

**STAFF REPORT**  
**DATE: 12/12/2023**  
**WORKSHOP DISCUSSION**

**TO:** City Council  
**FROM:** Nathan Fuerst, AICP, Consulting Planner  
**AGENDA ITEM:** **Comprehensive Plan Amendment Sketch Review – Kramer Lake Property Proposal by Tamarack Land Development**  
**REVIEWED BY:** Jenni Faulkner, Senior Consulting Planner

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**BACKGROUND:**

The City is in receipt of a Comprehensive Plan Amendment application from Tamarack Land Development for the proposed development on parcels north and west of Hudson Boulevard North and Lake Elmo Avenue North. The proposal would consist of 92 twin home units, 307 multiple family units across 2 buildings, and 60,000 square feet of commercial space. The development is proposed to be connected to city water and sewer and would wrap around the property at 10746 3<sup>rd</sup> Street Place occupied by Pet Images Resort. The Applicant aims to receive entitlements and begin work in 2024.

A Comprehensive Plan Amendment to Map 3-7, the MUSA Growth and Phasing Plan, will be required for this development. The property is currently in the 2030-2040 development period and could not be developed until then with sewer unless a comprehensive plan amendment is approved.

The Applicant is required to go through the EAW process prior to compiling an application for this development. Prior to proceeding with that step, the Applicant was instructed to request the Comprehensive Plan Amendment for this property to understand whether the Council will support approval of the necessary Comprehensive Plan Amendment.

The City is in receipt of a complete Comprehensive Plan Amendment request and staff have notified the Applicant of the extended review period for an additional 60 days. The City must take action on the Comprehensive Plan Amendment request by March 3, 2023, however, no formal action is requested at the Council's 12/12/2023 workshop. This item will be brought to the City's Planning Commission after the beginning of the new year.

In 2022 the applicant submitted a sketch plan review. A review of the concept plan and narrative supplied by the applicant along with a planning memo reacting to the previous sketch plat are appended to this report. The details most important for this discussion are provided below.

**ISSUE BEFORE THE CITY COUNCIL:**

As proposed, this project will require a Comprehensive Plan Amendment and Planned Unit Development. Since PUD's recognize the uniqueness of a site and the proposed development, they have different considerations and conditions. The City Council should provide feedback regarding the comprehensive plan amendment and concept plan and advise Tamarack Land Development on City preferences to move forward with the proposed development.

**LAND USE GUIDANCE OVERVIEW:**

Comprehensive Plan Future Land Use Guidance – Mixed Use Commercial (MU-C)

- Required Residential Density 10 – 15 Units / Net Acre
- MUSA Growth & Phasing Period – 2030-2040

Zoning District

- Existing – Rural Transition
- Requested – Mixed Use Commercial (MU-C)
- Located in Shoreland Overlay

**ENTITLEMENTS REQUIRED:**

Staff have reviewed the concept level plan against the adopted 2040 Comprehensive Plan and the City's Zoning and Subdivision standards. The Density of the property appears to meet the requirements of the Comprehensive Plan but not the City's Shoreland Overlay, this will necessitate a Shoreland Variance.

The following approvals will be required for this project to be permitted:

1. Comprehensive Plan Amendment – An amendment to the development period for the subject parcels on Map 3-7 in the City's Comprehensive Plan is required.
2. Rezone – Amend the Zoning Map to revise the subject property's zoning district from Rural Transition (RT) to reflect the district proposed by the development, Mixed Use Commercial (MU-C).
3. Mandatory Environmental Review – The number of attached units (399) in this residential development is over the threshold (375) triggering for a Mandatory Environmental Assessment Worksheet (EAW) established by MN Rules Sec. 4410.4300. This process must be completed prior to approval of the subdivision.
4. Planned Unit Development (PUD) – Provide flexibility to allow the developer to deviate from the City Code requirements of the base zoning district, Mixed Use Commercial.
5. Variance(s) to Shoreland Overlay – Flexibility to requirements of the City's Shoreland Overlay Ordinance cannot be granted through a PUD. It is possible that flexibility to requirements such as density, building height, or impervious surface could be requested. If needed, flexibility must be granted through the variance process.
6. Major Subdivision – Required by the City's ordinance to subdivide the property and allow for dedication of easements and Rights of Way.

**FISCAL IMPACT:**

There is no fiscal impact to the City at this time. The Developer would be required to extend the public infrastructure serving the proposed development at their own expense. Portions of Hudson Boulevard must also be reconstructed at the Applicant's expense. This sketch plat went to Parks Commission in 2022 where they have recommended park dedication be satisfied with cash payment, partial credit can be granted for the construction of trails per City Code.

## ANALYSIS:

The subject property is required to conform with various land use, density, and shoreland standards that affect the location and intensity of the proposed uses on this property:

### Comprehensive Plan – Mixed Use Commercial

- Density - Mixed Use Commercial requires 10-15 units with at least 50% residential development. In this case, a minimum of 285 and maximum units is required.

### Zoning – Mixed Use Commercial (non-shoreland)

- Density - Mixed Use Commercial requires between 50% and 80% residential development. In this case, a minimum of 285 units and maximum of 428 units is required.
- Impervious – 75%
- Height – 50' (Additional height through CUP)

### Zoning – Shoreland Overlay (1000' from OHWL of Kramer Lake)

- Max Tiered Density – Tiers are at 320' intervals from Kramer Lake OHWL:

<b>Tiering Analysis</b>	<b>Max Units Permitted</b>	<b>Max Units Permitted w/ 20% Density Bonus</b>	<b>Units Proposed</b>
Tier 1	23.8	28.5	29
Tier 2	18.6	22.4	27
Tier 3	24.9	29.8	34
<b>Total</b>	<b>67.3</b>	<b>81</b>	<b>90</b>

- Impervious Surface – 30% max per lot
- Height – 35 feet
- Twin home Setback from Kramer Lake OHWL – 250 – 300 feet (or 200' without PUD)
- Open Space – 50% of Development (70% of shore impact zone)

### Zoning- PUD Provisions

- Minimum Development Area - 5 acres
- Minimum Open Space Preservation - 20% of project area
- Street layout – Must provide connectivity consistent with adopted plans

## DEVELOPMENT FLEXIBILITY:

The Applicant's plan contains proposed land uses that are consistent with the Comprehensive Plan and Zoning District. However, the proposed plan does not conform with the City's shoreland requirements. The Applicant will be required to apply for a variance if the following flexibilities are needed:

The anticipated requests to deviate from City Code are summarized below:

- Maximum Tiered Density – There are too many twinhome units within each of the three tiers. With a maximum density bonus of 20% applied to each tier, the proposed units exceed the maximum permitted by the Shoreland PUD ordinance.
- Minimum Setback for Twin Home – Proposed twinhomes do not meet the minimum setback which is increased from 200 to 250 feet for PUD's with shoreland preservation.
- Impervious Surface – Each platted lot within the shoreland must be under 30% impervious. A majority of the twinhome lots do not appear to comply with this requirement.

#### Other Considerations:

The challenge of locating land uses at appropriate densities and intensities on this property is acknowledged. In order to comply with the requirements of the City's Shoreland Overlay, the Applicant could consider the following:

1. Change the twinhome units to a different type of housing that is more compact.
2. Concentrate residential uses in the northeast corner of the development to avoid issues with density tiering.
3. Concentrate the commercial uses along Hudson Boulevard.

#### **PLANNED UNIT DEVELOPMENT BENEFITS:**

- PUD will provide 50% open space preservation into perpetuity.
- 100% of the development's Shore Impact Zone on Kramer Lake will be preserved in perpetuity.
- The development will provide a mix of residential and commercial uses that provide for a transition in intensity and respect surrounding uses.
- The proposed development will connect to, and extend, City utilities at the expense of the Developer.
- Trails and pedestrian connectivity are proposed.

#### **FEEDBACK DESIRED:**

The following questions are posed to provide feedback requested by the Applicant:

- Will the City Council Support the request for a Comprehensive Plan Amendment to Map 3-7, the MUSA Growth & Phasing Map?
- Is the City Council supportive of the request for additional density within the 3 tiers along Kramer Lake?
- Is the City Council supportive of a request for a reduced setback for the twinhomes from Kramer Lake?
- Is the City Council supportive of a request for impervious surface beyond the amount allowed by the shoreland ordinance?
- Water appropriations have been a topic recently discussed by the City Council. Under what circumstances might the City make a determination that the subdivision is premature?

#### **ATTACHMENTS:**

- Proposed concept plan and narrative
- 11/4/2022 - Planning Comment Memo – Sketch Plan Review
- 10/28/2022 - City Engineering Comment Memo
- 10/24/2022 - Landscape Architect Comment Memo
- 10/7/2022 - Fire Chief Comments



**KRAMER LAKE OVERLOOK  
MIXED-USE DEVELOPMENT  
LAKE ELMO, MN  
COMPREHENSIVE PLAN AMENDMENT**

The Gene and Anne Peltier Trust as property owners and Tamarack Land Development as Developer request an amendment to Lake Elmo's 2040 Comprehensive Plan. Our request is to move the MUSA Development Growth time frame for these parcels located in the NW Quadrant of Lake Elmo Blvd and Hudson Road up to 2024 from 2030.

The Kramer Lake Overlook Mixed-Use Development project is proposed on approximately 57 acres of land on the south-central border of the City of Lake Elmo in Washington County. The project will include 92 single-family twin homes, one 121 unit multi-family apartment building and one 186 multi-family apartment building, and 60,000 square feet of commercial space. Development of the project area will include installation of public and private infrastructure including streets, municipal water and sanitary sewer, stormwater systems, electrical, gas, and telephone lines, as well as mass grading, stormwater management practices, and new home construction. Hudson Road will also be upgraded to current design standards and will include a multi-use path along the project frontage.

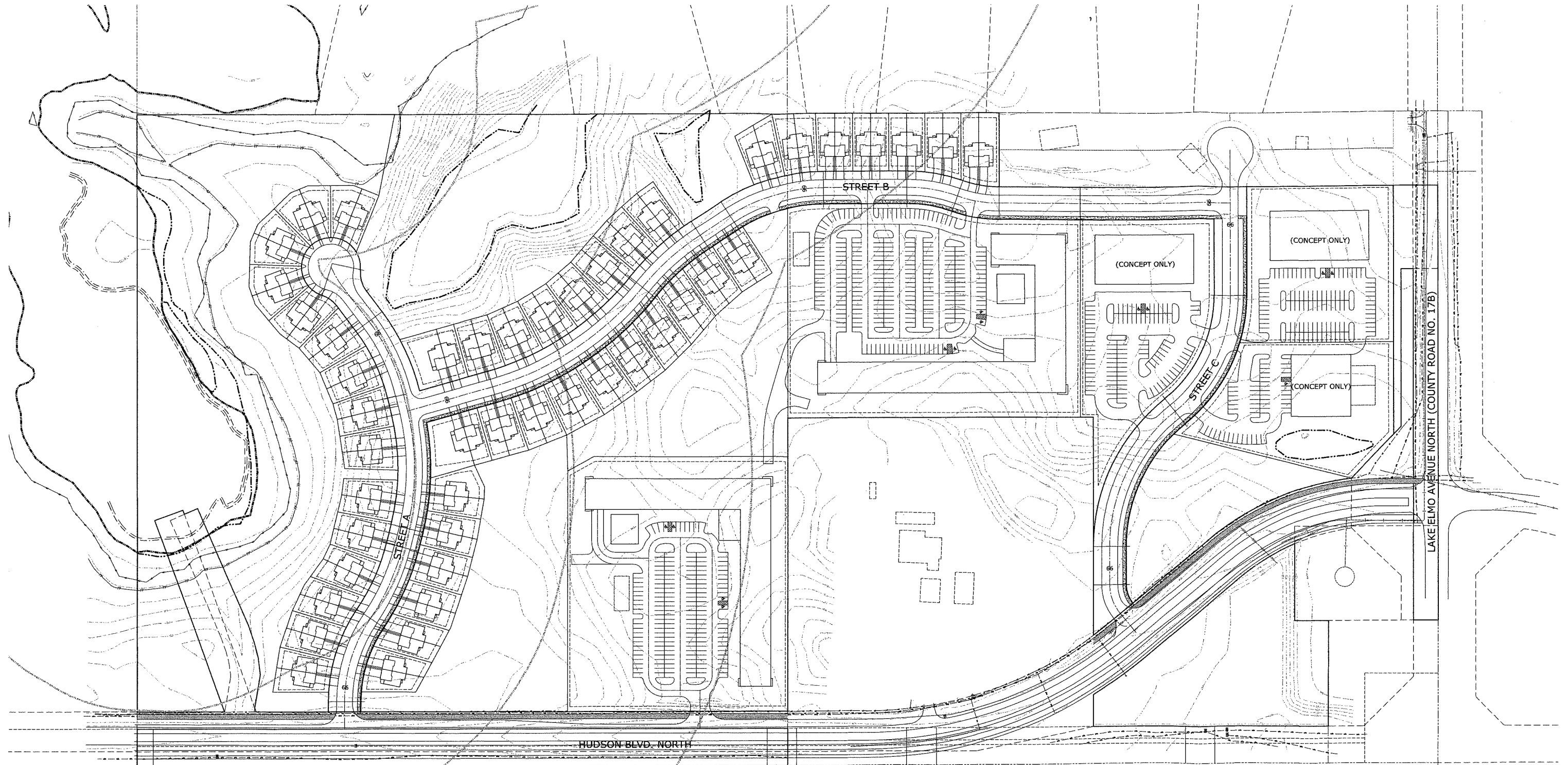
The proposed development will also require a change in zoning from Rural Transitional to Mixed Use Commercial. This zoning change is consistent with the 2040 Comprehensive Plan zoning guidelines.

This development supports the goals of the comprehensive plan that relates to land development. We are:

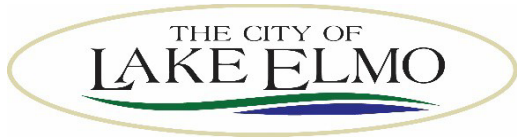
- Developing an area for new businesses
- Installing municipal infrastructure at this site allowing future extensions to the west
- Providing trails and improving Hudson Road
- Preserving view sheds and maintaining open spaces
- Adapting the site plan to meet the changing guidance of staff and zoning regulations
- Providing mixed housing stock
- Providing affordable housing, a significant increase over what currently exists

The 57-acre site is situated within the Kramer Lake Shoreland Overlay zone. Thirty-one acres falls within this zone. The residential portion of this project has a density requirement of 10 units per acre. This requires approximately 385 residential units. The proposed site plan meets this density requirement and complies with several of the restrictive codes such as reduced unit densities per Shoreland Tiers, Increased buffer zones, lower limits of impervious surface and lower building heights. To fully comply with the density requirements of this zoning district, a PUD may be the best solution.

Granting this amendment request will help the City of Lake Elmo get closer to its goals of housing diversity and affordability much sooner. As it stands today, *“young people starting out their careers are distinctly missing from the community because there are few, if any, options for them to live affordably in the community”* (Comp Plan page 4-17). Approval will also allow this development to move forward through the city's approval process. It is the goal of the property owners to sell the property in 2024 once the developer obtains city and other jurisdictional approvals. It is the developer's goal to start construction in 2024.



KRAMER LAKE OVERLOOK  
MIXED-USE DEVELOPMENT  
LAKE ELMO, MN  
COMPREHENSIVE PLAN AMENDMENT  
Tamarack Land Development



**DATE:** November 4, 2022  
**TO:** Dan Willenbring, Tamarack Land Development  
**FROM:** Molly Just, Planning Director  
**RE** Subdivision Sketch Plan Application for PIDs 35.029.21.43.0001 and 34.029.21.44.0012

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### **OVERVIEW:**

The City has received a Subdivision Sketch Plan application (“Application”) for 2 undeveloped parcels located near the western corner of the intersection of Hudson Boulevard and Lake Elmo Avenue (“Property”). The Property is surrounded by I-94 and Pet Images Country Inn to the south, vacant land guided Mixed Use Commercial to the west, The Forest subdivision to the north, and the Crossroads East commercial subdivision across Lake Elmo Avenue to the east. The Property is guided by the Lake Elmo Comprehensive Plan as Mixed-Use Commercial which allows residential development between 10 and 15 units per acre and requires a mix of uses. The Property is zoned Rural Transitional, a holding zone, and must be rezoned to enable the development.

The Property is within a larger area that is under a moratorium. Through April 8, 2023, the City of Lake Elmo is not considering Preliminary or Final Plats in the area. While the City is reviewing concept plans such as this, the plan is reviewed based on the codes and policies in place at this time.





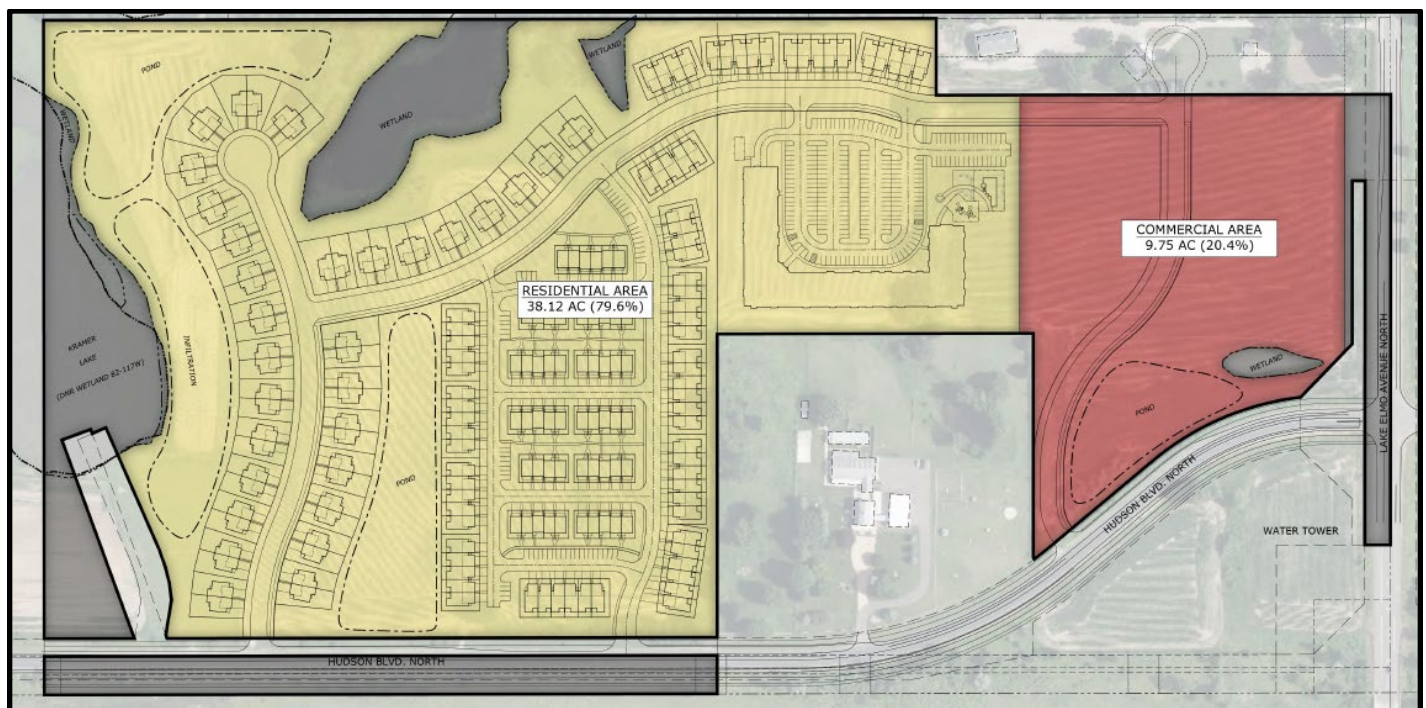
## **CONCEPT ANALYSIS:**

The Application depicts approximately 10 acres for commercial development at the intersection of Hudson Boulevard and Lake Elmo Avenue, with access from Hudson Boulevard. The project then transitions to multifamily housing, then to single family attached and then to twin home units closer to the wetland and Kramer Lake. This transition of density is appropriate. Access to the proposed development is constrained by the 10024 Hudson Boulevard parcel. It would benefit the project and the City to have a continuous Hudson Boulevard improvement along this frontage.

The Application depicts 362 residential units (171 multifamily units, 60 twin home units and 131 attached single family (townhome) units). An Environmental Assessment Worksheet consistent with Minnesota Rules, Chapter 4410 must be prepared for projects meeting the thresholds of [Minnesota Rules, part 4410.4300, Subparts 19a, 20a, 25, 27, 28, 29, and 36a.](#)

If the Property is to be developed in phases a phasing plan must be depicted on the Preliminary Plat and explained on the application narrative. Development of the Property requires that the developer construct all public improvements necessitated by the development. The Preliminary Plat must depict the necessary right-of-way elements for Lake Elmo Avenue, Hudson Boulevard and any other public streets/infrastructure to support the project.

While the Application is for review of a Subdivision Sketch Plan, if Planned Unit Development (PUD) approval is sought, the applicant must clearly list the purpose of the PUD and list the criteria of the code from which relief is sought through the PUD. This list becomes a zoning overlay for the property.





## Overview of Mixed-Use Commercial Zoning District (See Article XIV for full requirements).

1. Sec. 105.12.850 Purpose and District Descriptions
  - a. Mixed-Use Commercial.
    1. The purpose of the mixed-use commercial district is to provide areas in the city for and promote mixed-use development that supports a sustainable mix of retail, commercial and residential uses that will benefit from proximity and adjacency to one another. It is the intent of the district to require a minimum mix of uses with each plat and PUD. The mixed-use commercial district will serve as a transitional district between more intense highway-oriented development and less intense rural or medium density residential uses. The intent of the mixed-use commercial district is to permit flexibility in the use of the land, while providing a set of minimum development standards in site design, spatial relationships, building architecture and landscape design that will allow property owners to design and construct development projects that respond both to market needs and to city goals and policies. The placement and treatment of buildings, parking, signage, landscaping and pedestrian spaces are essential elements in creating a livable environment in a mixed-use area. The transitional aspect of development in this district requires projects that are designed with a special focus on mitigating any negative impacts on existing and future development in the area. The city will evaluate new development proposals for their consistency with these goals and the city may require developers to amend or change development proposals. The city may deny proposals when the city finds them to be inconsistent with the goals and policies of the city.
    2. The district promotes attractive, inviting, high-quality retail shopping and service areas that are conveniently and safely accessible by multiple travel modes. Development shall incorporate creative design and buffering techniques to ensure smooth transitions between different types of development or different intensities of uses. At least 50 percent but no more than 80 percent of the net developable area of a proposed mixed-use commercial development is to be residential, and residential development within these areas shall occur at a density range of 10 to 15 units per acre. If a proposed development does not include at least 50 percent but no more than 80 percent of the net developable land area in residential development, the city will require the applicant to provide a ghost plat (build-out plans) during sketch plan review that proposes how this residential requirement would be met. This method of subdivision (by showing future land use and subdivision) and development review is a front-loading process that preserves land for future residential use. The city will use the ghost plat or sketch plan as an official document to establish land use consistent with the comprehensive plan.



## 2. Proposal for Commercial Land

Per Sec. 105.850 a.2. at least 20% but no more than 50% of the net developable area shall be reserved for non-residential development. If the Preliminary Plat/PUD applicant does not propose to develop the commercial portion of the project then there will need to be a separate ghost plat as an official document. The City will use the ghost plat as an official document to establish a land use mix consistent with the comprehensive plan. The ghost plat or build-out plan shall show a realistic future urban-style lot and block layout and street system, taking into consideration existing streets and access points, utilities, topography, natural features (water bodies, wetlands, etc.) and shall show how the proposed development will not isolate the adjacent land or property making them undevelopable.

## 3. Dimensional Standards

Standard	Mixed-Use Commercial District	Shoreland Management Overlay Kramer Lake (Classified as NE)
Minimum lot area (two-family and SF attached, per unit)	3,000 sqf	35,000 sqf <i>Single family attached is 4 units max</i>
Minimum lot area (multifamily, per unit)	1,500 sqf	Not allowed
Nonresidential min. lot area	20,000 sqf	None proposed in shoreland
Impervious Surface Maximum	75% (non-shoreland areas)	30%
Maximum Height	50 feet (increase in height allowed by CUP)	35 feet
Setbacks	See code	Two-family – 200 ft from OHW

*It is the responsibility of the applicant to review all code and plan requirements.*

## 4. Use Specific Standards. See Sec. 105.12.900 and/or 105.12.1260 for use specific standards for uses not listed below.

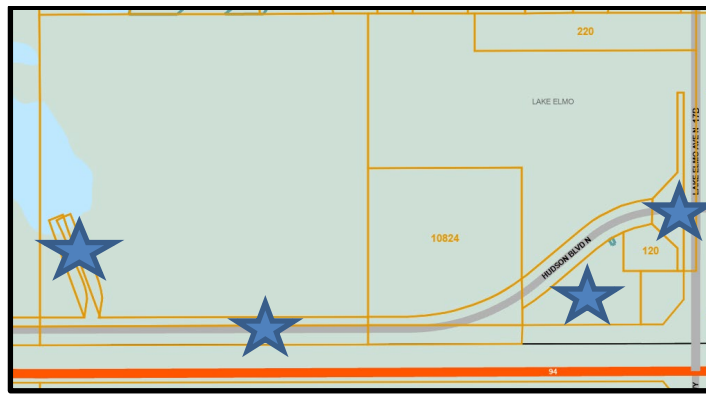
- Single-family attached dwellings.
  - a. A maximum of ten units shall be allowed within a single building (row). Buildings with more than ten units may be allowed as a conditional use.
  - b. Townhouse dwellings shall be located on lots in such a way that each individual unit has a minimum of 15 feet of street frontage. No parking shall be located in the front yard or between the front facade and the street except on a permitted driveway. Townhouses that do not meet the minimum requirements for frontage along the street or that have frontage along a private street may be allowed as a conditional use.
- Multifamily dwellings.
  - a. No vehicle parking shall be located in the front yard or between the front facade and the street.
  - b. Common open space for use by all residents or private open space adjacent to each unit (such as a courtyard or balcony or a combination of these) shall be provided. Such open space shall comprise a minimum of 300 square feet per unit.

## Adherence to Lake Elmo Design Guidelines and Standards.

The Lake Elmo Design Guidelines and Standards apply and are considered zoning standards. See Chapter 5 for standards for Mixed-Use Commercial [Link to Lake Elmo Design Guidelines and Standards](#).

**Plat Analysis.** See Title 103 of the Lake Elmo Code for full subdivision requirements.

The Application consists of two parcels but not all of the eastern parcel is depicted. The parcel will have to be split or fully depicted with Preliminary Plat. With this process, the remnant ROW/parcel areas along Hudson Boulevard and Lake Elmo Avenue must be cleaned up.



### **Analysis as a Planned Unit Development (Article XVIII).**

*Please note that Article XVIII is currently under review by the City Council. Consult the online version of the code before application.*

**Intent.** The intent of the Planned Unit Development (PUD) overlay zoning district is to provide greater flexibility in the use of land and the placement and size of buildings within the development of residential and nonresidential areas in order to achieve more creative development outcomes while remaining economically viable and marketable and to better utilize site features and obtain a higher quality of development. Approval of a planned unit development shall result in a zoning change to a specific PUD overlay district, with specific requirements and standards that are unique to that development. The City reserves the right to deny establishment of a PUD overlay district and direct a developer to re-apply for City approval under the standard applicable zoning district if the City determines the proposed benefits do not justify requested flexibilities.

### **Minimum requirements.**

1. Developed area of at least 5 acres – *Requirement met*
2. Open space of at least 20% of the area exclusive of streets. Can include wetlands and other land reserved for stormwater detention facilities and other required site improvements - *Requirement appears to be met. A breakdown of how the 20% is achieved must be provided with a PUD application.*
3. Street layout – Streets shall be designed to maximize connectivity in each cardinal direction, except where environmental or physical constraints make this infeasible. Streets shall terminate at other streets, at public land, or at a park or other community facility, except that local streets may terminate in stub streets when those will be connected to other streets in future phases of development or adjacent developments - *Requirement met*

**Identified objectives.** When reviewing requests for approval of a planned unit development, the City shall consider whether one or more of the objectives listed in Sec. 105.12.1130 will be served or achieved. It is the responsibility of the applicant to provide a narrative of how the proposed planned development meets one or more of the City's identified objectives. Planned unit developments should not be allowed simply for the purpose of increasing overall density or allowing development that otherwise could not be approved.

**Shoreland Management Overlay District (Sec. 105.12.1260).** To protect and enhance the natural and scenic qualities of shoreland areas during and after development and redevelopment of high-density residential districts, deviation from the minimum lot size standards of this overlay may be allowed if the standards of 105.12.1260.c.11 are met.

### **Analysis of Parks & Open Space in Excess of PUD Minimum**

**Comprehensive Plan.** The 2040 Comprehensive Plan depicts a Neighborhood Park on the Property. Staff recommends a neighborhood park with this project. The project will be reviewed by the Lake Elmo Parks Commission. The Parks Commission will make a recommendation to the City Council and their recommendation will consider compliance with the Comprehensive Plan and the requirement for dedication of parkland. Existing Neighborhood Parks in Lake Elmo range in size from 3-8 acres. See Map 6-7 (Attached).

**Sec. 103.00.150 Park Land Dedication Requirements.** The code requires dedication of 10% of the gross platted area be set aside as park land or provided as a fee in lieu of land dedication. If the two parcels to be platted are 59.3 acres then

5.93 acres would be required for park dedication. *The requirement can be met in multiple ways (land dedication, trail dedication, an/or fee in lieu) but the Neighborhood Park should be included to receive staff and Parks Commission support.*

1. Land acceptability. The city must approve the location and configuration of any park land which is proposed for dedication and shall take into consideration the suitability of the land for its intended purpose; the future needs of the city for parks, playgrounds, trails, or open space; and the recommendations of the city's parks commission. The following properties shall not be accepted for park land dedications:
  - a. Land dedicated or obtained as easements for streets, sewer, electrical, gas, stormwater drainage and retention areas, or other similar utilities and improvements;
  - b. Land which is unusable or of limited use; and/or
  - c. Land within a protected wetland or within a floodplain area unless the council determines that all of the following criteria are satisfied:
    1. Would be in the best interests of the general public;
    2. Would be valuable resource for environmental preservation, educational, or habitat preservation purposes;
    3. Has an exceptional aesthetic value; and
    4. Would not become financially burdensome to the city as a result of maintenance or preservation requirements.
2. Trails. Trails constructed by a subdivider within dedicated public open space having at least 30 feet of width are eligible for park credit. The maximum amount of trail dedication credit shall not exceed 25 percent of the total required park dedication. To receive credit for a trail, there must be a through public trail connection to the larger Lake Elmo or Washington County trail network. If the proposed trails are not able to connect to existing trails, they must be installed in a way that would provide a connection to future planned trails as additional infrastructure is established.

Shoreland Development. See Sec.105.12.1260.c.11 for open space requirements and land acceptability.

#### **INTERDISCIPLINARY REVIEW:**

**Engineering Comments.** The City Engineer has provided a memo (attached) with technical direction. The comments focus on Hudson Boulevard, Lake Elmo Avenue, internal roadways, municipal water, municipal sanitary sewer and stormwater management.

**Landscape Architect Comments.** The City's Landscape Architect has reviewed the Application and provided a memo (attached) with technical direction based on [Article VII – Environmental Performance Standards](#). The direction is based on the requirement for a tree inventory, tree preservation plan, landscape plan, and demonstration of compliance with Shoreland Management Overlay.

**Valley Branch Watershed District.** The project will require a [Valley Branch Watershed District permit](#).

**Fire Department Review.** The Fire Chief has provided a memo (attached) with technical direction. The comments focus on road and drive lane width requirements, fire access and safety in relation to the multifamily building, fire hydrant locations and compliance with applicable codes and standards.

#### **FISCAL IMPACT:**

There would be no fiscal impact to the City at this time as this is an administrative review and the Sketch Subdivision does not afford the applicant development rights. When the property develops, it will have urban services and will pay sewer and water connection charges, building permit fees and the like that the developer and/or contractors will pay. A development agreement will be required to ensure that the public improvements to Hudson Boulevard and elsewhere on the Property are provided by the developer at their expense. The City will incur expenses for any utility oversizing but the expenses would be less than for a stand-alone utility project.

#### **RECOMMENDATION:**

A Preliminary Plat/PUD based on this concept must address the guidance provided in this memo. The updates or changes should be addressed point by point in a memo and be clearly depicted on plans. A substantive change to the concept may trigger the need for a new concept review.



**ATTACHMENTS:**

- City Engineer Memo
- Landscape Architect Memo
- Fire Department Memo & Code References
- Parks Map

# MEMORANDUM

## FOCUS ENGINEERING, inc.

Cara Geheren, P.E. 651.300.4261  
Jack Griffin, P.E. 651.300.4264  
Ryan Stempski, P.E. 651.300.4267  
Chad Isakson, P.E. 651.300.4285

Date: October 28, 2022

To: Molly Just, Planning Director  
Cc: Chad Isakson, PE, Assistant City Engineer  
From: Jack Griffin, PE, City Engineer

Re: Kramer Lake Overlook  
Concept Plan Review

Engineering has reviewed the Concept Site Plans for Kramer Lake Overlook received October 3, 2022. The submittal consisted of the following documentation:

- Concept Plan A dated September 20, 2022.
- Concept Plan Street and Right-of-way Layout dated June 21, 2021.
- Concept Plan Utility Layout dated July 25, 2021.

### PRELIMINARY AND FINAL PLAT

1. The Preliminary and Final Plat applications must fully detail the existing and proposed right-of-way and easement dedication for the project.
2. The Preliminary and Final Plat will require right-of-way dedication along Lake Elmo Avenue as required by Washington County.
3. The Preliminary and Final Plat will require right-of-way dedication along Hudson Boulevard to provide a minimum of 50-feet from the existing roadway centerline, both north and south of the roadway. Additional right-of-way will be required along the corridor to fully accommodate the Hudson Boulevard Improvements in accordance with the approved city design standards, including any required turn lanes and bituminous trail.
4. The Preliminary and Final Plat will require the dedication of a 10-foot utility easement immediately adjacent to all public right-of-way, including Lake Elmo Avenue, Hudson Boulevard and all new public streets and shall maintain the city standard boulevard grade. The 10-foot utility easement must be preserved for the purpose of small/dry utility installation without encroachments from structures, trees or retaining walls.
5. Outlot boundaries and ownership must be provided as part of any Preliminary and Final Plat. Public stormwater basins must be placed in Outlots including the 100-year HWL elevation and maintenance access roads. Stormwater basin Outlots should be separate from Outlots provided for the purpose of open space, wetlands and Lakes.

### SITE PLANS AND TRANSPORTATION IMPROVEMENTS

1. Site Access. The development proposes three full accesses from Hudson Boulevard. The proposed access locations appear to be shown at approved access locations consistent with the Hudson Boulevard design standards and appear to generally meeting minimum access spacing distances. It is recommended that access location details and dimensions be submitted to the city for review and approval prior to receipt of a Preliminary Plat application. The access location shown closest to Lake Elmo Avenue will also serve as the only permitted access to the property south of Hudson Boulevard.
2. Hudson Boulevard Improvements. Hudson Boulevard must be improved along the frontage of the proposed development in accordance with the Hudson Boulevard Design Standards, with an Urban

section along the developable property, both the north and south side of the roadway, and a bituminous trail along the north boulevard. A concrete sidewalk should be required along the south boulevard where the south side is urbanized. These improvements must be part of any Preliminary Plat application for the application to be deemed complete.

3. Additional turn lanes may be required at each of the access locations to provide for dedicated left and right turn lanes. Turn lane requirements will be determined by the city as part of any Preliminary Plat application.
4. Improvements to Hudson Boulevard along the property at 10824 Hudson Boulevard (PID 3502921440001) should be completed together with the developer required Hudson Boulevard Improvements, including the bituminous trail, in order to avoid a gap in the roadway design/functionality and drainage systems.
5. Both public streets and private streets are proposed as part of the concept plan. Street A, Street B and Street C are proposed as public streets to be constructed at 32-ft width within 60-ft. right-of-way. The right-of-way widths for Street A, B and C must be revised to meet city design standards of 66-ft in order to maintain the required boulevard layout per the city design standards.
6. Drive A is proposed as a private street at 28 ft. wide. Drive A must be changed to a public street meeting city design standards to facilitate the public utilities, private small/dry utilities, and public sidewalk connections required for the development.
7. Drives B, C, D, E, and F are proposed as private streets at 24 ft wide and as shown on typical cross section B-B. The corridor as proposed is too narrow and does not adequately accommodate the necessary street, sidewalk and utility services required to support the properties. Section B-B does not show sidewalks, sidewalk boulevards, or small/dry private utilities (which must be placed outside of city utility trench impact areas). At 24 ft. width the street does not accommodate on-street parking. It is recommended that the applicant revise and resubmit proposed private street corridors for city approval prior to submitting and Preliminary or Final Plat applications.
8. Sidewalks. In medium and to high density developments it is recommended that sidewalks be installed along both sides of all streets (public and private). Sidewalks must be a minimum 6-ft in width if located along one side of the street and may be 5-ft wide if installed along both sides of the street. Public sidewalks must be located in the public right-of-way per city design standards. Private sidewalks must be installed with minimum 5-ft boulevards.
9. The minimum allowed front setback is 25 feet from the right-of-way for public streets and from the back of sidewalk for private streets.
10. Additional parking should be identified within the townhome/private street portion of the development.

#### MUNICIPAL WATER SUPPLY

1. Municipal water supply will be available to the site once the new water tower construction is completed and the water tower is brought online. The water tower completion is not expected to occur until October 2023, however, any delay(s) on the construction could result in the water tower not being operational until Summer 2024. No new user for this development area should be permitted to connect to city water until the water tower is made operational.
2. The applicant is responsible to extend the municipal water supply into the development at developer's sole cost. The preliminary plans propose to connect to the existing watermain located at the new water tower site along Hudson Boulevard. A secondary connection to the city watermain will be required along Lake Emo Avenue near the northern part of the proposed development.
3. A trunk watermain must be extended through the development, from the easterly trunk line along Lake Elmo Avenue to the westerly plat limits and stubbed for future extension to the west. Oversizing cost reimbursement is addressed as part of the development agreements for each phase.
4. Watermain distribution lines and connections will be required wherever possible to create a looped network and to minimize the length of dead ends. No watermain line shall exceed the maximum allowable dead-end length of 1,000 feet. At a minimum the watermain along Drive A must extend to Hudson Boulevard and then west along Hudson Boulevard to connect at Street A.

5. The applicant will be responsible to place hydrants and water system valves as determined by the Lake Elmo Public Works Director and Fire Department. Hydrant requirements and placement for the proposed apartment building must be determined prior to the receipt of a Preliminary Plat application to ensure that watermain extensions (and available easement corridors) are provided as part of the application.
6. Any watermain lines and hydrants placed within the development will remain city owned and operated. Therefore, minimum 30-foot easements centered over the pipe/hydrant are required. Easements must remain free of encroachments (including small/dry utilities). Site plan revisions will be required accordingly for the sanitary sewer located within Private Roads.
7. As part of any Preliminary Plat application to be deemed complete, the applicant must provide a detailed accounting of the domestic and fire suppression demands for the development so that staff may verify adequate water system capacity and pressures.

#### MUNICIPAL SANITARY SEWER

1. Municipal sanitary sewer service is available to the site. The applicant will be responsible to connect to the city sanitary sewer system and extend sanitary sewer into the property at applicant's sole cost.
2. The applicant will be required to connect to the existing sanitary sewer at the northwest corner of the Lake Elmo Avenue and Hudson Boulevard intersection as shown. The trunk sanitary sewer must be extended to the westerly plat limits and stubbed for future extension to the west. Oversizing cost reimbursement is addressed as part of the development agreements for each phase.
3. All sanitary sewer must be located within the public right of way or within dedicated drainage and utility easements with a minimum of 15-feet from centerline for all pipes and structures. Easements must remain free of encroachments (including small/dry utilities). Site plan revisions will be required accordingly for the sanitary sewer located within Private Roads.
4. As part of any Preliminary Plat application to be deemed complete, the applicant must provide a detailed accounting of the proposed maximum sewer usage for the development, consistent with the Met Council SAC manual methodology, and including any commercial Outlots.

#### STORMWATER MANAGEMENT

1. The concept plan shows potential stormwater pond locations for addressing stormwater management requirements. However, no details are provided at this time to determine if stormwater management can be adequately addressed as shown. The proposed development is subject to a storm water management plan meeting State, Watershed District and City rules. A permit will be required from the Minnesota Pollution Control Agency and the Valley Branch Watershed District.
2. Storm water facilities proposed as part of the site plan to meet State and watershed permitting requirements must be constructed in accordance with the City Engineering Design Standards Manual.
3. Permitting requirements will require rate control from all points of discharge from the site and will require volume control (or infiltration). Overland emergency overflows or outlets are required as part of the site plan for flood protection.
4. Soil borings must be taken in the number, quantity and depths in accordance with the city engineering design standards and submitted as part of any Preliminary Plat application, to verify infiltration rate assumptions used for design purposes.
5. Stormwater management ponds (detention) and infiltration basins receiving runoff from single family residential properties and public roadways should be city owned. Stormwater management ponds (detention) and infiltration basins receiving runoff from private roadways, multi-family properties and commercial properties should remain privately owned and maintained. City owned facilities must be placed in Outlots dedicated to the city. Privately owned stormwater basins must be placed in Outlots dedicated to the HOA or commercial property owner, or placed within public drainage and utility easements. The Outlots/easements must fully incorporate the 100-year high water flood level (HWL) for each basin and all maintenance access roadways.
6. The applicant will be required to execute and record a Stormwater Maintenance and Easement Agreement in the City's standard form of agreement for all privately owned stormwater management facilities.

7. All stormwater management facilities, whether public and private ownership, must be designed in accordance with the city engineering design standards, including maintenance access roadways.
8. To the extent adjacent properties are impacted by grading or storm water management discharges, written permission from those properties must be submitted as part of the development applications.

#### LANDSCAPING

1. The landscape plans must ensure that all trees reside outside of the proposed public easement areas for watermain, sanitary sewer and storm sewer pipes, and dedicated small/dry utility corridors.
2. The landscape plans must ensure that all trees reside outside of the proposed storm water basin maintenance roadways and benches.

To: Molly Just, City of Lake Elmo Planning Director

From: Sarah Harding, Landscape Architect  
Mark Flicker, Landscape Architect

Subject: City of Lake Elmo Landscape Plan Review  
Kramer Lake Overlook - Sketch Plat Review

Date: October 24, 2022

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### Submittals

- Sketch Plat plan documents dated 9/15/2022; received 10/3/2022.

**Location:** North of Interstate 94, west of Lake Elmo Ave. N.

**Current Land Use Category:** Rural Transitional (RT)

**Future Land Use Category:** Mixed Use - Commercial (MU-C)

**Adjacent and Surrounding Land Use:** Rural Single Family (RS) to the north, Rural Transitional (RT) to the west, Lake Elmo Ave N and Business Park (BP-PUD) to the east, and Hudson Blvd and I-94 freeway abutting City limits border to the south.

### Tree Preservation: 105.12.470

- A tree preservation plan and subsequent mitigation requirements is required for all development or redevelopment in any Zoning District unless the applicant demonstrates that the proposed improvements do not impact existing significant trees on the site.
- A tree preservation plan has not been submitted at this stage of plan review, however per aerial imagery, there appears to be large trees scattered onsite and within the vicinity of the subject properties' boundaries. A tree inventory and subsequent preservation plan will be required to demonstrate mitigation requirements at the preliminary plat plan review.

### Landscape Requirements: 105.12.480

- A landscape plan has not been submitted at this stage of plan review but will be required as part of the preliminary plat plan review.
- Design considerations per Code requirements include but are not limited to:
  - Maintain 10-ft clear from all utilities, lightpoles, and structures
  - Landscaping of setback areas:
    - o 1 tree per 50 feet of street frontage, lake shore or stream frontage.
  - Development activity disturbance:
    - o 5 trees per acre of disturbance
  - Interior parking lot landscaping:
    - o At least 5% of the interior parking lot area to be devoted to landscape planting areas
    - o 1 tree per 15 parking spaces for parking lots over 101 spaces
  - Perimeter parking lot landscaping:
    - o 1 tree per 50 feet of frontage strip
  - Screening of parking lots from public streets, walks and paths:
    - o 3.5 to 4-ft height and be 50% opaque
    - o 1 tree per 50 linear feet of frontage strip

October 24, 2022

Molly Just  
Planning Director  
**City of Lake Elmo**  
Page 2 of 2

- Screening of parking lots along side and rear property lines abutting residential districts:
  - o 4-ft to 6-ft in height and be 90% opaque
  - o 1 tree per 40 linear feet of property line
- Screening between different uses or Districts, such as between the proposed residential and commercial sites:
  - o 6-ft height and be 90% opaque
  - o 1 tree per 40 linear feet of property line
- Include all applicable City of Lake Elmo Standard Details.
- Maintenance and financial security requirements for a period of 2 years after installation completion.

**Shoreland Overlay District: 105.12.1260**

- Applicant submitted a shoreland evaluation memorandum, dated July 30, 2022, with the application packet.
- Per 105.12.1260 (7) Shoreland Alterations, intensive vegetation clearing within shore and bluff impact zones and/or steep slopes is not permitted and per 105.12.1260 (11), at least 70-percent of the shore impact zone shall be preserved in its natural or existing state. Per the shoreland evaluation memorandum Figure 4 and the sketch plans, stormwater facilities (an infiltration basin and pond) are located within the shoreland impact zone, which may necessitate extensive site clearing and grading to construct. Further design detail showing extents of construction limits and grading impacts within the shoreland impact zone will be needed for review.

**Findings:**

- A tree preservation plan has not been submitted but will be required.
- A landscape plan has not been submitted but will be required.
- Shoreland impact zone alteration may be of impact. Further design information is needed for review.

**Recommendation:**

It is recommended that a condition of approval include:

- Submit a tree preservation plan and a landscape plan.

**Stantec Consulting Services Inc.**



**Sarah Harding, PLA (MN)**

City of Lake Elmo Municipal Landscape Architect

P: (952) 334-4838

E: [sarah.harding@stantec.com](mailto:sarah.harding@stantec.com)

# Lake Elmo Fire Department

## Memorandum



To: Molly Just, Planning Director

From: Dustin Kalis, Fire Chief

Date: 10/7/2022

Re: Subdivision Sketch Plan and PUD Concept Plan – Kraemer Lake Overlook

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The Lake Elmo Fire Department has completed a Subdivision Sketch Plan and PUD Concept Plan – Kraemer Lake Overlook review based on submittals dated 9/20/22 with the following comments:

- 1) All roads and drive lanes shall meet the Lake Elmo Fire Department requirements for widths and turning radiuses.
- 2) Fire apparatus access road(s) may be required for the apartment building. For Group R occupancies equipped throughout with an approved automatic sprinkler system installed, the fire apparatus access road shall extend to within 600 feet. Provide a site plan showing perimeter distances for fire apparatus access to the west, south and east exteriors.
- 3) An approved signage and marking plan shall be determined for all No Parking and Fire Lane access roads.
- 4) Fire hydrants shall be provided in approved locations following review by Engineering and Public Works.
- 5) Building address numbers shall be plainly visible from the street fronting the property and shall contrasting color from the background. Addresses may be required to be posted adjacent to driveways or other access ways. Size and placement of address numbers shall be approved by the fire and planning departments.
- 6) A Fire Department lock box is required for emergency access to building at an approved location. Provide keys for emergency access into and throughout the occupancy as required.
- 7) The fire sprinkler system shall be installed compliant with provisions of 2016 NFPA Standard 13, Installation of Sprinkler Systems. City permit required prior to initiation of work.
- 8) Standpipes shall be installed compliant with 2016 NFPA 14, Standard for the Installation of Standpipe and Hose Systems for the apartment building. Additional class I hose connections shall be required for portions of this building.
- 9) Fire Department sprinkler connection locations to be approved prior to installation.

*“Proudly Serving Neighbors & Friends”*



- 10) The fire alarm systems shall be installed compliant with provisions of 2016 NFPA Standard 72, National Fire Alarm Code. City permit required prior to initiation of work.
- 11) The sprinkler system shall be properly monitored by a qualified monitoring company.
- 12) Install emergency egress illumination in the means of egress including exit discharge compliant with 2020 MSFC.
- 13) Install compliant exit signage as required by the 2020 MSFC.
- 14) Provide and install dry chemical fire extinguishers certified for service and tagged as required. Service classification rating shall be a minimum 2A classification rating and maximum travel distance of 75 feet to extinguishers. The minimum classification rating may be upgraded for special or extra hazard areas within the occupancy.
- 15) Rooms containing controls for air-conditioning systems, roof access, elevator equipment, sprinkler risers and valves, or other fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs required to identify fire protection equipment and equipment location, shall be constructed of durable materials, permanently installed and readily visible.

#### **Codes and Standards Used for this Review**

This review is based on the following codes and standards as adopted and in effect in the State of Minnesota at the time of plan submittal.

- 2020 Minnesota State Fire Code
- Lake Elmo Fire Department Fire Code Policy
- NFPA 72, 2016 edition
- NFPA 13, 2016 edition
- NFPA 14, 2016 edition

## APPENDIX D

# FIRE APPARATUS ACCESS ROADS

*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance or legislation of the jurisdiction.*

### User note:

**About this appendix:** Appendix D contains more detailed elements for use with the basic access requirements found in Section 503, which gives some minimum criteria, such as a maximum length of 150 feet and a minimum width of 20 feet, but in many cases does not state specific criteria. This appendix, like Appendices B and C, is a tool for jurisdictions looking for guidance in establishing access requirements and includes criteria for multiple-family residential developments, large one- and two-family subdivisions, specific examples for various types of turnarounds for fire department apparatus and parking regulatory signage.

### SECTION D101 GENERAL

**D101.1 Scope.** Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

### SECTION D102 REQUIRED ACCESS

**D102.1 Access and loading.** Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driv-

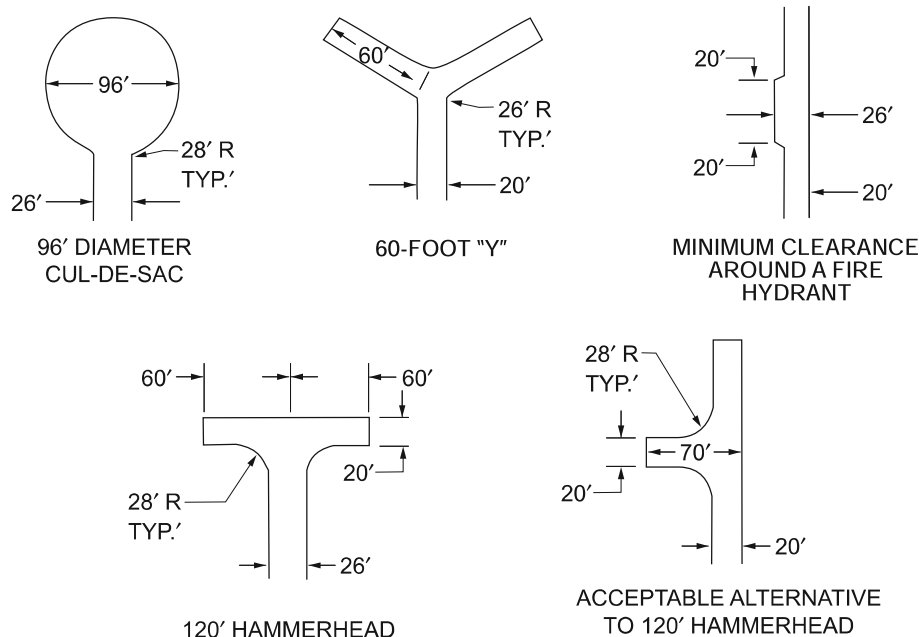
ing surface capable of supporting the imposed load of fire apparatus weighing up to 75,000 pounds (34 050 kg).

### SECTION D103 MINIMUM SPECIFICATIONS

**D103.1 Access road width with a hydrant.** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

**D103.2 Grade.** Fire apparatus access roads shall not exceed 10 percent in grade.

**Exception:** Grades steeper than 10 percent as *approved* by the fire code official.



For SI: 1 foot = 304.8 mm.

**FIGURE D103.1**  
**DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND**

## APPENDIX D

**D103.3 Turning radius.** The minimum turning radius shall be determined by the *fire code official*.

**D103.4 Dead ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

**TABLE D103.4**  
**REQUIREMENTS FOR DEAD-END**  
**FIRE APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0–150	20	None required
151–500	20	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501–750	26	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

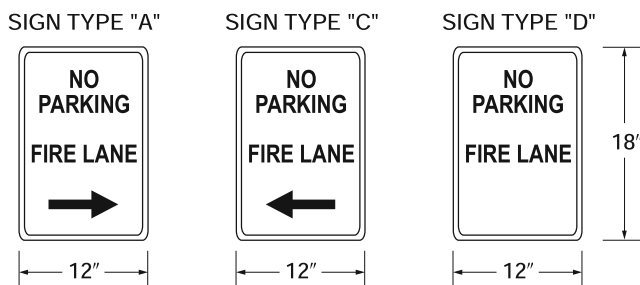
For SI: 1 foot = 304.8 mm.

**D103.5 Fire apparatus access road gates.** Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet (3658 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be *approved by the fire code official*.
6. Methods of locking shall be submitted for approval by the *fire code official*.
7. Electric gate operators, where provided, shall be *listed* in accordance with UL 325.
8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

**D103.6 Signs.** Where required by the *fire code official*, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted

on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.



**FIGURE D103.6**  
**FIRE LANE SIGNS**

**D103.6.1 Roads 20 to 26 feet in width.** *Fire lane* signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm).

**D103.6.2 Roads more than 26 feet in width.** *Fire lane* signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm).

## SECTION D104

### COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

**D104.1 Buildings exceeding three stories or 30 feet in height.** Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have not fewer than two means of fire apparatus access for each structure.

**D104.2 Buildings exceeding 62,000 square feet in area.** Buildings or facilities having a gross *building area* of more than 62,000 square feet (5760 m<sup>2</sup>) shall be provided with two separate and *approved* fire apparatus access roads.

**Exception:** Projects having a gross *building area* of up to 124,000 square feet (11 520 m<sup>2</sup>) that have a single *approved* fire apparatus access road where all buildings are equipped throughout with *approved automatic sprinkler systems*.

**D104.3 Remoteness.** Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

## SECTION D105

### AERIAL FIRE APPARATUS ACCESS ROADS

**D105.1 Where required.** Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), *approved* aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

**D105.2 Width.** Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

**D105.3 Proximity to building.** One or more of the required access routes meeting this condition shall be located not less than 15 feet (4572 mm) and not greater than 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the *fire code official*.

**D105.4 Obstructions.** Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the *fire code official*.

**SECTION D106  
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS**

**D106.1 Projects having more than 100 dwelling units.** Multiple-family residential projects having more than 100 *dwelling units* shall be equipped throughout with two separate and *approved* fire apparatus access roads.

**Exception:** Projects having up to 200 *dwelling units* shall have not fewer than one *approved* fire apparatus access road where all buildings, including nonresidential occupancies, are equipped throughout with *approved automatic sprinkler systems* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

**D106.2 Projects having more than 200 dwelling units.** Multiple-family residential projects having more than 200 *dwelling units* shall be provided with two separate and *approved* fire apparatus access roads regardless of whether they are equipped with an *approved automatic sprinkler system*.

**D106.3 Remoteness.** Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

**SECTION D107  
ONE- OR TWO-FAMILY  
RESIDENTIAL DEVELOPMENTS**

**D107.1 One- or two-family dwelling residential developments.** Developments of one- or two-family *dwelling units* where the number of *dwelling units* exceeds 30 shall be provided with two separate and *approved* fire apparatus access roads.

**Exceptions:**

1. Where there are more than 30 *dwelling units* on a single public or private fire apparatus access road and all *dwelling units* are equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, 903.3.1.2 or

903.3.1.3, access from two directions shall not be required.

2. The number of *dwelling units* on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the *fire code official*.

**D107.2 Remoteness.** Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

**SECTION D108  
REFERENCED STANDARDS**

ASTM	F2200—14	Standard Specification for Automated Vehicular Gate Construction	D103.5
UL	325—02	Door, Drapery, Gate, Louver, and Window Operators and Systems, with Revisions through May 2015	D103.5



# Part III—Building and Equipment Design Features

## CHAPTER 5 FIRE SERVICE FEATURES

### User note:

**About this chapter:** Chapter 5 provides requirements that apply to all buildings and occupancies and pertain to access roads, access to building openings and roofs, premises identification, key boxes, fire protection water supplies, fire command centers, fire department access to equipment and emergency responder radio coverage in buildings. Although many safety features are part of the building design, features such as proper fire department access roads and radio coverage are necessary in case of emergency and are important tools for emergency responders for public safety and their own safety.

### SECTION 501 GENERAL

**501.1 Scope.** Fire service features for buildings, structures and premises shall comply with this chapter.

**501.2 Permits.** A permit shall be required as set forth in Sections 105.6 and 105.7.

**501.3 Construction documents.** *Construction documents* for proposed fire apparatus access, location of *fire lanes*, security gates across fire apparatus access roads and *construction documents* and hydraulic calculations for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

**501.4 Timing of installation.** Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except where *approved* alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection where construction of new roadways allows passage by vehicles in accordance with Section 505.2.

### SECTION 502 DEFINITIONS

**502.1 Definitions.** The following terms are defined in Chapter 2:

**AGENCY.**

**FIRE APPARATUS ACCESS ROAD.**

**FIRE COMMAND CENTER.**

**FIRE DEPARTMENT MASTER KEY.**

**FIRE LANE.**

**KEY BOX.**

**TRAFFIC CALMING DEVICES.**

### SECTION 503 FIRE APPARATUS ACCESS ROADS

**503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

**503.1.1 Buildings and facilities.** Approved fire apparatus access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45,720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

**Exception:** Fire apparatus access roads need not be provided where there are two or fewer Group R-3 or Group U occupancy buildings.

*This exception clarifies that it is not the intent of the code to require the driveway to one or two homes or any Group U occupancy to have a code compliant access road no matter the setback distance from the main road.*

**503.1.1.1 Increases allowed.** The 150-foot distance shall be permitted to be increased for the following:

1. When the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3.
2. For Group R occupancies equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, the fire apparatus access road shall extend to within 600 feet (183 m).
3. Where fire apparatus access roads cannot be installed because of location on property, topog-

## FIRE SERVICE FEATURES

raphy, waterways, nonnegotiable grades, or other similar conditions, and an approved alternative means of fire protection is provided, the fire apparatus access road shall extend to within 300 feet (91.4 m).

**503.1.2 Additional access.** The *fire code official* is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

**503.1.3 High-piled storage.** Fire department vehicle access to buildings used for *high-piled combustible storage* shall comply with the applicable provisions of Chapter 32.

**503.2 Specifications.** Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8.

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for *approved* security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

**Exception:** Where the road serves Group R buildings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.1.1, 903.1.2, or 903.1.3, the minimum unobstructed width can be reduced to 16 feet (4,877 mm).

**503.2.2 Authority.** The *fire code official* shall have the authority to require or permit modifications to the required access widths where they are inadequate for fire or rescue operations or where necessary to meet the public safety objectives of the jurisdiction.

**503.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

**503.2.4 Turning radius.** The required turning radius of a fire apparatus access road shall be determined by the *fire code official*.

**503.2.5 Dead ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an *approved* area for turning around fire apparatus.

**Exception:** Where the dead-end road serves Group R buildings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, the maximum dead-end length distance is permitted to be increased up to 300 feet (91.4 m).

**503.2.6 Bridges and elevated surfaces.** Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits

shall be posted at both entrances to bridges where required by the *fire code official*. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces that are not designed for such use, *approved* barriers, *approved* signs or both shall be installed and maintained where required by the *fire code official*.

**503.2.7 Grade.** The grade of the fire apparatus access road shall be within the limits established by the *fire code official* based on the fire department's apparatus.

**503.2.8 Angles of approach and departure.** The angles of approach and departure for fire apparatus access roads shall be within the limits established by the *fire code official* based on the fire department's apparatus.

**503.3 Marking.** Where required by the *fire code official*, *approved* signs or other *approved* notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which *fire lanes* are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

**503.4 Obstruction of fire apparatus access roads.** Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Sections 503.2.1 and 503.2.2 shall be maintained at all times.

**503.4.1 Traffic calming devices.** Traffic calming devices shall be prohibited unless *approved* by the *fire code official*.

**503.5 Required gates or barricades.** The *fire code official* is authorized to require the installation and maintenance of gates or other *approved* barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways. Electric gate operators, where provided, shall be *listed* in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

**503.5.1 Secured gates and barricades.** Where required, gates and barricades shall be secured in an *approved* manner. Roads, trails and other accessways that have been closed and obstructed in the manner prescribed by Section 503.5 shall not be trespassed on or used unless authorized by the *owner* and the *fire code official*.

**Exception:** The restriction on use shall not apply to public officers acting within the scope of duty.

**503.6 Security gates.** The installation of security gates across a fire apparatus access road shall be *approved* by the *fire code official*. Where security gates are installed, they shall have an *approved* means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be *listed* in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

## SECTION 504 ACCESS TO BUILDING OPENINGS AND ROOFS

**504.1 Required access.** Exterior doors and openings required by this code or the *International Building Code* shall be maintained readily accessible for emergency access by the fire department. An *approved* access walkway leading from fire apparatus access roads to exterior openings shall be provided where required by the *fire code official*.

**504.2 Maintenance of exterior doors and openings.** Exterior doors and their function shall not be eliminated without prior approval. Exterior doors that have been rendered non-functional and that retain a functional door exterior appearance shall have a sign affixed to the exterior side of the door with the words THIS DOOR BLOCKED. The sign shall consist of letters having a principal stroke of not less than  $\frac{3}{4}$  inch (19.1 mm) wide and not less than 6 inches (152 mm) high on a contrasting background. Required fire department access doors shall not be obstructed or eliminated. Exit and *exit* access doors shall comply with Chapter 10. Access doors for *high-piled combustible storage* shall comply with Section 3206.7.

**504.3 Stairway access to roof.** New buildings four or more stories above grade plane, except those with a roof slope greater than four units vertical in 12 units horizontal (33.3-percent slope), shall be provided with a *stairway* to the roof. *Stairway* access to the roof shall be in accordance with Section 1011.12. Such *stairway* shall be marked at street and floor levels with a sign indicating that the *stairway* continues to the roof. Where roofs are used for roof gardens or for other purposes, *stairways* shall be provided as required for such occupancy classification.

## SECTION 505 PREMISES IDENTIFICATION

**505.1 Address identification.** New and existing buildings shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of  $\frac{1}{2}$  inch (12.7 mm). Where required by the *fire code official*, address identification shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

**505.2 Street or road signs.** Streets and roads shall be identified with *approved* signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an *approved* size, weather resistant and be maintained until replaced by permanent signs.

## SECTION 506 KEY BOXES

**506.1 Where required.** Where access to or within a structure or an area is unduly difficult because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type and shall contain keys to gain necessary access as required by the fire code official.

**Exception:** One- and two-family dwellings need not be provided with lock boxes.

**506.1.1 Locks.** An *approved* lock shall be installed on gates or similar barriers where required by the *fire code official*.

**506.1.2 Key boxes for nonstandardized fire service elevator keys.** Key boxes provided for nonstandardized fire service elevator keys shall comply with Section 506.1 and all of the following:

1. The key box shall be compatible with an existing rapid entry key box system in use in the jurisdiction and *approved* by the *fire code official*.
2. The front cover shall be permanently labeled with the words "Fire Department Use Only—Elevator Keys."
3. The key box shall be mounted at each elevator bank at the lobby nearest to the lowest level of fire department access.
4. The key box shall be mounted 5 feet 6 inches (1676 mm) above the finished floor to the right side of the elevator bank.
5. Contents of the key box are limited to fire service elevator keys. Additional elevator access tools, keys and information pertinent to emergency planning or elevator access shall be permitted where authorized by the *fire code official*.
6. In buildings with two or more elevator banks, a single key box shall be permitted to be used where such elevator banks are separated by not more than 30 feet (9144 mm). Additional key boxes shall be provided for each individual elevator or elevator bank separated by more than 30 feet (9144 mm).

**Exception:** A single key box shall be permitted to be located adjacent to a *fire command center* or the non-standard fire service elevator key shall be permitted to be secured in a key box used for other purposes and located in accordance with Section 506.1.

**506.2 Key box maintenance.** The operator of the building shall immediately notify the *fire code official* and provide the new key where a lock is changed or rekeyed. The key to such lock shall be secured in the key box.



FIRE SERVICE FEATURES

SECTION 507  
FIRE PROTECTION WATER SUPPLIES

**507.1 Required water supply.** An *approved* water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

**507.2 Type of water supply.** A water supply shall consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

**507.2.1 Private fire service mains.** Private fire service mains and appurtenances shall be installed in accordance with NFPA 24.

**507.2.2 Water tanks.** Water tanks for private fire protection shall be installed in accordance with NFPA 22.

**507.3 Fire flow.** Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an approved method. If no municipal water supply exists, the minimum water flow and duration requirements for new buildings, portions of buildings hereafter constructed, or buildings moved into or within the jurisdiction shall be as specified in Table 507.3.

**507.3.1 Fire flow for Group R-3 or Group U occupancies.** No minimum fire flows are required for Group R-3 occupancies or Group U occupancies with less than 5,000 square feet (465 m<sup>2</sup>) of floor area.

**507.4 Water supply test.** The *fire code official* shall be notified prior to the water supply test. Water supply tests shall be witnessed by the *fire code official* or *approved* documentation of the test shall be provided to the *fire code official* prior to final approval of the water supply system.

**507.5 Fire hydrant systems.** Fire hydrant systems shall comply with Sections 507.5.1 through 507.5.6.

**507.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 300 feet (91.5 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

**Exceptions:**

1. For Group R-3 and Group U occupancies, the distance requirement shall be 400 feet (122 m).
2. For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the threshold for requiring on site fire hydrants and mains shall be increased to 400 feet (122 m).
3. For Group R-3 buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, the threshold for requiring on-site fire hydrants and mains shall be increased to 600 feet (183 m).

**507.5.1.1 Hydrant for standpipe systems.** Buildings equipped with a standpipe system installed in accordance with Section 905 shall have a fire hydrant within 100 feet (30 480 mm) of the fire department connections.

**Exception:** The distance shall be permitted to exceed 100 feet (30 480 mm) where *approved* by the *fire code official*.

**507.5.2 Inspection, testing and maintenance.** Fire hydrant systems shall be subject to periodic tests as required by the *fire code official*. Fire hydrant systems shall be maintained in an operative condition at all times and shall be repaired where defective. Additions, repairs, *alterations* and servicing shall comply with *approved* standards. Records of tests and required maintenance shall be maintained.

TABLE 507.3  
MINIMUM FIRE FLOW REQUIREMENTS

HAZARD CLASSIFICATION <sup>1</sup>	SPRINKLERED BUILDING <sup>2</sup>	UNSPRINKLERED OR PARTIALLY SPRINKLERED BUILDING	DURATION (minutes)
Light Hazard	100 gpm available for fire department use	250 gpm available for fire department use	30
Ordinary Hazard	250 gpm available for fire department use	500 gpm available for fire department use	60
Extra Hazard	500 gpm available for fire department use	750 gpm available for fire department use	90
High Piled Combustible Storage	Hose stream demand from sprinkler installation standard (NFPA 13) or 500 gpm, whichever is larger	1,000 gpm available for fire department use	120
Other Group H Occupancies	Hose stream demand from sprinkler installation standard (NFPA 13, MSFC Chapter 57, etc.) or 500 gpm, whichever is larger	1,000 gpm available for fire department use	120

1. Light, ordinary, and extra hazard are as defined in NFPA 13, Standard for the Installation of Automatic Sprinkler Systems.
2. In sprinklered buildings, when a fixed water supply is used for the sprinklers, the hose stream available for fire department need not come from the fixed source (i.e. tank).

**507.5.3 Private fire service mains and water tanks.** Private fire service mains and water tanks shall be periodically inspected, tested and maintained in accordance with NFPA 25 at the following intervals:

1. Private fire hydrants of all types: Inspection annually and after each operation; flow test and maintenance annually.
2. Fire service main piping: Inspection of exposed, annually; flow test every 5 years.
3. Fire service main piping strainers: Inspection and maintenance after each use.

Records of inspections, testing and maintenance shall be maintained.

**507.5.4 Obstruction.** Unobstructed access to fire hydrants shall be maintained at all times. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.

**507.5.5 Clear space around hydrants.** A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants, except as otherwise required or approved.

**507.5.6 Physical protection.** Where fire hydrants are subject to impact by a motor vehicle, guard posts or other approved means shall comply with Section 312.

## SECTION 508 FIRE COMMAND CENTER

**508.1 General.** Where required by other sections of this code and in all buildings classified as high-rise buildings by the *International Building Code*, a *fire command center* for fire department operations shall be provided and shall comply with Sections 508.1.1 through 508.1.6.

**508.1.1 Location and access.** The location and accessibility of the *fire command center* shall be approved by the *fire code official*.

**508.1.2 Separation.** The *fire command center* shall be separated from the remainder of the building by not less than a 1-hour *fire barrier* constructed in accordance with Section 707 of the *International Building Code* or *horizontal assembly* constructed in accordance with Section 711 of the *International Building Code*, or both.

**508.1.3 Size.** The *fire command center* shall be not less than 0.015 percent of the total building area of the facility served or 200 square feet (19 m<sup>2</sup>) in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area or 10 feet (3048 mm), whichever is greater.

**508.1.4 Layout approval.** A layout of the *fire command center* and all features required by this section to be contained therein shall be submitted for approval prior to installation.

**508.1.5 Storage.** Storage unrelated to operation of the *fire command center* shall be prohibited.

**508.1.6 Required features.** The *fire command center* shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system control unit.
2. The fire department communications system.
3. Fire detection and alarm system annunciator.
4. Annunciator unit visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air distribution systems.
6. The fire fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking *interior exit stairway* doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, *means of egress*, *fire protection systems*, fire-fighter air-replenishment systems, fire-fighting equipment and fire department access, and the location of *fire walls*, *fire barriers*, *fire partitions*, *smoke barriers* and smoke partitions.
13. An *approved* Building Information Card that includes, but is not limited to, all of the following information:
  - 13.1. General building information that includes: property name, address, the number of floors in the building above and below grade, use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor) and the estimated building population during the day, night and weekend;
  - 13.2. Building emergency contact information that includes: a list of the building's emergency contacts including but not limited to building manager, building engineer and their respective work phone number, cell phone number and e-mail address;
  - 13.3. Building construction information that includes: the type of building construction including but not limited to floors, walls, columns and roof assembly;
  - 13.4. *Exit access stairway* and *exit stairway* information that includes: number of *exit access stairways* and *exit stairways* in building; each *exit access stairway* and *exit stairway*



**Legend**

**Search Areas (2040)**

- Neighborhood (Green square)
- Community (Yellow square)
- Regional (Dark Green square)
- NRPA (Teal square)
- Conservation Easements (Patterned square)
- Closed Landfill (Dark Grey square)
- Neighborhood (Pink circle)
- Sports Complex (Yellow circle)
- Community (Orange circle)
- Special Use (Blue circle)

Future City Road (Parkway) (Black arrow symbol)

