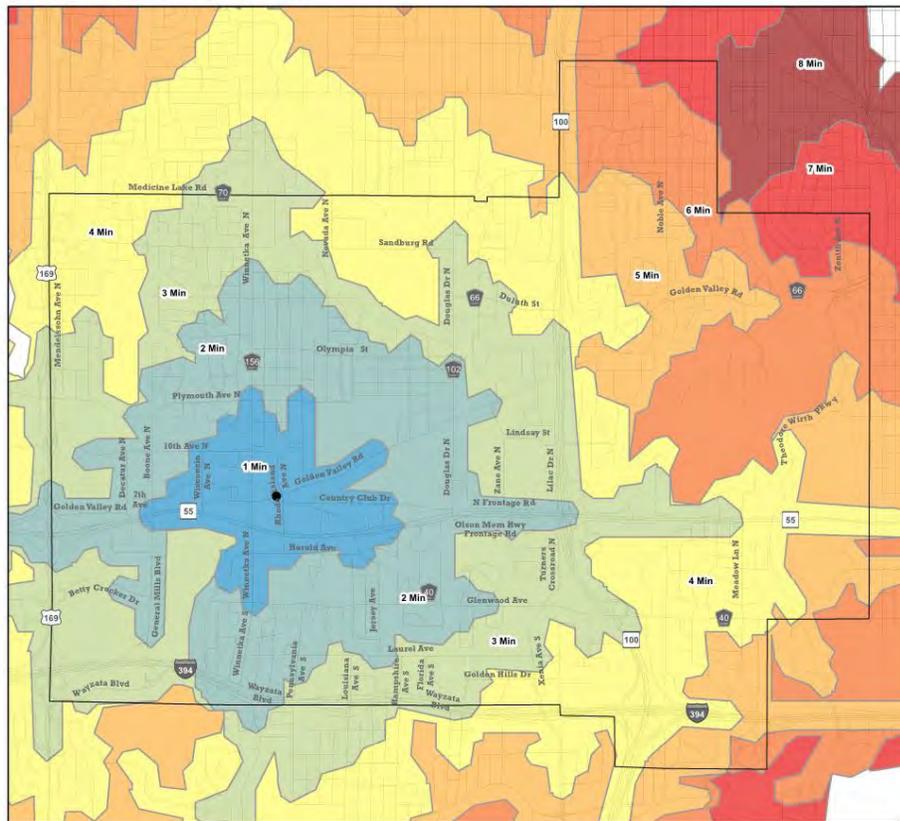
The next section shows the travel time coverage for Golden Valley under a one and two station deployment model.

Coverage by Existing Fire Stations – The analysis in this section shows the coverage from each of the existing fire stations.

Existing Headquarters Station – Travel time coverage from the Existing Headquarters Station is generally good. Coverage of Golden Valley within four minutes can be achieved except in the most southeast and northeast portions of the city, where travel times will range from five to seven minutes.

Figure 2: Travel Time Coverage, Existing Headquarters Station

Response Time Fire Station 1



NOTES

Travel times are based on a speed limit 5 miles per hour less than the posted speed except for highways which are based on the posted speed limit.

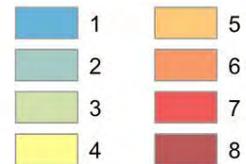
No controls were applied for traffic conditions, traffic control, or other

Times displayed are transit times only and does not take into account the activities between alarm and departure or preparation activities after arrival at location.

Response From

GV Fires Station #1
7800 Golden Valley Rd

Response Time (Minutes)

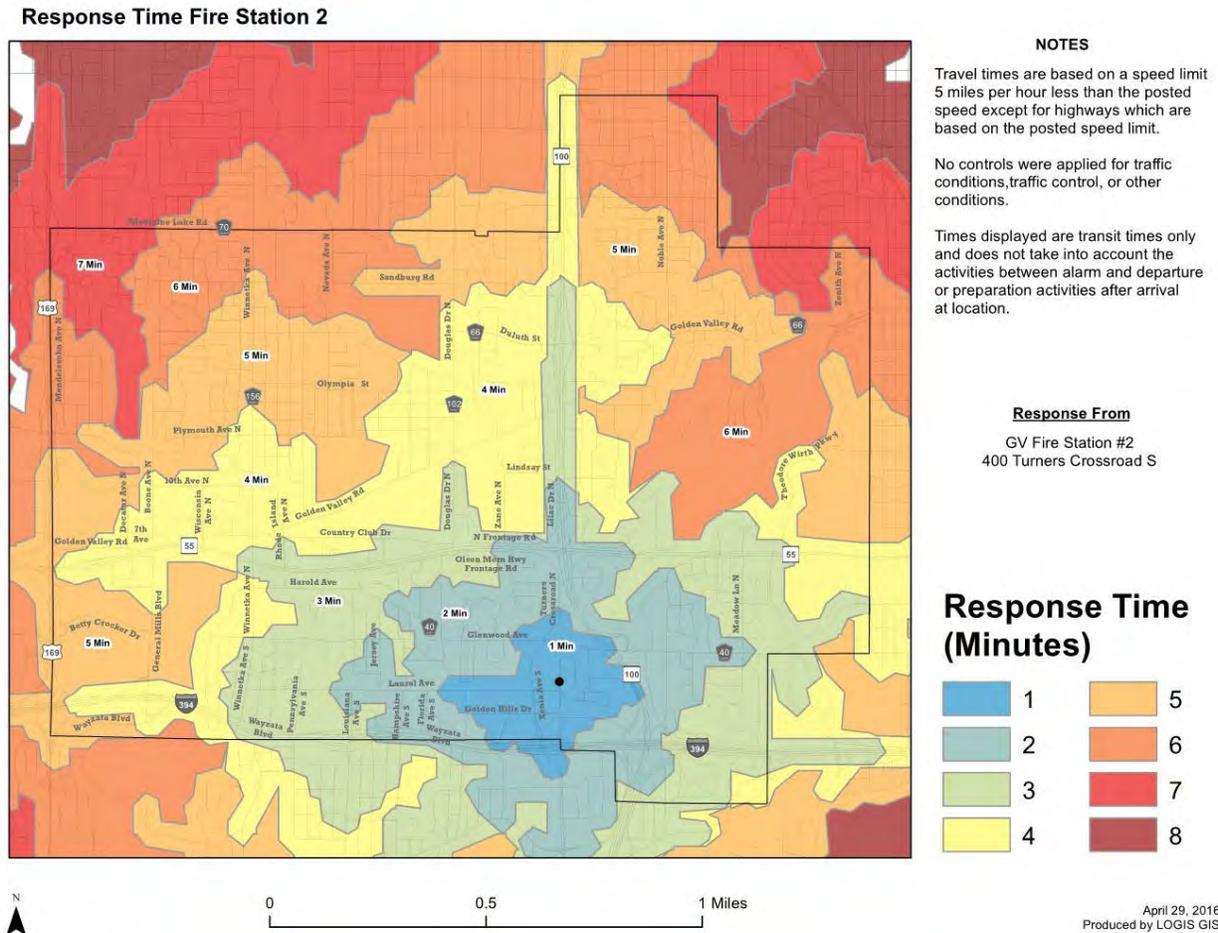


April 28, 2016
Produced by LOGIS GIS

If the city were to maintain the POC staffing model, this solution is not a good one. Total response times would exceed the response times occurring now with three stations.

Existing Station 2 – Station 2 is unable to reach large portions of the city within four minutes. The coverage area of Station 2 is also inefficient because most of its coverage is to Saint Louis Park. Access to Station 2 by POC personnel is also difficult due to the Highway 55 corridor and narrow residential streets. Turners Crossroad is no longer a main north-south roadway.

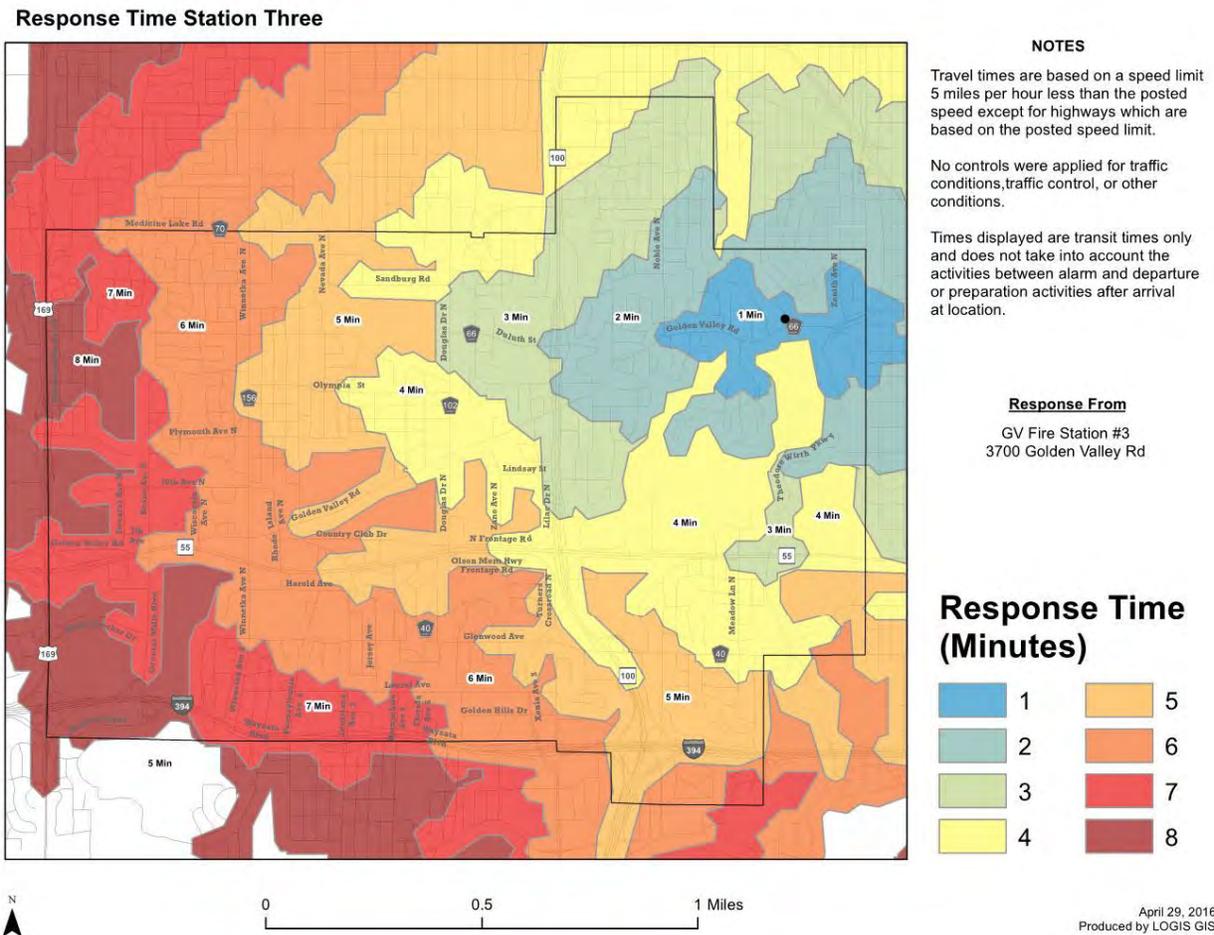
Figure 3: Travel Time Coverage, Existing Station 2



Polygons in Figure 3 show that Station 2 has good response times when going north on Highway 100. Most of northwest and northeast Golden Valley has response travel times exceeding five, six, and even seven minutes.

Existing Station 3 – Station 3 is similar to Station 2 as it is located very close to the city’s border. The existing station is reasonable when considered as part of the current three-station model, but not as a single station.

Figure 4: Travel Time Coverage, Existing Station 3



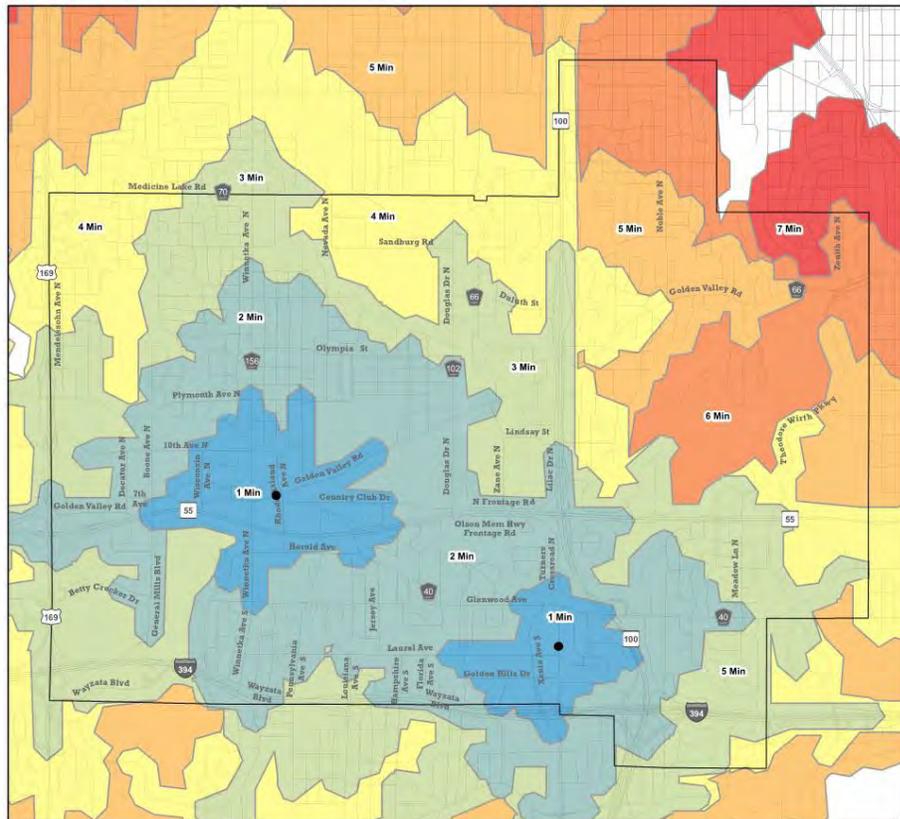
Travel time coverage near the recommended standard of four minutes is only achievable to Douglas Drive north of Highway 55. Most of the area below Highway 55 and west of Douglas Drive will have travel times of six, seven, and even eight minutes or more, if Station 3 were the only station. Station 3 property is also located nearest the Bottineau commuter rail line and thus might be attractive for parking or other uses.

The next section presents the GIS analysis for two-station deployment options, beginning with Existing Headquarters Station and Existing Station 2.

Existing Headquarters Station and Existing Station 2 – The option of keeping Stations 1 and 2 is better than any of the one station options presented earlier. This option does not adequately cover northeast Golden Valley where travel times would exceed six or even seven minutes on most calls, however.

Figure 5: Travel Time Coverage, Existing Stations 1 and 2

Response Time Fire Stations 1 and 2



NOTES

Travel times are based on a speed limit 5 miles per hour less than the posted speed except for highways which are based on the posted speed limit.

No controls were applied for traffic conditions, traffic control, or other conditions.

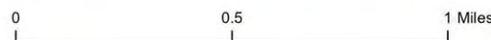
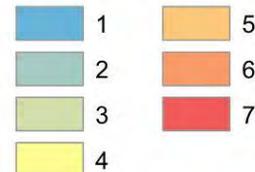
Times displayed are transit times only and does not take into account the activities between alarm and departure or preparation activities after arrival at location.

Response From

GV Fire Station #1
7800 Golden Valley Rd

GV Fire Station #2
400 Turners Crossroad S

Response Time (Minutes)



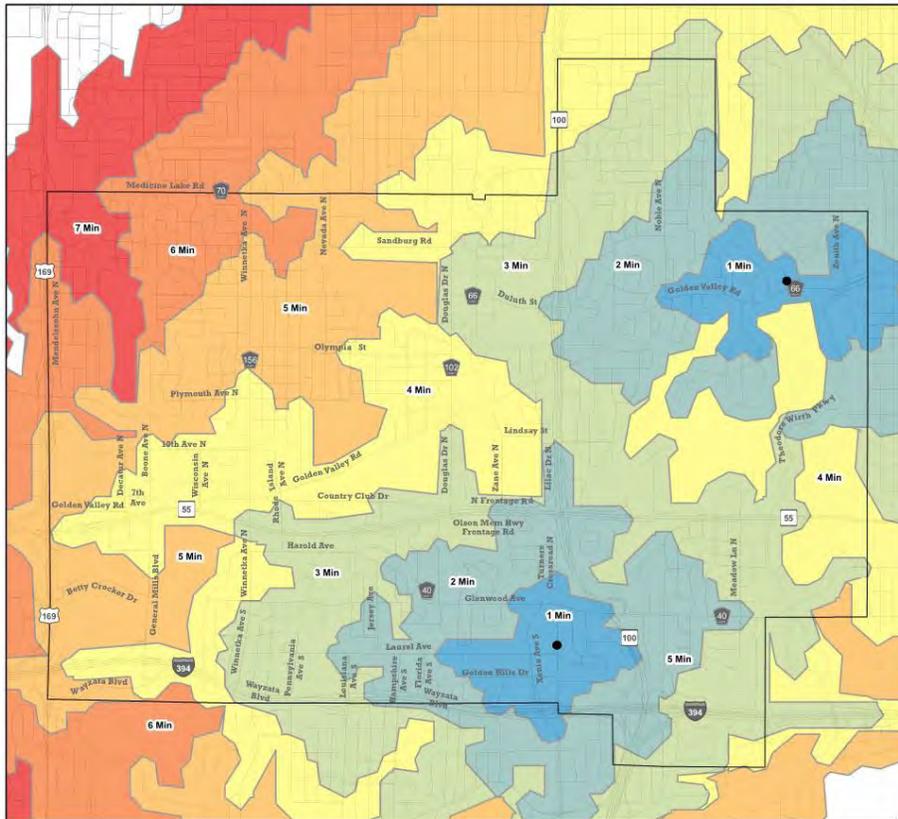
April 29, 2016
Produced by LOGIS GIS

Under a deployment model that maintains Existing Stations 1 and 2, areas north of Highway 55 and east of Highway 100 would have travel times in excess of six and seven minutes. This model would also maintain Station 2, which was shown to be too close to the city's border.

Existing Stations 2 and 3 – A model that keeps Stations 2 and 3 also does not provide effective coverage to large portions of western Golden Valley, which would have travel times in excess of five and six minutes with some areas over seven minutes.

Figure 6: Travel Time Coverage, Existing Stations 2 and 3

Response Time Fire Station 2 and 3



NOTES

Travel times are based on a speed limit 5 miles per hour less than the posted speed except for highways which are based on the posted speed limit.

No controls were applied for traffic conditions, traffic control, or other conditions.

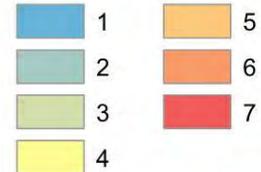
Times displayed are transit times only and does not take into account the activities between alarm and departure or preparation activities after arrival at location.

Response From

GV Fire Station #2
400 Turners Crossroad S

GV Fire Station #3
3700 Golden Valley Rd

Response Time (Minutes)



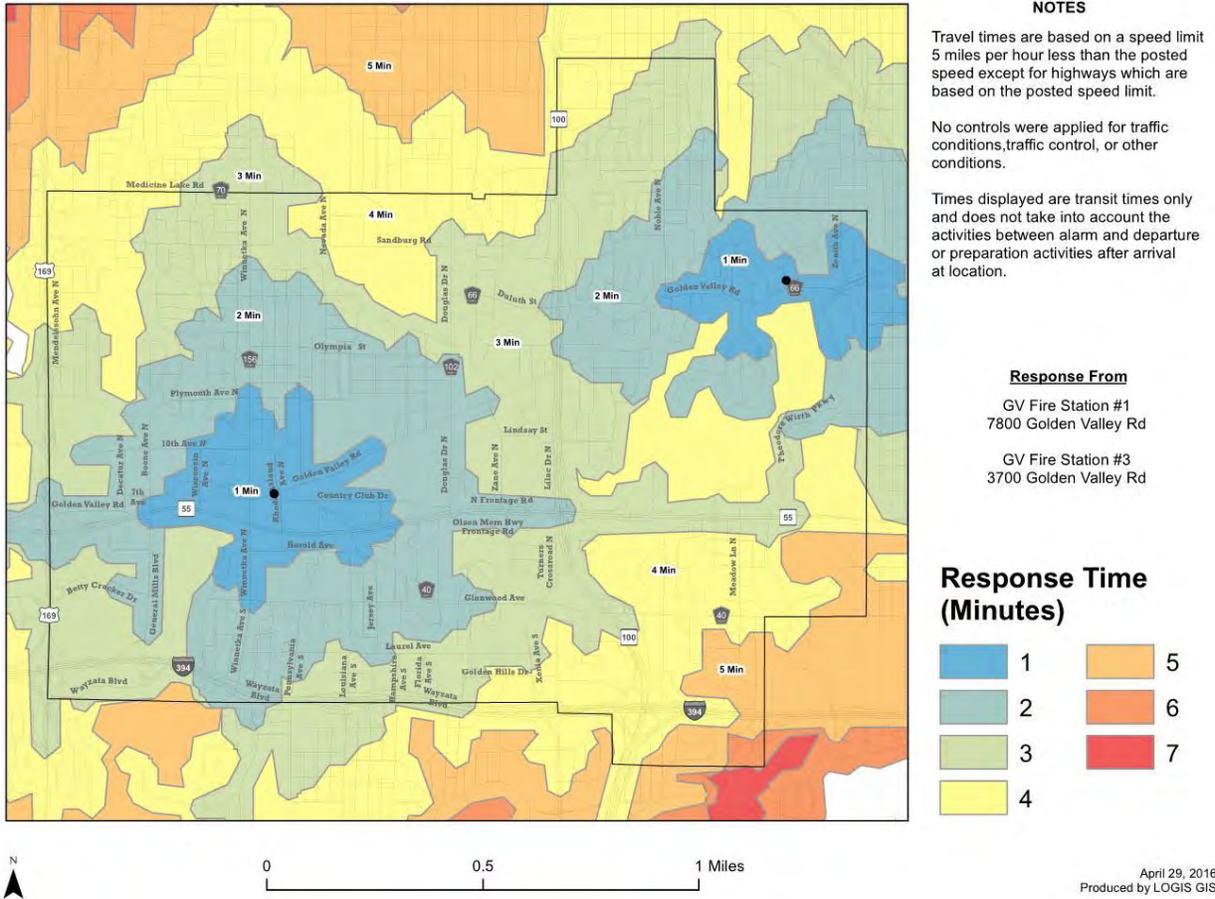
April 29, 2016
Produced by LOGIS GIS

Under a model where Existing Stations 2 and 3 would be kept underserves large areas of west and northwest Golden Valley. These are areas where call demand is high and where some of the largest risks (industrial, healthcare and senior living facilities) are located such as Highway 169, and several multifamily and commercial developments. This option is not one the city should consider.

Existing Headquarters Station and Station 3 – A deployment model that keeps the Existing Headquarters Station and Existing Station 3 is better than the other two-station models. However, Station 3 remains too close to the city’s border. There are also some areas of southeast Golden Valley where travel times could reach five minutes.

Figure 7: Travel Time Coverage, Existing Headquarters Station and Existing Station 3

Response Time Fire Stations 1 and 3

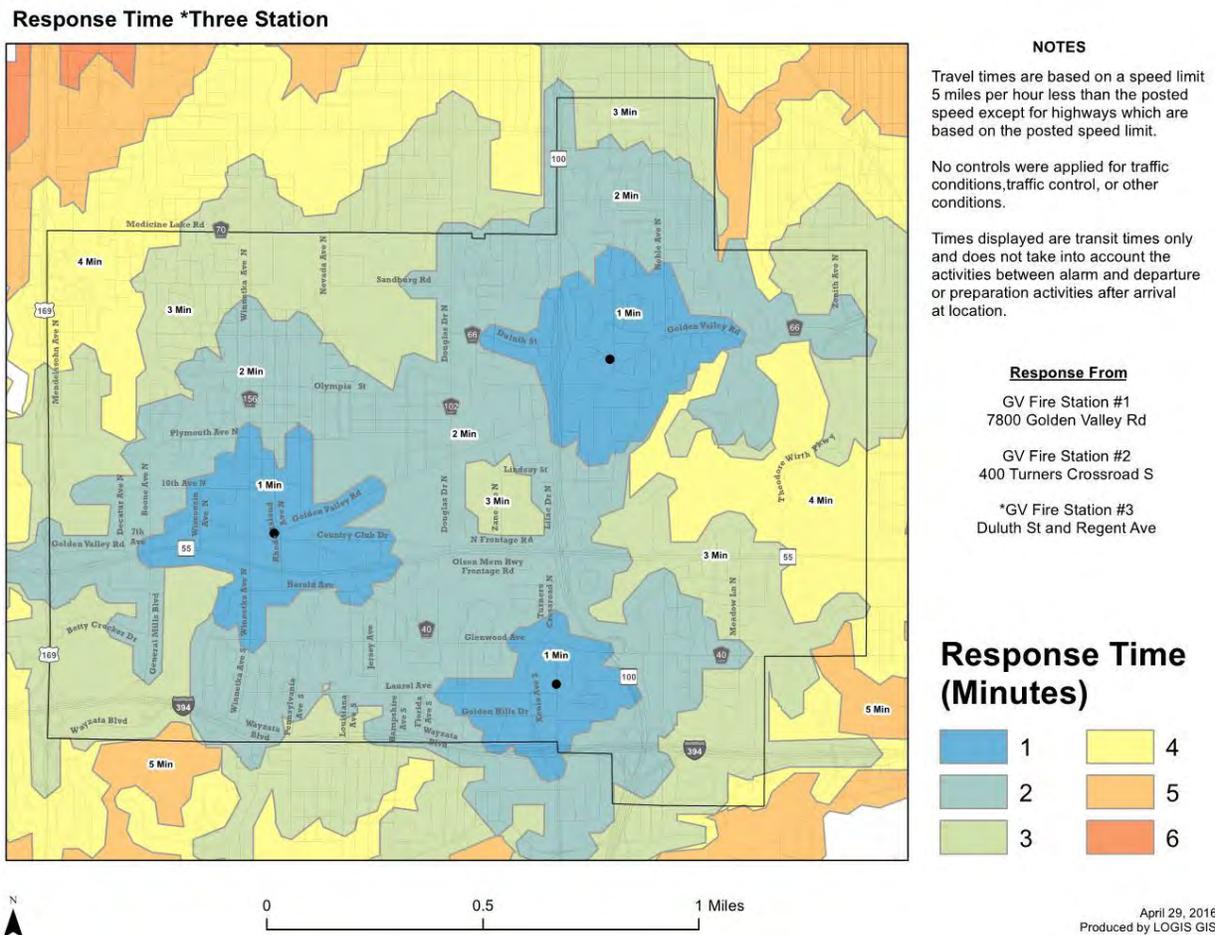


In terms of travel-time coverage, Existing Headquarters Station and Existing Station 3 would provide reasonable, but not great coverage. It does allow the city to eliminate existing Station 2. However, existing Station 3 is not in a location to achieve the best response travel times. There are also facility and space issues that must be resolved and these can better be addressed if a new station is constructed. These issues are discussed later in this report.

Relocation of Existing Stations – The study considered the options of relocating one or more of the existing fire stations to determine which solution might be the best in terms of coverage.

Three Stations with Station 3 Relocated - Under this deployment model the Existing Headquarters Station and Existing Station 2 are maintained at their present locations with Station 3 relocated (for the reasons mentioned earlier) to the vicinity of Duluth Street and Regent Avenue N.

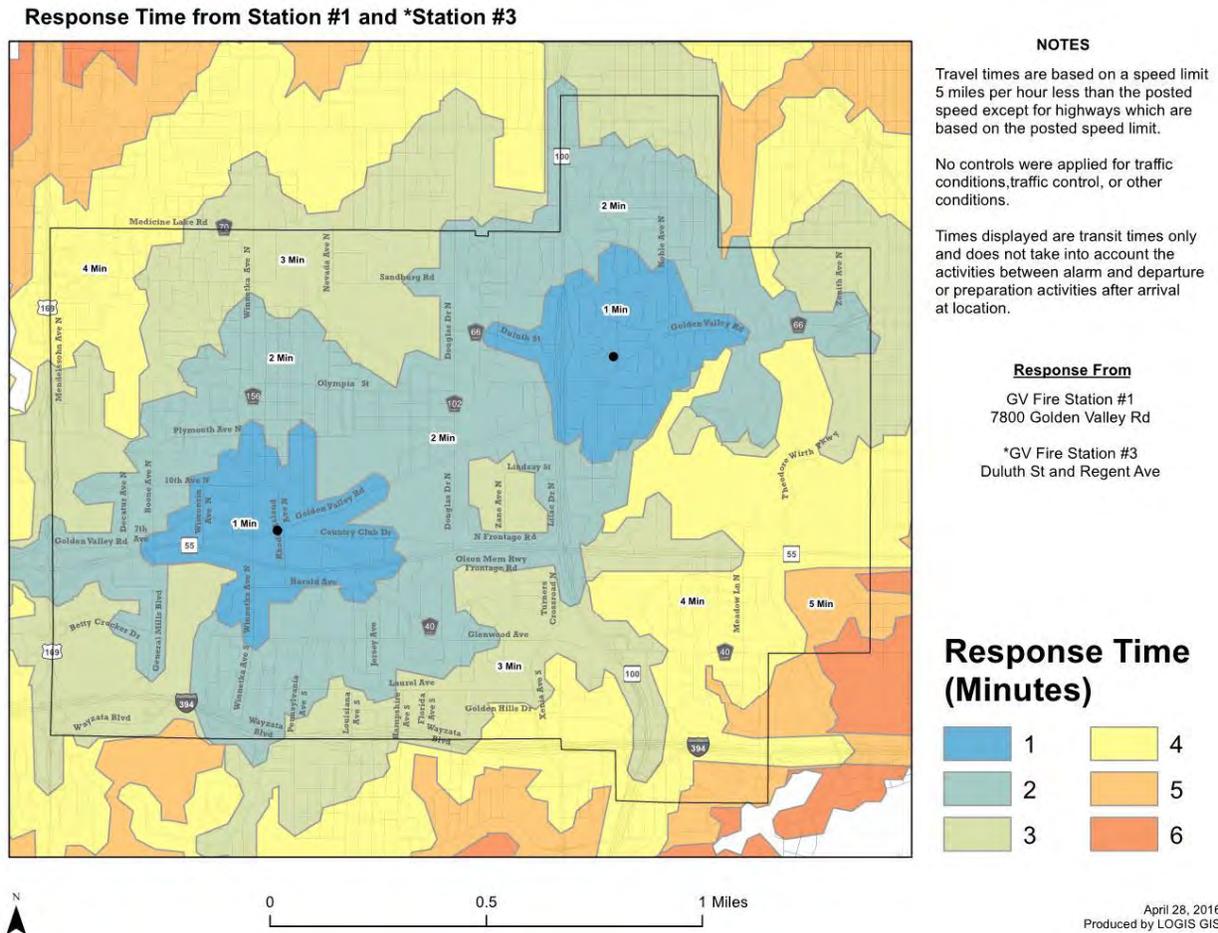
Figure 8: Travel Time Coverage, Existing Headquarters Stations, Existing Station 2 and New East Station



GIS analysis shows that Station 3 can improve its coverage area and reach more of the city if moved near the intersection of Duluth Street and Regent Avenue N. From there units from New East Station will have excellent access to Highways 100 and 55, while remaining close to Golden Valley Road. This option continues to maintain three stations. There are however, options to cover the city with two, or even, one station.

Two Stations (New East Station) – A better option is to construct a new east station near Duluth Street and Regent Avenue N. while keeping the existing headquarters station. The headquarters station is in a good location and constructing a new east station and adding scheduled POC allows Existing Station 2 to be closed.

Figure 9: Travel Time Coverage, Existing Headquarter Station and New East Station



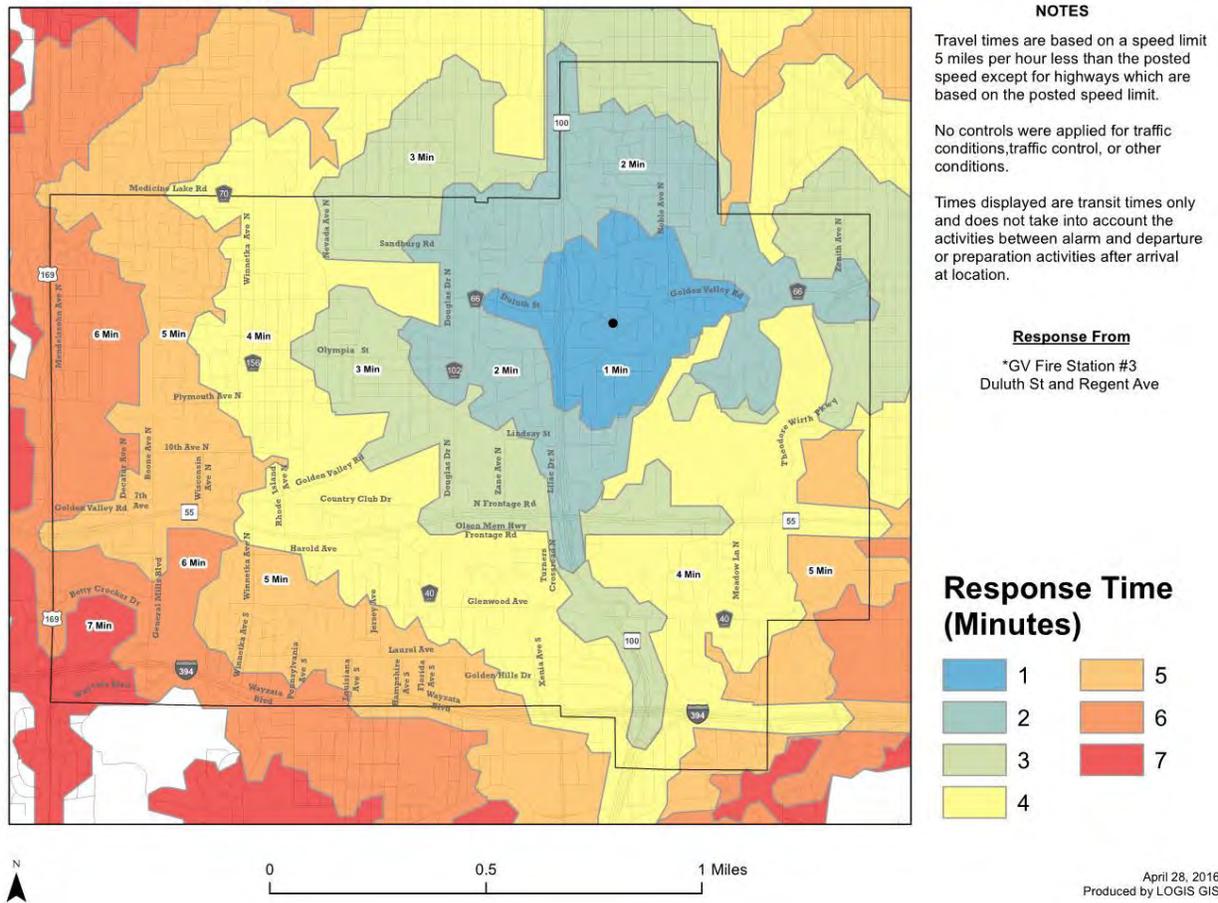
The deployment of fire stations with the Existing Headquarters station remaining at its present location and moving Existing Station 3 to this new location offers the most efficient coverage.

Single Station Coverage - Golden Valley does have the option to eliminate two fire stations. One option is to locate a main (headquarters) station near the vicinity of Duluth Street and Regent Avenue. This option does not provide sufficient travel time coverage.

The second option is to locate a headquarters station near Golden Valley Road and Douglas Drive. Though a better location than Duluth and Regent, this solution still does not provide the coverage obtained by two stations. As the maps that follow shows, a single headquarters station at Duluth Street and Regent Avenue N. does not provide good coverage.

Figure 10: Travel Time Coverage, New Headquarters Station at Duluth Street & Regent Avenue N.

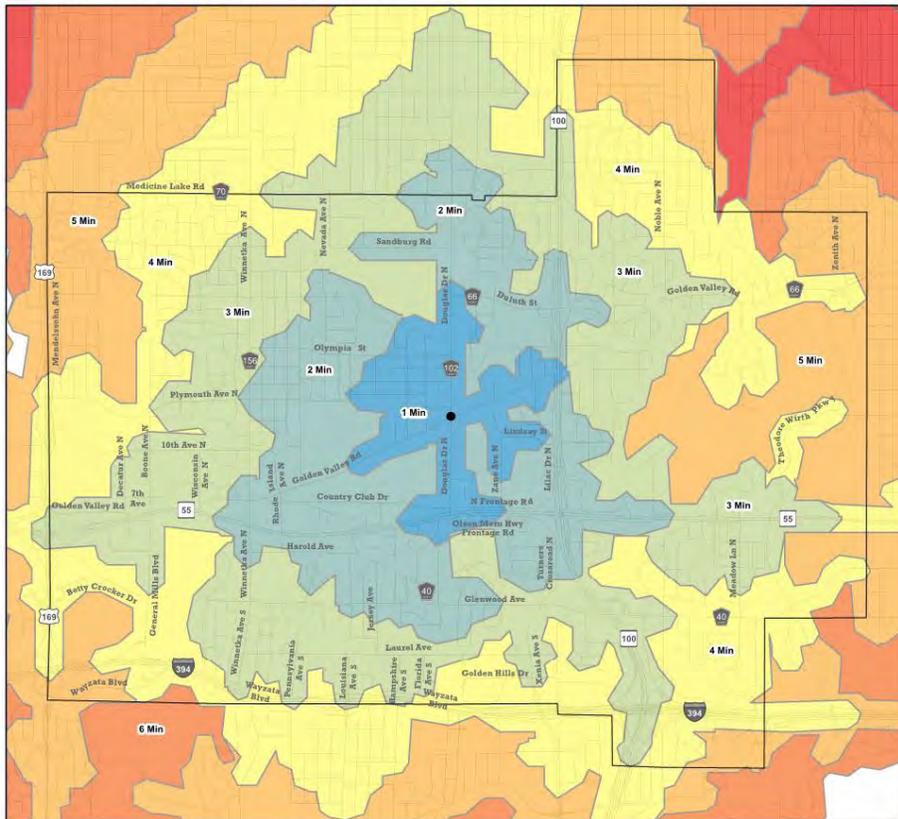
Response Time from Fire Station #3 at Duluth & Regent



The option with a single station near the city center is better but still results in large areas with travel times in excess of five minutes.

Figure 11: Travel Time Coverage, New Headquarters Station at Douglas Dr. and Golden Valley Rd.

Response Time from *Fire Station #1



NOTES

Travel times are based on a speed limit 5 miles per hour less than the posted speed except for highways which are based on the posted speed limit.

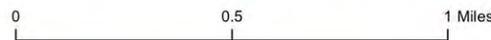
No controls were applied for traffic conditions, traffic control, or other conditions.

Times displayed are transit times only and does not take into account the activities between alarm and departure or preparation activities after arrival at location.

Response From

*GV Fire Station #1
Golden Valley Rd & Douglas Dr

Response Time (Minutes)



April 29, 2016
Produced by LOGIS GIS

If operating from a single (main) station, travel times would be at five minutes or more to the perimeter of the city. To operate from a single station would require automatic aid from neighboring fire departments (West Metro, Saint Louis Park, Robbinsdale and / or Plymouth). GVFD would also likely have to transition to an all-career department as reaction times for POC staff would be longer than the two or three station model.

Recommendation 1: Consider building a new headquarters station near Duluth Street and Regent Avenue N. while maintaining a smaller fire Station at or near the current headquarters station (7800 Golden Valley Road).

The operational impact of changes to station locations and deficiencies of the current facilities are discussed elsewhere in this report.

Incident Demand & Loss

It is important to consider the impact of demand and response times when deciding about stations and their locations. Golden Valley is fortunate that fires and other emergencies are relatively low. One reason for the demand being relatively low is due to the police handling medical calls.

Call volumes for GVFD have remained stable from 2011 to 2015. Without a major policy change such as having the fire department assume the primary role of medical first responders, there likely will be little change in call demand over the next few years. New development and population growth will increase demand a little though the change will be gradual.

Demand - GVFD handles just over 700 calls per year. The majority are routine calls handled by one station or the career duty crew. Weekday career staff and weekend standby POC (2 firefighters for 7 hours Friday night and 5 fire fighters for 4 hours on Sundays) crews handle almost a third of the calls responded to by GVFD. Having the duty and standby crews reduces the need to page POC personnel. General alarms, those calls where all POC staff are alerted, account for about 28 percent of all calls dispatched.

Of the three stations, Station 1 handles the most calls with 27 percent. Station 2 is next with 24 and Station 3 with 21 percent. The location of Station 1, which is more centrally located, is the reason for its call volume to be higher. Table 2 shows the breakdown of call demand by station and crew.

Table 2: Call Distribution by Station, 2011-2015

Year	2011	2012	2013	2014	2015	Average	Total	Pct. Calls 2011-2015
Station 1 (Headquarters)	198	198	184	181	200	192	961	27
Station 2	176	172	159	150	175	166	832	24
Station 3	152	158	142	129	153	147	734	21
Duty Crew/ Standby Crew	220	151	325	198	219	223	1113	32
General Alarm Calls	224	206	191	175	195	198	991	28
Total Calls	726	648	797	631	711	703	3513	-

Of the 2,139 calls responded to by GVFD from 2013 to 2015, only four percent (85) were fires. Of the 85 fire calls, 32 were structure fires the others being vehicle, trash, brush, and other fires. This is an excellent record and shows that prevention is working.

Fire Loss – Data shows that Golden Valley has very low historical loss when it comes to fires. Most fires occur in places other than structures. In terms of demand and potential loss, population and demographics are better predictors for medical calls while the age (and condition) of buildings are better indicators of structure fires. On average, Golden Valley experiences 11 structure fires each year.

Table 3: Golden Valley Fire Loss, 2013-2015

	2013	2014	2015	Totals	Average/ Incident
Structure Fires	14	8	10	32	10.7
Loss	\$.90M	\$.72M	\$.35M	\$1.97M	\$.66M
Other Fires	23	19	11	53	17.7
Loss	\$.33M	\$.09M	\$.05M	\$.47M	\$.16M
Total Fires	37	27	21	85	28
Total Loss	\$1.23M	\$.81M	.40M	\$2.44M	\$.81M

From 2013 to 2015, the average loss per structure fires was \$66,000. For all other fires the average loss was just over \$16,000.

Response Time

When citizens call 911 to report an emergency it is how fast that help reaches them that is the most concern. Research on response time to fires and medical emergencies shows a direct correlation between response time and loss. Faster response times equal lower loss at fires and better outcomes on medical emergencies.

When calculating response time three time segments are considered: call-taking and dispatch time, reaction (sometimes referred to as turnout) time, and travel time. The locations of stations, and whether personnel are at them, are the two factors most affecting travel time. A national standard for response time recommends that a unit arrive within five-minutes, twenty seconds of a call being dispatched. The standard considers the time to be one-minute twenty seconds for turnout time and four minutes for travel time.

Staffing - GVFD operates multiple staffing patterns. During weekdays the career staff handles calls from 8:00am to 4:00pm. From Friday evening at 6:30pm until 1:30am Saturday and 8:00am to 12:00pm Sunday there is a POC crew on-duty. These are called duty crews. During weekdays when the duty crew is handling calls, policy is to page POC members for fire and medical events requiring additional personnel. POC members are called back on a ‘general alarm’, meaning a

call has been dispatched and available members may respond, if available. Other types of calls for POC members to respond to included ‘station’ and ‘all-call’. Station and all-calls are paged on nights and weekends typically when there is no duty crew. For structure fires and potentially significant emergencies multiple stations are dispatched. For routine calls such as alarm bells, odor of smoke or medical assist, one or two stations may be alerted.

Response Time - For this study it was considered important to understand the response times between the various staffing patterns and stations. It was determined that the best response times result when there are duty crews. When duty crews are staffed it can be expected that units will arrive at the scene anywhere from two-and-a-half to four minutes faster, on average. When there is no duty crew such as for a single or two station response, response times are considerably longer – in some cases as many as eight to ten minutes, 2015 data shows.

The table below shows the results. Only those calls occurring in Golden Valley – not mutual aid calls to other jurisdictions - were included in the analysis. Eliminated also were calls where units were ‘canceled enroute’, because these calls often skew the analysis since units typically do not reach the incident location.

Table 4: Response Time Analysis, 2015 (first truck to arrive)

Crew Type/ Station	Average	Median	No. Calls
Duty Crew	4:14	3:53	200
Station 1	7:54	7:51	53
Station 2	7:50	6:45	27
Station 3	8:15	8:09	31
Station 1 & 2	6:36	6:32	60
Station 1 & 3	6:59	5:48	38
Station 2 & 3	5:28	5:21	38
All Call	6:09	5:29	16
General	5:38	5:07	183

As stated, the best response times are during those times when a crew is on duty, whether the career staff during the week or POC Friday night and Sunday. The next best times are when Stations 2 and 3 are alerted for a call, followed by the ‘general alarm’ calls. Station 3 has the longest response times when a single station is alerted.

Overall, the response times for Golden Valley are quite good considering that crews are only on duty 51 hours of the 168 hours each week. Having duty crews available more hours will certainly improve response times.

Recommendation 2: Increase the number of duty-crew hours each week with an eye toward 24/7 staffing, either by scheduled part-time or career personnel.

III. FIRE RESCUE OPERATIONS

This section discusses the organization of the GVFD and the delivery of services to the public. The section ends with a discussion of the options available to the city regarding its fire stations and the staffing models for the various options.

Overview

Major focus of this study was to consider the options for delivering fire services in the future. Considered important in reviewing operations and possible future options were cost, effectiveness, efficiency, and sustainability. All options were to be considered including consolidation and the possibility of contracting of services. Also to be considered was medical first response and whether the police department would continue to be the agency that delivers that service.

GVFD responds to about 700 calls each year. That level of call demand is low compared to other communities of similar population. That it is low is attributed to the police department being responsible for medical calls. If the fire department were to take on that responsibility, it is likely that call volume for the Fire Department would increase three or four fold. Prior to using career and scheduled part-time firefighters, the police in Saint Louis Park also handled EMS calls. With the change in staffing, Saint Louis Park Fire Department (SLPFD) now handles medical calls. The same change would likely occur in Golden Valley.

For the past 35 years there have been few changes to the GVFD. Volunteers which are now the part-time, Paid-on-Call personnel are the primary staff relied on to fight fires and handle other emergencies. There are now five full-time personnel during weekdays. Among them are a full-time fire chief, deputy chief, battalion chief and two fire/property maintenance specialists (inspectors). These individuals provide the primary staffing and response during weekday hours.

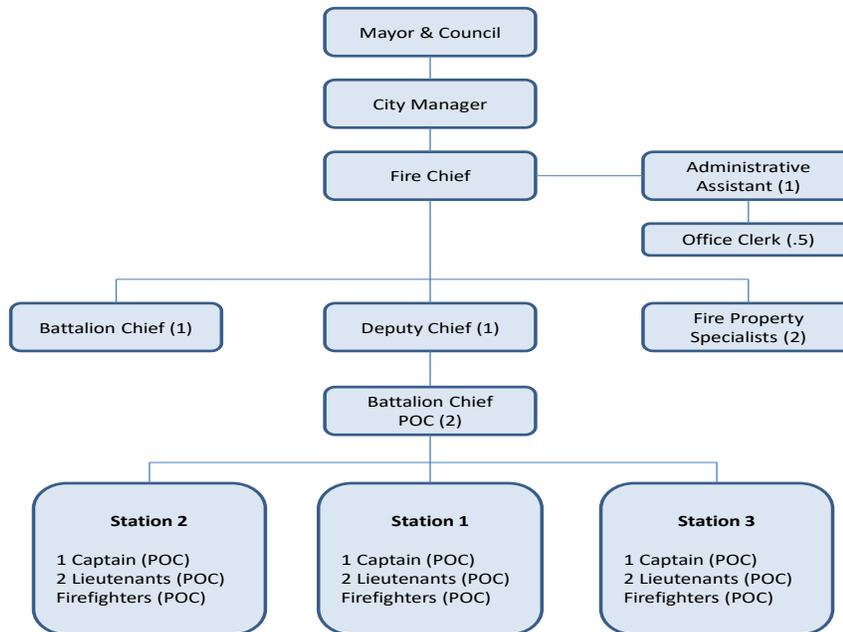
Golden Valley did not always have a full-time fire chief. In 1958, the city hired its first full-time fire chief and in 1967 hired a full-time fire marshal. In 1976, the full-time fire chief's position was eliminated with the position being filled by three different POC fire chiefs from 1977 to 1990. During this time the city operated under a public safety model organization with a public safety director who oversaw both police and fire personnel. In 1990, the city once again hired a FT fire chief to oversee the operations of the fire department.

For vehicle extrication events and other similar emergencies, GVFD does have a rescue truck and its personnel are trained in vehicle extrication. However, as the primary medical first responders the police department is typically dispatched to these calls first without the fire department. There are calls where police officers are trying to extricate patients from vehicles without the proper training or tools. I-394, a major highway with high-speed traffic, runs directly

through the city and the fire department is not being dispatched to accidents on this highway as it should be.

Organization and Budget

As fire departments go the GVFD is not very different from other fire departments. A fire chief appointed by the City Manager. A career deputy chief responsible for emergency services reports to the fire chief.



The table of organization is generally good. The figure above does show the POC battalion chiefs as being in charge of the stations, though in reality it appears that the fire chief and deputy chief handle most of the management and coordination of stations and POC personnel. This is common practice in departments with volunteer and POC staff. Going forward it would be good for succession planning to give the POC battalion chiefs more responsibility for operations. Overall, the current organization can support any number of changes to include changing the POC system to a scheduled part-time or all-career model, if these were to occur.

Recommendation 3: Maintain the current table of organization as it is effective and generally efficient.

The adopted FY2016-17 budget for GVFD of \$1.29M has changed little over the past four years. A budget decrease did occur from 2014 to 2015 due to the elimination of administrative positions when Fire and Inspection Services merged.

When it comes to fire services, citizens in Golden Valley receive excellent value. While this study did not include a cost comparison with other departments, other studies where these were conducted show that the cost in Golden Valley is low. Approved budgets and the cost per capita for the past four budget periods are:

Table 5: Cost Per Capita, GVFD

Year	FTE Positions	Total Budget	Cost-Per-Capita ⁵
FY2013-14 ⁶	11.0	\$1.6M	\$75.30
FY2014-15	6.5	\$1.2M	\$56.47
FY2015-16	6.5	\$1.3M	\$61.18
FY2016-17	6.5	\$1.3M	\$61.18

Staffing Costs - As with all fire departments personnel costs make up the largest portion of annual expenditures. In FY16, 84 percent of the budget is allocated for personnel. Of the fire departments total \$1.29M budget in FY16, \$1.08M is allocated for personnel. POC salaries for time spent responding to calls and for stand by details, training, and other events was \$292,000. Following are the hourly rates for GVFD personnel, not including administrative staff.

Table 6: 2016 GVFD Hourly Rates

Fire Chief	55.87
Deputy Fire Chief	44.38
Fire Education Specialist/Training Coordinator (Battalion Chief)	33.52
Fire/Property Maintenance Specialist	32.18
Fire/Property Maintenance Specialist	30.84
(POC) Battalion Chief	20.42
(POC) Captain	19.66
(POC) Lieutenant	18.22
(POC) Firefighter	15.83
(POC) Firefighter-Apprentice	13.34
(POC) Firefighter-In-Training	10.01

⁵ Cost-Per Capita is calculated on the estimated 2015 population of 21,250.

⁶ In FY2013-14, the city's fire and inspection services were both under the same budget, thus the budget included both services.

Benefit costs are additional costs that must be considered in any change Golden Valley may make regarding the future of fire services. POC, which would be considered part-time employees, have a substantially lower benefit load than do full-time personnel. Load rates for the three employee classifications in GVFD are:

Full-time Management -	.52
Full-time Non-Management -	.57
On-Call Personnel -	.17

Operations

GVFD operates from three fire stations. Nights and weekend staffing of the stations is entirely by part-time, POC staffing. GVFD does have crews on duty during some periods such as the weekend. Each station is equipped with at least one engine. Station 1, located at 7800 Golden Valley Road, is the headquarters station. Stations 2 and 3 are located at 400 Turners Crossroad S and 3700 Golden Valley Road, respectively.

GVFD is a cost-efficient operation that provides very good, reliable service. Apparatus and equipment is excellent and personnel are generally well trained. There is no doubt that the city gets a ‘big bang for its buck’ when it comes to fire protection. However, the fire department is unable to meet the NFPA standards of response for the number of personnel responding to structure fires within the recognized national standard goal of 8 minutes. The location of the three stations does allow the goal to be achieved; however, firefighters are on-call via pager and must first respond to the fire station from work or home.

While POC firefighters must drive to the station when a call is received, officers are provided with portable radios and are permitted to go directly to the scene. Policy is to require three fully trained firefighters at the station before the apparatus responds to the incident. It is preferred to have four, though fire units will respond with three. Responding with three personnel, though not ideal, is reasonable in our opinion. When alerted for a call POC personnel are paid a minimum of one hour, plus time over that in 15 minute increments. POC personnel are also scheduled for special duty assignments.

Standards require 13-15 firefighters as the minimum number of personnel to respond on structure fires. Data for this study shows that GVFD can muster the required number of firefighters though generally not within the eight minutes established by standards. NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments recommends a response time of 6 minutes, 20 seconds for the first arriving fire unit and eight minutes for a full first alarm assignment. The 6:20 time includes 4:00 travel time to the call and 2:20 combined for dispatch and turn out time. Three stations can easily reach all areas of Golden Valley.

The NFPA provides recommendations for the number of firefighters at structure fires. Two resources, NFPA 1710 and the Fire Chiefs' Handbook differ slightly but both state that a minimum response of about 13-15 personnel is optimal. Additional personnel for larger structures and those of higher risk require more personnel. Following are the guidelines from NFPA 1710 and the Fire Chiefs' Handbook regarding the number of personnel needed for an effective response.

NFPA 1710: The initial full alarm assignment to a structure fire in a typical 2000 sq.ft. (186 m²), two-story single-family dwelling without basement and with no exposures shall provide for the following: ⁷

- Incident command - 1
- Establish water supply – 1
- Operating two hose lines – 4
- Support person for each attack and backup line – 2
- Search/ rescue team – 2
- Team to raise ladders/ ventilation – 2
- Aerial ladder operator – 1 (if used)
- Safety team – 2
- Total Personnel = 15 (14 if aerial ladder is not used)

NFPA 1710 also recommends additional personnel for structures of higher risk: “Fire departments that respond to fires in high-, medium-, or low-hazard occupancies that present hazards greater than those found in the low-hazard occupancy described in 5.2.4.2.2 shall deploy additional resources on the initial alarm.”⁸

Fire Chiefs' Handbook Recommendations:

- **High-Hazard Occupancies** (schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high-risk or large fire potential occupancies): At least four pumpers, two ladder trucks (or combination apparatus with equivalent capabilities), two chief officers, and other specialized apparatus as may be needed to cope with the combustible involved; not fewer than 24 firefighters and two chief officers.

- **Medium-Hazard Occupancies** (apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or firefighting forces): At least three pumpers, one ladder truck (or combination apparatus with equivalent

⁷ NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, Section 5, Fire Department Services, p. 1710-9

⁸ Ibid.

capabilities), one chief officer, and other specialized apparatus as may be needed or available; not fewer than 16 firefighters and one chief officer.

- **Low-Hazard Occupancies** (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies): At least two pumpers, one ladder truck (or combination apparatus with equivalent capabilities), one chief officer, and other specialized apparatus as may be needed or available; not fewer than 12 firefighters and one chief officer.

Golden Valley is at a significant disadvantage in terms of fire protection because firefighters are not at the stations most of the time. Even during weekdays when the career staff is working they are often out of the office and must return to the station, or meet a fire truck at the scene.

Operationally, the current system is not ideal. Having the fire chief and deputy chief as primary responders during weekdays is not a good idea as they need to be focused on incident management and strategy, not actual firefighting or rescue. On more complex calls chief officers should fill command roles and not be performing other tasks. To improve response the city should begin to take steps and change the emergency response delivery model where at least one crew, staffed with personnel other than the Chief or Deputy Chief, is on-duty 24/7. The minimum crew size should be three. Four are recommended by NFPA but three can work in Golden Valley, which has a low frequency of working fires.

Recommendation 4: Begin to take steps to staff at least one station with three firefighter's on-duty 24/7, with an eye of eventually providing full-time staffing at two stations. Staffing can include either scheduled part-time or career personnel.

None of the three fire stations has the necessary facilities to accommodate 24/7 staffing by firefighters. To meet the required staffing and response to fires it can be expected that Golden Valley should have six firefighters on duty, with the rest likely responding from West Metro, Plymouth, Robbinsdale or Saint Louis Park on automatic aid. To accommodate this level of staffing, any changes to existing stations or future ones should include facilities to accommodate at least four personnel at any station remodeled or built. Facilities should also include accommodations for female firefighters.

Recommendation 5: In making any changes to existing stations or constructing new ones, provide sleeping and other accommodations to allow 24/7 staffing.

GVFD does not have a chief officer on-duty 24/7 as most urban fire departments do. Current practice is that the fire chief or deputy chief handles structure fires and other calls where multiple stations respond. And sometimes the POC battalion chief handles the call; however, these individuals must go to the station first to get a vehicle, thus valuable time is lost.

There is no dedicated command vehicle for a duty officer. A small investment that would improve operations is to provide a command vehicle that would be used by the on-duty command officer. It is not necessary to have multiple vehicles as the same vehicle can be shared among those assigned to cover the responsibility on a particular day.

Recommendation 6: Implement a policy to have a command officer on-call 24/7 and provide a command vehicle for this purpose.

A recent promotion of the training officer to battalion chief and requiring him to respond to calls after hours is another individual that could be in the command rotation, along with the deputy chief.

POC Staffing

New POC recruits are appointed by the City Manager following a process that includes background investigation, psychological, clinical and physical ability assessments, and interviews. Promotion to POC Officer is approved by the City Manager following a review process and interviews. Captains and lieutenants serve four-year terms. There are no term limits for POC battalion chiefs. The target staffing for GVFD is to have 16 - 18 POC personnel at each of its three stations for a total of 50 personnel. The number of POC staff is approved by the city council as part of the annual budget process.

Among the 50 POC personnel are two battalion chiefs, three captains, and six lieutenants. One captain and two lieutenants are assigned to each station. One POC battalion chief is responsible for administration and the other apparatus and equipment maintenance. First-year POC firefighters are classified as 'Probationary' until the second year when they become 'Apprentice' and then 'Firefighter' in the third year. Pay schedules are based on the grade.

Recruitment and Retention of POC - GVFD does put a lot of effort into recruiting new firefighters. It has an ongoing recruitment program that is supported by the chief and staff. Even with a quality program, GVFD is putting more effort annually into recruiting new members. This is not unusual as most volunteer and POC departments are having similar problems. A study by the University of Minnesota and recent news articles do show the problem to be acute in Minnesota. With the exception of Minneapolis and Saint Paul, staffing for fire / rescue in the state is almost entirely volunteer or part-time, Paid-on-Call.

Income and education demographics do play a role in volunteerism for fire services, as communities like Golden Valley are finding it difficult to recruit and retain volunteers and POC firefighters. Professionals are the majority workforce in Golden Valley and these individuals are less likely to be attracted to opportunities in fire rescue services. Dual income families and other commitments such as child activities also make it difficult for individuals to spend time away at the fire station.

An excellent 2014 study of non-career fire departments in Minnesota was conducted by the University of Minnesota's Humphrey School of Public Affairs.⁹ The research determined that

⁹ ***Empty Boots, Quiet Sirens: The State of Non-Career Firefighting in Minnesota***; A Report to the Minnesota State Fire Chiefs Association, Humphrey School of Public Affairs, University of Minnesota; Maria Cote, Brad Hasskamp, Partha Chevuru, Mamta Verma. August 2014.

many factors affect the decline of non-career firefighters, primary among them are the time demand and additional training requirements. Other factors were increased call volumes and the expanding role of fire departments.

The study determined that “if current trends continue, by 2022, 68 percent of Minnesota’s non-career firefighters will be age 45 or over.”¹⁰ More compelling is “in 2020, for the first time in the state’s history, there will be more individuals over the age of 65 than under the age of 18. By 2035, 20 percent of Minnesotans will be over the age of 65.”¹¹ Clearly, as demand and services increase and non-career firefighter’s age, these are sufficient reasons to consider when the time might be right to transition to a scheduled part-time or career force.

Within the Appendix are other articles that discuss the issues of staffing for volunteer and POC departments.

GVFD Demographics – Golden Valley is fortunate to have the dedicated cadre of non-career part-time, POC firefighters. The number of positions has remained fairly steady in recent years. Concerning however, is that the city is already on the precipice of the aging force issue discussed in the just-mentioned study. A future consideration for city officials is whether the model of providing fire services by a POC staff is sustainable. Data provided for this study shows that almost 27 percent of the current POC staff is between the age of 50 and 65.

GVFD has an excellent recruitment program with the recently promoted battalion chief also responsible for recruitment. The fire department takes advantage of a number of outreach and media programs to get the word out on non-career firefighter opportunities. Each year it does attract a number of new candidates, however not all of those that are hired actually make it to firefighter status.

Figure 12: GVFD Recruiting Banner, Headquarters Station



¹⁰ *Empty Boots, Quiet Sirens: The State of Non-Career Firefighting in Minnesota*; A Report to the Minnesota State Fire Chiefs Association, Humphrey School of Public Affairs, University of Minnesota; Maria Cote, Brad Hasskamp, Partha Chevuru, Mamta Verma. August 2014.

¹¹ Ibid. p.17.

Demographics of the POC staff reveal a two-edged sword; not only are members older, a significant number are eligible to take the full, 20-year pension. Of the current 45 POC staff only 13 are between the age of 30 and 39 and only one of the current staff is below the age of 30.

Table 7: GVFD POC Demographics, 2016

Age Distribution	No. POC Staff	Percentage
18-29	1	2
30-39	13	29
40-49	19	42
50-59	11	25
60-65	1	2

POC Retirement - The retirement system for POC firefighters allows them to be vested in 10 years (60 percent). Full benefits (100%) are available at 20 years, or four percent per year increase between the 10th and 20th year. A cash amount is added for each year over 20 years.

Table 8: POC Years of Service, 2016

Years of Service	No. POC	Percent
1-5	15	33
5-10	11	24
10-15	7	16
15-20	5	11
20-30	7	16

As Table 8 shows, 43 percent of the current POC staff have 10 or more years, thus could take a retirement benefit at any time. With 20 or more years of service, 7 are eligible for full retirement now. Assuming that those with 10 or more years of service do stay on until they reach 20 years and then take retirement, the GVFD could potentially see a 43 percent attrition of POC staff over the next 10 years.

In light of the University of Minnesota study, retirement eligibility and aging POC force, it is imperative that the city consider any and all options for staffing the fire department. For its part

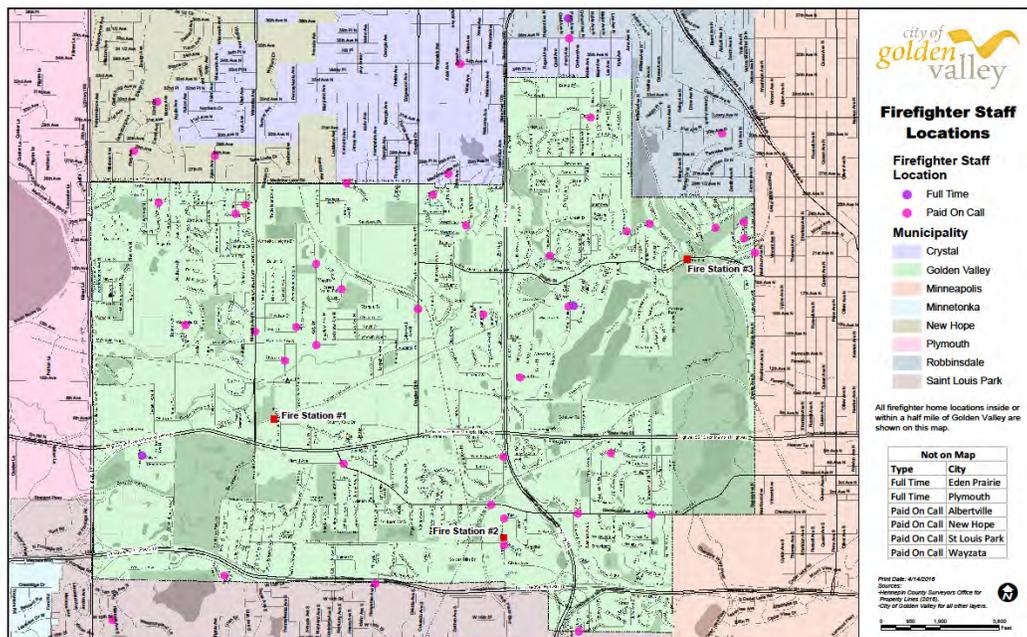
the Fire Department should begin to keep information on the anticipated retirement year for both full-time and POC staff. The information will be useful for planning the recruitment efforts. As the data above shows, the current POC force is aging and many are nearing the time when they are likely to take retirement.

The best way to ensure a stable workforce is to provide a reasonable schedule for POC personnel. Under the current framework POC personnel are ‘always on duty’ and must answer a percentage of calls, plus attend required training to maintain their certifications. By scheduling POC staff who then become ‘scheduled part-timers’, it is easier for them to know when they are required to be on-duty. The city benefits by having qualified fire personnel at the station and ready to respond – at a fraction of the cost that it is to have an all-career department.

Distribution of POC Firefighters – An important consideration for POC fire departments is ‘where do firefighters live’. The longest time segment for POC is the time it takes for them to get to the fire station, after the call is received. GVFD policy requires that POC personnel live within six minutes of a fire station.

A review of the POC home locations shows that a majority of POC staff live north of Highway 55 with a majority of those living west of Highway 100. Only 12 of the current POC staff live south of Highway 55 with eight living near Station 2. A comparison of the drive-time GIS maps with the POC firefighter home locations shows that most live within a three to four-minute drive time of the closest station. However, some firefighters are not assigned to the station closest to their home residence so the drive time would be longer.

Figure 13: Home Location of POC Staff, 2016



Our discussions with GVFD staff determined that few POC spend time at fire stations, thus three to four minutes are being added to the response times for most fire calls. Added to the six-plus minutes for the dispatch and travel time is resulting in total estimated response times of 9 and 10 minutes. Research shows that in structure fires flashover occurs around the eight-minute mark. After flashover there is substantially more risk to citizens and firefighters, so it is good practice for the fire department to arrive before eight minutes.

Historical Response of POC Firefighters – GVFD has excellent data on the number of POC firefighters responding to calls, by day of the week and time of day. Data for 2015 shows that on average 10 POC personnel responded for calls where they were alerted. However, there were a number of calls that did not have adequate personnel responding. The best response from POC was during evening and nighttime hours during the week. The lowest turnout was on Friday and Saturday.

Table 9: POC Staff Response, 2015

Day	0800-1700	1700-0800	All
Monday	9	13	
Tuesday	6	12	
Wednesday	9	15	
Thursday	10	14	
Friday	8	6	
Saturday	-	-	9
Sunday	-	-	13
Average	8.4	12.0	11.0

For this analysis the weekday hours from 8am to 5pm were compared to the hours of 5pm to 8am and these hours to the weekend. Not surprisingly the fewest POC responders answered calls during weekdays and the most at night. However, Friday evening and Saturday also have a low average response. To address the issue GVFD does schedule some POC staff as duty crews beginning on Friday evenings when POC response is typically lower. Overall the response from POC personnel is excellent. The challenge is response time because POC responders must travel to the fire station first before responding to a call.

Recommendation 7: Recognize that continuing to staff the fire department almost entirely with POC personnel will be a challenge. Take steps to transition the fire department to a system of scheduled part-time (duty crews).

The current number of POC firefighters can probably support staffing three scheduled part-time firefighters 24/7. At some point however, six personnel (three at two stations) should be staffed and this likely would require hiring additional POC or career firefighters.

Medical First Response - Medical first response in Golden Valley is handled mostly by the police department. If police are busy, or if the call requires additional personnel, GVFD is alerted. The system of police handling medical first response calls is not unheard of but it is unusual. The Police Chief likes the idea of officers handling medical emergencies because it gives police the chance to interact with citizens in a positive situation. For Golden Valley, which relies on part-time, POC firefighters at night and on weekends, it is also good because POC firefighters are not required to handle the thousands of medical calls each year. If GVFD, under the current staffing model, handled all medical calls it would likely increase the number of calls such that firefighters would stop responding.

Police are also the first to be dispatched when there is a motor vehicle accident with injury, even though the GVFD has the tools and equipment to extricate a patient from a vehicle. Police sometimes do have the FD dispatched immediately to a motor vehicle accident, but mostly wait to get on the scene to confirm that a patient must be extricated. The reason is because police understand that when the stations are unstaffed POC personnel will handle the call and they are not at the station. To avoid getting firefighters out unnecessarily, police often will wait. The police department's consideration for firefighters is laudable but it does add time to a response. It is standard practice in the industry for local fire departments with extrication equipment are dispatched immediately to the scene of these types of calls.

Saint Louis Park Fire Department and other departments that transition from volunteer and POC to scheduled part-time and career staff, have taken on the responsibility for medical response. It can be expected that the GVFD would probably do the same, if a similar transition were to occur as firefighters would have the time to devote to the additional demand and would already be at the station. For now having police handle most of the medical calls is a good policy.

Recommendation 8: Maintain the current policy of the police department having primary responsibility for initial medical response. Reevaluate the policy if the fire department does implement a system of duty crews.

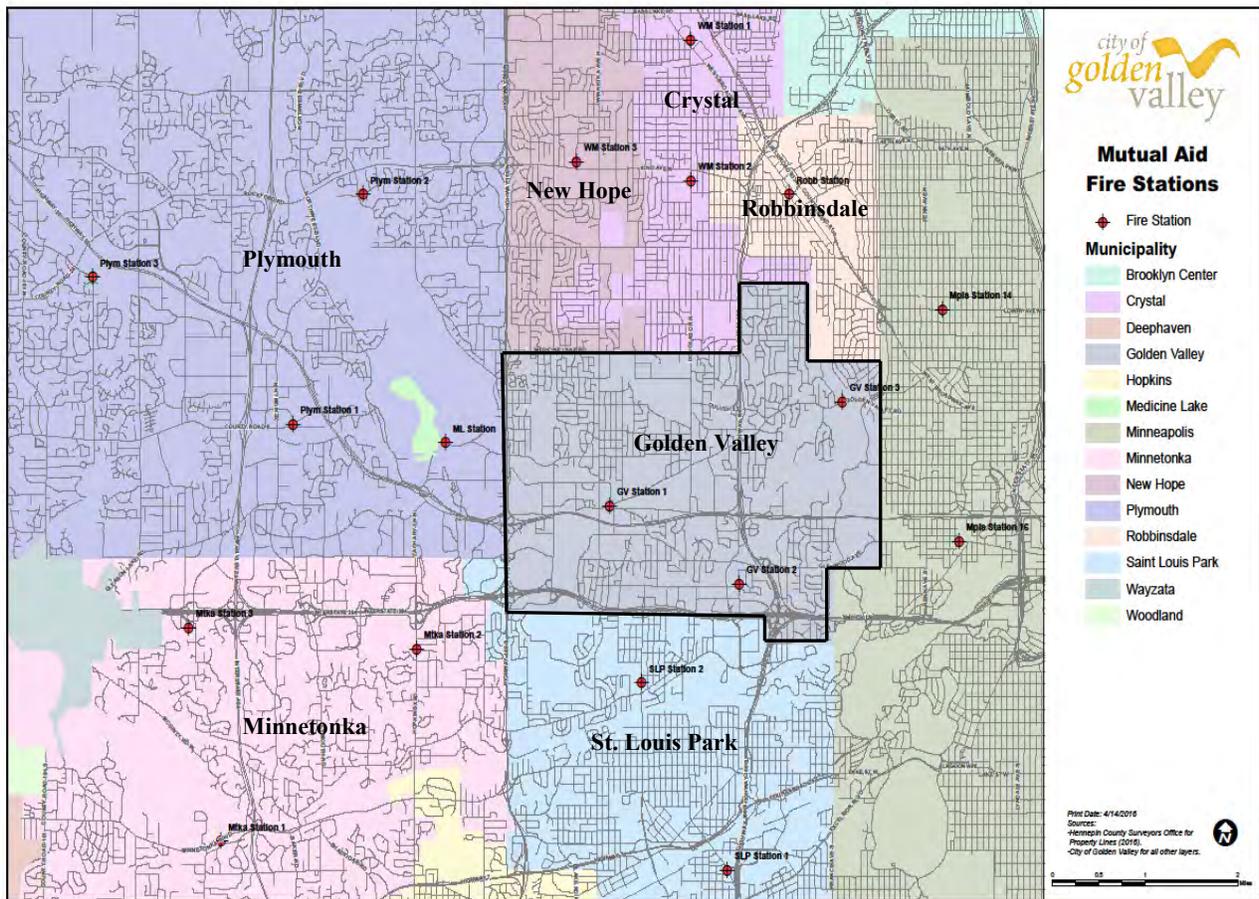
Regional Partnership Opportunities

Because resources are limited most communities are looking for ways to improve emergency services at the same time making them more efficient. A good way to do this is through consolidation (where it's feasible) or automatic aid. Consolidation can be difficult to achieve politically. Short of consolidation there are opportunities to improve services at little or no cost by having departments adopt automatic aid policies. To do this requires that departments have the same or similar staffing models.

Mutual and Automatic Aid - Golden Valley benefits significantly by neighboring fire stations around the city's perimeter. Plymouth, Saint Louis Park, Robbinsdale and West Metro, are the departments most relied on by the GVFD when aid is needed. Medicine Lake, an all-volunteer department, is the closest of any fire station around Golden Valley, though there are no automatic aid agreements with them.

Following is a map showing the locations of fire stations around Golden Valley and the staffing model used by each department.

Figure 14: Golden Valley Mutual Aid Fire Station Locations



Minnetonka – Station 1 Career (M-F) and Scheduled Part-Time
 Station 2 Paid-On Call
 Station 3 Paid-On-Call

Medicine Lake – All Volunteer

Plymouth – Station 1 Paid-On-Call
Station 2 Scheduled Part-Time (6am – 9pm) and Paid-On-Call
Station 3 Paid-On-Call

Robbinsdale – Paid-On-Call

Saint Louis Park – Station 1 Career and Scheduled Part-Time 24/7
Station 2 Career and Scheduled Part-Time 24/7

West Metro – Station 1 Paid-On-Call
Station 2 Paid-On-Call
Station 3 Career (M-F) and Scheduled Part-Time

The most recent mutual aid agreement for Hennepin County appears to have been approved in 2004. The agreement is for mutual aid, whereby fire departments agree to provide assistance when called. The agreement looks sufficient though it probably does need to be updated. Automatic aid differs from mutual aid in that departments agree to be dispatched ‘automatically’ on the initial call or for additional assistance, based on pre-determined protocols. Golden Valley has signed automatic aid agreements with the Cities of Saint Louis Park (1994) and Plymouth (2000).

The agreement between Saint Louis Park and Golden Valley provide² automatic aid on the initial call on structure fires. However, SLPFD has improved its staffing model with scheduled part-time and career firefighters and does not include Golden Valley on its initial alarm to structure fires. The reason is that GVFD does not have a minimum staffing level on duty, thus SLPFD does not rely on them for aid. There is no written automatic aid agreement with West Metro Fire Rescue District (WMFRD) or Robbinsdale Fire Department, though it is recommended there be an agreement. However, both Robbinsdale and WMFRD already respond automatically to portions of Golden Valley without a signed formal agreement in place.

Several fire stations around Golden Valley are located such that automatic aid can improve service to both communities.

West Metro Fire / Rescue District (WMFRD) – Two stations nearest Golden Valley are West Metro Fire-Rescue Station 3, located at 4251 Xylon Avenue North in New Hope. Station 3 operates with scheduled part-time and full-time career firefighters.

Figure 15: West Metro Fire Rescue District Station 3



WMFRD Station 2 is located at 4101 Douglas Drive North in Crystal. Station 2 is staffed by scheduled POC personnel 24/7. There have been discussions about closing the station.

Figure 16: West Metro Fire Rescue District Station 2



The stations in WMFRD are located in a way that could mutually benefit Golden Valley and WMFRD by automatic aid. There is also the possibility to consolidate GVFD with WMFRD, as both departments operate very much the same and their cultures are similar.

Saint Louis Park Fire Department – SLPFD has one station closest to Golden Valley and another in proximity to provide automatic aid. SLPFD is the department that most recently implemented a scheduled part-time model with POC staff and thus is a good example to follow. In fact, they were very helpful in this project in explaining the changes made concerning scheduled part-time and career staffing. SLPFD operates from two stations.

SLPFD Station 2 is located at 2262 Louisiana Avenue, Saint Louis Park. The facility which is new has a total space of over 16,000 square feet. SLPFD has 24 career and 24 scheduled part-time firefighters that jointly staff Station 2 on a 24/7 basis.

Figure 18: St. Louis Park Station 2



SLPFD and GVFD do have an automatic aid arrangement whereby each department provided immediate response on structure fires and other calls where multiple apparatus are dispatched. However, SLPFD does not have GVFD respond into its district on the initial call because it does not have on-duty staffing 24/7 thus response times to get personnel to the scene were longer. SLPFD still provides automatic aid to Golden Valley on structure fires and is often able to reach the scene faster on some calls because personnel are already at the station.

The location of SLPFD station 2 is excellent for covering southern portions of Golden Valley. In fact, its four minute travel time covers much of GVFDs station 2's area. As with West Metro, there seemed to be possibilities to consolidate Golden Valley and SLPFD; however, the two departments operate very differently and their cultures are not the same. At some point however, the financial situation may change to the extent that Golden Valley and Saint Louis Park see the advantages of consolidation. It does not seem at this point now, however.

Robbinsdale Fire Department (RFD) – RFD has one station and protects the city of Robbinsdale with a POC staff. Its station is located along West Broadway Avenue just south of 42nd Avenue North. The RFD has a POC chief and responds to approximately 300 calls per year. As with West Metro Stations 2 and 3, the RFD station is situated that it can cover portions of northeast Golden Valley, in particular the area above Medicine Lake Road east of Highway 100.

Figure 19: Robbinsdale Fire Station



Plymouth Fire Department (PFD) – PFD has three fire stations and provides automatic aid to Golden Valley between Winnetka Avenue and Highway 169. Golden Valley reciprocates by providing auto aid to the southeast portion of Plymouth.

Station 1 located at 13205 County Road 6, just west of Highway 55, operates with POC staffing.

Figure 20: Plymouth Fire Station 1



Fire Station 2 is located at 12000 Old Rockford Road. This station operates with a scheduled POC duty crew from 6am to 9pm and then unscheduled POC from 9pm to 6am.

Figure 21: Plymouth Fire Station 2



Station 3, located at 3300 Dunkirk Lane N. and operates with POC staffing

Figure 22: Plymouth Fire Station 3



The location of neighboring stations and those within Golden Valley do suggest that consolidation of one or more departments is possible, especially with West Metro. The scope of work for this project did not include a full review of these possibilities.

A major benefit of improving the fire staffing situation in Golden Valley by having scheduled crews is that it would mirror the model of other departments around Golden Valley, which have adopted a scheduled part-time model or hired full-time firefighters. In doing, it is more likely that automatic aid can become common practice, regionally. Likewise it is easier for fire departments to consider consolidation when their operational profiles are similar.

Recommendation 9: Explore the possibility of consolidating Golden Valley with the West Metro Fire Department, Robbinsdale, and Plymouth Fire Departments. The locations of fire stations in these communities are advantageous for improving coverage and efficiency in the region. Possible reduction in command staff positions might also result, though the likelihood is that some positions would be reclassified.

Insurance Services Office (ISO)

ISO is a national consortium that provides fire protection rating services. Its services are used by insurance companies to determine fire insurance rates, primarily for single-family residential properties. Multi-family residential, commercial, and industrial properties are usually rated individually. Golden Valley was last evaluated by ISO in 2012, at which time it received a Class 4 Public Protection rating.

Classifications for ISO range from 1-10, with 1 being the best. Class 10 is for those communities where fire protection does not meet a minimum standard. In 2012, there were no fire departments rated as Class 1 or Class 2 in Minnesota. There were 39 rated as Class 3 and 103 Class 4. Final ISO ratings are based on the total score of three areas: receipt and handling of alarms, fire department resources, and water supply.

In 2012, Golden Valley received a score of 75.15 out of a possible 100 points. Points were subtracted (7.99) from the score because of incongruence between the excellent water supply and limitations in fire department resources. Following are the scores for each area:

Receiving Alarms	Fire Department	Water Supply
6.25 of 10.0	29.4 of 50.0	39.5 of 40.0

Golden Valley's water supply is exceptional thus the almost perfect rating. The area most affecting a lower rating was in the area of fire department. It was in this category where Golden Valley lost significant points. Only 3.89 of the 15.0 points for fire department staffing were accrued in this area. Improvements in staffing will benefit the city with regards to the ISO rating.

In terms of future changes to the fire department, the city does benefit from three fire stations. If the city were to eliminate a station, the rating likely would not be affected much so long as the city and neighboring communities maintained the automatic aid agreements already in place. The best way to improve the ISO rating is to improve fire staffing such as by having crews on-duty at the fire stations 24/7.

Recommendation 10: Request a consultation with ISO to discuss changes to staffing and deployment to determine the possible impact of changes.

Apparatus

Fire apparatus and other response vehicles are in excellent condition and personnel take great pride in their vehicles. The current fleet is reasonable considering that Golden Valley has three fire stations. If, as this study recommends, Fire Station 2 is eliminated, one fire unit, and possibly two, could be also be eliminated. Doing so would be a considerable savings to the capital budget for fire vehicle replacement.

There are presently seven large fire / rescue vehicles in the fleet: four engines, one ladder truck / quint, and two rescue trucks. The oldest of these is Engine 32, which is 20 years old. The newest Engine (21) is one year old. GVFD considers the replacement for engines to be about 20 years, ladders 25 years, and rescues 15 years. The age for replacement is typical for these types of units. GVFD unit ages, expected replacement date and cost are depicted are as follows:

Table 10: GVFD Suppression & Rescue Units - Replacement Schedule

Unit	Location	Age	Anticipated Replacement Date	Estimated Cost
Engine 11	Station 1	7	2029	\$1.10M
Ladder/ Quint 11	Station 1	25	2018	\$1.10M
Rescue 11	Station 1	6	2025	\$.14M
Engine 21	Station 2	1	2035	\$.60M
Rescue 21	Station 2	15	2016	\$.10M
Rescue 22	Station 2	7	2023	\$.28M
Engine 31	Station 3	4	2026	\$1.09M
Rescue 31	Station 3	15	2019	\$.10M
Engine 32	Station 3	20	2018	\$.60M

Not all of the engines are first-line units. Currently Engine 32 is a spare unit used to replace a first-line unit when one is out for repairs. All engines have the necessary equipment for first-line use.

With two stations one of the engines and a rescue could be eliminated. It is expected that Golden Valley could still meet its fire flow requirements under ISO as the ladder/quint can also get credit for pumping capacity. The city can also use the pumping capacity of automatic aid departments such as SLPFD and West Metro.

Building a new station would take several years. The next unit to be replaced is the ladder/ quint at Station 1. This unit will be needed under any station model the city may choose, so it can be replaced. Units to be replaced after the ladder/ quint are Engine 32 (2021) and Rescue 22 (2023). These units likely would not have to be replaced, if Station 2 is eliminated, though they could be kept as spares for a few more years.

Three engines, one quint/ladder and two rescue units should be considered adequate for Golden Valley given a two station model. The fourth engine and third rescue can be kept as spares until replacement is necessary.

Recommendation 11: Under a two station deployment model consider eliminating one engine and one rescue and relocate remaining equipment to other fire stations.

Training

GVFD has an excellent training program for a department of its size. Training is a priority for the department and most of its members take it seriously. Almost as much time is spent by GVFD in training as is spent responding to calls. GVFD has a full-time training officer. The training officer has recently been reclassified to a battalion chief position as he is now required to respond to calls after hours, sometimes as the incident commander.

The initial training includes 170 hours of classroom and hands-on training. The initial training to become a certified firefighter is conducted Monday and Thursday evenings from 6:00pm to 10:00pm. Trainees are paid at the probationary rates, which is \$10.00/ hour.

Following their first year new personnel are then provided additional medical training of 40 hours. Following their second year, Apprentice Firefighters then attend emergency vehicle apparatus driving classes (40 hours) to become certified operators. All personnel are required to complete EMS and operator training. A regular training night is also conducted weekly and personnel are expected to attend a certain number of hours each year.

Listed in Table 2 are the classes most frequently conducted by the training section.

Table 11: GVFD Training Classes Provided

Training Classes	Required For
* NFPA 1001 Firefighter I & II *Hazardous Materials 472 or equivalent *NFPA 1002 Fire Apparatus Operator *Incident Command 100, 200, 700	All Personnel at Initial Employment
*Emergency Medical Responder *Emergency Medical Technician *Paramedic	One of the Three Required for All Personnel
Blue Card-Hazard Zone 4 & 5 Management NFPA 1041 Instructor I NFPA 1021 Officer 1	Required for All Officers
MN State Fire License ICS 300 & 400 NFPA 1041 Instructor II NFPA 1021 Officer II NFPA 1031 Inspector 1 NFPA 1031 Inspector II	Provided to Personnel Based on Need

Potential firefighters in Golden Valley are required to get certified by the state, which includes obtaining the requisite certifications for Firefighter I, Firefighter II, and Hazardous Material Operations. Candidates also go through the entry process that includes the application process, written test, interviews, physical ability, psychological and medical screening. The process is identical as that for a career firefighter and the city is wise to make sure candidates go through the process before being promoted to firefighter.

The typical process is for the fire department to take in new candidates in January with the candidates graduating in June. GVFD does allow applicants that successfully complete a few hours of basic instruction prior to the formal recruit training process to ride as observers (blue helmets). GVFD is wise to have this pre-training ‘blue-helmets’ program for the reason that many potential volunteers become disinterested because of the time lag between filing the application and the beginning of the formal training program, which can be many months. It does not appear this is a problem for Golden Valley. GVFD does not have a dedicated training facility to practice skills. It does have access to the South Metro Public Safety Training Facility

(SMPST) in Edina and periodically uses that facility for training. GVFD personnel also applied their skills and are constructing a very good search maze at Station 3.

As with many fire departments, the logistics of moving personnel and equipment to a training facility off-site can be problematic. Though not a significant issue, any considerations for new stations should also consider the function of training. A station design that considers ways to provide effective classroom and hands-on training will pay dividends.

Recommendation 12: Maintain the already excellent training program. Improve the ability to conduct better hands-on training and enhance classroom capabilities with any new station.

Scheduled Part-Time (Duty Crew) Firefighters

SLPFD is the department most relied on by GVFD for aid and the most recent to implement scheduled part-time firefighters. Eden Prairie also implemented scheduled part-timers several years ago and the system appears to have worked well there. The staff of GVFD and a number of chiefs including the deputy chief of Golden Valley have been successful in transitioning a POC system to part-time, thus the city would be in good hands in getting help if it decides to pursue it.

Prior to implementation of the system in SLPFD there was reluctance by POC personnel to embrace the model, though most are reported to like it now as it allows them to better plan their schedule. Scheduled part-time firefighters are required to work a minimum of six hours per week and 30 hours per month. The average part-timer works 45 hours/ month. According to state regulations, part-time firefighters are permitted to join the union once they average 14 hours per week. SLPFD officials believe the best estimate is to have 5-7 part-time firefighters for each position to be staffed. The required part-time firefighters does change based on the number of hours each person works.

SLPFD has developed a schedule for its part-time fire personnel. The schedule includes five shifts per day with personnel allowed to sign up for multiple shifts each day, depending on their availability. The schedule is:

7:00am – 10:30am

10:30am – 1:30pm

1:30pm – 5:30pm

5:30pm – 7:30pm

7:30pm – 10:30pm

10:30pm – 7:30am

SLPFD currently staffs its apparatus with a minimum of three personnel, and will be increasing this to four in the near future. Its crews can consist of a combination of full-time and part-time personnel under their system. They make no distinction between part and full time, so long as individuals have the required training.

For this study we estimated the number of part-time firefighters needed to staff three GVFD positions 24/7. The number of positions is due to the assumption that Golden Valley would have three positions staffed by part-timers. The number of hours to be covered by this staffing level is: 3 personnel times 24 hours times 365 days = 26,280 hours. If each part-time firefighter were to work an average of 12 hours per week, the number of part-time personnel needed to cover the needed hours becomes: 12 hours week times 52 weeks = 624 hours divided by 26,280 hours = 42 part-time personnel. Increasing or decreasing the number of hours worked changes the number of part-time personnel needed.

Training Hours and the Transition to Part-time - Annually, POC firefighters attend over 6,400 hours each year for training. Data shows that the hours and costs for training are about the same as those for responding to calls. This is not a surprise considering the importance of maintaining a well-trained force.

This study recommends a change in the deployment model to include scheduled part-time firefighters. One of the advantages of the change is that firefighters would be paid for time at the station and training can be conducted while they are on duty. If, as this study suggests, three part-time firefighters were on-duty 24/7, the total hours would be 26,280 hours each year. If the hours were evenly distributed among 50 (or so) part-time firefighter, each would work about 525 hours, thus training could mostly be conducted during work hours. To provide an estimate of the anticipated cost to staff three scheduled part-time fire personnel over an entire year, we calculated the average hourly rates of captains, lieutenants, firefighter, and apprentice firefighter for the purpose of determining the average hourly rate. This was done for the reason that it is not possible to know which individual might work a particular shift. Benefit costs were also added.

The average hourly rate, including benefits, for these positions is \$19.61. To cover the anticipated 26,280 hours annually would cost approximately \$515,350. Though significant it is substantially less than the cost to provide full-time career personnel to cover the same number of hours. The cost to staff one part-time position for one year is \$171,784. By comparison, the cost to staff one full-time firefighter position for a full year would take about 3.8 FTE personnel at a cost of \$300,000.¹²

The cost (\$515,350) to provide the 24 hour coverage with scheduled part-time personnel would be offset by the cost already paid for POC fire personnel in both response and stand by. GVFD already pays salaries for time responding to calls, training and other activities, such as maintenance. In 2015, 17,489 hours of POC time was paid for these activities.

¹² Calculated at an annual salary with benefits of \$80,000/ yr.

- Incident Response – 6413 hours
- Special Duty – 4678 hours
- Training – 6398 hours

Assuming that 80 percent of the current cost already paid to POC personnel would not be needed if POC personnel were scheduled, the anticipated increase to staff three scheduled part-time firefighters would be:

- Full Cost \$515,350
- Already Paid (80%) -\$233,600
- Additional Cost \$281,750

The remaining 20 percent (\$58,400) would likely still be needed for special events, training, and other activities. At the average rate of \$19.61, about 2,900 hours of unscheduled training hours would remain available to conduct training activities.

IV. FACILITIES AND STAFFING OPTIONS

Golden Valley has options regarding its deployment of fire rescue services. The current model of three stations and primarily a POC staff has been effective for the past 35 years. Analysis shows however that two fire stations, properly located, can serve the city more efficiently than three. There are concerns that POC firefighters will be harder to come by in the future and many of the POC fire personnel there now are nearing retirement.

To improve services and maintain an efficient service there is a need to provide 24-hour staffing. As it stands GVFD only has duty crews for 51 hours each week. Analysis shows that response times are much better during the hours when duty crews are available. Saint Louis Park and Eden Prairie, two departments that recently transitioned from POC to scheduled part-time, reported that firefighters were initially skeptical of being scheduled to work, though most like the system now. The reason is because it is easier to schedule when they are available for fire duty.

The recommendations in this report support the continued expansion of the duty crew model by GVFD as it positions itself for a future where the POC service model becomes challenged by recruitment issues and surrounding departments continue to implement duty crews to achieve the required response times. It is recommended therefore that any facilities options include provisions for living quarters to support a 24/7 duty crew operational model.

The recommendations in the report also indicate that a 2 station model of operation can and will provide adequate service to the community under the duty crew model of operation. The implementation of this option will require the reallocation of equipment and personnel from the retired Existing Station 2 to the remaining two stations in the service model. This recommendation will lead to a minimum addition of one apparatus bay at each station as well as living quarters.

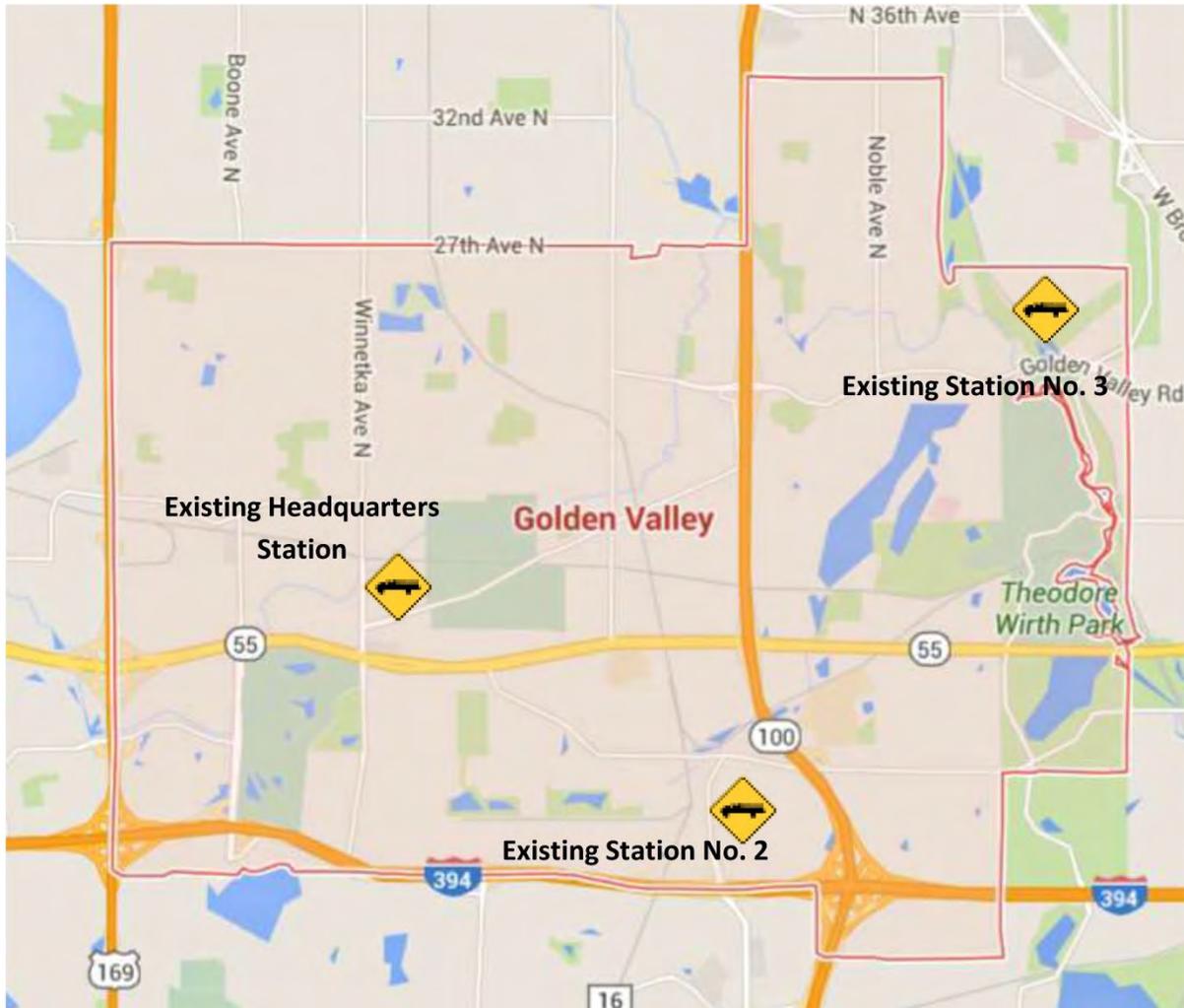
Facilities Analysis: A review of the operational and space allocations of the existing stations.

When contemplating changes to facilities, especially to those that are as old as the existing GVFD Fire Stations, it is reasonable to review their physical and operational condition before determining if expansion and growth plans are appropriate. The team reviewed each station for compliance with the following:

- Standards and recommendations issued by the International Association of Fire Chiefs
- Current building code requirements for the State of Minnesota
- Common design practice for the construction of safe and efficient fire stations

Golden Valley Fire Department (GVFD) responds from three facilities, Station no. 1 (Existing Headquarters Station), Station no. 2 (Existing Station 2) and Station no. 3 (Existing Station 3). The following section provides a review of the facilities that concentrates on the operational characteristics and physical condition of these facilities.

Figure 23: Golden Valley MN – Existing Station Map



Golden Valley MN – Existing Station Map

Figure 24: Golden Valley Fire Department Existing Headquarters Station



The GVFD Existing Headquarters Station located in the Golden Valley Public Safety Building at 7700 Golden Valley Road was constructed in 1966 with an addition added in 1995 this facility provides 9,500 gross square feet of space for the GVFD. The facility consists of three double deep apparatus bays, storage and support spaces and offices for full and part-time department staff. The facility shares a training room and fitness room with the Police Department. The facility has a small dedicated portion of the site that includes 6 dedicated parking spaces and front and rear aprons providing adequate turning room for current equipment needs.

Operationally, this facility is the most functional of the three GVFD stations providing well-spaced, drive through apparatus bays, adequate facilities for storage of personal protective gear (PPE) including SCBA filling and cleaning, and access to the department command staff. There are however a number of operational short comings at this facility that should be considered:

1. Office space is limited. The department currently has a staffing model of 6 full time employees and a half-time employee. In addition the department command structure includes 2 Paid-on-Call (POC) Battalion Chiefs and 3 station officers requiring offices space. These 11.5 staff share a total of 5 offices. With the Chief, Deputy Chief and the Battalion chief having private offices as befits their positions, that leaves the remaining 7.5 personnel sharing 2 offices.
2. Training space for physical drills is limited. The facility provides a shared lecture-style training room that is capable of allowing the entire department to attend training events. Space on-site for physical trainings (ladder drills, hose evolutions, equipment training, etc.) is limited and causes conflicts with shared parking for the police squad cars.
3. Parking is limited. A large POC response to a fire call (Potentially 18 POC) leads to double parking of fire and non-fire staff vehicles parked in the facility parking lot.
4. Personal Protective Equipment (Turnout gear) is stored in the apparatus bay in close proximity to fire trucks. This is dangerous for fire fighters who are potentially donning gear while equipment is leaving the station and is deleterious to the life of that equipment. There is also some evidence that carcinogens deposited on equipment are transferable to the fire fighters themselves.
5. There are no lockers, locker rooms, or showers provided specifically for the fire fighters. Locker rooms, toilets and showers are shared with the police department.

6. No direct venting of vehicle exhaust is provided.

A few short comings of less concern include a lack of direct access by the public to the facility, a need for visitors to transit through the secure portions of the police department for access and a lack of space for POC staff to congregate at the facility without disturbing office staff.

Physically the facility is in good condition. It is constructed of masonry load bearing construction with bar joists, metal deck and a membrane roof system. Office areas are appropriately finished in carpets, lay-in ceilings and stud and drywall construction. The facility is protected by a fire sprinkler system and appears to be code complying for the date of its construction.

Mechanical and electrical systems are reported to be in good condition though of less economical versions than currently available.

Figure 25: Golden Valley Fire Department Existing Station 2



GVFD Existing Station 2, located at 400 Turners Crossroad South, was constructed in 1978 and consists of 6150 gross square feet of space. It has 3 single deep apparatus bays that are NOT drive through. It contains an office, dayroom, kitchen and bathroom/locker room spaces with a shower. The facility has limited storage and work areas.

Operationally this facility presents a number of challenges:

1. Apparatus Bays are not drive through requiring the backing of all equipment stored here. This is particularly challenging with the position of the PPE gear lockers located at the rear of the apparatus bays.
2. Apparatus Bays are narrow at 16'-0" wide with 12' x 12' overhead doors. Modern stations are typically constructed with 20' wide bays and 14' x 14' overhead doors.
3. Personal Protective Equipment (PPE) is stored in the apparatus bay in close proximity to fire trucks. This is dangerous for fire fighters who are potentially donning gear while equipment is leaving the station and is deleterious to the life of that equipment. There is also some evidence that carcinogens deposited on equipment are transferable to the fire fighters themselves.

4. The bathroom/locker rooms are not handicapped accessible. Nor is the apparatus bay with a 6" elevation change. This is particularly challenging with the use of the facility as an election polling place for the City.
5. No direct venting of vehicle exhaust is provided.
6. Finishes in common areas such as the day room and the office have reached the end of their expected life.
7. Some elements of the HVAC equipment are original and have reached the end of their expected life.

Physically the facility is in good condition. It is constructed of masonry load bearing construction with metal bar joists, metal deck and a membrane roof. The facility is built into a hill and there is evidence of past leaks at some of these locations. The facility is protected by a fire sprinkler system and appears to be code complying for the date of its construction. Site and parking lots appear to be in good shape.

The following items are in poor condition and should be considered in any discussions regarding the future of this facility:

1. It is code complying for the date of its construction however handicapped accessibility codes (ADA) have changed and the facility is no longer compliant.
2. Finishes in common areas such as the day room and the office have reached the end of their expected life.
3. Some elements of the HVAC equipment are original and have reached the end of their expected life.
4. The facility is lit entirely by fluorescent fixtures. More efficient alternatives (LED) exist.

Figure 26: Golden Valley Fire Department Existing Station 3



GVFD Existing Station 3, located at 3700 Golden Valley Road was constructed in 1979 and consists of approximately 5,760 gross square feet of space. It has 3 single deep apparatus bays that are NOT drive through. It contains an office, dayroom, kitchen and bathroom/locker room spaces with a shower. The facility has limited storage and work areas.

Operationally this facility presents a number of challenges:

1. Apparatus Bays are not drive through requiring the backing of all equipment stored here. This is particularly challenging with the position of the PPE gear lockers located at the side of the apparatus bays.
2. Apparatus Bays are narrow at 14'-0" wide with 12' x 12' overhead doors. Modern stations are typically constructed with 20' wide bays and 14' x 14' overhead doors.
3. Personal Protective Equipment (Turnout gear) is stored in the apparatus bay in close proximity to fire trucks. This is dangerous for fire fighters who are potentially donning gear while equipment is leaving the station and is deleterious to the life of that equipment. There is also some evidence that carcinogens deposited on equipment are transferable to the fire fighters themselves.
4. The bathroom/locker rooms are not handicapped accessible. Nor is the apparatus bay with a 6" elevation change. This is particularly challenging with the use of the facility as an election polling place for the City.
5. No direct venting of vehicle exhaust is provided.
6. Finishes in common areas such as the day room and the office have reached the end of their expected life.
7. Some elements of the HVAC equipment are original and have reached the end of their expected life.

Physically the facility is in poor condition. It is constructed of masonry load bearing construction with wood trusses, wood decking and a combination of shingles and membrane roofing. The facility is protected by a fire sprinkler system and appears to be code complying for the date of its construction. The exterior masonry appears to be in good shape however the wood siding is in poor condition. Site and parking lots appear to be in good shape.

The following items are in poor condition and should be considered in any discussions regarding the future of this facility:

1. It is code complying for the date of its construction however handicapped accessibility codes (ADA) have changed and the facility is no longer compliant.
2. Wood siding is showing its age. Nails are visible and woodpecker holes are evident around the entire perimeter.
3. The nature of the hipped wood truss roof framing will make adding on to this facility challenging requiring structural analysis if modification of the current framing is required.
4. There is minimal insulation in the wall system making this facility more costly to run than newer construction.
5. Finishes in common areas such as the day room and the office have reached the end of their expected life.

6. Some elements of the HVAC equipment are original and have reached the end of their expected life.
7. The facility is lit entirely by fluorescent fixtures. More efficient alternatives (LED) exist.

Space Needs Analysis

The space needs analysis contained in this report is presented with the assumption that the recommended two station model is implemented. This section contains summaries of the full space needs analysis with the detail for that work included in the appendix.

The space standards used to develop the space needs for the Golden Valley Fire Department’s New Main Station and New East Station are developed from a number of sources. The spaces proposed are assumed to present a station design that is planned to include 20 years of growth. Where possible, Five Bugles Design uses national standards as promulgated by the International Association of Fire Chiefs and other nationally recognized organizations. Other data is derived from our experience with over 200 facilities located throughout the Midwest.

Recommended facility budgets are based upon a range of costs that is established through the use of nationally recognized sources such as Engineering News Record as well as an averaging of recent bid and construction costs for stations designed by our firm.

The following is a space needs summary and comparison to existing for each of the proposed stations:

NEW MAIN STATION

AREA OF USE	EXISTING	PROPOSED
Apparatus Bay	4350 sf	12694 gsf
Apparatus Support	625 sf	4565 gsf
Administration	1073 sf	4870 gsf
Training	2748 sf	6842 gsf
Staff Support	600 sf	2815 gsf
TOTAL	9396 sf	31,786 gsf

A few items of note regarding the new Main Station areas indicated above.

1. The assumption of a closed station increases the size of the proposed Apparatus Bay to account for repositioned equipment.
2. The Main Station program includes the living quarters for a part-time fire fighter presence as recommended earlier in this report.
3. The existing spaces indicated above are not gross square foot as they do not include the share of mechanical and electrical spaces that serve them.

NEW SATTELITE STATION

AREA OF USE	EXISTING (Station No. 3)	PROPOSED
Apparatus Bay	3334 gsf	7948 gsf
Apparatus Support	434 gsf	3643 gsf
Administration	368 gsf	1899 gsf
Training	0 gsf	1409 gsf
Staff Support	1624 gsf	2542 gsf
TOTAL	5760 gsf	17441 gsf

Notes:

1. The assumption of a closed Station no. 2 increases the size of the proposed Apparatus Bay to account for repositioned equipment.
2. The Main Station program includes the living quarters for a part-time fire fighter presence as recommended earlier in this report.
3. Existing space are gross square foot including mechanical, electrical and all interior and exterior wall areas.

EXISTING STATION NO. 2

AREA OF USE	EXISTING	PROPOSED
Apparatus Bay	3560 gsf	Planned Decommission
Apparatus Support	520 gsf	Planned Decommission
Staff Support	1846 gsf	Planned Decommission
Training	0 gsf	Planned Decommission
Administration	224 gsf	Planned Decommission
TOTAL	6150 gsf	

Notes:

1. Existing space are gross square foot including mechanical, electrical and all interior and exterior wall areas.

The detailed space needs analysis is included in the appendix of this report.

Facilities Conclusions and Recommendations

The facilities recommendations that follow are based on the following conclusions regarding the conditions of the existing facilities and the space needs study.

1. The existing Headquarters Station (Station no. 1) has few maintenance and repair issues however, it is too small for current administrative functions, and lacks needed site area for an active physical training program. The available site area would seem to preclude the ability to add living quarters recommended herein as well as the additional apparatus bay required by the eventual closing of Station no. 2.
 - a. It should be noted that the possibility to add living quarters within the existing confines of the station or to add to administrative space on the existing site may be possible and was not studied as part of this report.

This facility would appear to have the capacity to serve as a satellite station in an interim mode where a new Main Station has been constructed and Existing Station 2 is still operational. However, this option would require capital improvements to create appropriate living quarters for duty crews with a long term plan to construct a replacement facility.

2. Existing Station 2 is in good repair; however this station is the most out of place of the three stations from a station location and response characteristic. Its structure will make it difficult to resolve the tight conditions within the apparatus bays. It is possible that living quarters could be renovated within existing space or as an addition, however this investment should be balanced against the long term recommendation of this report to close this facility as increased reliance on 24/7 duty crews reduces its effectiveness.
3. Existing Station 3 is marginally out of place from a location and response characteristic, is threatened by the eventual growth of the Bottineau Rail Corridor project and has growing maintenance challenges. The structure and site constraints would seem to preclude the ability to add living quarters recommended herein as well as the additional apparatus bay required by the eventual closing of Existing Station 2 without major capital investment.
 - a. It should be noted that the possibility to add living quarters within the existing confines of the station or to add to the required apparatus bay on the existing site may be possible and was not studied as part of this report.

A facility improvement plan is challenged by the likelihood that the implementation of the duty crew model will be a gradual change and not happen overnight. The City will need to balance the potential for making short term investments in facilities to allow for the living quarters required against the eventual retirement of those facilities and construction of new. With that in mind the team makes the following optional recommendations.

Option No. 1-Single Construction Project (Preferred Option): Construct a New Main Station in the vicinity of Existing Station 1 and a New East Station near the intersection of Duluth Street and Regent Avenue. Close Existing Station 2. Renovate the Existing Headquarters Station as Police Department space and garage space for Police Department use.

Pros

- Provides updated facilities for fire
- Moves Station 3 to a better location
- Eliminates one station
- Provides facilities for 24/7 staffing
- Good travel time coverage with two fire stations
- Provides additional space for Police Department

Cons

- Large Capital Outlay
- Moves Headquarters away from government center

Potential Capital Costs

New Main Station	\$9,900,000 to \$12,100,000
New East Station	\$5,500,000 to \$5,700,000
<u>Renovation at Police Station</u>	<u>not included in study</u>
Total	\$15,400,000 to \$17,800,000

*Costs do not include site acquisition

**Costs are presented in 2017 construction dollars and should be inflated for year of construction.

Option No. 2-Phased Construction:

Phase 1-Year 1: Construct a New East Station as the Main Station (Department Headquarters). Renovate Existing Station 1 to convert office space to living quarters. Perform required maintenance at Station no. 2.

Phase 2-Year 5-10: Construct a new station near the Government Center that includes recommended living quarters and a minimum of 4 apparatus bays. Close station no. 2.

Pros

- Spreads capital costs over multiple years
- Provides updated facilities for fire headquarters
- Provides for needed physical training opportunities
- Provides facilities for 24/7 staffing
- Good travel time coverage with three fire stations

Cons

- Increases total project costs due to maintenance work at stations to be closed as well as losses due to inflation.
- Separates fire headquarters from government center
- Maintains three station alignment for foreseeable future
- Invests in renovating and maintaining stations that are not part of long term department strategy
- Does not resolve operational issues of Existing Station 2.

Potential Capital Costs

Phase 1-Year 1

New Main Station	\$9,900,000 to \$12,100,000
Station No. 1 add and remodel	\$750,000 to \$800,000
<u>Station No. 2 maintenance</u>	<u>\$250,000 to \$500,000</u>
Sub-Total	\$10,900,000 to \$13,400,000

Phase 2-Year 5-10

Construct new station near Government Campus	\$5,500,000 to \$5,700,000
<u>Renovation at Police Station Not included in scope of study</u>	
Sub-Total	\$5,500,000 to \$5,700,000
Total Project	\$16,400,000 to \$19,100,000

*Costs do not include site acquisition

**Costs are presented in 2017 construction dollars and should be inflated for year of construction.

Option No. 3: Do Nothing. Each of the department's facilities have unmet maintenance needs that should be performed if there is to be a delay in implementation of the report's recommendations of longer than 5 years. Those recommendations are detailed at length in a 2007 report shared with our team by the department. It should also be noted that the Do Nothing option will hinder the department's ability to transition to a scheduled, part-time POC model as the spaces at the various stations are not adequate to support 24/7 staffing.

Pros

- Minimal capital investment

Cons

- Maintains existing 3 station service model
- Does not provide for 24/7 staffing at stations

Potential Capital Costs

Existing Headquarters Station	\$240,000 to \$275,000
Existing Station No. 1	\$250,000 to \$500,000
<u>Existing Station No. 2</u>	<u>\$490,000 to \$550,000</u>
Total	\$755,000 to \$1,325,000

Recommendation 13: Planning studies of preferred options should be implemented to verify the ability of existing infrastructure to support the required expansions as well as determine total project cost of any planned capital improvements.

APPENDICES

APPENDIX A

POC SYSTEM SUPPORTING RESEARCH

Why are volunteer-based fire departments going up in smoke?¹³



A lawn statue rests in the yard in front of the remains of a house on Skyline Trail in Eagan on April 12, 2016. The house was destroyed in a fire last April. Neighbor Bill Pederson lays the blame on the Eagan Fire Department. “A volunteer fire department is an outdated model in this day and age,” he said. (Pioneer Press: John Autey)

**By Bob Shaw | bshaw@pioneerpress.com
April 15, 2016 | UPDATED: 4 weeks ago**

To Bill Pederson, it’s not just a ruin. It’s a monument to bad firefighting. Last week he walked past a neighbor’s house that was destroyed by fire a year ago. The Eagan Fire Department took 18 minutes to get a stream of water on the fire, partly because of a shortage of volunteer firefighters. “It’s an embarrassment,” said Pederson, who is planning a one-year commemoration of the fire April 23. “A volunteer fire department is an outdated model in this day and age.”

Eagan Fire Chief Mike Scott said the response to that fire was too slow and was a consequence of the manpower shortage. “In volunteer fire departments,” said Scott, “the one driving force is that you need volunteers.” After decades of surviving every type of emergency, volunteer fire departments are facing a new hazard — a lack of volunteers. The state fire marshal’s office says

¹³ <http://www.twincities.com/2016/04/15/why-are-volunteer-based-fire-departments-going-up-in-smoke/>

Eagan is among the 94 percent of metro-area cities that are partially dependent on volunteers, and the shortage is slowing response times and increasing costs.



Brick and charred wood is about all that remains of a house on Skyline Trail in Eagan that was destroyed in a fire last year, April 12, 2016. (Pioneer Press: John Autey)

“In some cities this is reaching critical mass,” said State Fire Marshal Bruce West. As volunteer firefighters drift away, cities are forced to hire full-time firefighters costing up to \$100,000 a year. The cost to cities could be staggering — volunteer firefighters save the state an estimated \$742 million a year, according to a 2014 University of Minnesota study.

The state classifies part-time firefighters who respond to calls as volunteers — whether they are unpaid, or get a nominal fee such as \$15 per call. The state fire marshal reports that in the metro area there are seven departments that use only full-time professional firefighters — St. Paul, Minneapolis, Richfield, Burnsville, the Minneapolis/St. Paul Airport, the Mdewakanton Sioux Community, and the South Metro fire department, serving South St. Paul and West St. Paul. The other 126 departments rely on a combination of volunteers and full-timers.

Minnesota is uniquely dependent on volunteers, according to the University of Minnesota study. The state has the fewest number of full-time firefighters per capita in the country, and the second-highest percentage of volunteer fire departments. But 56 percent of the state’s counties saw a decline in volunteers from 2008 to 2012, the study said.

Lake Elmo Fire Chief Greg Malmquist said that is a sign that the volunteer system is broken. In the 19th century, he said, pioneer towns would ring a fire bell and volunteers would come running to help extinguish fires. It works much the same way today, except volunteers have

beepers and drive to the fire stations. Malmquist now has 22 volunteer firefighters — and there should be 32. “We are short-staffed and we have been for years,” he said.

Woodbury has a fire station at Upper Afton Road and Century Avenue where the volunteer shortage is critical. “We have grave difficulty there, and it’s getting worse,” said Woodbury Fire Commander John Wallgren. Eagan has 87 volunteers — which is 79 percent of what it needs, said fire chief Scott. Last year, 19 of them quit.

CHANGING TIMES

There are many reasons fewer volunteers are coming forward. Residents no longer work near their homes. “We are a bedroom community,” said Lake Elmo’s Malmquist. When a fire breaks out, firefighters race from their jobs in places like the 3M campus in Maplewood or downtown St. Paul — and the drive adds as much as 10 minutes to the response time.

Potential firefighters — and everyone else — move more frequently and are less devoted to their communities. They balk at the time commitment, according to Rob Boe, the public safety project coordinator for the League of Minnesota Cities. “We see the shortage as a rising issue,” said Boe.

After Sept. 11, 2001, when the heroics of New York’s firefighters were on TV, thousands were inspired to join fire departments. But that glamour has faded, officials say. Finally, there is the training. Firefighters must devote hundreds of hours to preparing for emergencies that their grandfathers couldn’t have imagined. “We are all-hazard departments now,” said state fire marshal West. “We do floods, tornadoes, hazardous material spills. We come when someone throws a chemical into a mall. Or if there is a suicide bomber.”

DOES SERVICE SUFFER?

Officials worry that the volunteer-starved departments are lagging. Volunteers are inherently less reliable. “There are no guarantees. You don’t know who’s on vacation, who’s out to dinner, or whose kids are sick,” said Malmquist. “You are at the mercy of their personal lives.” From 10 a.m. to 10 p.m. on weekdays, volunteers are working or out for the evening — and those are the worst hours to get an adequate response, he said.

In Eagan, volunteers take almost twice as long to respond to fires, said fire chief Scott. He said that in 2015, volunteers responded to calls in an average 8 minutes, 5 seconds. The full-time firefighters responded in 4 minutes, 48 seconds. With fewer volunteers, cities are faced with a new era of higher costs. Scott would like to boost Eagan from five full-time firefighters to 15 — at a cost of \$1 million more a year. The extra costs include building expenses. Lake Elmo is considering spending \$10 million for two new fire stations, needed in part to provide housing for future full-timers working 24-hour shifts.

Woodbury has helped address its shortage by paying more — \$11.30 per hour. But the city also requires that volunteers live no more than four minutes from their assigned station and go through training taking up to two years. The effects of the volunteer shortage exploded in Eagan

on April 23, 2015. Fire chief Scott said the 18-minute wait to get water on the fire was longer than he would have liked. “It was kind of a perfect storm,” said Scott. “With volunteers, you don’t have enough people, and you don’t know who is going to show up.”

Volunteers will always be slower than professional firefighters who wait at fire stations. “I have nothing but admiration for the volunteers. But the world is changing.” For the neighbors, the fire was an unforgettable spectacle. Pederson dashed outside to see the house being devoured by flames. The inferno was hot enough to crack several windows and melt shingles on the neighboring house. Across the street, Melissa Ilaug stood on her lawn, transfixed by the sight. “We were getting sunburned from the heat,” she said. She waited for help to arrive.

With more than 100 people watching, said Ilaug, the volunteer crew was unable to hook up hoses to the hydrant. When they finally did, the water dribbled out of their hoses, half-way up the driveway. Standing by the ashes of the house Tuesday, Pederson admitted that the volunteers save money. But it’s time to spend the money to set up a competent fire department, he said. “Everyone likes being fiscally responsible, but no one wants to be known as the Walmart of the suburbs. “This is the 21st century.”

From Eagan to Anoka, firefighters' emergency is daytime staffing¹⁴



Eagan Fire Department Captain Mark Majerus, left, and firefighter Jon Stevenson clear snow from a hydrant on Golfview Drive in Eagan on Friday, January 24, 2014. (Pioneer Press: John Doman)

**By Nick Ferraro | nferraro@pioneerpress.com
February 22, 2014 | UPDATED: 2 years ago**

Eagan volunteer firefighter Dave DiIoia has responded to thousands of calls over his 36-year career. Because he is a business owner, he can drop what he is doing and rush to an emergency — at any time during the workday. “I just put the closed sign on the door and take off,” said DiIoia, owner of a second-generation shoe repair shop in Eagan.

Daytime flexibility and long-term loyalty from volunteer firefighters have become rarer for cities like Eagan and others across the state and nation in recent years. As a result, their fire departments have staffing challenges, longer average response times to calls and often not enough firefighters on the scene. Local fire chiefs say increased training requirements, time-crunched family lives and less-flexible employers are big reasons not enough firefighters can respond to daytime calls.

Nyle Zikmund, chief of the Spring Lake Park-Blaine-Mounds View Fire Department, calls the daytime shortage a “national trend and a crisis.” “There are a lack of daytime volunteers available because of things like the always-changing economy and a lack of manufacturing jobs that employ third-shift workers,” said Zikmund, who also serves as a district director for the International Association of Fire Chiefs. “It’s those factors and just pure demographics that are causing the shortage of volunteers.”

¹⁴ <http://www.twincities.com/2014/02/22/from-eagan-to-anoka-firefighters-emergency-is-daytime-staffing/>

To help round up and retain recruits, fire chiefs are turning to part-time paid crews or city employees who also are trained firefighters. Many local cities are relying on a pot of federal grant money, which this year totals \$340 million. But the grants are only a temporary fix, said Mike Scott, fire chief for Eagan. Scott's city was recently awarded a federal SAFER (Staffing for Adequate Fire and Emergency Response) grant of about \$871,000. The money will be used to hire four full-time firefighters and a captain for weekday coverage for the next two years.

When the new employees come on board around June, they will be the first full-time firefighters in the department's 50-year history. The hope, Scott said, is that the city council sees the value of their work and decides to fund the positions after the grant money runs out, Scott said. "It is a trend to start having some full-time staff," he said. "It's somewhat out of desperation ... we've tried so many different things to recruit and retain volunteers — and it's just not working."

BIG TIME COMMITMENT

Eagan, with a population of nearly 65,000, has long had one of the largest groups of paid on-call or volunteer firefighters in the state. Currently, it has 92. From 2009 to 2013, the city hired 54 volunteer firefighters. But about 14 firefighters left each year. Scott said exit surveys revealed the most common reason they left was the time commitment, followed by a busy home life and a change in career. On average, Eagan firefighters go through 40 training sessions a year, for everything from how to be first responders to dealing with hazardous materials. "The position requires a lot more time than it used to," Scott said. "I think one of the things people don't understand is that a volunteer or paid on-call firefighter has the same training requirements of a full-time firefighter, and that's how people get burned out."

Eagan firefighters are given \$15 per call and \$19 for each training session, but pay ranks ninth on the list for reasons why they left. That comes to no surprise to Scott. "I know it sounds kind of like a cliché, but they want to give back to the community and they enjoy doing it," he said. "So for a lot of folks, it's really a struggle when they are making the choice to leave."

More than half of the department's calls come in on weekdays, which is the most difficult time to staff, Scott said. Just 20 of the city's 92 firefighters are available during the day, Scott said, adding that an unwritten rule in volunteer fire departments is that a third of those available will be able to respond. "Weekends and weeknights, we're not concerned about," Scott said.

During the day, Eagan's department, like most volunteer departments across the state, regularly fails to meet the National Fire Protection Association recommendation that 15 firefighters be on the scene of a blaze within nine minutes, Scott said. As a result, most departments use the standards only as guidelines. "I don't know of any city that says 'We've adopted the NFPA standards and we're going to hold ourselves to it,'" he said. "You just don't want to set yourself up for failure."

EXPERIMENTS IN STAFFING

Cities are taking various measures to beef up the firefighter ranks. Several departments, including Maplewood, Cottage Grove and Roseville, are paying some of their volunteers an hourly wage to man firehouses in shifts. Meanwhile, some cities, like Rosemount, have upped the per-call compensation to try to retain firefighters and recruit new ones. City officials say it will be a few years before they discover whether the approach works.

Others are thinking outside the box. Eagan offers up six dorm rooms at a fire station, where firefighters live for free in exchange for their service. Forest Lake, meanwhile, plans to re-organize staff at city hall, switching some positions to dual roles such as firefighter/building inspector and firefighter/custodian. But nothing compares to having firefighters around the station full time, Shakopee Fire Chief Rick Coleman said. In September, Shakopee added four full-time firefighters to work during the day, a first for the southwest metro city that has seen big population gains over the past decade. “It’s like night and day now around here,” Coleman said. “Our trucks are getting worked on; our equipment is in better shape. Things are just getting done.”

Salary and benefits for the four firefighters costs about \$260,000 a year, a sum that city council members didn’t take lightly, Coleman said. “Believe me; we all feel we pay enough in taxes,” he said, “but somewhere there has to be a balance between what you pay and what level of service you want.” Last year, Stillwater, which relies heavily on paid, on-call firefighters, added two full-time firefighters to its force. “Historically, the paid on-call model was very effective,” Fire Chief Stuart Glaser said. “Most people lived and worked in the city. That’s not necessarily the case anymore.”

DUAL ROLES

Up until two years ago, Tom Stepaniak managed a Goodyear auto service center and volunteered for the Spring Lake Park-Blaine-Mounds View Fire Department. “One year, I think in 2009, I had the most calls within the department,” he said — about 170 calls. But Stepaniak wanted to be a full-time firefighter. He got his chance in fall 2012, when he and three other volunteers were hired full time to work daytime hours, thanks to a \$500,000 SAFER grant. They started out mainly doing maintenance and other odd jobs during down time. Now, three of the four are certified fire inspectors and the fourth is a fire prevention specialist.

Eagan also is planning to have its new firefighters help catch up on fire inspections. “I don’t mind this,” said Stepaniak, 41, while driving to a scheduled inspection of a real estate agency in Spring Lake Park. “I’ll do whatever I can to prove my worth.” But he knows the grant money will run out this fall and the positions could go away. “We hope to keep these guys around full time, somehow, some way,” said his co-worker, Dan Retka, a battalion chief. “I don’t know what we’d do if not for Tom and the other guys.”

Just then, a call came over Retka’s hand-held radio. “We gotta go,” he said. Within a minute, Retka and Stepaniak were in their turnout gear and heading down Ramsey County 10 to a rollover crash on Interstate 35W.

Creative Recruitment Efforts Launched by MN Departments¹⁵

Karen Zamora June 18, 2016

Source: McClatchy

June 18--Fire departments across the west metro are getting creative in recruiting candidates to join them as paid on-call firefighters. Departments such as Plymouth, Golden Valley and Maple Grove are taking to social media, holding information events and handing out fliers in hopes of attracting as many qualified applicants as possible. "It's difficult, we don't see the interest we had in the past," said Plymouth Fire Chief Roger Coppa. "The volunteerism is more difficult to come by now. We do notice that."

Most Minnesota cities mainly use paid on-call firefighters who live or work minutes away from their local fire station. Only a handful of firefighters in most departments are full-time. In recent years, recruiting for the on-call positions has run up against people's changing priorities, whether family commitments or careers or both. George Esbensen, Eden Prairie's fire chief and director of emergency preparedness, said that 90 percent of Minnesota's firefighters are part-time who don't make it a career.

Esbensen, who serves as president of the Minnesota State Fire Chiefs Association, said that many departments have only about 80 percent of the personnel that they can carry. "There is such a struggle keeping staffing," Esbensen said. "It's a huge statewide issue, nationally as well. The current trend says that this will not get any better." So departments now have to be creative to attract the younger generation. And Esbensen says that social media is the way. "We do very little print media publicity. All of our stuff is social media driven," he said. "When you are thinking about the younger generation, that's where they hang out."

Coppa said his department is making postcards to target specific neighborhoods. To be a paid on-call firefighter in Plymouth, you must live within eight minutes of one of the city's fire stations. Golden Valley Battalion Fire Chief Steve Baker said his department has held several informal meetings and open houses for residents to ask current firefighters questions and learn more about the job. "It's not a seasonal job," Baker said. "There's a lot of commitment. So if someone is interested and talks with our firefighters, then they know what to maybe expect."

Golden Valley has started using social media by posting memes on the city's Facebook page. In one photo posted two weeks ago, a firefighter is holding a large tool over his shoulder with words in bold that read, "I don't always rip doors off cars, but when I do, it's to save a life." Another photo shows a group of firefighters with the words: "One does not simply fight a fire alone." "We have to be more creative in the recruiting process," Baker said.

¹⁵ <http://www.firehouse.com/news/1222224/minnesota-fire-departments-try-creative-ideas-for-firefighter-recruitment-firefighter-news>

Some departments team up with outreach programs, such as the Boy Scouts of America, to attract even younger potential recruits. "Those are seeds you are planting for many years from now, and hopefully it turns out where they want to do this," Esbensen said. Maple Grove Deputy Fire Chief Tim Bush said that many of his colleagues are former Explorer scouts. "This is something where you are giving back to the community," Bush said. "It's a way to help people in your community."

Twitter: @KarenAnelZamora

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Volunteer Fire Departments Face Recruitment, Retention Challenges Minnesota's recruitment and retention efforts have been falling since the 1980s.¹⁶

Grace Pastoor, Duluth News Tribune | July 14, 2015
It's hard to recruit and retain volunteer firefighters. Shutterstock



(TNS) - For Grant Gimpel, a workweek means putting in at least 70 hours as a firefighter. For 50 of those hours, Gimpel is an airfield firefighter with the state of Minnesota. The other 20-plus are spent as chief of the Grand Lake Volunteer Fire Department northwest of Duluth. "It's difficult," Gimpel said. "I'm married with kids. ... But the nice thing is, my wife is retired from here so she understands. She gets it."

Gimpel's grueling schedule is the reality that comes with heading a volunteer fire department. Recruitment and retention within departments such as Gimpel's has been falling since the 1980s. And even though fire-related calls are decreasing, volunteer fire departments are working more.

The Minnesota Department of Public Safety reported that fire-related incidents decreased by 14.1 percent between 2009 and 2013 — but according to a report conducted for the Minnesota State Fire Chiefs Association, the number of non-fire-related calls increased by 45.9 percent between 2002 and 2012. Many of those are rescue and medical calls.

¹⁶ <http://www.emergencymgmt.com/disaster/Volunteer-Fire-Departments-Face-Recruitment-Retention-Challenges.html>

Mark Niemi, assistant fire chief for the Rice Lake Fire Department just north of Duluth, said the increase in calls puts a strain on volunteers. "The fire department's kind of the catch-all for any problem out there," he said. "We have to be trained in so many different things now than in years past."

The U.S. Fire Administration reported that 87 percent of the country's departments are volunteer or mostly-volunteer. In Wisconsin, more than 92 percent of fire departments are volunteer. Ninety-seven percent of Minnesota's fire departments are volunteer or mostly-volunteer — the second-largest percentage in the country.

But Minnesota does not lead the nation in the number of volunteer firefighters, measured in relation to state population. Minnesota is 21st in the United States for the number of non-career firefighters per 10,000 people at 32.89, according to a study conducted for the Minnesota State Fire Chiefs Association.

Gimpel has seen a decline in numbers first-hand. The Grand Lake department is allowed to have 40 members, but only has 21. The department had two recruits at the end of 2014, but the overall lack of firefighters makes it difficult for the department to do its job.

Mike Marshall, chief of the Hermantown Volunteer Fire Department, has faced the same difficulties. His department also is allowed 40 members, but is stuck at 20. Marshall said the call volume in Hermantown creates challenges. "We'd like to have more; we'd like to have a full roster and a waiting list, which we used to have 20 years ago," he said. "We have to run so many calls in Hermantown; we're up to about 1,000 calls a year now, which is a lot to expect of somebody who is a volunteer."

George Esbensen, chief of the Eden Prairie (Minn.) Fire Department, who helped supervise the study for the Minnesota State Fire Chiefs Association, said the problem is more concentrated in small towns. "I think everything is accentuated when you just have a smaller pool of people to start with," Esbensen said. "And if a major employer or two shuts down in your community ... a lot of people move out of town."

Experience gap

The state's volunteer fire departments also have trouble retaining firefighters. Niemi said students from Lake Superior College's fire school often join the Rice Lake department but leave soon after to pursue careers as career firefighters. "We have a gap of brand-new members that are within their first two years or less, and then we have another chunk of members that have been around for almost 20-plus years, so it's that middle area that we lack right now," Niemi said. Fire departments statewide suffer from this gap. Esbensen said fewer young people are "waiting in the wings" to take over for older firefighters, and the study backs up his observation. In 2012, 22 percent of volunteer firefighters were older than 50. Forty-six percent were between the ages of 35 and 49. "The aging community means you have fewer young people to draw from to turn into firefighters," Esbensen said. "Typically people that get into the fire service are under 50 and the high percentage of them are under 40, so when you have an aging population you just have fewer of those young people around."

Niemi said he's concerned that once the firefighters with the most experience retire from the department, nobody will be able to lead it. "Once these members retire, that have had these 20-plus years of service, a lot of their experience and knowledge goes out the door," Niemi said.

To fight this, Rice Lake is pairing older firefighters with newer recruits in an attempt to engage them.

What's causing the problem?

The state fire chief's association report identified many reasons for the difficulties with recruitment and retention among volunteer fire departments. Those reasons fall under three categories: increased demands, changing communities and local management. Esbensen said greater training requirements increase the demand on recruits' time. Training to become a firefighter takes 200 hours. "We're trying to do a better job ... training and equipping our people to respond to the myriad of different things that fire service people respond to," Esbensen said. "There's just an unending list of the kind of emergencies that the fire service responds to."

Calvin Larson, chairman of the Minnesota State Volunteer Firefighters Association, said the time it takes to train to fight fires and handle other calls can deter candidates. "People we talk to who are interested in it — when they hear that it's [200] hours to get started, [it] makes them take another look at if they really want to do it or not," Larson said.

Changing communities also play a role in recruitment and retention issues, Esbensen said. The aging population throughout the state has increased the demand for emergency medical services. Increasingly mobile communities and high housing costs also cause problems, he said. Because firefighters generally are young people with lower incomes, they often don't have the money to live in communities with expensive real estate, leaving those areas with less fire protection. "When you have a city whose housing costs are rising and are above the affordable level for what a typical young person early in their career can afford, then they live in different cities and your city is less able to staff their non-career fire ranks," he said.

To combat staffing issues, volunteer fire departments rely on mutual aid — a system in which, when a fire department receives a call, nearby departments also are dispatched. In St. Louis County, fire departments receive automatic mutual aid for fire incidents and can request it for other kinds of emergencies. Esbensen said Minnesota needs to find a way to reverse the decline in recruitment and retention, especially because the state relies so heavily on volunteer firefighters. "It's something that every community needs to be thinking about before it comes crashing down around our collective heads," he said. "We still need to provide fire coverage. How are you going to do that if you can't effectively recruit and retain?"

How to help

Hermantown Volunteer Fire Department Chief Mike Marshall said people interested in helping their local volunteer fire department should reach out and see if there is a need. Marshall said the most

important quality in a volunteer firefighter is enthusiasm for the job. "They've got to want it," he said. "If they're willing to do it they'll learn, because there's a lot to learn."

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INVER GROVE HEIGHTS MOVES ON-CALL FIREFIGHTERS INTO STATION SHIFTS¹⁷



Inver Grove Heights firefighter Mike McMonigal opens the water flow at a fire hydrant last week so Jason Colvin, center, can practice pumping, at Fire Station No. 1. (Pioneer Press: Scott Takushi)

By Nick Ferraro | nferraro@pioneerpress.com
May 9, 2016 | UPDATED: 1 day ago

Highlights

- Fire chiefs say duty crews reduce response times and helps recruit and retain firefighters.
- Duty crews cost more than the on-call pager system but not significantly more.
- Duty crews began in the 1970s and more departments are heading toward them, but they still are not the norm.

Bill Groth is antsy. Foot surgery has put the veteran Inver Grove Heights firefighter on light duty, which means he can't go on calls. "That's been tough," he said. Consider that last year, Groth responded to 706 of the department's 1,229 fire, medical and rescue calls.

"When you're a paid on-call firefighter, you want to help people," said Groth, a 57-year-old retired postal worker, when asked to explain his call total, which was tops in the department. "You want to make as many of the calls as you can." Bum foot or not, Groth's call volume would have dropped this year either way — and he's OK with that.

¹⁷ <http://www.twincities.com/2016/05/09/inver-grove-heights-moves-on-call-firefighters-into-station-shifts/>

In January, the fire department switched to a “duty crew” service model, which means that three paid on-call firefighters are at the station in shifts, 24 hours a day, seven days a week. It replaces the traditional system in which the firefighters came to the station after their pagers went off. “I think this should have come a long time ago,” Groth said at the end of a shift on a recent weekday. “It’s just a win-win for the community.”

Fire chiefs who are using the duty-crew approach say it reduces response times and helps recruit and retain firefighters — all things that many departments have struggled with in recent years. And it can be done without significant increases to the budget. Duty crews are not new. Roseville was among the first cities to try them, in the 1970s with an overnight crew. It added daytime crews in 2001 and went to a full 24 hours three years later.

Although more and more departments in Minnesota and nationwide are heading in this direction, it still is not the norm, said Judy Thill, fire chief in Inver Grove Heights. While paying for duty crews does cost more than relying on firefighters to respond to pagers, it is still a fraction of the cost of staffing full-time career firefighters — up to \$100,000 each. Thill requested an extra \$72,000 in this year’s payroll budget for anticipated costs — mainly for staffing the firefighters at the \$12.50 hourly rate. So far, the cost has been about \$5,000 a month. “We have 65 firefighters and not everybody was excited at first,” she said. “But now they seem to embrace it.”

HOW IT WORKS



Inver Grove firefighters Jason Colvin, left, and Dennis Suchy make sure that a Self-Contained Breathing Apparatus air pack is properly functioning, at the start of their four-hour shift at Fire Station No. 1 on Wednesday, May 4, 2016. (Pioneer Press: Scott Takushi)

Having three firefighters at one of Inver Grove Heights’ two stations at all hours of the day means quicker response times, Thill said. “Right now we can be on scene helping the citizen where before we wouldn’t have even been to the station yet,” said firefighter Groth. “Fires double every minute, so if we can shave off seven, eight, nine minutes, we can save property.”

While three firefighters on duty is not enough for every emergency, chief Thill said, they can handle most calls — routine things like smoke alarms or carbon monoxide detectors going off, and some medical calls. Now, extra firefighters are paged only for large calls. During the first

three months of duty crews, only about 30 percent of the department's calls required paging additional firefighters.

Another advantage to the duty-crew system is that firefighters can train, perform station duties, and take fire and medical certification exams in their spare time during their shifts, Thill said. And while firefighters work about the same number of hours a month as they did with the pager model, they now can schedule their four-hour shifts ahead of time. Not knowing when he would be called to duty was a big reason Dennis Suchy decided to wait until 2011 to join the fire department. He wanted his two kids to be older. "It would have been too much running away from the dinner table," he said.

Suchy and fellow firefighter Mark Simmonds said they prefer duty-crew shifts. Simmonds, who joined the department after the switchover, is also a full-time Minneapolis firefighter and needs to know when he can sign up to work for Inver Grove. "I was never a part of the strictly on-call thing, but I was never a fan of it," he said. "I have a couple of buddies who are volunteers other places and they don't like how they're tied to their pagers, because their pager is going off all the time. Here it goes off 12 times a month, at best."

OTHER CITIES

Lakeville is another metro-area city that recently switched to paid duty crews during weekdays — a time when typically it is harder to find help. It is already paying off, Fire Chief Mike Meyer said. "We're at about three and a half minutes during the duty crew shift," Meyer said. "Prior to that, we were looking at eight minute response times, which are typical for paid on-call fire departments."

Meanwhile, the daytime crew has been able to handle most of the calls themselves. From October through March, extra firefighters were called for just 34 of the 179 calls. The Lake Johanna Fire Department, which covers Arden Hills, North Oaks and Shoreview, has had duty crews in one form or another for six years — first during the day, then also weekend evenings. In July, the department went to duty crews 24/7 at two of its stations. "It was less than ideal doing it over six years, but it was paced because we didn't want to break the budget all at once," Fire Chief Tim Boehlke said. "We started it during tough economic times."

The change has meant quicker response times, and nearly all the firefighters have stayed with the department. "I honestly think this provides a much superior service delivery, and makes better use of our firefighters' time," he said.

Groth, the retired postal worker with the bum foot, is enjoying the camaraderie around the fire station — something that was missing with the pager model. "You get to know these guys now because you're with them for four hours, where before it was hit or miss," he said. Dan Bernardy, who like Groth has been an Inver Grove firefighter for 29 years, has noticed attitudes have changed for the better. "What chief Thill has created with this is a group of people who want to do more," he said.

APPENDIX B
DETAILED SPACE NEEDS



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department - Main

Location: Golden Valley, MN

Date:

06/22/16

Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft ²	Quantity	Total Ft ²	Proposed Bay	Notes
Engines (Engine 11)	640	45	x	18	=	810	2	1620	1	Drive Through
Ladder/Snorkel (Ladder 11)	960	90	x	18	=	1620	1	1620	2	Drive Through
Telesquirt		100	x	18	=	1800	0	0		
Rescue Pumper		30	x	18	=	540	0	0		
Boat/Trailer		40	x	18	=	720	0	0		
HC FIT Unit	N/A	45	x	18	=	810	1	810	3	Future/Shared
Utility/Pickup	1536	22	x	18	=	396	1	396	4	
LSU Rehab Trailer		22	x	18	=	396	1	396	4	Could be at either station
HSEM Nuclear Trailer		22	x	18	=	396	1	396	4	Future
Portable Pump/Trailer			x	18	=	0	0	0		
Snowmobile/ATV/Trailer			x	18	=	0	0	0		
Firefighter Rehab Unit			x	18	=	0	0	0		
Tanker		50	x	18	=	900	0	0		
Staff Vehicle		35	x	18	=	630	3	1890	1,2,3L	Low Bays
Portable Lighting		24	x	18	=	432	0	0		
Rescue Squad (Rescue 11)	560	45	x	18	=	810	1	810	3	
Brush Buggy #31		24	x	18	=	432	0	0		
Mass Casualty		24	x	18	=	432	0	0		
Vehicle Maintenance Bay		40	x	18	=	720	0	0		
Training Bay		70	x	18	=	1260	1	1260	5	
Portable air and light unit		24	x	18	=	432	0	0		
EMS										
EMS Command Vehicle			x		=	0	0	0		
Ambulance		35	x	18	=	630	0	0		
Mass Casualty Trailer			x		=	0	0	0		
Phyisc Unit		24	x	18	=	432	0	0		
Total	4350							9,198		Subtotal (Ft²)
								1,840		Efficiency Ratio of 20%
								11,038		Apparatus Floor Total (Ft²)

= Existing Equipment
 = Future Equipment

See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft ²)								9,198
Number of Bays		3	4	5	6	7	8	
Length								
Depth	80	104	128	152	176	200		
	60	4800	6240	7680	9120	10560	12000	
	80	6400	8320	10240	12160	14080	16000	
100	8000	10400	12800	15200	17600	20000		

31,786 Overall Space Estimate (Ft²)



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department - Main

Location: Golden Valley, MN

Date:

6/22/16

Administration/Office Spaces

Spaces	Existing	Length	x	Width	=	Ft ²	Quantity	Total Ft ²	Notes
Fire Chief	144	20	x	12	=	240	1	240	
Deputy Chief/Fire Marshal	125	20	x	12	=	240	1	240	Plan Review
Evidence Storage		6	x	8	=	48	0	0	
Assistant Chief		16	x	12	=	192	0	0	
Officer Shared Office	165	20	x	15	=	300	1	300	POC Battalion Chiefs, 2 in shared office
Sleeping Room		10	x	13	=	130	0	0	
Toilet shower		8	x	10	=	80	0	0	
Captains Office		20	x	12	=	240	0	0	
Pub Ed Office		14	x	12	=	168	0	0	
Pub Ed Storage		6	x	8	=	48	0	0	
Fire Relief Association		8	x	10	=	80	1	80	
Study/Work Area		8	x	10	=	80	1	80	
Resource Library		2	x	10	=	20	1	20	
Administrative Assist. Office	150	16	x	12	=	192	2	384	
POC Staging		16	x	12	=	192	1	192	
Station Dispatch Office		8	x	12	=	96	1	96	
Future		16	x	10	=	160	0	0	
Conference Room		20	x	22	=	440	1	440	
Communications/ IT		10	x	10	=	100	1	100	
Record/Report Storage		8	x	10	=	80	1	80	
Copy Fax Work		4	x	6	=	24	1	24	
General Storage	10	8	x	10	=	80	1	80	
New Gear and Uniform Storage	104	8	x	16	=	128	1	128	
Elevator		10	x	20	=	200	0	0	
Public Toilets	375	10	x	14	=	140	2	280	
Janitors Closet		6	x	4	=	24	1	24	
Entrance Vestibule		30	x	20	=	600	1	600	
Stairs		24	x	10	=	240	0	0	
Other			x		=	0		0	
Other			x		=	0		0	
Other			x		=	0		0	
Other			x		=	0		0	
Total	1073							3,388	Subtotal (Ft²)
								847	Efficiency Ratio of 25%

4,235 Administration/Office Spaces Total (Ft²)

NOTES:



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department - Main

Location: Golden Valley, MN

Date:

6/22/16

Totals

Apparatus Bays 11,038

Apparatus Bay Support 3,970

Training 5,950

Administration 4,235

Living Quarters 2,448

Training - Tempered 0

27,640 Station Footprint (Ft²) Sub Total
4,146 Infrastructure (M & E) Space Factor 15%

31,786 TOTAL PROGRAM SPACE REQUIREMENT



PRELIMINARY SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department - Main

Location: Golden Valley, MN

Date:

6/22/2016

Potential Costs

				Low	High	Remarks
I. Site Acquisition						
Preferred Site			\$0	\$0	\$0	To Be Determined
Other Sites						
Sub Total				\$0	\$0	
II. Site Development						
Utility Extensions				15%	20%	
Unsuitable Soils/Rock Removal				\$0	\$0	
Natural Gas Extensions				\$0	\$0	\$8,132,423
Storm Water				0	0	
Site Improvements (hardscape)	15%-20% of building costs			\$958,337	\$1,355,404	
Sub Total				\$958,337	\$1,355,404	
III. Building Construction Costs						
	Size	Cost/SF				
Engineering News Record (2014/2015)	31,786	\$201.00		\$6,388,917		
Five Bugles Historic (2016)	31,786	\$213.21			\$6,777,020	
Cold Storage	0	\$0.00		\$0	\$0	
Sub Total				\$6,388,917	\$6,777,020	
IV. Furniture Fixtures and Equipment						
FF&E	5-8% of Building Construction			\$319,446	\$542,162	Assumes mostly new
Apparatus				\$0	\$0	
Others				\$150,000	\$250,000	SCBA, Excercise, vehicle exhaust
Sub Total				\$469,446	\$792,162	
V. Communications and Technology						
Technology	5-8% of Building Construction			\$319,446	\$542,162	Data systems, backbone, patch panels
Communcations				\$0	\$0	Radio, Tower, Repeaters, Etc
Audo Visual Equipment	Allowance			\$10,000	\$15,000	
Sub Total				\$329,446	\$557,162	
VI. Contingencies, Inflation and Other Costs						
Inflation to mid-point of construction	5%-10% total construction cost			\$407,307	\$758,540	Assume spring 2017 construction start
Owners Contingency	5% of total construction costs			\$427,673	\$512,014	Unforeseen Conditions, Owner Changes, E&O
Sub Total				\$834,980	\$1,270,554	
VI. Professional Fees and Legal						
Architectural/Engineering	7-9% of Construction Costs			\$625,682	\$853,357	
Geotechnical Studies				\$15,000	\$25,000	
Commissioning				\$15,000	\$35,000	
LEED/Sustainability				\$50,000	\$65,000	
Hazardous Materials				\$0	\$0	
Testing and Inspections				\$15,000	\$25,000	
Legal	2.5-4% of Costs			\$183,681	\$325,297	Cost of borrowing, Att. Fees, etc.
Sub-Total				\$904,363	\$1,328,654	
TOTALS				\$9,885,488.64	\$12,080,954.93	



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department

Location: Golden Valley, MN

Date:

6/20/16

Apparatus Floor

Spaces	Existing	Length	x	Width	=	Ft ²	Quantity	Total Ft ²	Proposed Bay	Notes
Engines		40	x	18	=	720	1	720	1	
Ladder/Snorkel		80	x	18	=	1440	1	1440	2	
Telesquirt		100	x	18	=	1800	0	0		
Rescue Pumper		30	x	18	=	540	0	0		
Boat/Trailer		20	x	18	=	360	1	360	3	
Arson Unit		25	x	18	=	450	0	0		
Utility/Pickup (Utility 11)		20	x	18	=	360	1	360	3	
Haz Mat		50	x	18	=	900	0	0		
Haz Mat-Diking/Booming		50	x	18	=	900	0	0		
Portable Pump/Trailer			x	18	=	0	0	0		
ATV/Trailer		20	x	18	=	360	1	360	3	
Firefighter Rehab Unit			x	18	=	0	0	0		
Tanker		50	x	18	=	900	0	0		
Staff Vehicle		20	x	18	=	360	1	360		
Portable Lighting		24	x	18	=	432	0	0		
Rescue Squad (Rescue 22)		40	x	18	=	720	1	720	1	
Brush Buggy #31		24	x	18	=	432	0	0		
Mass Casualty		24	x	18	=	432	0	0		
Vehicle Maintenance Bay		40	x	18	=	720	0	0		
Future Bay		80	x	18	=	1440	1	1440	4	
Portable air and light unit		24	x	18	=	432	0	0		
EMS										
EMS Command Vehicle			x		=	0	0	0		
Ambulance		35	x	16	=	560	0	0		
Mass Casualty Trailer			x		=	0	0	0		
Phsysc Unit		24	x	16	=	384	0	0		
Total	3334							5,760		
								1,152		Subtotal (Ft²)
								6,912		Apparatus Floor Total (Ft²)
										Efficiency Ratio of 20%

= Existing Equipment
 = Future Equipment

See also Training for other Apparatus and Large Equipment

Apparatus Sizing Table (Ft ²)								5,760
Number of Bays		3	4	5	6	7	8	
Length								
Depth	80	104	128	152	176	200		
	60	4800	6240	7680	9120	10560	12000	
	80	6400	8320	10240	12160	14080	16000	
100	8000	10400	12800	15200	17600	20000		

17,441	Overall Space Estimate (Ft²)
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SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department

Location: Golden Valley, MN

Date:

6/20/16

Apparatus Support

Spaces	Existing	Length	x	Width	=	Ft ²	Quantity	Total Ft ²	Notes
Protective Gear Locker	200	2	x	7	=	14	30	420	
Dirty Restroom		8	x	8	=	64	1	64	
Hose Drying/Storage	120	10	x	10	=	100	1	100	Hose dryers
Mezzanine		80	x	20	=	1600	1	1600	
Detached garage			x		=	0	0	0	
Walk-in med check/ed space		6	x	8	=	48	0	0	
K-9 spaces		6	x	8	=	48	0	0	
Work Room/SCBA		8	x	11	=	88	0	0	
SCBA Clean and Fill Room		8	x	12	=	96	1	96	
Hose Dryer			x		=	0	0	0	
Commercial Laundry Room		10	x	10	=	100	1	100	
Vehicle Maintenance Room		10	x	12	=	120	1	120	
EMS Report Writing		8	x	12	=	96	0	0	
EMS Storage		8	x	20	=	160	0	0	
Regulated Storage		6	x	6	=	36	0	0	
Bio Hazard Control		6	x	6	=	36	1	36	
Janitors Closet		6	x	4	=	24	1	24	
Equipment Decon		8	x	10	=	80	1	80	
General Storage	114								On Mezzanine
Total	434							2,640	Subtotal (Ft²)
								528	Efficiency Ratio of 20%
								3,168	Apparatus Support Total (Ft²)



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department

Location: Golden Valley, MN

Date:

06/22/16

Totals

Apparatus Bays	6,912
Apparatus Bay Support	3,168
Training	1,225
Administration	1,651
Staff Support	2,210
Cold Storage	0

15,166	Station Footprint (Ft ²) Sub Total
2,275	Infrastructure (M & E) Space Factor 15%
17,441	TOTAL PROGRAM SPACE REQUIREMENT



PRELIMINARY SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department

Location: Golden Valley, MN

Date:

6/22/2016

Potential Costs

				Low	High	Remarks
I. Site Acquisition						
Preferred Site			\$0	\$0		
Other Sites						
Sub Total				\$0	\$0	
II. Site Development						
Utility Extensions				15%	20%	
Unsuitable Soils/Rock Removal				\$0	\$0	
Natural Gas Extensions				\$0	\$0	
Storm Water				0	0	
Site Improvements (hardscape)	15%-20% of building costs			\$527,552	\$743,727	
Sub Total				\$527,552	\$0	
III. Building Construction Costs						
	Size	Cost/SF				
RS Means (2014/2015)	17,441	\$201.65		\$3,517,015		
Five Bugles Historic (2014/2015)	17,441	\$213.21			3,718,636	
Cold Storage	0	\$0.00		\$0	\$0	
Sub Total				\$3,517,015	\$3,718,636	
IV. Furniture Fixtures and Equipment						
FF&E	5-8% of Building Construction			\$175,851	\$297,491	Assumes mostly new
Apparatus				\$0	\$0	
Others				\$50,000	\$80,000	Committee -SCBA, Excercise, vehicle exhaust
Sub Total				\$225,851	\$377,491	
V. Communications and Technology						
Technology	5-8% of Building Construction			\$175,851	\$297,491	Data systems, backbone, patch panels
Communcations				\$0	\$0	Radio, Tower, Repeaters, Etc
Audo Visual Equipment	Allowance			\$7,500	\$10,000	
Sub Total				\$183,351	\$307,491	
VI. Contingencies, Inflation and Other Costs						
Inflation to mid-point of construction	5%-10% total construction cost			\$222,688	\$352,289	Assume spring of 2017 construction start
Owners Contingency	5% of total construction costs			\$233,823	\$237,795	Unforeseen Conditions, Owner Changes, E&O
Sub Total				\$456,511	\$590,085	
VI. Professional Fees and Legal						
Architectural/Engineering	7-9% of Construction Costs			\$338,188	\$396,326	
Geotechnical Studies				\$15,000	\$25,000	
Commissioning				\$15,000	\$35,000	
LEED/Sustainability				\$50,000	\$65,000	
Hazardous Materials				\$0	\$0	
Testing and Inspections				\$15,000	\$25,000	
Legal	2.5-4% of Costs			\$101,114	\$148,745	Cost of borrowing, Att. Fees, etc.
Sub-Total				\$534,302	\$695,071	
TOTALS				\$5,444,583.09	\$5,688,772.98	

City of Golden Valley, Minnesota

Review of
Fire/Rescue Services
Law Enforcement
Supplement

February, 2017

Prepared by



ARCHITECTURAL DESIGN FOR PUBLIC SAFETY

Review of Fire/Rescue Service
For
Golden Valley Fire Department
Law Enforcement Supplement

INTRODUCTION

Option no. 2 of the facilities section of the fire rescue services study recommends a satellite fire station of approximately 17,441 square feet be constructed in the general vicinity of the existing public safety building (in conjunction with a new Headquarters station on the east side of the City). The purpose of this supplemental report is to explore the option of the satellite facility being constructed as an addition to the existing public safety building and will explore potential growth requirements within the Law Enforcement areas of the building as well as how an enlarge fire presence can share space at the Golden Valley Government Center Campus.

PROCESS

Personnel from Five Bugles Design met with representatives from the Police Department and created a 20 year space needs specific to the Golden Valley Police Department. This information was then combined with the 20 year projected need for a satellite station from the main body of the report. Five Bugles Design architects and planners then generated several options to explore the positive and negative impacts of this particular option. The most viable Option explored is included with this report for consideration. Cost estimates are included for the combined project that can then be compared to the costs of building a satellite station as a separate project.

PUBLIC SAFETY BUILDING CONDITION REPORT

The existing Public Safety Building was built in 1966 and has had at least one major expansion and a number of minor remodeling efforts since. Even though the facility has seen many changes since construction it is still currently organized in an efficient fashion to serve as a modern law enforcement facility. There are however a few challenges to note:

1. The Law Enforcement sections of the building are at capacity. Recent renovations have begun converting storage spaces to offices. This condition is beginning to affect supervision as supervisors are not always located with officers. This condition will affect management with any additional staff.
2. The existing locker and break rooms are too small for current need and lack gender equity.

3. Garage space for squads is limited and requires backing of squads into residential type garage stalls. The department often leaves vehicles running outside to keep the equipment in them tempered. Not all vehicles fit in the allotted spaces. This issue affects response, maintenance and security.
4. The department training room is adequate for class room type training, but inadequate for the physical types of training (DATT) necessary in law enforcement. Fitness spaces are limited.
5. Physically the facility is in relatively good shape with no major challenges reported. A few items to consider relative to facility conditions include:
 - a. There is a need for minor maintenance to mechanical systems to assure they continue to operate at maximum efficiency.
 - b. The mechanical equipment is aging and less efficient than more modern models. Funds should be budgeted for replacement of this equipment. Consideration should also be given in any project to upgrading to more efficient models and systems.
 - c. Lighting is fluorescent fixtures throughout a major remodeling should consider upgrading to more efficient LED lighting throughout.

SPACE NEED ANALYSIS

The following chart is a summary of the space needs. A copy of the detailed space needs analysis is contained at the end of this supplement:

AREA OF USE	EXISTING	PROPOSED
Office of the Chief	1,254 GSF	1,788 GSF
Administration	2,180 GSF	2,003 GSF
Patrol	1,285 GSF	2,370 GSF
Investigations	1,112 GSF	1,935 GSF
Booking & Holding	1,035 GSF	1,813 GSF
Evidence	905 GSF	1,375 GSF
Operational Support	4,740 GSF	8,820 GSF
Fleet Support	4,450 GSF	7,513 GSF
Mechanical/Electrical	6,009 GSF	6,904 GSF
TOTAL	22,970 GSF	34,519 GSF

Some items of note about these figures:

- Some increases can be accounted for due to changing expectations of space usage. For instance a 100 square foot office adequate for an officer 10-20 years ago is now allotted at 120 square feet to allow for collaborative work efforts; an appropriate locker for an officer was 15-18” in width but is now allotted at 30-36” to accommodate multiple uniforms, bullet proof vests, rechargeable radios, flashlights, etc.

- Fleet Support pre-supposes a drive through garage. This advancement has become necessary due to the prevalence of computers, digital recorders and defibrillators in squad cars and to enhance response when required. The existing back in garage spaces can be re-assigned to other uses.
- Growth in training space needs can be attributed to the need for space to adequately train for the physical aspects of policing both in fitness and in DATT training.

While the department does not anticipate substantial growth in personnel or equipment, there is still an anticipated need of approximately 11,500 square feet of space to accommodate the following:

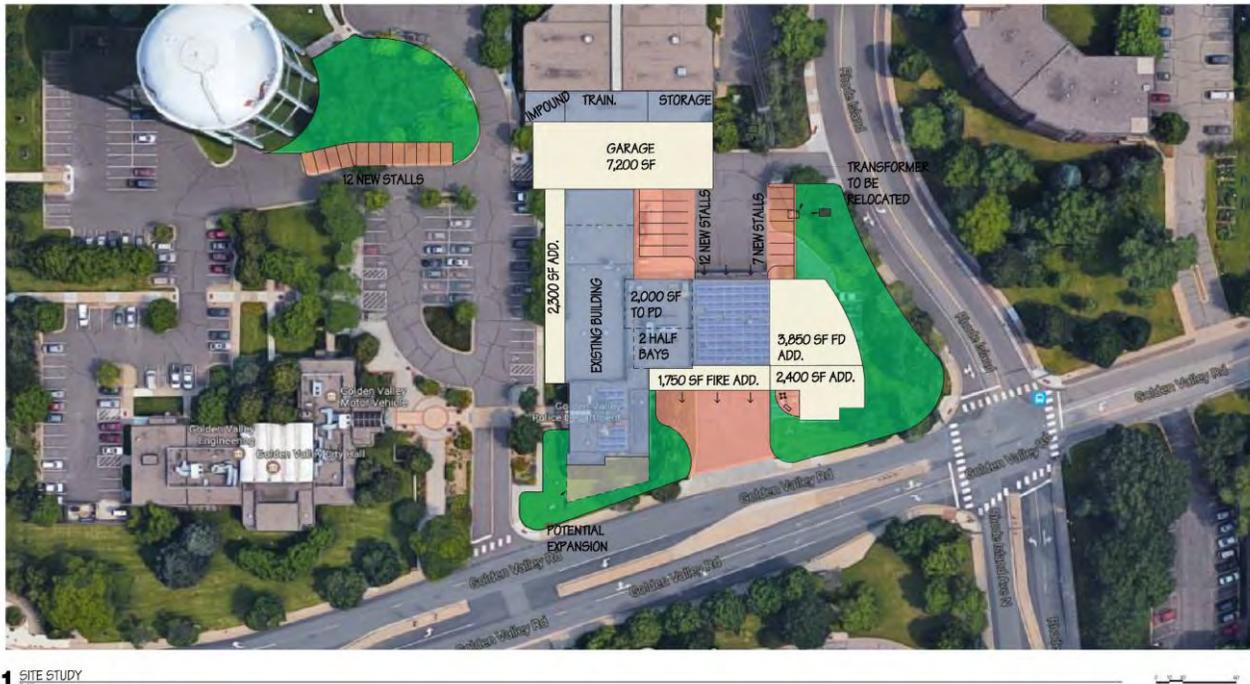
1. Allow for reorganization to assure proper work flow and personnel management for the long term.
2. Provide additional staff support spaces such as lockers and break spaces.
3. Provide training space to allow the department to stay trained in the physical aspects of their jobs.
4. Provide drive through garage space to simplify and improve response and fleet operations.

SPACE PLANNING

The space planning efforts starts with the following assumptions:

- The Fire/Rescue Services Study determined that the Fire Department requires an additional 8,000 square feet of space (the difference between the existing 9,396 square feet of space dedicated to the fire department and the 17,441 square feet projected need for a satellite station (from pages 60-63 of original report). This will provide for additional bay space, living quarters and decontamination spaces recommended from the fire department portion of the study that does not exist at this location currently.
- The Police Department requires 11,500 square feet of additional space in office functions, garage space, training, and staff support spaces.
- Current parking is currently challenged. Additional parking will be required as part of any development on this site.

Several site planning options were developed from these goals. The following, Site Study Option 1 is considered the most successful of the options even though it has several challenges.



1 SITE STUDY

1. Expansion to the Police Department is possible in appropriate locations to alleviate issues throughout the facility but work is spread out reducing construction efficiency, increasing cost and complicating efforts to remain operational during construction.
2. Existing fire offices can be converted back to half deep bay space for the department and a new office and living quarters and decontamination spaces can be added as an addition to the east of the existing bays. However, construction processes will significantly affect operations given the tight site conditions.
3. Parking is challenged even with an additional 12 spaces provided west of the public safety building. Twelve spaces for the fire department are stacked meaning responders will be parking each other in during all call events (as many as 25 may respond for such calls in the future). This cannot be solved with more parking elsewhere on site as the spaces must be adjacent to the fire department for adequate response.
4. Turning radius of the vehicles will be challenging. The station will be limited to one way traffic only and this traffic will conflict with the station staff parking.
5. There is little space remaining on site for storm water management; increasing costs.
6. If implemented, this construction will max out the site leaving no room for future expansion of this facility.
7. New construction will essentially encapsulate the older building on all sides.

This option is NOT recommended by Five Bugles Design, or the Police and Fire Departments.

The probable costs of construction for Site Study Option no. 1 are as follows:

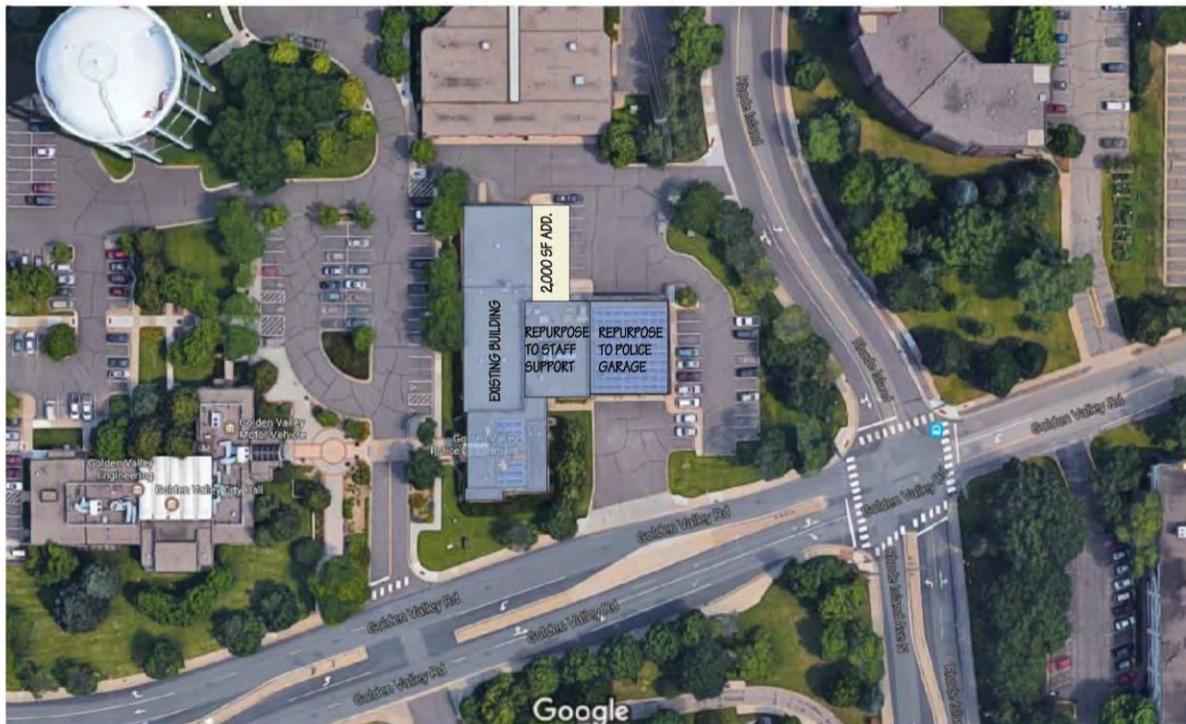
1. Construct new additions and renovations: \$6,750,000 to \$8,500,000
(Site Study 1)

Total \$6,750,000 to \$8,500,000

Cost details are attached at the end of this supplement.

RECOMMENDED SOLUTION

Another option considered by the team which offered more merit was to revert to the original recommendations for a new satellite station for the fire department and to convert the 9,600 square feet of current fire operations spaces to expansion space for the police department and to add an additional 2,000 square feet in office type space for expansions and reorganization of the patrol and investigations departments to achieve recommended space usage and improve work flow and organization.



2 SITE STUDY

This solution has the following advantages:

1. Existing fire department apparatus bay space can be converted to both garage space and training.
2. Office space currently allocated to fire department operations can be allocated as police department break/staff support space.
3. A new addition of roughly 2,000 square feet can be constructed in an appropriate location to increase patrol and investigations space to achieve current space standards.
4. The site will continue to support growth and change to the Police Department for years to come.

The major drawback to this approach is cost. Probable cost of this option can be summed as follows:

1. Construct New Satellite Fire Station at alternate site:	\$5,500,000 to \$5,700,000
2. <u>Renovate Police Department per Site Study 2:</u>	<u>\$2,300,000 to \$2,900,000</u>
Total	\$7,800,000 to \$8,600,000

Numbers above do not reflect the cost of land acquisition.

Cost Details are attached at the end of this supplement.

A NEW PUBLIC SAFETY BUILDING

The following is offered to provide additional information to the City Council as it considers the matter of providing for public safety services for the City of Golden Valley.

A new Public Safety Building consisting of Law Enforcement and a Satellite Fire Station could be constructed in the general location of the Government Campus as follows:

Law Enforcement Center (34,519 square feet)	\$9,500,000 to \$11,800,000
<u>Satellite Fire Station (four bays at 17,441 square feet)</u>	<u>\$5,500,000 to \$5,700,000</u>
Total project cost (in 2017 construction cost)	\$15,000,000 to \$17,500,000

Numbers above do not reflect the cost of land acquisition.

A preferred site would be approximately 4-5 acres in buildable area.

APPENDIX A
DETAILED SPACE NEEDS
(LAW ENFORCEMENT SUPPLEMENT)



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

OFFICE OF THE CHIEF/ADMINISTRATION

Administration Operations	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Office of the Chief									
Police Chief	250	12	x	21	=	252	1	252	
Chief's Conference Room	270	14	x	25	=	350	1	350	Meeting of department heads = 10-12
Deputy Chief	140	13	x	16	=	208	1		
Administrative Assistant	64	10	x	10	=	100	1	100	
Secure Files	0	6	x	10	=	60	1	60	Currently in Chief's office
Investigations Supervisor	0	13	x	16	=	208	0	0	With Investigations
Patrol Supervisor	0	13	x	16	=	208	0	0	With Patrol
2nd Commander Office	140	13	x	16	=	208	1	208	
Crime Prevention Officer	250	12	x	21	=	252	1	252	
Emergency Man. Supervisor	0	13	x	16	=	208	0	0	
Chaplain	0	13	x	16	=	208	0	0	
Break/Fax/ Copy	0	8	x	10	=	80	0	0	
Future Office	140	13	x	16	=	208	1	208	IT Support
Total	1,254							1,430	Subtotal (Ft²)
								358	Efficiency Ratio of 20%
								1,788	Office of the Chief
Administration									
Reception/Waiting Area	450	30	x	15	=	450	1	450	
Public Toilets	300	20	x	15	=	300	1	300	Don't meet current ADA
Clerical	1000	8	x	8	=	64	3	192	
Interview Spaces	80	8	x	10	=	80	2	160	
Copying / Forms Supply Area	0	3	x	6	=	18	0	0	Currently with records
Hard Copy Record Storage	350	20	x	20	=	400	1	400	Add high density storage
Break/Fax/ Copy	0	8	x	12	=	96	0	0	Currently with records
General Storage	0	10	x	10	=	100	1	100	Coat closet and general storage
			x		=		0	0	
			x		=		0	0	
			x		=		0	0	
			x		=		0	0	
Total	2,180							1,602	Subtotal (Ft²)
								401	Efficiency Ratio of 20%
								2,003	Administration



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Patrol / Booking / Evidence

Administration Operations	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Patrol									
Watch Commander Office	100	16	x	13	=	208	1	208	
Patrol Sergeants Office	300	6	x	8	=	48	6	288	Add CSO
Briefing/Squad Room	600	30	x	30	=	900	1	900	
Report Writing Room	225	8	x	6	=	48	3	144	
CSO	0	8	x	6	=	48	2	96	converted to Sergeant office
Reserves	0	8	x	10	=	80	1	80	
Patrol Equipment	60	6	x	10	=	60	1	60	same as current
Go Bags/ Personal Storage	0	12	x	10	=	120	1	120	
Total	1,285							1,896	Subtotal (Ft²)
								474	Efficiency Ratio of 20%
								2,370	Patrol

Booking/Holding	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Booking/Holding									
Sallyport	375	25	x	16	=	400	2	800	1 existing
Booking, Prints and Photos	150	20	x	10	=	200	0	0	
Hard Interview Room	70	10	x	8	=	80	2	160	
Soft Interview	120	12	x	10	=	120	1	120	
Juvenile Holding	50	10	x	7	=	70	1	70	Site and sound separation required
Intoxilyzer	70	10	x	8	=	80	1	80	
Holding-wet cell	140	10	x	7	=	70	2	140	2 existing
Toilet/Shower	60	10	x	8	=	80	1	80	
Public Release/vestibule	0	10	x	8	=	80	0	0	
Total	1,035							1,450	Subtotal (Ft²)
								363	Efficiency Ratio of 20%
								1,813	Booking and Holding

Evidence/Property	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Evidence/Property									
Evidence Drop	180	10	x	20	=	200	1	200	
Evidence Processing Room			x		=	0	0	0	Most processing done by BCA
Evidence Storage-general	625	20	x	40	=	800	1	800	Little bigger if possible
Evidence Storage-weapons	0		x		=	0	0	0	In Evidence Storage-general
Evidence Storage-drugs	0		x		=	0	0	0	In Evidence Storage-general
Evidence Storage-biological	0		x		=	0	0	0	In Evidence Storage-general
Evidence-large items	100	10	x	10	=	100	1	100	large items are challenged...garage space?
Evidence Return	0		x		=	0	0	0	
Total	905							1,100	Subtotal (Ft²)
								275	Efficiency Ratio of 20%
								1,375	Evidence and Property



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Investigations / Operational Support

Services	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Investigations								0	
Investigations Supervisor	140	13	x	16	=	208	1	208	
Detectives Offices	540	10	x	15	=	150	6	900	4 existing
Technology Investigations	0	20	x	12	=	240	0	0	
Temporary Evidence	0		x		=	0	0	0	
Major Case Room	0	12	x	20	=	240	1	240	Currently in open office area
Soft Interview/Victim-Witness	0		x		=	0	0	0	Recorded with Booking and Holding
Files and Records	360	8	x	10	=	80	1	80	
Equipment Storage	72	10	x	12	=	120	1	120	
Polygraph Examination Room	0		x		=	0	0	0	
Total	1,112							1,548	Subtotal (Ft²)
								387	Efficiency Ratio of 20%
								1,935	Investigations

Operational Support	Existing	Length	x	Width	=	Ft ²	Qty.	Total Ft ²	Notes
Training									
Training Room	1200	30	x	40	=	1200	1	1200	OK for seated training
DAAT Training	360	20	x	30	=	600	1	600	
A/V Equipment	0	6	x	10	=	60	1	60	
Chair and Table Storage	0	10	x	12	=	120	1	120	
Armory									
Firing Range	750	75	x	10	=	750	1	750	
Gun Cleaning Room	0	8	x	12	=	96	1	96	
Ammunition/Target Storage	0		x		=	0	0	0	Located in Range
SWAT/ERU	330	20	x	25	=	500	1	500	
Staff Support									
Men's Locker Room	600	30	x	35	=	1050	1	1050	At capacity - 40 male
Women's Locker Room	200	20	x	35	=	700	1	700	At capacity - 20 female
Men's Toilet w/Shower	180	12	x	20	=	240	1	240	
Women's Toilet w/Shower	120	12	x	20	=	240	1	240	
Fitness	600	30	x	30	=	900	1	900	
Break Room	400	20	x	30	=	600	1	600	
Total	4,740							7,056	Subtotal (Ft²)
								1,764	Efficiency Ratio of 20%
								8,820	Operational Support



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Site Program

Site Parking	Qty.	Notes
Marked Squad Car		
Unmarked Squad Car		
Oversized Vehicle		
Animal Control		
Motorcycle		
Employee	20	
Public	5	
Other		



SPACE NEEDS SUMMARY

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

TOTALS

Space	Existing	Proposed
Office of the Chief	1,254	1,788
Administration	2,180	2,003
Patrol	1,285	2,370
Investigations	1,112	1,935
Booking & Holding	1,035	1,813
Evidence	905	1,375
Operational Support	4,740	8,820
Fleet Support	5,050	8,263

17,561	28,365	Subtotal (Ft²)
0.24	7,091	Efficiency Ratio of 20%
22,970	35,456	Law Enforcement Total (Ft²)



ESTIMATE OF PROBABLE COSTS

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Potential Costs- Option 1 (Facility Expansion for both PD and FD to remain on site)

				Low	High	Remarks
I. Site Acquisition						
Preferred Site			\$0	\$0	\$0	
Other Sites						
Sub Total				\$0	\$0	
II. Site Development						
				5%	10%	
Utility Extensions				\$25,000	\$50,000	
Unsuitable Soils/Rock Removal				\$0	\$0	
Natural Gas Extensions				\$0	\$0	
Storm Water				\$0	\$0	
Site Improvements (hardscape)	5%-10% of building costs			\$238,199	\$524,037	
Sub Total				\$263,199	\$574,037	
III. Building Construction Costs						
	Size	Cost/SF			plus 10%	
New Construction-PD	9,200	sf	\$196.66	\$1,809,272	\$1,990,199	
Major Remodel-PD	2,000	sf	\$120.00	\$240,000	\$264,000	Demolition and remodel of large areas
Minor Renovations-PD	22,970	sf	\$30.00	\$689,100	\$758,010	Replace finishes and update
New Construction-FD	10,300	sf	\$196.66	\$2,025,598	\$2,228,158	
Major Renovation-FD	1,700	sf	\$120.00	\$204,000	\$224,400	
Sub Total				\$4,763,970	\$5,240,367	
IV. Furniture Fixtures and Equipment						
FF&E	5-8% of Building Construction			\$238,199	\$419,229	Assumes mostly new
Apparatus				\$0	\$0	
Others				\$0	\$0	
Sub Total				\$238,199	\$419,229	
V. Communications and Technology						
Technology	5-8% of Building Construction			\$238,199	\$419,229	Data systems, backbone, patch panels
Communcations				\$0	\$0	Radio, Tower, Repeaters, Etc
Audo Visual Equipment	Allowance			\$35,000	\$50,000	
Sub Total				\$273,199	\$469,229	
VI. Contingencies, Inflation and Other Costs						
Inflation to mid-point of construction	5%-10% total construction cost			\$276,928	\$536,229	Assume spring of 2017 construction start
Owners Contingency	5% of total construction costs			\$290,775	\$361,955	Unforeseen Conditions, Owner Changes, E&O
Sub Total				\$567,703	\$898,184	
VI. Professional Fees and Legal						
Architectural/Engineering	7-9% of Construction Costs			\$417,046	\$603,258	
Geotechnical Studies				\$15,000	\$25,000	
Commissioning				\$15,000	\$35,000	
LEED/Sustainability				\$50,000	\$65,000	
Hazardous Materials				\$0	\$0	
Testing and Inspections				\$15,000	\$25,000	
Legal	2.5-4% of Costs			\$125,679	\$232,576	Cost of borrowing, Att. Fees, etc.
Sub-Total				\$637,725	\$985,834	
TOTALS				\$6,743,993.32	\$8,586,879.75	



ESTIMATE OF PROBABLE COSTS

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Potential Costs - Option 2 (Renovate Facility for PD Use Only)

				Low	High	Remarks
I. Site Acquisition						
Preferred Site			\$0	\$0	\$0	
Other Sites						
Sub Total				\$0	\$0	
II. Site Development						
				5%	10%	
Utility Extensions				\$0	\$0	
Unsuitable Soils/Rock Removal				\$0	\$0	
Natural Gas Extensions				\$0	\$0	
Storm Water				\$0	\$0	
Site Improvements (hardscape)	5%-10% of building costs			\$81,121	\$178,466	
Sub Total				\$81,121	\$178,466	
III. Building Construction Costs						
	Size	Cost/SF			plus 10%	
New Construction-PD	2,000	sf	\$196.66	\$393,320	\$432,652	
Major Remodel-PD	4,500	sf	\$120.00	\$540,000	\$594,000	Demolition and remodel of large areas
Minor Renovations-PD	22,970	sf	\$30.00	\$689,100	\$758,010	Replace finishes and update
Sub Total				\$1,622,420	\$1,784,662	
IV. Furniture Fixtures and Equipment						
FF&E	3-5% of Building Construction			\$48,673	\$89,233	Assumes mostly new
Apparatus				\$0	\$0	
Others				\$0	\$0	
Sub Total				\$48,673	\$89,233	
V. Communications and Technology						
Technology	3-5% of Building Construction			\$48,673	\$89,233	Data systems, backbone, patch panels
Communcations				\$0	\$0	Radio, Tower, Repeaters, Etc
Audio Visual Equipment	Allowance			\$35,000	\$50,000	
Sub Total				\$83,673	\$139,233	
VI. Contingencies, Inflation and Other Costs						
Inflation to mid-point of construction	5%-10% total construction cost			\$91,794	\$175,328	Assume spring of 2017 construction start
Owners Contingency	5% of total construction costs			\$96,384	\$118,346	Unforeseen Conditions, Owner Changes, E&O
Sub Total				\$188,178	\$293,674	
VI. Professional Fees and Legal						
Architectural/Engineering	7-9% of Construction Costs			\$134,758	\$197,243	
Geotechnical Studies				\$15,000	\$25,000	
Commissioning				\$15,000	\$35,000	
LEED/Sustainability				\$50,000	\$65,000	
Hazardous Materials				\$0	\$0	
Testing and Inspections				\$15,000	\$25,000	
Legal	2.5-4% of Costs			\$42,589	\$78,525	Cost of borrowing, Att. Fees, etc.
Sub-Total				\$272,347	\$425,769	
TOTALS				\$2,296,411.41	\$2,911,036.67	



ESTIMATE OF PROBABLE COSTS

Project: Golden Valley Fire Department Facility Study - Law Enforcement Supplement

Location: Golden Valley, MN

Date:

28-Dec-16

Potential Costs - New Law Enforcement Center

				Low	High	Remarks
I. Site Acquisition						
Preferred Site			\$0	\$0	\$0	
Other Sites						
Sub Total				\$0	\$0	
II. Site Development						
				5%	10%	
Utility Extensions				\$0	\$0	
Unsuitable Soils/Rock Removal				\$0	\$0	
Natural Gas Extensions				\$0	\$0	
Storm Water				\$0	\$0	
Site Improvements (hardscape)	5%-10% of building costs			\$348,641	\$767,011	
Sub Total				\$348,641	\$767,011	
III. Building Construction Costs						
	Size	Cost/SF			plus 10%	
New Construction-PD	35,456	sf	\$196.66		\$7,670,109	
New Construction-PD	35,456	sf	\$196.66	\$6,972,826		Demolition and remodel of large areas
Sub Total				\$6,972,826	\$7,670,109	
IV. Furniture Fixtures and Equipment						
FF&E	3-5% of Building Construction			\$209,185	\$383,505	Assumes mostly new
Apparatus				\$0	\$0	
Others				\$0	\$0	
Sub Total				\$209,185	\$383,505	
V. Communications and Technology						
Technology	3-5% of Building Construction			\$209,185	\$383,505	Data systems, backbone, patch panels
Communcations				\$0	\$0	Radio, Tower, Repeaters, Etc
Audio Visual Equipment	Allowance			\$35,000	\$50,000	
Sub Total				\$244,185	\$433,505	
VI. Contingencies, Inflation and Other Costs						
Inflation to mid-point of construction	5%-10% total construction cost			\$388,742	\$740,330	Assume spring of 2017 construction start
Owners Contingency	5% of total construction costs			\$408,179	\$499,723	Unforeseen Conditions, Owner Changes, E&O
Sub Total				\$796,921	\$1,240,053	
VI. Professional Fees and Legal						
Architectural/Engineering	7-9% of Construction Costs			\$571,084	\$832,872	
Geotechnical Studies				\$15,000	\$25,000	
Commissioning				\$15,000	\$35,000	
LEED/Sustainability				\$50,000	\$65,000	
Hazardous Materials				\$0	\$0	
Testing and Inspections				\$15,000	\$25,000	
Legal	2.5-4% of Costs			\$183,037	\$337,485	Cost of borrowing, Att. Fees, etc.
Sub-Total				\$849,121	\$1,320,357	
TOTALS				\$9,420,878.45	\$11,814,540.50	



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