

# **PALMER LAKE FEASIBILITY STUDY**

for development of a Public Safety Facility

Prepared by:



**Architvity**

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## 1.0 INTRODUCTION

**The Town of Palmer Lake** has requested a Feasibility Study for a future Public Safety Facility for the Fire and Police Departments. The Feasibility Study looks at three potential sites within the Town of Palmer Lake, two of which are owned by the Town and one which would need to be purchased. The objective of the Feasibility Study is to document the physical features and various data, and determine the potential for each site to meet the requirements for a future building.

The following report documents each site individually under separate sections considering environmental characteristics, vehicular and traffic analysis, development and improvement factors, and big picture costs. The three sites under consideration are named as follows for reference within the report:

2.0 Santa Fe Ridge, Tract A - *represented in yellow*

3.0 Elephant Rock - *represented in red*

4.0 Valley Crescent (Town) - *represented in blue*

[refer to diagram 1A for a reference map]

Section 5.0 provides a Site Comparison Matrix to compare the three sites across each of the study areas.

Section 6.0 Conclusion provides a professional recommendation of which Site may be best suited to the Town's needs, based upon the findings of the research and data analysis.



Diagram 1A: Overall Map of Palmer Lake and potential Sites

## 2.0 SANTA FE RIDGE

### 2.1 Site Analysis:

- Physical properties - topography, orientation, geology, existing vegetation, existing structures or man-made features, environmental.
  - General: The Santa Fe Ridge Site is part of a 13 acre commercial property with multiple Lots, two of which are developed with existing buildings, parking and landscaping. The Lot under consideration is Tract A [refer to diagram 2A] which is located on the south side of the existing paved access road between the two existing buildings on Lots 4 and 6. Tract A is reported to have a site area of approximately 59,678 sq.ft. The Site is below the level of the existing access road and the land drops significantly toward the south to act as the drainage detention area for the combined properties within the development. Research into the

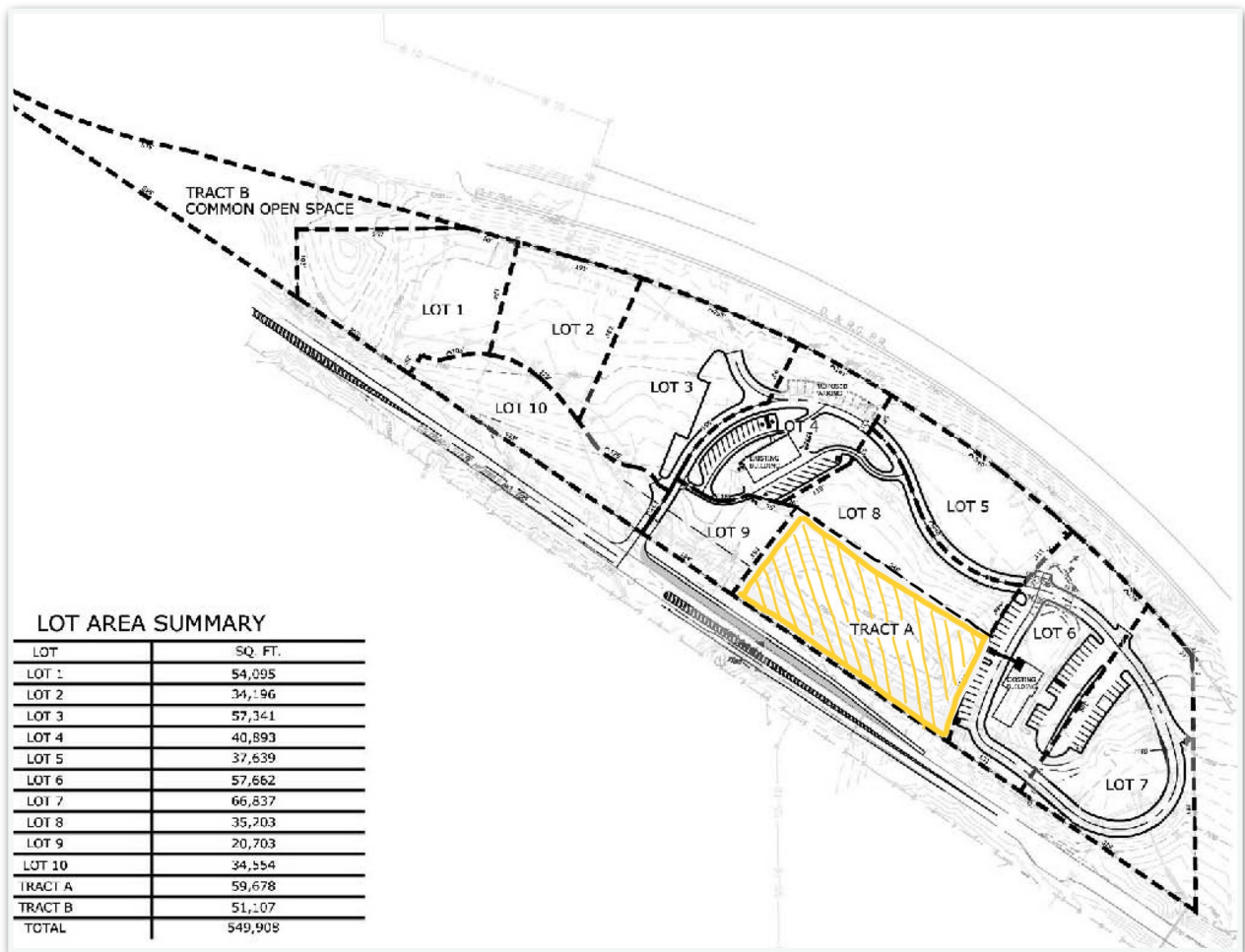


Diagram 2A: Santa Fe Ridge Development Plan Diagram

Santa Fe Ridge development with the land owner, Mr. James Fitzgerald, indicate that Tract A is intended to be the drainage detention basin for the overall development and was not intended to be used for a building site. There are other Lots within the Santa Fe Ridge development that are intended for buildings. The use of Tract A for the Town's proposed purposes is not feasible. While it is not within the scope of this report to propose other possible Sites for the Town's

needs for a Public Safety Facility, there are other possible Lots within the Santa Fe Ridge development that could be considered for a building site, such as the combined Lots 2 & 3 or possibly Lot 5. Further study of those lots would be required, but information below may still apply.

- Environmental: Prevailing Winds are from the north, northwest, Solar Exposure is to the south and east along the length of the site, and it sits below or level the existing adjacent properties with no potential for shading from existing structures on adjacent lots. Drainage and Erosion control is an issue with this Lot, because it was designed to receive the drainage from adjacent properties, as described above. It is our assessment that Tract A is the detention basin for the adjoining lots. The catchment area to the north and west is higher in elevation and it could be expected that surface drainage will shed onto the property from adjacent land to the northwest. The site is visible from Hwy 105 and potential future building(s) would be visible to passers-by. Due to local environmental conditions where the north-side of buildings and north-facing driveways and parking areas are subject to significant seasonal snow and ice build-up, it will be strongly recommended to have the driveways and parking areas on the south-side of any buildings. [Refer to diagram 2]
- Topography [refer to diagram 2B] on Tract A is sharply sloping from the north to the south, and then generally flat with a defined lower depression for drainage catchment. There are drainage swales and rip-rap entering from the north, west, and east sides which direct water from adjacent Lots within the development.

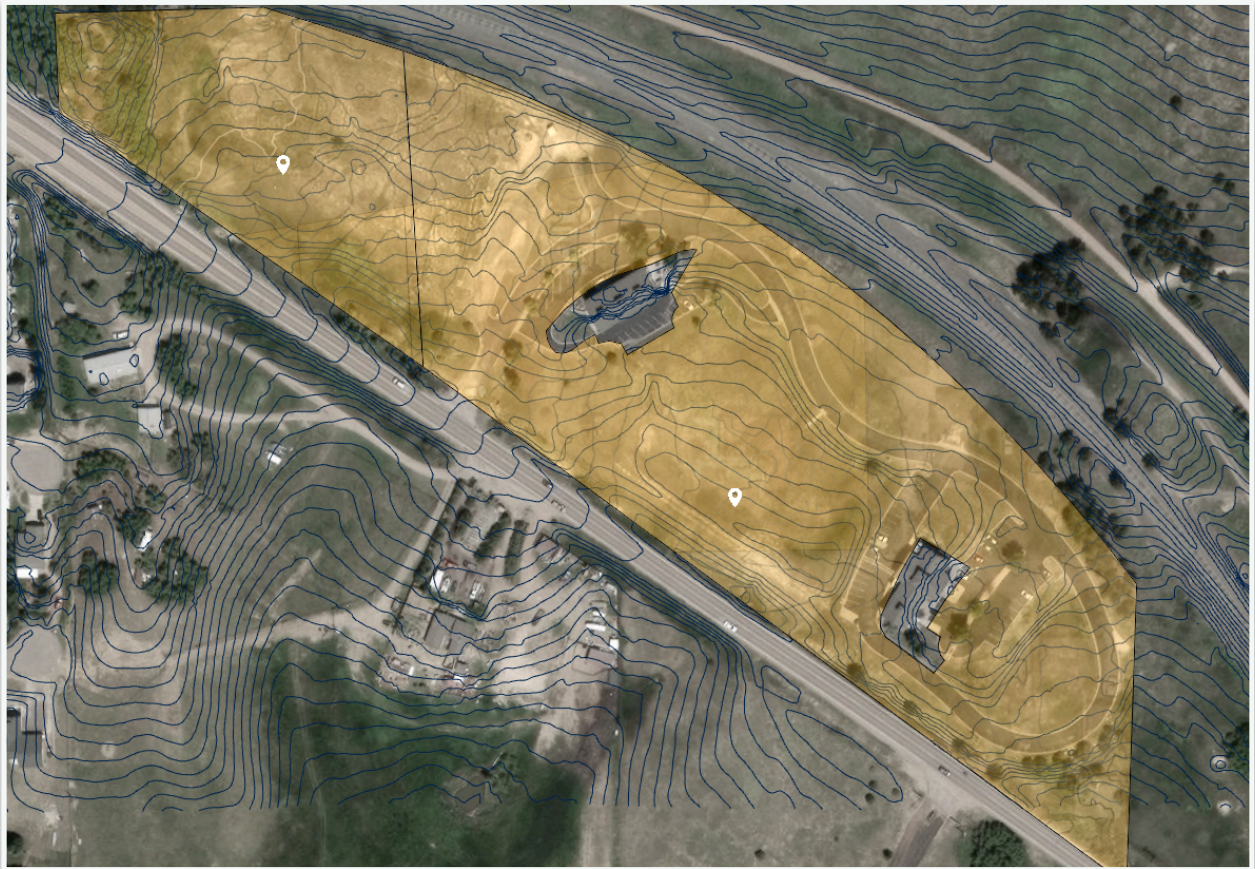


Diagram 2B: Santa Fe Ridge Topography

- Orientation: Tract A is oriented with its breadth spanning northwest-southeast, in line with existing contours. It is bordered on the south by the Highway 105 berm and the access road, Santa Fe Ridge, to the north.
- Geology: Data reviewed from the Colorado Geological Survey Map for the Palmer Lake Quadrangle indicates the Santa Fe Ridge Site is located within a geological area that may not be generally suitable for building construction without a geotechnical investigation and report provided by a geotechnical engineer. The engineer will determine requirements for foundations, which may include over excavation, soil amendment and/or deeper foundations. This would likely apply to any Lot within the Santa Fe Ridge development. Geology found within the limits of the Santa Fe Ridge location: TKda<sub>4</sub>, Qcs, Qa<sub>1</sub> [Refer to diagram 2C and Overall Map and Legend found in Appendix A & B].

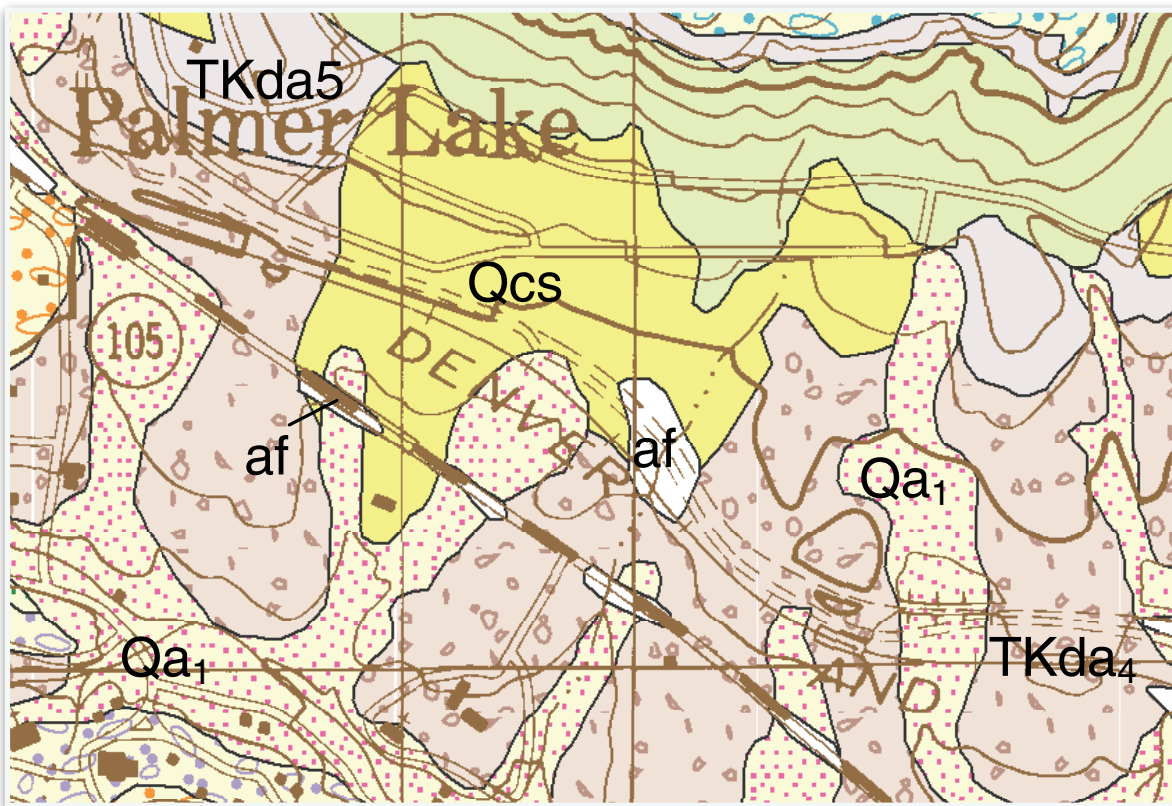


Diagram 2C: portion of Colorado Geological Survey Map - Palmer Lake - SantaFe Ridge Site

- Vegetation: Natural grasses, no trees, no boulders within Tract A.
- Existing structures or human-made features: Existing road and curb & gutter to the north, existing drainage swales and rip-rap at drainage points into Tract A. No existing structures.
- Potential Noise disruption: The site is located within a business development with two existing buildings having businesses with normal day-time operating hours. The Site is located outside of the Downtown zone, in a lower-density area. It is adjacent to Highway 105 with its ambient noise, and limited residential uses adjacent (across the highway to the south). The existing railroad grade is

immediately adjacent to the north of the Santa Fe Ridge development, and has daily trains passing by, creating noise. Noise disruption caused by activity on the site that may affect adjacent properties is not a significant factor with this Site.

**2.2 Vehicular access:** emergency services and general use to the site and within the site:

- Existing Emergency Service Vehicles in-use by the Town of Palmer Lake:
  - Engine (2011) Height 9.5ft Length 29.7ft, Turning Radii:
    - Curb-to-curb: 40 feet, 11 inches
    - Wall-to-wall: 47 feet, 0 inches
    - Inside Turn: 25 feet, 1 inch
  - Engine (2015) Height 9.5ft Length 29.3ft, Turning Radii:
    - Curb-to-curb: 39 feet, 9 inches
    - Wall-to-wall: 46 feet, 0 inches
    - Inside Turn: 25 feet
  - Two full-sized half-ton pickup trucks: Dodge Ram 2500
  - Two Brush trucks used for wildland firefighting
  - Two side-by-sides and Two ATV utility vehicles
- There is no direct road access to Tract A. Vehicular access to Tract A was not intended in the development plan for the Santa Fe Ridge development.
- Existing Adjacent Street Capacity: Tract A is adjacent to State Highway 105, a 2-lane state highway. The access point to the overall Development for Santa Fe Ridge is limited to the existing driveway at Santa Fe Ridge, located to the northwest of the existing Red Barn building at 300 General Palmer Dr. The access point is broken-down asphalt or road-base with no curb & gutter until a few hundred feet into the site. General Palmer Dr and Santa Fe Ridge are the internal access roads, and are paved with curb & gutter, though it stops for Lots 1,2,3 and 10 to the northwest. The street capacity of Santa Fe Ridge is an internal access road for two-way traffic with one lane in each direction, no shoulder or striping.
- The angle of approach into Tract A from Santa Fe Ridge does not apply as this site is not able to be developed for a building.
- Parking Requirements for the Public Safety building should include spaces for town employee's (Fire and Police) personal vehicles as well as limited public parking. The proposed use would require 1 space for each 300 sq ft of floor area according to Palmer Lake Zoning Ordinance 17.84.020 for off street parking. Based upon the preliminary building requirements for an estimated area of 9,200 sq.ft. of building (not including vehicle garages), the proposed Public Safety building could require as many as 30 spaces for employees and general public. The parking area for vehicles is estimated to require at least 15,000 sq.ft. Other potential Lots within the Santa Fe Ridge Development would need to take this into consideration.

**2.3 Traffic Impact Analysis:**

- Emergency service vehicles running calls from Lots within the Santa Fe Ridge development (not Tract A) would be required to exit their specific Lot, navigate the narrower access road (Santa Fe Ridge or General Palmer Dr.) before entering onto State Highway 105. It should be expected that an emergency signal would need to be added at the intersection of Santa Fe Ridge where it meets the State Highway.
- Traffic on Highway 105 would be impacted when emergency vehicles are deployed and need to enter the Highway turning right or left. Morning and

evening commuter traffic may experience some congestion if the emergency signal is activated and Highway traffic is stopped to allow emergency vehicles to enter the Highway.

- Based on the existing grade and width of Highway 105 at this location, it is questionable whether any widening of the road would be allowed or possible to create a turn lane or acceleration lane.
- It is not expected that any significant adjustment would be allowed to Highway 105 at the access point at General Palmer Dr. based upon input from Town Staff.

## 2.4 Undeveloped Land Analysis:

- Development Considerations for Santa Fe Ridge Site:
  - Some existing infrastructure, including streets and utilities are existing to the development and would only need to be extended to a new building on a potential developable Lot. Tract A is not a site that can be developed.
  - Site grading does not apply to Tract A, as it is a detention basin.
  - The existing development drainage structures, including swales, rip-rap, detention basins, and culverts within Tract A need to remain in order to control drainage on adjacent Lots.
  - Available lots within the Santa Fe Ridge development will require complete architectural and civil engineering site planning and will require direct communication with the land owner for approval of any building design.
- Financial implications to begin and maintain ongoing use of any developable lot within the Santa Fe Ridge development would require the purchase of land, with terms to be negotiated with the current land owner. There are development HOA fees that would also be required for internal road maintenance, trash and snow removal.

## 2.5 Utility Service Availability: options for all public utilities such as water, sewer, electric, gas, fiber optic, etc., and anticipated public safety communications

- Availability of Public Utilities:
  - Water service is provided to the Santa Fe Ridge development by an 8-inch PVC line that runs in a loop along the southern boundary parallel to Highway 105. There are two fire hydrants, located at the west and east end of Tract A and multiple other hydrants within the overall development. [refer to Diagram 2.5a]

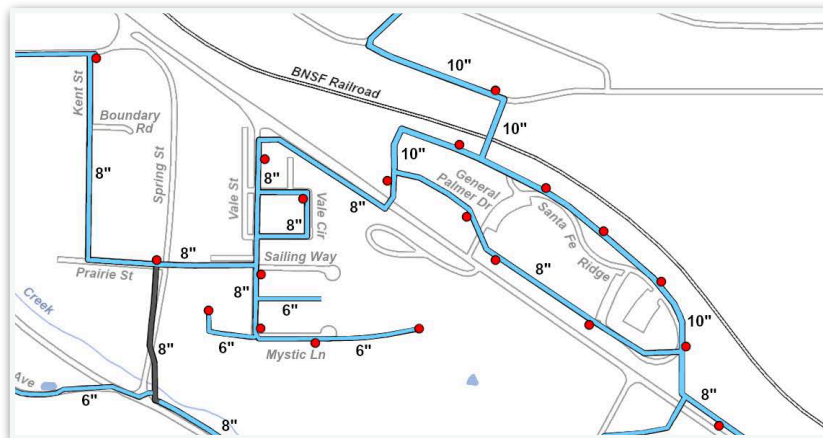


Diagram 2.5a: Water Service Lines - Santa Fe Ridge

- The existing wastewater (sewer) line is an 8-inch diameter pipe, running along the southern Tract A property line, parallel to Highway 105, with a manhole roughly in the center. [refer to Diagram 2.5b]

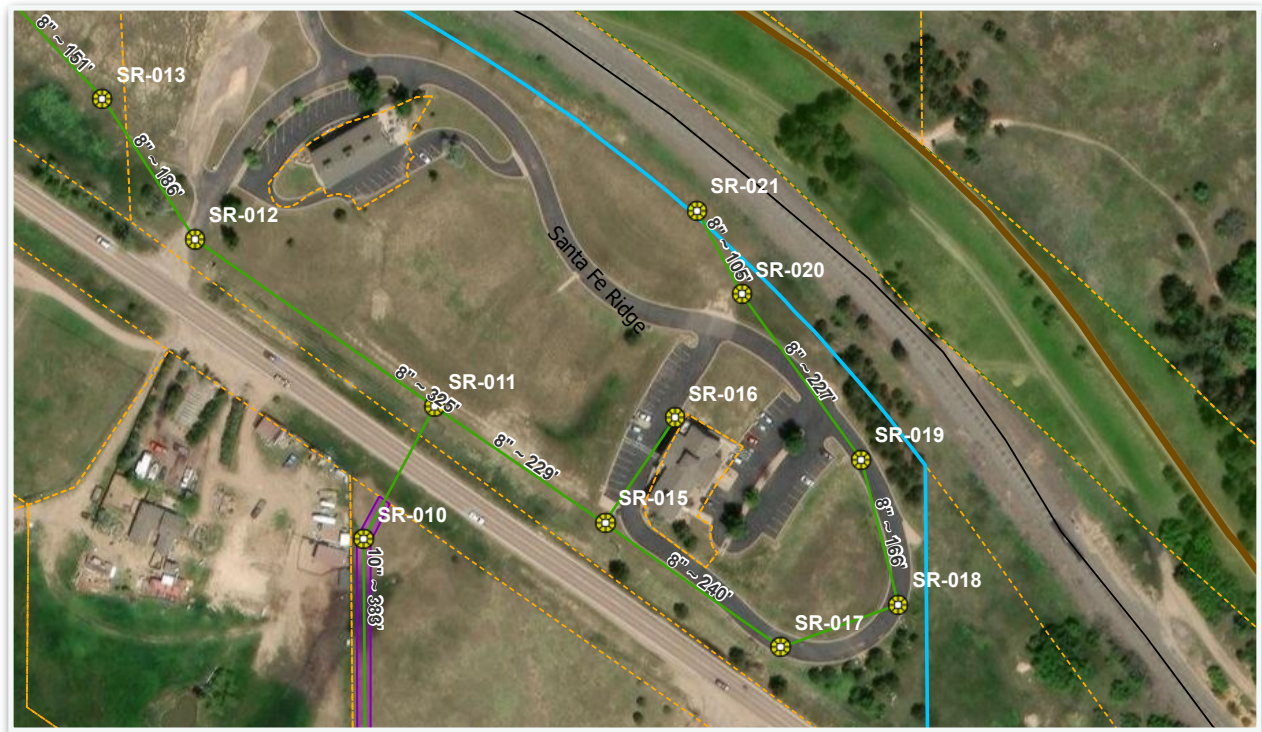


Diagram 2.5b: Wastewater Service Lines - Santa Fe Ridge

- Electrical service is provided by Core, and is supplied by underground 3-phase power that comes from overhead lines along Highway 105 on the south and enters the site near the building at 610 Santa Fe Ridge.
- Gas service is provided by Black Hills Energy and is supplied to the site by a 3" gas service line on the northwest portion of the overall development, with an internal service line to the lots.
- Internet service in Palmer Lake is provided by cable, satellite, and fiber through local providers such as Xfinity, Viasat, CenturyLink, and Force Broadband.
- For all utilities, the service lines to the new buildings would need to be extended from their current locations. All utility needs appear to be readily available for Lots within Santa Fe Ridge.

**2.6 Site security: equipment and facility protection against vandalism and acts of violence**

- Safety and security for the Santa Fe Ridge Site could potentially be impacted by its more rural location outside of town and along the Highway. It is possible that the new building would be oriented to face south for the benefit of the sun exposure in winter months, and therefore the driveway, access points and garages would be visible from the Highway. The security of the site should be maintained as it will generally be occupied around the clock. The overall development is planned for business uses that currently have occupancy during the day. The police station portion of the future building will be equipped with controlled access devices to prevent unauthorized access.

## 2.7 Planning, zoning and code implications for each site

- The Santa Fe Ridge Site has a PUD Zoning designation and fronts Highway 105. Zoning regulations for the Town of Palmer Lake require a setback of 200ft from State Highway 105. The setback requirement will have significant impact based on the location of a potential Lot within the Santa Fe Ridge development. Tract A does not apply.

## 2.8 Site improvement cost estimates

- Development of a site within the Santa Fe Ridge location will require Site Grading and drainage plans and earth work, Utility connections and tap fees, excavation for new building foundations, paving for parking lots, sidewalks, curb and gutter, and coordination with CDOT to install an emergency signal at Highway 105 and General Palmer Dr.
- See Appendix E for a Preliminary Cost Estimate provided by a licensed contractor who considered each of the three potential Sites.

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## 3.0 ELEPHANT ROCK

### 3.1 Site Analysis:

- Physical properties - *environmental, topography, orientation, geology, existing vegetation, existing structures or man-made features.*
  - General: The Elephant Rock Site is part of a larger 27 acre property on the south side of State Highway 105, made up of two parcels, one adjacent to State Highway 105 that is approximately 6 acres, and a larger 21 acre triangle of land to the south developed with existing buildings, parking and landscaping. The Lot under consideration is on the 6 acre parcel on the north [refer to *diagram 3A*]. The Site is immediately adjacent to the Highway and to an existing dirt access road, and more or less level with it. The western corner of the land drops significantly down from the highway toward the south and is unbuildable. There are natural rock formations which must be preserved and protected with any site development.



Diagram 3A: Elephant Rock Site

- Environmental:[Refer to *diagram 2*] Prevailing Winds are from the northwest, Solar Exposure is to the south and east along the length of the site, and it sits level with the existing adjacent properties with no potential for shading from existing structures on adjacent lots. Drainage and Erosion control is not an issue with most of this Site, based upon the topography described above. The existing slope in the northwest corner may need to be improved with construction of drainage infrastructure when adding impervious area from parking lots and buildings. The site is visible from Highway 105 and potential future building(s) would be visible to passers-by.
- Topography [*refer to diagram 3B*] The Elephant Rock site is gently sloping land that is highest at the north and sloping gradually toward the southwest. The north 1/3 of the 6 acre parcel has steep sloping land forming a drainage to the southwest. The buildable area may be limited to approximately 4 acres of the overall 6-acre parcel based on topography and setback requirements, see below.

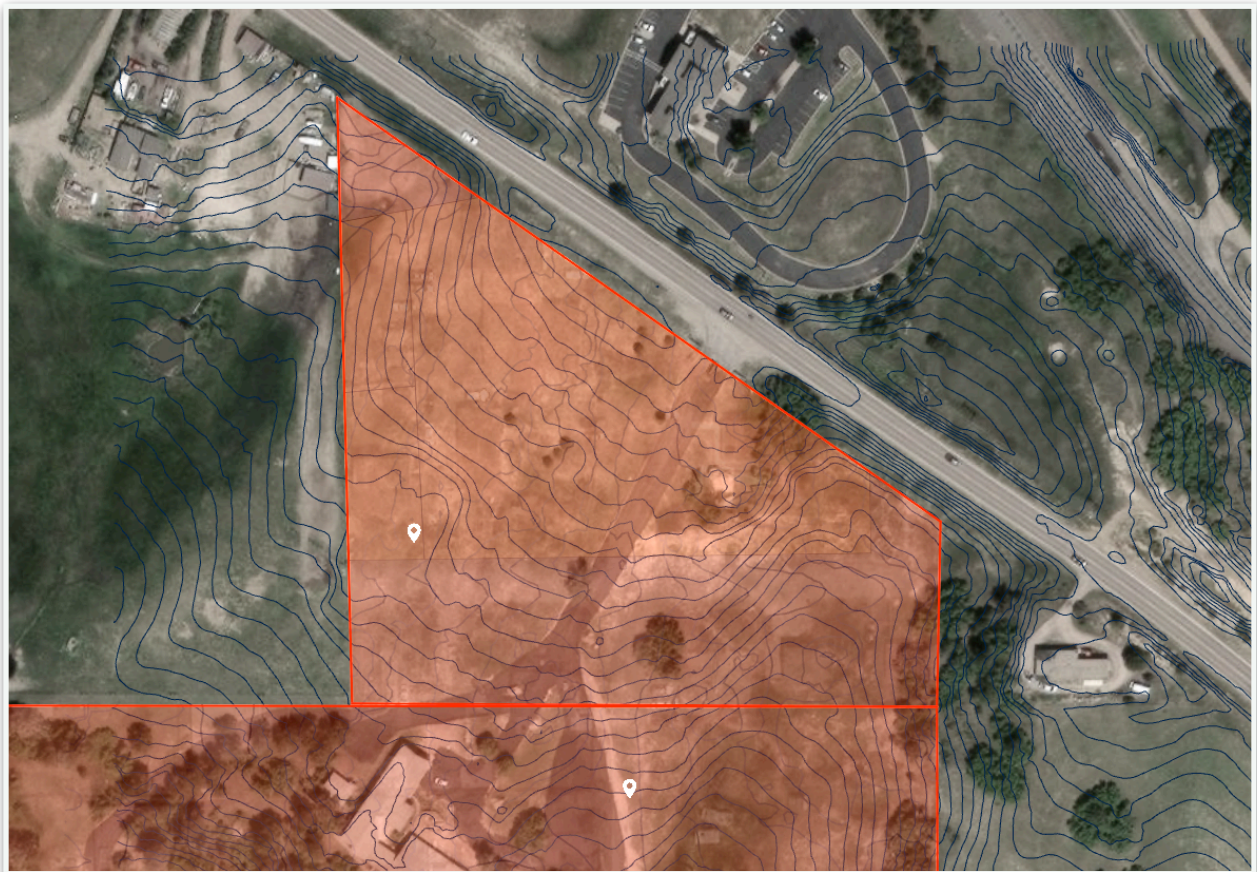


Diagram 3B: Topography for Elephant Rock Site.

- Orientation: The Elephant Rock Site faces southwest, and any potential building would need to be oriented with it's breadth spanning southeast - northwest, in line with existing contours, roughly parallel to Highway 105 to the north. It is bordered on the north by State Highway 105 and a berm, a residential property to the west that is lower in elevation, the additional 21-acre parcel owned by the Town on the south, and a residential lot to the east.
- Geology: Data reviewed from the Colorado Geological Survey Map for the Palmer Lake Quadrangle indicates the Elephant Rock Site is located within a geological

area that may not be generally suitable for building construction without a geotechnical investigation and report provided by a geotechnical engineer. The engineer will determine requirements for foundations, which may include over excavation, soil amendment and/or deeper foundations. The site appears to be a mix of Alluvium and Dawson formation sedimentary rock. Geotechnical test borings will be required prior to building design. [Refer to *diagram 3C and Overall Map and Legend found in Appendix A & B*]

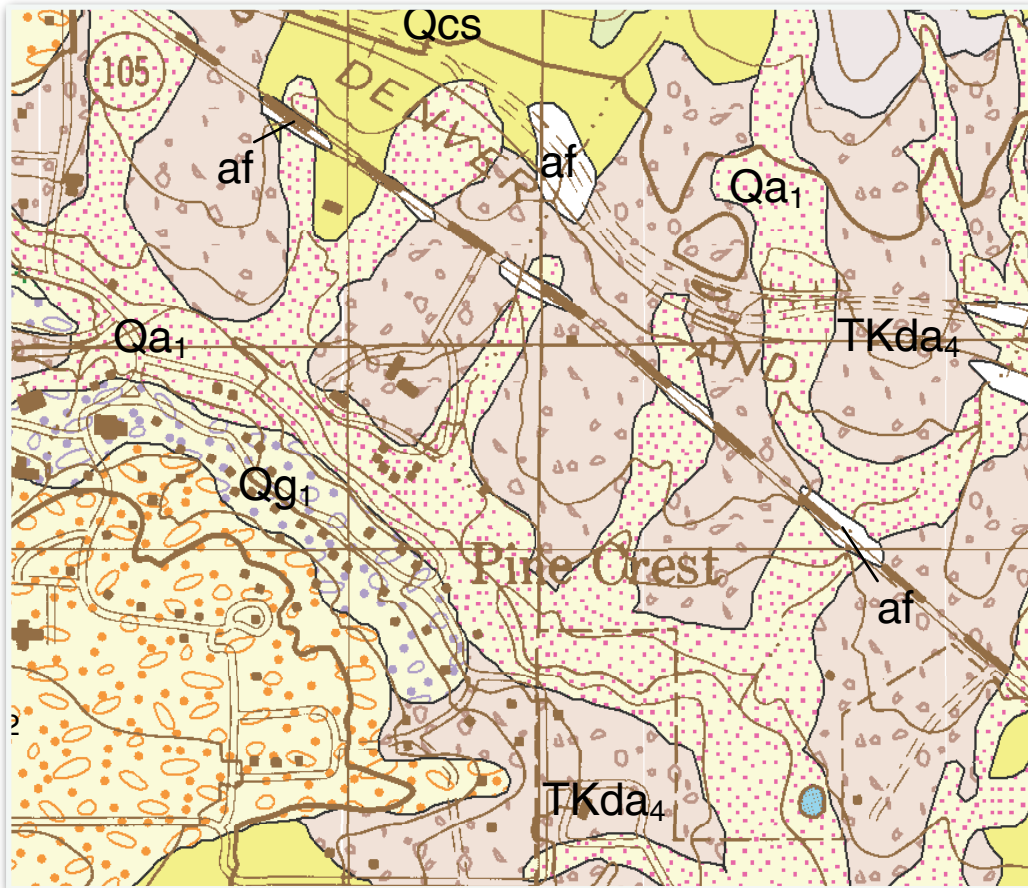


Diagram 3C - Portion of Colorado Geological Survey Map - Palmer Lake - Elephant Rock Site

- **Vegetation:** The site primarily has natural grasses, with a few coniferous trees near the dirt access road. More trees exist on the lower 21-acre parcel.
- **Existing structures or human-made features:** The Site on the ~6-acre parcel is currently undeveloped. The Site entry off of Highway 105 has a pair of gates with stone walls. The existing internal road is dirt with no curb & gutter. There are a number of existing buildings and man-made features on the lower ~21-acre parcel. There is a light pole at the entry point to the property off highway 105, and power poles adjacent to the entry along the dirt road toward the south.
- **Potential Noise disruption:** The Site is located in an area that is outside of town, in a less-densely populated area. It is adjacent to Highway 105 with it's ambient noise, and single-family residential uses on either side. Noise disruption into the Site should be expected from Highway 105 and the nearby railroad track to the north. Noise disruption from the Site is not a significant factor with this property, due the the rural nature of the adjacent properties.

### **3.2 Vehicular access:** *emergency services and public access to and within the site:*

- Refer to section 2.2 for a list of existing vehicles used by the Town of Palmer Lake Fire Department.
- Existing Adjacent Street Capacity - Adjacent to Highway 105, a 2-lane state highway. The access point is from the north and is limited to the existing driveway located in roughly the center of the 6-acre parcel frontage to Highway 105. The road is currently dirt with no curb & gutter, there are two existing gates for entry/exit. The existing internal access road is nominally wide enough for one vehicle in each direction.
- The angle of approach into the Elephant Rock Site from the existing dirt road is flat enough to allow any vehicle to enter / exit with minimal grading required. It should be noted that improving the existing dirt road to be a paved access road with curb and gutter for heavy emergency vehicles and equipment is expected.
- The Elephant Rock site is approximately 6 acres and is deep enough in the north-south direction to allow for a building, driveways, and parking. The Fire Department's existing engines will require a turning radius of at least 41 feet. Given the potential required footprint for the Public Safety building with garage space at least 45 feet deep, and the required driveway and approach into the garages, sufficient space to turn and navigate the site appears to be sufficient.
- Parking Requirements for the public safety building should include spaces for town employee's (Fire and Police) personal vehicles as well as limited public parking. The Elephant Rock site would require 1 space for each 300 sq ft of floor area according to Palmer Lake Zoning Ordinance 17.84.020 for off street parking. Based upon the preliminary building requirements for an estimated area of 9,200 sq.ft. of building (not including vehicle garages), the proposed Public Safety building could require as many as 30 spaces for employees and general public. The parking area for vehicles is estimated to require at least 15,000 sq.ft. This site has sufficient area for parking.
- Public access to the Elephant Rock site would be possible from the existing Highway 105 entry point. Also, there would be sufficient space within this site to allow for the access for Fire and Police vehicles to be separated from Public access and parking areas. The remainder of the Site including the lower 21 acre parcel is planned for public use and the shared internal access road will have vehicles from the public using it.

### **3.3 Traffic Impact Analysis:**

- Emergency service vehicles running calls from the Elephant Rock site would be required to exit the parking lot, navigate the common access road before entering onto State Highway 105. It should be expected that an emergency signal would need to be added at the intersection of the existing access road where it meets Highway 105.
- Traffic on Highway 105 would be impacted when emergency vehicles are deployed and need to enter the Highway turning right or left. Morning and evening commuter traffic may experience some congestion if the emergency signal is activated and Highway traffic is stopped to allow emergency vehicles to enter the Highway.
- Based on the existing grade and width of Highway 105 at this location, it is questionable whether any widening of the road would be allowed or possible to create a turn lane or acceleration lane.

- It is not expected that any significant adjustment would be allowed to Highway 105 at the access point at Elephant Rock based upon input from Town Staff and CDOT indications on other Highway related questions.

### 3.4 Undeveloped Land Analysis:

- Development Considerations for the Elephant Rock Site:
  - Some existing infrastructure, including a dirt road and utilities are existing to the Site. Utilities would only need to be extended to a new building on the 6-acre parcel.
  - There is a gas main / meter located a few hundred feet into the site on the west side of the dirt road that may need to be relocated, but could be done as part of extending the gas service to the new facility.
  - The dirt road would require improvement to a paved road with reinforced concrete aprons and curb and gutter at least around any public building and within the area of the driveway and garage for the emergency vehicles.
  - Minimal site grading would need to be done to allow access for vehicles, and to create a buildable area for the Public Safety building.
  - There are no existing drainage structures, swales, rip-rap, or detention basins on the 6-acre parcel. These may be necessary to allow for any site improvements.
  - The environmental impacts of adding impervious area with driveways, buildings, and parking lots required for the project would need to be studied by a Civil Engineer.
- Financial implications to begin and maintain ongoing use of the Elephant Rock Site on the 6-acre parcel would primarily include the development and construction costs for building a new facility. The land is owned by the Town of Palmer Lake and is zoned PUD which allows for the type of proposed development.

### 3.5 Utility Service Availability: *options for all public utilities*

- Availability of Public Utilities:
  - Water service is provided to the Elephant Rock Site by a 6-inch PVC line that runs south on the east side of the dirt access road down to

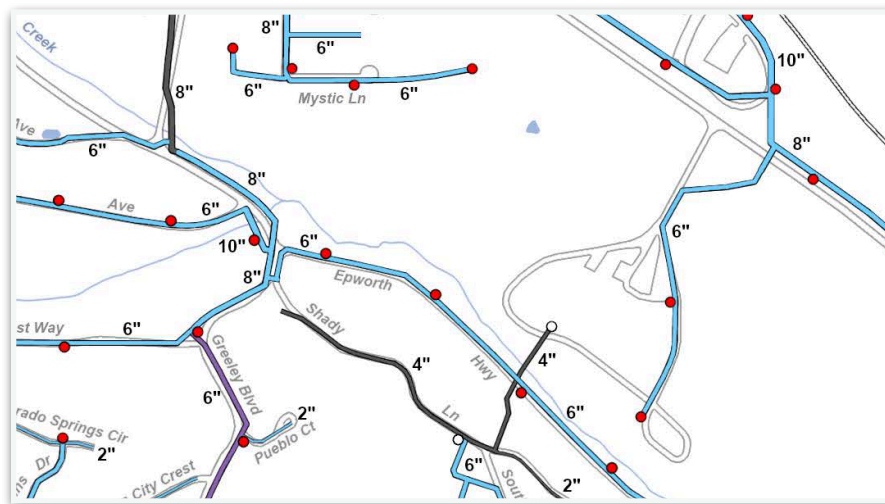


Diagram 3.5a - Water Service Lines - Elephant Rock

the remaining site. There are two fire hydrants, both located on the lower 21-acre parcel. A service line would need to be extended to the west for the new proposed facility. (Refer to Diagram 3.5a)



Diagram 3.5b - Wastewater Service Lines - Elephant Rock

- The existing wastewater (sewer) line is a 10-inch diameter pipe, and runs along the western property line toward the south. There are several manholes along the line through the site. There is no sewer line along the south side of Highway 105 at this location. (Refer to Diagram 3.5b)

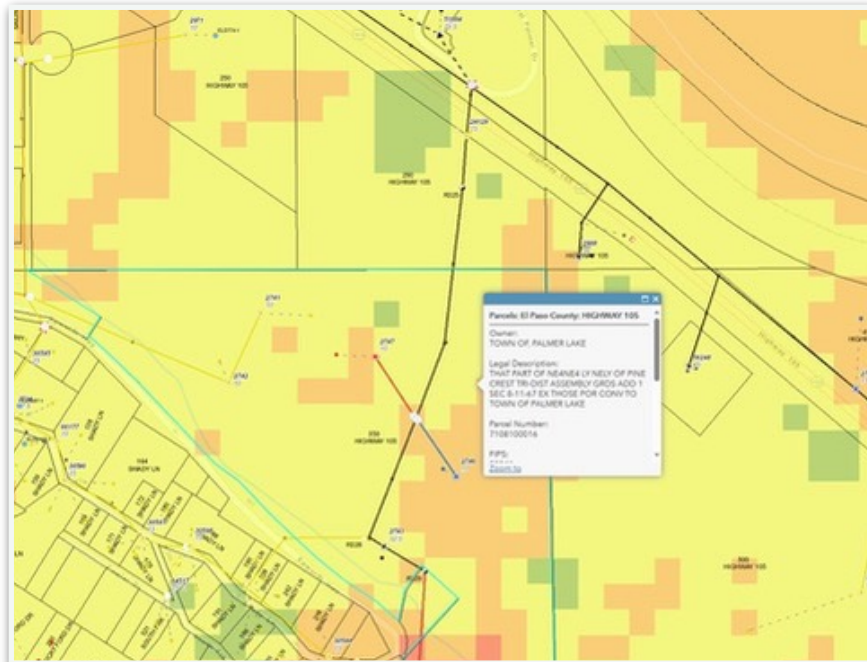


Diagram 3.5c: Electrical Service - Elephant Rock

- Electrical service is provided by Core, supplied by overhead power lines with 3-phase power from lines along Highway 105 to the north and enters the site near the dirt access road. Power poles run south through the site down to the lower buildings. There are some single-phase overhead lines on the lower 21-acre parcel connecting to existing buildings.
- Gas service is provided by Black Hills Energy and is supplied to the site by a 3" service line running parallel to Highway 105 and directly through the Site. There is a High-Pressure Gas Main also running parallel to the service line, which could have impact on any site development.
- Internet service in Palmer Lake is provided by cable, satellite, and fiber through local providers such as Xfinity, Viasat, CenturyLink, and Force Broadband.
- For all utilities, the service lines to the new buildings would need to be extended from their current locations. All utility needs appear to be readily available on the Elephant Rock Site.

### **3.6 Site security: *Equipment and facility protection against vandalism and acts of violence***

- Safety and security for the Elephant Rock Site could potentially be impacted by its more rural location outside of town and along the Highway. It is possible that the new building would be oriented to face south for the benefit of the sun exposure in winter months, and therefore the driveway, access points, and garages would not be easily visible from the Highway. However the security of the site should be maintained as it will generally be occupied around the clock. The vulnerability of the property may come with the fact that the remainder of the larger site (the lower 21-acre parcel) could be developed as public park and open space uses where the public has access. The police station portion of the future building will be equipped with controlled access devices to prevent unauthorized access.

### **3.7 Planning, zoning and code implications**

- The Elephant Rock Site has a PUD Zoning designation which requires a setback of 200 feet from State Highway 105. This will limit the availability of land for the Public Safety building significantly. Due to local environmental conditions where the north-side of buildings and north-facing driveways, walkways, and parking areas are subject to significant seasonal snow and ice build-up, it will be strongly recommended to have the driveways and parking areas on the south-side of the building. These two factors (setback and environmental) may require that more available land be allocated to the Public Safety Building when considering the Elephant Rock Site.
- There is a permanent well easement on the Elephant Rock property on the east side of the dirt access road from Highway 105 on the northwest boundary. This does not have a direct impact on developing the land to the west of the access road.

### **3.8 Site improvement cost estimates**

- Development of the Elephant Rock location will require site grading and drainage plans and limited earth work, utility connections and tap fees, excavation for new building foundations, paving for parking lots, new sidewalks, curb and gutter to access the new building, new site landscaping, and coordination with CDOT to install an emergency signal at Highway 105.
- See Appendix E for a Preliminary Cost Estimate provided by a licensed contractor who considered each of the three potential Sites.

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## 4.0 VALLEY CRESCENT (TOWN)

### 4.1 Site Analysis:

- Physical properties - topography, orientation, geology, existing vegetation, existing structures or man-made features, environmental climate.
  - General: The Valley Crescent Site is located in the Town of Palmer Lake on Valley Crescent St between Middle Glenway St on the north and Lower Glenway St on the south. [refer to diagram 4A]. The Site includes the existing Town Hall, Town Administration offices, Police Department, Fire Department, Palmer Lake Historical Society, and a blank piece of land owned by the Fire Department Association. This Site is within the downtown area and has residential and some commercial uses surrounding it. The recommended location for the future Public Safety building would be the northern 1/3 of the Valley Crescent Site along Middle Glenway Street, including the Fire Association land on the west, the existing Fire Station building (to be demolished) in the middle, and possibly the dirt parking lot to the east.
  - Environmental:[Refer to diagram 2D] Prevailing Winds are from the northwest, Solar Exposure is to the south and east along the length of the site, and grade is level with the existing adjacent properties. Mature vegetation and trees will create some shading on driveways and access roads and walkways. There is little potential for shading from existing structures on adjacent lots. Drainage within



Diagram 4A: Valley Crescent Town Site

the site will need to be considered carefully, as neither of the adjacent roads have any curb & gutter and the drainage swales on the roadside are shallow and do not carry water effectively. The drainage around existing buildings may need to be improved when adding impervious area with parking lots and buildings with construction of new drainage infrastructure. Shade and shadow from existing structures leads to significant snow and ice build-up during winter months and is a factor for design consideration. The site is several blocks from Highway 105 and would be accessed similarly to the way it is done currently.



Diagram 4B: Topography for Valley Crescent Site

- Topography [*refer to diagram 4B*] The Valley Crescent site is perceptibly flat land, though sloping to the east, with contours running north - south across the site. The elevation is higher on the west, gently dropping to low on the east.
- Orientation: The Valley Crescent Site does not have a strong orientation, however a potential future Public Safety building would likely need to be oriented east - west along the north boundary of the site. It is bordered on the north by Middle Glenway St and residential properties to the north, east, south, and west.
- Geology: Data reviewed from the Colorado Geological Survey Map for the Palmer Lake Quadrangle indicates the Valley Crescent Site is located within a geological area that appears to be generally suitable for building construction. A geotechnical investigation and report provided by a geotechnical engineer will be necessary to determine requirements for foundations. The site appears to be within a Gravel Deposit soil area. Geotechnical test borings will be required prior to building design. [*refer to diagram 4C*]
- Vegetation: The site has natural and cultivated grasses, existing mature deciduous and coniferous trees throughout the site. The boundary along Middle Glenway St has several mature spruce trees and other deciduous trees. The Fire Association portion of the Site has little vegetation and is currently used for parking or staging vehicles. There are established gardens and landscaping through much of the Valley Crescent site, especially around the existing town buildings.

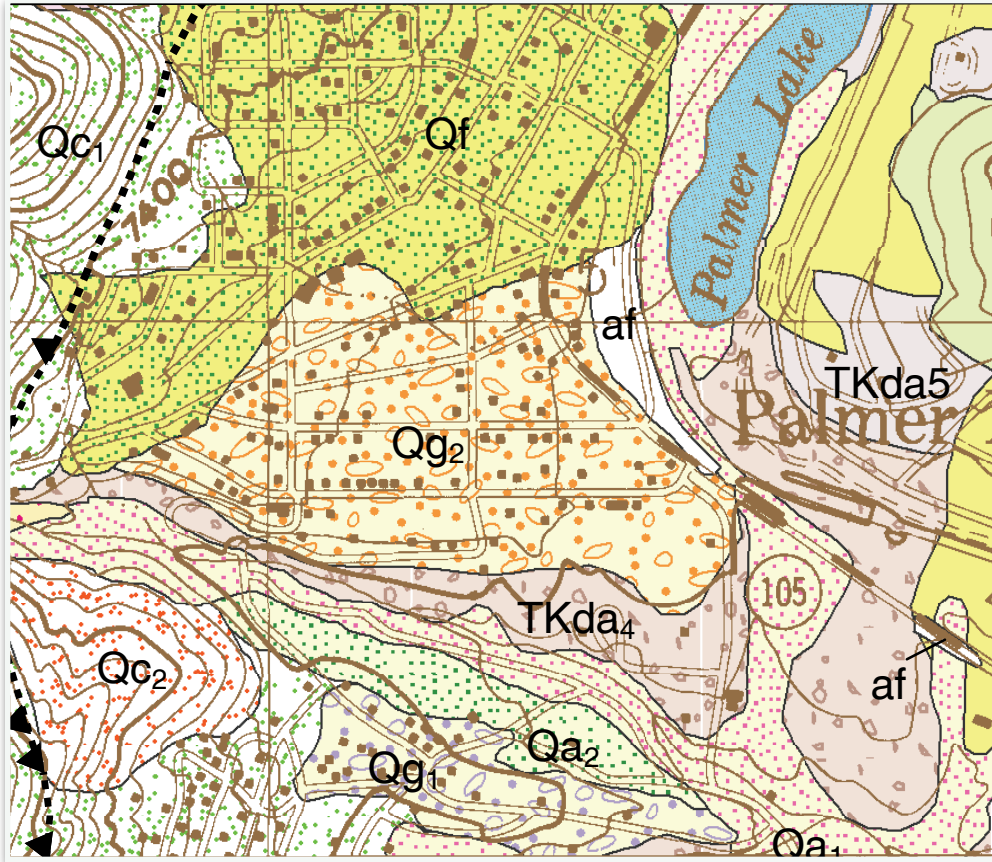


Diagram 4C: Portion of Colorado Geologic Survey Map - Palmer Lake - Valley Crescent Site

- Existing structures or human-made features: The Valley Crescent Site is developed with five buildings, some of which have historical significance. There are some existing sidewalks, driveways, and parking areas. There is an informal alley on the west side of the property that is used for Fire Department access and town employee parking.
- Potential Noise disruption: The site is located in the center of town, in a relatively-densely populated area. It is adjacent to single-family residential uses on all sides. Noise disruption will be a significant factor with this property, as it already is with the existing Police and Fire Stations located on the larger property.

**4.2 Vehicular access:** *emergency services and public access to and within the site:*

- Refer to section 2.2 for a list of existing vehicles used by the Town of Palmer Lake Fire Department.
- Access to and from the Valley Crescent Site is either from Middle Glenway St on the north, or via Lower Glenway St. at the informal alley on the west side behind the existing Town Hall, or into the parking lot in the middle of the site.
- Existing Adjacent Street Capacity - The Valley Crescent Site is between two neighborhood streets with no striping or curb & gutter. The capacity of Lower and Middle Glenway Streets is not expected to vary with the improvement of the Site to include a combined Public Safety building since both of these uses already utilize the adjacent streets.
- The angle of approach into the Valley Crescent Site from the existing streets is flat enough to allow any vehicle to enter / exit with minimal to no grading required. It should be noted that improving the existing dirt driveways to be

- a paved access road or driveway apron with curb and gutter for heavy emergency vehicles and equipment is expected.
- The Valley Crescent site is approximately 2 acres total, including all other existing buildings, driveways and open space. The available land that might be considered for use with a new building is approximately 400 feet by 110 feet, (44,000 sq.ft.) Whether the potential site is deep enough in the north-south direction to allow for a new building, driveways, and parking will require careful investigation. The Fire Department's existing engines will require a turning radius of at least 41 feet. Given the potential required footprint for the Public Safety building with garage space at least 45 feet deep, and the required driveway and approach into the garages, sufficient space to turn and navigate the site may be adequate, but it could be very tight.
- Parking Requirements for the public safety building should include spaces for town employee's (Fire and Police) personal vehicles as well as limited public parking. The Valley Crescent site would require 1 space for each 300 sq ft of floor area according to Palmer Lake Zoning Ordinance 17.84.020 for off street parking. Based upon the preliminary building requirements for an estimated area of 9,200 sq.ft. of building (not including vehicle garages), the proposed Public Safety building could require as many as 30 spaces for employees and general public. Obviously, the Valley Crescent site cannot accommodate this many spaces. The required parking area for vehicles is estimated to require at least 15,000 sq.ft. There is existing parking within the Valley Crescent Site, but with the addition of a new building this may be impacted.
- Public access to the Valley Crescent site is currently possible from middle Glenway St. with an entry point on the north, or on the south side from Lower Glenway St. into a central parking lot.

#### **4.3 Traffic Impact Analysis:**

- Emergency service vehicles running calls from the Valley Crescent site would be required to use either of the neighborhood streets Middle Glenway or Lower Glenway St. These streets do not have significant traffic and impact from emergency services would remain similar to what it is currently.
- Traffic on Highway 105 would be impacted when emergency vehicles are deployed and need to enter the Highway turning right or left, but this is already an existing condition. Morning and evening commuter traffic may experience brief delays when Highway traffic is stopped to allow emergency vehicles to enter the Highway. There is no expectation of adding an emergency signal.

#### **4.4 Developed Land Analysis:**

- Development Considerations for the Valley Crescent Site:
  - Phasing the project to allow Fire Department services to continue while a portion of the site is developed for a new building.
  - Existing infrastructure is already in-place, including paved roads, sidewalks, utilities, landscaping, and buildings. Utilities would only need to be extended to a new building.
  - Demolishing existing structures in preparation for the new building would be required.
  - The dirt access roads on the north (east and west of the existing Firehouse) would require improvement to a paved road with reinforced concrete aprons and curb and gutter.
  - Minimal to no site grading would need to be done to allow access for vehicles, and to create a buildable area for the Public Safety building.

- Existing drainage structures, swales, or detention basins may require improvement to allow for new site improvements.
- Environmental impacts of adding impervious area with driveways, buildings, and parking lots required for the project would need to be studied by a Civil Engineer to determine if a detention pond or other provisions need to be made on adjacent streets and within the site.
- Financial implications to begin and maintain ongoing use of the Valley Crescent Site would include the demolition of existing buildings and site preparation for site development and construction of a new building. The land is owned by the Town of Palmer Lake which allows for the type of proposed development and added building.

**4.5 Utility Service Availability:** *options for all public utilities*

- Availability of Public Utilities:
  - Water service is provided to the Valley Crescent Site by a 4-inch cast iron service line running within Valley Crescent St through the center on the plane, and a 6" PVC line that runs along the south side of Middle Glenway St. There are two fire hydrants nearby, located at the corners of Valley Crescent St. There is a Raw Water hydrant located

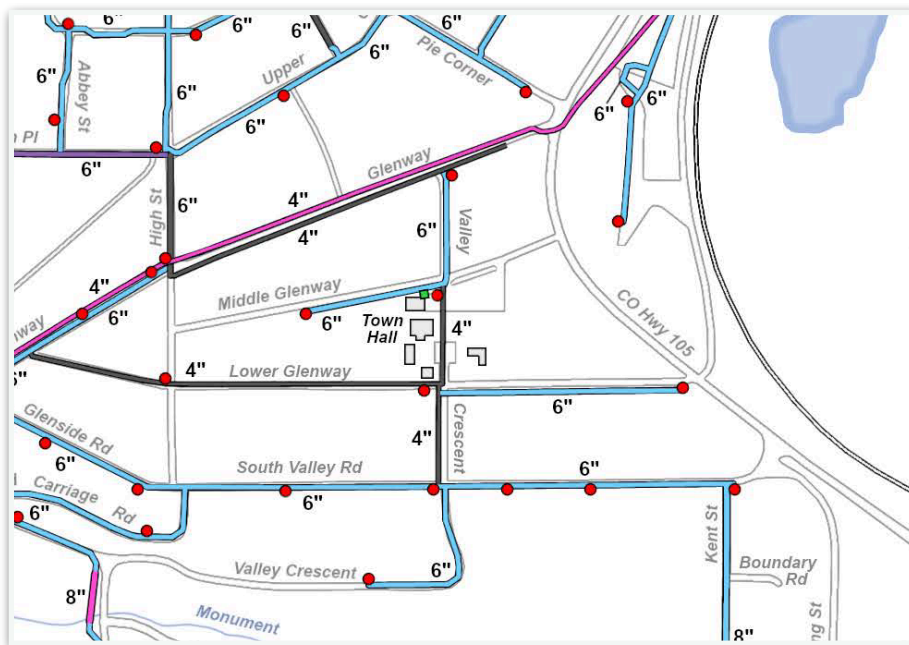


Diagram 4.5a: Water Service Lines - Valley Crescent

- adjacent to the existing Fire Station. [*refer to Diagram 4.5a*]
- The existing wastewater (sewer) line is an 8-inch diameter pipe, and runs along the eastern side of Valley Crescent St toward the south, through the site from Middle Glenway to Lower Glenway St. There is a manhole in the dirt parking lot on the north of the site. [*refer to diagram 4.5b: Sewer lines are represented in green*]
- Electrical service is provided by Core, and is supplied by overhead power lines with 3-phase power that comes from lines along the north, east, south and west perimeter of the site and enters the site near the



- For all utilities, the service lines to the new buildings would need to be extended from their current locations. All utility needs appear to be readily available on the Valley Crescent site.



Gas Service to Valley Crescent

**4.6 Site security: Equipment and facility protection against vandalism and acts of violence**

- Safety and security risk for the Valley Crescent Site may be reduced by the fact the new facility will be in the center of town and among residential properties. It is possible that the new building would be oriented to face south for the benefit of the sun exposure in winter months, and therefore the driveway, access points and garages would not be easily visible from the Middle Glenway St. However the security of the site should be maintained as it will generally be occupied around the clock. The police station portion of the future building will be equipped with controlled access devices to prevent unauthorized access.

**4.7 Planning, zoning and code implications for each site**

- The Valley Crescent Site has an R3 Zoning designation which may require a re-zoning process to allow for the proposed use. It is possible the Town could administratively approve a re-zone to allow for the proposed use, considering that other Town Municipal uses already exist on the Site. Providing adequate parking for town personnel and the public would be a greater challenge with this site, especially if it is developed further with a larger Public Safety building. The geohazards associated with this Site appear to be less than other sites in consideration, based on geology, topography and history.

**4.8 Site improvement cost estimates**

- Development of the Valley Crescent location will require some site preparation to demolish existing structures. It will also require site grading and drainage plans and limited earth work, utility connections and tap fees, excavation for new building foundations, paving for parking lots, new sidewalks, curb and gutter where the new building will be located. Discussions with the Town Staff indicated there is willingness to be flexible with the operations of the Fire Department (temporary accommodations) while the existing building is removed and cleared for construction of a new combined facility. This site may have the lowest site improvement costs of the three potential sites.

- **See Appendix E** for a Preliminary Cost Estimate provided by a licensed contractor who considered each of the three potential Sites.

## 5.0 Site Comparison Matrix

### SITE COMPARISON MATRIX

	SANTA FE RIDGE	ELEPHANT ROCK	VALLEY CRESENT
<b>SITE DATA</b>			
TOPOGRAPHY	Detention basin, steep slope to north	Gently sloping ideal for building	Flat / Gently Sloping, ideal for building
GEOLOGY	poor soils, mitigation likely required	poor soils, mitigation likely required	good soils, no mitigation
VEGETATION	native grasses, no trees	native grasses, min trees	mature landscape & trees
NOISE	From Outside: Train/Highway From Inside: non issue	From Outside: Train/Highway From Inside: non issue	From Outside: minimal From Inside: residential neighborhood
ENVIRONMENTAL	Prevailing winds north/northeast, south/southeast	Prevailing winds north/northeast, south/southeast	Prevailing winds north/northeast, south/southeast
	Sunlight south exposure	Sunlight south and east exposure	Sunlight south and east exposure
	Existing detention basin (unbuildable)	Typical drainage mitigation, minimal grading	Moderate drainage mitigation, minimal grading
<b>VEHICLE &amp; TRAFFIC</b>			
ACCESS	Not possible	Good, with multiple options	Good, with limited options
STREET CAPACITY	Restricted, existing drive is narrow	unrestricted, new	restricted, existing alley and neighborhood streets
PARKING CAPACITY	N/A	adequate	limited
TRAFFIC IMPACT	Emergency signal required at Hwy 105	Emergency signal required at Hwy 105	Same as existing, no change
<b>LAND ANALYSIS</b>			
UNDEVELOPED / DEVELOPED	Undeveloped Site	Undeveloped Site	Developed Site
	Existing detention pond, <b>Unbuildable</b>	no existng drainage infrastructure. Some detention may be required	limited drainage infrastructure, mitigation likely required
	Setbacks n/a	200 ft setback reduces land available for building	easement on north, existing buildings
	Existing access road, extension to site n/a	access road improvement and extension to site	existing alley, needs improvement
	Site grading n/a	minimal / no site grading required	minimal / no site grading required
	no demolition required	no demolition required	building demolition required

## SITE COMPARISON MATRIX

	SANTA FE RIDGE	ELEPHANT ROCK	VALLEY CRESENT
<b>UTILITIES</b>			
WATER	8" PVC, 2 hydrants	6" PVC, 1 hydrant	4" cast iron and 6" PVC, 2 hydrants
WASTE WATER	8" dia., accessible to south	10" dia. Accessible to west	8" dia., accessible to east
ELECTRICAL	3-phase, underground	3-phase, overhead	3-phase, overhead
GAS			
INTERNET	Cable, Fiber, Satellite	Cable, Fiber, Satellite	Cable, Fiber, Satellite
<b>SITE SECURITY</b>			
	(location, orientation, and visibility) N/A	Medium risk, (location, orientation, and visibility)	Low Risk, within town, high visibility
<b>SITE IMPROVEMENT COST PROJECTION</b>			
GRADING & DRAINAGE	Grading and drainage N/A	Minimal grading, add / extend drainage infrastructure	Minimal to no grading, improve drainage infrastructure
UTILITIES	all available, connect to site N/A	all available, typical cost to connect to site	all available, low cost to connect to site
DRIVES CURB & GUTTER	Curb & Gutter N/A	C&G and extent of paving optional	Paved driveways C&G required
<b>PLANNING &amp; ZONING CODE IMPLICATIONS</b>			
GEOHAZARD	Yes, Required	Yes, Required	No
RE-ZONE	No	No	Yes
DEVELOPMENT PLAN	Yes, Minor Amendment	Yes, Minor Amendment	Yes, Minor Amendment
SETBACKS	200 ft, Hwy 105, south	200 ft, Hwy 105, north	Property line
EASEMENTS	Utility	Permanent Well, Utility	Utility
LOT SETBACKS	Un-buildable	Yes, 200 ft Hwy Setback issue	Yes, limited impact

## 6.0 Conclusion

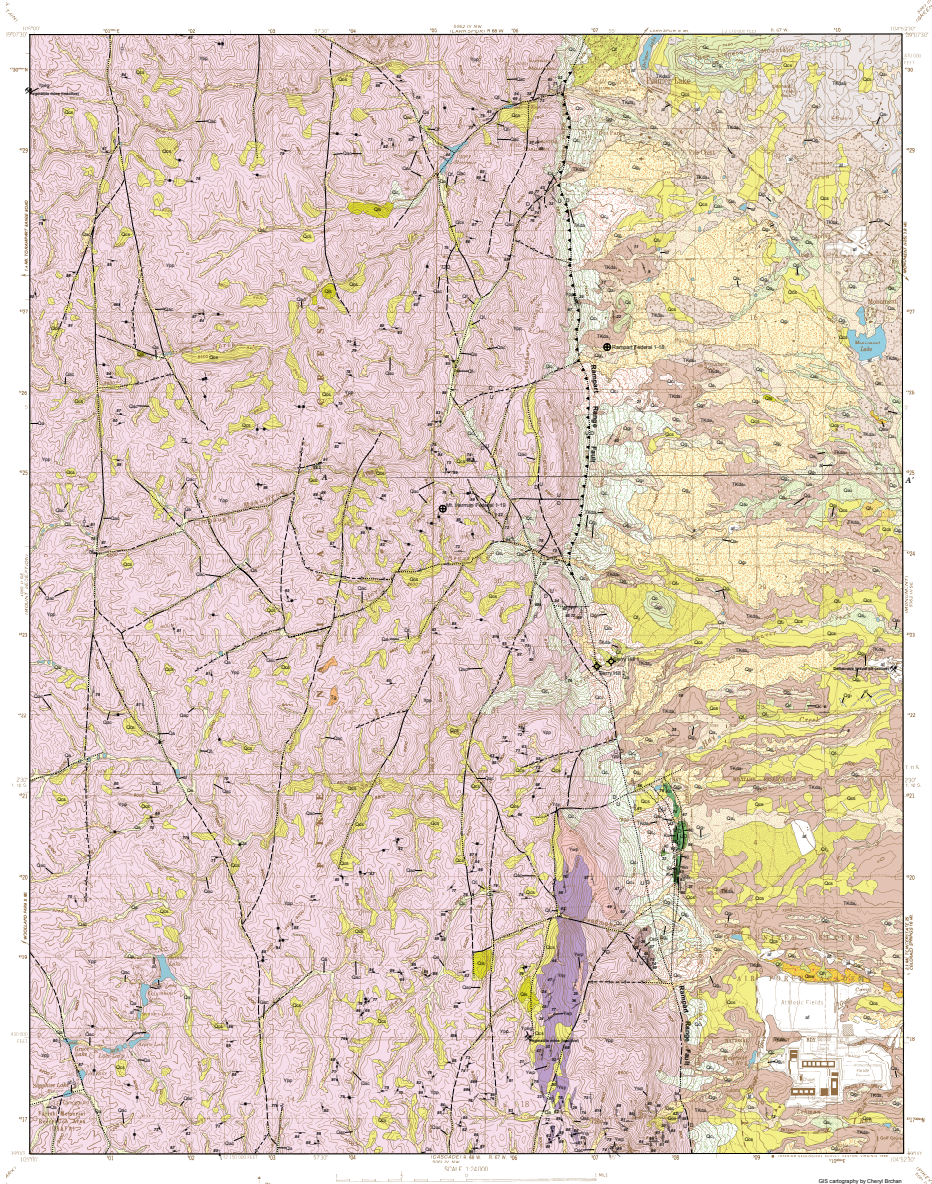
Based upon the findings of this report and the analysis of the data collected, it is the recommendation of the design professionals that the Town consider developing the Valley Crescent Site for the future combined Public Safety Facility. The Site has the required areas, agreeable topography, vehicular access, and all available utilities. It will involve the complexities of phasing the project, in order to construct a fire department building while allowing the existing building to continue operating, but this would not be prohibitive. The Valley Crescent Site is in the center of town and proximate to all of the existing Town functions, which is favorable. The factors in favor of this site outweigh other possibilities considered.

# Appendix A

## Geologic Map of the Palmer Lake Quadrangle

COLORADO GEOLOGICAL SURVEY  
DEPARTMENT OF NATURAL RESOURCES  
DENVER, COLORADO

OPEN-FILE 06-6  
GEOLOGIC MAP OF THE PALMER LAKE QUADRANGLE  
EL PASO COUNTY, COLORADO  
Plate 1 of 2  
Booklet accompanies map



- LIST OF MAP UNITS**  
The complete description of map units and references are in the accompanying booklet.
- SURFICIAL DEPOSITS**
- HUMAN-MADE DEPOSITS**
- Artificial fill (late Holocene)
- ALLUVIAL DEPOSITS**
- Stream-channel, flood-plain, and terrace alluvium, undivided (Holocene and late Pleistocene)
  - Alluvium one (late to early Holocene)
  - Alluvium two (late Pleistocene)
  - Stream alluvium and colluvium, undivided (Holocene to late Pleistocene)
  - Sheetwash alluvium (Holocene and late Pleistocene)
  - Alluvial fan deposit one (late Holocene)
  - Alluvial fan deposit two (early Holocene to late Pleistocene)
  - Alluvial fan deposit three (late Pleistocene)
  - Alluvial fan deposit (Holocene to late Pleistocene)
  - Gravel deposit one (middle Pleistocene)
  - Gravel deposit two (early middle Pleistocene)
  - Gravel deposit three (early Pleistocene)
  - Gravel deposit four (early Pleistocene or late Eocene?)
  - Gravel (late Tertiary)
- MASS-WASTING DEPOSITS**
- Colluvium and sheetwash alluvium deposits, undivided (Holocene and late Pleistocene)
  - Colluvium deposit one (Holocene to late Pleistocene)
  - Colluvium deposit two (middle to late Pleistocene)
  - Colluvium deposit, undivided (Holocene to late Pleistocene)
  - Landslide deposits (Holocene to late Tertiary)
- BEDROCK**
- TERTIARY AND UPPER CRETACEOUS CONTINENTAL SEDIMENTARY ROCKS**
- Dawson Formation, undivided (Upper Cretaceous to middle? Eocene)—Shown only on cross sections
  - Dawson Formation, facies with fine (early to middle? Eocene)
  - Dawson Formation, facies with fine (Palaeocene)
  - Dawson Formation, facies with three (Palaeocene)
  - Dawson Formation, facies with one (Upper Cretaceous to Palaeocene)
- MESOZOIC SEDIMENTARY ROCKS**
- Laramie Formation (Upper Cretaceous)
  - Fox Hills Sandstone (Upper Cretaceous)—Shown only on cross sections
  - Pierre Shale (Upper Cretaceous)—Shown only on cross sections
  - Niswara Formation (Upper Cretaceous)
  - Cattle Shale, including Coddell Sandstone Member (Upper Cretaceous)
  - Graneros Shale, Greenhorn Limestone, and Cattle Shale, undivided (Upper Cretaceous)—Shown only on cross sections
  - Dakota Sandstone and Purgatoire Formation (Lower Cretaceous)—Shown only on cross sections
  - Morrison Formation and Rabbit Creek Formation (Upper Jurassic)—Shown only on cross sections
- PALAEZOIC AND LATEST MESOZOIC SEDIMENTARY ROCKS**
- Lower Triassic?, Permian, and Pennsylvanian rocks, undivided—Shown only on cross sections
  - Manitou Limestone (Lower Ordovician)
  - Sawatch Sandstone (Upper Cambrian)
- MESOPROTEROZOIC IGNEOUS ROCKS OF THE PIKES PEAK BATHOLITH**
- Pegmatite (Mesoproterozoic)
  - Windy Point Granite (Mesoproterozoic)
  - Syncline (Mesoproterozoic)
  - Pikes Peak Granite (Mesoproterozoic)
- SYMBOLS**
- Contact—Approximately located
  - High-angle fault—Dashed where approximately located, dotted where concealed, queried where inferred. If on upper/lower side of an outcrop, the number indicates field measurement of dip magnitude.
  - Thrust fault—Dotted where concealed. Barbed teeth are on overthrust block side of fault.
  - Strike and dip of bedding or contacts
  - Inclined—Showing direction and angle of dip
  - Overturned—Showing direction and angle of dip
  - Strike and dip of fractures
  - Inclined—Showing direction and angle of dip
  - Vertical
  - Strike and dip of joints
  - Inclined—Showing direction and angle of dip
  - Vertical
  - Primary igneous foliation—Showing direction and angle of dip
  - Shear fracture with slickenside lineation—Showing direction and angle of dip, and trend and plunge of lineation
  - Mine or gravel pit
  - Proposed oil and gas test well
  - Existing oil and gas exploratory well (abandoned)
  - Water
  - Line of cross section

### GEOLOGIC MAP OF THE PALMER LAKE QUADRANGLE, EL PASO COUNTY, COLORADO

By John W. Keller, Matthew L. Morgan, Jon P. Thorson, Neil R. Lindsay, and Peter E. Barkmann  
2007



Bill Ritter Jr., Governor  
State of Colorado  
Helen S. Shivers, Executive Director  
Department of Natural Resources  
Vernon M. Riffe, State Geologist and Division Director  
Colorado Geological Survey

# Appendix B

## Enlarged Legend for Colorado Geological Map Palmer Lake Quadrangle

### SURFICIAL DEPOSITS

#### HUMAN-MADE DEPOSITS

af Artificial fill (latest Holocene)

#### ALLUVIAL DEPOSITS

Qa Stream-channel, flood-plain, and terrace alluvium, undivided (Holocene and late Pleistocene)

Qa<sub>1</sub> Alluvium one (late to early Holocene)

Qa<sub>2</sub> Alluvium two (late Pleistocene)

Qac Stream alluvium and colluvium, undivided (Holocene to late Pleistocene)

Qsw Sheetwash alluvium (Holocene and late Pleistocene)

Qf<sub>1</sub> Alluvial fan deposit one (late Holocene)

Qf<sub>2</sub> Alluvial fan deposit two (early Holocene to late Pleistocene)

Qf<sub>3</sub> Alluvial fan deposit three (late Pleistocene)

Qf Alluvial fan deposit (Holocene to late Pleistocene)

Qg<sub>1</sub> Gravel deposit one (middle Pleistocene)

Qg<sub>2</sub> Gravel deposit two (early middle Pleistocene)

Qg<sub>3</sub> Gravel deposit three (early Pleistocene)

QTg<sub>1</sub> Gravel deposit four (early Pleistocene or late Eocene?)

Tg Gravel (late Tertiary)

#### MASS-WASTING DEPOSITS

Qcs Colluvium and sheetwash alluvium deposits, undivided (Holocene and late Pleistocene)

Qc<sub>1</sub> Colluvium deposit one (Holocene to late Pleistocene)

Qc<sub>2</sub> Colluvium deposit two (middle to late Pleistocene)

Qc Colluvium deposits, undivided (Holocene to late Pleistocene)

Qls Landslide deposits (Holocene to late Tertiary)

### BEDROCK

#### TERTIARY AND UPPER CRETACEOUS CONTINENTAL SEDEMENTARY ROCKS

TKda Dawson Formation, undivided (Upper Cretaceous to middle? Eocene)—Shown only on cross sections

TKda<sub>5</sub> Dawson Formation, facies unit five (early to middle? Eocene)

TKda<sub>4</sub> Dawson Formation, facies unit four (Paleocene)

TKda<sub>3</sub> Dawson Formation, facies unit three (Paleocene)

TKda<sub>1</sub> Dawson Formation, facies unit one (Upper Cretaceous to Paleocene)

Legend for Geologic Map of Palmer Lake Sites:

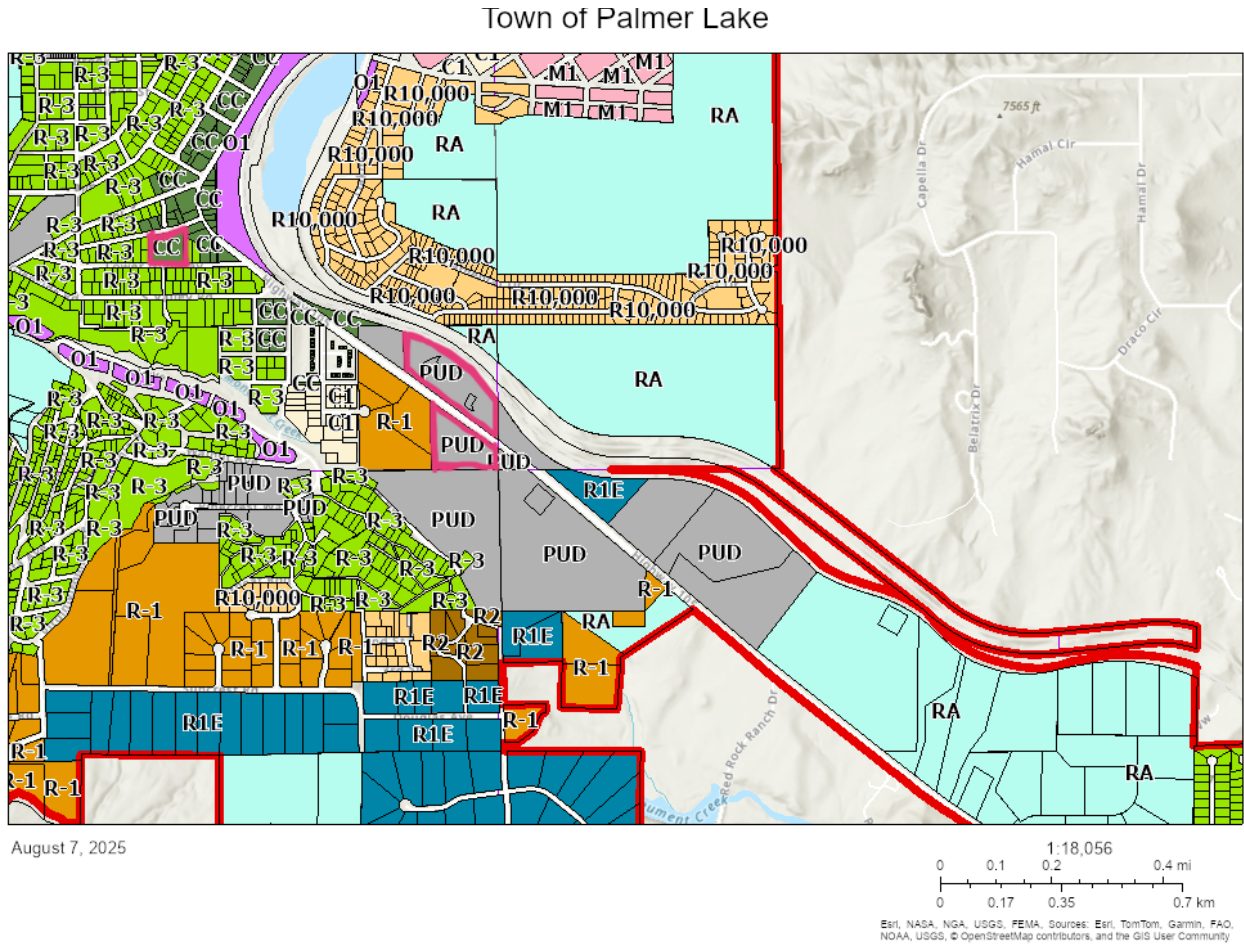
Orange - Santa Fe Ridge

Red - Elephant Rock

Blue - Valley Crescent

# Appendix C

## Zoning Designations for the Town of Palmer Lake



Zoning Map for Town of Palmer Lake

# Appendix D

## Basic Programming and Areas for the Public Safety Facility

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### Palmer Lake Feasibility Study - Programming Questions and Areas

#### Police Department:

- 1) Private offices, 3 total. Roughly 10ft x 12ft each, total **360** sq ft.
  - 2) Patrol Room Cubicle area for 6 cubicles, approximately 6ft x 6ft each, total **216** sq ft.
  - 3) Interview room: approx. 10ft x 10ft, **100** sq ft
  - 4) Secure records room: approx 8ft x 10 ft, **80** sq ft
  - 5) Secure Storage: *Evidence, Personell files*: 10ft x 10ft, **100** sq.ft.
  - 6) Sally Port (exterior) for 1 vehicle, oversized garage 20ft x 40ft with included secure chain link storage of confiscated materials approx 10ft x 10ft. Total **800** sq ft.
  - 7) ADA restrooms (men's & women's) approximately 50 sq ft ea, total **100** sq.ft.
  - 8) Break room: 14ft x 14ft, **200** sq ft.
  - 9) General circulation and accessory spaces: 25% of total sq.ft. **490** sq.ft.
- Approximate Required Area for Police Department: ~2,450 sq.ft.*

#### Potential Shared Facilities / Spaces:

- a) Lobby: Space for an Admin reception desk, waiting area, sm conf., total **250** sq.ft.
  - b) Mechanical, Utility room, IT Closet: **200** sq.ft.
  - c) Locker Room w/ changing cubicles: (12 staff?) **360** sq.ft.
  - d) Conference / Training Room(s) 16ft x 24ft, **384** sq.ft.
  - e) Public Restrooms for Men & Women 50 sq.ft. ea, total **100** sq.ft.
  - f) Gym (Weights, Functional Training, Cardio) 20ft x 18ft, **360** sq.ft.
  - g) General circulation and accessory spaces: 25% of total square.ft. **415** sq.ft.
- Approximate Area for Shared Spaces: ~2070 sq.ft.*

#### Fire Department:

- 1) Garage for vehicles: ~**4,800** sq.ft. (estimate 45ft deep x 106 ft long)
    - a) Engine 1 (2011): 29.7ft (l) x 9ft (w) x 9.5ft (h)
    - b) Engine 2 (2015): 29.3ft (l) x 9ft (w) x 9.5ft (h)
    - c) Brush Truck 1: 22.5' (l) x 11ft (w) x 6.7ft (h)
    - d) Brush Truck 2: 22.5' (l) x 11ft (w) x 6.7ft (h)
    - e) Dodge Ram 2500
    - f) Dodge Ram 2500
    - g) (2) Razor (Side-by-side ATV) 9ft (l) x 7ft (w)
    - h) (2) 4-wheeler ATVs
  - 2) Bunker Gear Storage (adjacent to vehicle garage) 24ft x 10ft, total **240** sq.ft.
  - 3) Bunk Rooms Men & Women (6 occ) **600-800** sq.ft.
  - 4) Bathrooms for Men & Women 80 sq.ft. ea, provide 4, total **320** sq.ft.
  - 5) De-con Room (Laundry): 10ft x 12ft, **120** sq.ft.
  - 6) General Laundry: 10ft x12ft, **120** sq.ft.
  - 7) Private Offices, 4 total. 10ft x 12ft, 120 sq.ft. ea, total **480** sq.ft.
  - 8) General Gear/equipment storage: (current 160 sq.ft.) 16x20, total **320** sq.ft.
  - 9) Lounge 16ft x 20ft, **320** sq.ft.
  - 10) Kitchen/Dining: 12ft x 14ft, **168** sq.ft.
  - 11) Outdoor patio and grill area: **200** sq.ft.
  - 12) General Circulation and accessory spaces: 25% of total square.ft.
- Approximate Required Area for Fire Department, (not including garage): ~3,860 sq.ft.*

**Grand Total Approximate Building Area: ~13,200 sq.ft.**

# Appendix E

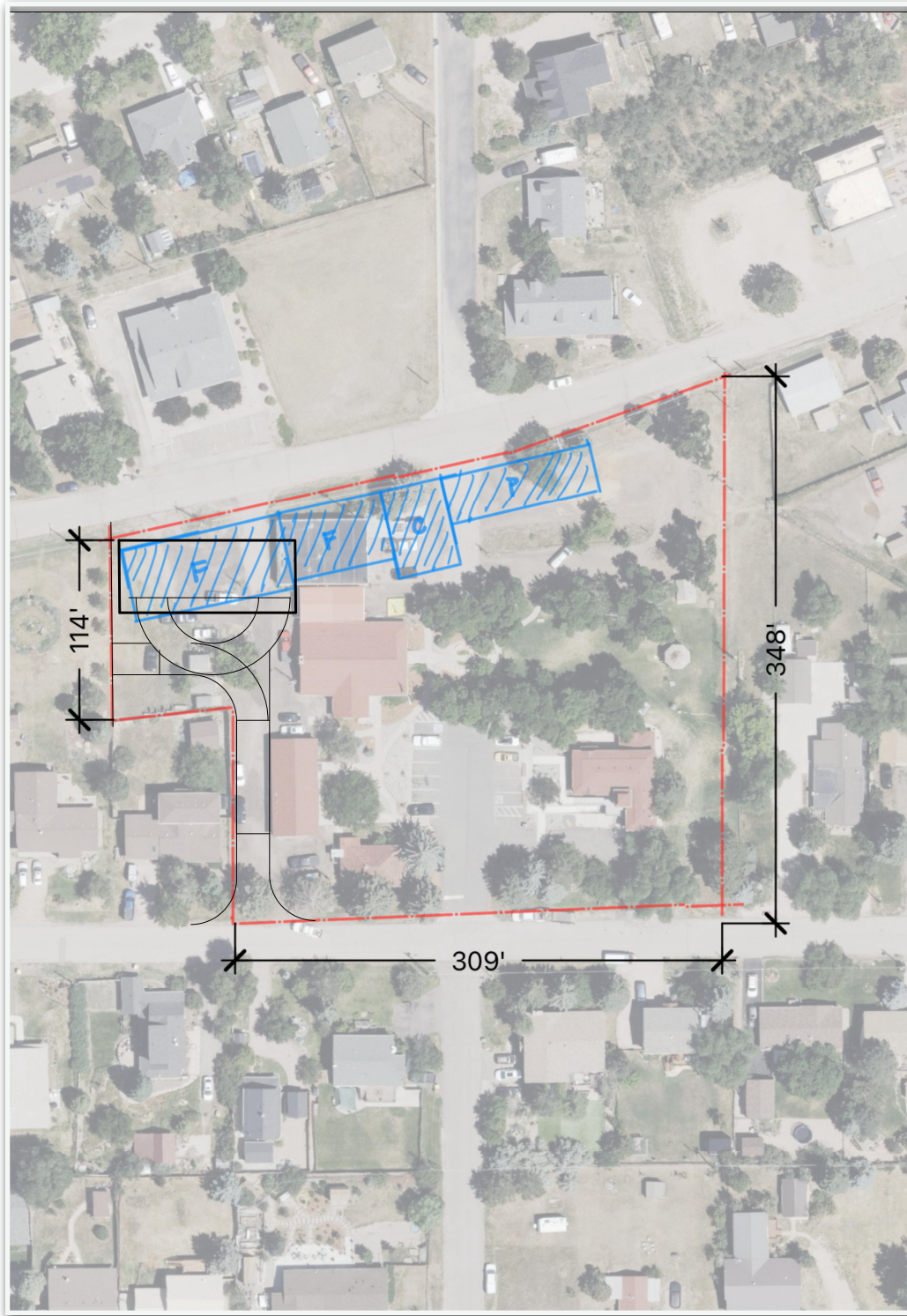
## Preliminary Cost Estimate for the Public Safety Facility on Three Potential Sites

	Palmer Lake Public Safety Building			
	Elephant Rock	Valley Crescent	Santa Fe Ridge	Comments
<b>02- EXISTING CONDITIONS</b>	\$17,000.00	\$56,000.00	\$18,000.00	Building Demo
<b>03- SUBSTRUCTURE</b>	\$423,000.00	\$428,000.00	\$420,000.00	
<b>04- MASONRY</b>	\$22,000.00	\$22,000.00	\$22,000.00	
<b>05- METALS</b>	\$4,600.00	\$4,600.00	\$4,600.00	
<b>06- WOOD &amp; PLASTICS</b>	\$79,000.00	\$79,000.00	\$79,000.00	
<b>07- THERMAL &amp; MOISTURE</b>	\$67,000.00	\$67,000.00	\$67,000.00	
<b>08- OPENINGS</b>	\$187,000.00	\$187,000.00	\$187,000.00	
<b>09- FINISHES</b>	\$602,000.00	\$622,000.00	\$602,000.00	
<b>10-SPECIALTIES</b>	\$37,000.00	\$37,000.00	\$37,000.00	
<b>11-EQUIPMENT</b>	\$30,000.00	\$30,000.00	\$30,000.00	
<b>12-FURNISHINGS</b>	-	-	-	
<b>13-SPECIAL CONSTRUCTION</b>	\$445,000.00	\$518,000.00	\$445,000.00	
<b>21-FIRE SUPPRESSION</b>	\$53,000.00	\$53,000.00	\$53,000.00	
<b>22-PLUMBING</b>	\$188,000.00	\$188,000.00	\$188,000.00	
<b>23-HEATING VENT./AIRCON</b>	\$330,000.00	\$330,000.00	\$330,000.00	
<b>26- ELECTRICAL</b>	\$251,000.00	\$251,000.00	\$251,000.00	
<b>27-COMMUNICATIONS</b>	\$24,000.00	\$24,000.00	\$24,000.00	
<b>31-EARTHWORK</b>	\$428,000.00	\$205,000.00	\$270,000.00	Vacant land vs developed
<b>32-EXTERIOR SITE IMPROV</b>	\$524,000.00	\$296,000.00	\$524,000.00	Vacant land vs developed
<b>32-UTILITIES</b>	\$411,000.00	\$185,000.00	\$278,000.00	Vacant land vs developed
<b>00-MISC</b>	\$37,000.00	\$33,000.00	\$37,000.00	
<b>TOTAL CSI DIVISIONS</b>	<b>\$4,159,600.00</b>	<b>\$3,615,600.00</b>	<b>\$3,866,600.00</b>	
<b>GENERAL CONDITIONS</b>	\$525,000.00	\$668,000.00	\$500,000.00	
<b>HWY 105 REWORK ALLOWANCE CDOT</b>	\$500,000.00	-	\$500,000.00	Located on Hwy 105
<b>CONTINGENCY 8%</b>	\$317,000.00	\$361,000.00	\$305,000.00	
<b>FEES 5%</b>	\$198,000.00	\$217,000.00	\$190,000.00	
<b>GRAND TOTAL</b>	<b>\$5,699,600.00</b>	<b>\$4,861,600.00</b>	<b>\$5,361,600.00</b>	

Simplified Contractor Estimate for overall construction

# Appendix F-1

Fire Truck Turning Radii for 3 potential Sites



Valley Crescent Site Diagram with Fire Equipment Turning Radii

**Appendix F-2**



Elephant Rock Site Diagram with Fire Equipment Turning Radii

**Appendix F-3**



Santa Fe Ridge Site Diagram with Fire Equipment Turning Radii