

ELK GROVE

RURAL ROAD
IMPROVEMENT
STANDARDS

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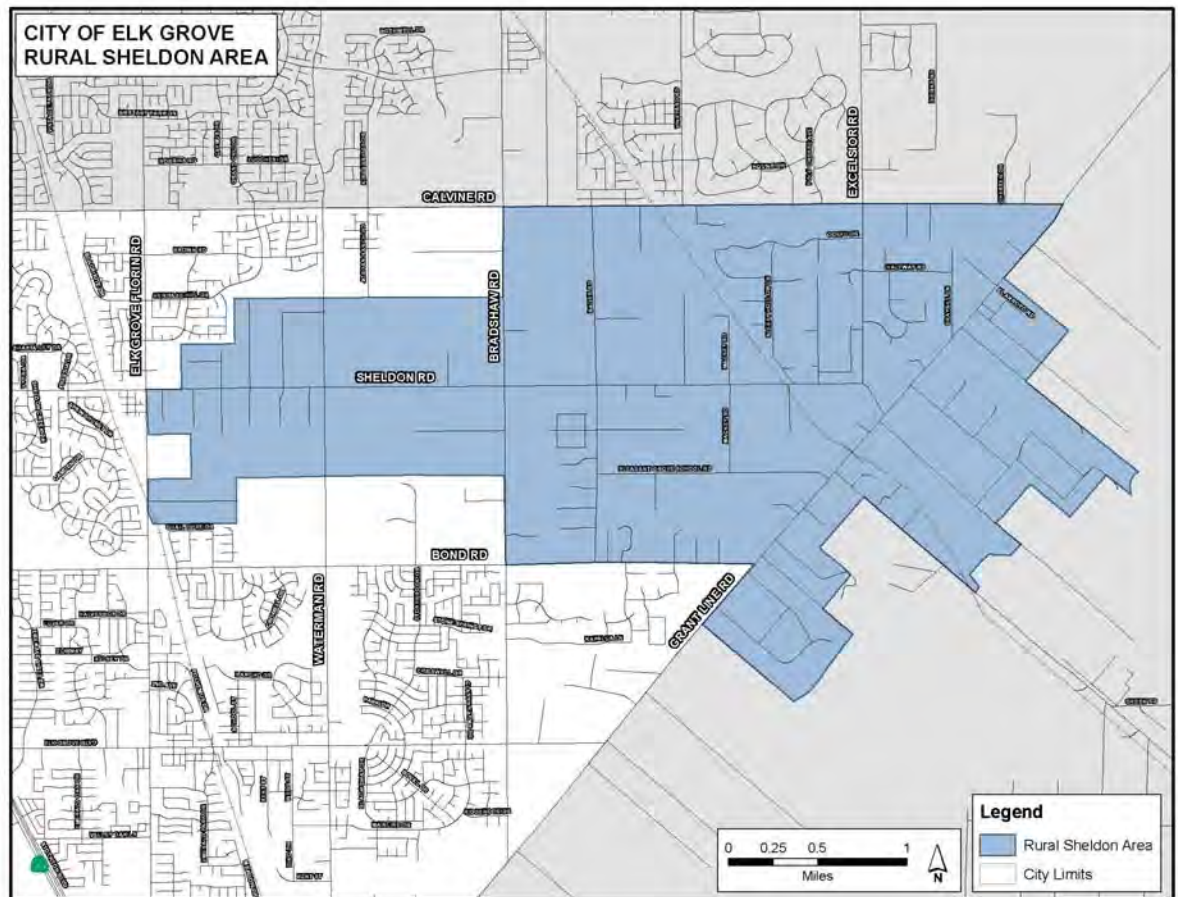
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RURAL ROAD IMPROVEMENT STANDARDS

I. PURPOSE AND APPLICABILITY

The purpose of the Rural Road Improvement Standards is to establish unique road improvement design standards that are rural (rather than urban) in character for future road improvements in the designated Rural Residential area of the City. The intent of the Rural Road Improvement Standards is to preserve and enhance the existing rural character of the Rural Residential Area consistent with the policy direction in the General Plan. It is not the intent of these new design standards to change the planned roadway improvements outlined in the adopted General Plan, but rather to affect the design and potentially construction timing of those future improvements to be more rural in character.



The project area subject to the Rural Road Improvement Standards is the existing Rural Sheldon/Rural Residential Area (hereafter Rural Residential Area) as outlined in the General Plan and shown on the map above. Specifically, the following roadways are included as part of this project; Excelsior Road, Bradshaw Road, Waterman Road, Elk-Grove Florin Road, Calvin Road, Bond Road, and Sheldon Road.

Once adopted by the City Council, the Rural Road Improvement Standards shall apply to all future road improvements within the project area, including all new road widening and intersection improvements, as well as new road construction. These design standards shall also apply to previously approved road

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improvement projects within the project area that are not yet constructed or otherwise vested. For example, design specifications for intersection light standards outlined herein will be utilized on all public roadways where other intersection light fixtures have not already been purchased and/or placed.

The Rural Road Improvement Standards is a companion document to the Rural Road Improvement Policy. The Rural Road Improvement Policy is a value based approach for incremental (rather than ultimate) road improvements that solve specific traffic issues identified through periodic evaluations of traffic conditions. The Rural Road Improvement Policy (and the Rural Road Improvement Standards) documents are based on principles of Context Sensitive Design. Under this policy, roads are not simply built to the projected ultimate improvement unless the actual demand exists. By phasing road improvements the character of the rural residential area can be maintained.

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II. RELATIONSHIP TO OTHER CITY-ADOPTED PLANS AND POLICIES

GENERAL PLAN

The Rural Road Improvement Standards implement the General Plan goals, policies, and actions. These standards implement the provisions of the Land Use and Circulation Elements regarding the maintenance of features that create the rural character, including small local roadways, roadways which preserve the areas mature trees, and preservation of large oak trees. Pursuant to State law, implementing documents must be consistent with the City's adopted General Plan.

ZONING ORDINANCE

The Rural Road Improvement Standards supplement the allowed use and development standards in the City's adopted Zoning Code. Both documents are planning tools used by the City to guide the physical form and function of the community consistent with the General Plan. While most of the City's zoning regulations apply to land outside the public right-of-way, these standards focus on improvements within the public right-of-way. The Zoning Code does include special development standards for improvements within and adjacent to the right-of-way, including but not limited to fencing, special signage, and clear visibility requirements at the intersections of streets and driveways.

CITY WIDE IMPROVEMENT STANDARDS

The Rural Road Improvement Standard document replaces the Citywide Improvement Standards for design details associated with road improvements for the City's designated rural/residential area. This document contains design standards and details that are unique to the Rural Residential Area of the City as defined by Land Use Elements policy LU-18. Standards and details that are not part of the Rural Road Improvement Standards are addressed in the Citywide Improvement Standards documents.

ELK GROVE TRAILS MASTER PLAN

The Trails Master Plan is an expression of the City's desire to have an exemplary off-street multi-use trail system that provides connectivity throughout the City and wider Sacramento region in order to offer recreational opportunities and an alternative method for transportation for Elk Grove residents. The Trails Master Plan discusses the use of off-street multi-use trails throughout the City and is not part of this Rural Roads project since the Rural Road Improvement Standards focus on improvements in the right of way.

ELK GROVE BICYCLE AND PEDESTRIAN MASTER PLAN

The Bicycle and Pedestrian Master Plan is a companion document to the Trails Master Plan and addresses on-street bicycle and pedestrian facilities. The purpose of the Bicycle and Pedestrian Master Plan is to improve and encourage bicycle and pedestrian transportation within the City of Elk Grove and allow connections with the surrounding area. The Bicycle and Pedestrian Master Plan addresses facilities within the public right-of-way which are designated Bike Trails (Class I) along portions of Calvin Road and Bond Road, Bike Lanes (Class II) and Bike Routes (Class III) facilities. A map of the Bicycle and Pedestrian Master Plan (adopted in 2004) is included in Appendix A of this document. Completion of the routes shown on the map will be completed as funding is available. The Rural Road Standards are consistent with the Bicycle and Pedestrian Master Plan. The table in this document accounts for the on-street routes in the paved shoulder width column. Bike routes have signing only

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and do not have a minimum pavement width. Bike lanes require 4 (four) feet of minimum pavement width without gutters and without parking. Bike lanes will be 5 (five) feet wide unless there are physical constraints such as trees, ditches, or right-of-way issues. The City Council will approve the final design.

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III. DEFINITIONS

Arterial streets- The arterial system carries the major portion of trips entering and leaving the urban area, as well as the majority of through movements. In addition, significant intra-area travel, such as between residential areas and commercial or business should be served by this system.

Average Daily Traffic (ADT) - The average of 24-hour mid-week (Tuesday-Thursday) traffic flows on a roadway segment (both directions) measured over multiple days, typically over a week or longer, measured under typical operating conditions excluding holidays, non-recurrent conditions (i.e., accidents), and times when schools are not in session.

Class I Bikeway/(Bike Trail) – A paved route not on a street or roadway and expressly reserved for bicycles traversing on otherwise unpaved area.

Class II Bikeway/(Bike Lane) - Bike lane that provides restricted right-of-way designated for the semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

Class III Bikeway/(Bike Route) – Bike route provides a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

Collector Streets - Provide both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. Collectors penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system.

Context Sensitive Design – Tailoring roadway design to adjacent land use with sensitivity to community values and considers cultural, historic, environmental and economic as well as traffic issues. Community members and City staff are involved in a collaborative process that includes people/stakeholders with diverse expertise in order to reach solutions.

Local streets - Primary function is to provide direct access to abutting land and access to collector streets. It offers the lowest level of mobility.

Median - Generally raised and curbed area separating opposing lanes of traffic.

Native Landscaping - Landscaping that is native and does not contain ornamental plantings.

Off Street – Improvements that are not located in the public right of way

On-Street –Improvements that are located in the public right of way

Right of Way – A strip of land occupied or intended to be occupied by certain transportation and public use facilities such as roadways and utilities.

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Roundabout – A roundabout is larger than a traffic circle and used to allocate right-of-way for competing movements.

Rural Area – Map of Rural Residential Area of Elk Grove as defined by the Elk Grove General Plan.

Rural Road – A roadway that is located within the Rural Residential Area of the City.

Traffic Circle – A traffic circle is used as a traffic calming device at intersections that typically fit within the existing curb line.

Traffic Control Device –Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction.

IV. GENERAL PROCESS

A. *Implementation of Rural Road Improvement Policy*

The process for implementation of the Rural Road Improvement Policy is outlined in that Policy document. In summary, once the need for an improvement is identified, the City will work with affected property owners and rural residents in the project area to discuss impacts and alternatives. City Council will provide direction on the alternatives and the Capital Improvement Process outlined below will commence.

B. *Capital Improvement Project Process*

Roadway and intersection improvements are carried out by the City Public Works Department and are listed as Capital Improvement Projects (CIP). Listed below are the steps of a CIP project.

- 1) Preliminary roadway evaluation to identify options, opportunities and constraints;
- 2) Community outreach meetings with affected property owners, homeowner associations, and the Rural Residential Area;
- 3) Preliminary project design and environmental evaluation;
- 4) Circulate environmental document (Draft Environmental Impact Report (EIR) and request public comment;
- 5) Refine project and environmental evaluation as needed and proceed with certification;
- 6) Certification of the Final EIR for the preferred project alternative;
- 7) Right-of-way engineering and negotiations-primarily with individual property owners;
- 8) Final design with more details in the defined right-of-way (e.g., landscape, lighting design, driveways) for review, comment, and approval by the City Council after recommendations from the affected property owners, homeowners associations and the Rural Residential Area;
- 9) Request bids for construction, award contract, and commence construction.

V. STREET DESIGN

This section includes basic street typologies describing the range of public roads within the Rural Residential Area. The Rural Road Standards table on page 9 identifies the roadway design specifics for each of those road typologies. As stated in the Rural Roads Improvement Policy document, roadway widening shall occur when certain thresholds are met. The street sections shall be refined on a case-by-case basis for preservation of trees. All roads will have minimal lane width with open drainage and native landscape. Roads within the Rural Residential Area will not include curb, gutter, or sidewalk. Except for demonstrated safety needs or for necessary tree preservation, there shall be no medians in the Rural Residential Area.

A. STREET SECTIONS

Roadways in the Rural Residential Area shall have a rural character that will include minimal lane widths. Roadway section standards are shown in the Rural Roads Standards table on page 9 of this document and include provisions for center turn lanes for improved access and safety.

B. PATHS

There may be places within the Rural Residential Area where informal paths are necessary or desired (e.g., designated pedestrian access to schools and community facilities or commercial uses, connection to Citywide trail system). If included within the Rural Residential Area, paths shall be constructed with a surface such as decomposed granite or other similar surface, that is appropriate for the intended use!

C. BIKEWAYS

Bike lanes and bike routes will be included as part of the roadways within the Rural Residential area as shown on the adopted Bicycle and Pedestrian Master Plan Map (Appendix A). Bicycle circulation through the rural area will be provided with the use of bike routes and bike lanes for connectivity to Citywide trail system. Bike routes and bike lanes have been accounted for in the Rural Road Standards table in this document in the paved shoulder column.

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Rural Road Standards Table

Rural Road Classification	Lane Width	Paved Shoulder*	Unpaved shoulder/transition	Roadside Ditch	Total Pavement Width	Turn Lane Width
Local (<400 ADT)	9-ft	2-ft	1-ft	Open, slope varies (dependent on capacity)	22-ft	0
Local (>400 ADT)	10-ft	2 to 4-ft	1-ft	Open, slope varies (dependent on capacity)	24 to 28-ft	0
Collector	10-ft	2 to 4-ft	1-ft	Open, Varies	24 to 28-ft	0
Arterial						
2-lane	11-ft	3 to 5-ft	3-ft	Open, Varies	28 to 32-ft	0
2-lane + center turn lane	11-ft	3 to 5-ft	3-ft	Open, Varies	40 to 44-ft	12-ft
4-lane	11-ft	3 to 5-ft	3-ft	Open, Varies	50 to 54-ft	0
4-lane + center turn lane	11-ft	3 to 5-ft	3-ft	Open, Varies	62 to 66-ft	12-ft
6-lane + center turn lane	11-ft	3 to 5-ft	3-ft	Open, Varies	84 to 88-ft	12-ft

Source: City of Elk Grove Public Works Department

* Consistent with the City of Elk Grove Bicycle and Pedestrian Master Plan and as discussed in the Section V.(C) Bikeways of this document.

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D. CENTER TURN LANES

For the Rural Residential Area, use of center turn lanes will have a negligible effect on roadway capacity since the volume of turning traffic into and out of adjacent properties is low. However, the benefit of a center turn lane may be substantial for local residents that may have difficulty accessing their property. Consequently, center turn lanes may be considered for implementation at any time to improve safety and convenience independent of intersection improvements, which are discussed in Chapter

VI. The need for center turn lanes will be determined on a case-by case basis.

Except for demonstrated safety needs or for necessary tree preservation, there shall be no medians in the Rural Residential area. If needed for tree preservation, the inside travel lane (closest to the median) will be 12 feet and include a curb between the travel lane and median and will include curb cuts in order to facilitate drainage from around the tree.

E. LANDSCAPE

Rural roadways shall have native landscaping within the public right-of-way. Ornamental plantings shall not be part of the improvements unless they are pre-existing. The landscaping will not be irrigated except as necessary for establishment. Healthy, viable trees shall be saved wherever possible.



F. DRAINAGE

Rural roadways shall include open ditches for drainage. Native vegetation will be allowed to grow within the open ditch as long as the vegetation does not reduce the efficiency of the ditch or create a fire hazard. The ditches will continue to be maintained by the City. Ditch width shall be the minimum necessary to accommodate the drainage requirements of the particular roadway and adjacent properties.

Roadside ditches shall be designed and constructed as necessary to accommodate the drainage requirements of the particular roadway and adjacent properties. Roadway drainage improvements shall incorporate sound engineering practices to maintain the integrity of the roadway and the conveyance of storm water runoff.

VI. INTERSECTION DESIGN

As stated in the Rural Road Improvement Policy, intersection improvements shall be phased and constructed as needed based on traffic counts. Intersections will be designed in keeping with the rural character of the area and shall not include curb, gutter, and sidewalks and will have only minimal safety lighting.

Phased Intersection improvements are based on traffic volumes and outlined in the Rural Road Improvement Policy. The intersection improvements are the maximum that would be made at an intersection. Once the threshold is met, the intersection will be evaluated to see if all the improvements listed are warranted.

A. INTERSECTION IMPROVEMENTS

Intersections shall not adversely affect nor alter or detract from the existing rural residential appearance, appeal, or quality of life. Improvements will include designs and scale that minimizes pavement and use of turn lanes whenever possible.

Luminaires may not be required on all four corners of an intersection. Lighting analysis software shall be used to determine the minimum number of luminaires required at an intersection to meet standard illumination requirements. Lighting requirements at specific intersections will be evaluated on a case-by-case basis.

The installation of curb, gutter and sidewalk is not required and shall not be a part of the signalization of an intersection. Other options that may be considered when an intersection is signalized are placing signal poles farther from the edge of travel way, placing berms around signal poles or signal cabinets, and providing small pedestrian refuge areas at the edge of the road where a crosswalk is proposed.

B. DRIVEWAY SEPARATION (NEW DRIVEWAYS ONLY)

When existing driveways are near an intersection and their access is impacted by intersection improvements then a special evaluation is required. The City shall work with affected property owners to determine appropriate action to maintain property access.

VII. INTERSECTION LIGHTING STANDARDS AND DESIGN

The least intrusive intersection lighting is to be considered when improvements are made at an intersection, lighting is needed for safety reasons, or when a new intersection is constructed. Continuous roadway lighting is not to be installed. Computer software shall be used to calculate the optimum location, height and spacing for alternative lighting solutions at each intersection.

A. LIGHTING SOURCES

Metal Halide (MH) is preferred due to the more natural color rendition and pure white light. MH is energy efficient and has a very long service life. High pressure sodium lamps are not permitted.

B. DARK SKY

To minimize trespass lighting to the skies, full cutoff luminaires are recommended. Full cutoff luminaires are designed so that they do not emit any light above 90 degrees, thereby reducing sky glow. Insure the design results in good uniformity to improve visibility and minimize reflected light into the sky.

C. POLE HEIGHTS

The amount of light required for an intersection should be based on Caltrans minimum requirements. A T-intersection should have at least one luminaire to meet these requirements. On a four-legged intersection, the above values will be maintained using at least two luminaires.

To avoid adding more luminaires, consider increasing the wattage of the lamps or the height of the pole to introduce better lighting levels. These need to be engineered and dealt with on a case-by-case basis. Note that it is more difficult to control glare and minimize the number of lighting standards if lower luminaire mounting heights are used.

D. BULB SIZE

Use of 100 watt to 200 watt bulbs is recommended, depending on the type of fixture and local conditions.

E. SHIELDS

Use internal or external shields when necessary to minimize light trespass onto neighboring properties. Use of shields should be evaluated to insure they do not impact the required intersection lighting levels.

VIII. SPECIAL SIGNAGE

Signage can be used for many purposes in the Rural Residential Area. Signs can identify that a motorist is entering a Rural Residential Area as well as posting a speed limit for the area.

A. AGRICULTURAL VEHICLE, LIVESTOCK, HORSE CROSSING, AND PEDESTRIAN CROSSING SIGNS

Signs that indicate to motorists they are in a Rural Residential Area are encouraged. These signs may be used at appropriate locations in the Rural Residential Area.

B. SPECIAL SPEED LIMIT SIGNS

Speed limit signs that utilize radar for detecting speed shall be used whenever possible in key locations along 2- and 4-lane arterials with City approval.



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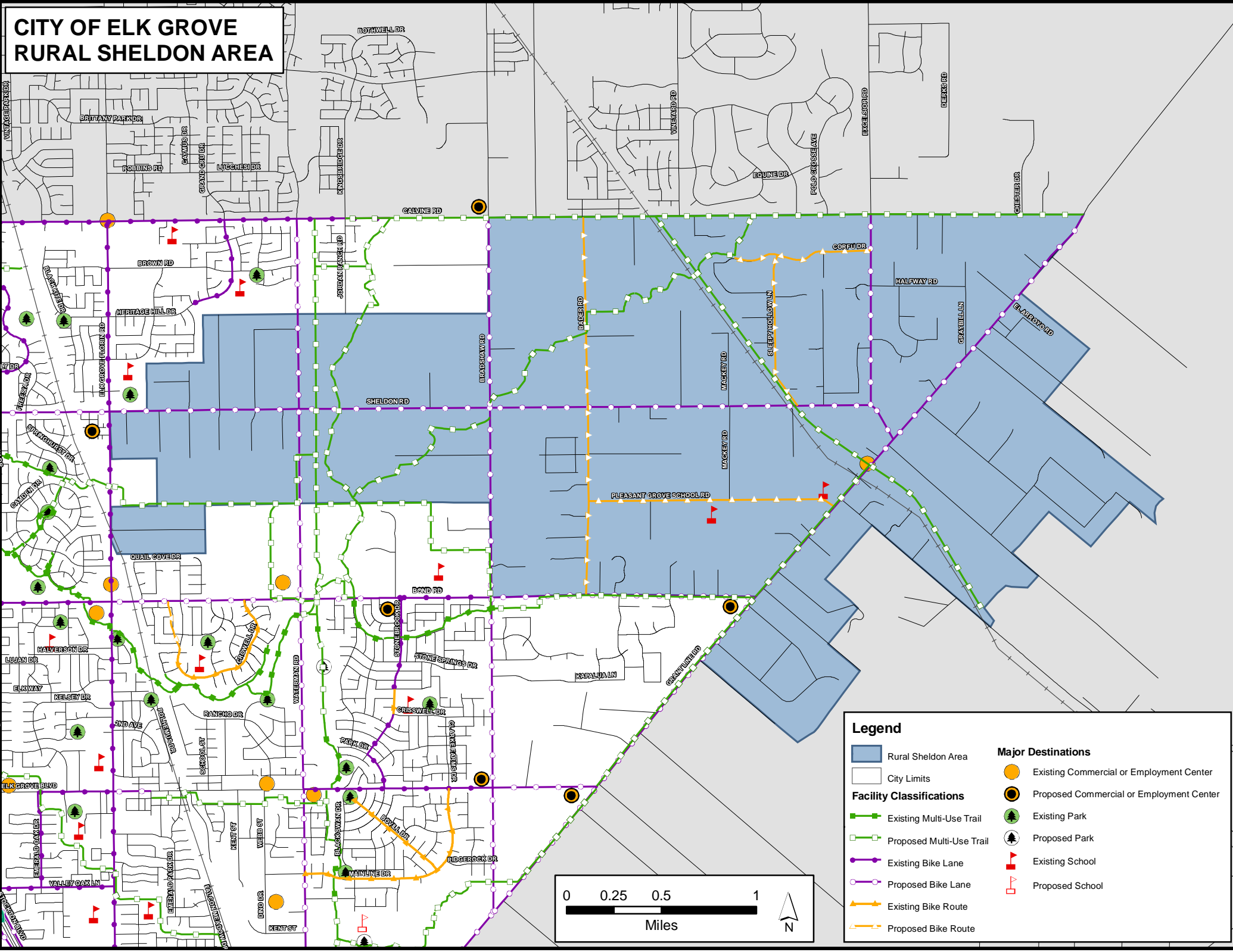
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IX. SCREENING AND NOISE ATTENUATION DESIGN OPTIONS















Unless required as mitigation by a noise study, sound walls shall not to be utilized in the Rural Residential area. If they are required, they shall be located in the public right of way and not on private property. Additionally, there shall be no City mandated landscaping or berms. The use of rubberized roadway materials shall be utilized to the maximum extent feasible.

APPENDIX

CITY OF ELK GROVE RURAL SHELDON AREA



Legend

- | | |
|--|--|
|  Rural Sheldon Area |  Existing Commercial or Employment Center |
|  City Limits |  Proposed Commercial or Employment Center |
| Facility Classifications | |
|  Existing Multi-Use Trail |  Existing Park |
|  Proposed Multi-Use Trail |  Proposed Park |
|  Existing Bike Lane |  Existing School |
|  Proposed Bike Lane |  Proposed School |
|  Existing Bike Route | |
|  Proposed Bike Route | |

