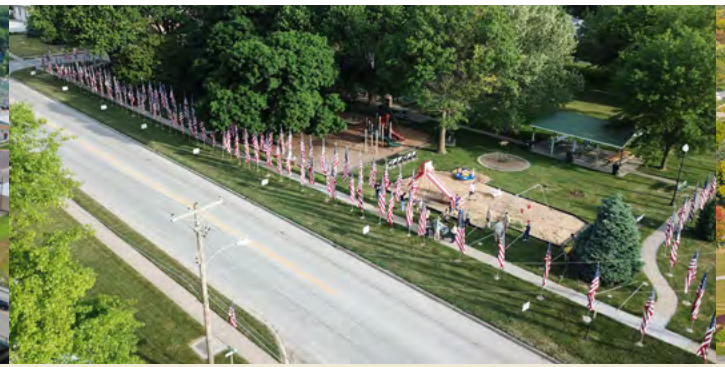
WESTERN SARPY
TRANSPORTATION
ENHANCEMENT PLAN

*Gretna, Springfield, Papillion, Sarpy County*


# WE-STEP Draft Plan Recommendations

September 2024

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# LIST OF ACRONYMS

**CD:** Conservation district

**I-80:** Interstate 80

**LOS:** Level of service

**MAPA:** Metropolitan Area Planning Agency

**NCHRP:** National Cooperative Highway Research Program

**NDOT:** Nebraska Department of Transportation

**ROW:** Right-of-way

**STAC:** Steering and Technical Advisory Committee

**SUDAS:** Statewide Urban Design and Specifications

**TDM:** Travel Demand Model

**TWLTL:** Two-way left-turn lane

**WE-STEP:** Western Sarpy County Transportation Enhancement Plan

# PROJECT BACKGROUND

Western Sarpy County has seen significant growth over past decades and is expected to continue growing for the next several decades due to improved access to Interstate 80 (I-80), strong regional employment, good quality of life, planned sewer extensions, and other amenities that make Sarpy County attractive for development. There is a need to develop a plan for a connected, multimodal transportation network that provides safe, efficient transportation and supports planned residential, commercial, and industrial development. A unified set of policies, guidelines, and standards used by the County and each city is recommended to ensure that roadway design, right-of-way (ROW) allocation, utility coordination, and the like are consistent and cohesive across jurisdictions.

The five agencies working together to enhance transportation in western Sarpy County include the City of Gretna, the City of Papillion, the City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA). The study area, shown in **Figure 1**, is located between Schram Road on the north, South 60th Street on the east, and the Platte River on the south and west.

The Western Sarpy County Transportation Enhancement Plan (WE-STEP) is a forward-looking plan that identifies the arterial and major collector roadway network extensions and enhancements to complement the existing transportation network and support future development. It also accounts for transportation options for all users by accommodating multimodal options and outlining standards, policies, and guidelines to provide a unifying framework. With the growth and progress anticipated in the coming years, it is paramount that the transportation network supports upcoming development to ensure a thriving future for the community – one with a network of streets, public transit, and alternative modes of transportation that connect the communities of western Sarpy County.

The Western Sarpy County Transportation Enhancement Plan (WE-STEP) is a strategic transportation plan for western Sarpy County, developed in collaboration with the City of Gretna, the City of Papillion, the City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA).

WE-STEP provides a framework to help the rapidly changing communities develop for future generations. The plan identifies a proposed future regional transportation network and flexible guidelines that can fit with whatever develops around it.

# INVENTORY AND ANALYSIS OF EXISTING CONDITIONS

## Review of Existing Plans, Policies, and Projects

The WE-STEP study was initiated with the understanding that each jurisdiction has a distinct set of guiding plans and policies that influence the development of the local and regional transportation network. These references include the following:

- **Gretna –** PlanGretna; adopted 2009, updated 2021
- **Springfield –** Springfield Comprehensive Plan; adopted 2015
- **Papillion –** The Papillion Plan; updated 2022
- **Sarpy County –** Sarpy County Comprehensive Plan; revised November 2020
- **MAPA –** 2050 Long Range Transportation Plan; 2020

## Shared Goals

Transportation goals summarized in the Gretna, Springfield, Papillion, Sarpy County, and MAPA comprehensive plans provide common themes, including an **interconnected network**, **diverse transportation options**, and **responsive services**. These transportation goals reflect shared efforts to support community mobility and the overall quality of life. **Appendix A** includes the Existing Plans and Policies summary, which provides a more in-depth discussion about the data sources, plans, and policies/standards used as a framework for WE-STEP.

### Other Relevant Studies

Numerous other studies provided a framework for WE-STEP by providing information about land use, demographic, and transportation data. Studies referenced include the following:

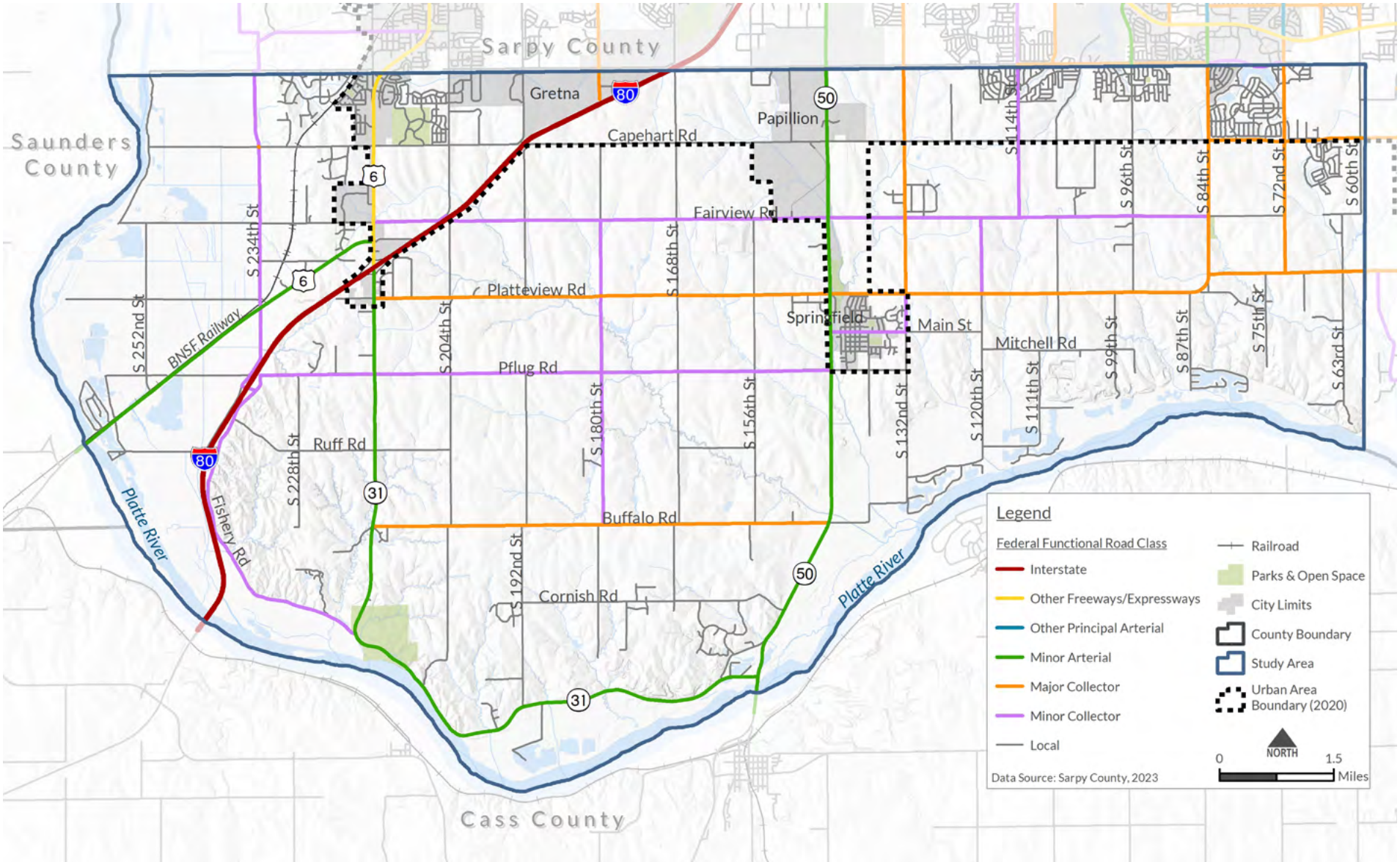
- Metro Area Travel Improvement Study
- Sarpy County I-80 PEL
- Platteview Road Corridor Study
- Platteview Road Design
- The Crossings Corridor Master Plan (Gretna)
- Sarpy County Transit Feasibility Study
- 180th/192nd Corridor Feasibility Study
- Sarpy County Trail Plan
- Lake 80
- South Sarpy County Sewer Plan
- MetroNEXT

In addition to transportation, implementing a wastewater network in southern Sarpy County will be a catalyst for development.

## Functional Classification System

The Federal Highway Administration (FHWA) groups roadways into classes according to the character of service they are intended to provide. Federal Functional Classifications (**Figure 1**) provide state, regional, and local planning context for the transportation network and focus primarily on the purpose of the roadway rather than the design requirements.

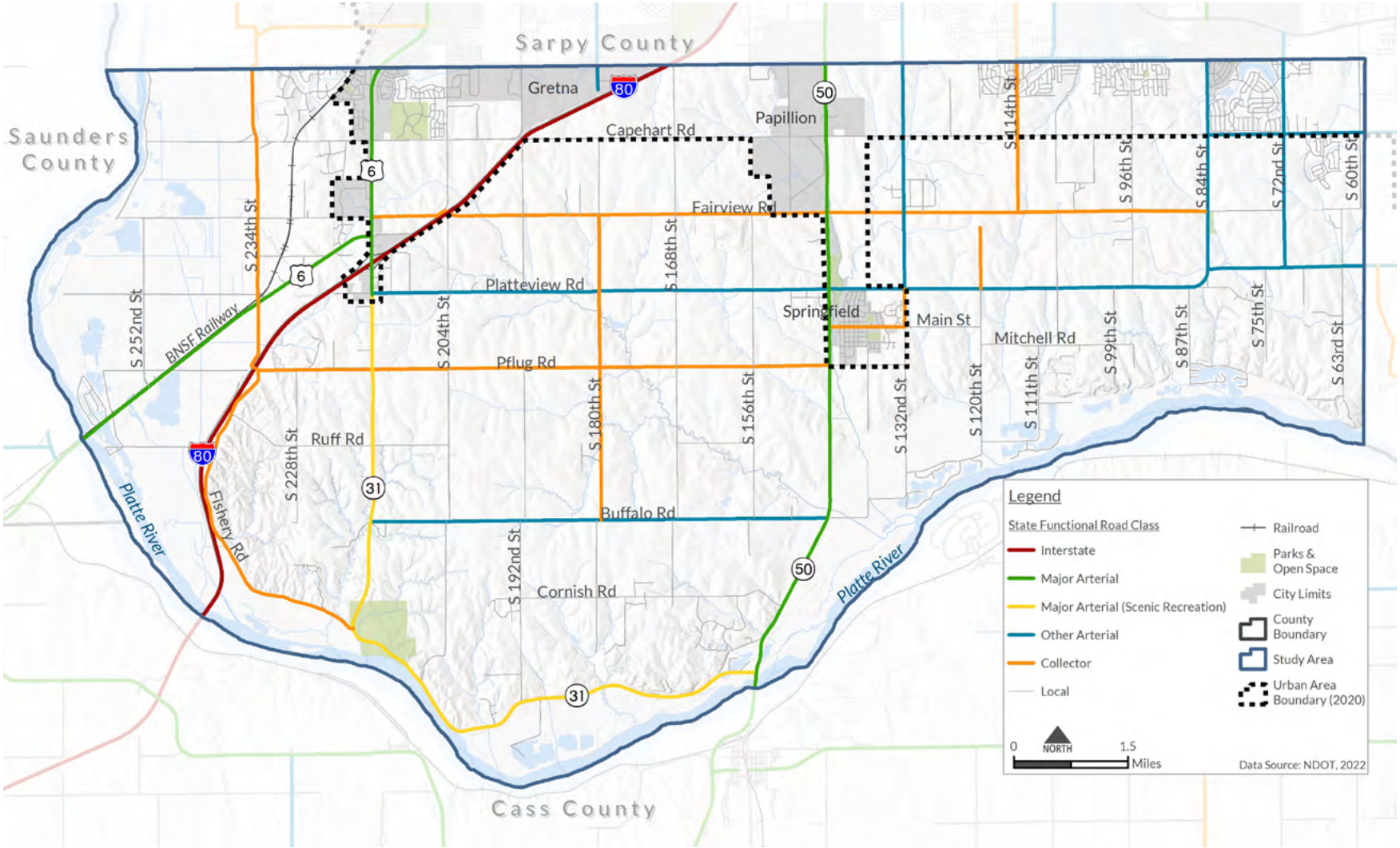
**Figure 1: Existing Federal Functional Road Classifications**



The State Functional Classification System provides jurisdictions with the minimum design criteria that must be achieved for a federal-aid-supported project. The State Classification System (**Figure 2**) ensures that the transportation facility is designed appropriately for the context and purpose it is intended to serve for the regional network. It is important to note that a State Classification for minimum design standards can apply to multiple Federal Functional Classifications.

Local classification systems may supplement State Classifications within local jurisdictions, but they do not replace Federal or State classifications and rely only on local regulations to oversee subdivision regulation and design requirements applied to development. This review indicated the need for a unique set of street and roadway typologies for the WE-STEP study area.

**Figure 2: Existing State Functional Road Classification**



## Existing Conditions Analysis

A review of the existing conditions was completed to summarize 2023 baseline conditions of the region's current multimodal transportation system. Data was assembled from the Nebraska Department of Transportation (NDOT), City of Papillion, City of Gretna, City of Springfield, and Sarpy County. **Appendix A** contains additional information about the existing conditions analysis, which included a basic assessment of the following topics:

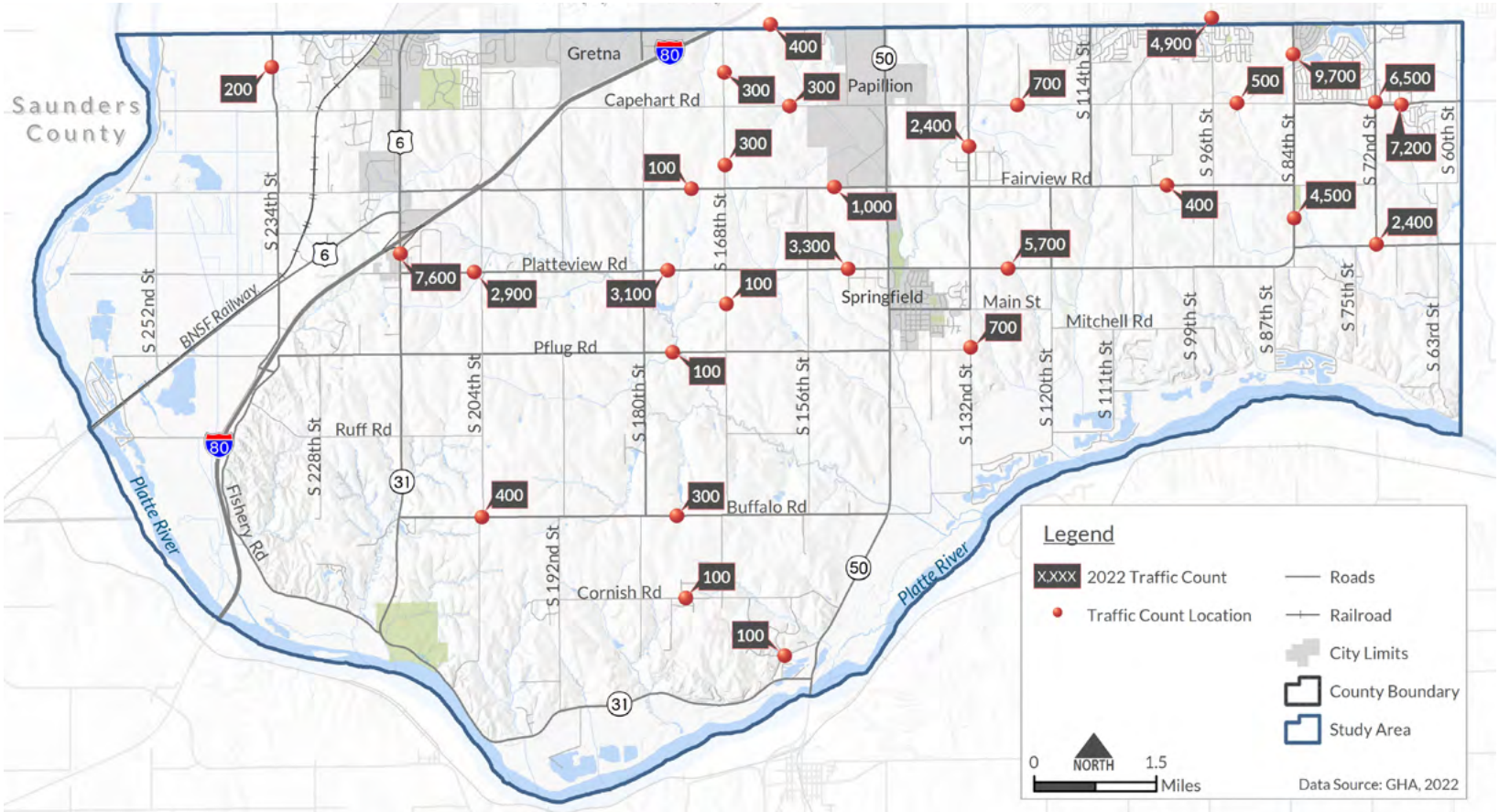
- Planning level traffic operations
- Crash history assessment
- Network connectivity and gap assessment by mode
- Environmental constraints
- Man-made constraints
- Asset conditions for pavement and bridges

### Planning Level Traffic Operations

Traffic flow largely reflects the number of vehicles that move through the area, the design and speed of the corridor, and the intensity of development in the area, which are expected to increase substantially from current conditions. MAPA provided traffic count data collected in 2022, which helps to show how much traffic is using the cross-county road network in relation to traffic flows. The daily traffic volumes presented in **Figure 3** illustrate the traffic on the local road network in Sarpy County.

While it is recognized that currently the study area is largely rural in nature and anticipated to change as communities urbanize into the study area, it is important to know the baseline from which the transportation system is starting.

**Figure 3: Study Area Daily Traffic Counts**



### Crash History Assessment

A high-level review of available crash records was completed for roadways in the study area. NDOT provided records of crashes occurring between 2016 and 2020 to MAPA. The crash record counts confirm that the heaviest traveled roadways also have the most crashes. State highways and interstates represent the largest number of overall crash records. Fairview Road, Platteview Road, and 204th Street represent the County roadways with the largest number of crash records.

The 20 intersections with the largest number of crashes were also identified for the study area. More than three-quarters of these locations occurred either on the state highway network or Platteview Road. There was a total of 15 fatalities recorded between 2016 and 2020. Six of the fatalities occurred at intersections along the interstate, state highways, or Platteview Road.

More details about the crash analysis are provided in **Appendix A**.

### Network Connectivity and Gap Assessment by Mode

Several plans from the different jurisdictions in western Sarpy County addressed recreational trails in the area. After a review of the plans, five trails emerged as major connectors in the region. These consisted of the MoPac Trail, 144th Street Trail, Keystone Trail, Bellevue Loop Trail, and West Papio Trail. Together, these trails play a major role in enhancing mobility and connectivity across the region.

The Cities of Springfield, Gretna, and Papillion each have an existing trail network. However, outside each City's limits, gaps exist in the regional trail network. In many instances, bicycles or pedestrians must use the roadway shoulder to navigate a gap between jurisdictions, a practice that is often uncomfortable for most users.

### Asset Conditions for Pavement and Bridges

NDOT provided data that documents the existing condition of the interstate and non-interstate state highway system. No segments of the existing network are rated Poor, and most segments are listed in Good or Excellent condition.

Sarpy County bridges are inspected routinely. Half of the 10 bridge structures are listed as fracture critical. The bridges all cross streams that drain to the Platte River. As bridges are replaced to support new roadway cross sections, design should provide for the grade-separated crossing of a new trail corridor as well.

More details about pavement and bridge conditions are provided in **Appendix A**.

## Environmental Evaluation

As part of the study, an environmental screening of the study area was prepared. Water resources and conservation areas along the study area's western and southern boundary support land uses that limit development pressure. Water resources, parks, and farmland areas of statewide importance are environmental resources that most influence the current land use context in the study area.

This study can inform methods for mitigating future environmental issues, including noise, floodplains, and wetlands. More details about the environmental baseline are provided in **Appendix A**.

### Noise

Noise abatements may need to be evaluated for individual projects in the study area, depending on the nature of the project, adjacent land uses near the project locations, and forecasted traffic speeds. For federal- and state-funded projects, noise evaluations will follow the NDOT Noise Analysis and Abatement Policy. Based on noise modeling projections, noise abatement measures will be evaluated for feasibility and reasonableness.

### Floodplains

Areas of the floodplain are present in several locations throughout the study area (along the Platte River in the south and west section of the study area and along the Springfield and Buffalo Creeks in the central portion of the study area). The study area exists outside the Papillion Creek Partnership, which has adopted floodplain development standards enforced by each jurisdiction. The same floodplain management principles are applicable to areas of Sarpy County outside the Papillion Creek Watershed, unless exempt from the local floodplain policy adopted by the Papillion Creek Partnership.

### Wetlands

Based on the National Wetlands Inventory and National Hydrography Dataset, potential wetlands and channels are present in the study area. The project area's southern border includes approximately 35 miles of Platte River shoreline, including numerous tributaries such as the Buffalo Creek, Springfield Creek, and Turtle Creek. In addition, the proposed project area encompasses the Elkhorn River confluence with the Platte River in the northwest corner. Many other wetlands and water resources are likely to be present throughout the study area and would need to be determined with a field review of specific project locations.

# FUTURE GROWTH AND CONNECTIONS

## Land Use and Development Trends

Future land use maps from Sarpy County and the Cities of Gretna, Springfield, and Papillion are shown in **Figure 4–Figure 7**. The City of Gretna is currently in the process of updating their comprehensive plan, so the current future land use map shown references an older version. These maps lay the foundation for not only understanding the nature and patterns associated with future travel but also opportunities for future multimodal connections.

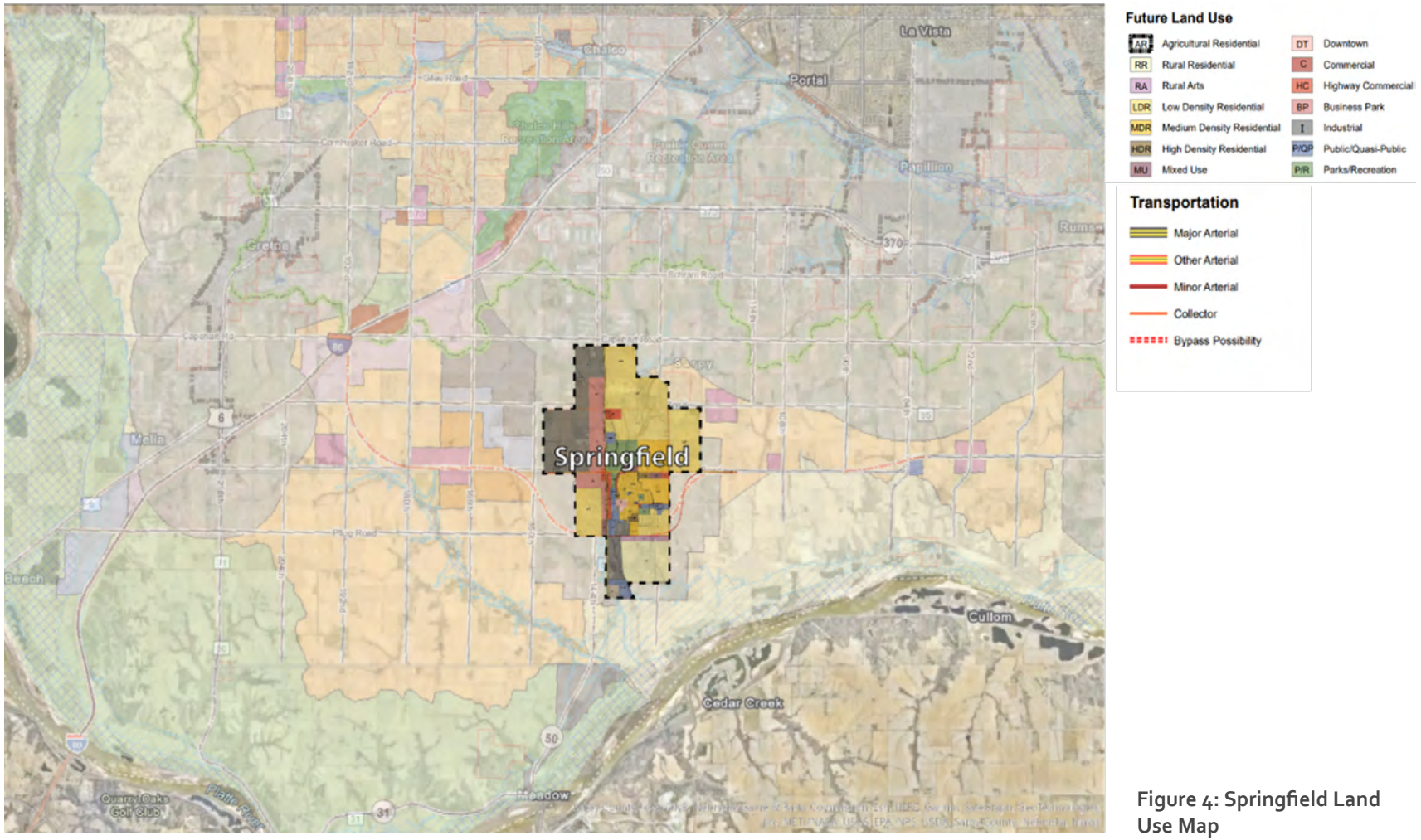



**Figure 4: Springfield Land Use Map**

Figure 5: Papillion Land Use Map

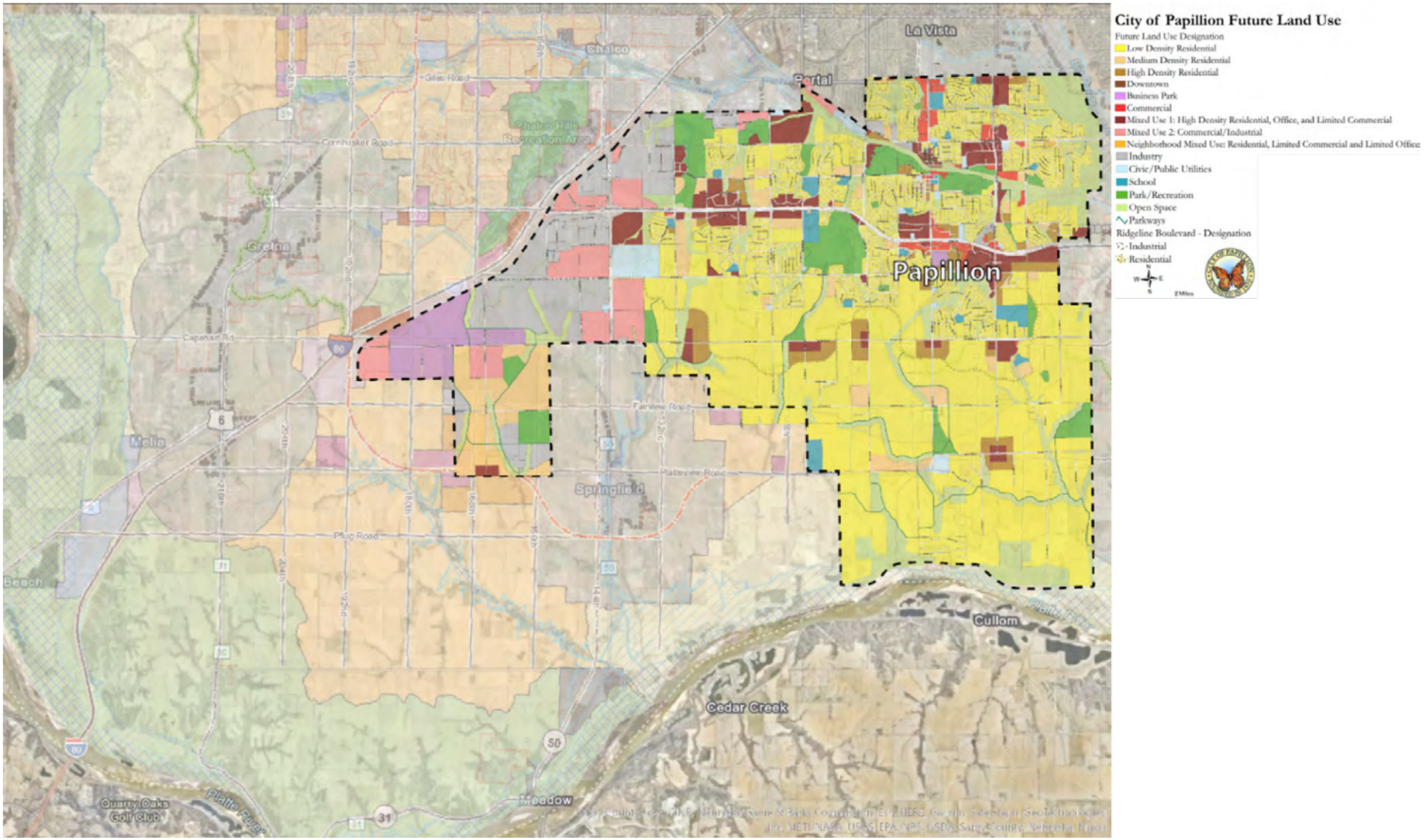
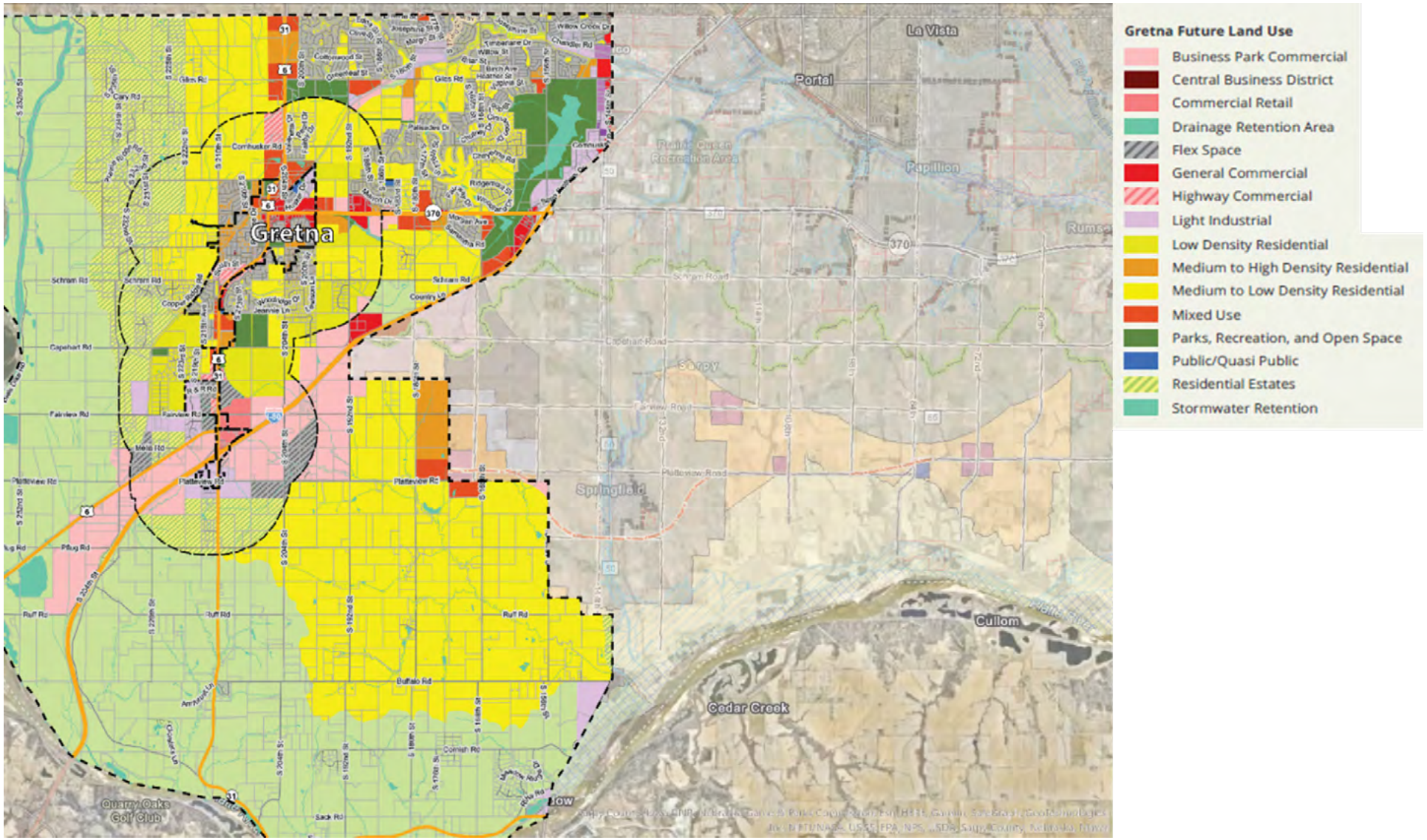
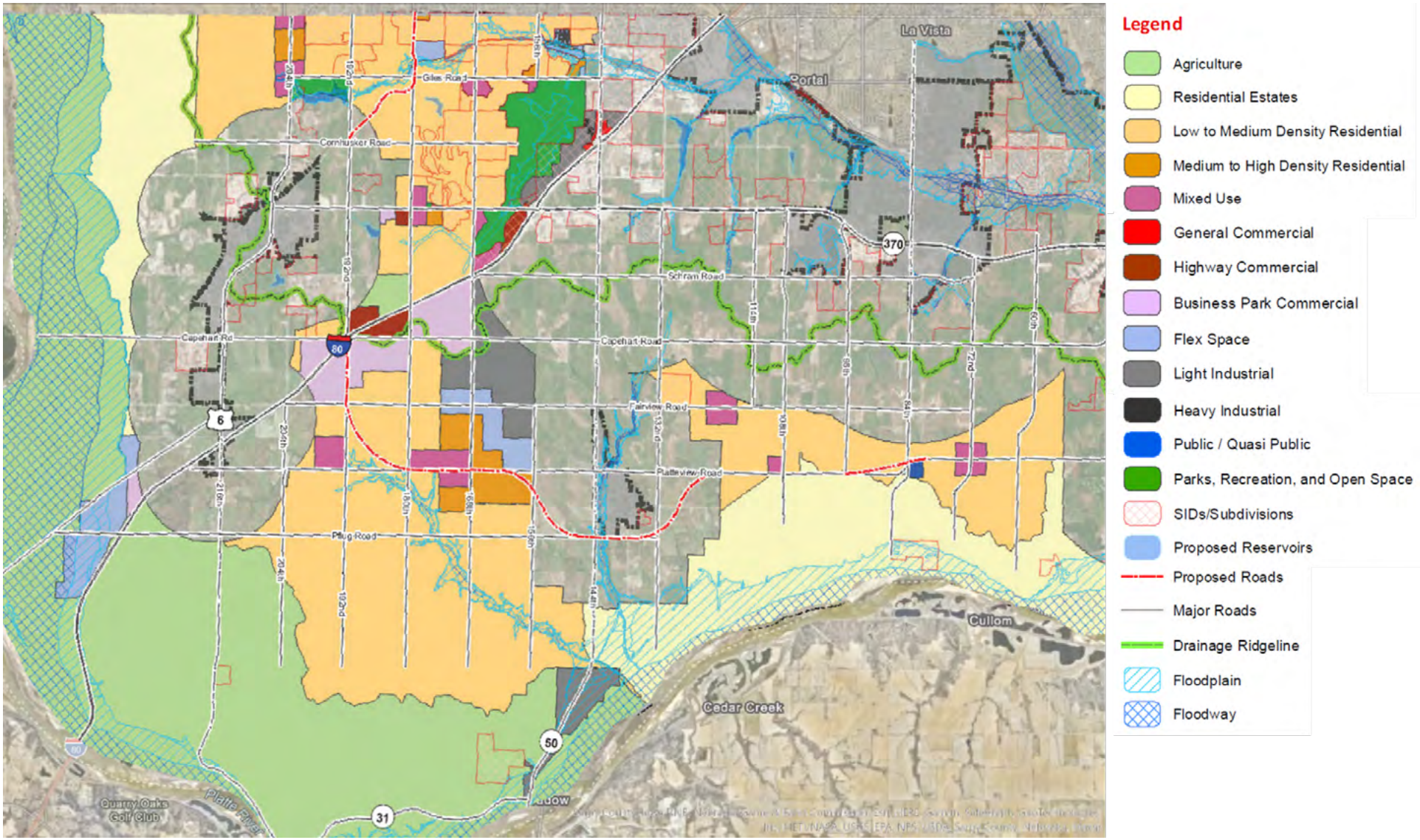


Figure 6: Gretna Land Use Map




*Gretna Future Land Use map currently being updated.

Figure 7: Sarpy County Land Use Map




The study team coordinated with MAPA and local jurisdictions to identify three land use contexts that were used for evaluating alternatives:

- Suburban scale developments
- Mixed-use urban scale developments
- Rural development patterns

Much of the anticipated future rural development is located in the area labeled as the conservation zone (shown as agriculture land adjacent to the Platte River.)

## Future Scenarios and the Travel Demand Model

The agencies in the region use the regional Travel Demand Model (TDM) to plan for future transportation needs, which provides the capability to evaluate land use and transportation scenarios. Future land use projections are included in the TDM to forecast future travel and traffic patterns.

Projected traffic volumes are based on anticipated development patterns and can estimate the needed capacity of the future street system. Streets with traffic volumes forecasted to exceed available capacity are locations to be considered for safety and capacity improvements, including an alternatives evaluation and design for corridor ROW protection, roadway cross section, access management, intersection design, and accommodation for active transportation. For individual developments, local jurisdictions will require traffic impact studies to be completed with subdivision applications. This process helps determine whether the adjacent arterial and collector street network can support the proposed development demand. Development proposals are typically only reviewed by the jurisdiction responsible for approving the application.

The TDM was reviewed to develop the WE-STEP plan to provide a flexible network and set of guidelines to accommodate the travel needs for anticipated future development. Additional follow-up work will be completed to review potential network scenarios leveraging an updated version of the MAPA TDM later in 2024.

A significant driver of traffic growth is that recent planning and investments have allowed for the extension of sewer services into the study area, which will allow urban scale development in the future. The future sewer growth area is shown in **Figure 8**.

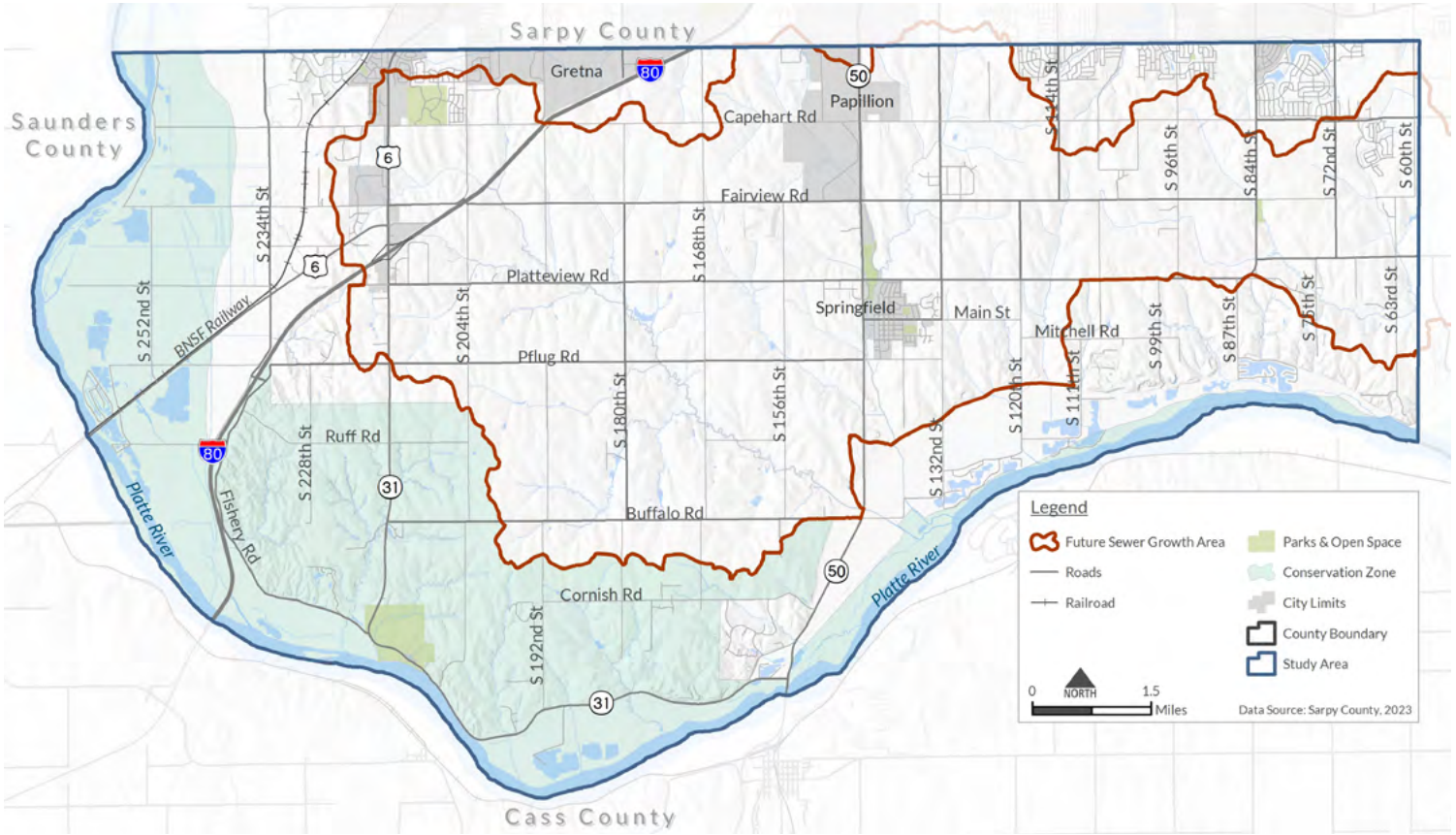



**Figure 8: WE-STEP Future Sewer Growth Area**

## Multimodal Transportation Needs Assessment

A goal for western Sarpy County's street corridors is to make them more supportive of the broader needs of active transportation and transit users. Some corridors, including I-80, Platteview Road, State Highway 6, and State Highway 50, currently present barriers to connectivity for anticipated community growth. A limited number of crossing locations are anticipated that can present safe, comfortable active transportation corridors, which are needed to reinforce essential community and regional continuity.

The feedback from community members and stakeholders in the study area was that planning for a connected multimodal network was important, including the following:

- A complete network of shared-use paths and neighborhood connections for pedestrians and bicyclists to provide active transportation connections among homes, workplaces, services, and schools
- A system that can accommodate and support future public transit services in the study area
- Plan for safe crossings for pedestrians and bicyclists
- Recreational trail connections in the study area

# STAKEHOLDER AND PUBLIC ENGAGEMENT

Community and public engagement helped form WE-STEP by focusing on engaging with planning and engineering staffs from partner agencies, stakeholders that were frequent users of the system, and the broader public to understand what elements were most important to include in the plan. These engagement activities included the following:

- Steering and Technical Advisory Committee (STAC) meetings: A meeting was held with the STAC once a month beginning in June 2023, for a total of 14 meetings, to set plan direction. The STAC includes representatives from the City of Gretna, City of Papillion, City of Springfield, and Sarpy County.
- Online public meeting: An online public meeting was available from March 25 through April 15, 2024, at westernsarpytep.com or via the City of Gretna's project page for WE STEP. The meeting's purpose was to provide information about WE-STEP and gather public feedback on the safety and design, bicycle and pedestrian connections, future development, and where the transportation network needs to support an anticipated increase in traffic.
- Small group stakeholder meetings: The project team held several small group stakeholder meetings in April and May 2024, including four in-person meetings and one virtual meeting, for identified stakeholders who operate in Sarpy County. The purpose of these meetings was to present information about the study's status and solicit input on the future of transportation in western Sarpy County.

See **Appendix B** for the stakeholder and public engagement summary.

# ALTERNATIVE ANALYSIS AND DEVELOPMENT

## Performance Objectives

A set of performance objectives was developed to help evaluate how well ideas and designs generated for the WE-STEP system fit with stakeholder and agency study area goals. These performance objectives guided the decision-making process that led to plan recommendations. The performance objectives are documented and described in **Table 1**.

**Table 1. WE-STEP Performance Objectives**

| PERFORMANCE OBJECTIVES | DESCRIPTION AND CONSIDERATIONS |
|---|---|
| Future development projections and land use | Areas of future urban scale development should provide corridors with sufficient multimodal access and capacity. Typology designations are flexible to respond to adjacent land use context. |
| Travel demand | Multimodal travel demand is a direct result of land use patterns; more development leads to more trips. Corridors were designated to meet reasonably anticipated travel throughout the WE-STEP study area. |
| Connectivity | A well-connected network has a dense set of street connections with many through connections. High connectivity leads to decreased travel distances and increased route choice for more direct travel. |
| Roadway design | Roadway design considerations overlap with many other performance objectives, including safety, connectivity, and cost. In many cases, design is less an objective rather than a tool for implementation. |
| Safety | Safety is becoming the primary consideration in transportation planning and was a primary consideration in WE-STEP. Features and standards are included in the study that increase travel safety for all system users. |
| Transit access | There is currently no transit service in the study area due to its predominantly rural nature. However, as the study area urbanizes, the network needs to plan for transit access. Many stakeholders recognize that transit access may be important in the future. |
| Bicycle and pedestrian access | As the study area urbanizes, the opportunities for bikeable and walkable trips will increase significantly. Decisions made in this study considered how to create safe bicycle and pedestrian connections. |
| Environmental considerations | An environmental screening was conducted, and the future network recognizes environmental constraints, including conservation areas where limited future development is anticipated. |
| Freight and emergency response access | Recommendations for network connections and standards recognize that larger freight and emergency response vehicles will be traversing the future network, and standards will need to accommodate these uses. |
| Cost | The scalable network recommendations in WE-STEP recognize that as corridors transition from rural to urban corridors, there are opportunities to reduce long-term lifecycle costs. |

# RECOMMENDATIONS

## Network Typologies

A range of street typologies were identified for the WE-STEP study area that could serve the varied transportation modes. STAC established the following principles for WE-STEP:

- The typologies should be distinct from federal and state functional classes.
- The typologies should accommodate all modes of travel.
- The typologies should be flexible to its surrounding land use.
- The typologies should be flexible to accommodate an interim and an ultimate cross section.

### Arterial Typologies

Beyond the 2050 travel patterns identified in the MAPA model, the typologies identified two different categories of main growth arterials:

- **Arterial 1 –** Highest level of mobility arterial with no on-street parking and the ability to expand to six lanes of traffic in addition to bicycle and pedestrian infrastructure.
- **Arterial 2 –** Typical arterial corridor with a high level of mobility, no on-street parking, and the ability to expand to four lanes of traffic in addition to bicycle and pedestrian infrastructure. Every arterial on the 1-mile grid will at least be an Arterial 2 in the WE-STEP growth area as defined by the potential sewered area, shown in **Figure 8**.

A third typology, Arterial 3, was added to address conservation area corridors. If development occurs in these areas, it is anticipated to be limited, so the need for widening should be limited. These corridors could potentially have shared-use paths for recreational biking and walking opportunities.

The first step in developing typical sections was to identify standard ROW widths. The initial focus was on the arterial network, which would provide a system to link across the study area, connecting housing to jobs, entertainment, schools, and other land uses. To accommodate these mobility and functional needs, the general characteristics of each were as follows:

1. **ROWs**
   - Arterial 1: 150-foot-wide ROW
   - Arterial 2: 110-foot-wide ROW
   - Arterial 3: 100-foot-wide ROW
2. **Access control**
   - Full access at a recommended minimum spacing of 1/4 mile (Arterial 1 and 2)
   - Partial access at a recommended minimum spacing of 1/8 mile (Arterial 2)
3. **Bicycle and pedestrian infrastructure**
   - All Arterial 1 and Arterial 2 routes will have an adjacent shared-use path, with a recommended width of 12 feet.
   - Pedestrian crossings will occur at all controlled intersections and key non-controlled intersections with pedestrian crossing treatments/ enhancements.

In some corridors, particularly in the northern parts of the study area, large portions are already being platted due to development in process. In these corridors (Arterial 2.2), ROW is set at 100 feet wide due to past policy in the WE-STEP jurisdictions.

**WE-STEP TYPOLOGIES**

- **Arterial 1:** Highest mobility corridors with 150-foot dedicated ROW.
- **Arterial 2:** High mobility corridors that accommodate all modal users, developed on the 1-mile grid.
- **Arterial 3:** Conservation area arterials, anticipated to remain rural roads for the foreseeable future. If development occurs along these corridors, a 100-foot ROW is recommended to accommodate a potential turn lane and potential recreational trails in the long term.
- **Collector:** Corridors that connect neighborhoods and connect to arterials. Located 1/2 mile from arterials and ideally continuous corridors for 2 or more miles.

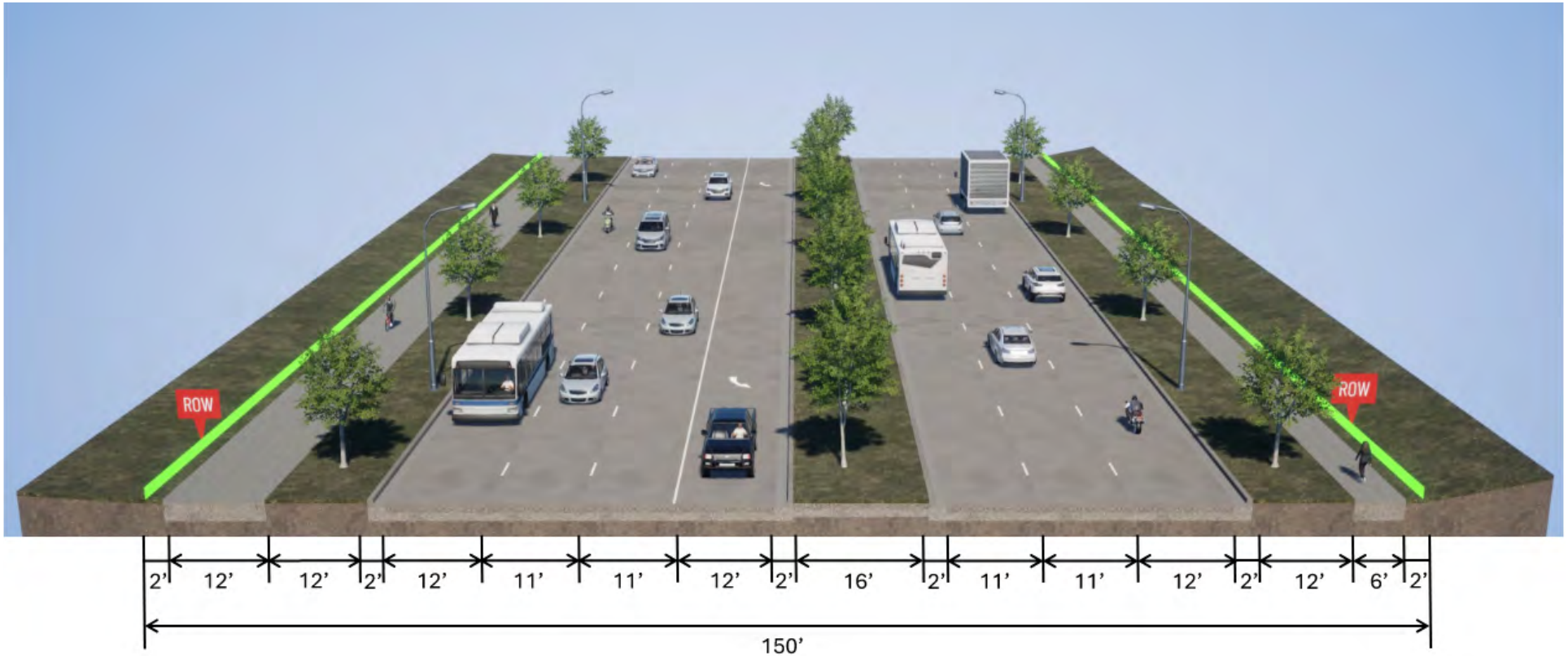
In some corridors, particularly in the northern parts of the study area, large portions are already being platted due to development in process. In these corridors (Arterial 2.2), ROW is set at 100 feet wide due to past policy in the WE-STEP jurisdictions.

### *Arterial 1*

Arterial 1 is intended to be a continuous route that moves traffic between communities in the study area and supports long distance travel. The ultimate design for Arterial 1.1 would be a maximum of six lanes and a recommended ROW width of 150 ft. Turn lanes, a 12-foot shared use sidepath, and landscaped buffers were also included. **Figure 9** shows a standard typical section for Arterial 1.1.

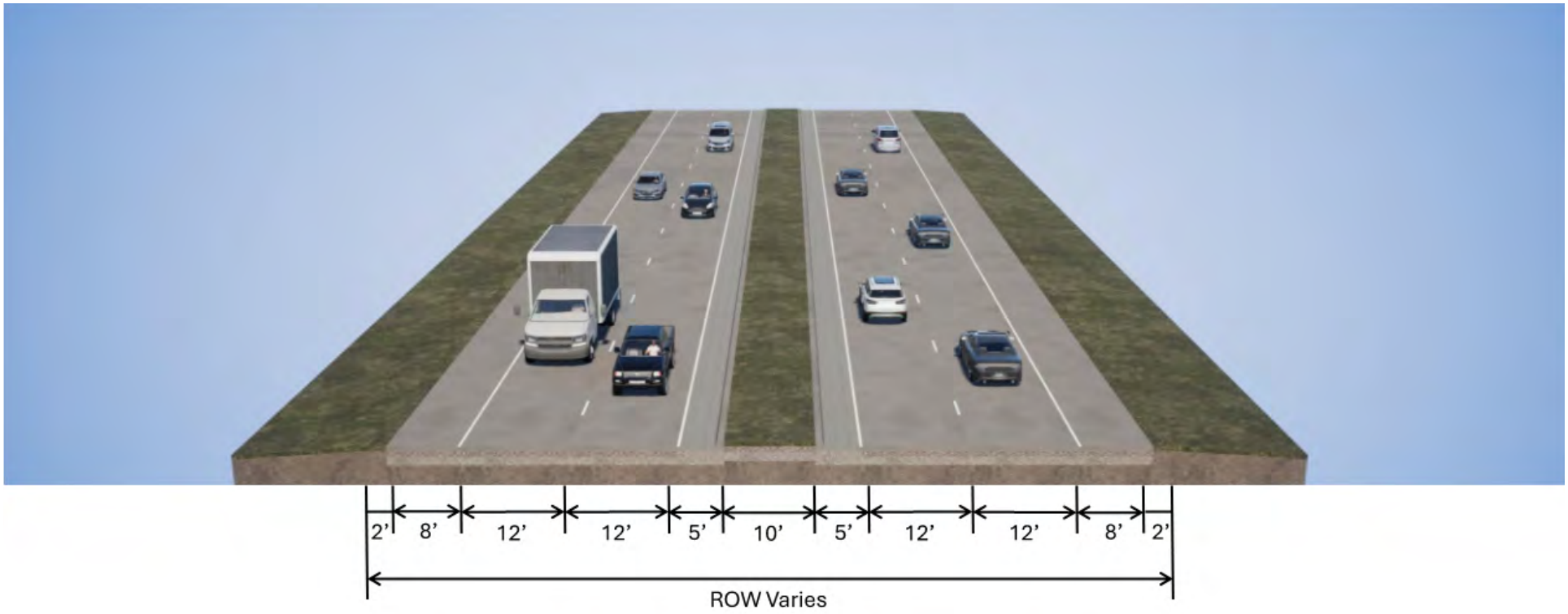
This section illustrates what would be potential "ultimate" typical cross-sections. In most locations 4-lane and 6-lane divided cross-sections would not be constructed first; current rural roads would likely have an interim 3-lane improvement for safety and traffic benefits in many locations.

**Figure 9: Arterial 1.1 Ultimate Typical Section**



Planning is currently underway for a Southern Sarpy Expressway that would follow the Platteview Road and Pflug Road corridors between US-75 and N-36. The typical section includes a hybrid design with an urban median and outside shoulders and ditches. There is currently no standard ROW width due to the rural nature of the section, the expected terrain of the area, and the varying needs of limited-access, high mobility corridors. Instead, ROW is expected to extend out to the ditches for maintenance. This typical section is in a preliminary design stage and may be updated based on developments with the Southern Sarpy Expressway project. **Figure 10** shows the Southern Sarpy Expressway typical section.

**Figure 10: Southern Sarpy Ultimate Typical Section**



*Arterial 2*

An Arterial 2 connects major areas of activity within and between communities and would include four lanes in the ultimate design and a recommended ROW width of 110 feet. Two subcategories of the Arterial 2.1 typical section were developed: one for suburban development patterns and one for urban scale development patterns.

Arterial 2.1a is intended for suburban areas and includes a 12-foot shared-use path, sidewalk, and landscaped buffers. **Figure 11** shows the standard typical section for Arterial type 2.1a. An Arterial 2.1b shows how this flexible right-of-way can accommodate urban areas and includes on-street parking, on-street buffered bike lanes, and sidewalks. **Figure 12** shows the Arterial 2.1b standard typical section.

**Figure 11: Arterial 2.1a Ultimate Typical Section**

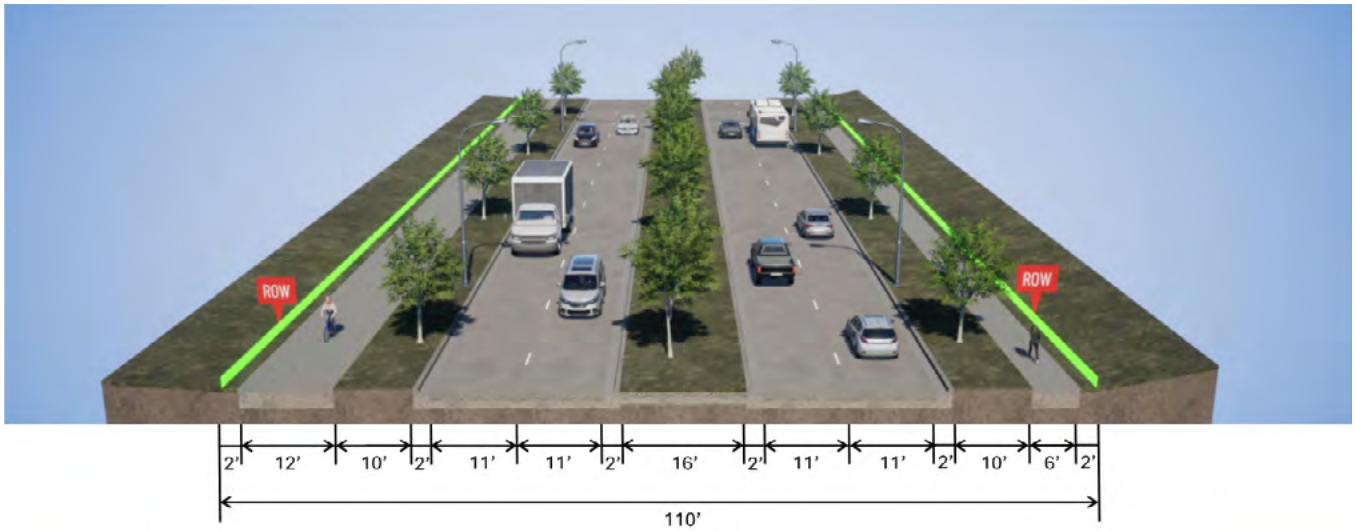
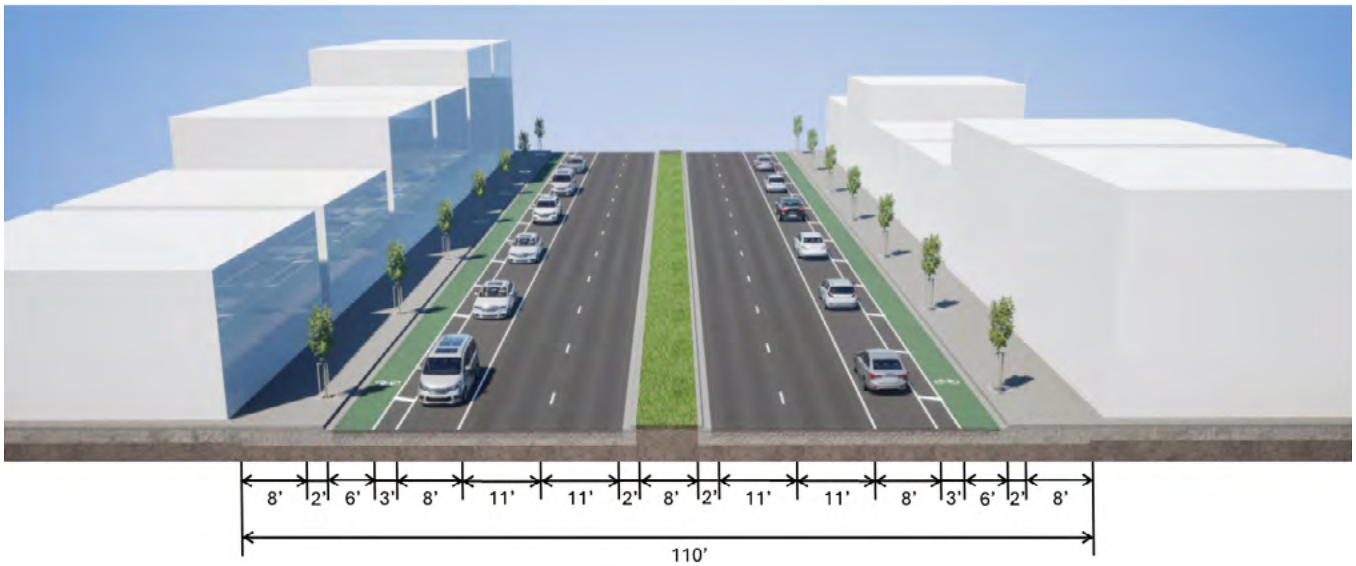



**Figure 12. Arterial 2.1b Ultimate Typical Section**



Some corridors in the study area are currently in development or were recently developed and are only platted to accommodate 100-foot-wide ROW. These corridors have been identified as a subcategory called Arterial 2.2. An Arterial 2.2 would accommodate four lanes of traffic and a 12-foot sidepath separated by a raised, stamped median. **Figure 13** shows a standard typical section for Arterial 2.2.

### *Arterial 3*

A third arterial type was also identified for corridors located in the conservation zone. These corridors would reserve 100 feet of ROW for redevelopment, but it is anticipated that there will be a limited need for widening. An Arterial 3 is expected to include one travel lane in each direction and a two-way left-turn lane. These corridors could potentially have sidepaths for recreational biking and walking opportunities. **Figure 14** shows the standard typical section for Arterial 3.

**Figure 13: Arterial 2.2 Ultimate Typical Section**

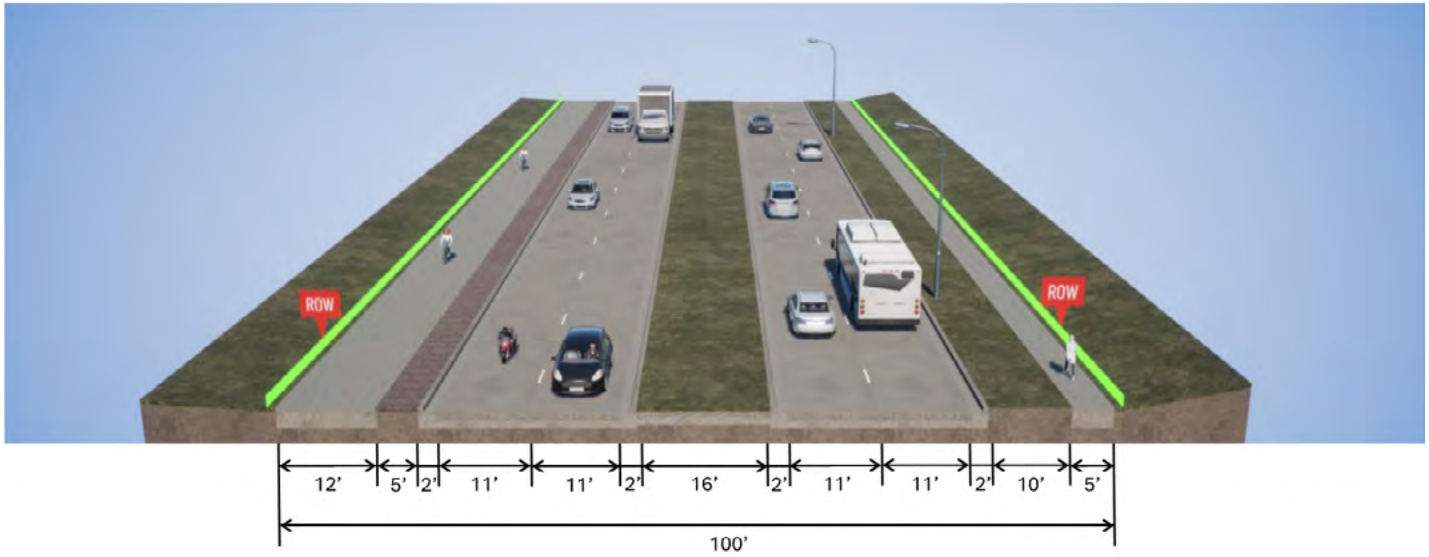
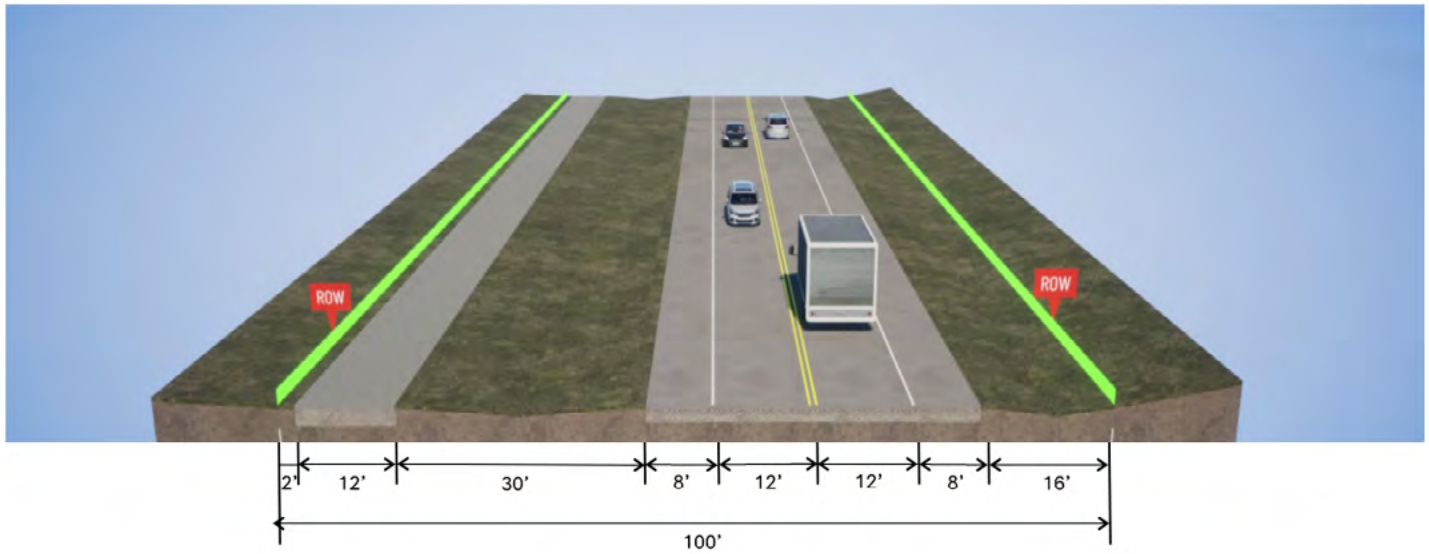



**Figure 14: Arterial 3 Ultimate Typical Section**



## Network Map

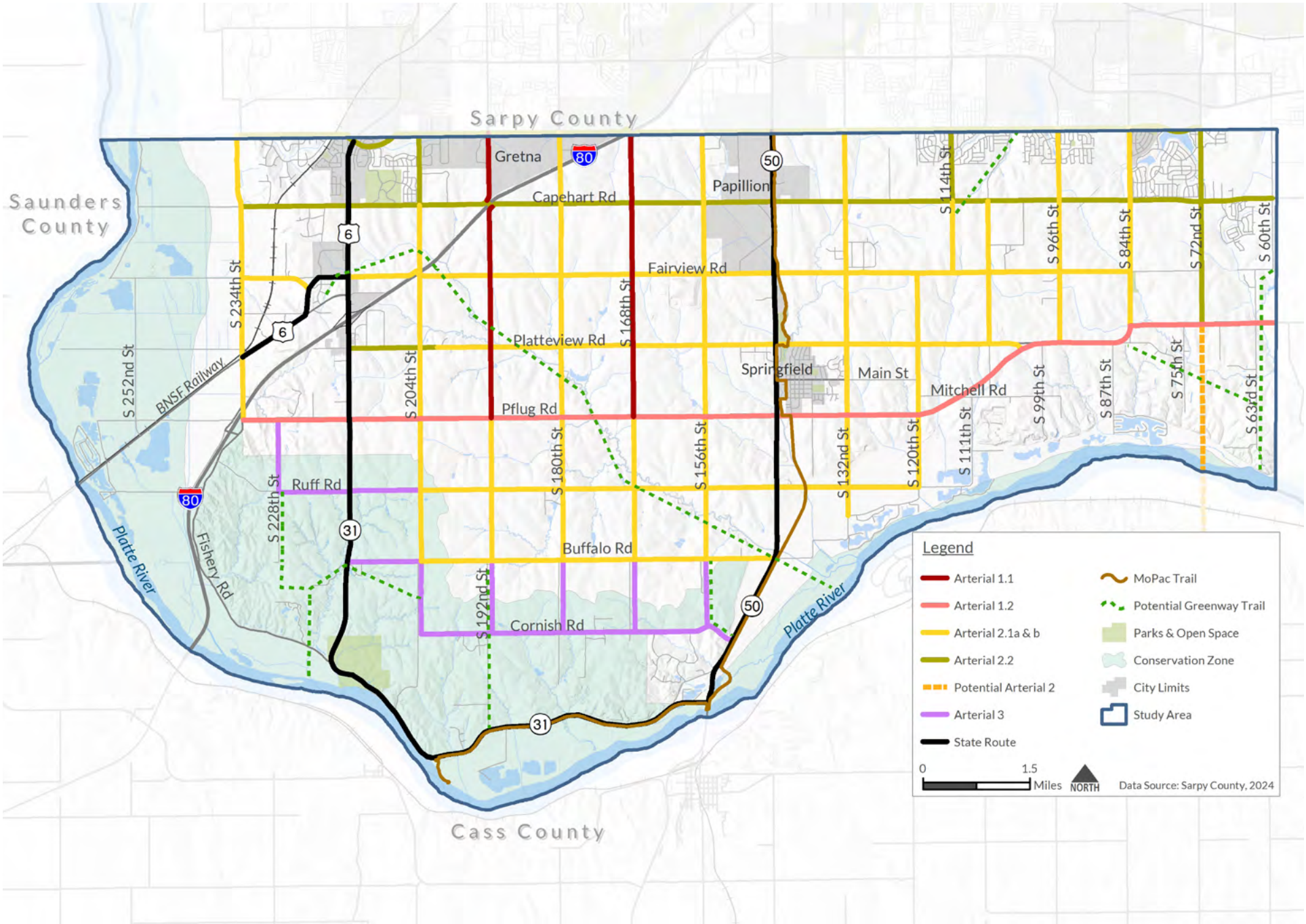
A future network map (**Figure 15**) was developed to identify which of the arterial types is recommended for the major corridors in the study area. Every arterial on the 1-mile grid will be an Arterial 1 or 2 in the WE-STEP growth area defined by the potential sewered area. To identify the jurisdictional boundaries, each city is highlighted. The boundaries for the planned future sewered area are also shaded on the map.

Additionally, several trails are shown on the map, including the existing MoPac Trail located along 144th Street and the potential Greenway Trail and other key arterial paths. Some trails are still in development and may change on further review and design. However, the goal of the trail network is to provide improved continuity and access for pedestrians and bicycles throughout the study area.

The network was established based on the latest information available in the study area, including the following:

- Travel demand model runs through the year 2050. The input data used an older version of the MAPA model, which indicated lower growth in the WE-STEP area than the latest land use growth assumption. Therefore, the traffic forecasts did not assume as much land use and traffic growth as the in-progress model updates (anticipated for late 2024) will assume.
- Current planning for new I-80 interchange access in Sarpy County anticipates that 168th Street and 192nd Street are the corridors with the potential for future I-80 interchanges. Both corridors also have significant connections to the northern parts of Sarpy County and Douglas County, indicating that these two corridors are the highest-mobility corridors (Arterial 1) in the WE-STEP area.
- Current planning for a high-mobility, limited-access east-west corridor in the study area has focused on the Platteview Road – Pflug Road corridor. This corridor was identified as the Southern Sarpy Expressway.
- Northern portions of the network were developing quickly during this study, particularly Schram Road and Capehart Road corridors, so these ROW-constrained corridors were designated Arterial 2.2 to reflect the limited 100-foot ROW widths available.
- A conservation district overlay is designated for much of the southwest portion of the WE-STEP area, which limits development potential. Therefore, this part of the network was given an Arterial 3 designation.

Figure 15: WE-STEP Network Map



## Collector Route Policy

The collector road system will link developments and local streets with the arterial network and provide access and traffic circulation in residential, commercial, and industrial areas. The collector system is integral to the overall street system because it provides connections for short-distance trips and opportunities to incorporate bicycle and pedestrian connections. STAC recognized the following benefits of a system of continuous collector and local streets within the WE-STEP area arterial grid system:

- Provides a resilient system where an incident or closure on one segment allows for multiple alternative paths with less negative impacts due to rerouted traffic
- Less out-of-direction travel due to multiple route choices for each trip, particularly for shorter trips in a neighborhood or subarea, eliminating the need to use an arterial to travel less than a few miles
- Improved connectivity for pedestrians and bicyclists
  - These trips tend to be shorter, and the distance and directness of connections have a significant impact on the practicality and probability that someone can and will walk or bike for a shorter trip.
- Potentially delayed or eliminated need for arterial improvements and widenings due to traffic dispersing to collector and local streets for some trips

The collector typology was identified so that it would do the following:

- Ideally have no direct driveway access
- Include a ROW width of 60 feet minimum
- Include a minimum typical pavement width of 26 feet that could accommodate one travel lane in each direction and on-street parking or bike lanes
- Include sidewalks on both sides of the street, each at least 5 feet wide
- Recommend speed control and safety features

Some speed control strategies include the following:

- Roundabout/traffic circle
- Median island
- Median barrier/forced turn island
- Raised intersection
- Chicane
- Realigned intersection
- Choker
- Speed cushion
- Corner extension/bulb-out
- Speed hump
- Lateral shift

Three example typical sections were developed to show design options for collector routes. **Figure 16** includes a narrow pavement width of 26 feet that accommodates one travel lane in each direction. The section also allows on-street parking on one side of the street. **Figure 17** includes 40 feet of pavement that can accommodate one travel lane in each direction and on-street parking on both sides. A bump-out is also included for this section as a speed control strategy to minimize the potential for speeding and provide shorter crossing distances for pedestrians. **Figure 18** is an example of a boulevard section that includes one travel lane in each direction separated by a raised, landscaped median. On-street bike lanes are also included. This section does have a wider width to accommodate the various elements. Collectors are designed for relatively low speeds and provide access to residential areas. It is recommended that on-street facilities and speed control strategies be provided to reduce the possibility that speeding may occur and improve the safety of the corridor.

**Figure 16: Collector Road Option 1 Typical Section**

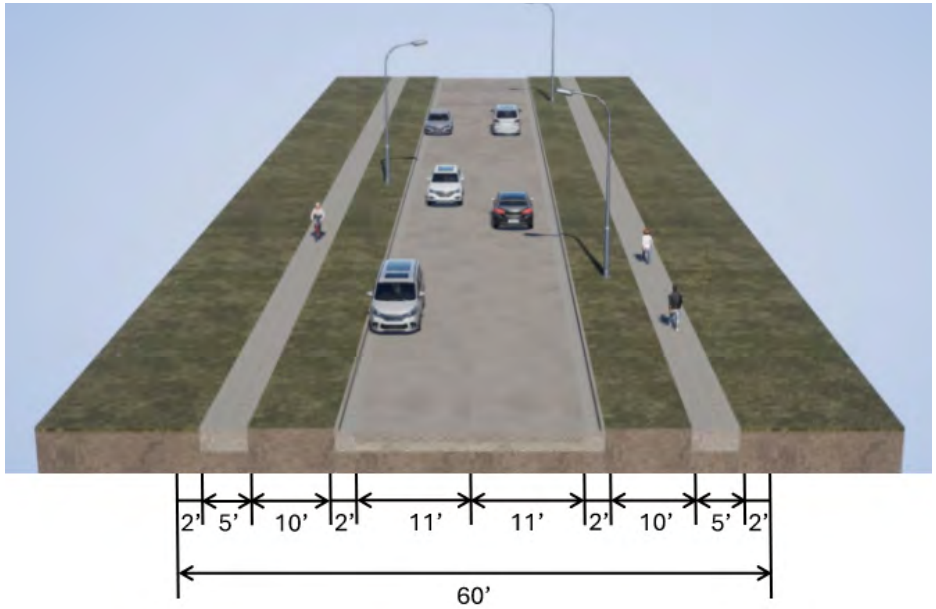


Figure 17: Collector Road Option 2 Typical Section

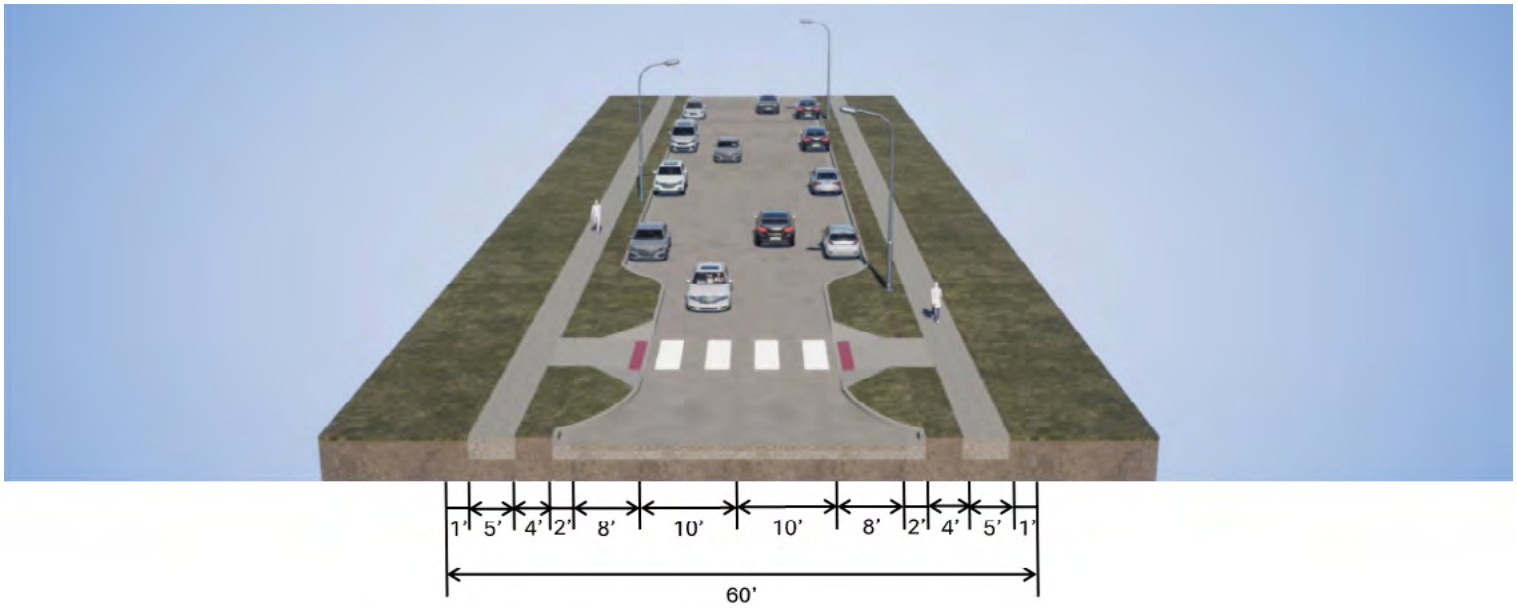
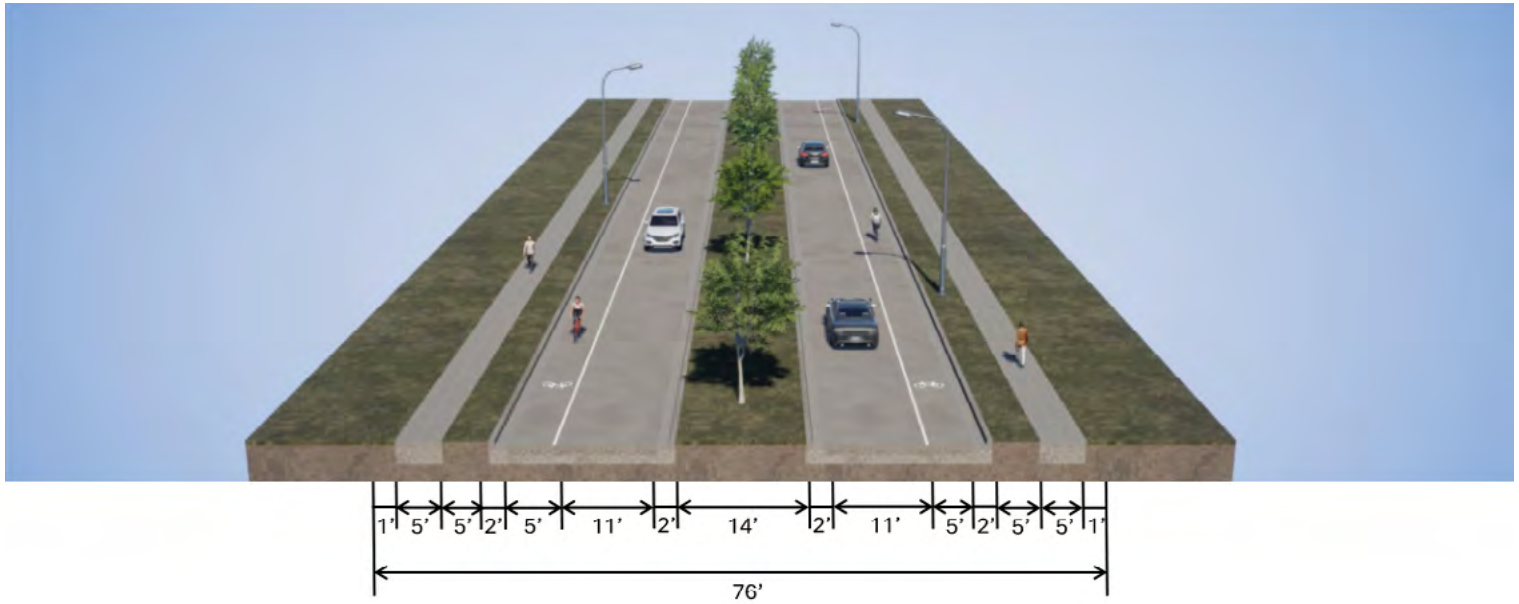



Figure 18: Collector Road Option 3 Typical Section

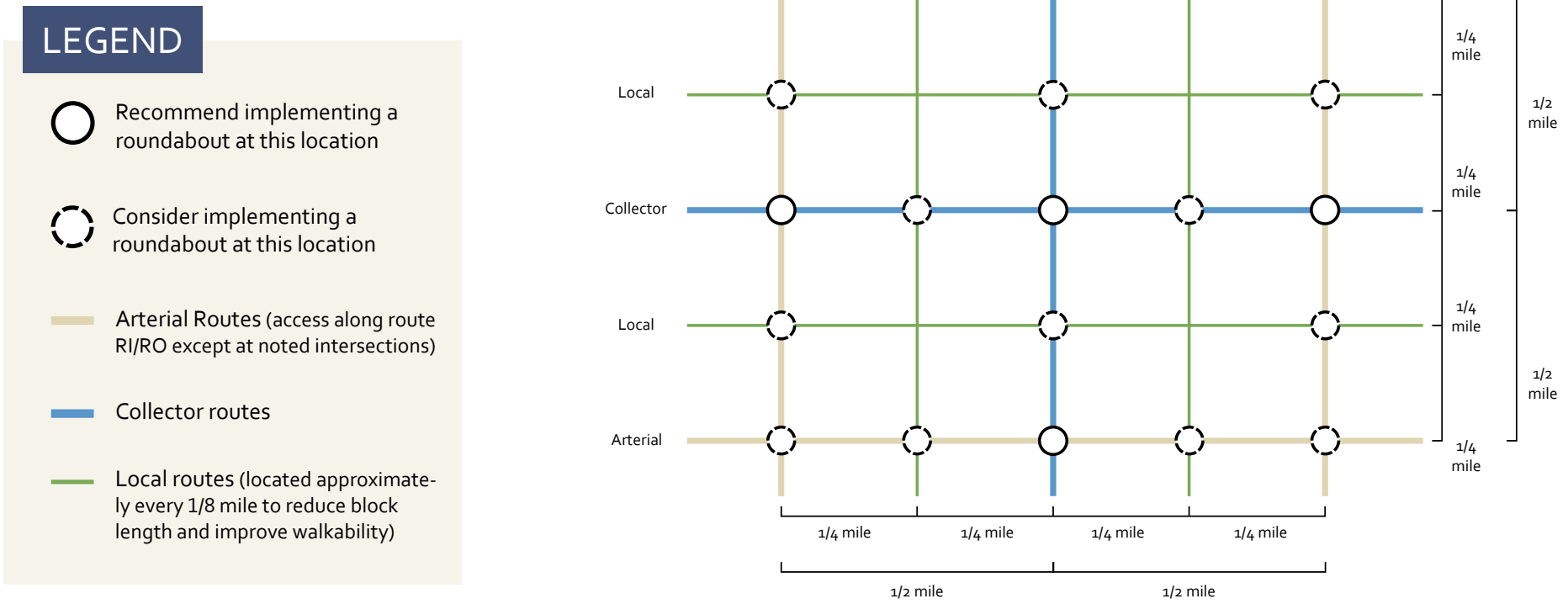


A full listing of potential cross sections and options for an interim three-lane cross section is shown in **Appendix E**. To reflect the benefits of continuous collector routes and connected grid systems, a collector and through route policy was developed, which states that every section of the network in a 1 mile grid, considering no human or development barriers exist, should include three continuous collector and local streets approximately every 1/4 mile:

- The 1/2 mile street located in the middle of the section should be a designated collector street when possible and should be continuous for more than one mile.
- The three through streets from each section should form an intersection and align with the three through streets on all adjacent sections. This network design overlaps with the access control elements of the WE-STEP arterials that bound each section, so that a full-access intersection will occur at the 1/4-mile spacing interval with the three through-route streets.
- Roundabouts are an intersection type that could potentially be implemented as a part of this policy.
- In most cases, these through routes should be designed to discourage speeding through speed control strategies, horizontal curvature, and minimizing long stretches between local intersections within a development.
- If human or development barrier exists, including ones that would require the construction of a bridge or box culvert, exceptions can be made to the layout of the collector network.

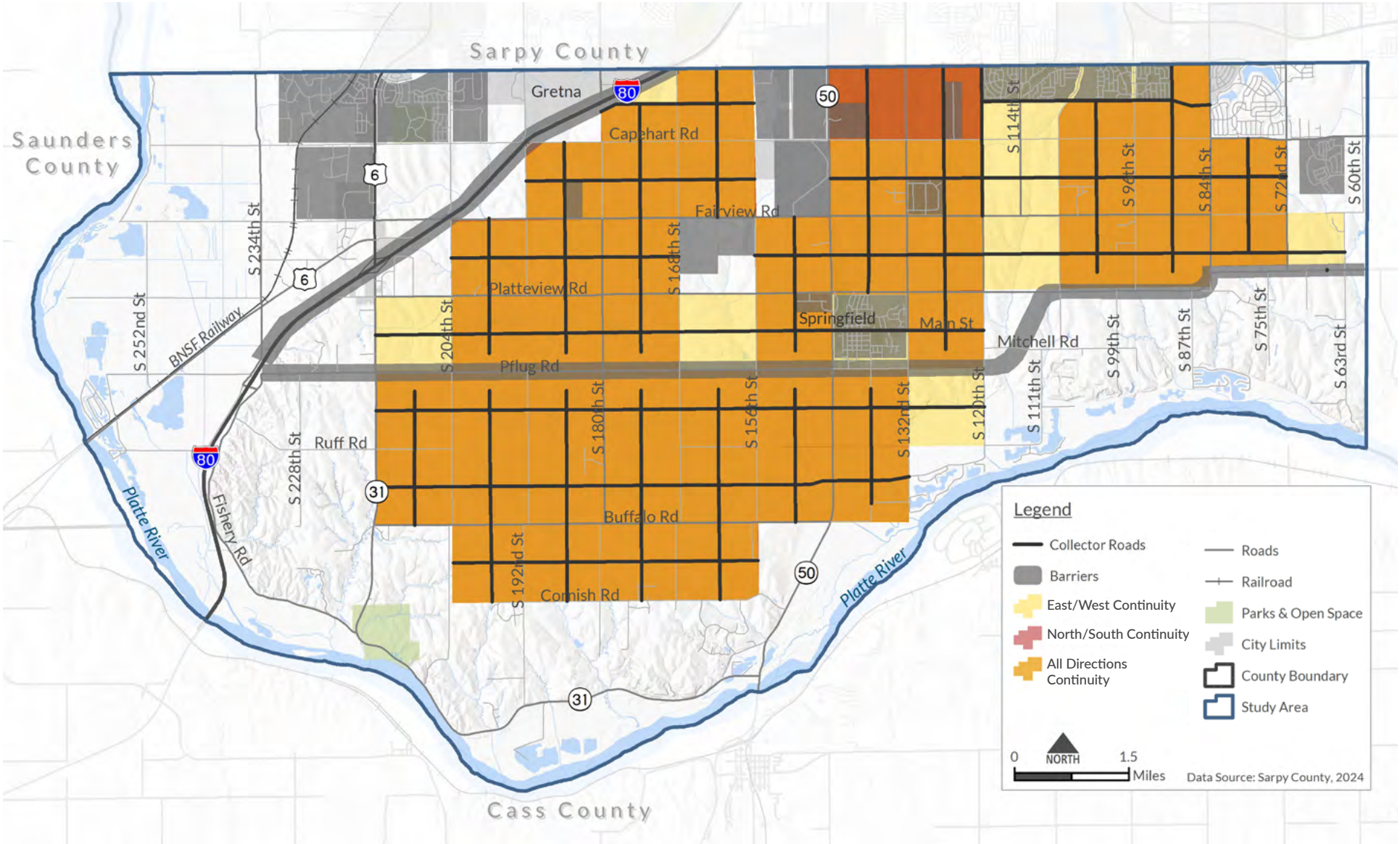
The illustration of this policy and associated locations recommended for roundabout intersection control is shown in **Figure 19**.

**Figure 19: Recommended Collector and Through-Route Policy**



As noted, ideally the ½ mile collector designation would be implemented in locations where at least two miles of a continuous collector could be constructed on approximately the ½ mile spacing between arterials. There are several existing and planned barriers to continuous corridors on the ½ mile like large developments and the planned Platteview-Pflug corridor. **Figure 20** shows some of these barriers and illustrates the ½ mile collector continuity potential for different portions of the study area.

**Figure 20. Collector Through-Route Barriers and Continuity Potential**



# GREENWAY TRAILS

The planning area includes the existing MoPac Trail from the Platte River to Springfield and the 144th Street Trail extending north to Schram Road from Springfield. The study recommends shared use sidepaths to be included on the proposed arterial network. Additional Greenway Trails are also envisioned to develop over time. Two types of corridors identified by the plan are suitable for new Greenway Trails.

### Buffalo Creek Greenway Trail

The City of Gretna adopted an area plan that includes a new Greenway Trail along Buffalo Creek and encourages Trail Oriented Development between US Hwy 6/34 and 204th Street. The associated vision of the Buffalo Creek Greenway Trail through Gretna is to also create community continuity as development expands south across I-80. The area plan recommends including a shared use sidepath along the I-80 interchange bridge when reconstructed and/or providing a grade separated crossing along Buffalo Creek where it passes under I-80 through coordination with NDOT. Buffalo Creek flows about 8 miles southeast from I-80 to the Platte River, flowing under US HWY 50 and the MoPac Trail along the way. The Buffalo Creek corridor will be protected from development encroachment by floodplain regulations within a conservation area. When existing bridges are replaced with new arterial streets they should include grade separated trail crossings at intersections with Buffalo Creek. Conservation areas and buffers are suitable for a trail alignment that can be coordinated between the participating jurisdiction, MAPA, and the Papo-Missouri River NRD.

### Zwiebel Creek Greenway Trail

Interlocal planning between Papillion, Bellevue, and Sarpy County was completed east of 72nd Street separately from this study. East to 84th Street, a Greenway Trail can connect from Platteview Road to 60th Street along Zwiebel Creek consistent with recommendation from that plan. The planning and design for the Platteview Road improvements is considering sidepath facilities and grade separated crossings where needed to facilitate bicycles and pedestrians across the corridor at Zwiebel Creek.

### Conservation Development Trails

Sarpy County Zoning regulations protect a significant portion of the County adjacent to the Platte River consistent with the Conservation Provisions of the Comprehensive Plan. These areas preserve and protect environmentally sensitive areas with conservation techniques by which new developments permanently designate a portion of subdivisions as independent conservation areas. Subdivision reviews within the zoning area will consider multiple evaluation criteria including pedestrian circulation systems. Through coordinated planning, these conservation corridors may be adjusted, but can ultimately provide access between properties, activities, or special features within the neighborhood open space system. Examples of special features to provide access to include the Lied Platte River Pedestrian Bridge, Schramm State Park, Gretna Fish Hatchery Historical Marker, and other cultural destinations such as the Cloisters on the Platte. All roadside footpaths should connect with off-road trails. Conservation Developments for Greenway Trail alignments should be coordinated further between Ruff Road and Fishery Road, from 228th Street to 204th Street and 192nd Street from Cornish Road to the MoPac Trail.

# POLICY GUIDANCE/STANDARDS CHECKLIST

The study team developed a standards checklist to review the guidance for the recommended process of implementing the WE-STEP plan. An extensive standards checklist can be found in **Appendix C**. This section summarizes the major policy elements.

### Travel Demand Model Guidance

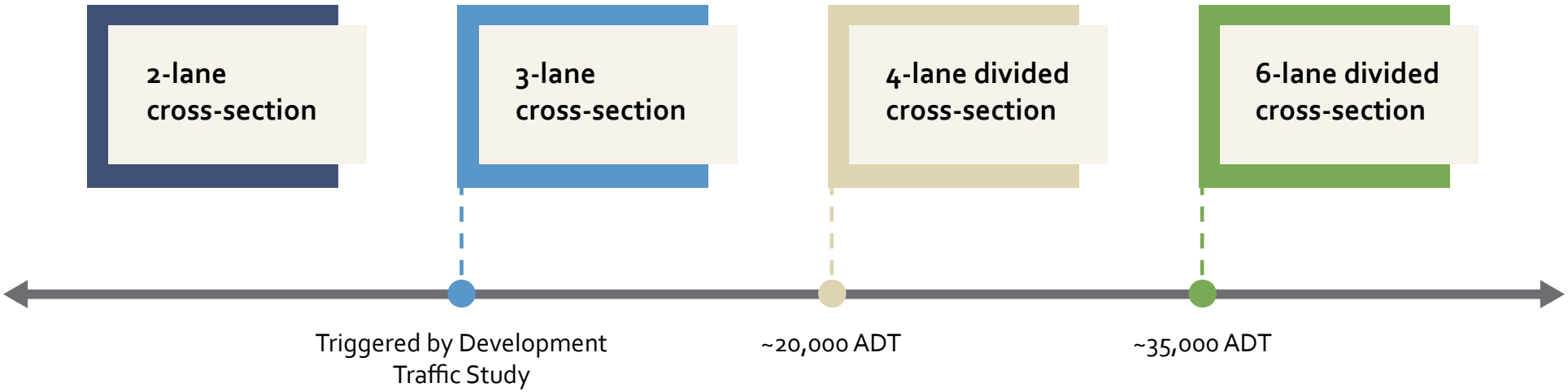
A traffic study should decide the ultimate recommendations on corridor configuration and lanes. However, the TDM provides some guidance about direction for corridor configuration. It is recommended that if the TDM output for the future year is less than approximately 20,000 daily trips, a traffic study should be completed that considers traffic analysis for an ultimate three-lane section.

If the TDM output is between approximately 20,000 and 35,000 daily trips, a traffic study that considers traffic analysis for an ultimate four-lane divided section should be completed. Lastly, if the TDM output projects more than approximately 35,000 daily trips, the traffic study should consider traffic analysis for an ultimate six-lane section. **In some cases traffic studies may identify design recommendations that diverge from these TDM-based lane guidelines**. **Figure 21** illustrates these general street improvement thresholds. While all street projects should include a corridor study to determine ultimate cross-section needs, it should be noted that typically as new adjacent urban developments come online adjacent to rural roads, a traffic study is conducted to determine what urban cross-section (3-lane, 4-lane divided, 6-lane divided) might be required.

**Many Factors Influence Street Cross-Section Recommendations**

WE-STEP has provided some average daily traffic thresholds triggering consideration of potential street cross-section expansion projects. In most cases, these traffic levels would equate to LOS F peak hour levels of service. In all cases, a traffic study that considers multiple factors (not just traffic level of service) should occur. In addition to consideration of level of service, user safety (including pedestrians and bicyclists) and neighborhood context are critical considerations when determining if a street widening project is warranted.

**Figure 21: Generalized Street Cross-Section Traffic Thresholds**



## Street Design Guidance

The general guidance for the WE-STEP typologies is provided in **Table 2**. Many guidance standards have a range of values to reflect the flexibility required for a range of future corridor contexts. For instance, speeds on many corridors can vary between 30 and 45 miles per hour, reflecting the fact that some corridors will have more urban scale, street-oriented development contexts with high pedestrian activity, while others may be more suburban context with limited street orientation.

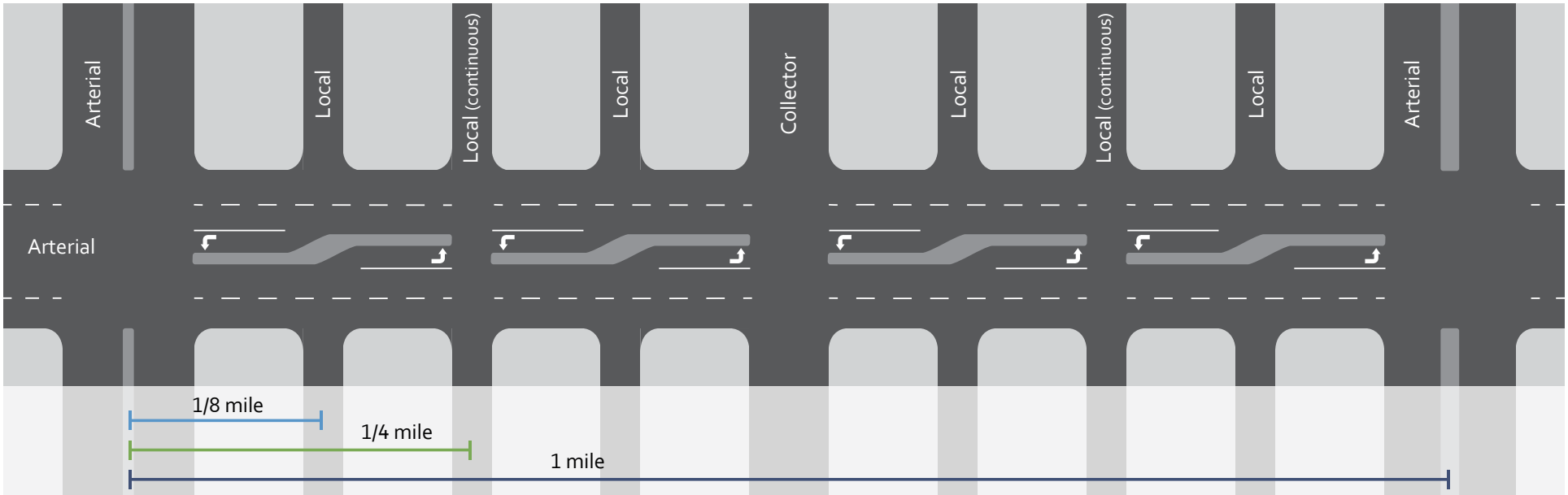
**Table 2: WE-STEP Design Guidelines by Typology**

| ROADWAY GENERAL CRITERIA | ARTERIAL 1.1 | ARTERIAL 2.1A | ARTERIAL 2.1B | ARTERIAL 2.2 | ARTERIAL 3 |
|---|---|---|---|---|---|
| Posted Speed (mph) | 40–45 | 30–45 | 25–30 | 30–45 | 45–55 |
| Ultimate Number of Lanes | 6 | 4 | 4 | 4 | 3 |
| Lane Width (in feet) | 12 | 11–12 | 11 | 11–12 | 12 |
| ROW (in feet) | 150 | 110 | 110 | 100 | 100 |
| Vertical Alignment | Ultimate Vertical Profile Study or AASHTO Standards | | | | |
| Shoulder/Curb and Gutter | 2-foot curb and gutter | 2-foot curb and gutter | 2-foot curb and gutter | 2-foot curb and gutter | 8-foot shoulder |
| Sidewalk with Landscaped Buffer (in feet) | 5-6 | 5-6 | 5-6 | 5-6 | – |
| On-Street Parking Allowed | No | No | Yes | No | No |
| On-Street Parking Width (in feet) | – | – | 8 | – | – |
| Shared-Use Path Required | 1 side | 1 side | No | 1 side | 1 side |
| Shared-Use Path (in feet) | 12 | 12 | – | 12 | 12 |

### Access Management Guidance

Access management along arterial corridors can improve safety by limiting turning traffic to key locations and can improve the traffic flow of an arterial corridor. **In tandem with the recommended Collector and Through-Route Policy, access management should support improved safety on arterials while providing multiple continuous routes on the collector and local through-street grid for shorter trips.** The recommended access policy for arterial streets is illustrated in **Figure 22**. Note that 1/8-mile spacing access may provide 3/4-access intersections (provide left turns off the arterial but not onto); 1/4 mile spacing intersections may be roundabouts or signalized intersections.

**Figure 22. Recommended Arterial Access Management Policy**



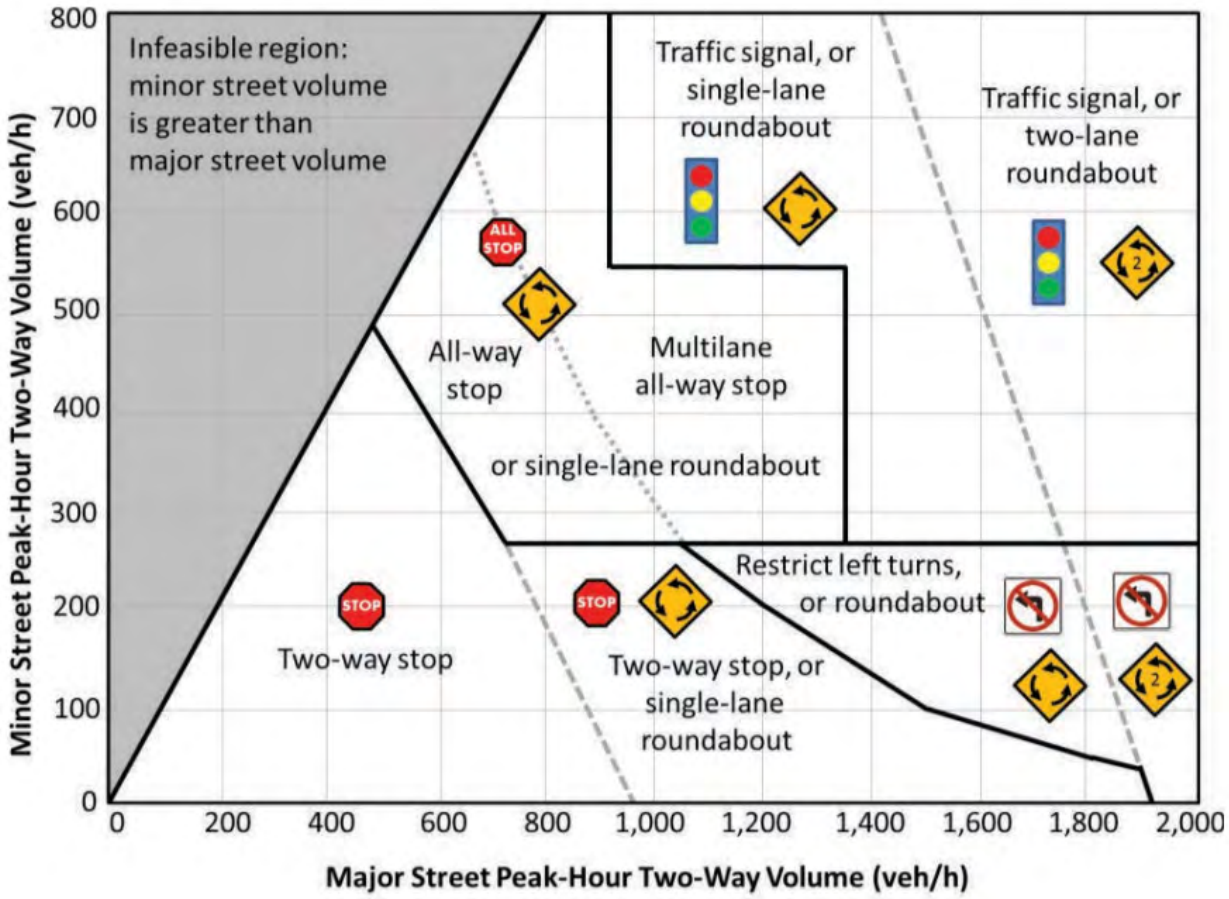
## Roundabouts

Roundabouts are considered as a safe, efficient option for intersection design. When considering roundabouts, the following is recommended:

- Calculating a roundabout's level of service (LOS) for each intersection will help determine whether a roundabout is recommended.
- If the roundabout horizon year (opening year plus 20 years) LOS is less than F, it is recommended to consider implementing a roundabout.
- If roundabouts exist elsewhere along the study corridor, roundabouts are also recommended.
- For intersections where the horizon year roundabout LOS is equal to F, it is recommended that a signal warrant analysis be performed to determine the LOS for the signalized intersection.
- If a roundabout is recommended in the study area, design should follow guidelines from the National Cooperative Highway Research Program (NCHRP) 1043 (updated version of NCHRP 672).
- If available, it is recommended to use the ultimate vertical profile for roundabout design and access points tie-in locations.

**Figure 23** shows the range of traffic volume scenarios where roundabouts might be a safe, efficient option for intersection control.

**Figure 23. Intersection Control Type by Peak Hour Volume**
(Source: "Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual", NCHRP 825 Report



## Interim Build Conditions

The recommendations outlined in the typologies and typical sections reflect what can be called an "ultimate build" version of each cross-section. The ultimate build street typologies in this plan reflect a significant level of investment in what is often a mature urban corridor. In many instances, an interim improvement might make the most sense at the time it is required. In these interim cases the current 2-lane rural corridors will likely have safety and operational needs arise at a time where the full 4-lane or 6-lane divided ultimate cross-section:

1. Is more investment than is required to meet projected traffic volumes
2. Exceeds agency budgets at the time of construction

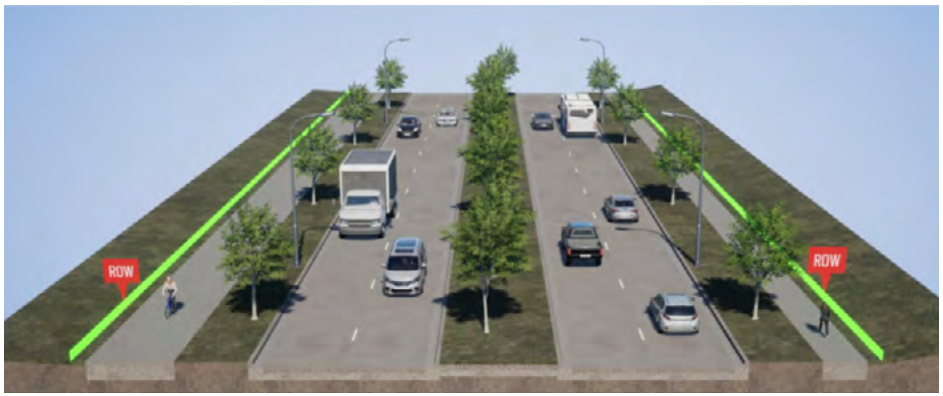
In these cases an interim 3-lane build is likely called for.

WE-STEP interim 3-lane corridor improvements should be planned and engineered in such a way to minimize life cycle costs by implementing an interim improvement that can largely be reused when the ultimate improvement is eventually constructed. This interim approach recommends:

- Creating the 3-lane street offset on the ultimate centerline so that the curb and gutter, utilities, sidepaths and sidewalks, and two (Arterial 2) or all three (Arterial 1) of the travel lanes constructed during the interim are in-place and do not need to be constructed for the ultimate 4-lane or 6-lane cross-section.
- These 3-lane interim streets should be offset on a consistent side of the ultimate cross-section throughout a corridor. The default side for a new corridor where right-of-way or design considerations do not dictate otherwise should be the north side of an east-west corridor or the east side of a north-south corridor.
- The interim street superelevation should reflect ultimate superelevation requirements.
- The interim driveway and side-street tie ins should reflect the ultimate profile of the corridor. The benefit of an offset interim section is only realized if a portion of the 3-lane street is used in the ultimate build.

An illustration of the interim and corresponding Arterial 2.1 ultimate cross-section are illustrated in **Figure 24**.

**Figure 24. Interim and Ultimate Build Illustration**




Interim Build, Arterial 2.1


Ultimate Build, Arterial 2.1

## Additional Guidance and Recommendations

### Systemic Safety Considerations

*Access and Medians*

Crashes skew heavily to intersections, midblock crossings, and access points (such as driveways). The access guidance provided by WE-STEP that allows full-access intersections at the 1/4 mile can limit turning conflicts that lead to crashes. Installing raised medians on the arterials can also provide a safer facility for all users. Raised medians provide refuge for pedestrians and bicycles at midblock crossings.

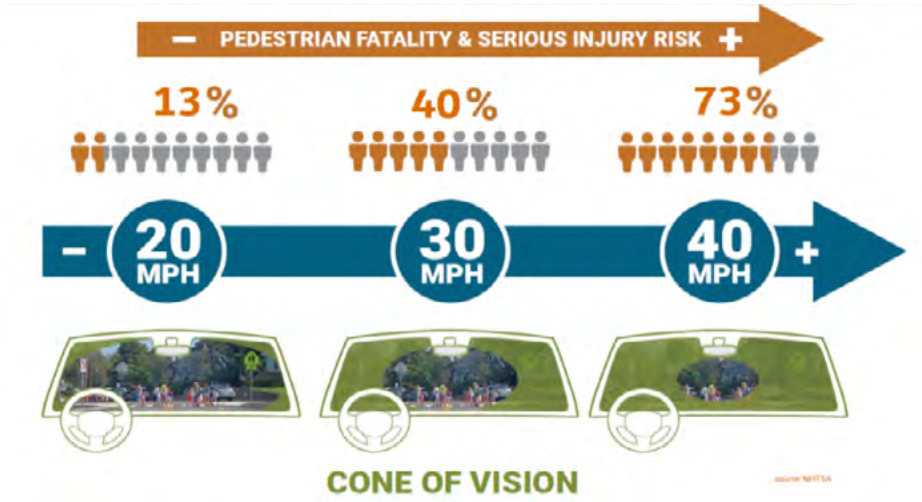
*Intersection Design*

Another safety concern is overbuilding intersections for expected growth. Intersections should be sized for opening day needs despite the risk to long-term operations. It is also recommended that enough ROW be acquired at the intersections to accommodate any future buildout. Note that roundabouts are a recommended intersection control type due to their safety benefits and efficiency at keeping people moving. Roundabouts also have lower ongoing costs for management and maintenance, and they decrease almost 80 percent of fatal and serious injury crashes in areas where they have been introduced as a safety countermeasure.

*Corridor Speeds*

Sidewalks and shared-use paths are highly recommended to provide separation between vehicles and pedestrians and cyclists. As shown in **Figure 25**, the faster a vehicle is traveling, the greater the risk for a pedestrian fatality or serious injury. Controlling speeds by introducing horizontal design features and traffic calming elements can improve pedestrian and bicyclist safety. Sidewalks provide safe routes for pedestrians that are separated from vehicles. However, cyclists' speeds can be unsafe for pedestrians, and sidewalks do not provide enough space for the two users to interact safely and comfortably. Shared-use paths provide a better facility for both pedestrians and bicyclists due to the increased width that allows for safe passing.

**Figure 25. Speed and Pedestrian Risk (Source: NHTSA)**




### Active Transportation Guidance

Providing a safe, connected network for pedestrians, bicyclists, and potential future transit users is a key element of this study. To support these project objectives, the study has outlined the following:

- Provide sufficient ROW for separation between vehicle lanes and sidewalks and sidepaths
- Provide sufficient ROW for the potential transit-supportive features, such as bus shelters, and lane width flexibility for transit vehicles
- Identify a preferred guidance of including a 12-foot-wide sidepath along each corridor
- Recommend the inclusion of sidewalks that are a minimum of 5 feet wide
- Provide a set of bicycle and pedestrian guidelines for treatments and crossings

Continuity across jurisdictions and through corridors is critical. Sidepaths should be planned to align with the same side of the corridor as those on adjacent corridors to limit unnecessary pedestrian and bicyclist crossing of arterials. A more detailed discussion of the bicycle and pedestrian treatments and crossings is provided in **Appendix D**.

### Construction Standards

It is important to establish the standard specifications and plates to conform with expectations for the construction of projects and materials for the project. If standards are not specifically outlined in supporting WE-STEP documents or by the agency with jurisdiction over the project, it is assumed that City of Omaha standard plates will be used as a baseline. In areas where local roadways intersect state facilities, NDOT standards will apply. In some specialized cases, it may be necessary to use the Iowa Statewide Urban Design and Specifications to supplement these standards.

### Future Effort to Establish Vertical Profiles

An engineering study to establish the ultimate future vertical profiles on all arterial roads would be a valuable follow-on study. A common issue identified in the study area is that often when developments come online, the vertical profile on the adjacent roads are not yet defined and still reflect their original elevations. In some cases when developments have been graded and built next to a rural road before it has been improved to urban standards, the adjacent development might not fit well with the ultimate (future) road profile leading to the need for retaining walls or extreme grades for development access roads. These situations can lead to higher project costs and safety and design issues. By doing a study that establishes an overall set of recommended vertical profiles for the WE STEP area roads, these situations can be mitigated. Establishing a vertical profile would also allow utilities to bury power lines underground with confidence and limit overall utility re-work in the corridor.

## SUMMARY

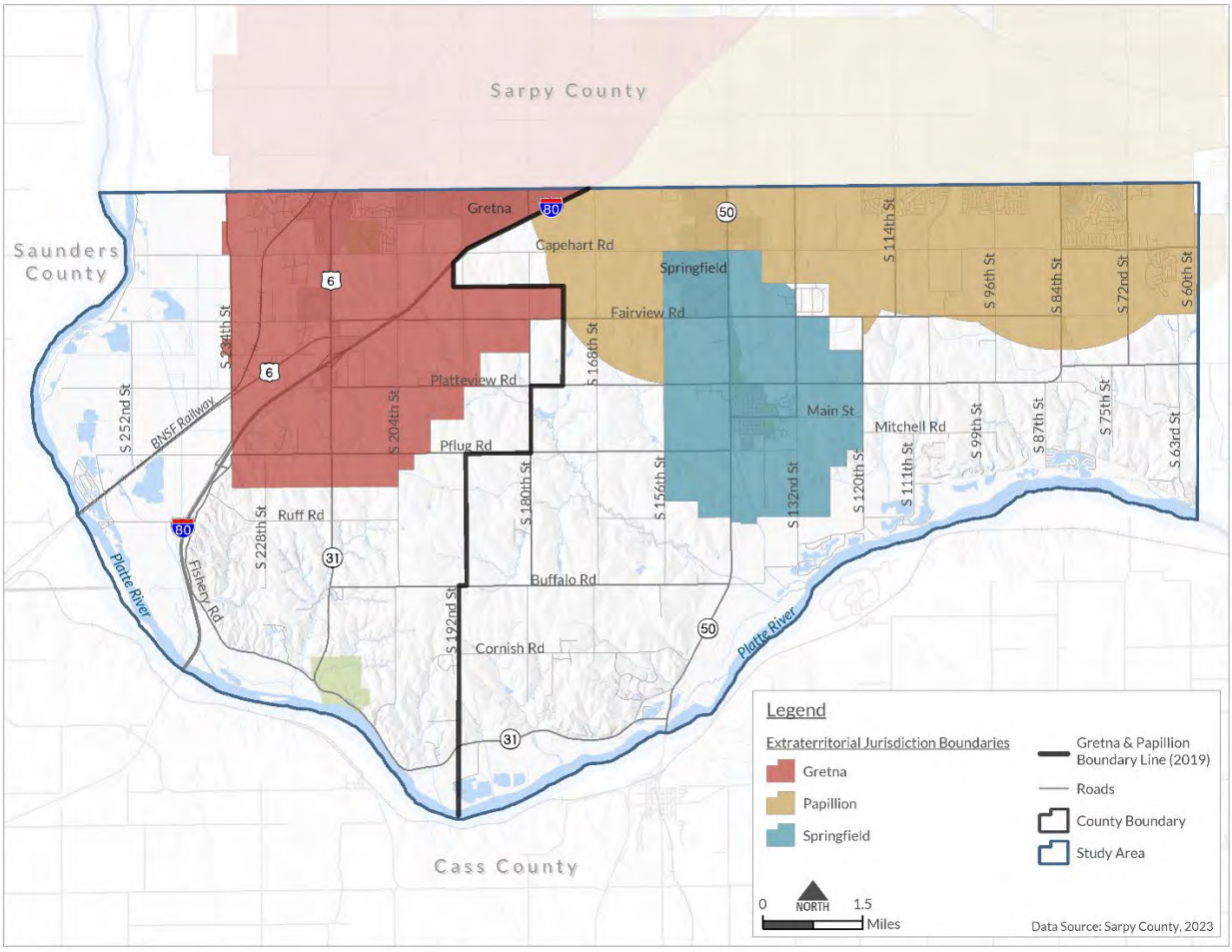
WE-STEP has been a partnership of the jurisdictions in western Sarpy County to establish a set of guidelines for how the future transportation system should develop. It leveraged past planning efforts and the latest information about current and future trends to develop a set of street typologies that would meet the range of demands and modal needs of future WE-STEP system users. The future WE STEP network was developed by assigning typologies to the area corridors. Finally, the guidelines, standards, and elements associated with the network were defined based on input from technical staff and system stakeholders.

# APPENDIX A: EXISTING PLANS, POLICIES, AND TRANSPORTATION CONDITIONS MEMO

# Task 3.2 – Existing Plans & Policies

The WE-STEP study was initiated with the understanding that each jurisdiction (**Figure 1**) has a distinct set of guiding plans and policies in place that influence the development of a local and regional transportation network. It is anticipated by the review team for this study that some of these plans and policies may have consistency while others may not and lead to potential conflicts in the efficient development of a transportation network that best serves future growth in western Sarpy County.

FIGURE 1: Study Jurisdiction Boundaries




This memorandum summarizes the sources of data, plans, and policies/standards that currently guide development and maintenance of the transportation network. Additionally, the summary provides information about commonalities and incongruent elements that exist between jurisdictions. Finally, the summary and associated review may be used to help support recommendations for shared policies adopted into local plans of the study partners.

Study references included:

- **Gretna** – PlanGretna adopted 2009, updated 2021 and current subdivision regulations
- **Springfield** – Springfield Comprehensive Plan adopted 2015 and current subdivision regulations
- **Papillion** – The Papillion Plan updates 2022 and current subdivision regulations
- **Sarpy County** – Sarpy County Comprehensive Plan (rev. Nov. 2020) and current subdivision regulations
- **MAPA** – 2050 Long Range Transportation Plan (2020)

## Goals and Performance Measures

Transportation goals summarized in the Comprehensive Plans of Gretna, Springfield, Papillion, Sarpy County, and MAPA, provide common themes including an interconnected network, diverse transportation options, and responsive services. Papillion and Sarpy County prioritize safety and adequate infrastructure that supports community development. Urban design with street planning includes the use of parkways and green streets as transportation networks which support all modes of transportation in Gretna and Papillion. Springfield strives for a transportation network that supports vibrant district development for its future growth. Sarpy County concentrates on infrastructure preservation. MAPA adopts a regional perspective, ensuring equity, enhancing the living environment, boosting economic growth, and managing transportation systems. These shared and distinctive transportation goals reflect shared efforts to support community mobility and overall quality of life.

## Data and Analysis Results

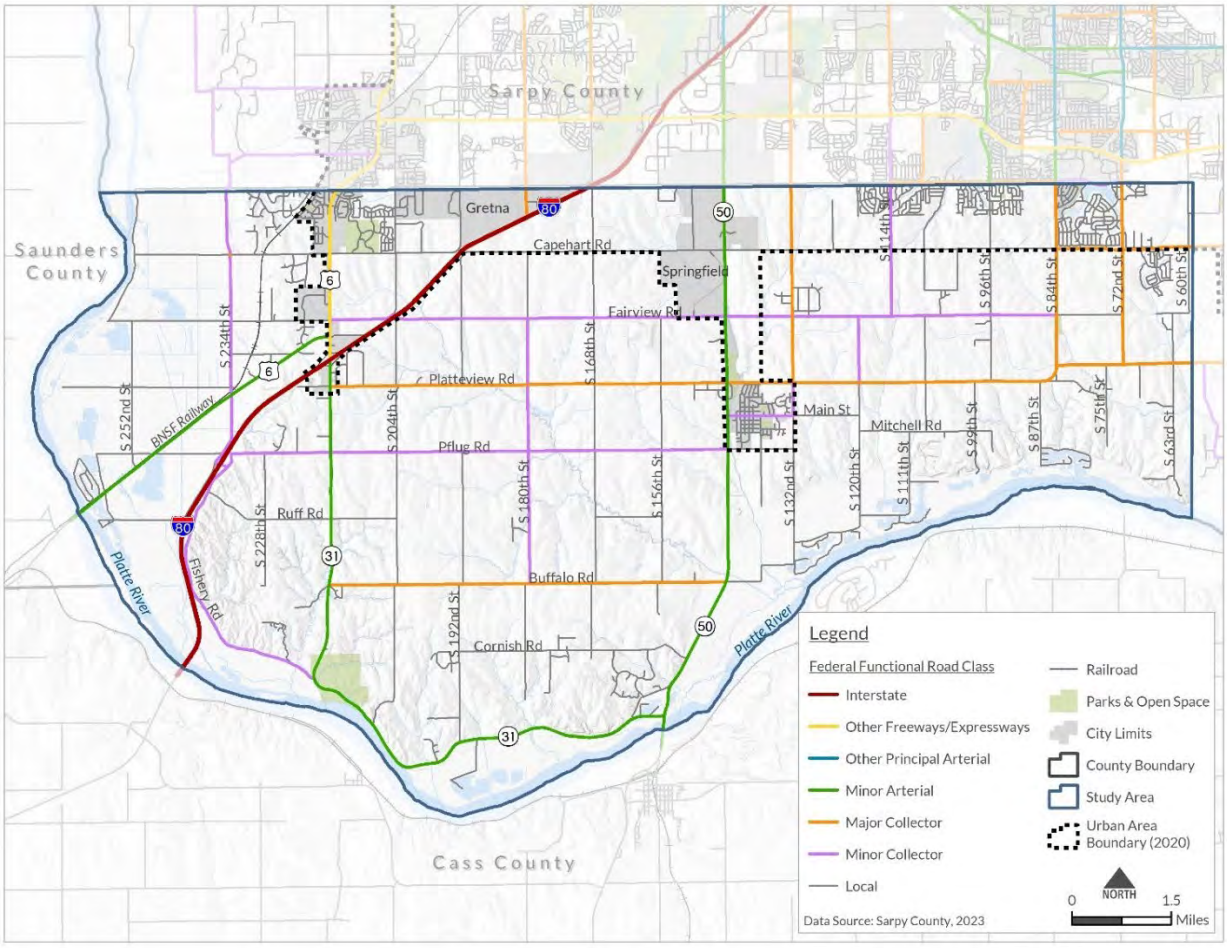
Comprehensive Plans for local jurisdictions use current traffic volumes compiled by MAPA to measure existing and future level of service (LOS) which can be useful for forecasting how land use changes may create the need to increase roadway capacity over time. All jurisdictions rely on the regional Travel Demand Model which uses land use and growth information provided to MAPA by each community. This iterative method of transportation and land use planning can help with forecasting when traffic flows are projected to change significantly leading to demands that may overwhelm capacity during peak travel periods of the day.

Papillion includes a summary of the capacity analysis for the transportation network included in the Comprehensive Plan. Although not included in other Comprehensive Plans, this same approach is used by each of the local jurisdictions. Papillion's projected traffic volumes are compared against capacity guidelines for central and non-central business district settings. Roadways that are forecast with future volumes that exceed available capacity provide a trigger for the community to begin programming for roadway improvements which may include alternatives evaluation and design for corridor right of way protection, roadway cross section, access management, intersection design, and accommodation for active transportation. For individual developments, local jurisdictions will require traffic impact studies to be completed with subdivision applications. This process helps to ensure that the planned capacity and traffic management intended for the arterial and collector street network can support the proposed development demand. Development proposals are typically only reviewed by the jurisdiction responsible for approving the application.

## Strategies and Network Recommendations

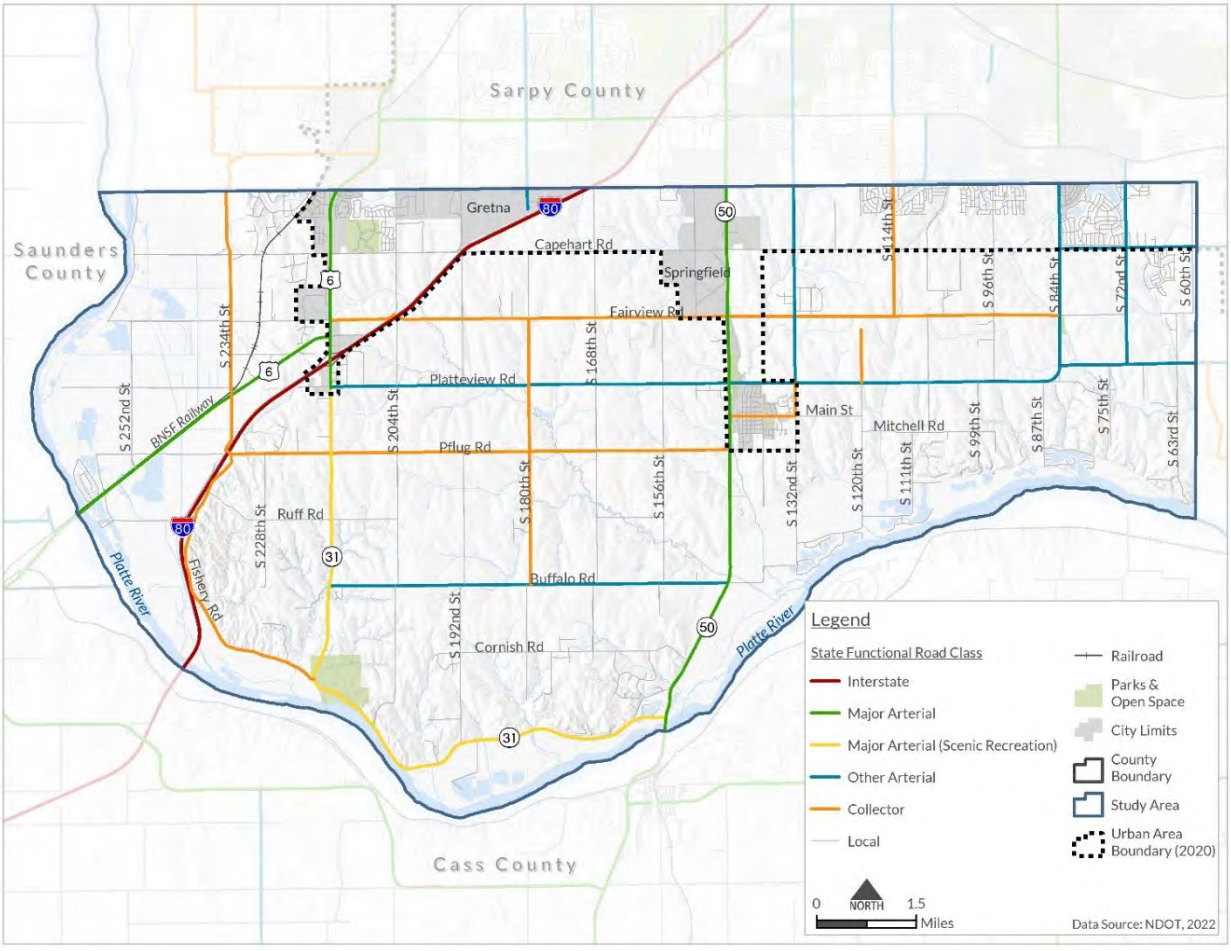
The Federal Highway Administration (FHWA) groups roadways into classes according to the character of service they are intended to provide. A roadway must be classified, at minimum, as a planned or existing Minor Collector in an urban area or Major Collector in a rural area to be eligible for Federal Surface Transportation Funds. The Urban Area Boundary is typically the dividing line between urban and rural areas. On the outer fringe of rapidly growing regions, rural standards applied in the County should be reviewed to anticipate future corridor protection needs that may be different than less developing rural areas. Federal Functional Classifications (**Figure 2**) provide state, regional, and local planning context for the transportation network and focus primarily on the purpose of the roadway rather than the design requirements. Federal legislation continues to use functional classification in determining eligibility for funding under the Federal-aid program. Federal transportation agencies describe roadway system performance, benchmarks and targets by functional classification. As these agencies continue to streamline performance-based decision making, functional classification will be an increasingly important consideration in setting expectations and measuring outcomes for preservation, mobility and safety. Comprehensive Plans and Long Range Transportation Plans must reflect the Federal Classification of the road network and may include additional classification maps for State and Local considerations.

FIGURE 2: Existing Federal Functional Road Classification



The State Highway Classification System, administered by NDOT, provides jurisdictions with the minimum design criteria that must be achieved for a federal-aid supported project. The State Classification system (**Figure 3**) is used to ensure that the transportation facility is designed appropriately for the context and purpose it is intended to serve for the regional network purpose. The State Classification System establishes criteria such as minimums for right-of-way widths, design speeds, lane widths and many others. It is important to note that a State Classification for minimum design standards can apply to multiple Federal Functional Classifications. For example, a Major Arterial State Functional Classification Design Standard can be applied to both a Major Collector and a Minor Collector assigned on the National Functional Classification system. Nebraska Title 428 is maintained by the Board of Public Roads Classifications and Standards where these procedures for Standards are provided in Chapter 2. Standards are divided between urban and rural standards for the same classification type. This is an important consideration for planning rapidly growing urban areas where jurisdictions will grow into the rural county and eventually connect boundaries with each other. The MAPA urban planning area boundary is typically used as the delineation between urban and rural standards for roadway design requirements.

FIGURE 3: Existing State Functional Road Classification



Additionally, local classification systems may supplement State Classifications within local jurisdictions. This is not common, but they may either exist within subdivision regulations as a legacy standard that is no longer used or a purpose-built classification to support hyper-local transportation needs of a transportation integrated, land use strategy. Local classifications do not replace Federal of State classifications and rely only upon local regulations to oversee subdivision regulation and design requirements applied to development. As such, the roadway classifications (Table 1) and descriptions of minimum design criteria are specified within local subdivision regulations.

Table 1: Existing Plan Typologies

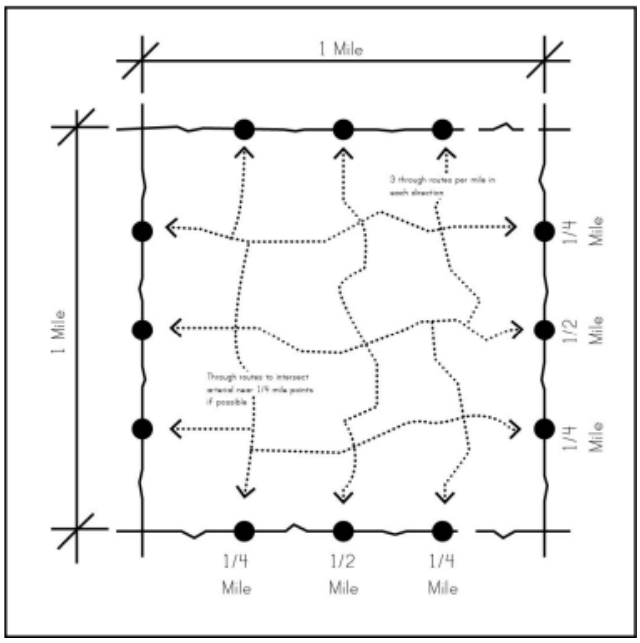
| Jurisdiction | Reference | Description |
|---|---|---|
| **City of Springfield** | Comprehensive Plan Chapter 4, Page 171 | Provides four (4) typologies according to the Federal Classification System; major arterial, other arterial (only for Platteview Road), collector streets, local streets |
| **City of Papillion** | Comprehensive Plan Chapter 3, Page 49 | Provides five (5) typologies according to the State Classification System; expressways, major arterials, other arterials, collectors, and local streets.<br>Additional definitions in the Plan for civic streets and parkways add to, but do not replace, the underlying functional classifications in Papillion. |
| **City of Gretna** | Comprehensive Plan Chapter – Transportation Plan, Page 187 | Provides six (6) "Street Classification" typologies best considered through a local planning lens; major arterial, interstate highway, other major arterial, other arterial, collector street, and local street<br>Also provides six (6) "Street Designation" typologies which align with the Federal Classification System: interstate, other freeways & expressways, other principal arterial, minor arterial, major collector, minor collector |
| **Sarpy County** | Comprehensive Plan Chapter 5, Page 116 | Provides six (6) typologies according to the Federal Classification System; interstate, other freeway & expressway, principal/minor arterial, major collector, minor collector, and local road |
| **MAPA** | Long Range Transportation Plan, Page 5 | Provides six (6) typologies according to the Federal Classification System; Interstate, other freeways & expressways, other principal arterial, minor arterial, major collector, minor collector (local roads are not included as a typology) |

Local jurisdictions must plan and program transportation projects in a manner that upholds Federal Classifications and satisfies minimum State Classification design standards. Failing to track the different naming and purposes of functional classifications in comprehensive plans can lead to discrepancies in corridor strategies where jurisdictions will grow together. Local policies provide guidance for the roadway routing standards each jurisdiction intends to achieve within the applied typologies. Most local plans provide a short policy guideline for roadway routing standards. For continuity, they are listed here. While they do not contradict each other, they are distinctly different.

## Roadway Routing Standards

- **Papillion**: Page 57 of the Comprehensive Plan describes connectivity and how the network should connect. The street network should have segments which connect to one another internally and to collector streets. Several measures to evaluate the connectivity of street networks have been developed. One measure included in the Comprehensive Plan that may not be applied to future planning is the ratio of the number of street links divided by the number of nodes (intersections or cul-de-sac heads). A target ratio of 1.40 may produce a good neighborhood mix of connectivity and privacy when site development conditions allow. The subdivision regulations (Article V Chapter 170-16.A (6) also regulates the subdivision of streets to support a through route strategy including three north-south and three east-west through routes provided per mile, unless infeasible, on the half and quarter mile intersections with adjacent streets. Access management (**Figure 4**) is recommended as full access each quarter mile with turn movement limited to right-in, right-out only on the quarter mile. Quarter mile spacing is preferred at 1,320 feet with 1,200 feet minimum.

FIGURE 4: Typical Three-Through Street Policy




- **Gretna**: Page 113 of the Comprehensive Plan provides general expectations for connectivity. The transportation network for Gretna will provide interconnected access between neighborhoods and commercial areas, a balance of opportunities for vehicular, pedestrian, and other forms of transportation and levels of service that respond to and influence land use needs. Gretna Comprehensive Plan also adopts the three through streets per mile policy described for Papillion.
- **Springfield**: Page 169 of the Comprehensive Plan provides a few notes about transportation network connections. Adequate circulation systems are essential for the safe and efficient flow of vehicles and pedestrians, to all parts of the community. Communities need to be able to provide adequate transportation services to move people and goods around and through the community. In addition, access to facilities, industries, and businesses should facilitate efficient traffic patterns

while minimizing conflicts between vehicular and pedestrian traffic. Springfield does not address the three through streets per mile policy in their Comprehensive Plan or Subdivision Regulations.

- **Sarpy County**: Page 89 and 131 of the Comprehensive Plan provide goals and policy statements regarding connectivity that is safe, reliable, efficient as well as acknowledging the important role of coordinating activities as local jurisdictions grow into the county. Transportation goals and policies, including the creation of a complete streets policy, arterial access policies, and the implementation of accessibility guidelines; Provide a connected transportation system that offers safe, efficient and reliable options for all modes of travel; Coordinating the development of public infrastructure and facilities will enhance the overall connectivity and continuity of public amenities, thereby creating comprehensive systems available throughout the county. Sarpy County Comprehensive Plan (Page 130) is enforced by subdivision regulations and adopts the three through streets per mile policy described for Papillion. Access management is recommended as full access each quarter mile with turn movement limited to right-in, right-out only on the eighth mile.

The technical differences between typologies at the local level can be further narrowed down to three primary elements – roadway classification, the differences between rural and urban areas according to the state classification and the ROW standards from jurisdiction to jurisdiction.

### Roadway Classifications

**Interstate Highway (Major Arterial):** While Papillion does not provide an definition of Major Arterial of Interstate Highway, Sarpy County uses the federal classification of Interstate as opposed to Major Arterial. Sarpy County's definition also includes "a divided, limited access facility with no direct land access and no at-grade crossings or intersections" as a component of its definition.

**Expressway:** Papillon provides its own definition for an expressway, whereas Sarpy County provides the federal classification for a freeway/expressway. In Papillion's definition, it states that expressways will be constructed with only grade-separated intersections, whereas Sarpy County simply notes that there should be limited at-grade access.

**Other Major Arterial**: Papillion does not provide a category for 'Other Major Arterial,' and instead uses its own definition of 'Major Arterial.' Sarpy County uses the Principal/Minor Arterial state federal classification for 'Principal/Minor Arterial.' Papillon states that these articles 'connect major activity centers,' which is not mentioned in any of the other definitions. Papillon references the use of 'traffic control devices' such as medians, which are not referenced in any of the other definitions.

**Arterial Street:** Many Gretna, Springfield and Papillion all have 'Other Arterials' listed as functional classes. Papillion's comprehensive plan specifies that these other arterials are designed for speeds of 40 mph or below, while neither Springfield nor Gretna mention speed limit regulations. Sarpy County, on the other hand, uses 'Principal/Minor Arterials' as its categories. Sarpy County's primary focus is on prioritizing traffic movement, not localized access.

**Collector Streets:** All the plans include Collector Streets with a common purpose of facilitating access and circulation within different areas, they vary in their specifications, such as speed limits, configuration requirements, and the distinction between Major and Minor Collectors in Sarpy County's plan.

**Local Street:** As Gretna and Springfield have identical descriptions for Local Streets, Papillion provides additional details about their role in serving individual properties and the challenge of cul-de-sacs. Sarpy County emphasizes the importance of Local Streets in providing direct access to adjacent land uses and highlights their prevalence in the street network.

### Urban and Rural Criteria

**Minor Arterials:** In Urban areas, Minor Arterials have a designated speed of 30 mph (45 mph) with 11 ft. lane width. However, in rural areas Minor Arterials have a designated speed of 50 mph (55 mph) with 12 ft maximum lane width max and 10 ft minimum.

**Major Collectors:** In Urban areas, Major Collectors have a designated speed of 30 mph (55 mph) with 11 ft lane width max and 10 ft minimum. However, in Rural areas Major Collector have a designated speed of 50 mph (55 mph) with 12 ft maximum lane width max and 10 ft minimum.

**Minor Collectors:** In Urban areas, Minor Collectors have a designated speed of 20 mph (45 mph) with 11 ft lane width max and 10 ft minimum. However, in Rural areas Minor Collector have a designated speed of 50 mph (55 mph) with 12 ft maximum lane width max and 10 ft minimum.

**Local Streets:** In Urban areas, Local Streets have a designated speed of 20 mph (45 mph) with 11 ft lane width max and 10 ft minimum. However, in Rural areas Local Street have a designated speed of 50 mph (55 mph) with 12 ft maximum lane width max and 10 ft minimum.

### Right of Way Standards

**Rural ROW** standards are straight forward to understand. In Sarpy County, the minimum ROW for Major Arterials is 150 feet, while the Other Arterials can range from 66 to 100 feet. Gretna is the only other jurisdiction that makes a distinction between rural and urban, noting that the minimum ROW for Major Arterials is 150 feet.

**Urban ROW** standards are slightly more complicated. All jurisdictions have a minimum ROW of 150 feet for Major Arterials, but Other Arterials range from a minimum of 70 feet in Sarpy County to 100 feet in Gretna, Springfield, and Papillion. Collector roads have a minimum of 80 feet ROW in Springfield, 70 feet in Sarpy County, and 60 feet in Gretna and Papillion. Local roads have a 50-foot minimum in Sarpy County and Gretna, 60-foot minimum in Springfield, and no specified ROW in Papillion.

## Development Standards

Subdivision Regulations are used to enforce development review procedures for the purposes of subdividing land according to local codes and ordinances. Within subdivision regulations adopted by each of the four local jurisdictions, the minimum standards for streets networks, design, construction, rights-of-way, and other criteria are provided for use.

Table 2: Subdivision Regulation Standards

| Jurisdiction | Minimum Standards | Streets | Design | Construction | Rights-of-Way |
|---|---|---|---|---|---|
| Sarpy County | 10.1 Shall not be subdivided unless adequate methods for subdivision are formulated by the developer and approved by the Planning Commission and County Board. | 10.2 Shall conform to the Comprehensive Plan. Where such is not shown, provide for the continuation or appropriate projection of existing principal streets in surrounding areas. | Table 10-2 Minimum Design Standards of the State of Nebraska Board of Public Roads. | 12.1 In accordance with the current edition and any revisions or amendments thereto of the "City of Omaha Standard Specifications for Public Works Construction" and/or the current edition and any revisions or amendments thereto of the "Nebraska Department of Roads Standard Specifications for Highway Construction." | 10.2.13 Shall not be less than the minimum dimensions nor more than the maximum grades as set forth in the current version, including any revisions or amendments thereto, of the "Nebraska Administrative Code, Title 428, Rules and Regulations of the Board of Public Roads Classifications and Standards." |
| Gretna | 4.01 No subdivision shall be approved unless it is in conformance with the requirements of this Ordinance and the Comprehensive Development Plan | 4.02 Arrangement, character, extent, width, grade and location of all streets shall conform to the Comprehensive Plan | 4.24 Per NDOR Standards or as directed by the City Engineer | 4.24 Per design standards by AASHTO | 4.03 (New) shall meet the right-of-way requirements as stated in Section 4.24<br>4.04 (Existing) shall dedicate additional right-of-way or easements if necessary to meet the minimum street width requirements set forth in this Ordinance. |

| Jurisdiction | Minimum Standards | Streets | Design | Construction | Rights-of-Way |
|---|---|---|---|---|---|
| Springfield | 4.01 No subdivision shall be approved unless it is in conformance with the requirements of this Ordinance and the Comprehensive Development Plan | 4.02 Arrangement, character, extent, width, grade and location of all streets shall conform to the Comprehensive Plan | 4.02 New or reconstructed streets shall conform to Nebraska Board of Public Roads Classifications and Standards, Minimum Design Standards | 4.02 The Nebraska State Standard Specifications shall be the Nebraska Department of Transportation Standard Specifications for Highway Construction | 4.04 (New) shall meet the right-of-way requirements as stated in Schedule A 4.05 (Existing) shall dedicate additional right-of-way or easements if necessary to meet the minimum street width requirements set forth in this Ordinance |
| Papillion | 170-16 All streets shall conform as near as possible to the Comprehensive Plan | 170-16.A Roadway system shall conform to the City's Comprehensive Plan. | Table II Standards for arterial streets shall be determined by AASHTO standards or state highway officials | Table II Standards for arterial streets shall be determined by AASHTO standards or state highway officials | 170-16.C (New) shall meet the right-of-way requirements as provided in Table II of these regulations. and D (Existing) shall dedicate additional right-of-way, if necessary, to meet the minimum street width requirements set forth in these regulations. |

## Right of Way Protection and Cross Sections

Local jurisdictions provide their own requirements for ROW protections within subdivision regulations. While MAPA's LRTP provides helpful guidance for the organizing of the regional transportation network, it is the local regulations, in conformance with local Comprehensive Plans and Zoning that direct technical aspects of street, sidewalk, curb ramp or trail construction. Sarpy County protects 300' of ROW for Rural Interstate and Expressways and 150' for Rural Major Arterials. No other local jurisdiction applies Rural standards to ROW protection. Minimum ROW protections for Urban standards are summarized in Table 3 by jurisdiction.

Table 3: ROW Protection Required by Subdivision Regulations

| Jurisdiction | Major Arterial | Other Arterial | Collector | Subcollector | Local |
|---|---|---|---|---|---|
| **Sarpy County** | 100′ | 70' | 70' | N/A | 50' |
| **Gretna** | 100′ | 100' | 60' | N/A | 50' |
| **Springfield** | 100′ | 100' | 80' | N/A | 60' |
| **Papillion** | 100′ | 100' | 60-70'* | 50-60'* | N/A |

* Parking may be provided within Collector and Subcollectors in Papillion

Each local jurisdiction provides additional cross section references for minimum paved width, number of lanes, radius, sight distance, and paved thickness within subdivision regulations. Comprehensive Plans for Papillion, Gretna, and Sarpy County also provide visual examples of typical cross sections. Sarpy County includes four cross-section alternatives that fit within the minimum 100′ ROW. Additionally, a 150′ ROW and 120′ ROW cross-section are provided to support dual center turn left lanes with either six or four through-lane options respectively. Gretna provides visual examples of seven typical cross-sections of 50-150′ ROW widths. Gretna also includes variable width ROW for three green street cross sections. The Crossings Corridor Master Plan for Gretna extended nine variable ROW width cross sections for green streets. Papillion Comprehensive Plan updates introduced visual examples of typical cross sections for Parkways and Ridgeline Boulevard streets in 2022.

Cross section criteria in subdivision regulations and visualized in local plans are considered specific to the local Comprehensive Plan. They neither intentionally compliment nor contradict each other between jurisdictions. They exist separately without necessary coordination for arterial and collector street corridors to be established consistently. They also do not exist at this time to provide and coordinated strategy for preserving ROW and designing cross sections across jurisdictions.

## Funding Transportation Improvements

The local designation of future roadway classification helps establish corridor protections needed for roadway projects and provides methods for funding local improvements made by the community. Municipal codes for each jurisdiction enable the cost of street improvements within an improvement district to be assessed toward the value or size of the adjacent property benefiting from the road. For street improvements to Arterial Streets, value provided by the roadway is regional. Papillion maintains local authority that allows funds to be set aside for Arterial Street Improvement cost sharing with Sarpy County when projects are included on the County One- and Six-Year plan. This Arterial Street Improvement Program (ASIP) provides for and efficient method of cooperative improvement for arterial streets. Regional funding is also available for arterial street projects through MAPA and the Transportation Improvement Program. Projects included on the TIP must be amended into the LRTP if they are not already included, but projects selected from the pool of applicants are eligible for State Transportation Block Grant (STBG) funds directed by Federal Highway Administration. Local jurisdictions alone, or in partnership with each other, must provide a minimum local 20% match for requested funding. Without STBG funding, local jurisdictions must use any combination of general funds, sales tax, or bonds to plan, design, and construct projects.

# Task 3.3 – Data Inventory

Several studies are currently available that provide recent and ongoing efforts to capture land use, demographic, and transportation data. Data from these plans and studies was requested from MAPA, NDOT or the individual jurisdictions. Studies referenced include:

- MAPA 2050 LRTP
- Metro Area Travel Improvement Study
- Sarpy County I-80 PEL
- Platteview Road Corridor Study
- Platteview Road Design
- Sarpy County Comprehensive Plan
- Gretna Comprehensive Plan
- The Crossings Corridor Master Plan (Gretna)
- Papillion Comprehensive Plan Update
- Springfield Comprehensive Plan
- Sarpy County Transit Feasibility Study
- 180th / 192nd Corridor Feasibility Study
- Sarpy County Trail Plan
- Lake 80
- South Sarpy County Sewer Plan

# Task 3.4 – Existing Conditions Analysis

A review of existing conditions was completed to summarize 2023 baseline conditions of the region's current multimodal transportation system. Analysis included existing land uses and multimodal transportation infrastructure of the study area. The existing conditions for the largely rural area of Sarpy County summarized in this analysis is lightly beneficial to the future conditions analysis and recommendation to support the study area in the future. The task summary provides a basic assessment of the following topics:

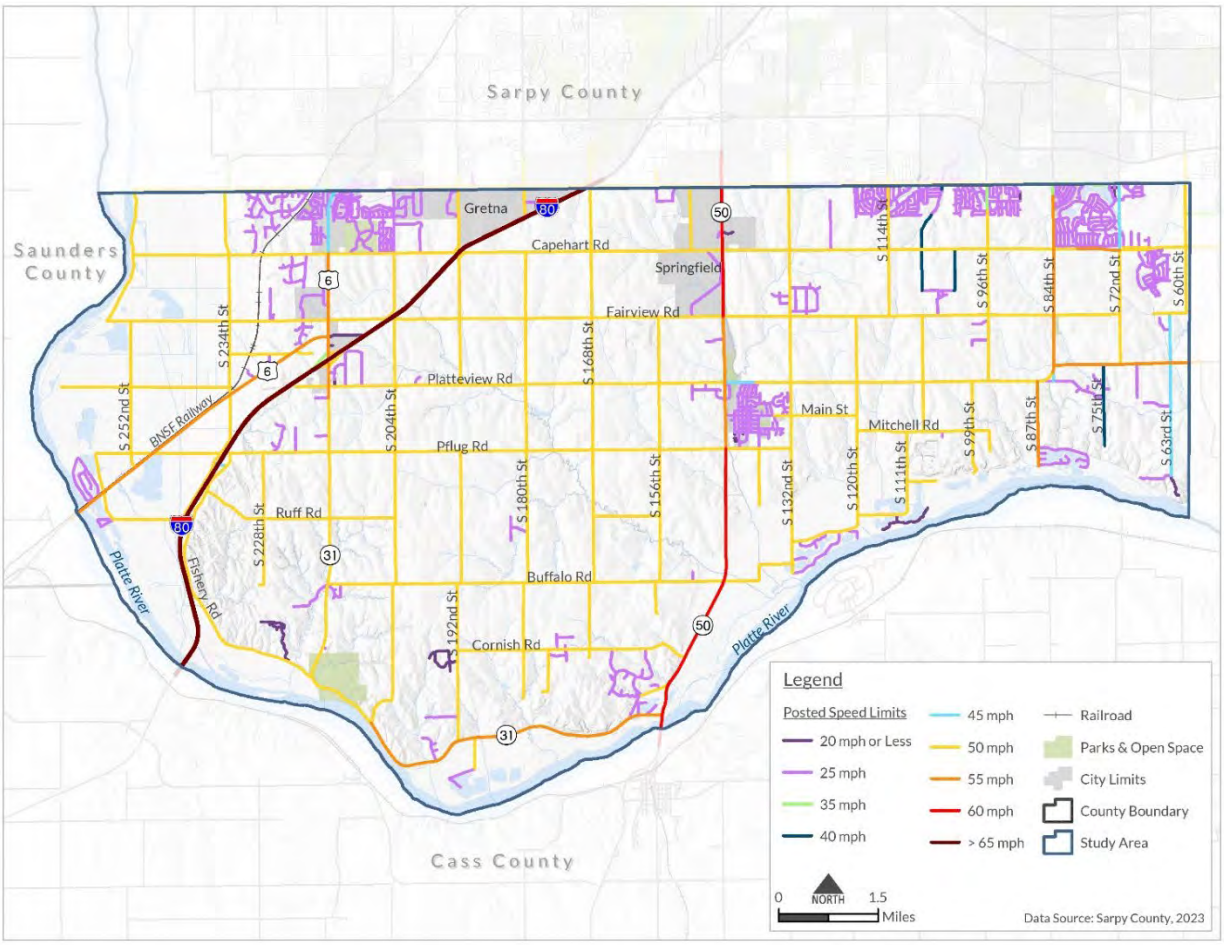
- Planning level traffic operations
- Crash history assessment
- Network connectivity and gap assessment by mode
- Environmental constraints
- Other constraints
- Asset conditions for pavement and bridges

## Planning Level Traffic Operations

The rural transportation network is composed of section line roads that focus traffic moving through the county to highways and the Interstate. Travel speeds are posted throughout the County and within each community. As shown on **Figure 5,** most of the current section line roads list a 50 mile per hour posted speed limit. Most of these roads are county gravel roads that have supported agriculture and low-density residential areas throughout the study area. Posted speeds for highways and interstates provide limits of 55 mph or greater. Posted speeds on local roads with the communities are typically

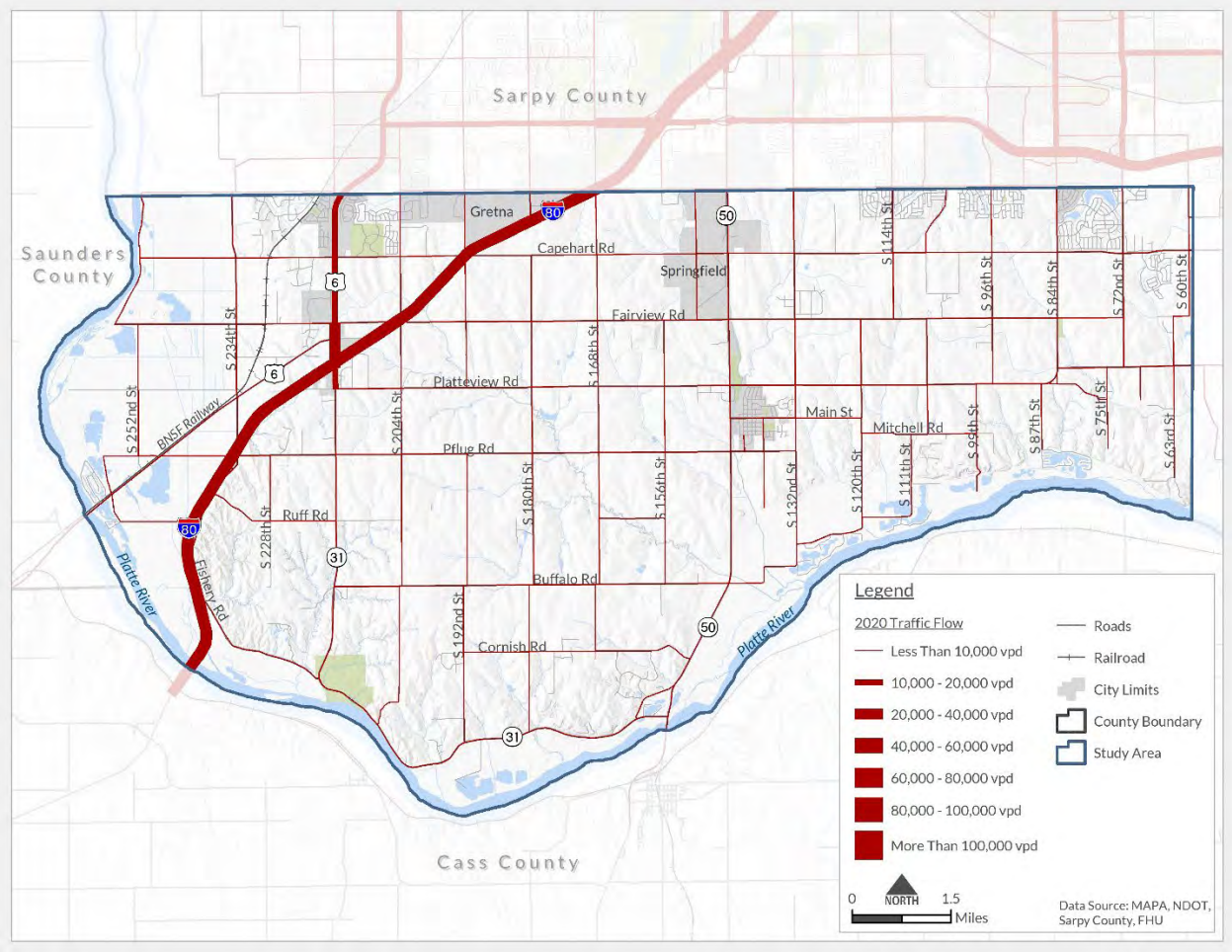
35 mph or lower. State Functional Classification establishes the minimum values for criteria that support posted speed and coordinating the transition between County and Urban design standards requires careful coordination for rapidly growing urban areas.

FIGURE 5: Study Area Posted Speed Limits



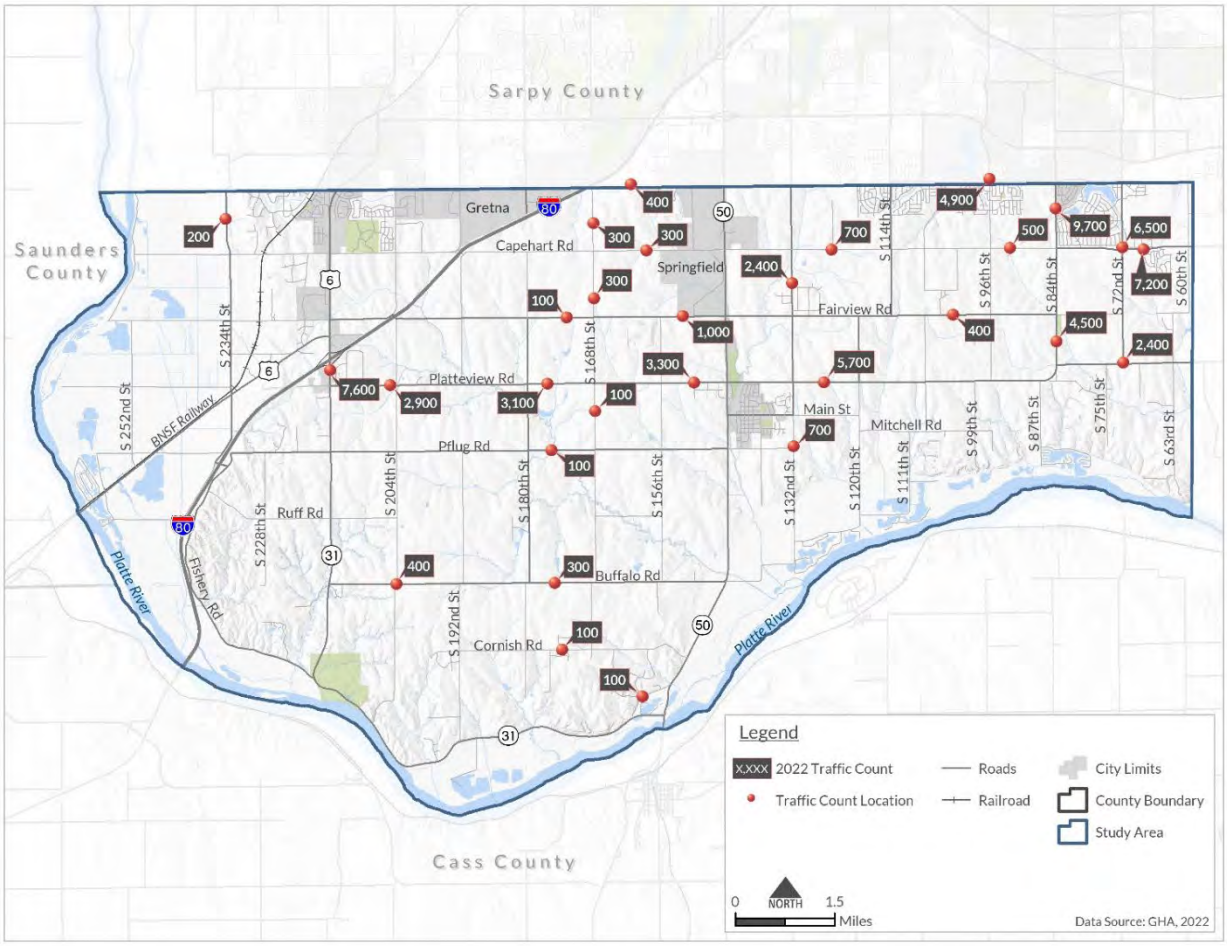
Traffic data (Average Annual Daily Traffic) provided by MAPA and NDOT was useful to consider density of traffic flow along major roadways within the study area. Roadways with more travel lanes or higher posted speeds are expected to carry more vehicles by comparison with county roads that have slower speeds. This correlation is represented in **Figure 6**. Major roadways outside the study area that currently carry higher traffic flows include Highway 370 and Highway 6. Traffic flows largely reflect the number of vehicles that move through the area and the intensity of development within the area which are both expected to increase substantially from current conditions.

FIGURE 6: Study Area Traffic Flows



Traffic count data collected in 2022 was provided by MAPA which is useful to review with the traffic flows and understand how much traffic is using the county road network. Count data is typically collected over a 24-hour period and the timing is scheduled to coincide with typical traffic volumes understanding that there will be some days with more or less than typical volumes collected during the count. The count volumes in **Figure 7** generally correspond well to the modeled traffic flows provided by MAPA for the study. Traffic counts for state highways and the interstate are also available. The data presented on **Figure 7** is helpful for considering traffic that is on the local road network of Sarpy County.

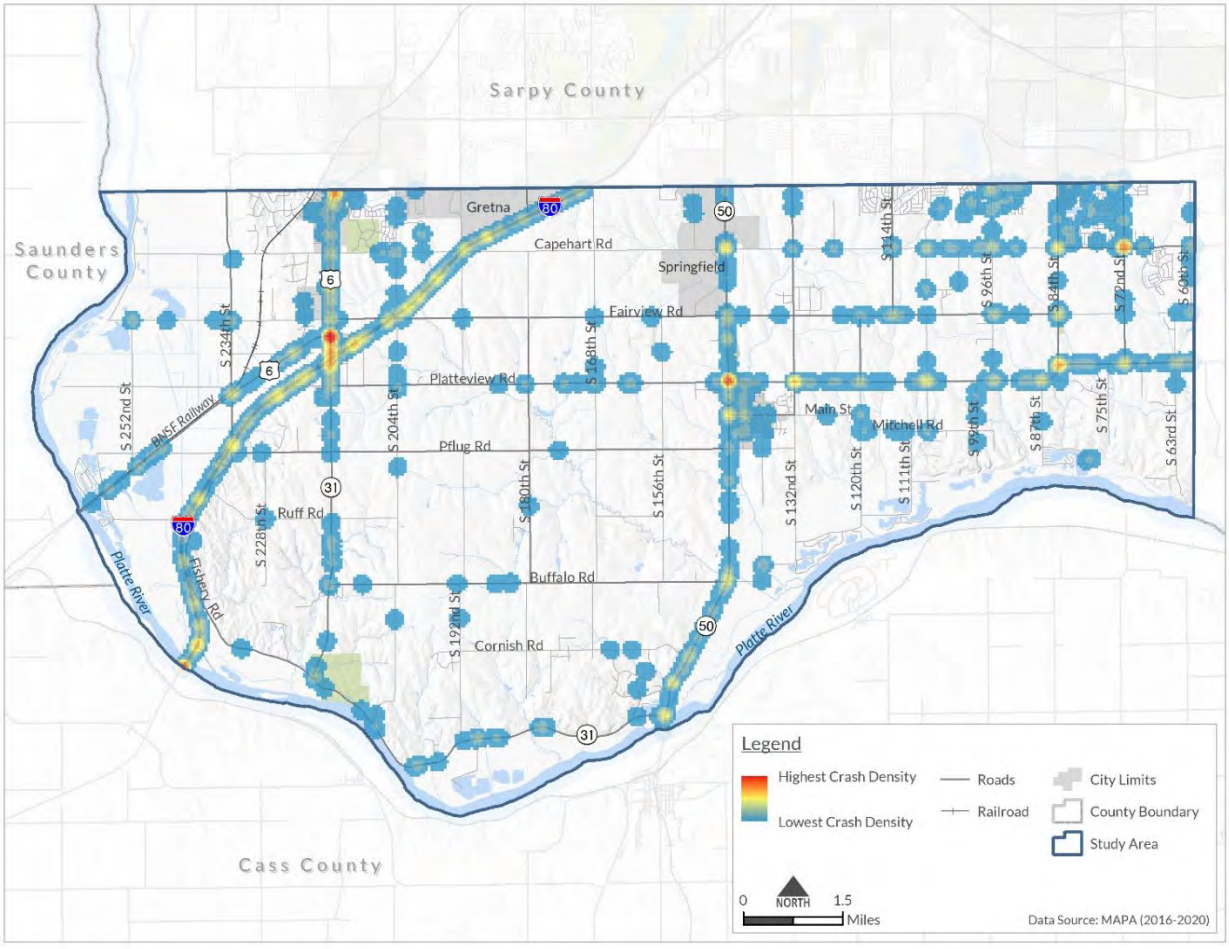
FIGURE 7: Study Area Traffic Counts



## Crash History Assessment

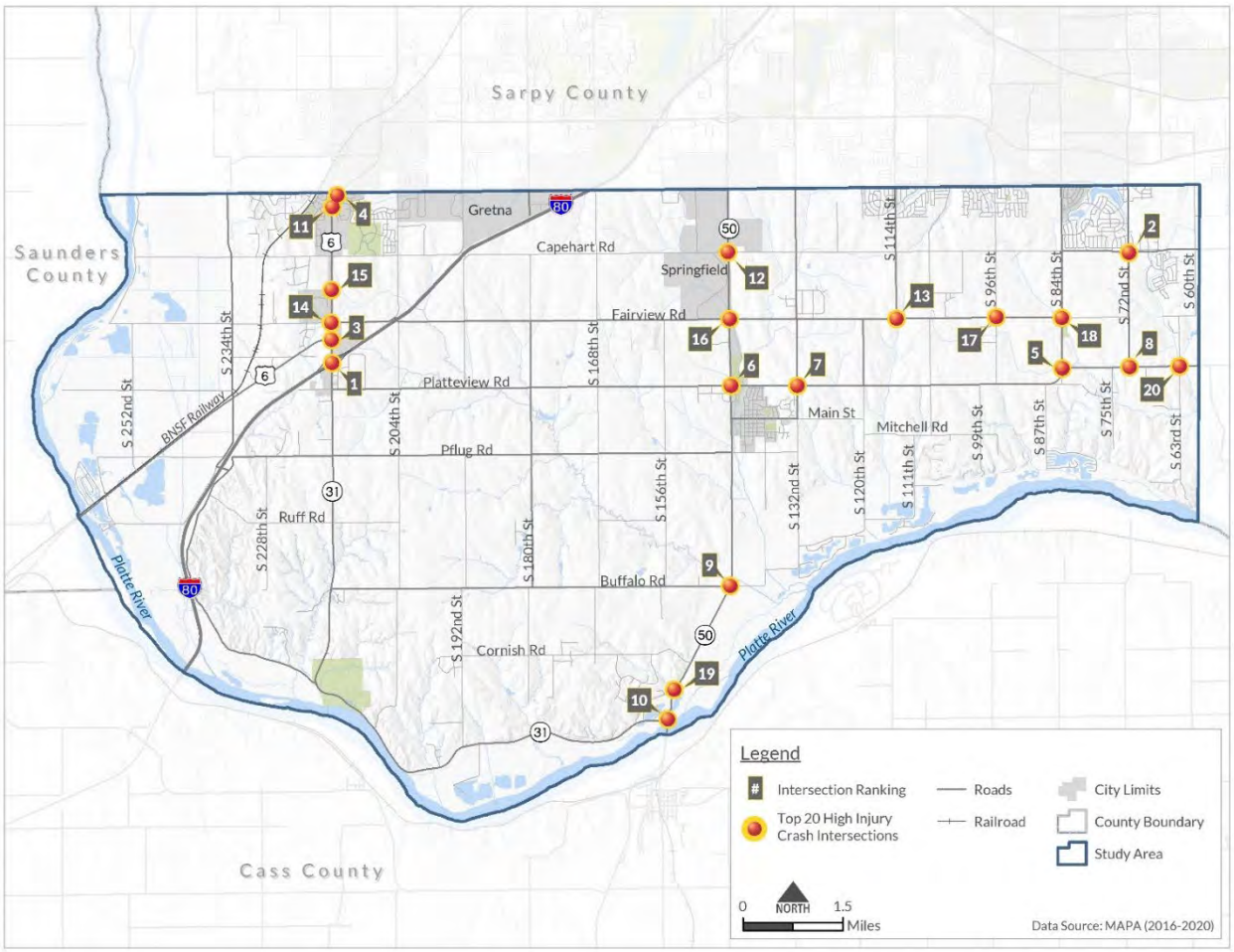
A high-level review of available crash records was completed for roadways within the study area. Records of crashes recorded between 2016 and 2020 were provided to MAPA by NDOT. Crashes are the result of numerous factors that are not explored in this analysis. The density of crashes shown on **Figure 8** provides confirmation that the heaviest traveled roadways also have the most records of crashes. Outside of individual communities included with the study, state highways and interstates represent the largest number of overall crash records. Fairview Road, Platteview Road, and S. 204th Street represent the County roadways with the largest number of crash records.

FIGURE 8: Study Area Crash Record Counts



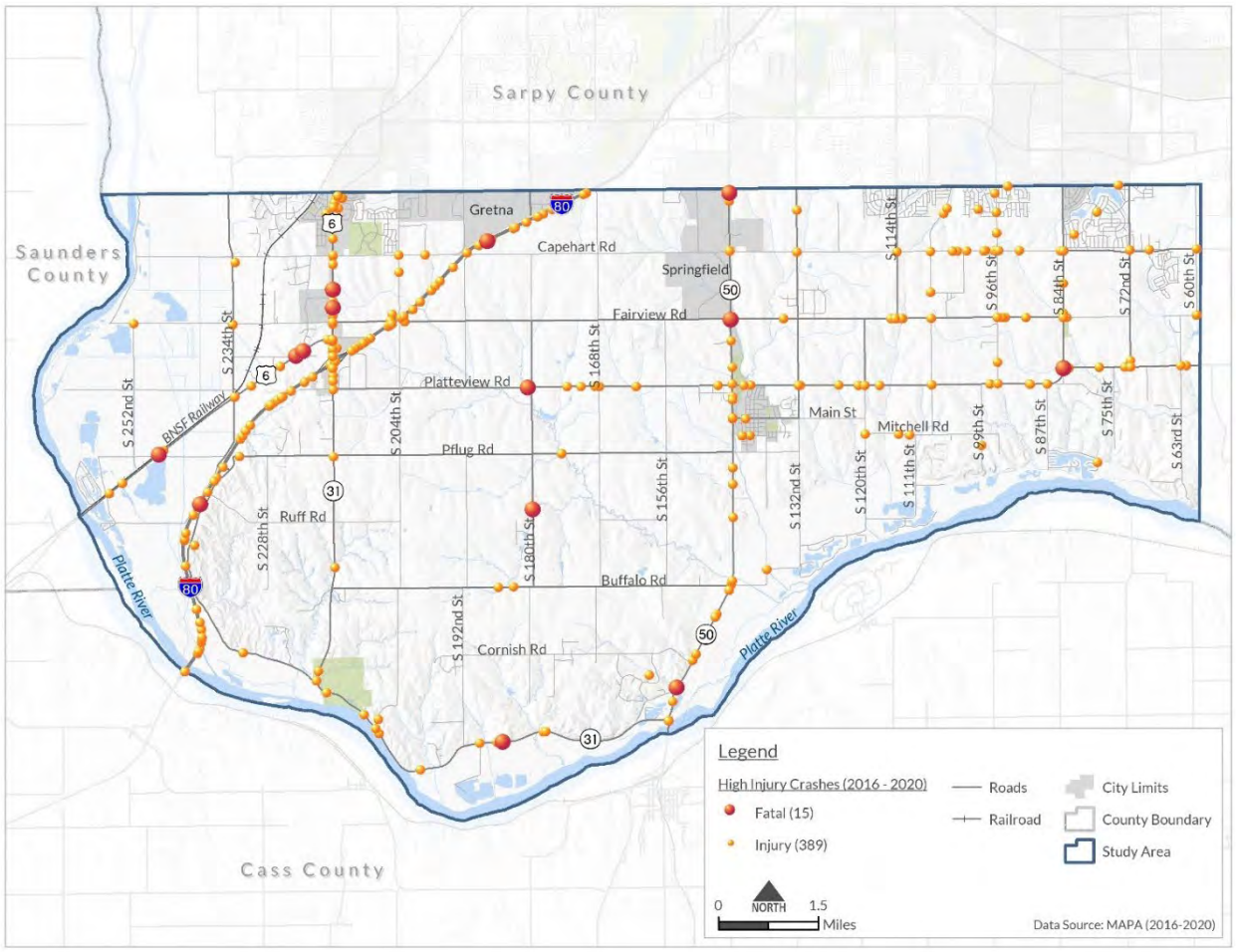
Recorded crash locations are commonly associated with intersections and are described according to the nearest intersection to where the crash occurred. The provided data was screened to identify the twenty intersections that represented the largest number of crashes. An analysis of these intersections or the type of crashes was not completed for existing conditions of this study, but the density of crash at specific locations was of interest. The locations of these 20 intersections are represented in **Figure 9** where more than three quarters of these locations occur on the State highway network or Platteview Road.

FIGURE 9: Study Area Top 20 Crash Record by Intersection



Crash data was also screened to identify the locations where records indicate that a fatality or significant injury had occurred. More than 400 records are represented in **Figure 10** with the predominant number of crashes meeting these criteria located along the interstate, a state highway, or Platteview Road. Six of the 15 fatalities occurred at intersections those roadways. MAPA has initiated a review of existing crash data to prepare a comprehensive safety action plan which will identify the recommended best practices and standards to design roadways and intersections that are safe for all users.

FIGURE 10: Study Area High Injury and Fatality Crash Locations



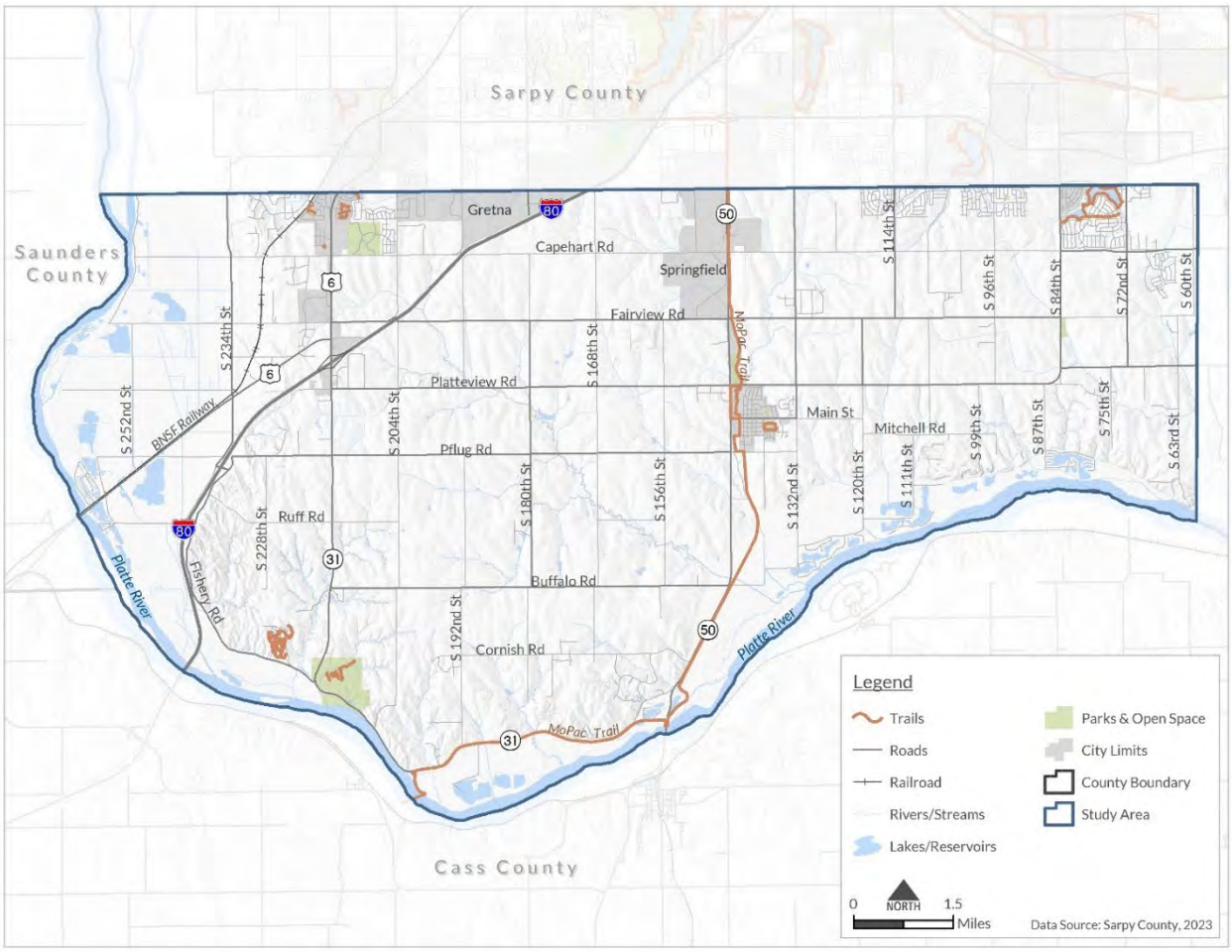

## Bikeways and Trails

Several plans from the different jurisdictions in western Sarpy County addressed recreational trails in the area. Five trails emerged from an analysis of these plans as major connectors in the region. These consisted of the MoPac Trail, the 144th Street Trail, the Keystone Trail, the Bellevue Loop Trail, and the West Papio Trail. Together, these trails will play a major role in enhancing mobility and connectivity across the region.

The MoPac Trail is predominantly shown in **Figure 11** and is part of the national Rails-to-Trails Conservancy travels along a north-south alignment, running through Springfield before turning west to intersect with the Lied Platte River Bridge crossing south of Highway 31. North of the study area. the 144th Street trail extends south into Sarpy County from the greater Omaha area and stops at the

intersection of 144th Street and Emily Street. The West Papio Trail has a northwest-southeast alignment as it runs along Papillion Creek. The Keystone Trail is another major northwest-southeast trail along the east side of the project area that provides many connections to the greater Omaha area. To the south, the Keystone Trail turns into the Bellevue Loop Trail, which continues southeast beyond the project area, and then north again following the Missouri river.

FIGURE 11: Study Area Existing Trails

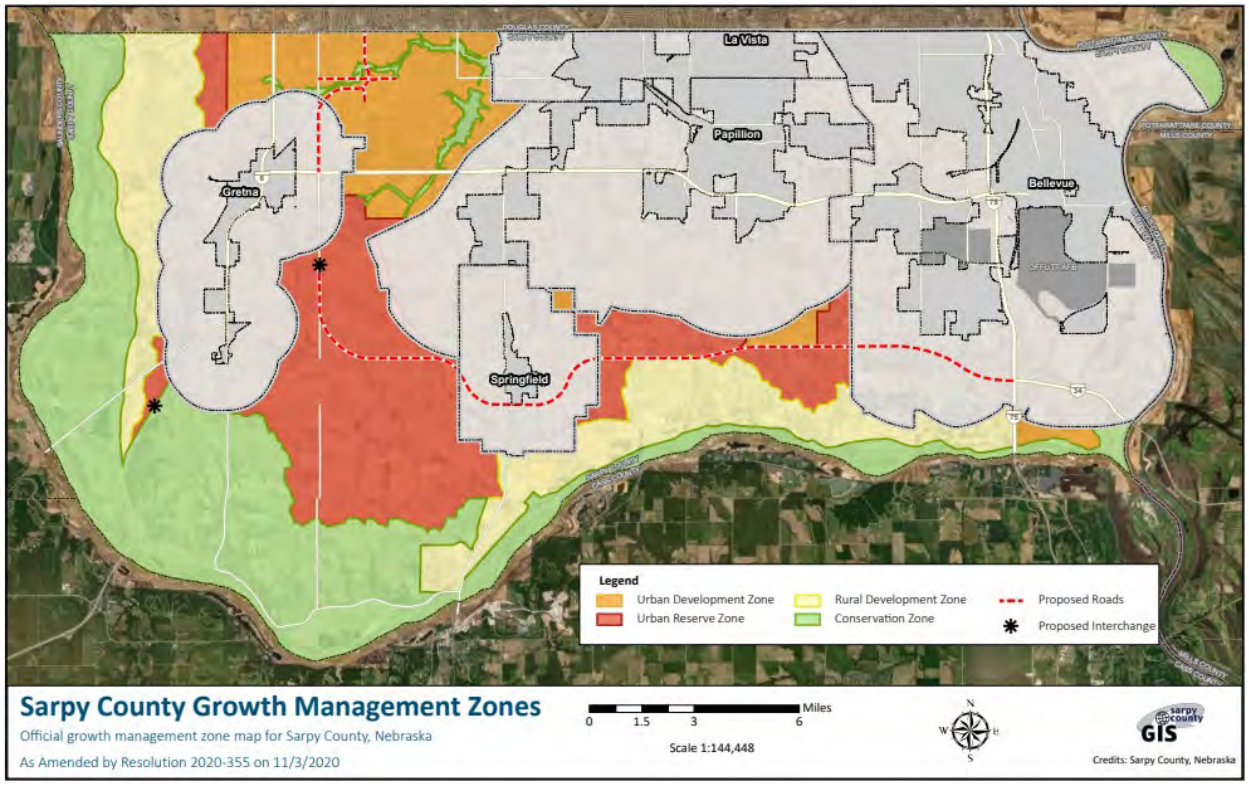



The respective comprehensive or transportation plans of the three cities in Western Sarpy County – Springfield, Gretna, and Papillion – each showcases its own existing trail network. However, outside of each city's limits, gaps exist with the regional network. Each plan detailing the bicycle network addresses the importance of connectivity with this network, often setting a concrete goal of connectivity and proposing additional trails to be constructed. The Keystone Trail in the north, the West Papio Trail in the northwest, and Bellevue Loop Trail in the east are great examples of trails that connect multiple communities in the region, as together, they connect Papillion, La Vista, and Bellevue, as well as other communities in between. However, the City of Springfield and City of Gretna do not have trail connections that connect either to each other or to the greater Omaha metropolitan area. Unfortunately, in many instances, bicycles or pedestrians must resort to a roadway shoulder to navigate a gap between jurisdictions, a practice that is often only comfortable for experienced riders.

## Constraints

An environmental screening of the study was prepared to support Tasks 3.4 and 3.5. The official growth management zone map of Sarpy County (**Figure 12**) was used as the study boundary for this screening. The results of the environmental screening are included with this memorandum as Attachment 1. Water resources and conservation areas along the western and southern boundary of the study area support land uses that limit development pressure. Water resources, parks, and farmland areas of statewide importance are environmental resources that most influence the current land use context within the study area. Individual transportation infrastructure projects are completed through NDOT, MAPA and/or local jurisdictions and must comply with federal regulations for protecting water resources, protected species and critical habitat among other requirements. These regulations are summarized in Attachment 2.

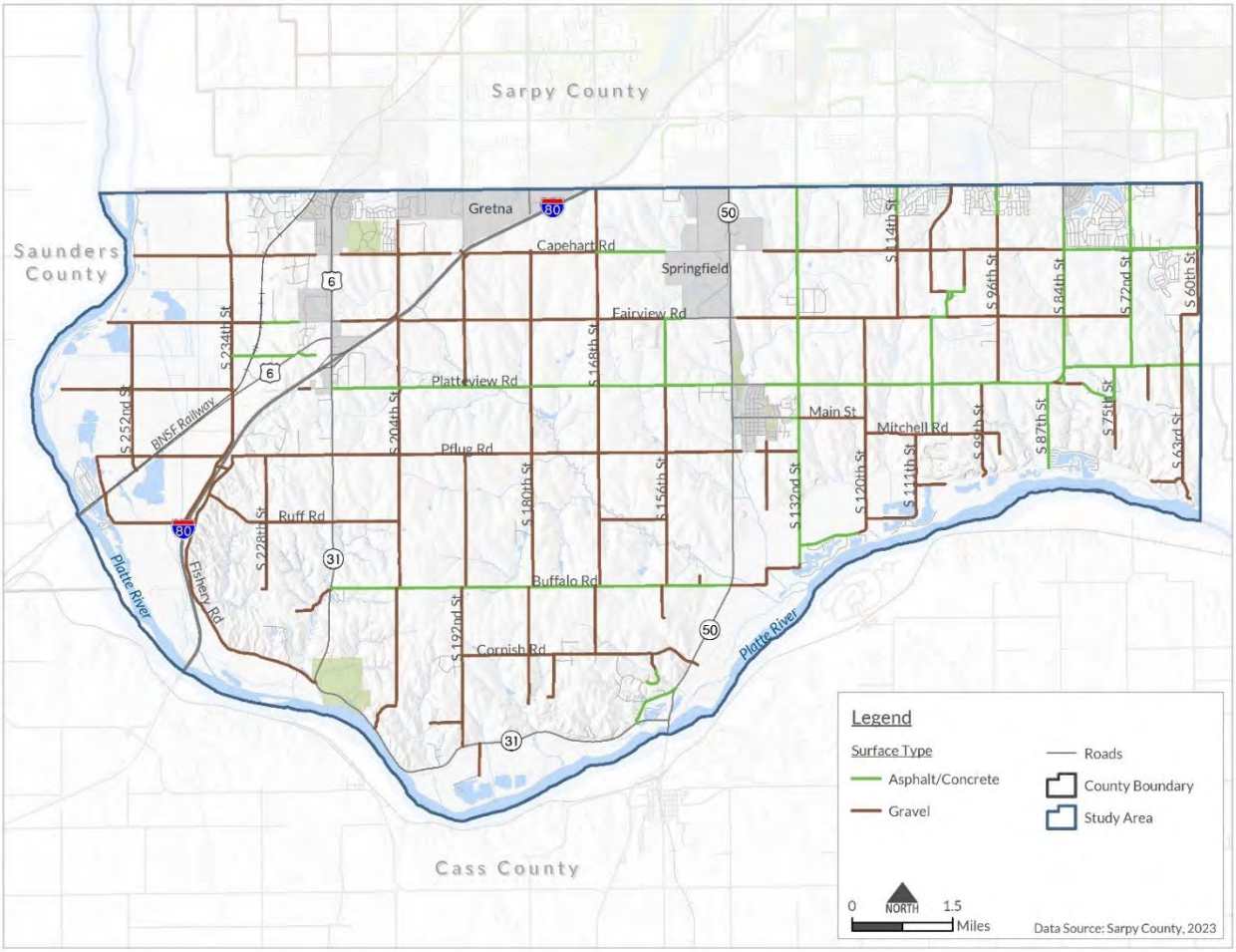
FIGURE 12: Study Area Growth Management Zones



## Asset Conditions for Pavement and Bridges

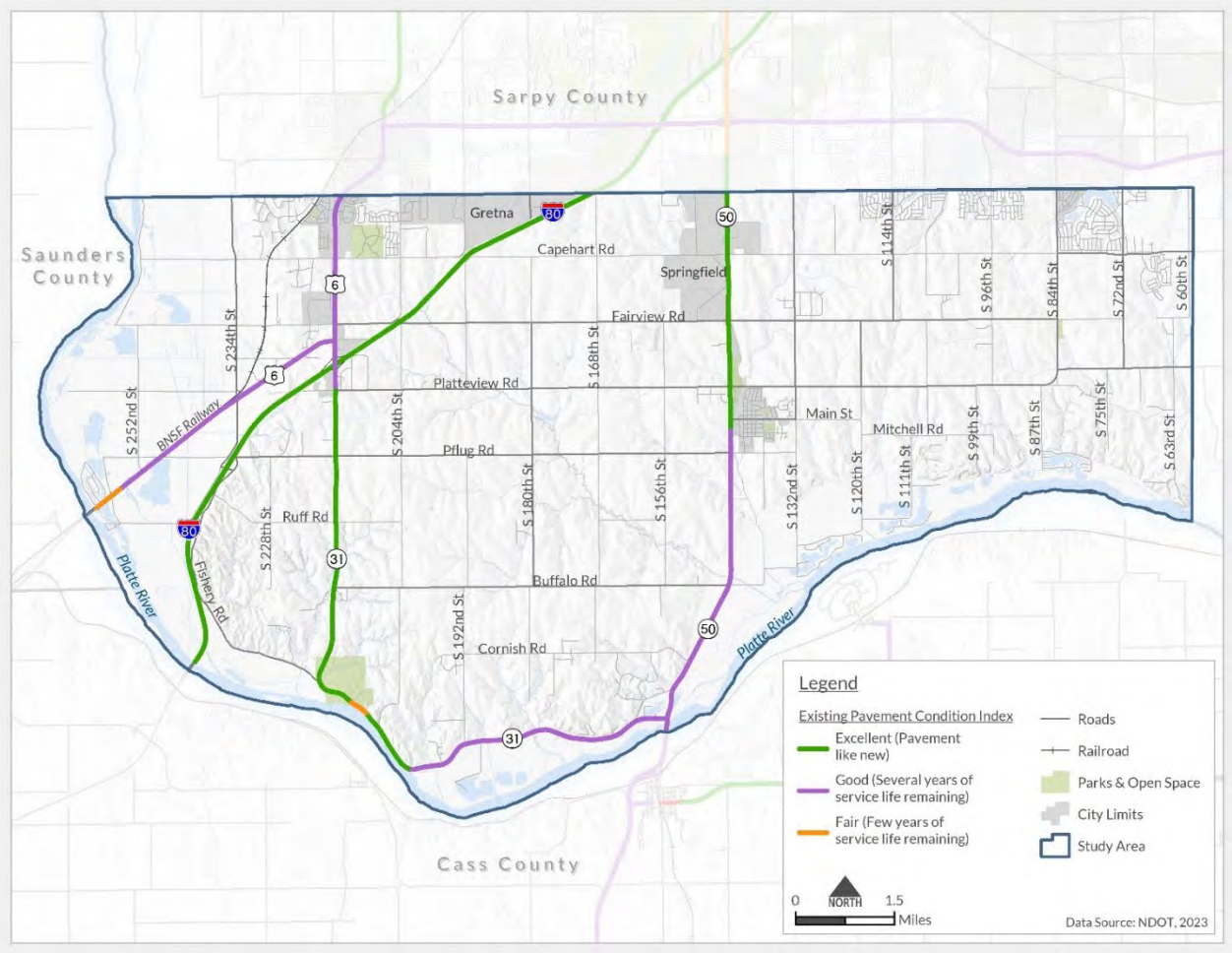
A review of the asset conditions for existing Sarpy County roads was documented for the study area. Information about existing conditions may be helpful for the study recommendations to consider ongoing maintenance needs and possible prioritization of future improvements. Between I-80 and the Platte River, Platteview and Buffalo Road provide paved cross section from east to west (**Figure 13**). The remaining alignments provide a gravel road on section lines with local access provided to more heavily used roadways. The north south roadways between Highway 50 and I-80 remains gravel, while growth pressure near Papillion and Bellevue have led to paving sections of multiple roads to the east of Highway 50.

FIGURE 13: Study Area Existing County Roadway Surface Type



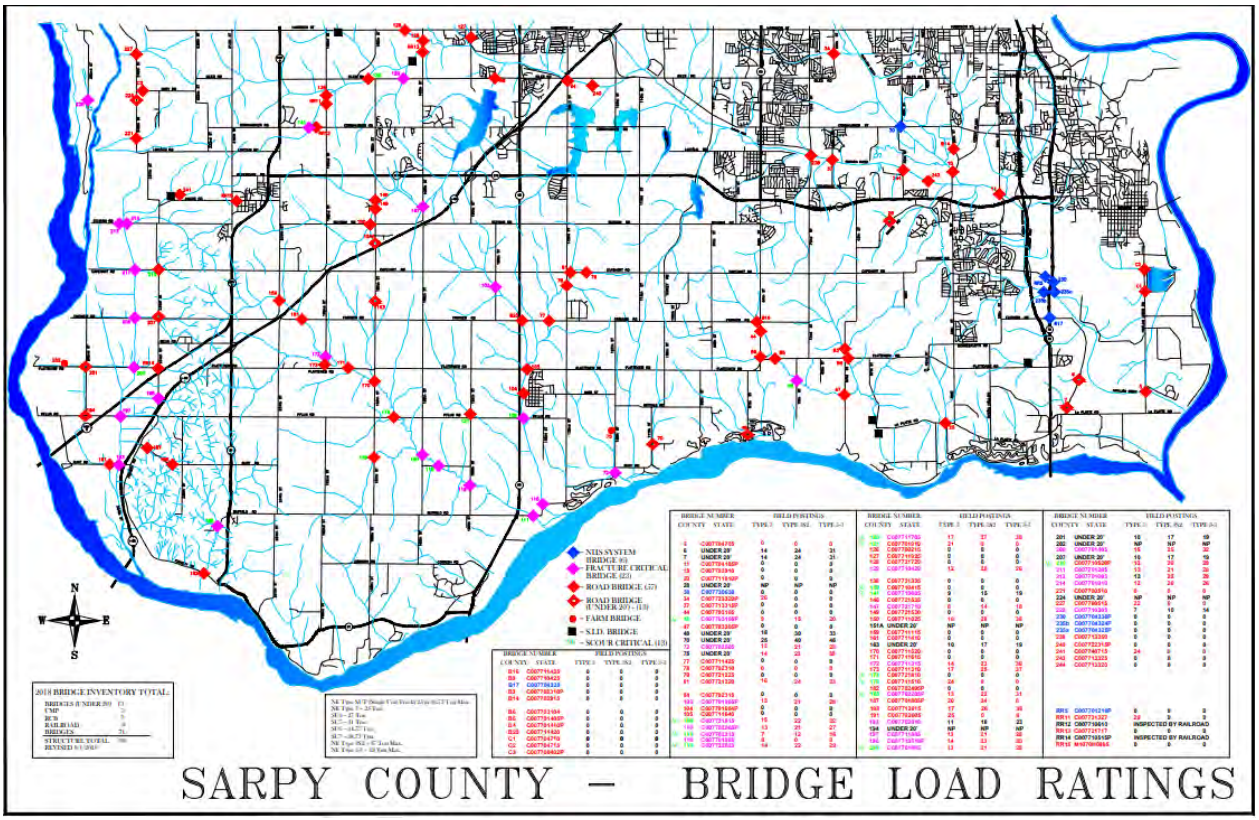
Data provided by NDOT is presented to document the existing condition of the Interstate an Non-Interstate State Highway System. Pavement condition is one performance measure used by MAPA and NDOT to evaluate progress toward achieving goals of the Long Range Transportation Plan. This regional planning document is updated every five years. No segments of the existing network are currently rated Poor and the majority of segments are listed as Good or Excellent condition. Because performance measures like pavement condition index (**Figure 14**) are federally mandated, it is reasonable to expect that NDOT and MAPA will continue to prioritize projects that maintain or improve upon the existing pavement condition ratings.

## FIGURE 14: Study Area Existing Highway Surface Condition



Bridges located in Sarpy County are inspected routinely. Information about each bridge structure that exceeds 20-feet of span length and small structures that provide greater than 16 square feet of open width (ie, culvert(s)) are listed in the National Bridge Inspection Standards database. The information provided in **Figure 15** from Sarpy County Engineering & Permitting provides a summary of the information Sarpy County maintains for Bridge Load Ratings of these NBIS structures. Locations of bridges will be considered in the design of any future roadway improvements. Buffalo Creek flows from Gretna to the Platte River. After crossing I-80, half of the 10 bridge structures are listed as fracture critical. The bridges serve a unified purpose to convey surface runoff to the Platte River. As bridges are replaced to support new roadway cross sections, designs should provide for the grade separated crossing of a new trail corridor as well.

FIGURE 15: Study Area Existing Bridges Load Rating




## Task 3.5 – Future Conditions Analysis

The existing conditions assessment provided with this memorandum may be used by the study team to consider future conditions for land use, multi-modal needs, and an environmental assessment. Following the review and recommendation of alternatives with project stakeholders, this section of the analysis will be expanded.

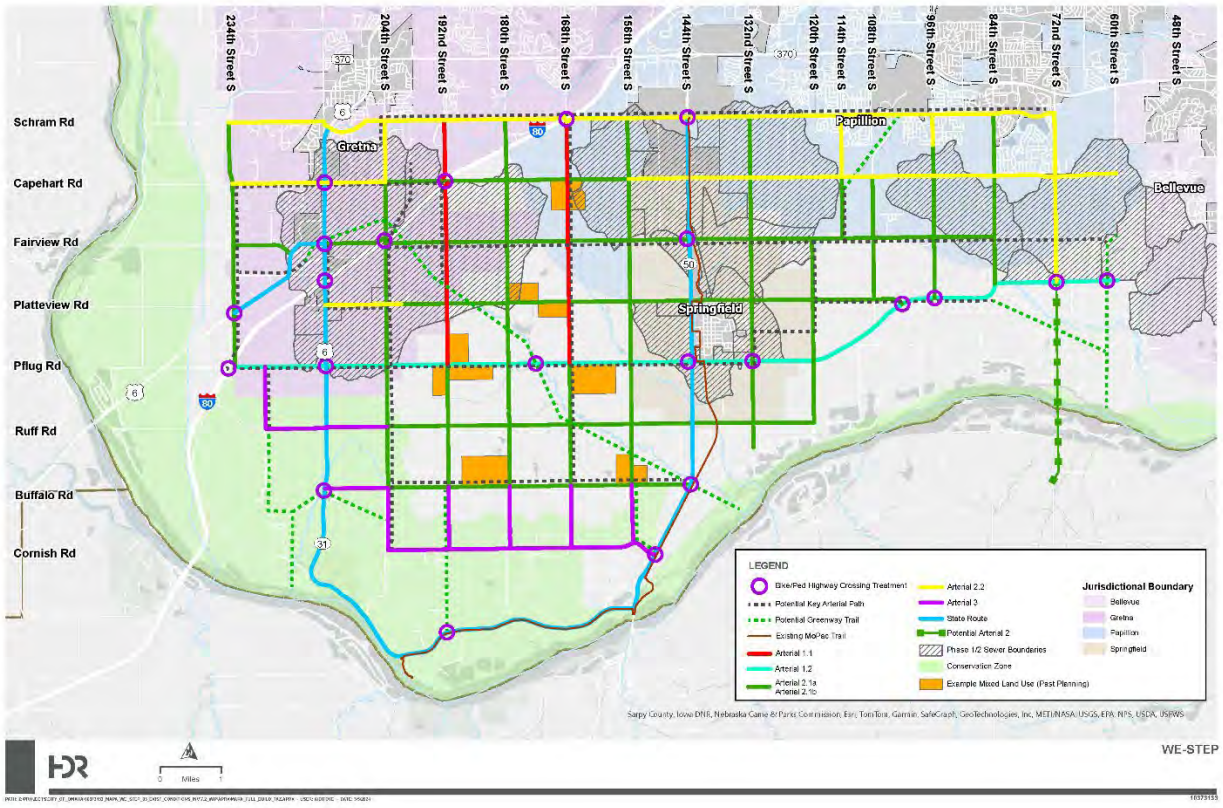
## Land Use / Development Trends

The study team coordinated with MAPA and local jurisdictions to develop three land use assumptions for evaluating alternatives. The assumptions were presented to the steering committee.

## Multi-Modal Transportation Needs Assessment

Urban growth within the study area will provide the need to improve the existing cross section of section line roads to support the many developments that will occur over time. The study process has identified multiple options for arterial cross sections. Each alternative is envisioned to incorporate the needs of active transportation users as well as personal vehicles. A sequence of priority arterial alignments have been recommended to incorporate a wider sidepath and specifically enhance the intersection approaches to support pedestrians as well as bicycles. These are shown on **Figure 16** in addition to potential greenway trails that do not typically follow the section line roads. Locations where bike/pedestrian crossings are anticipated to require a higher level of design and possible grade separation are shown below as purple circles. Interstate 80 and the State Highway routes carry the highest speeds and most vehicles through the study area. Providing safe ways for active transportation to cross these facilities should be considered in all roadway design plans.

FIGURE 16: Study Area Priority Arterials and Trail Network



## Environmental Review

Development pressure and the resulting transportation network must be accomplished in a manner that supports local and regional policies as well as all Federal and State environmental regulations. The size of the study area is large and individual transportation projects will be evaluated in a manner that aligns with the use of Federal funds, state aid, or local funding. A summary of environmental resources applicable to the western Sarpy County planning area are summarized in Attachment 2.

### Noise

Noise abatement may need to be evaluated for individual projects within the study area, depending on the nature of the project and adjacent land uses near the project location. For federal and state funded projects, noise evaluation would follow the NDOT Noise Analysis and Abatement Policy. Based on noise modeling projections, noise abatement measures would be evaluated for feasibility and reasonableness.

### Floodplains

The Federal Emergency Management Agency (FEMA) is the primary agency responsible for evaluating impacts to the floodway and the 100-year floodplain. A regulatory floodway is the area of a channel and adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Floodway is designated by FEMA and must remain free of development for this purpose. The 100-year floodplain is the land area covered by floodwaters during a 100-year flood event (i.e., areas that have a 1% annual chance of flooding). Areas of Zone A/AE floodplain and floodway are present within a number of areas throughout the study area as identified in **Attachment 1-Figure 4**. In particular along the Platte River in the south and west of the study area; and along Springfield and Buffalo Creeks in the central portion of the study area.

Western Sarpy County study area exists outside the Papillion Creek Partnership which has adopted floodplain development standards enforced by each jurisdiction. The same floodplain management principles are applicable to areas of Sarpy County outside the Papillion Creek Watershed where unless exempt from local floodplain policy adopted by the Papio Partnership, A setback area equal to three (3) times the channel depth plus fifty (50) feet (3:1 plus 50 feet) from the edge of low water on both sides of channel shall be required for any above or below ground structure exclusive of bank stabilization structures, poles or sign structures adjacent to any watercourse defined within the watershed drainage plan. Grading, stockpiling, and other construction activities are not allowed within the setback area and the setback area must be protected with adequate erosion controls or other Best Management Practices, (BMPs). The outer 30 feet adjacent to the creek setback limits may be credited toward meeting the landscaping buffer and pervious coverage requirements. The Floodway Fringe encroachment and creek setback schematic is represented above.

### Wetlands

Based on the National Wetland Inventory and National Hydrography Data set, potential wetlands and channels are present within the environmental study area. The southern border of the project area includes approximately 35 miles of Platte River shoreline including numerous tributaries such as Buffalo Creek, Springfield Creek, and Turtle Creek. In addition, the proposed project area encompasses the Elkhorn River confluence with the Platte in the northwest corner. Many other wetlands and water resources are likely to be present throughout the study area and would need to be determined with a field review of specific project locations.

## Air Quality

The study area is not in a non-attainment zone. On October 1, 2015, the Environmental Protection Agency imposed tougher national air quality standards related to ground-level ozone. The Omaha-Council Bluffs metropolitan area meets these new standards and remains in "attainment" status, but barely. The new standard for ground-level ozone is 70 parts per billion (ppb). Our region's current measurement according to the area's air quality monitors is 67 ppb, just three points lower than the new standard.

## Sensitive Species

Federal and/or State listed species that could occur within the study area include:

- Interior Least Tern (*Sternula antillarum athalassos*) - state endangered
- Piping Plover (*Charadrius melodus*) - state and federally threatened
- Pallid Sturgeon (*Scaphirhynchus albus*) - state and federally endangered
- Lake Sturgeon (*Acipenser fulvescens*) - state threatened
- Sturgeon Chub (*Macrhybopsis gelida*) - state endangered
- Western Prairie Fringed Orchid (*Platanthera praeclara*) - state and federally threatened
- Northern Long-eared Bat (*Myotis septentrionalis*) - state threatened and federally endangered

Habitat for the first five species is generally associated with the Platte and Elkhorn Rivers. Western prairie fringed orchid habitat is present in native prairie remnants, wherever present. Northern long-eared bat habitat is generally found within forested areas throughout the study area, including riparian areas along creeks. Northern long-eared bat hibernacula is also known to be present in the south portion of the study area, and may require additional coordination for any impacts to suitable habitat in this area.

# Attachment 1 - Summary of Environmental Resource Findings

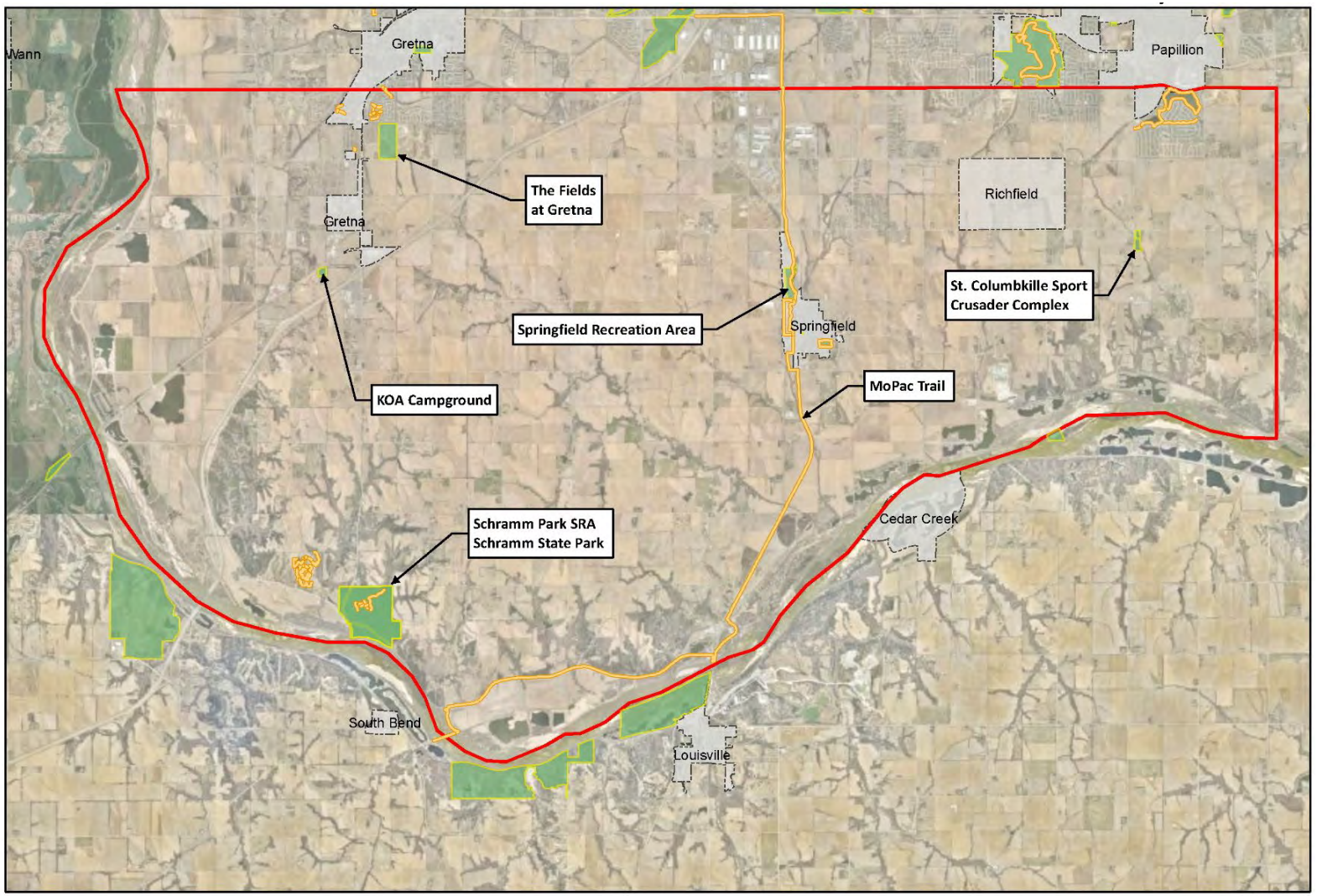



**Figure 1**
**Recreational Resources**
Western Sarpy County Transportation Enhancement Plan
Sarpy County, Nebraska

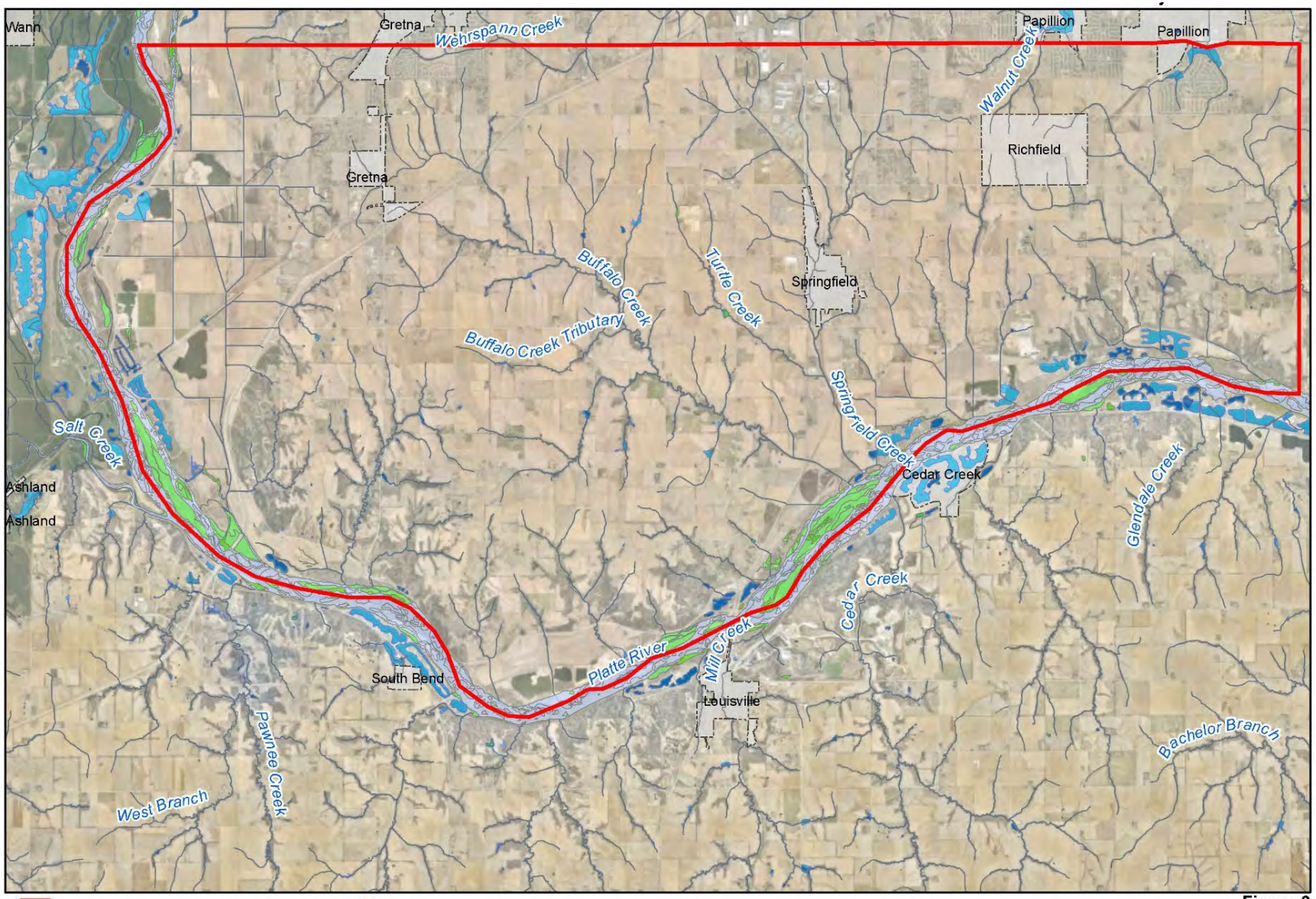



**Figure 2**
**Water Resources**
Western Sarpy County Transportation Enhancement Plan
Sarpy County, Nebraska

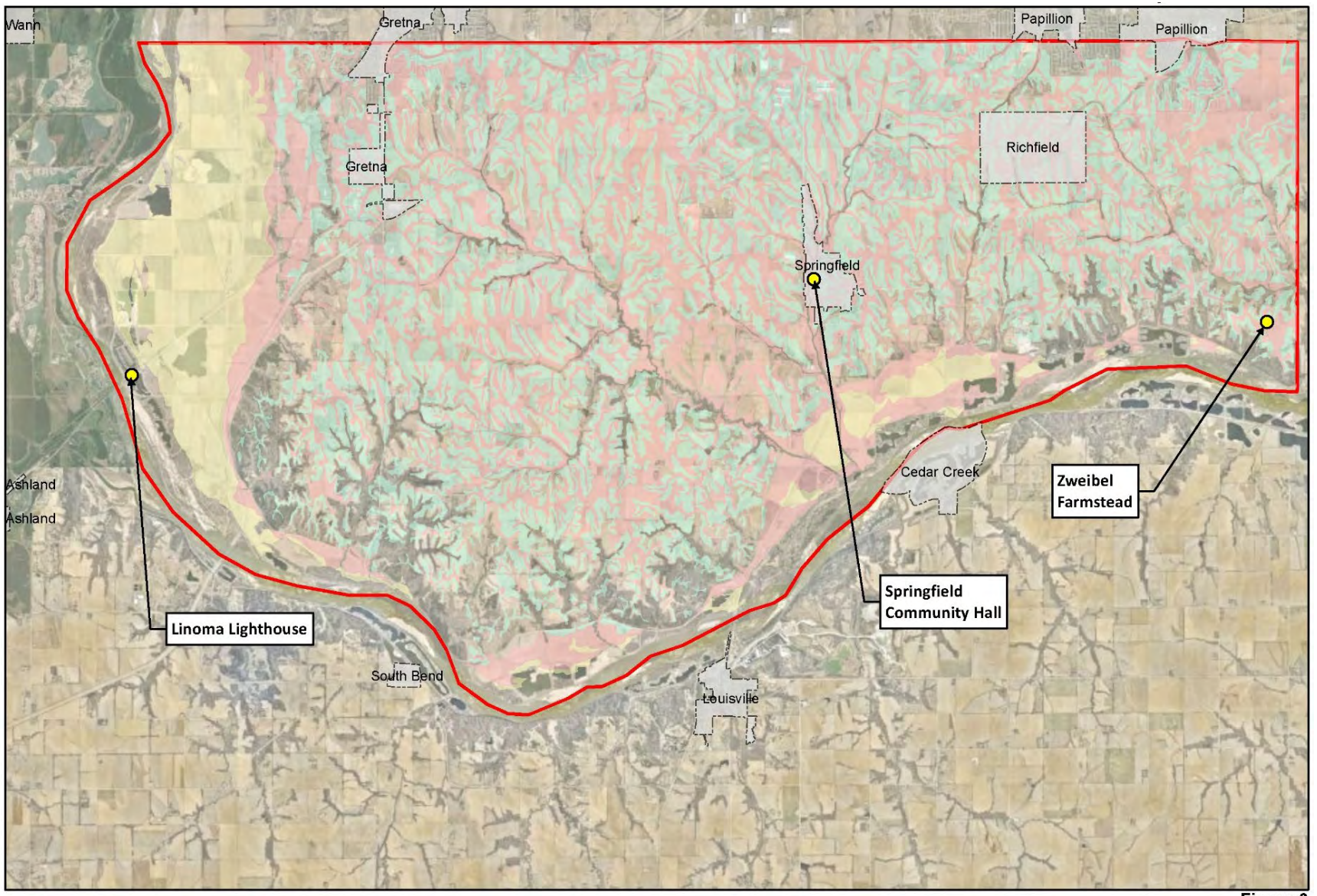



**Figure 3**
**Farmland and Historic Sites**
Western Sarpy County Transportation Enhancement Plan
Sarpy County, Nebraska

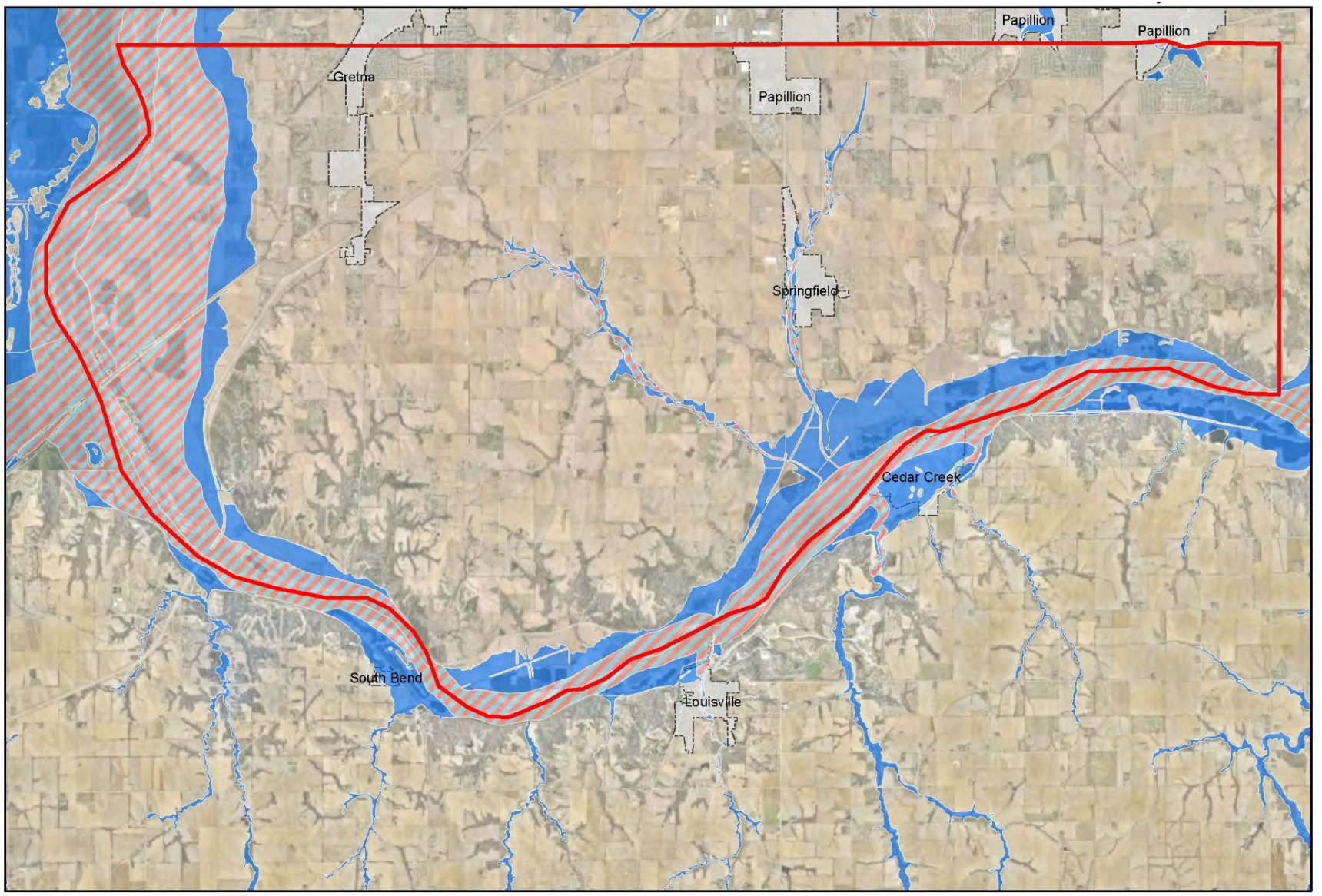



**Figure 4**
**Floodplains**
Western Sarpy County Transportation Enhancement Plan
Sarpy County, Nebraska

# Attachment 2 - Summary of Environmental Resource Findings

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| **Wetlands** | Section 404 of the Clean Water Act (CWA). Title 117 of the Nebraska Administrative Code. | Wetlands and other water resources are afforded protection under the Clean Water Act (CWA) as amended, and EO 11990 of 1977 (Protection of Wetlands). They are also afforded protection from Title 117 of the Nebraska Administrative Code (NAC). Impacts to these resources could require obtaining a Section 404 permit from U.S. Army Corps of Engineers (USACE). Depending on potential impacts, wetland or channel mitigation may be necessary.<br><br>Based on the National Wetland Inventory and National Hydrography Data set, potential wetlands and channels are present within the environmental study area (**Attachment 1-Figure 2**). The southern border of the project area includes approximately 35 miles of Platte River shoreline including numerous tributaries such as Buffalo Creek, Springfield Creek, and Turtle Creek. In addition, the proposed project area encompasses the Elkhorn River confluence with the Platte in the northwest corner. Many other wetlands and water resources are likely to be present throughout the study area and would need to be determined with a field review of specific project locations. |
| **Water Quality** | Section 303(d) of the CWA; Safe Drinking Water Act of 1986. | Water Quality is regulated under the Federal Water Pollution Control Act Amendments of 1972 (CWA). The objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and non-point pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. Each individual state has jurisdiction for managing water quality in its respective state. Section 303(d) of the CWA requires each state to evaluate water quality conditions in designated water bodies and list as impaired any water bodies not meeting water quality standards; this is to be reported every other year.<br><br>Based on the 2022 Nebraska Water Quality Integrated Report, two Category 5 impaired waters are present within |

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| | | the environmental study area: Platte River and Walnut Creek. Future projects would need to implement BMPs to ensure they do not contribute to the impairment of these waterbodies. |
| **FEMA Floodplains** | National Flood Insurance Program; National Flood Insurance Act of 1968. | Floodplain Management Guidelines, EO 11988, outlines the responsibilities of the federal agencies in the role of floodplain management. Each agency shall evaluate the potential effects of actions on floodplains and should avoid undertaking actions that directly or indirectly support floodplain development. The Federal Emergency Management Agency (FEMA) is the primary agency responsible for evaluating impacts to the floodway and the 100-year floodplain. A regulatory floodway is the area of a channel and adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Floodway is designated by FEMA and must remain free of development for this purpose. The 100-year floodplain is the land area covered by floodwaters during a 100-year flood event (i.e., areas that have a 1% annual chance of flooding).<br><br>Areas of Zone A/AE floodplain and floodway are present within a number of areas throughout the study area as identified in **Attachment 1-Figure 4**. In particular along the Platte River in the south and west of the study area; and along Springfield and Buffalo Creeks in the central portion of the study area. |
| **Cultural Resources** | Section 106 of the National Historic Preservation Act (NHPA); Native American Graves Protection Act. | Section 106 of the National Historic Preservation Act (NHPA) requires that federally funded or permitted projects be evaluated for impacts on historic properties (buildings, archaeological sites, etc.).<br><br>Publicly available data for the National Registers of Historic Places identified three listed historic sites in **Attachment 1-Figure 3**. Other sites not currently listed on the National Register may be present within the study area. Specific projects areas would need to be reviewed to determine if there are potentially eligible structures that are protected under Section 106. Coordination with the Nebraska State Historic Preservation Office is also recommended for specific projects to determine if there are other sites not listed in public databases. |

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| **Threatened & Endangered Species** | Endangered Species Act; Nebraska Nongame and Endangered Species Conservation Act. | The Endangered Species Act protects imperiled species and their habitats. Section 9 of the Endangered Species Act makes it unlawful for any person—including private and public entities—to "take" individuals of an endangered and threatened species. Section 7 of the Endangered Species Act requires federal agencies to consult with the US Fish and Wildlife Service (USFWS) for any federally permitted project that may affect a species listed under the study area. The USFWS is the primary agency responsible for administering the Endangered Species Act. The Nebraska Nongame and Endangered Species Conservation Act, administered by the Nebraska Game and Parks Commission (NGPC), protects state listed Threatened and Endangered species.<br><br>Federal and/or State listed species that could occur within the study area include:<br>Interior Least Tern (Sternula antillarum athalassos) - state endangered<br>Piping Plover (Charadrius melodus) - state and federally threatened<br>Pallid Sturgeon (Scaphirhynchus albus) - state and federally endangered<br>Lake Sturgeon (Acipenser fulvescens) - state threatened<br>Sturgeon Chub (Macrhybopsis gelida) - state endangered<br>Western Prairie Fringed Orchid (Platanthera praeclara) - state and federally threatened<br>Northern Long-eared Bat (Myotis septentrionalis) - state threatened and federally endangered<br><br>Habitat for the first five species is generally associated with the Platte and Elkhorn Rivers. Western prairie fringed orchid habitat is present in native prairie remnants, wherever present. Northern long-eared bat habitat is generally found within forested areas throughout the study area, including riparian areas along creeks. Northern long-eared bat hibernacula is also known to be present in the south portion of the study area, and may require additional coordination for any impacts to suitable habitat in this area. |

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| **Migratory Birds and Bald and Golden Eagles** | Migratory Bird Treaty Act (MBTA); Bald and Golden Eagle Protection Act (BGEPA) | Under the Migratory Bird Treaty Act (MBTA), construction activities that would otherwise result in the "taking" of migratory birds, eggs, young, and/or active nests, should be avoided. Additionally, Nebraska Revised Statute §37-540 prohibits take and destruction of nests or eggs of protected birds. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs from April 1st to July 15th and from February 1st to July 15th for raptors; however, some birds may nest outside these periods. Bald and golden eagles have specific protection under the Bald and Golden Eagle Protection Act (BGEPA), administered by the USFWS.<br><br>Projects with tree removal activities have the potential to directly impact birds, eggs, young, or active nests protected by MBTA. Tree and shrub clearing should be avoided during the primary nesting season, or surveys should be conducted by a qualified biologist prior to construction. Additionally, bald eagles nest in tall trees near large, open waterbodies where they can forage. Project areas with large trees (e.g., mature cottonwoods) near large bodies of water should be surveyed for potential bald eagle nests. This includes areas near the Platte River, as well as larger reservoirs and creeks throughout the study area. |
| **Parks & Recreational Areas** | Section 6(f) of the Land and Water Conservation Act; Section 4(f) of the U.S. Department of Transportation Act. | Recreational resources developed with federal funding through the Land and Water Conservation Fund (LWCF) are protected under Section 6(f) of the LWCF Act, which prohibits the conversion of these properties to anything other than public outdoor recreation uses. This protection applies regardless of whether a project has federal funding. Section 4(f) of the United States Department of Transportation Act (USDOT Act) of 1966 stipulates that FHWA and other DOT agencies cannot approve the use of land from<br>publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless certain conditions apply.<br><br>Several state parks, recreation areas, wildlife management areas, and trails are identified in **Attachment 1-Figure 1**. These and other publicly owned recreational resources would be protected by Section 4(f). |

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| | | Additionally, several recreational resources in the study area were funded through Land and Water Conservation and are protected by Section 6(f). These Section 6(f) properties are generally located in Springfield, Gretna, Papillion, and Schramm State Park. |
| **Environmental Justice** | Executive Order 12898 | Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, directs federal agencies to incorporate environmental justice in their decision-making process. Environmental Justice populations could be present within the study area. Environmental Justice populations are possible within the study area. Individual project areas would need to be reviewed for the presence of potential environmental justice populations and, if present, evaluate whether the project would result in disproportionate adverse impacts to Environmental Justice populations. |
| **Airspace** | Federal Aviation Administration (FAA) | Protected airspace surrounds Millard Airport and Offutt Air Force Base. However, both are located outside the study area and therefore are unlikely to be a constraint to any proposed projects. Construction equipment height will need to comply with the requirements of the FAA. If the proposed project would have any structures or equipment that exceed 200 feet above ground level, FAA Form 7460-01 (Notice of Proposed Construction or Alteration) must be submitted to FAA. |
| **Air Quality** | Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) | Federal air quality policies are regulated through the Clean Air Act (CAA) of 1963, as amended (42 USC § 7401 – 7671). The CAA is intended to "protect and enhance the quality of the Nation's air resources to promote the public health and welfare and the productive capacity of its population." The CAA directs the attainment and maintenance of National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50). The EPA also implements the NAAQS and determines attainment of federal air quality standards on a short- and long-term basis. The study area is not in a non-attainment zone. |
| **Noise** | | Noise is defined as unwanted sound that interferes with normal activities or in some way reduces the quality of the environment. In urban areas, most noise comes from transportation, construction, industrial, and human sources. |

| Environmental Resource | Applicable Regulations | Findings |
|---|---|---|
| | | Noise abatement may need to be evaluated for individual projects within the study area, depending on the nature of the project and adjacent land uses near the project location. For federal and state funded projects, noise evaluation would follow the NDOT Noise Analysis and Abatement Policy. Based on noise modeling projections, noise abatement measures would be evaluated for feasibility and reasonableness. For locations meeting the feasibility and reasonableness criteria, noise abatement measures would be carried forward for a vote by the benefitting property owners and tenants. At least 75 percent of points from returned ballots must be in favor of the proposed noise barrier in order for noise abatement to be provided. |

# APPENDIX B: PUBLIC AND STAKEHOLDER ENGAGEMENT SUMMARY

| STAKEHOLDER | CATEGORY/NOTES | CONTACT |
|---|---|---|
| Sarpy Sewer Agency | Resources | Dan Hoins |
| South Sarpy Watershed Partnership/NRD | Resources | |
| Grow Sarpy | Growth and Development | Mike Rooks |
| Sarpy Chamber of Commerce | Growth and Development | Karen Gibler |
| South Sarpy Environmental Group | Resources | |
| OPPD | Utilities | Matt Core |
| MUD | Utilities | Tim Cavanaugh |
| MUD | Utilities | Mike McGowan |
| City of Bellevue | Municipalities | |
| Nebraska Department of Transportation | Transportation Agency | Tom Goodbarn |
| Gretna Area Chamber of Commerce | Growth and Development | |
| Black Hills Energy | Utilities | |
| City of Omaha | Municipalities | David K. Fanslau |
| Werner Trucking | Logistics/Freight | |
| Claas | Logistics/Freight | |

| STAKEHOLDER | CATEGORY/NOTES | CONTACT |
|---|---|---|
| Meta/Facebook Data | Data Centers | |
| Yahoo Data | Data Centers | |
| Amazon Distribution | Logistics/Freight | |
| Sarpy County Sheriff's Office | Emerency Response | Tori Boldt |
| Sarpy County Emergency Response Agency | Emerency Response | Jesse Eret |
| Papillion Fire Department | Emerency Response | Robb Gottsch |
| Papillion Police Department | Emerency Response | Christiaan E. Whitted |
| Springfield Volunteer Fire Department | Emerency Response | |
| Gretna Fire & Rescue | Emerency Response | Rod Buethe |
| City of La Vista | Municipalities | Joe Soucie |
| Papillion - La Vista Community Schools | School Districts | Stephanie Scheller |
| Springfield-Platteview Community Schools | School Districts | Nichole Baugh |
| Gretna Public Schools | School Districts | Travis Lightle |
| Metropolitan Community College | School Districts | Stan Horrell |
| MOBA | Builders/Developers | Jaylene Eilenstine |
| Build Omaha | Builders/Developers | Colleen Newton |

# Western Sarpy Transportation Enhancement Plan

# Community Engagement Summary

May 2024

This document provides a summary of all engagement conducted for the Western Sarpy Transportation Enhancement Plan (WE-STEP) between June 2023 and April 2024. WE-STEP is a strategic transportation plan that prepares Sarpy County for future growth by identifying an arterial network and supporting collectors in the currently rural portions of the county, and to develop a unified set of policies and standards for each jurisdiction for consistent and safe connections between communities. Community engagement was designed to inform the public and promote awareness of the project and associated opportunities for input. This included meetings with a steering and technical advisory committee, stakeholder meetings, and an online public meeting, and related outreach for each, which are summarized below.

## Steering and Technical Advisory Committee (STAC) Meetings

A meeting was held with the STAC once per month beginning in June 2023. The STAC includes representatives from the City of Gretna, City of Papillion, City of Springfield and Sarpy County. Meetings with the STAC are ongoing, but 12 meetings have been held as of May 2024. Topics of discussion included the following:

- Community engagement for WE-STEP
- Data inputs to be used in the study
- Regional transportation network
- Typical cross sections and roadway design
- Study considerations, including safety
- Through route policy
- Decision tree for design
- Development of design standards
- Priority corridors for implementation

Each STAC meeting was documented with meeting minutes. The STAC was often asked to provide additional input through an online workshop tool, Mural, in between meetings. A list of STAC members is available in Table 1. STAC meetings also included representatives from Metropolitan Area Planning Agency (MAPA), including Jim Boerner, Michael Blank, and Carlos Morales.

**Table 1: STAC Members**

| Name | Contact | Jurisdiction | Role |
|---|---|---|---|
| Kristine Stokes | kristine@cityofgretna.com | Gretna | Project Manager |
| Gregory Perry | gregp@eagleengineeringgroup.com | Gretna | Public Works |
| Paula Dennison | paula@cityofgretna.com | Gretna | City Administrator |
| Mark Stursma | mstrusma@papillion.org | Papillion | Deputy City Administrator |
| Mike Kleffner | mkleffner@papillion.org | Papillion | Public Works |
| Travis Gibbons | tgibbons@papillion.org | Papillion | Planning |
| Scott Bovick | sbovick@sarpy.gov | Sarpy County | As available |
| Steven Jensen | snjensen@cox.net | Sarpy County | Planning |
| Zachary Hergenrader | zhergenrader@sarpy.gov | Sarpy County | Public Works |
| Kathleen Gottsch | kathleen@springfieldne.org | Springfield | City Administrator |

## Online Public Meeting Summary

An online public meeting for WE-STEP was available from March 25 through April 15, 2024 at westernsarpytep.com or via the City of Gretna's project page for WE-STEP. The purpose of the meeting was to provide information about WE-STEP and gather public feedback on safety and design, bicycle and pedestrian connections, future development, and where the transportation network needs to support an anticipated increase in traffic. The meeting provided information about the goals and objectives of the plan, the proposed regional transportation network, and study considerations. Attendees were encouraged to provide feedback via a comment map or a general comment form. 934 users visited the meeting throughout the available dates.

### Outreach

Outreach for the online public meeting was conducted via an email to stakeholders, a press release, and social media content. The online public meeting was also promoted on the City of Gretna's website on the WE-STEP project page. Outreach for the online public meeting can be found in Appendix 1.

### Meeting Materials

The online public meeting was available from March 25 through April 15, 2024, and was hosted at westernsarpytep.com. The website provided information about the plan, current progress and developments, addressed considerations of the plan, and provided an opportunity for the public to provide input via a location-specific comment map or a general comment form. A full copy of the online public meeting content can be found in Appendix 2.

### Public Feedback and Comments

*Summary*

Common themes from feedback are summarized below. A full list of public comments can be found in Appendix 3. Common themes included traffic congestion, including the need for higher capacity roads for north-south and east-west travel during commute times, speed limits, trail connections for bicycles and pedestrians, and paving.

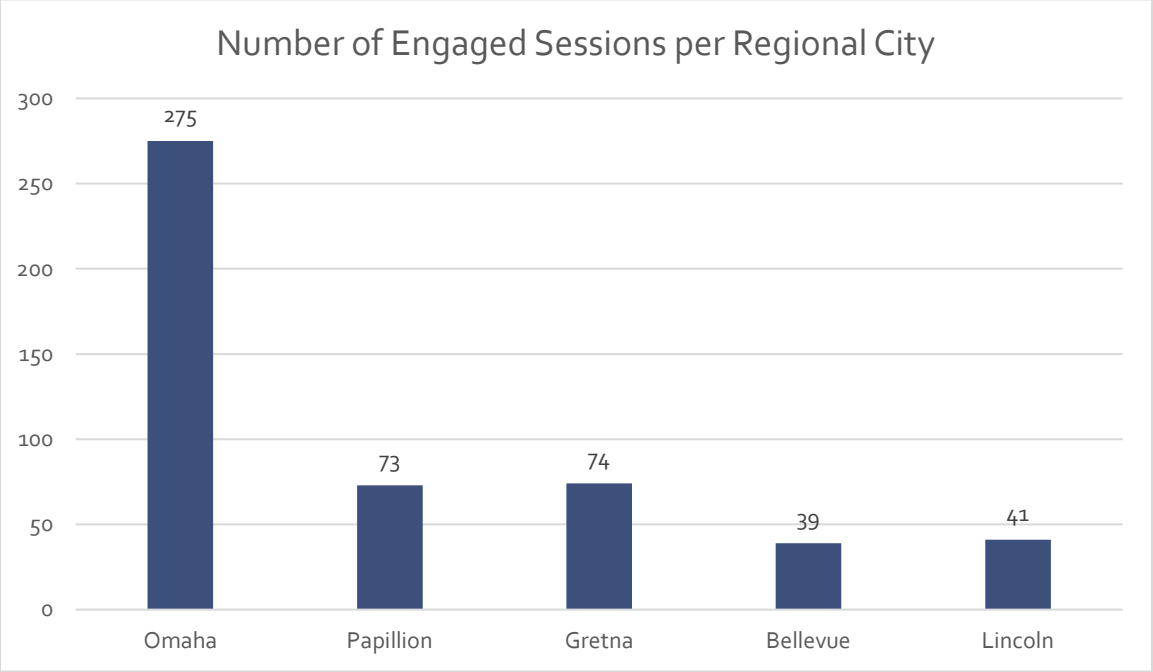
*Demographics*

A user is an individual who interacted with the website. The online public meeting had 934 users.

An engaged session is a single visit to the website that lasted longer than 10 seconds or includes two or more page views. The online public meeting had 473 engaged sessions.

Participants in the online public meeting came from several metro area cities, including Omaha, Papillion, Gretna, Bellevue, and Lincoln. The number of engaged sessions from each city is detailed in Figure 1 below.

**Figure 1: Number of Engaged Sessions per Regional City**




Nearly half of participants accessed the online public meeting by going directly to the website. Other referral sources are noted in Figure 2 below. The sources of referrals are detailed in Table 2.

**Figure 2: Online Public Meeting Referral Sources**

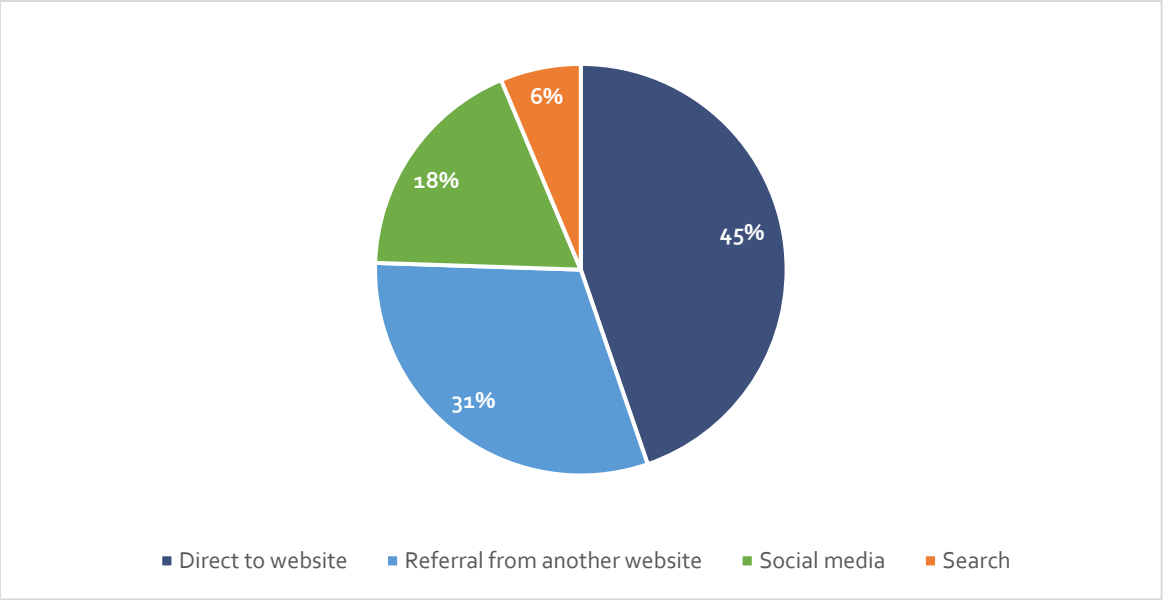
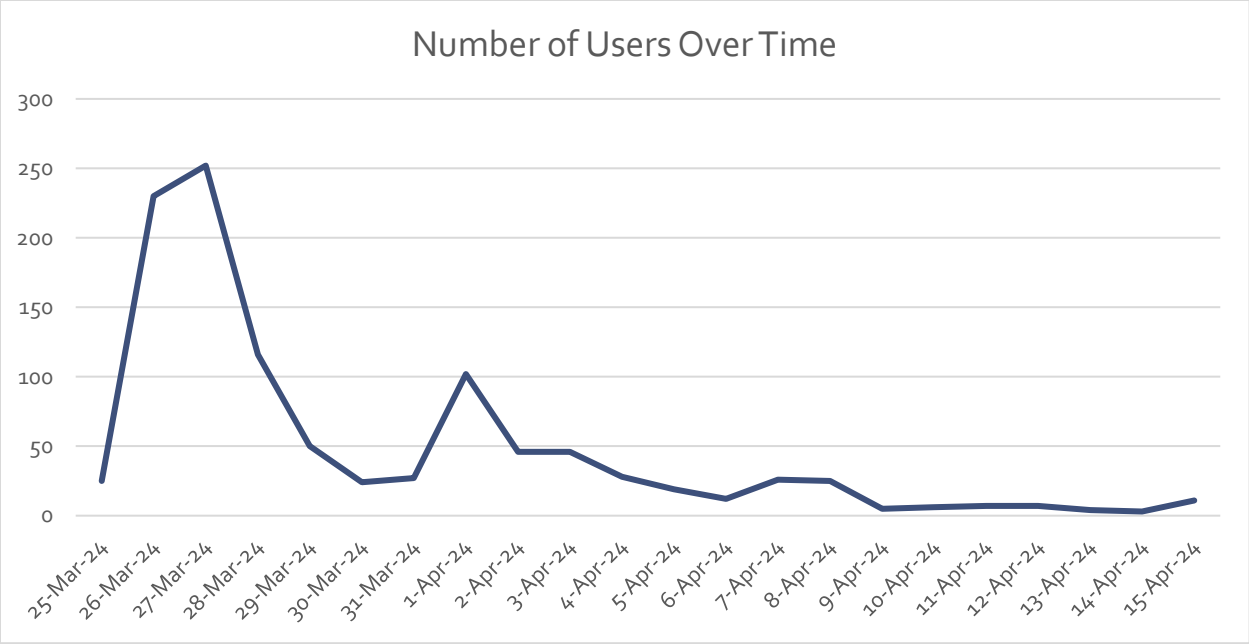



**Table 2: Sources of Online Public Meeting Referrals**

| Source | Number of engaged sessions |
|---|---|
| Wowt.com | 87 |
| Omaha.com | 37 |
| Facebook.com | 75 |
| Journalstar.com | 10 |
| t.co | 8 |
| Eomahaforums.com | 5 |
| 1011now.com | 4 |
| Linkedin.com | 3 |
| Webmail.centurylink.net | 2 |
| Mail.yahoo.com | 1 |

Of the 934 total site visitors, the highest number of users in one day to the online public meeting occurred on March 27, 2024, two days after it was launched.




### Other Public Comments

Jim Boerner of MAPA served as the project contact on all materials and fielded questions from members of the public. A record of those communications is included in Appendix 4.

## Small Group Stakeholder Meetings Summary

The project team hosted a series of small group stakeholder meetings, including four in-person meetings and one virtual meeting, for a series of identified stakeholders who operate in Sarpy County. These meetings were hosted in April and May 2024. The purpose of these meetings was to present information on the status of the study and solicit input on the future of transportation in western Sarpy County from the stakeholders' point of view.

### Outreach

Outreach for all meetings was conducted via an email to a list of stakeholders identified by the STAC and desktop research of the project area, and a calendar invitation sent to those stakeholders. For the virtual meeting, additional outreach was conducted via Lisa Scheve, the executive director of Grow Sarpy, the economic development organization for the county.

Outreach for these meetings can be found in Appendix 5, and the stakeholder list can be found in Appendix 6. A full list of attendees can be found in Appendix 7.

### Meeting Materials

In-person meetings were held at the Sarpy County Administration Building on Friday, April 5, Thursday, April 11, and Friday, April 12, 2024. A presentation provided information about the study background and objectives, schedule, previous progress and status of development, and plan considerations. Following the presentation, attendees asked questions verbally of the project team. Questions were answered verbally. Attendees were also encouraged to provide feedback using the online activity tool Mentimeter.

In-person meetings were grouped by stakeholder category, and were organized and attended as noted in Table 3.

**Table 3: Small Group Stakeholder Meeting Organization**

| Stakeholder Group | Date & Time of Meeting | Number of Attendees |
|---|---|---|
| Resources, Utilities, and Transportation Agencies | Friday, April 5, 2024<br>1:00 – 2:30 pm | 3 |
| Growth and Development, Data Centers, and Builders/Developers | Thursday, April 11, 2024<br>10:30 am – 12:00 pm | 3 |
| Emergency Response and Logistics/Freight | Thursday, April 11, 2024<br>1:00 – 2:30 pm | 4 |
| Municipalities, Community Groups, and School Districts | Friday, April 12<br>1:00 – 2:30 pm | 5 |
| Virtual | Thursday, May 2, 2024<br>10:30 am – 12:00 pm | 7 |

The project team hosted an additional stakeholder meeting for stakeholders who were not able to attend their designated grouped meeting. The project team hosted this meeting virtually to make it more accessible to remaining stakeholders. The virtual stakeholder meeting was hosted on Zoom on Thursday, May 2, 2024, and featured the same presentation from previous stakeholder meetings and the same opportunities for questions and answers, along with the Mentimeter input activity with one additional question. The virtual stakeholder meeting had seven attendees.

Through all small group stakeholder meetings, the project team reached a total of 22 stakeholders.

Meeting materials can be found in Appendix 8.

## Stakeholder Feedback and Comments

Comments from each meeting are summarized below.

### *Resources, Utilities, and Transportation Agencies*

#### Metropolitan Utilities District

A representative from Metropolitan Utilities District (MUD) attended the meeting and noted that in the future, the City of Gretna is highly likely to become a wholesale partner of MUD, and that they will be building infrastructure along several of the corridors in the study area. The representative noted that this study area is the "last frontier" of development for MUD. The representative noted the need to get utilities located correctly the first time to avoid costly utility relocations.

MUD intends to develop infrastructure from 36th Street to 156th Street along Platteview Road, and they would like to coordinate their work with the roadwork being done on Platteview Road. MUD is also coordinating with the City of Bellevue and HDR on infrastructure from 36th Street east through Bellevue.

The representative noted that water infrastructure is usually located farther from the roadway, so there is room for the incorporation of trails as the plan notes.

### South Sarpy Watershed Partnership/Papio-Missouri River Natural Resources District

A representative from the South Sarpy Watershed Partnership/Papio-Missouri River Natural Resources District attended the meeting and noted that their watershed planning looks at the same buildout timeframe as the WE-STEP plan. Their current intentions also align with the priority to provide greenspace for trails throughout the area.

The representative noted that a new policy will take effect on July 1, 2024 that any stream crossing of streets with a drainage area of one-half square mile or greater will require in-stream stabilization work.

The representative also encouraged the project team to consider bridge design, particularly a 2- or 4-lane section decision at interim build versus ultimate buildout.

The representative noted that they do not currently have a designed reservoir project, but that the following areas may be of note due to current and future residential areas for walkability:

- 180th Street and Giles Road
- 204th Street and Schram Road
- 214th Street – USACE project
- WP2 and WP4 are currently under construction and part of the Papillion Watershed District

#### *Growth and Development, Data Centers, and Builders/Developers*

There was a comment about opportunities for public transit in the study area and to consider the 2016 study that looked at transit in Sarpy County. It was noted that getting workers access to jobs is a priority for the business community and that transit considerations in this plan are important.

There was discussion about considering connector streets for active transportation, including motor scooters. This discussion focused on the difference in use on neighborhood roads versus main arterials and highways.

There was a discussion about having 10-foot sidepaths versus 12-foot sidepaths and the pros and cons that go with each. It was determined that 12-foot sidepaths would be preferred.

There was a comment about getting the southeast Sarpy County transportation study information on the Connect Sarpy website. The project team noted that they will pass along this information.

It was noted that top priorities are active transportation, trails, and regional connections to travel to entertainment and business districts and the Platteview Expressway for planning growth.

Specific areas of future development within the project area were also provided by attendees.

#### *Emergency Response and Logistics/Freight*

There was discussion about roundabouts and how they function for large vehicles, particularly as related to fire trucks and ambulances for emergency response purposes. It was decided that roundabouts are okay as long as they are designed for fire trucks to use mountable curbs. It was also noted that the jurisdictions in the study area have slightly different trucks and they may have different intersection design needs. It was also noted that it takes approximately four years for emergency response agencies to order new vehicles, so they are planning now for future trucks. They also noted that the center of roundabouts would need deep enough concrete to hold emergency response vehicle

weight, and that roundabouts provide limited space for emergency vehicles to park when needed in an emergency situation.

Emergency response agencies also noted that transportation greatly affects their evacuation plans in an emergency. These agencies also noted that the greater the distance is between pedestrians and the roadway, the safer transportation is for all users.

There was discussion about streetscaping and the concern that landscaping (vegetation) may decrease sight distance for both vehicles and pedestrians, particularly for neighborhood collector street crossings. The project team noted that any landscaping considerations should be selected and maintained for maximum sight distance.

There was also discussion about golf carts on arterial streets and the enforcement of rules related to this type of transportation. The project team noted that jurisdictions should work with related agencies to enforce those rules, but that it would not be considered as part of WE-STEP.

*Municipalities, Community Groups, and School Districts*

There was a question about land use in the southern part of Sarpy County. The project team explained that current traffic models do not show a demand for a 6-lane section, but that WE-STEP is planning now for a long-term future development buildout of the region.

There was a question about jurisdictional governance and how WE-STEP will work to get everyone on the same page. The project team explained that the process of developing WE-STEP has involved all jurisdictions in the study area, and that development started with a comparison of current standards in each, getting agreement on a standard set of terms and understanding what each means, getting agreement on a standard right-of-way (ROW) and what concessions would be made where that is not possible. The project team also mentioned the development of a decision-making tree that will help the jurisdictions to implement the plan.

There was a question about how developers have been involved. The project team explained that developers are feeling the pressure now to plan ahead this far out, and that WE-STEP will help jurisdictions make decisions based on development in the future.

There was a question about utilities and where that fits into the plan, including what work is done upfront versus later. The project team explained that WE-STEP will encourage jurisdictions to do more work upfront, and that this is expensive upfront, but saves money and time in the long-run by avoiding costly relocations. The project team also explained that building on one side first for an interim roadway (including utilities) has been very successful in other cities.

The project team also answered a question regarding the prioritization of projects and corridors. The project team explained that WE-STEP will not make prioritizations, but it will run some "pilot cases," and there may be some recommendations based on those.

The project team also had a conversation with a representative from Metropolitan Community College, particularly regarding the proposed new 140-acre site located between Highway 50 and 132nd Street, and between Schram Road and Capehart Road. The representative mentioned that the goal is to get the main roads and utilities for this sight in soon, and that they are very interested in having public transit for this sight.

*Mentimeter Feedback*

Mentimeter was used to gather feedback from attendees on plan considerations. Results from this activity are summarized below. Mentimeter results per stakeholder meeting can be found in Appendix 9.

Attendees were asked to describe their vision for the future of western Sarpy County in a few words. Responses are summarized in Table 4.

**Table 4: Vision Words for the Future of Western Sarpy County**

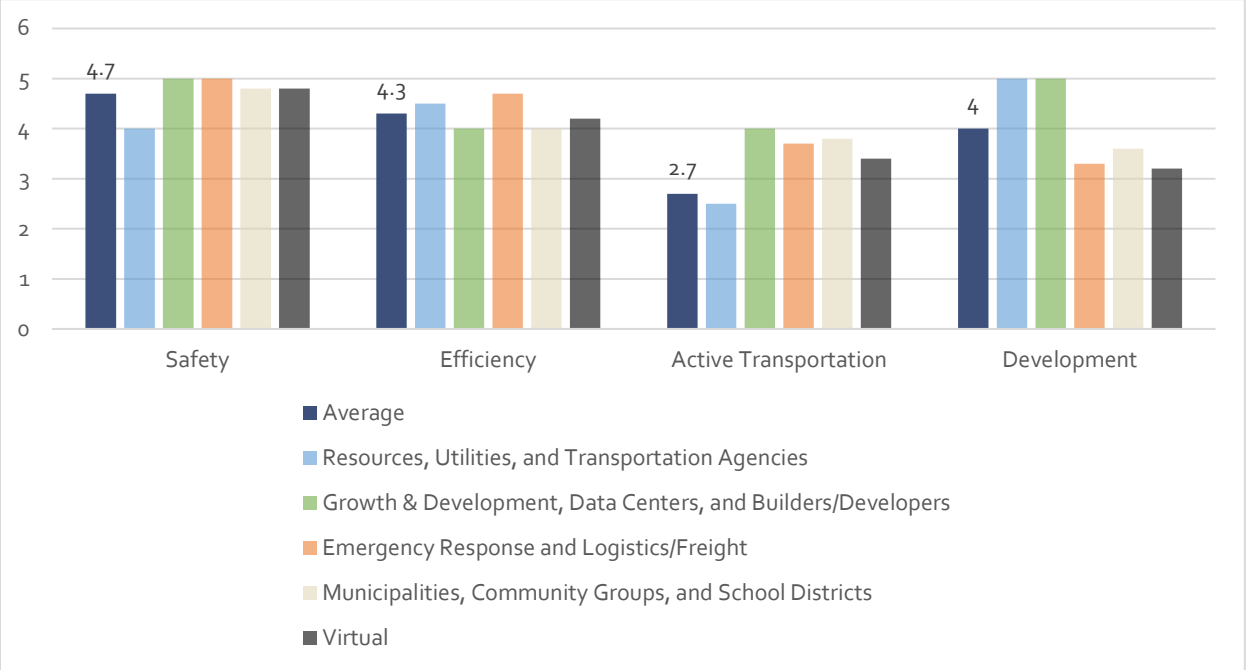
| Response | |
|---|---|
| Friendly | |
| Plush | |
| Booming | |
| Transformative | |
| Multi-faceted | |
| Profitable | |
| Populated | |
| Growing | |
| Concerning | |
| Inclusive | |
| Prepared | |
| Consistent | |
| Bike share | |
| E-bikes | |
| Bikes | **2** |
| Connected | **2** |
| Navigable | |
| Suburban | |
| Coordinated | |
| Progressive | |
| Forward thinking | |
| Not congested | |
| Fun | |
| Balanced | |
| Walkable | |
| Bikeable | |
| Green with lots of trees | |
| Destination | |
| Well planned | |
| Easy traffic flow, not 370 | |
| Public transportation | **3** |
| Bike lanes | |
| Shaded trail system | |
| Housing developments | |
| Walkways | |
| High class | |
| Minor industrial | |

Attendees were asked to share an example of how transportation connectivity affects them or their organization. The responses are summarized in Table 5.

**Table 5: Transportation Connectivity Effects**

| Response |
|---|
| No public transportation halts business growth in Sarpy and linking workers to the area |
| Can be a barrier for growth as it relates to moving workforce around the county |
| Better flow to small communities and small business retailers |
| Timeliness and efficient |
| Traffic flow and pedestrian safety along with emergency response are the primary concerns for SCSO |
| Delay response, access to developments |
| Quality of life |
| Needs easy access to the freeway system, wider roads for employees to travel on |
| Bussing schedules |
| We operate the bikeshare program and want to be able to provide bike share as a safe active transportation option across the entire county |
| Take a lot of throughput traffic/shortcomings of other transportation networks |
| As a utility we are often challenged to find space. Consistency is much easier to work through |
| Drives the utility growth |
| Park connectivity and recreation access |
| We have over 3000 employees with over 25% that have expressed interest in access to Omaha public transportation. Would increase our reach to future hires. |
| I live and work in Sarpy in the logistics field. Trucks need better maneuverability. |
| We cover a large portion of Sarpy, but out schools currently are pretty centralized…getting people to and from our schools to their communities is imperative. |

Attendees were asked to rate the goal areas of WE-STEP by their level of importance to them or their organization on a scale of 1 to 5, where 1 = least important and 5 = most important. The average rating is as follows:



Attendees were asked to rank the considerations of WE-STEP in order of their importance to them or their organization. The average ranking is noted below:

1. Future development projections
2. Connectivity
3. Safety
4. Roadway design
5. Land use
6. Traffic demand
7. Alternative modes of transportation
8. Costs
9. Environmental considerations
10. Transit
11. Pedestrian amenities

Attendees were asked to rank the elements included in WE-STEP standards in order of their importance to them or their organization. The average ranking is noted below:

1. Bike and pedestrian crossings
2. Roundabouts
3. Sidepaths separated by landscaped buffers
4. Lower speeds for safety
5. Transit stops

One additional question was asked to attendees of the virtual stakeholder meeting. Attendees were asked to identify some high priority corridors for expansion in western Sarpy County. The responses are as follows:

- Access to I-80 west of 120th Street
- Less restrictive access to I-80, Highway 75, etc.
- 72nd Street to 84th Street north/south corridor
- 132nd Street from Giles towards Highway 370
- Better access to I-80 from Highway 370
- Expressway over Highway 370
- Long term plans for Platteview Road will have serious impacts in our future
- Highway 370 between 144th Street and 132nd Street – we struggle with traffic lights and better access to site
- Platteview Road and Pflug Road expansion creates issues with future planning and too close to community

## Board & Commission Presentations

The project team provided materials and support on presenting information about WE-STEP to the jurisdictions' City Councils, County Board, and Planning Commissions. Materials made available to the jurisdictions can be found in Appendix 10.

# Engagement Appendix 1: Online Public Meeting Outreach

| Outreach | Responsibility | Launch Date |
|---|---|---|
| Email | Consortium Agencies | March 11, 2024 |
| Letter | Consortium Agencies | March 11, 2024 |
| Press Release | Consortium Agencies | March 11, 2024 |
| Social Media | Consortium Agencies | March 18, 2024 |

## Letter

Please join us for an online public meeting for the Western Sarpy County Transportation Enhancement Plan (WE-STEP)! The online public meeting provides information about WE-STEP and gathers feedback on the proposed regional transportation network and arterial types and will be available from March 25 to April 8, 2024, at westernsarpytep.com.

WE-STEP will be a strategic transportation plan for western Sarpy County, developed in collaboration with the City of Gretna, City of Papillion, City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA). WE-STEP will provide a framework for changing communities to develop for future generations.

The plan identifies a proposed future regional transportation network and proactive standards that are flexible and can fit with what develops around it. You can provide feedback on the transportation network and standards in the online public meeting.

If you have questions, please contact:

Jim Boerner
jboerner@mapacog.org

## Email

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If you have questions, please contact:

Jim Boerner
jboerner@mapacog.org

## Press Release

FOR IMMEDIATE RELEASE

Jim Boerner, Transportation Planner, Metropolitan Area Planning Agency (MAPA)
402-444-6866
jboerner@mapacog.org

**Metropolitan Area Planning Agency (MAPA) to host online public meeting for Western Sarpy County Transportation Enhancement Plan (WE-STEP)**

Sarpy County, Neb. – Metropolitan Area Planning Agency (MAPA) is hosting an online public meeting to introduce and receive input for the Western Sarpy County Transportation Enhancement Plan (WE-STEP). The online public meeting will be available from March 25 to April 8, 2024, at westernsarpytep.com.

The Western Sarpy Transportation Enhancement Plan (WE-STEP) will be a strategic transportation plan for western Sarpy County, and developed in collaboration with the City of Gretna, City of Papillion, City of Springfield, Sarpy County, and MAPA. WE-STEP will provide a framework for changing communities to develop for future generations.

The plan identifies a future regional transportation network and proactive standards that are flexible and can fit with what develops around it. You can provide feedback on the transportation network and standards in the online public meeting.

###

## Social Media

| Dates | Content | Graphic | Platform |
|---|---|---|---|
| March 25<br>April 1<br>April 5<br>April 8 | Please join us for an online public meeting for the Western Sarpy County Transportation Enhancement Plan (WE-STEP). WE-STEP will provide a framework for changing communities to develop for future generations.<br><br>Visit [online meeting link] to learn more and provide your feedback.<br><br>The meeting will be available from March 25 to April 8, 2024. |  | FB |

# Engagement Appendix 2: Online Public Meeting Materials

WESTERN SARPY
TRANSPORTATION
ENHANCEMENT PLAN
*Gretna, Springfield, Papillion, Sarpy County*

Thank you for joining the Western Sarpy Transportation Enhancement Plan (WE-STEP) online public meeting!

**This online public meeting will run from March 25 through April 15, 2024.**

**Learn about:**

- Goals and objectives of the plan
- Proposed regional transportation network
- Schedule
- Ways to provide input

**We want your feedback on:**

- Safety and design
- Bicycle and pedestrian connections
- Future development
- Where the transportation network needs to support the anticipated increase in traffic

Enter the Online Meeting →


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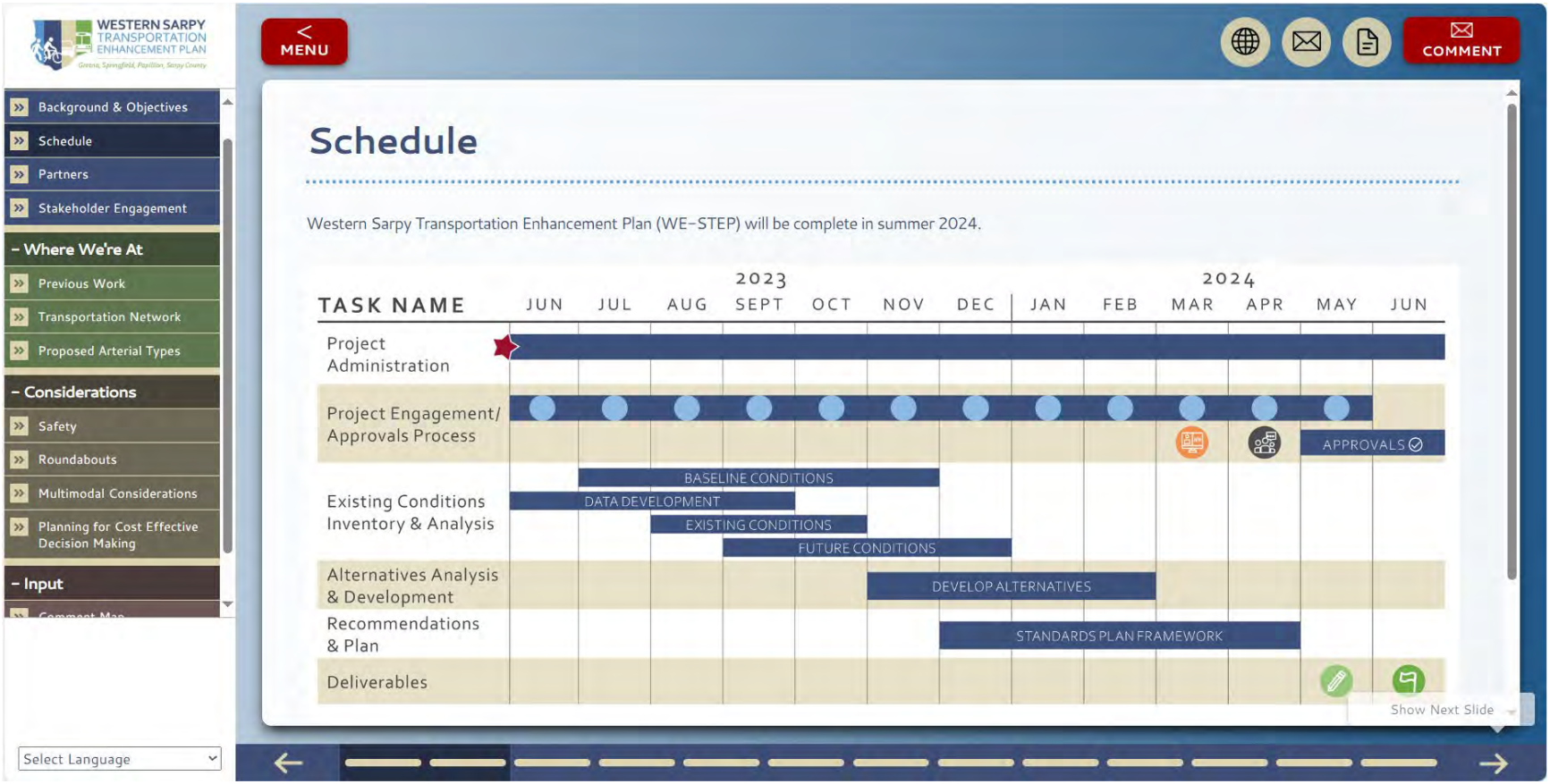
Select Language
Study Background & Objectives
The Western Sarpy Transportation Enhancement Plan (WE-STEP) will be a strategic transportation plan for western Sarpy County, and developed in collaboration with the City of Gretna, City of Papillion, City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA). WE-STEP will provide a framework for changing communities to develop for future generations. The plan considers how the involved communities are changing and how the advancing transportation network can support these evolving communities.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Schedule
Western Sarpy Transportation Enhancement Plan (WE-STEP) will be complete in summer 2024.
2023
2024
TASK NAME
JUN JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUN
Project Administration
Project Engagement/ Approvals Process
APPROVALS
BASELINE CONDITIONS
Existing Conditions Inventory & Analysis
DATA DEVELOPMENT
EXISTING CONDITIONS
FUTURE CONDITIONS
Alternatives Analysis & Development
DEVELOP ALTERNATIVES
Recommendations & Plan
STANDARDS PLAN FRAMEWORK
Deliverables
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Partners
The City of Gretna, City of Papillion, City of Springfield, Sarpy County, and MAPA make up a consortium, or group, that was formed to undertake this planning effort together. The WE-STEP Consortium is working with a steering and technical advisory committee (STAC) to develop a plan that is applicable to all communities. The STAC is comprised of representatives from partner agencies in public works, planning, and city and county administration. Together, the WE-STEP Consortium and the STAC make up the plan development team.
Gretna
THE GREAT LIFE
CITY OF PAPILLION
FOUNDED IN 1870
SPRINGFIELD
NEBRASKA
SARPY COUNTY
NEBRASKA
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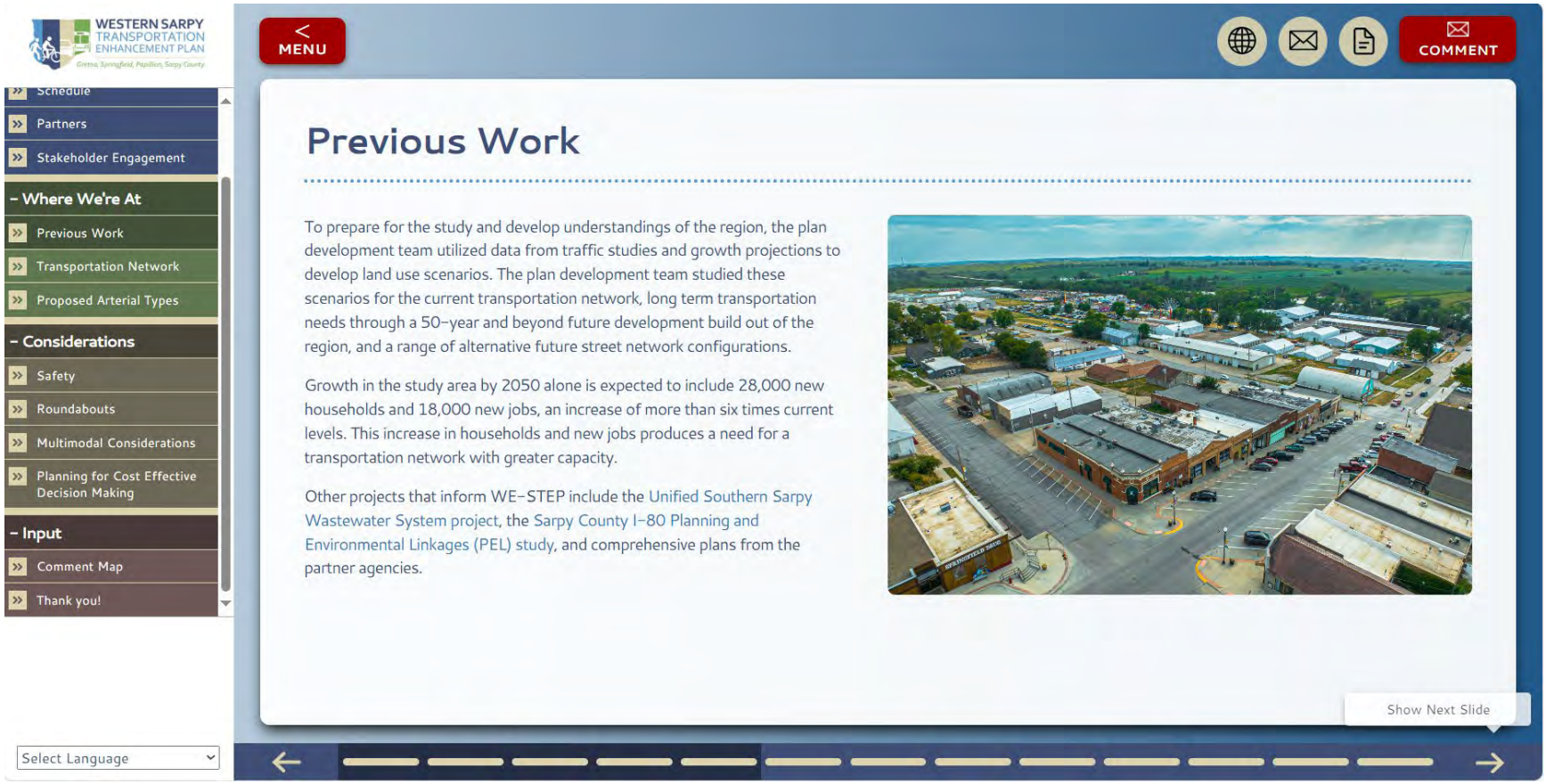
Thank you!
Stakeholder Engagement
Engagement with stakeholders and the public is critical to develop a plan that works for all communities and jurisdictions within the study area. The STAC has provided representation for each of their communities in planning efforts to date. Additional engagement is defined below.
Board Presentations
The STAC will present a draft plan to its respective boards for feedback and approval.
Small Group Meetings
Small group meetings are currently underway to discuss the plan and obtain input from identified stakeholders, such as school districts, emergency response agencies, environmental groups, utility and resource groups, and logistics and freight centers.
Online Public Meeting
The purpose of this online public meeting is to inform the public about the plan and gather feedback that can be addressed within it. The plan will provide a long-term framework for changing communities to develop for future generations. Feedback is being collected now through April 8, 2024 via a comment map, and general comment form. If you or your organization would like to be involved in WE-STEP, please indicate so in the comment form or contact:
Jim Boerner: jboerner@mapacog.org or 402-444-6866 ext. 3231
Select Language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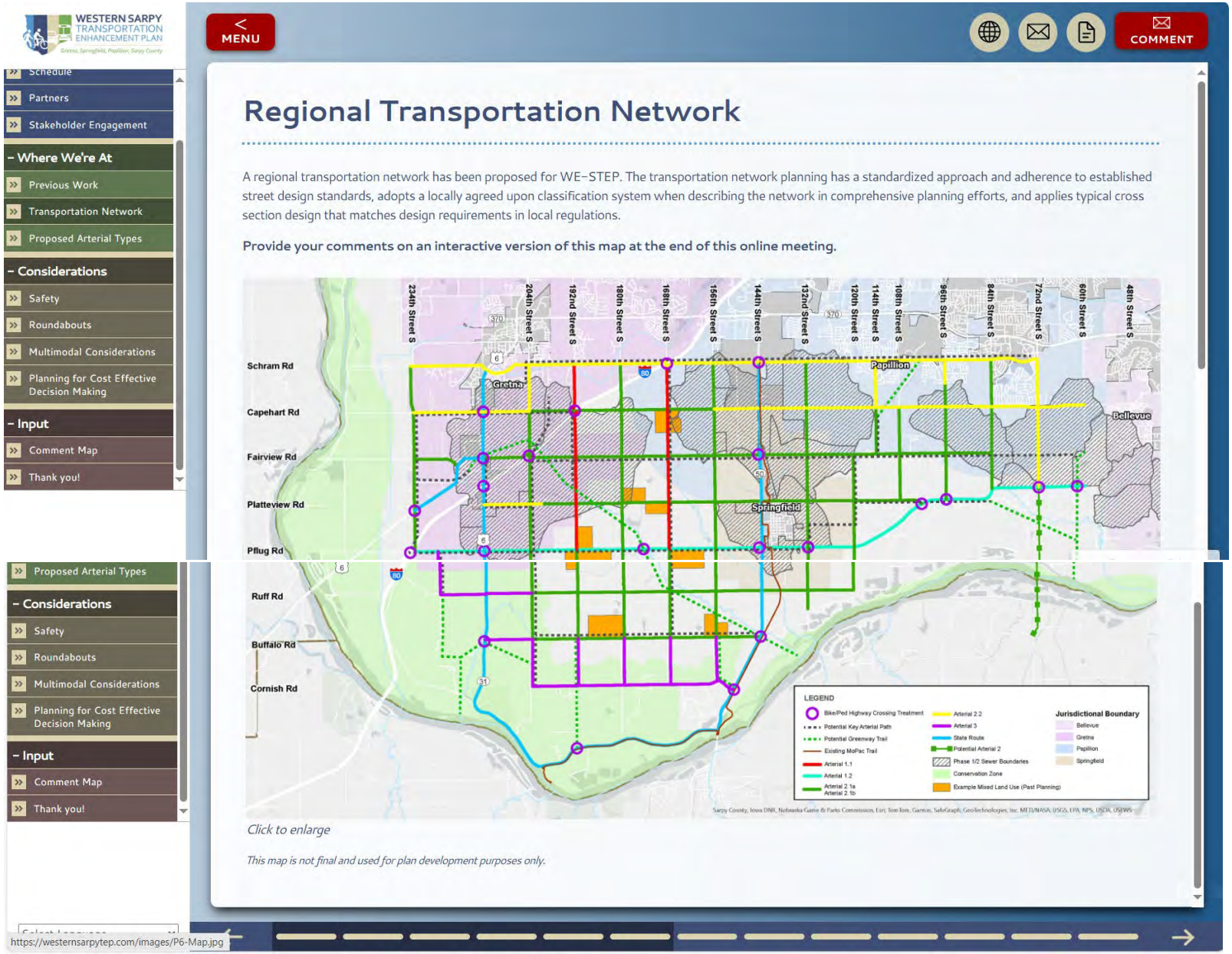
Previous Work
To prepare for the study and develop understandings of the region, the plan development team utilized data from traffic studies and growth projections to develop land use scenarios. The plan development team studied these scenarios for the current transportation network, long term transportation needs through a 50-year and beyond future development build out of the region, and a range of alternative future street network configurations.
Growth in the study area by 2050 alone is expected to include 28,000 new households and 18,000 new jobs, an increase of more than six times current levels. This increase in households and new jobs produces a need for a transportation network with greater capacity.
Other projects that inform WE-STEP include the Unified Southern Sarpy Wastewater System project, the Sarpy County I-80 Planning and Environmental Linkages (PEL) study, and comprehensive plans from the partner agencies.
Show Next Slide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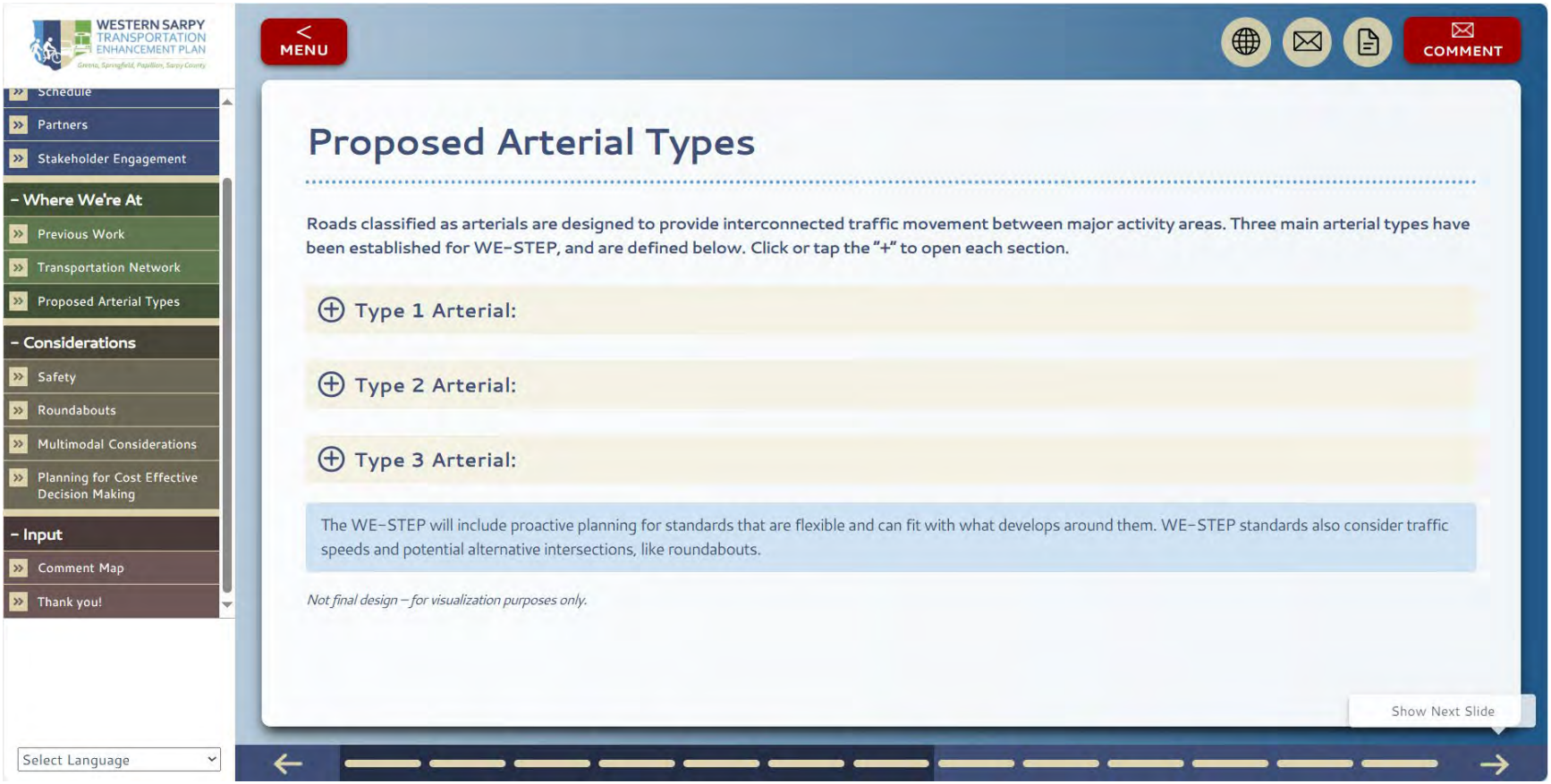
COMMENT
Regional Transportation Network
A regional transportation network has been proposed for WE-STEP. The transportation network planning has a standardized approach and adherence to established street design standards, adopts a locally agreed upon classification system when describing the network in comprehensive planning efforts, and applies typical cross section design that matches design requirements in local regulations.
Provide your comments on an interactive version of this map at the end of this online meeting.
234th Street S
204th Street S
192nd Street S
180th Street S
168th Street S
156th Street S
144th Street S
132nd Street S
120th Street S
114th Street S
108th Street S
96th Street S
84th Street S
72nd Street S
60th Street S
48th Street S
Schram Rd
Capehart Rd
Fairview Rd
Platteview Rd
Pflug Rd
Ruff Rd
Buffalo Rd
Cornish Rd
Gretna
Papillion
Bellevue
Springfield
LEGEND
Bike/Ped Highway Crossing Treatment
Potential Key Arterial Path
Potential Greenway Trail
Existing MoPac Trail
Arterial 1.1
Arterial 1.2
Arterial 2.1a
Arterial 2.1b
Arterial 2.2
Arterial 3
State Route
Potential Arterial 2
Phase 1/2 Sewer Boundaries
Conservation Zone
Example Mixed Land Use (Past Planning)
Jurisdictional Boundary
Bellevue
Gretna
Papillion
Springfield
Click to enlarge
This map is not final and used for plan development purposes only.
https://westernsarpytep.com/images/P6-Map.jpg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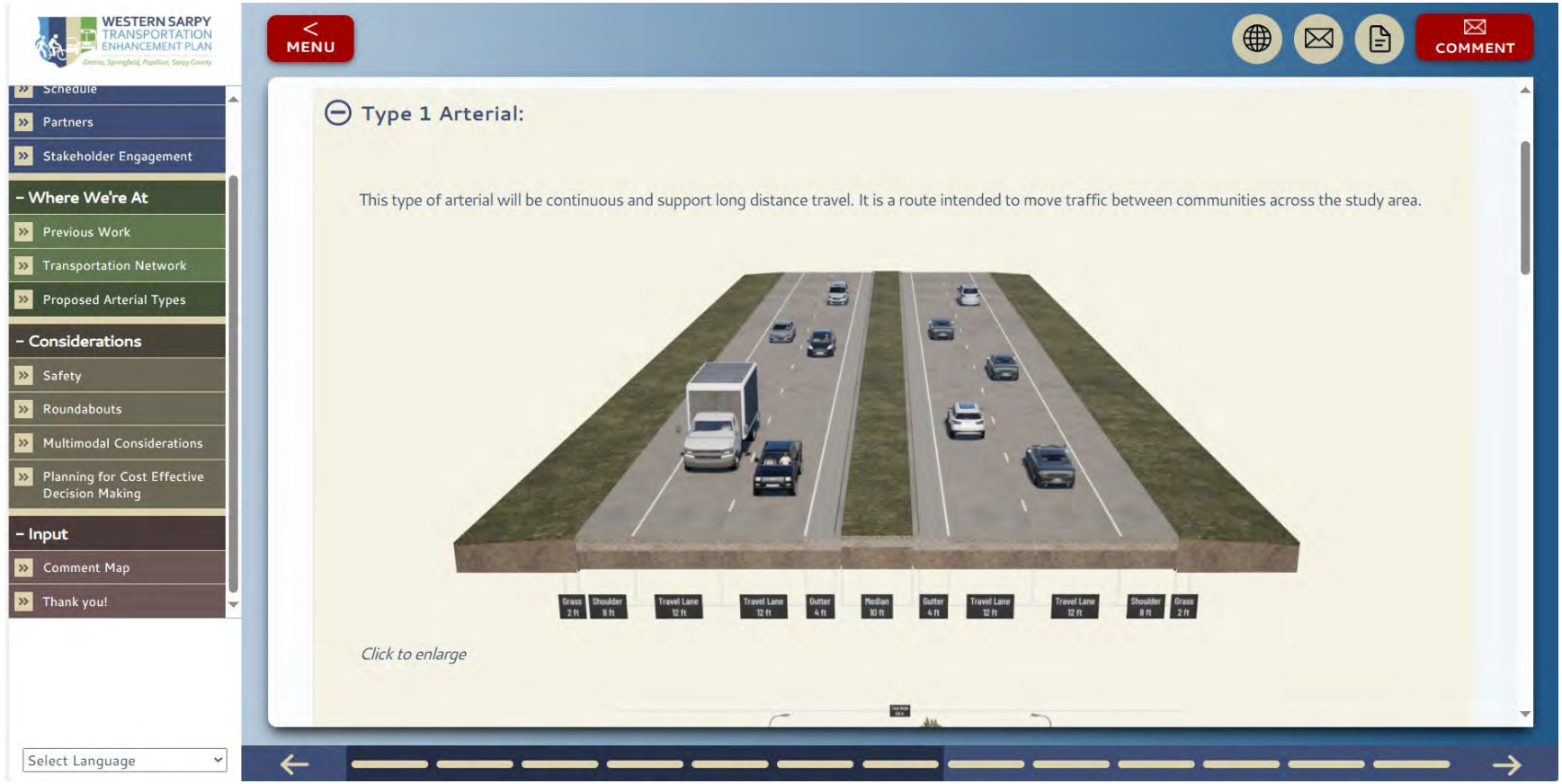
Proposed Arterial Types
Roads classified as arterials are designed to provide interconnected traffic movement between major activity areas. Three main arterial types have been established for WE-STEP, and are defined below. Click or tap the "+" to open each section.
Type 1 Arterial:
Type 2 Arterial:
Type 3 Arterial:
The WE-STEP will include proactive planning for standards that are flexible and can fit with what develops around them. WE-STEP standards also consider traffic speeds and potential alternative intersections, like roundabouts.
*Not final design – for visualization purposes only.*
Show Next Slide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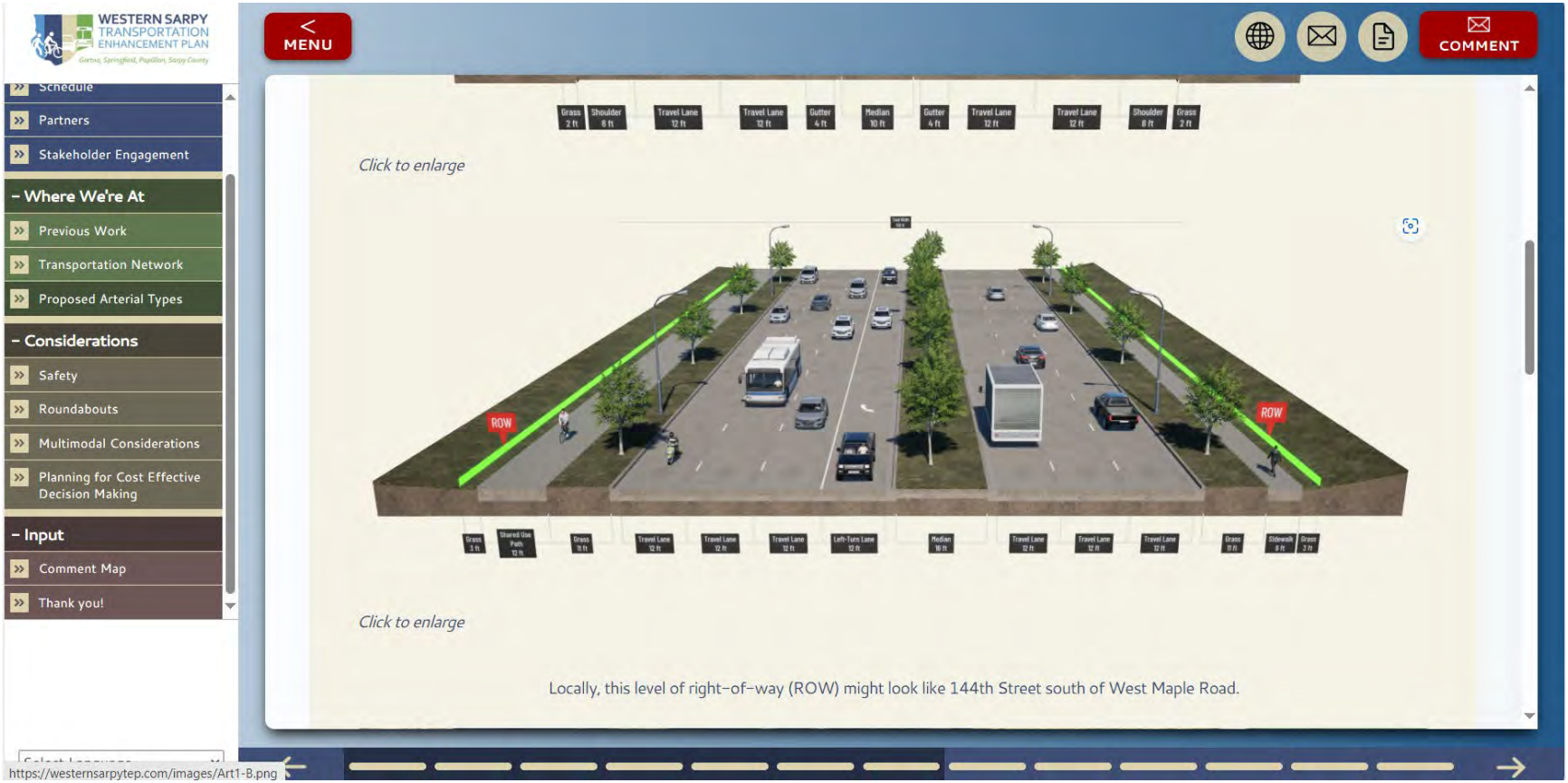
COMMENT
Type 1 Arterial:
This type of arterial will be continuous and support long distance travel. It is a route intended to move traffic between communities across the study area.
Grass 2 ft
Shoulder 8 ft
Travel Lane 12 ft
Travel Lane 12 ft
Gutter 4 ft
Median 10 ft
Gutter 4 ft
Travel Lane 12 ft
Travel Lane 12 ft
Shoulder 8 ft
Grass 2 ft
*Click to enlarge*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Thank you!
< MENU
COMMENT
Click to enlarge
ROW
ROW
Click to enlarge
Locally, this level of right-of-way (ROW) might look like 144th Street south of West Maple Road.
https://westernsarpytep.com/images/Art1-B.png


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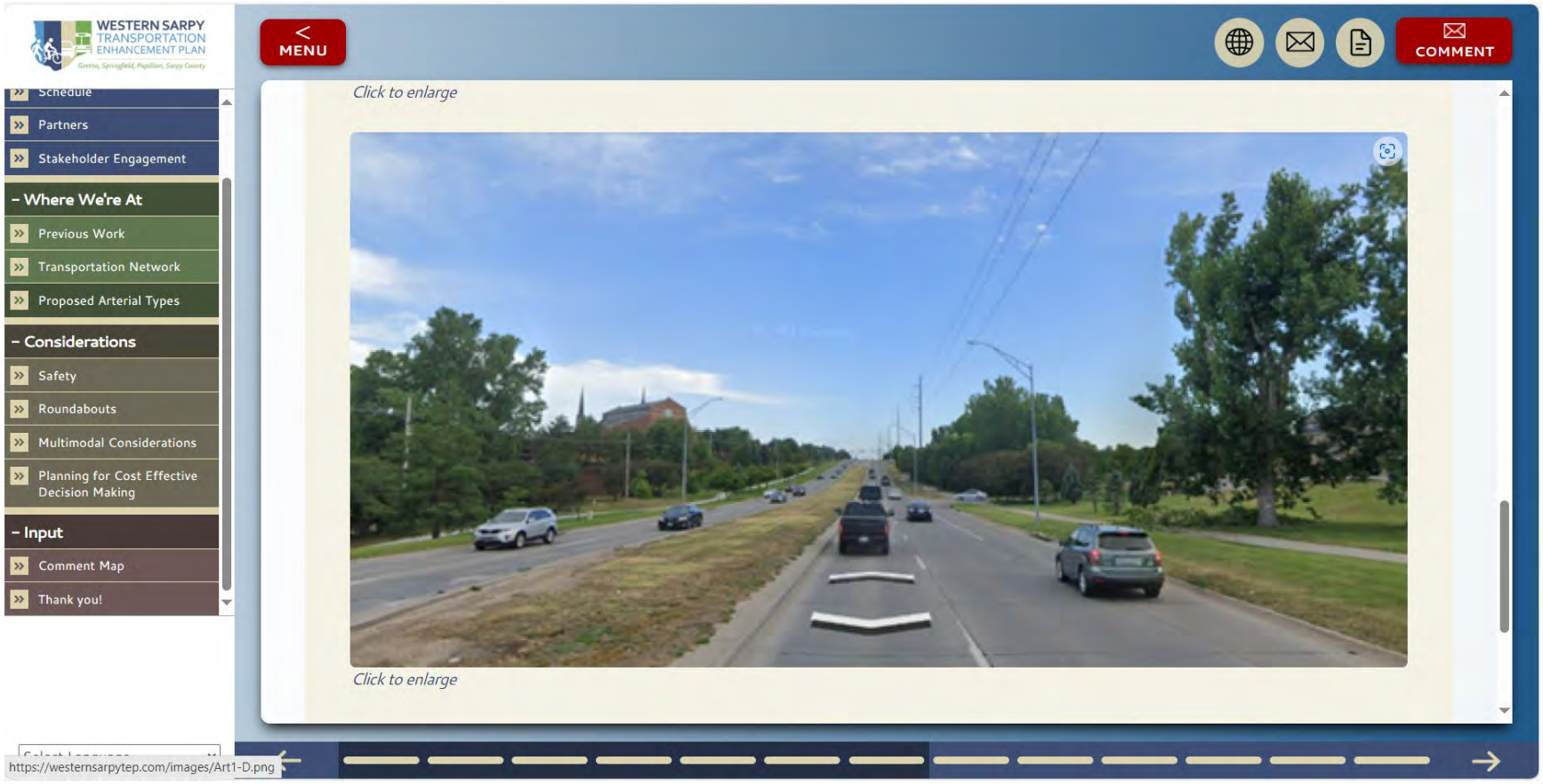
COMMENT
Locally, this level of right-of-way (ROW) might look like 144th Street south of West Maple Road.
144th and Maple – 150 ft. ROW
https://westernsarpytep.com/images/Art1-C.png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https://westernsarpytep.com/images/Art1-D.png


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Select Language
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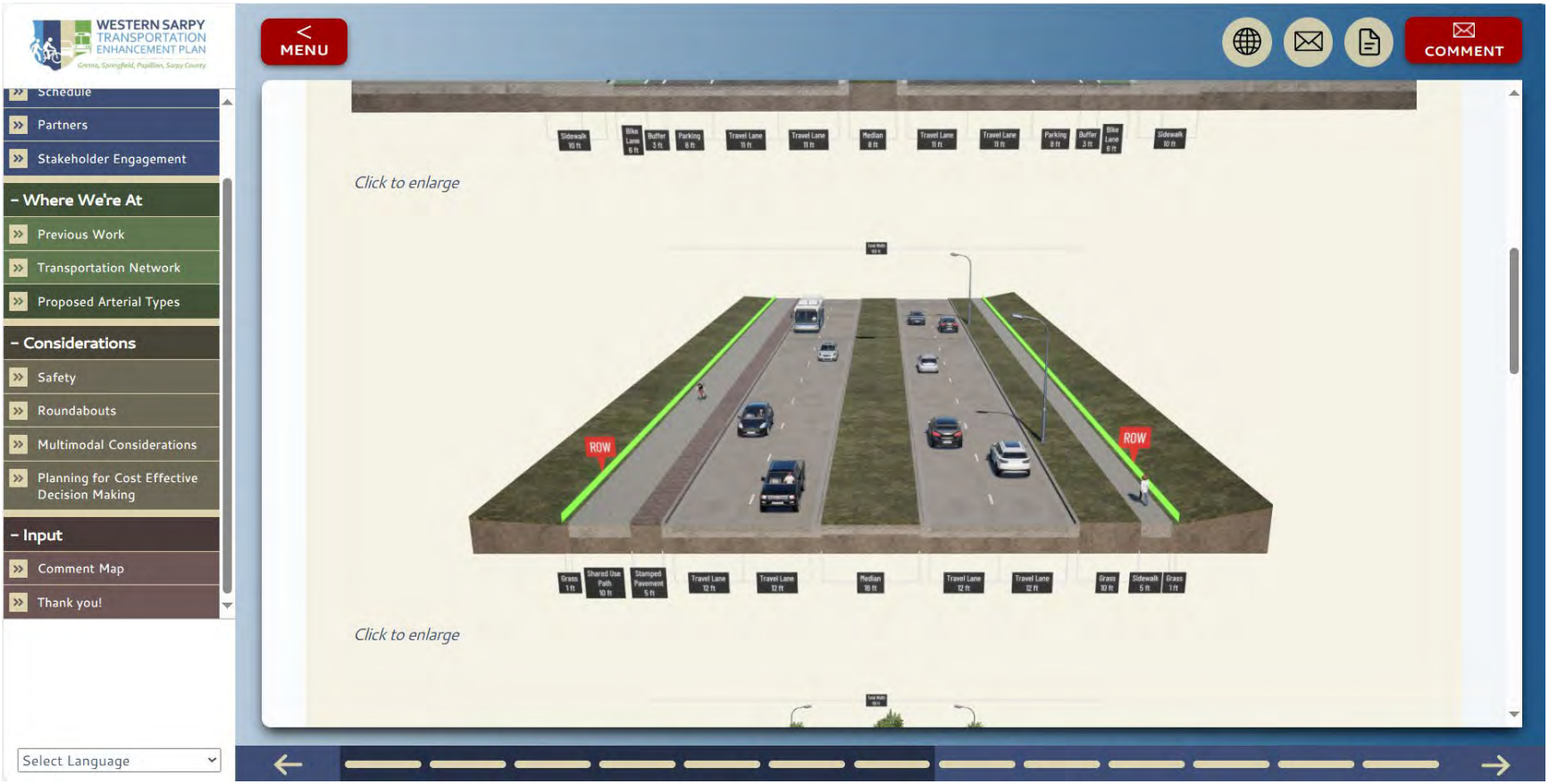
COMMENT
Type 2 Arterial:
This type of arterial is more specific to a municipality and is intended to connect major areas of activity within and between communities.
Click to enlarge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Select Language
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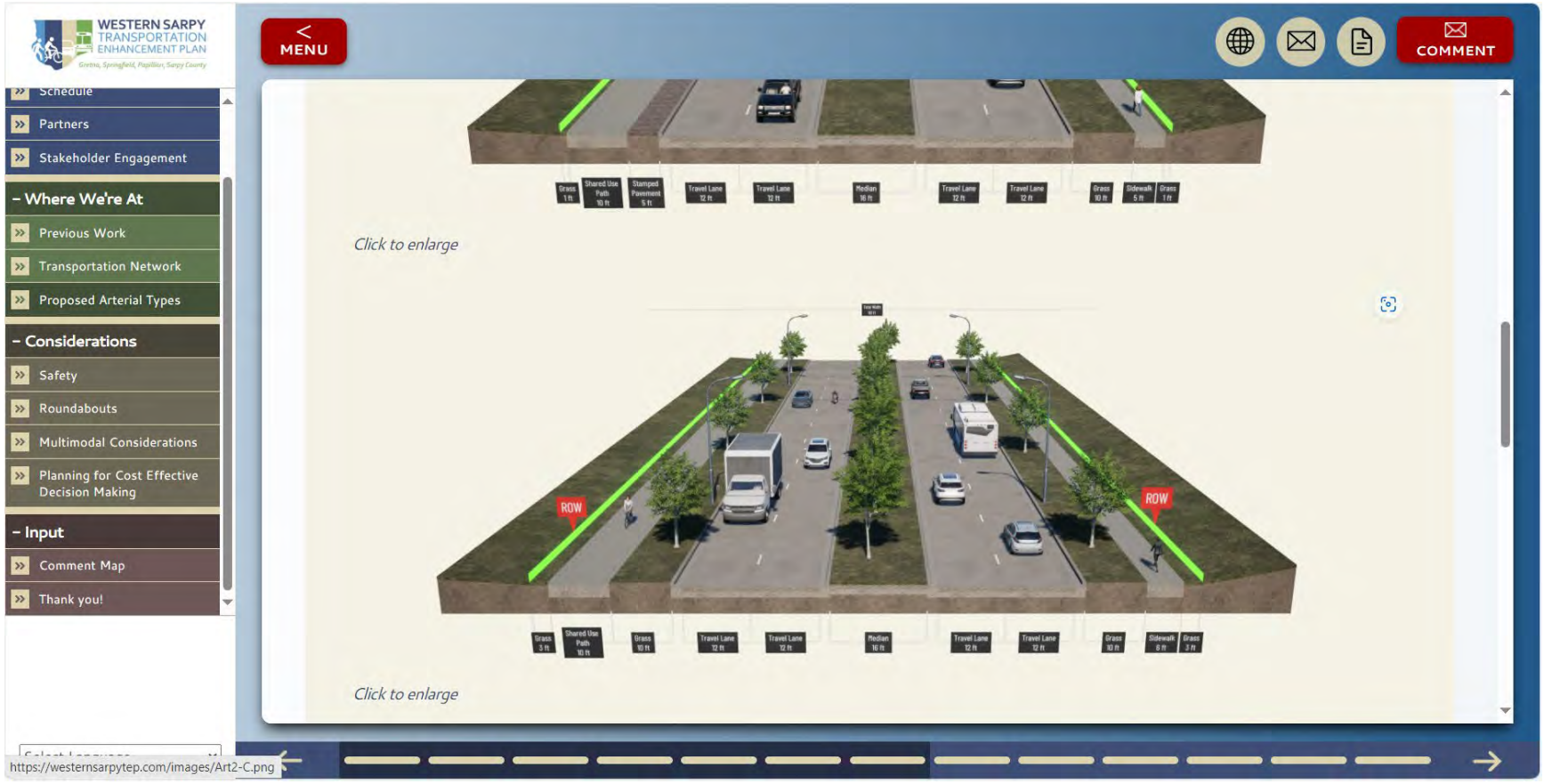
WESTERN SARPY
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Transportation Network
Proposed Arterial Types
– Considerations
Safety
Roundabouts
Multimodal Considerations
Planning for Cost Effective Decision Making
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https://westernsarpytep.com/images/Art2-C.png


WESTERN SARPY TRANSPORTATION ENHANCEMENT PLAN
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Locally, this level of ROW might look like the intersection of 136th and Blondo Streets.
136th and Blondo – 110 ft. ROW
Click to enlarge


WESTERN SARPY TRANSPORTATION ENHANCEMENT PLAN
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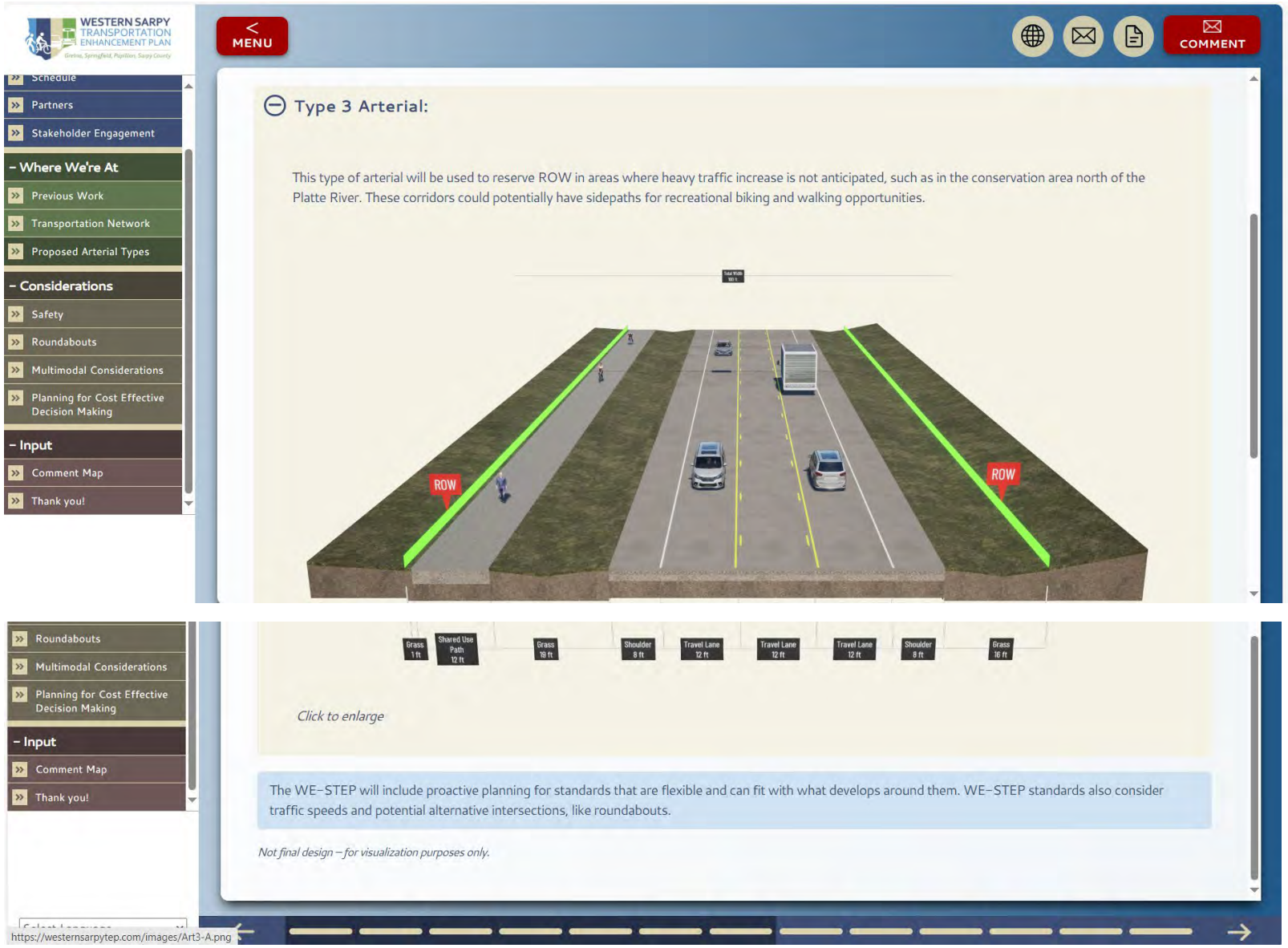
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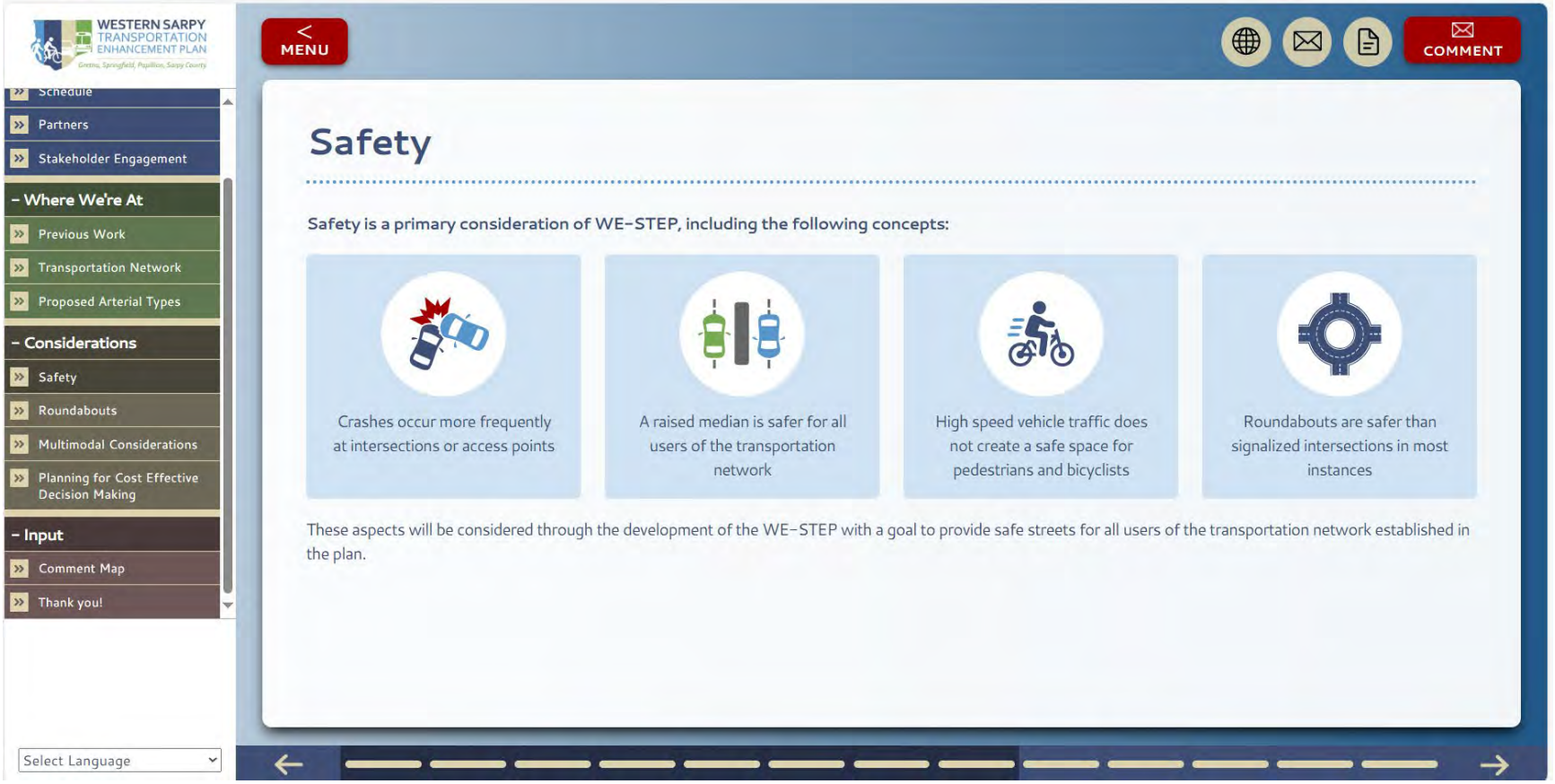
Comment Map
Thank you!
Type 3 Arterial:
This type of arterial will be used to reserve ROW in areas where heavy traffic increase is not anticipated, such as in the conservation area north of the Platte River. These corridors could potentially have sidepaths for recreational biking and walking opportunities.
ROW
ROW
Grass 1 ft
Shared Use Path 12 ft
Grass 18 ft
Shoulder 8 ft
Travel Lane 12 ft
Travel Lane 12 ft
Travel Lane 12 ft
Shoulder 8 ft
Grass 16 ft
Click to enlarge
The WE-STEP will include proactive planning for standards that are flexible and can fit with what develops around them. WE-STEP standards also consider traffic speeds and potential alternative intersections, like roundabouts.
Not final design – for visualization purposes only.
https://westernsarpytep.com/images/Art3-A.png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Comment Map
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Select Language
< MENU
COMMENT
Safety
Safety is a primary consideration of WE-STEP, including the following concepts:
Crashes occur more frequently at intersections or access points
A raised median is safer for all users of the transportation network
High speed vehicle traffic does not create a safe space for pedestrians and bicyclists
Roundabouts are safer than signalized intersections in most instances
These aspects will be considered through the development of the WE-STEP with a goal to provide safe streets for all users of the transportation network established in the plan.


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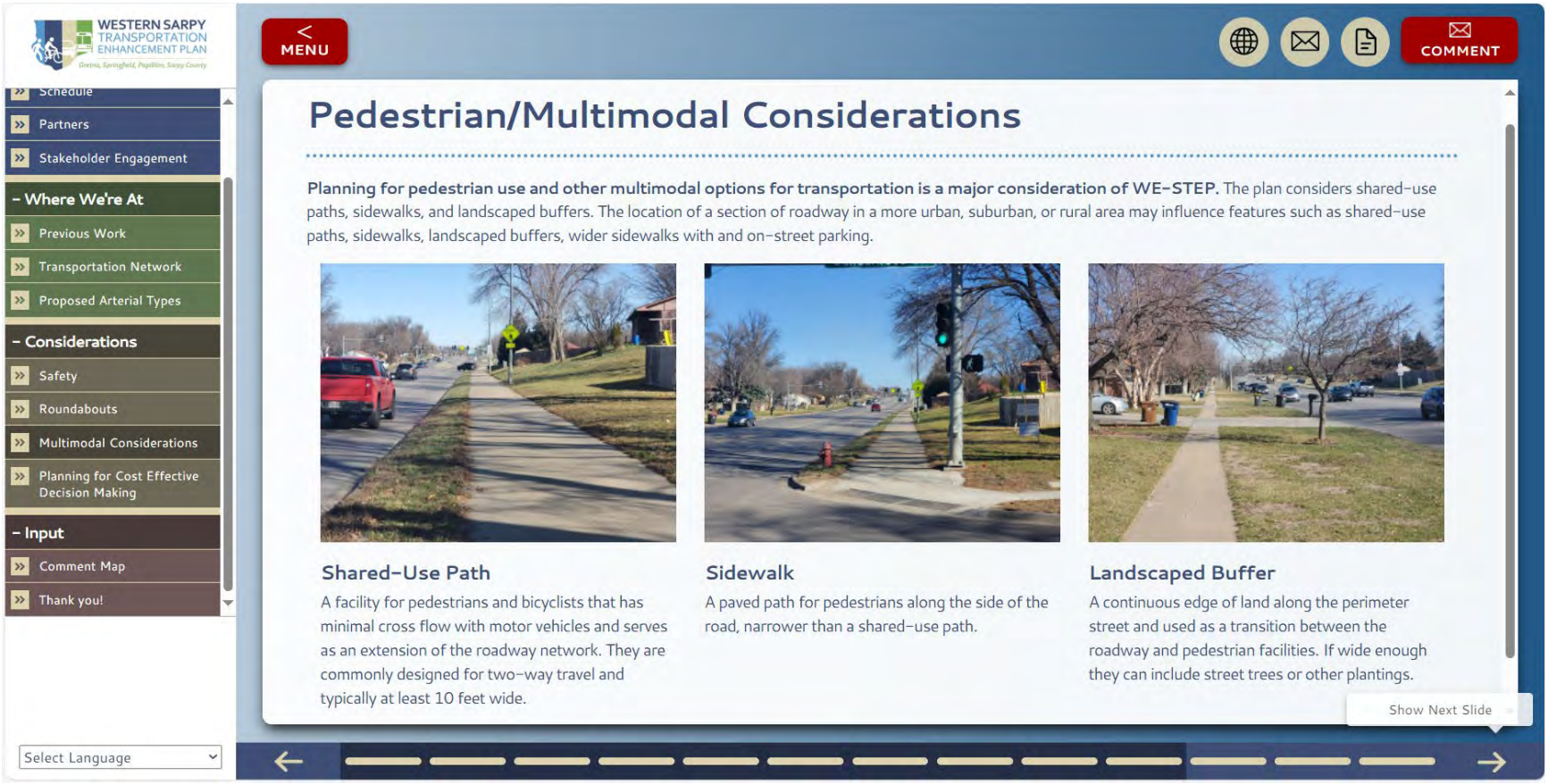
Comment Map
Thank you!
https://westernsarpytep.com
< MENU
COMMENT
Roundabouts
Roundabouts will be considered in the plan as they are a type of intersection that is cost-effective when compared to signalized intersections, and they improve safety for all users, including pedestrians and cyclists. Roundabouts also reduce congestion and help keep traffic moving. The Federal Highway Administration reports that converting a signalized intersection to a roundabout reduces all crashes by nearly one-third, and fatal or serious injury crashes by nearly 80%.
1
1
2
Show Next Slide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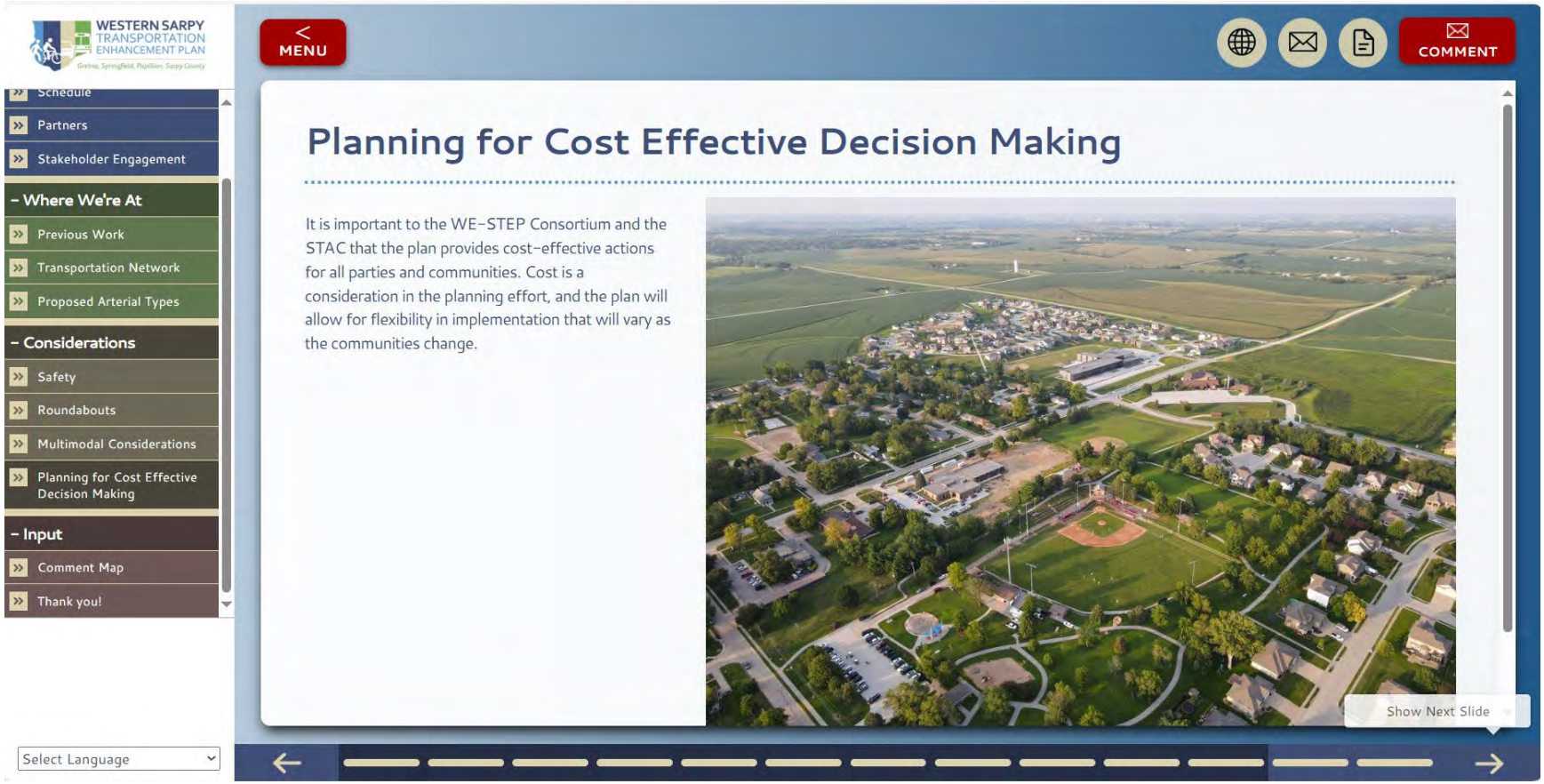
Comment Map
Thank you!
Select Language
< MENU
COMMENT
Pedestrian/Multimodal Considerations
Planning for pedestrian use and other multimodal options for transportation is a major consideration of WE-STEP. The plan considers shared-use paths, sidewalks, and landscaped buffers. The location of a section of roadway in a more urban, suburban, or rural area may influence features such as shared-use paths, sidewalks, landscaped buffers, wider sidewalks with and on-street parking.
Shared-Use Path
A facility for pedestrians and bicyclists that has minimal cross flow with motor vehicles and serves as an extension of the roadway network. They are commonly designed for two-way travel and typically at least 10 feet wide.
Sidewalk
A paved path for pedestrians along the side of the road, narrower than a shared-use path.
Landscaped Buffer
A continuous edge of land along the perimeter street and used as a transition between the roadway and pedestrian facilities. If wide enough they can include street trees or other plantings.
Show Next Slide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Planning for Cost Effective Decision Making
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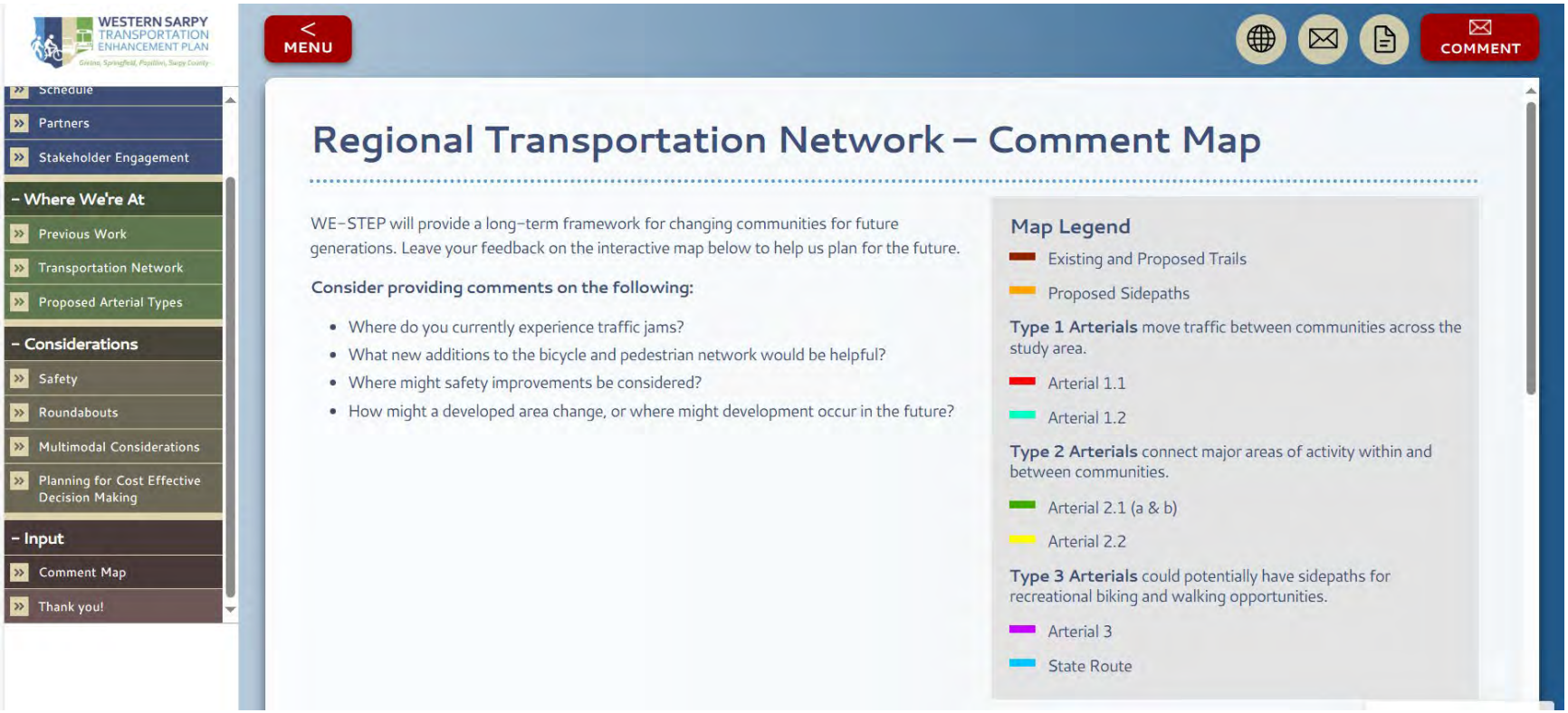
Comment Map
Thank you!
Select Language
< MENU
COMMENT
Planning for Cost Effective Decision Making
It is important to the WE-STEP Consortium and the STAC that the plan provides cost-effective actions for all parties and communities. Cost is a consideration in the planning effort, and the plan will allow for flexibility in implementation that will vary as the communities change.
Show Next Slide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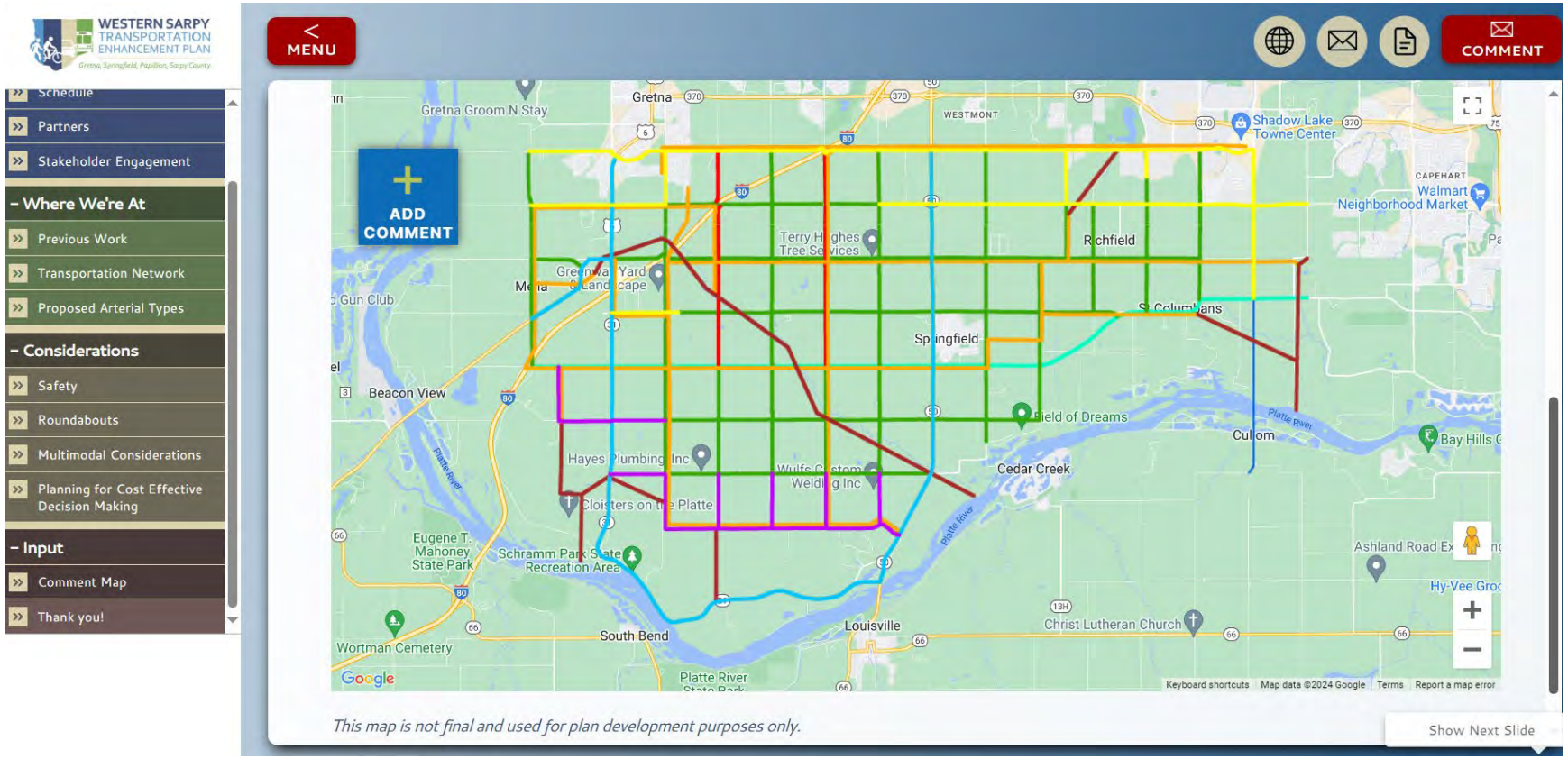
Comment Map
Thank you!
< MENU
COMMENT
Regional Transportation Network – Comment Map
WE-STEP will provide a long-term framework for changing communities for future generations. Leave your feedback on the interactive map below to help us plan for the future.
Consider providing comments on the following:
• Where do you currently experience traffic jams?
• What new additions to the bicycle and pedestrian network would be helpful?
• Where might safety improvements be considered?
• How might a developed area change, or where might development occur in the future?
Map Legend
Existing and Proposed Trails
Proposed Sidepaths
Type 1 Arterials move traffic between communities across the study area.
Arterial 1.1
Arterial 1.2
Type 2 Arterials connect major areas of activity within and between communities.
Arterial 2.1 (a & b)
Arterial 2.2
Type 3 Arterials could potentially have sidepaths for recreational biking and walking opportunities.
Arterial 3
State Route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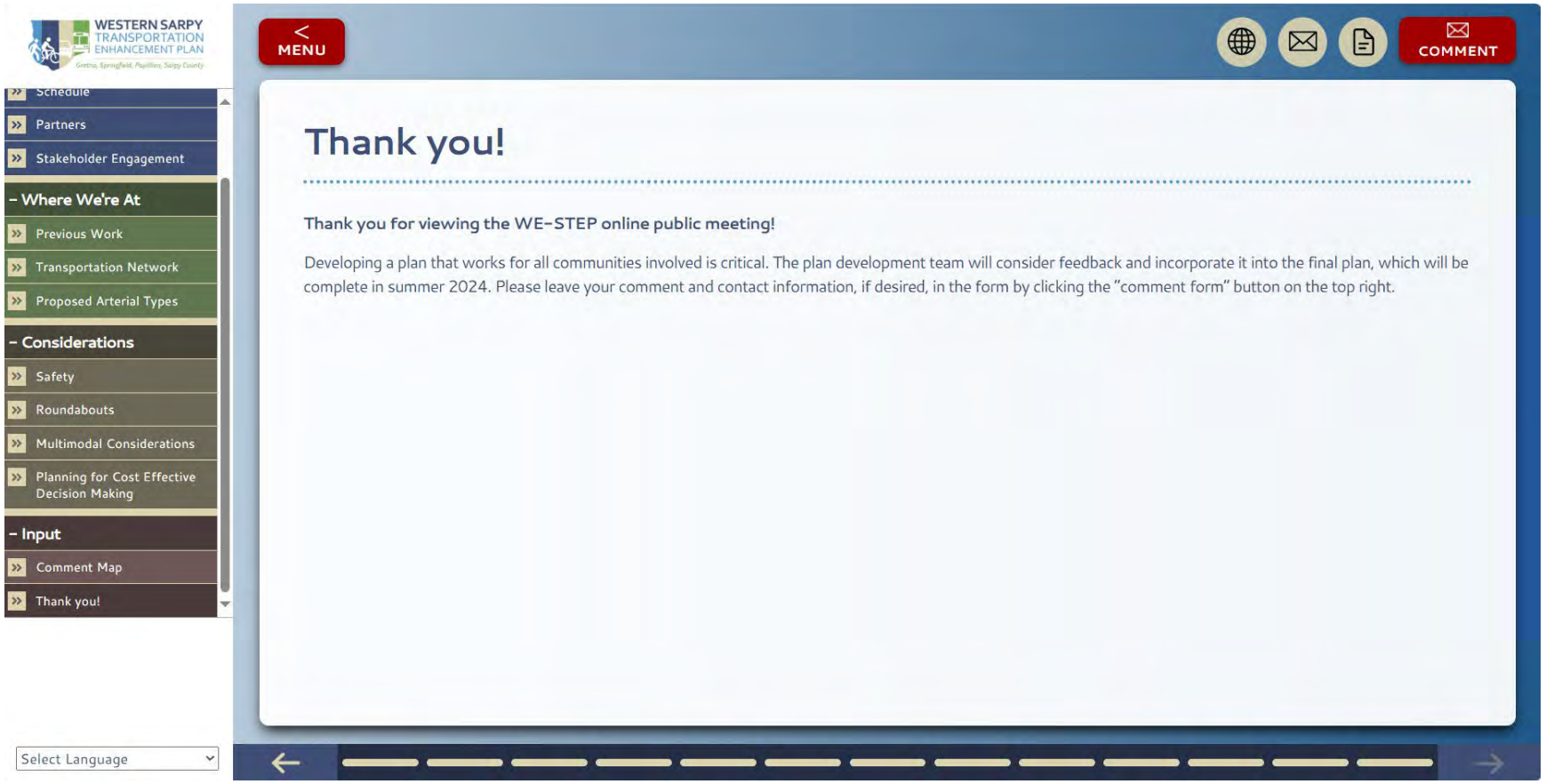
– Input
Comment Map
Thank you!
< MENU
COMMENT
ADD COMMENT
Gretna
Gretna Groom N Stay
WESTMONT
Shadow Lake Towne Center
CAPEHART
Walmart Neighborhood Market
Terry Hughes Tree Services
Richfield
Springfield
Beacon View
Field of Dreams
Cullom
Bay Hills
Cedar Creek
Hayes Plumbing Inc
Cloisters on the Platte
Eugene T. Mahoney State Park
Schramm Park State Recreation Area
Ashland Road
Hy-Vee
Louisville
Christ Lutheran Church
South Bend
Wortman Cemetery
Platte River
Google
Keyboard shortcuts
Map data ©2024 Google
Terms
Report a map error
*This map is not final and used for plan development purposes only.*
Show Next Slide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Comment Map
Thank you!
Select Language
< MENU
COMMENT
Thank you!
Thank you for viewing the WE-STEP online public meeting!
Developing a plan that works for all communities involved is critical. The plan development team will consider feedback and incorporate it into the final plan, which will be complete in summer 2024. Please leave your comment and contact information, if desired, in the form by clicking the "comment form" button on the top right.

# Engagement Appendix 3: Online Public Meeting Comments

| General Comments | | |
|---|---|---|
| Questionable speed limits and lack of enforcement | | |
| Platteview Road should be a limited access expressway | **5** | |
| Shared use path – north side of Platteview Road between Springfield High School and 84th Street | | |
| Landscaped buffers – unusable land – increased costs to developers, business owners, and homeowners | | |
| Use 4' sidewalks | | |
| Most drivers prefer lights/intersections over roundabouts | | |
| PEL study – interstate interchange at 192nd Street – when will a decision be made? | | |
| Need a limited access east/west route through the County | **5** | |
| Highway 370 used to be a good through east/west, but is not anymore. | **9** | |
| Roundabouts are great but need to be big enough to allow traffic to flow | | |
| Include landscaping | | |
| No on-street parking | | |
| Traffic is too congested near I-80 interchange between Papillion and Gretna – need better on/off ramp | | |
| Do not develop this part of the county | **2** | |
| Need additional lanes on 180th Street and 192nd Street to Highway 370 and 168th Street | | |
| Bike lanes / additional trails | From Papillion towards Springfield, Louisville, and westward<br>Papillion to Chalco Hills or Gretna<br>Papillion to the southern side of Bellevue (Capehart Rd) | |
| | Consider where they connect to | |
| | Chalco to MoPac trail | |
| | Chalco to Highway 370 or Highway 6 | |
| | Highway 370 to the Gretna Outlet Mall | |
| | Highway 370 to I-80 interchange at 192nd | |
| | Connections to MoPac trail | |
| | Between Springfield and Papillion | |
| | Gretna Crossing Park to Schram Park and east to the Lied Bridge over the Platte River near South Bend. This can then connect to the trail nearby to Lincoln | |
| | Bike lanes in the street are more helpful than trying to ride on the sidewalk | **2** |
| Paving | 168th Street from Platteview Road to Highway 370 | |
| | Schram Road from Highway 50 to 168th Street | |
| | Fairview Road from 84th Street to 144th Street. | |
| It looks like there is a proposed highway through our farm between Platteview Road and Mitchell Road on 108th Street | | |

| | |
|---|---|
| Add public transportation/bus lanes | |
| Current trail plan goes across private property | **2** |
| 192nd Street is classified as an Arterial 1 south to Pflug Road. Shouldn't it extend east from the intersection? | |
| Reduce the Highway 50 speed limit from Platteview Road to Pflug Road from 50 to 35 MPH | |
| Need turn lanes at West Center Road between Wright Street and 240th Street | |
| Make sure to coordinate with the Sarpy County and Cities Wastewater Agency because new roads are great but not helpful if they go to places with no utilities | |
| Consider a roundabout here | Intersection of 170th Street and Chandler Road |
| | Schram Road connection to Highway 6/Highway 31 and 204th Street |
| 192nd Street and Chandler Road – How many lights will be added? Are there going to be turning lanes for property owners? What development do you foresee? Will the speed limit change? It seems like 3 lanes would provide what is needed for this area. | |
| Keep the marked crosswalk across 96th along Hardwood until a multi-use path is complete along Schram Road west of 96th | |
| Sarpy Heights Neighborhood – Would like our neighborhood to stay private and not connect to Schram Road. Speed will be more of an issue with paved roads. We need traffic quieting and low light emitting streetlamps. | |
| The study should address area planning, including industrial zones, air taxi locations, and utilities, and roadways are corridors for these.<br>Limit wind and solar farms to rural areas outside of the study area to densify and utilized mixed use development. | |
| There are no north/south connections east of 144th Street that are viable for high-speed, high-volume traffic like the Kennedy Freeway at 96th Street from I-80 to Schram Road. Urban core connections are lacking from Eppley to the study area. Consider the transit time from the study area to the airport including Lincoln. | |
| There are no planned east-west connections from Bellevue to Gretna. Traffic will ramp up quicker at the intersection of Highway 75 and Highway 34 with the plans for a casino, waterpark, and hotels than in the Papillion and Springfield area. | |
| Roundabouts will cause more issues then benefits | |
| Cornhusker Road and Highway 31 is very dangerous and the bridge under the train is closed so you can no longer take an alternate route. | |
| The new interchange of I-80 and 192nd Street needs to happen today. | **2** |
| The study should address interim improvements, considering ways that do not hinder a corridor's ability to accommodate the ultimate roadway section, while not over building as development enters the areas and drives the need for the improvements. | |
| At 216th and West Gruenther Road – the type of development in this area and the lack of connectivity to Highway 370 calls for a Type 3 arterial rather than a Type 2. | |
| 264th Street – with the unlikelihood of 180th Street ever crossing I-80, this would be more appropriate as a Type 3 arterial. | |
| Given road termination before the river and no bridge, these roads would be best likely with an Arterial 3 designation (180th and Platteview Road) | |
| A second priority I-80 interchange should be considered for Platteview Road, particularly for semi traffic. | |

| |
|---|
| Schram Road near Papillion was recently widened and paved, with the existing road left intact and the new road built to the south, leaving access to established homes intact and separate from the new road. Please consider this type of build for Capehart Road from 192nd west to Highway 6/31. |
| North of Capehart Road to Schram Road should be a Type 3 arterial with non-automotive traffic options due to high school, neighborhood, and Gretna Crossing Park/YMCA traffic. |
| 252nd and Harrison Street is a residential property and would create a great deal of issues if these streets or intersections are increased in size. We do not want the increased traffic in these areas. |
| Consider the width of the roads and the impact construction will have on property and property owners along Platteview Road, specifically between 99th Street and 84th Street. Sidewalks are also not needed along this road. This should be an arterial 3. |
| There should be a regional public transit network from Omaha to Lincoln via Nebraska Crossing. The intentions for a major mixed use development could make this feasible. |

# Engagment Appendix 4: Other Public Comments

| Contact | Public Comment | Response |
|---|---|---|
| Kim Staley<br>kstaley@sappbros.net | Hi,<br><br>We live on Pflug Rd. Can you tell me know what we can expect?<br><br>Thank You.<br><br>Kim | Hi Kim,<br>The majority of this connection would occur in Phase 3 of the Platteview Road Expressway project, which is separate from the broader WE-STEP study. Options to connect I-80 will be determined at a later phase of the study and have not been identified. The project team anticipates evaluating alternatives for that area near Gretna later this year. Public information meetings will be scheduled in the future to share additional information, but the timing of these meetings is yet to be determined. You can find current project information on the Connect Sarpy website, and the Platteview Road Expressway project team will also add you to their mailing and email lists. Please feel free to reach out at any time with questions or concerns to either of the contacts listed below.<br><br>Zach Hergenrader<br>Sarpy County Public Works<br>402-537-6917<br><br>Chris Malmberg<br>Project Manager<br>402-399-4959<br><br>Thanks,<br><br>Jim |

# Engagement Appendix 5: Small Group Stakeholder Meetings

| Stakeholder Group | Number of Stakeholders | Meeting Date |
|---|---|---|
| Resources and Utilities | 6 | Friday, April 5 |
| Growth and Development, Data Centers, and Builders/Developers | 9 | Thursday, April 11 |
| Emergency Response and Logistics/Freight | 11 | Thursday, April 11 |
| Municipalities, Community Groups, and School Districts | 9 | Friday, April 12 |

## Letter

Dear **[insert contact or organization],**

The Western Sarpy County Transportation Enhancement Plan (WE-STEP) Consortium is pleased to invite you to participate in a Stakeholder Workshop for WE-STEP, which will be a strategic transportation plan for western Sarpy County, developed in collaboration with the City of Gretna, City of Papillion, City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA). WE-STEP will provide a framework for changing communities to develop for future generations.

The Stakeholder Workshop is designed to present information about plan development, identification of a future regional transportation network and standards that are flexible and can fit with what develops around it. You can also provide feedback on the transportation network and standards in the meeting.

The meeting will be in-person. Your attendance is requested at the following:

Resources and Utilities

- Friday, April 5, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

Growth and Development, Data Centers, and Builders/Developers

- Thursday, April 11, 2024
- 10:30 am – 12:00 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

Emergency Response and Logistics/Freight

- Thursday, April 11, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

Municipalities, Community Groups and School Districts

- Friday, April 12, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

We look forward to your participation in the Stakeholder Workshop. Please let us know if you or a representative from your organization can join us by contacting Delani Watkins at delani.watkins@hdrinc.com. If you have additional questions, please contact:

Jim Boerner
jboerner@mapacog.org

## Email

SUBJECT: You're Invited: Western Sarpy County Transportation Enhancement Plan (WE-STEP) Stakeholder Workshop

Dear **[insert contact or organization],**

The Western Sarpy County Transportation Enhancement Plan (WE-STEP) Consortium is pleased to invite you to participate in a Stakeholder Workshop for WE-STEP, which will be a strategic transportation plan for western Sarpy County, developed in collaboration with the City of Gretna, City of Papillion, City of Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA). WE-STEP will provide a framework for changing communities to develop for future generations.

The Stakeholder Workshop is designed to present information about plan development, identification of a future regional transportation network and standards that are flexible and can fit with what develops around it. You can also provide feedback on the transportation network and standards in the meeting.

The meeting will be in-person. Your attendance is requested at the following:

Resources and Utilities

- Friday, April 5, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

Growth and Development, Data Centers, and Builders/Developers

- Thursday, April 11, 2024
- 10:30 am – 12:00 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

Emergency Response and Logistics/Freight

- Thursday, April 11, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building

*1210 Golden Gate Drive, Papillion, NE 68046*

Municipalities, Community Groups and School Districts

- Friday, April 12, 2024
- 1:00 – 2:30 pm
- Sarpy County Planning & Building
  *1210 Golden Gate Drive, Papillion, NE 68046*

We look forward to your participation in the Stakeholder Workshop. Please let us know if you or a representative from your organization can join us by contacting Delani Watkins at delani.watkins@hdrinc.com. If you have additional questions, please contact:

Jim Boerner
jboerner@mapacog.org

## Calendar Invitation

### Resources and Utilities

**TITLE:** Western Sarpy County Transportation Enhancement Plan (WE-STEP) Stakeholder Meeting – Resources and Utilities

**DATE/TIME:** Friday, April 5 – 1:00 – 2:30 pm

**LOCATION:** Sarpy County Planning & Building – 1210 Golden Gate Drive, Papillion, NE, 68046

**COPY:** Thank you for participating in the WE-STEP stakeholder meeting. MAPA, Sarpy County, and the Cities of Gretna, Papillion, and Springfield are working together to develop a strategic transportation plan for western Sarpy County.

We look forward to hearing your perspective and feedback!

### Growth and Development, Data Centers, and Builders/Developers

**TITLE:** Western Sarpy County Transportation Enhancement Plan (WE-STEP) Stakeholder Meeting – Growth and Development, Data Centers, and Builders/Developers

**DATE/TIME:** Thursday, April 11 – 10:30 am – 12:00 pm

**LOCATION:** Sarpy County Planning & Building – 1210 Golden Gate Drive, Papillion, NE, 68046

**COPY:** Thank you for participating in the WE-STEP stakeholder meeting. MAPA, Sarpy County, and the Cities of Gretna, Papillion, and Springfield are working together to develop a strategic transportation plan for western Sarpy County.

We look forward to hearing your perspective and feedback!

### Emergency Response and Logistics/Freight

**TITLE:** Western Sarpy County Transportation Enhancement Plan (WE-STEP) Stakeholder Meeting – Emergency Response and Logistics/Freight

**DATE/TIME:** Thursday, April 11 – 1:00 – 2:30 pm

**LOCATION:** Sarpy County Planning & Building – 1210 Golden Gate Drive, Papillion, NE, 68046

**COPY:** Thank you for participating in the WE-STEP stakeholder meeting. MAPA, Sarpy County, and the Cities of Gretna, Papillion, and Springfield are working together to develop a strategic transportation plan for western Sarpy County.

We look forward to hearing your perspective and feedback!

### Municipalities and School Districts

**TITLE:** Western Sarpy County Transportation Enhancement Plan (WE-STEP) Stakeholder Meeting – Municipalities, Community Groups and School Districts

**DATE/TIME:** Friday, April 12 – 1:00-2:30 pm

**LOCATION:** Sarpy County Planning & Building – 1210 Golden Gate Drive, Papillion, NE, 68046

**COPY:** Thank you for participating in the WE-STEP stakeholder meeting. MAPA, Sarpy County, and the Cities of Gretna, Papillion, and Springfield are working together to develop a strategic transportation plan for western Sarpy County.

We look forward to hearing your perspective and feedback!

# Engagement Appendix 6: Stakeholder List

| Category/Notes | Stakeholder | Contact | Email | Phone Number | Address | City | State | Zip |
|---|---|---|---|---|---|---|---|---|
| Resources | Sarpy Sewer Agency | Dan Hoins | danh@sccwwa.org<br>papadmin@papionrd.org | 402-593-2347 | 1210 Golden Gate Dr | Papillion | NE | 68046 |
| Resources | South Sarpy Watershed Partnership/NRD | Ian Ghanavati | ighanavati@papionrd.org | 402-444-6222 | 8901 S 154th St | Omaha | NE | 68138 |
| Utilities | OPPD | Matt Core | https://ww3.oppd.com/contact-n | 531-226-3515 | | | | |
| Utilities | OPPD | | | | | | | |
| Utilities | OPPD | Michaela Valentine | mvalentin@oppd.com | | | | | |
| Utilities | MUD | Cory Erspamer | cory_erspamer@mudnebr.com | | | | | |
| Utilities | MUD | Mike McGowan | boardemails@mudnebr.com | | | | | |
| Utilities | Black Hills Energy | Dustin Snyder | dustin.snyder@blackhillscorp.com | 402-949-2266 | 11526 Valley Ridge Rd | Papillion | NE | 68046 |
| Transportation Agency | Nebraska Department of Transportation | Damion Stern | damion.stern@nebraska.gov | | | | | |
| Transportation Agency | Nebraska Department of Transportation | Curtis Nosal | curtis.nosal@nebraska.gov | 402-595-2534 | 4425 South 108th St<br>PO Box 45461 | Omaha | NE | 68145 |
| Builders/Developers | MOBA | Jaylene Eilenstine<br>Mark Westergard | jaylene@moba.com<br>mark@moba.com | 402-333-2000 | 2637 S 158th Plz Ste 250 | Omaha | NE | 68130 |
| Builders/Developers | Laura Osborn Realty | Laura Osborn | laura@lauraosbornrealty.com | | | | | |
| Data Centers | Meta/Facebook Data | Stephanie Seger | stephanieseger@meta.com | | | | | |
| Data Centers | Google Data | Matt Sexton | mattsexton@google.com | | | | | |
| Data Centers | Yahoo Data | John Branigan | braniganj@yahooinc.com | | | | | |
| Growth and Development | Grow Sarpy | Lisa Scheve | lscheve@selectgreateromaha.com | 402-233-7155 | 808 Conagra Dr, Ste 400 | Omaha | NE | 68102 |
| Growth and Development | Sarpy Chamber of Commerce | Karen Gibler | president@sarpychamber.org | 402-339-3050 | 1243 Golden Gate Dr, Ste 1 | Papillion | NE | 68046 |
| Growth and Development | Springfield Business Association | | welovesba@gmail.com | 402-689-9794 | PO Box 185 | Springfield | NE | 68059 |
| Growth and Development | Papillion Historic Downtown Business Association | Joe Hunter | https://papilliondba.com/contact-us/ | | | | | |
| Growth and Development | Gretna Area Chamber of Commerce | | info@gretnachamber.com | 402-332-3535 | 798 Village Square | Gretna | NE | 68028 |
| Emergency Response | Sarpy County Sheriff's Office | Tori Boldt | tboldt@sarpy.gov | 402-593-2288 | 8335 Platteview Road | Papillion | NE | 68046 |
| Emergency Response | Sarpy County Emergency Response Agency | Jesse Eret | sarpyema@sarpy.gov | 402-593-5785 | 1210 Golden Gate Drive<br>Suite 1310 | Papillion | NE | 68046 |
| Emergency Response | Papillion Fire Department | Robb Gottsch | rgottsch@papillion.org | 402-339-8617 | 10727 Chandler Road | La Vista | NE | 68128 |
| Emergency Response | Papillion Police Department | Christiaan E. Whitted | PoliceChief@papillion.org | 402-597-2035 | 1000 E 1st Street | Papillion | NE | 68046 |
| Emergency Response | Springfield Volunteer Fire Department | Bob Engberg | bobengberg@yahoo.com | 402-253-2600 | 505 S 1st St | Springfield | NE | |
| Emergency Response | Gretna Fire & Rescue | Rod Buethe | firechief@cityofgretna.com | 402.660.4644 | 21825 Capehart Rd | Gretna | NE | 68028 |
| Logistics/Freight | Werner Trucking | | https://www.werner.com/contac | 402-895-6640 | 14507 Frontier Rd | Omaha | NE | 68138 |
| Logistics/Freight | Claas | Matt Ristow | matt.ristow@claas.com | 402-861-1000 | 8401 S 132nd St | Omaha | NE | 68138 |
| Logistics/Freight | R&R Nebraska Division | Mike Homa | Rupprecht.Paul@RRRealty.com. | 405-885-4002 | 8881 West Dodge Road, Suite 100 Wes | Omaha | NE | 68022 |
| Logistics/Freight | HRC Industrial West, LLC | Dave Vogtman | dave.vogtman@thehomecompan | 402-537-5801 | 6900 Westown Parkway | West Des M | IA | 50266 |
| Logistics/Freight | Amazon Distribution | Jason Vangalis | vangalis@amazon.com | | 11650 S 154th St | Omaha | NE | 68138 |
| Municipalities | City of Bellevue | Harrison Johnson | harrison.johnson@bellevue.net | 402-293-3000 | 1500 Wall St | Bellevue | NE | 68005 |
| Municipalities | City of Bellevue | Jim Ristow | jim.ristow@bellevue.net | | | | | |
| Municipalities | City of Omaha | Derek Miller | derek.miller@cityofomaha.org | 402-444-5150 | 1819 Farnam St, Suite 1100 | Omaha | NE | 68183 |
| Municipalities | City of La Vista | Joe Soucie | jsoucie@cityoflavista.org | 402-331-8927 | 9900 Portal Road | La Vista | NE | 68128 |
| Community Group | ROAM (formerly Heartland BCycle) | Benny Foltz | benny@roamshare.org | 402-350-0421 | | | | |
| School Districts | Papillion - La Vista Community Schools | Dr. Andrew Rikli | andrew.rikli@plcschools.org | 402-537-6200 | 420 S. Washington Street | Papillion | NE | 68046 |
| School Districts | Springfield-Platteview Community Schools | Dr. Ryan Saunders | ryan.saunders@spcsne.org | 402-592-1300 | 765 Main St | Springfield | NE | 68059 |
| School Districts | Gretna Public Schools | Travis Lightle | tlightle@gpsne.org | 402-332-3265 | 11717 South 216th St | Gretna | NE | 68028 |
| School Districts | Metropolitan Community College | Stan Horrell | SHorrell@mccneb.edu | 531-622-2532 | | | | |
| | Jennifer Peters | | | | | | | |
| | Dustin Crouch | | | | | | | |

# Engagement Appendix 7: Small Group Stakeholder Meetings

| Meeting | Attendees | |
|---|---|---|
| **Resources, Utilities, and Transportation Agencies** | South Sarpy Watershed Partnership/NRD | Ian Ghanavati |
| | MUD | Cory Erspamer |
| **Growth and Development, Data Centers, and Builders/Developers** | MOBA | Mark Westergard |
| | Grow Sarpy | Lisa Scheve |
| | Sarpy Chamber of Commerce | Karen Gibler |
| **Emergency Response and Logistics/Freight** | Sarpy County Sherriff's Office | Tori Boldt |
| | Sarpy County Emergency Response Agency | Jesse Eret |
| | Papillion Fire Department | Robb Gottsch |
| | Gretna Fire & Rescue | Rod Buethe |
| **Municipalities, Community Groups, and School Districts** | City of Omaha | Derek Miller |
| | City of La Vista | Joe Soucie |
| | Heartland Bike Share | Benny Foltz |
| | Gretna Public Schools | Travis Lightle |
| | Metropolitan Community College | Stan Horrell |
| **Virtual** | Black Hills Energy | Dustin Snyder |
| | Laura Osborn Realty | Laura Osborn |
| | Google Data | Matt Sexton |
| | Yahoo Data | John Branigan |
| | Class | Matt Ristow |
| | Amazon Distribution | Jason Vangalis |
| | Black Hills Energy | Jennifer Peters |
| | Amazon Distribution | Dustin Crouch |

# Engagement Appendix 8: Small Group Stakeholder Meeting Materials

# WESTERN SARPY TRANSPORTATION ENHANCEMENT PLAN

*Gretna, Springfield, Papillion, Sarpy County*

Virtual Stakeholder Meeting

May 2, 2024

# Welcome

- Please type your name and organization in the chat

# Introductions

# Agenda

- Study Background & Objectives
- Study Schedule
- Where We're At
  - Previous Work
  - Regional Transportation Network
  - Corridors of the Future
- Network Planning Considerations
  - Safety
  - Roundabouts
  - Pedestrian / Multimodal Considerations
  - Planning for Cost Effective Decision Making
- Q&A / Feedback

# Mentimeter

- Visit menti.com and enter input code 3915 4789 to start the live poll

OR

- Scan the QR code

# Study Background & Objectives

# Study Area

- The Western Sarpy County Transportation Enhancement Plan (WE-STEP) is a strategic transportation plan for Western Sarpy County
- Partnership between Gretna, Papillion, Springfield, Sarpy County, and the Metropolitan Area Planning Agency (MAPA)
- Partner agencies will develop a unified framework for the coordination of future transportation improvements

WESTERN SARPY
TRANSPORTATION
ENHANCEMENT PLAN
*Gretna, Springfield, Papillion, Sarpy County*

# Coinciding Planning Efforts

- WE-STEP draws upon the goals identified in coinciding planning efforts from all agencies involved, including:
  - 2050 Long Range Transportation Plan (LRTP) – MAPA
  - Gretna Comprehensive Plan
  - Papillion Comprehensive Plan
  - Springfield Comprehensive Plan
  - Sarpy County Planning

MAPA
Omaha - Council Bluffs Metropolitan Area Planning Agency

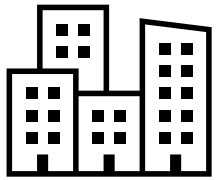
SARPY COUNTY NEBRASKA

Gretna
THE GREAT LIFE

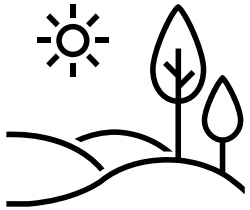
CITY OF PAPILLION
FOUNDED IN 1870

SPRINGFIELD
EST 1882
NEBRASKA

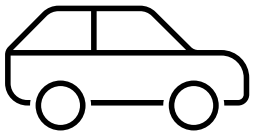
# Plan Considerations



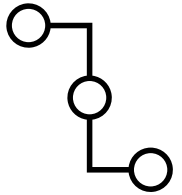
Future development projections



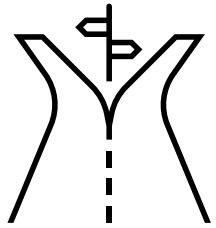
Land use



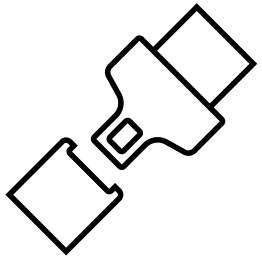
Traffic demand



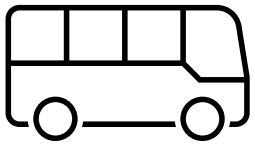
Connectivity



Roadway design



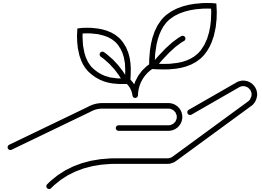
Safety



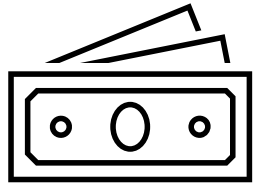
Transit

Alternative modes of transportation

Pedestrian amenities



Environmental considerations



Costs

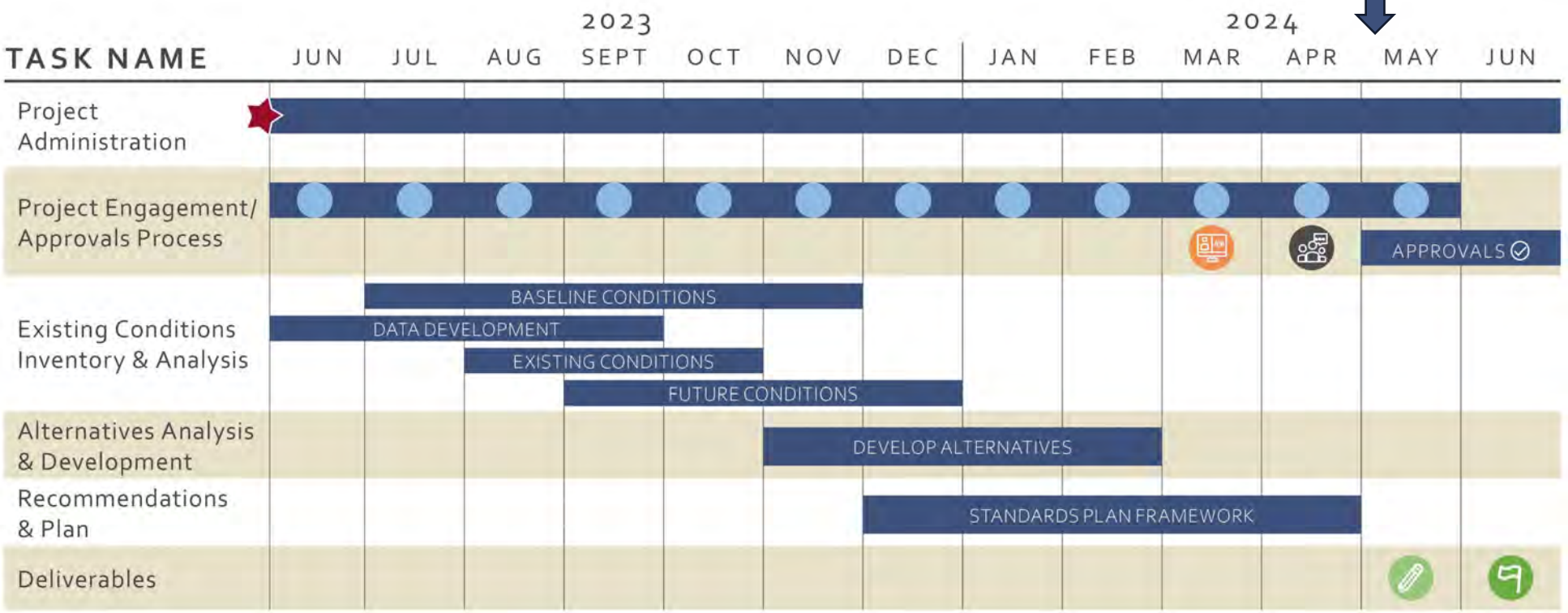
# Plan Goal

**Provide a flexible framework for changing communities to facilitate a connected and consistent future transportation network for all users, beyond what the existing transportation system in the area can offer.**

# Study Schedule

# Schedule

- Currently finalizing options for future street standards



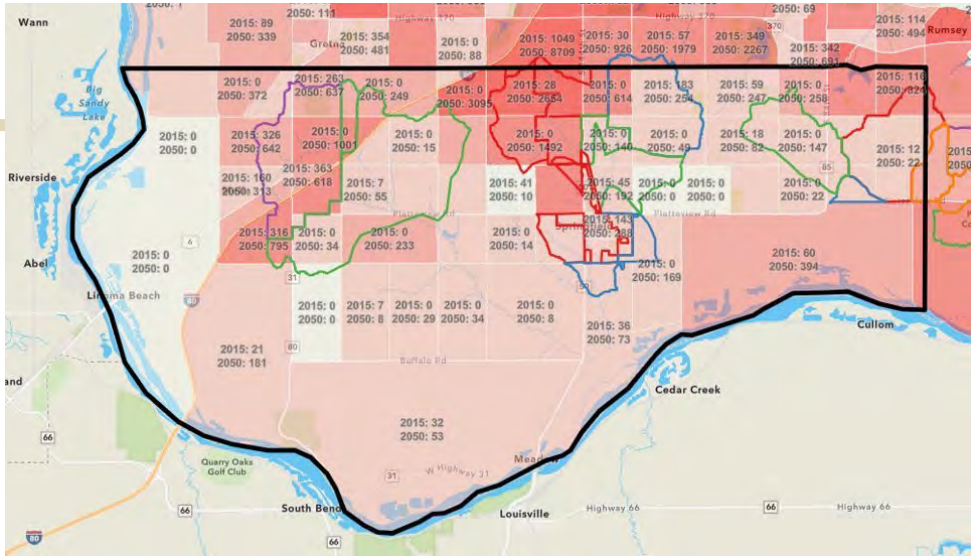
# Where We're At

# Previous Work

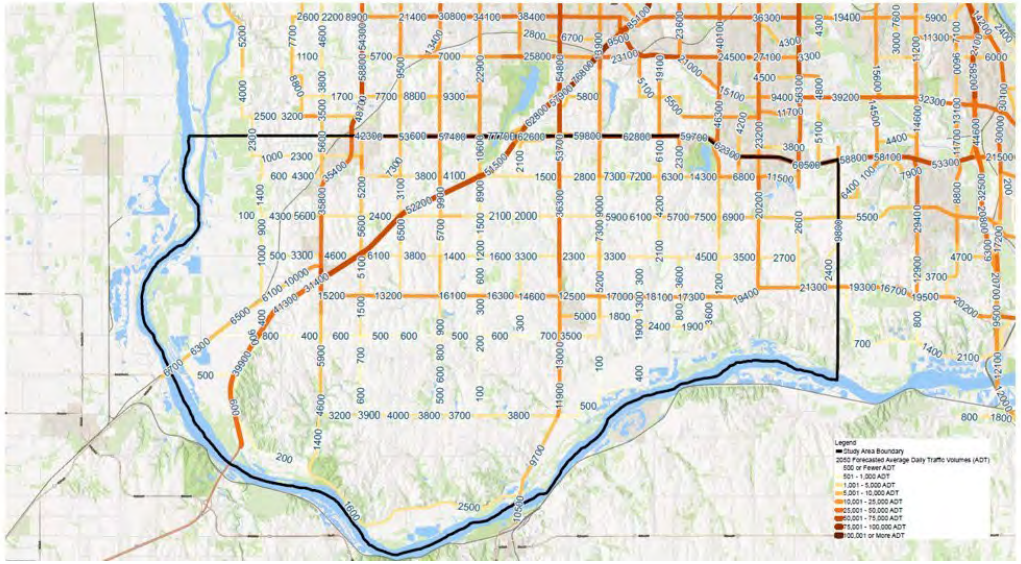
# Previous Work

- Reviewed past studies and plans from each jurisdiction
- Considered long-term needs for 2050 and beyond (50+ years)

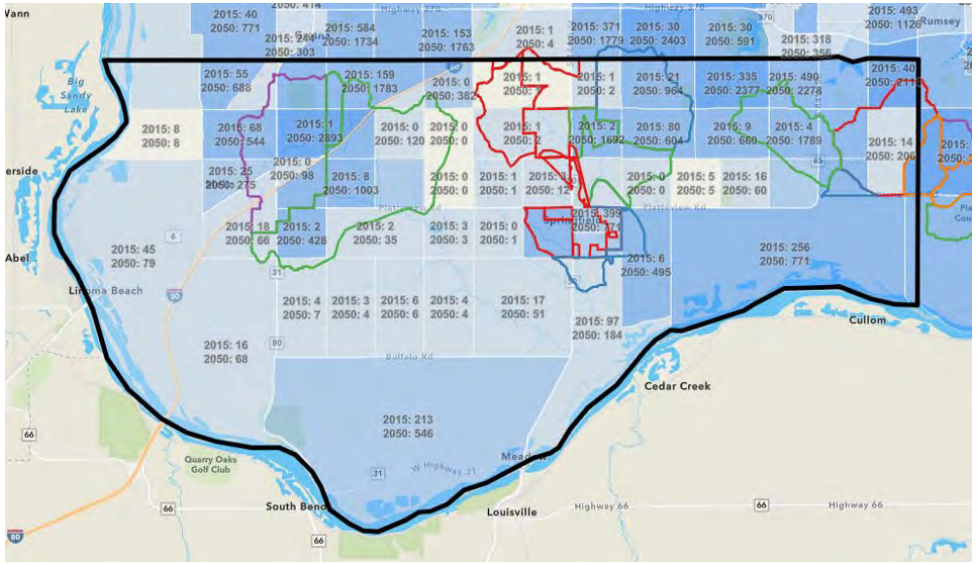
Forecasted Employment Growth (through 2050)



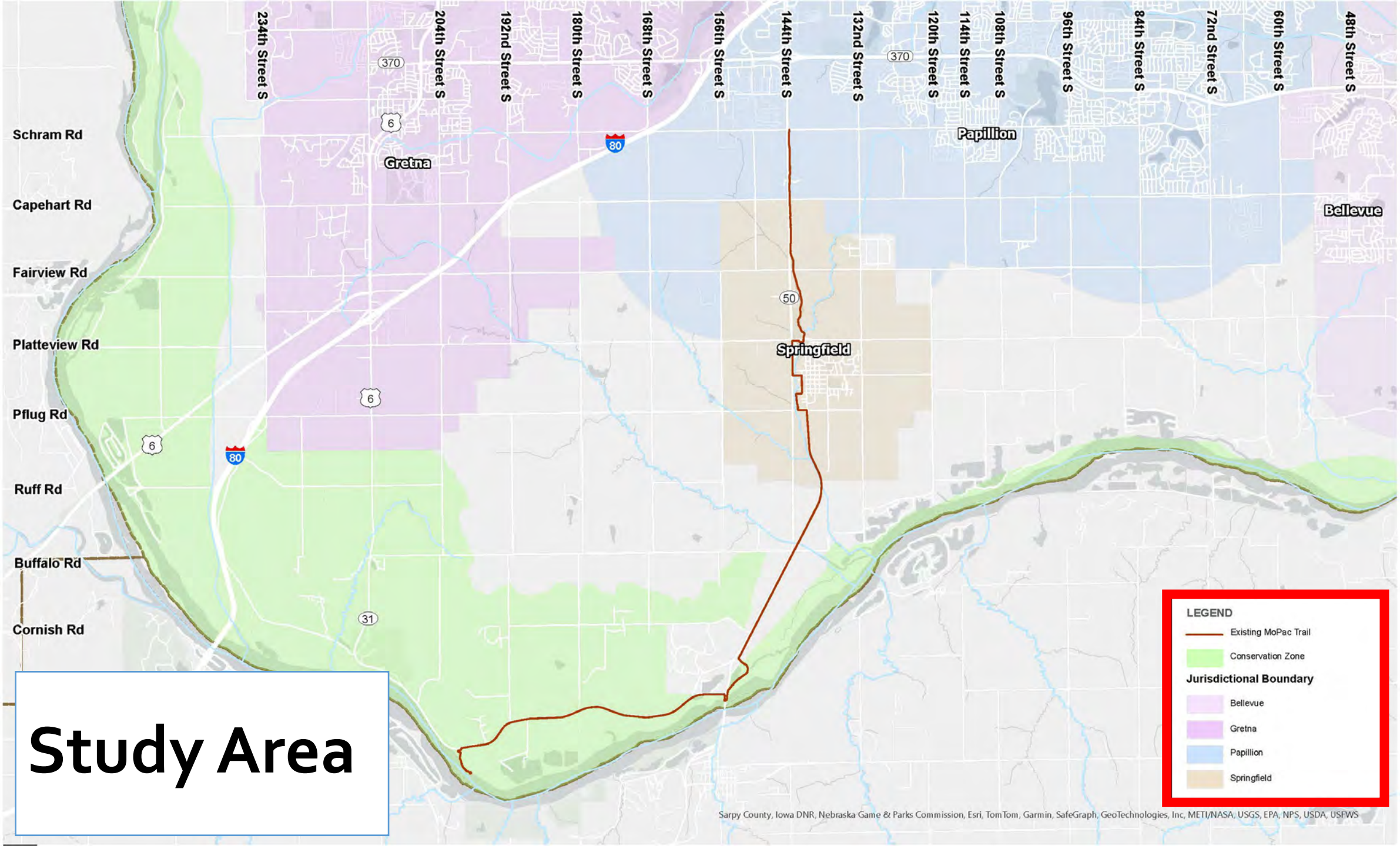

Forecasted Traffic Volume Growth (through 2050)



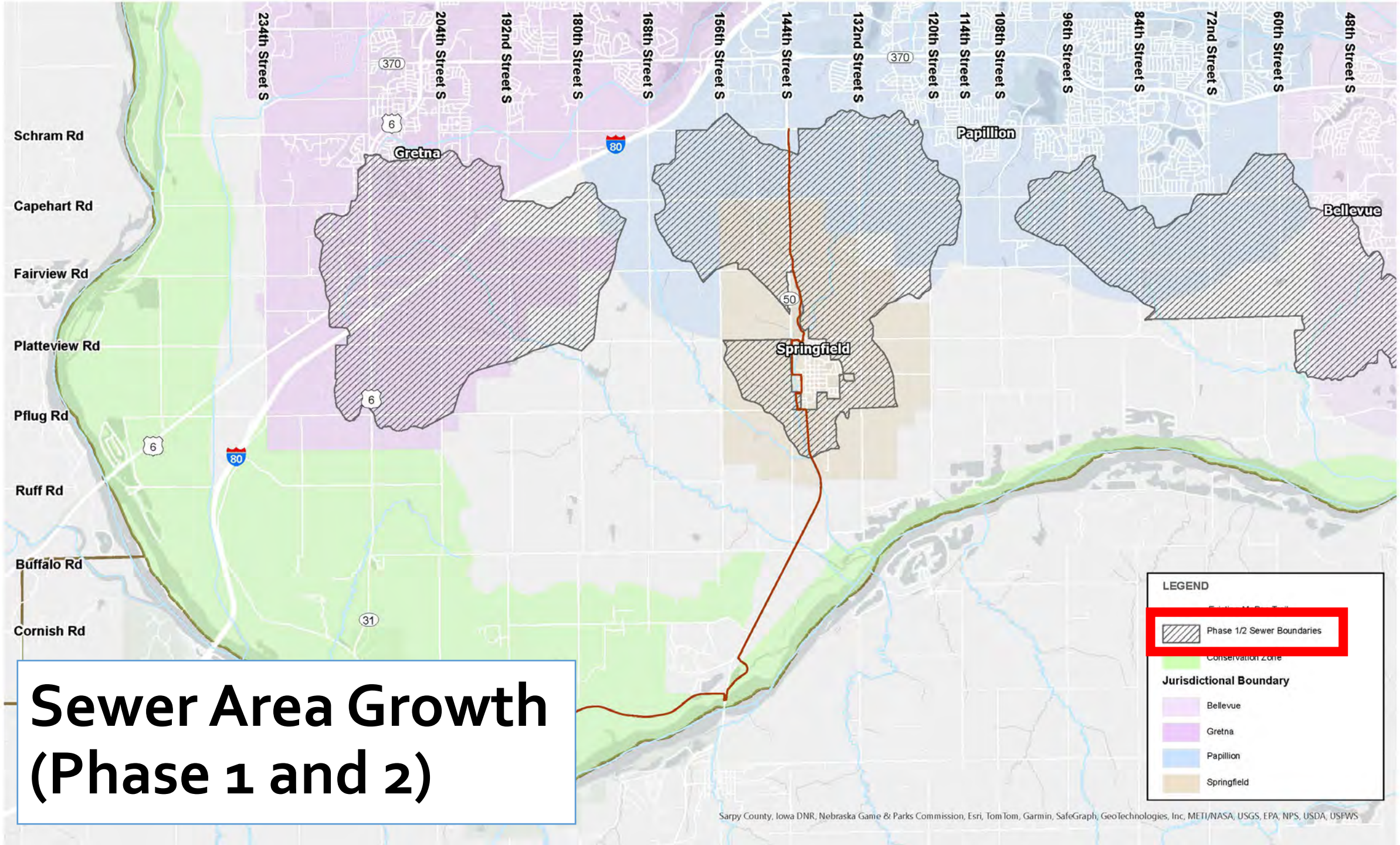
Forecasted Household Growth (through 2050)



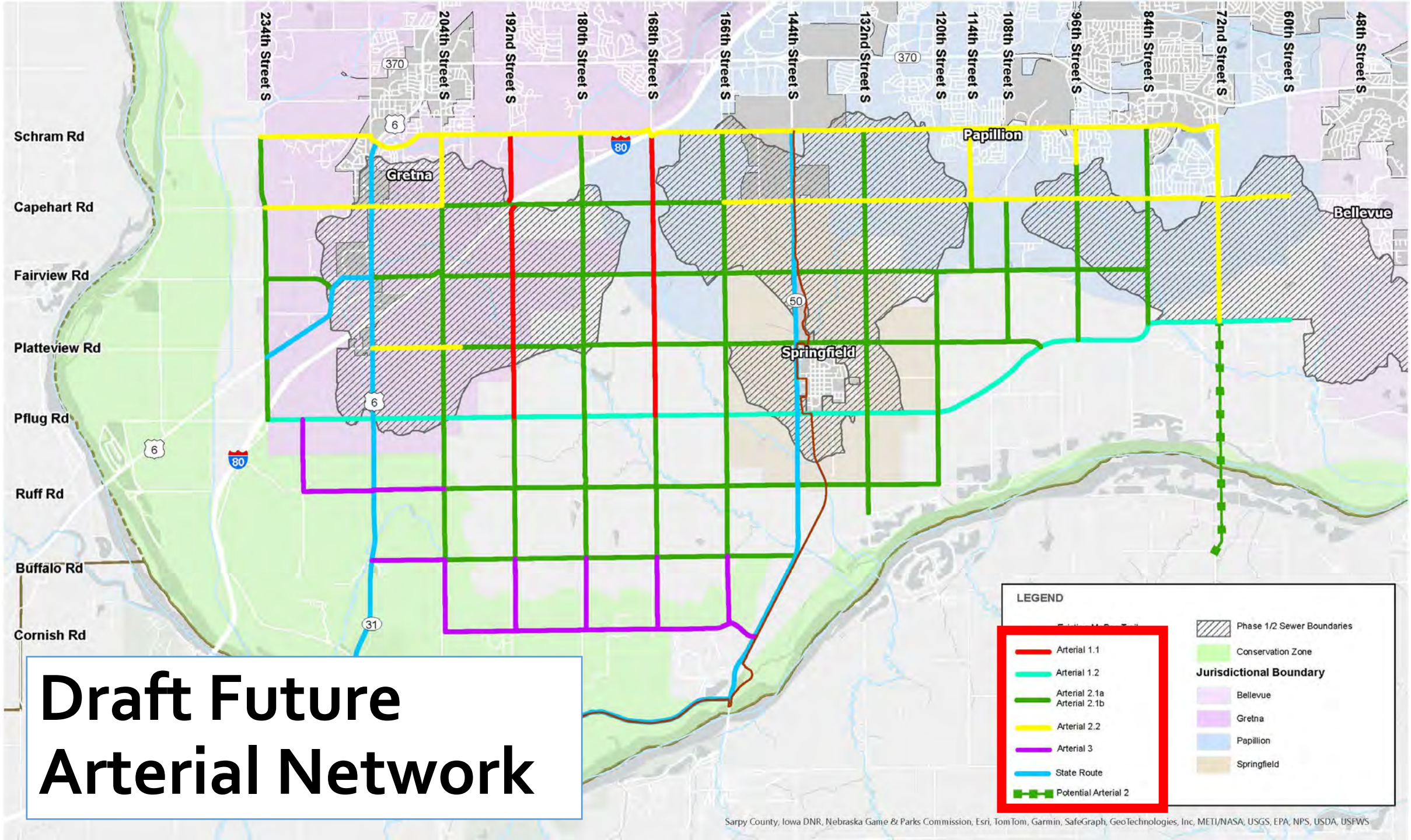
# Regional Transportation Network


234th Street S
204th Street S
192nd Street S
180th Street S
168th Street S
156th Street S
144th Street S
132nd Street S
120th Street S
114th Street S
108th Street S
96th Street S
84th Street S
72nd Street S
60th Street S
48th Street S
370
370
6
6
6
80
80
50
31
Schram Rd
Capehart Rd
Fairview Rd
Platteview Rd
Pflug Rd
Ruff Rd
Buffalo Rd
Cornish Rd
Gretna
Papillion
Bellevue
Springfield
LEGEND
Existing MoPac Trail
Conservation Zone
Jurisdictional Boundary
Bellevue
Gretna
Papillion
Springfield
Sarpy County, Iowa DNR, Nebraska Game & Parks Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

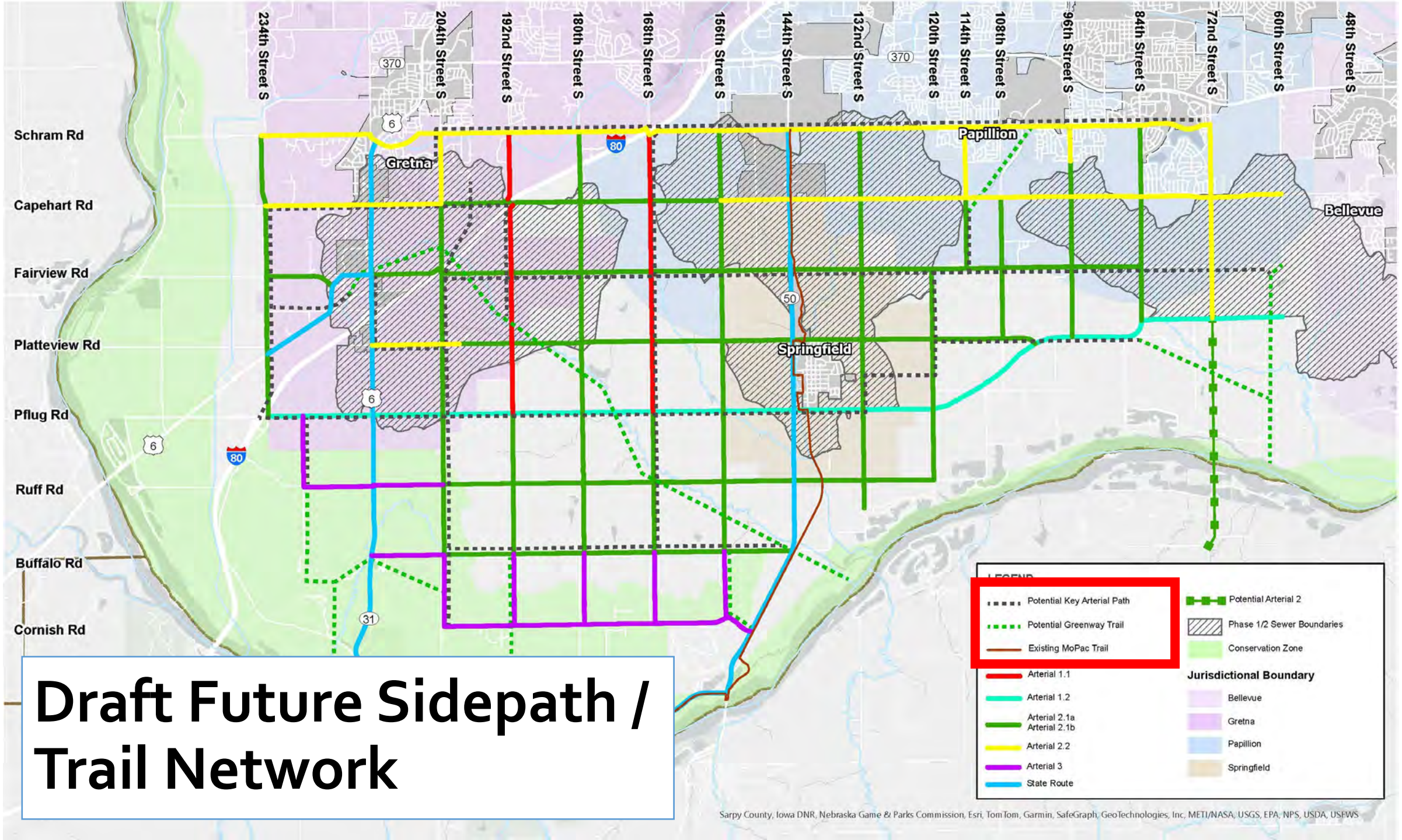
# Study Area




# Sewer Area Growth (Phase 1 and 2)




# Draft Future Arterial Network

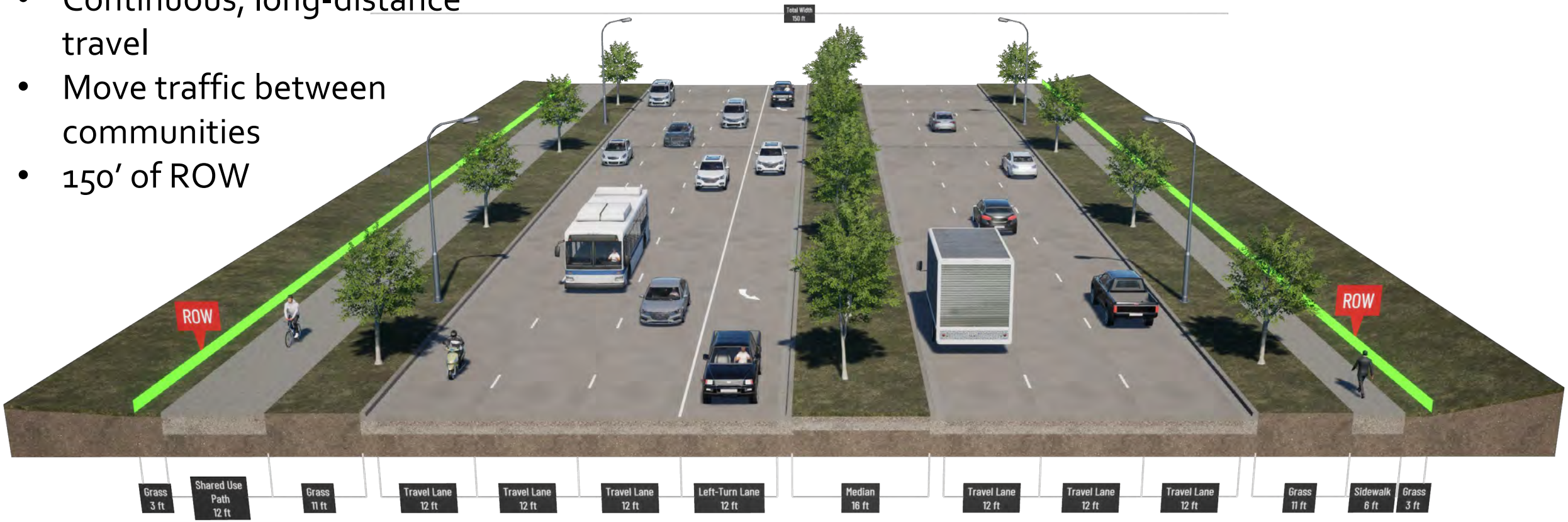



# Draft Future Sidepath / Trail Network

# Corridors of the Future

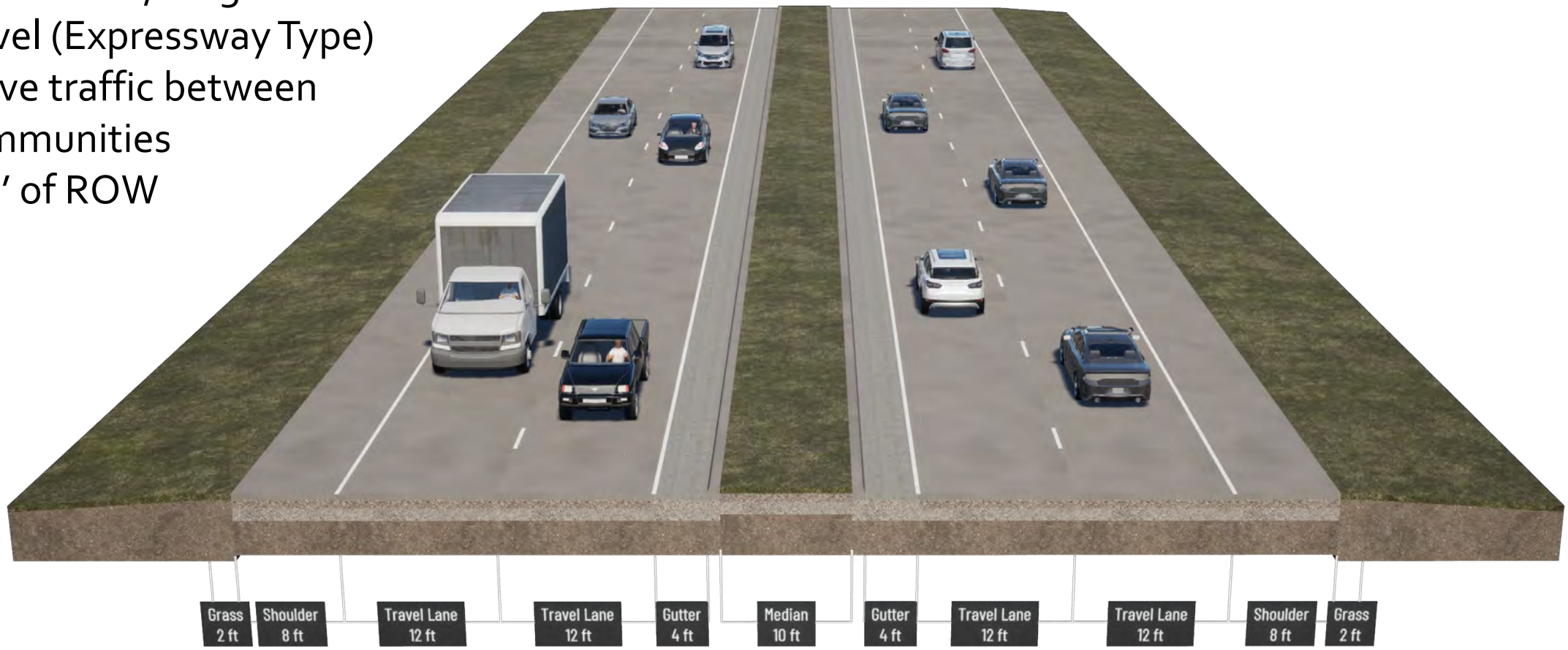
# Type 1.1 Arterial (Ultimate Build)

- Continuous, long-distance travel
- Move traffic between communities
- 150’ of ROW



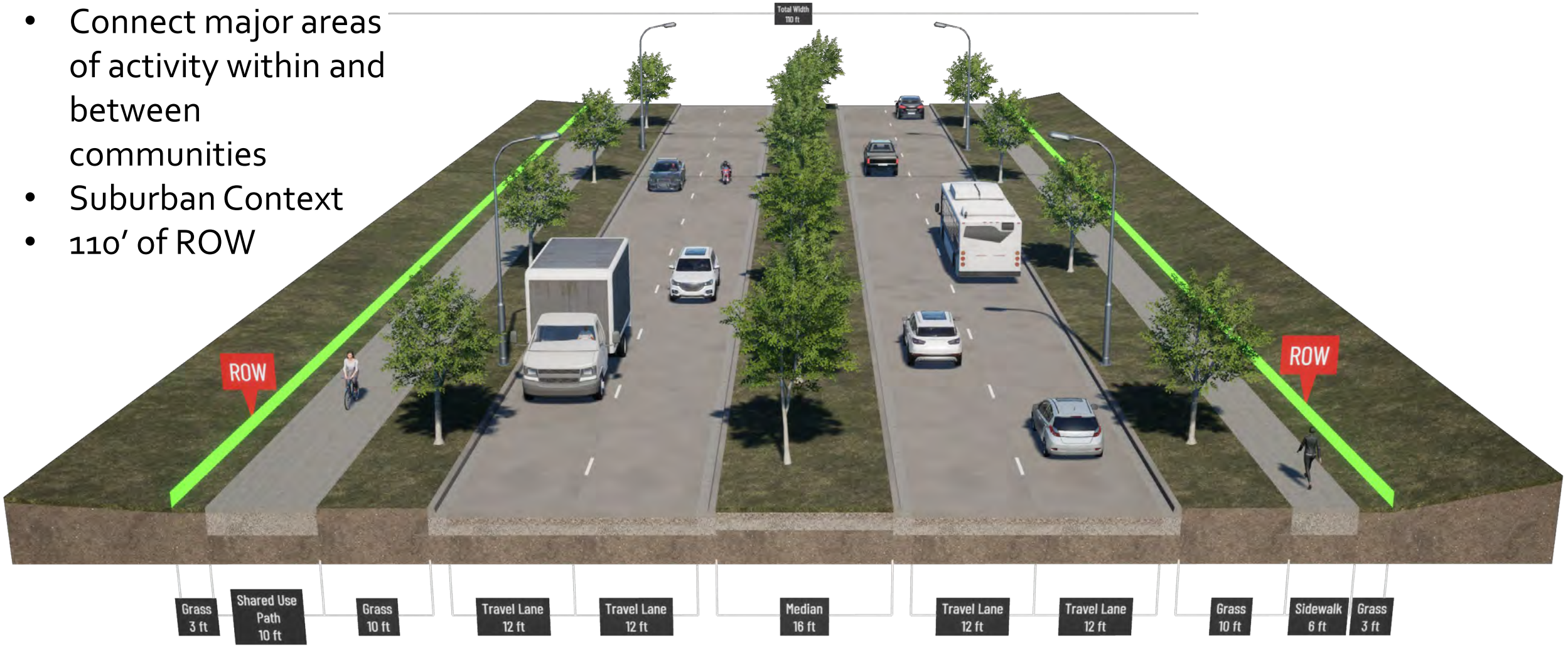
# Type 1.2 Arterial (Ultimate Build)

- Continuous, long-distance travel (Expressway Type)
- Move traffic between communities
- 150’ of ROW



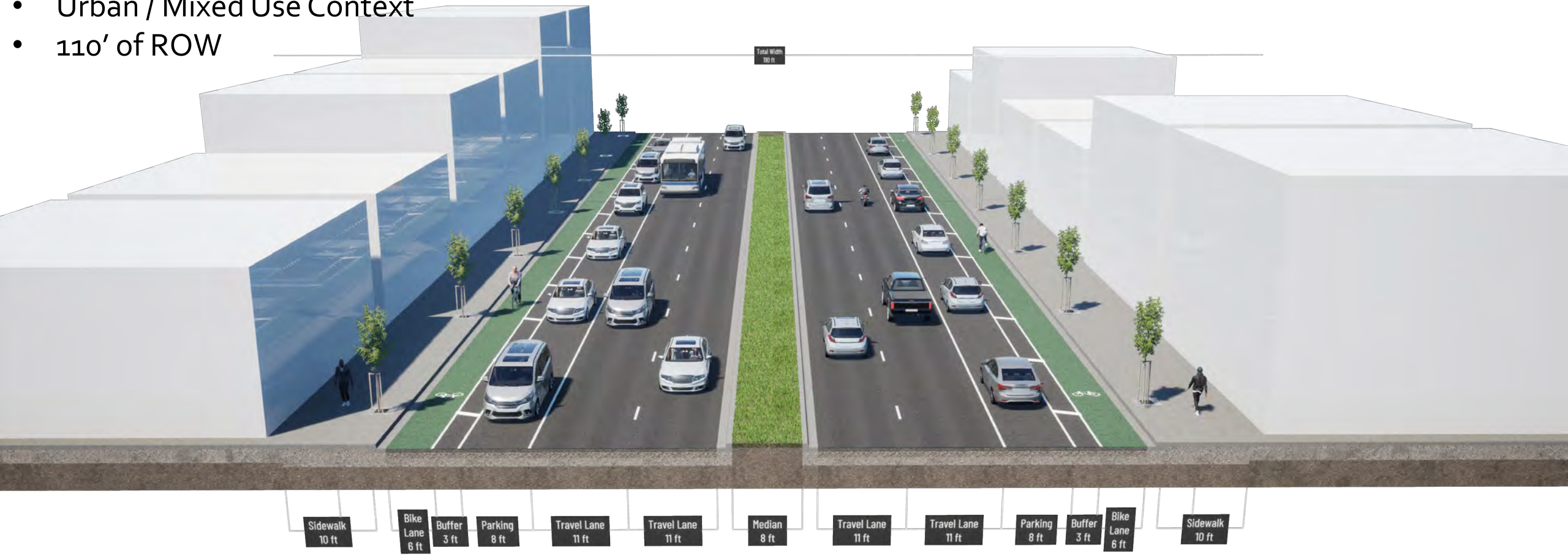
# Type 2.1a Arterial (Ultimate - Suburban)

- Connect major areas of activity within and between communities
- Suburban Context
- 110’ of ROW



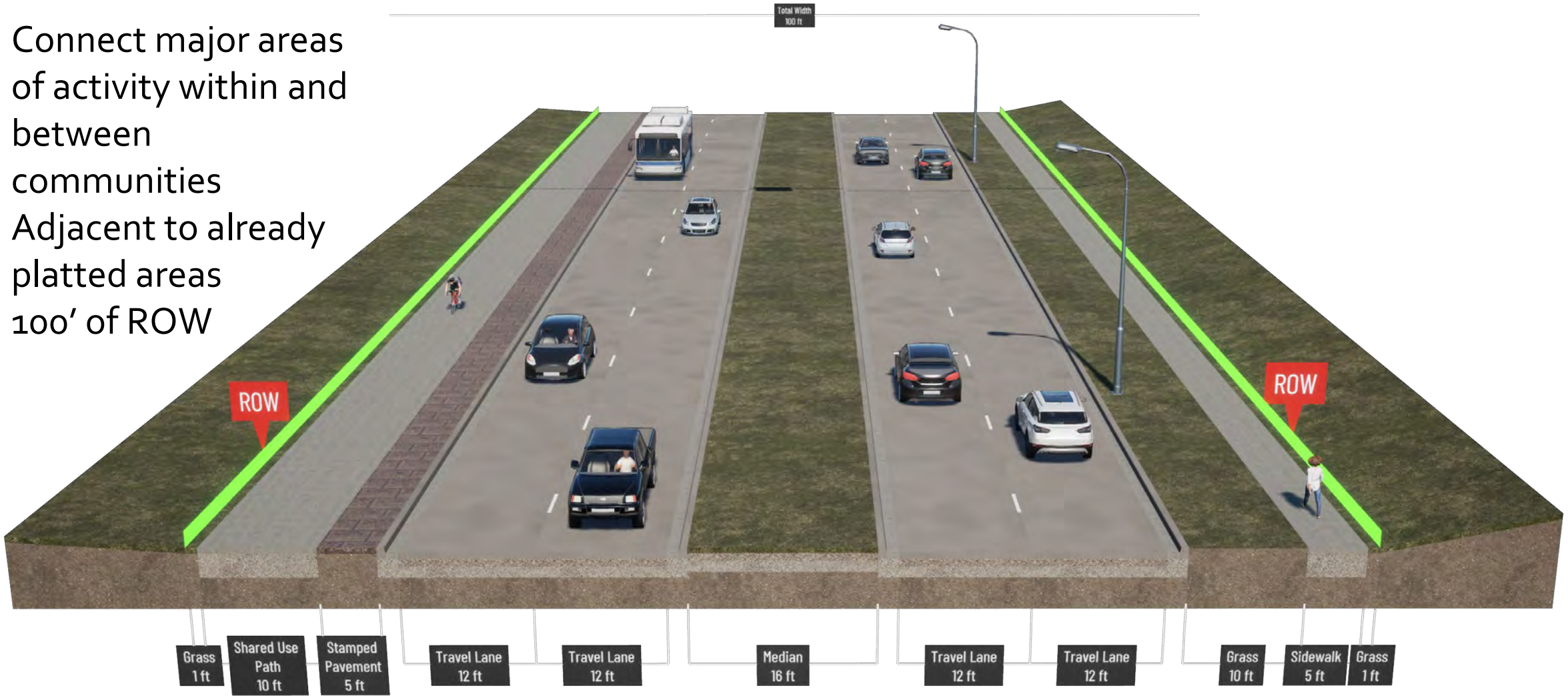
# Type 2.1b Arterial (Ultimate Build – Urban Mixed Use)

- Connect major areas of activity within and between communities
- Urban / Mixed Use Context
- 110’ of ROW



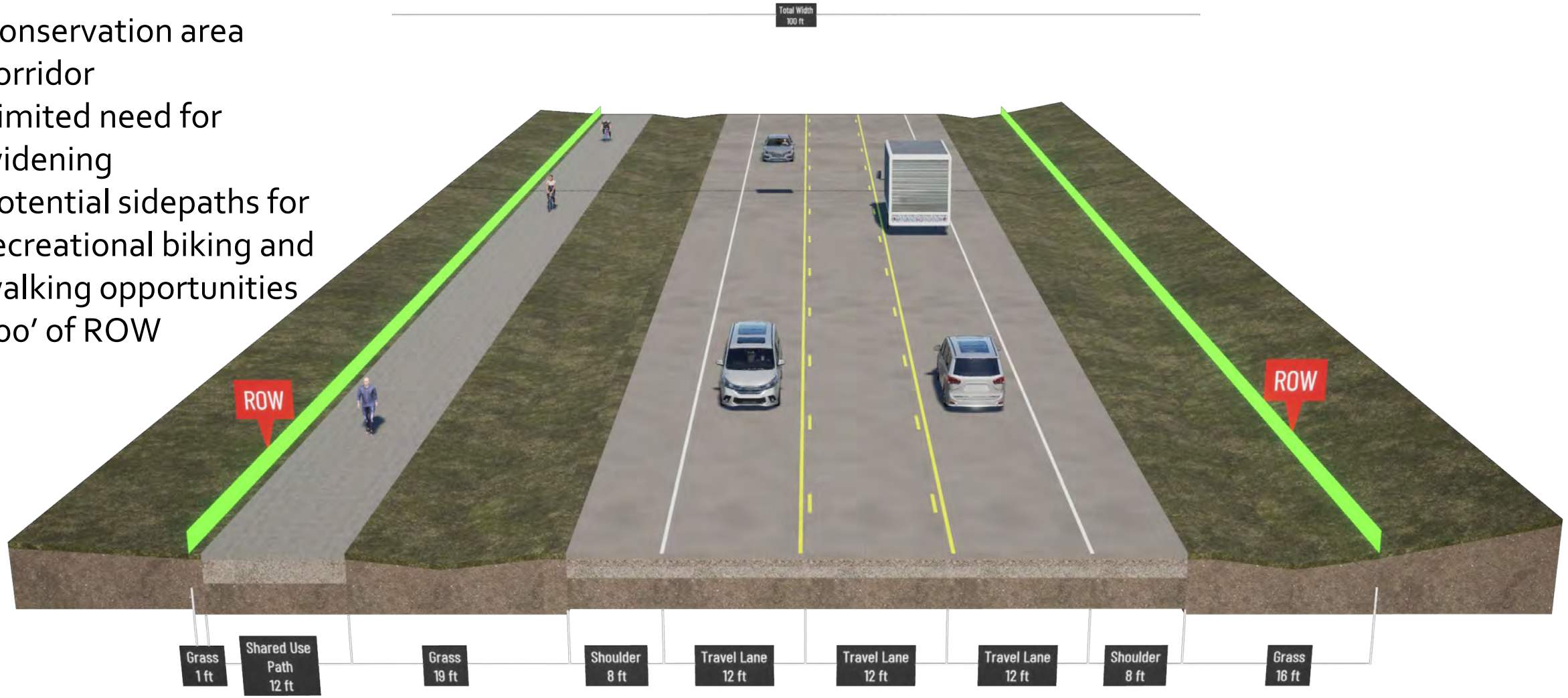
# Type 2.2 Arterial (Ultimate)

- Connect major areas of activity within and between communities
- Adjacent to already platted areas
- 100’ of ROW



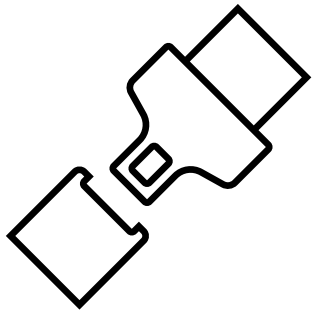
# Type 3 Arterial (Ultimate)

- Conservation area corridor
- Limited need for widening
- Potential sidepaths for recreational biking and walking opportunities
- 100’ of ROW

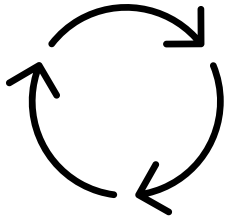


# Network Planning Considerations

# Network Planning Considerations

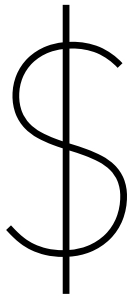


Safety



Roundabouts

Pedestrian / Multimodal Considerations



Planning for Cost Effective Decision Making

# Safety

Crashes occur more frequently at intersections or access points

A raised median is safer for all users of the transportation network

High speed vehicle traffic does not create a safe space for pedestrians and bicyclists

Roundabouts are safer than signalized intersections in most instances

# Roundabouts

# Roundabouts

- Roundabouts considered where feasible
- Roundabout features:
  - Long-term cost-effective compared to traffic signals
  - Improved safety for all users, reducing all crashes by 33% and fatal and serious injury crashes by 80% compared to signals
  - Continuous traffic flow and can reduce congestion

# Pedestrian / Multimodal Considerations

# Pedestrian / Multimodal Considerations

- Planning for pedestrian use and other multimodal options for transportation
  - Shared Use Path
  - Sidewalk
  - Landscaped Buffer
- The location of a section of roadway in a more urban, suburban, or rural area may influence availability of these features and on-street parking

Shared Use Path

Sidewalk

Landscaped Buffer

# Planning for Cost Effective Decision Making

# Planning for Cost Effective Decision Making

- It is important to the partner agencies that the plan provides cost-effective actions for all agencies
- Cost is a consideration in the planning effort
- The plan will allow for flexibility in implementation that will vary as communities change

# Q&A / Feedback

# Mentimeter

- Visit menti.com and enter input code 3915 4789 to start the live poll

OR

- Scan the QR code

# Thank you!

# Engagement Appendix 9: Small Group Stakeholder Meetings Mentimeter Results

# Instructions

Go to

**www.menti.com**

Enter the code

**1545 9260**

Or use QR code

# In a few words, describe your vision for the future of western Sarpy County.

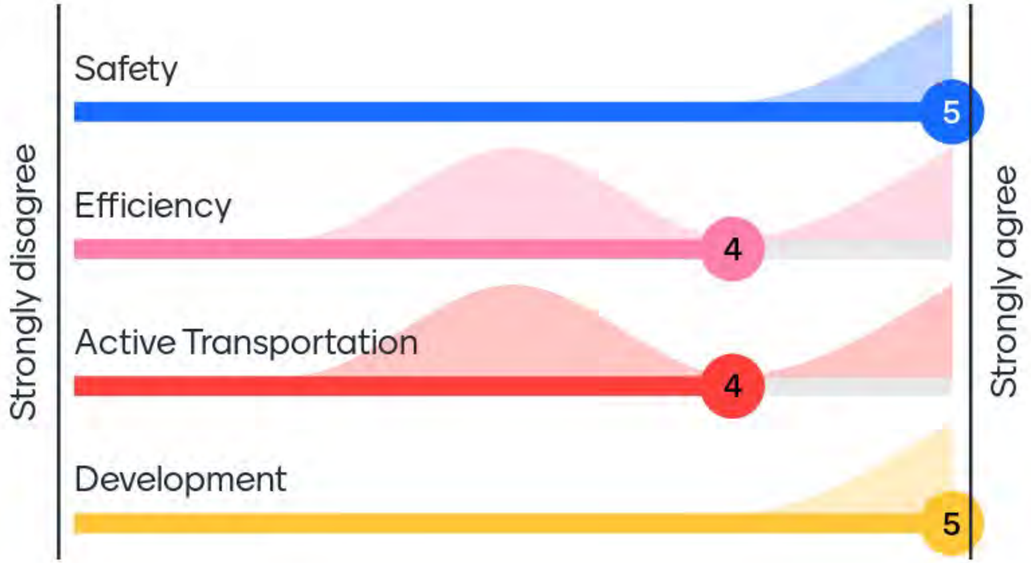
5 responses

# Share an example of how transportation connectivity affects you or your organization.

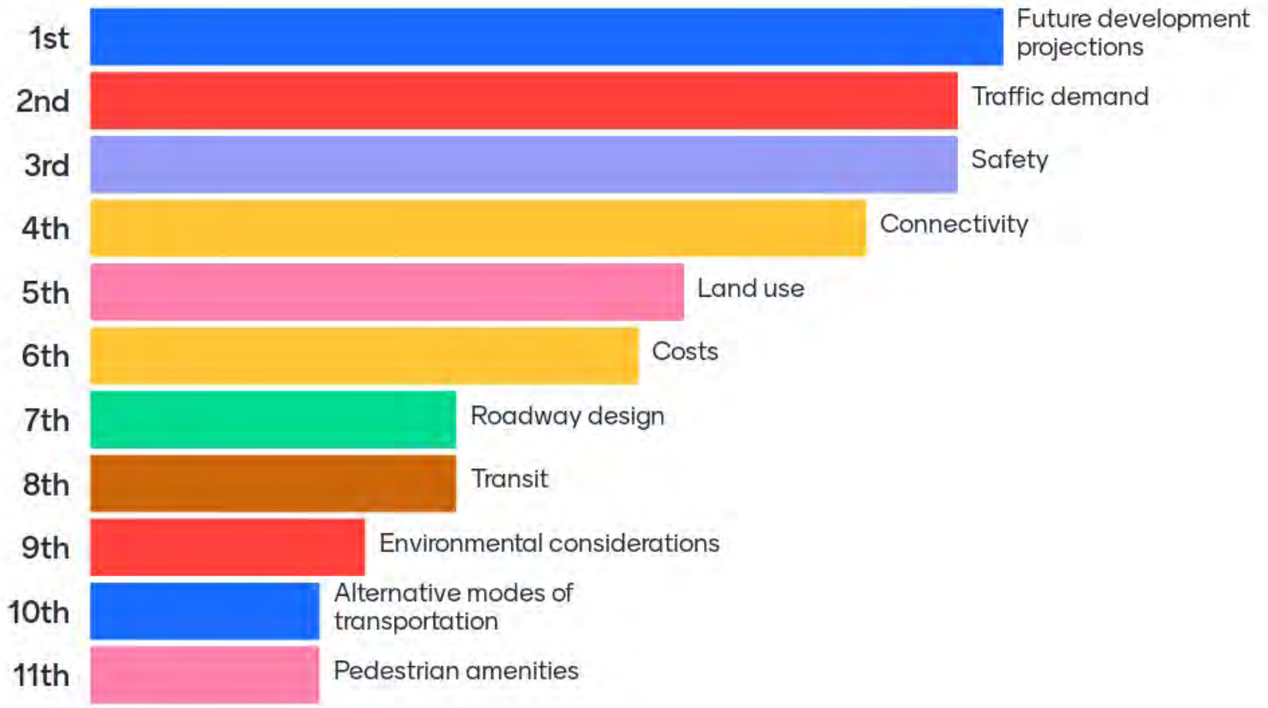
Can be a barrier for growth as it relates to moving workforce around the county.

Timeliness and efficient

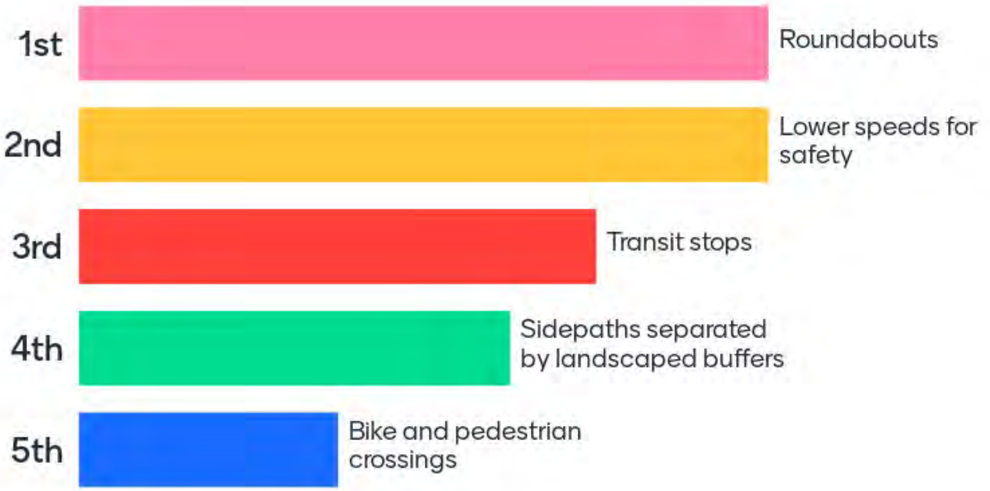
# Please rank the following goal areas of WE-STEP by their level of importance to you or your organization.



# Please rank the considerations of WE-STEP in order of their importance to you or your organization.



# Please rank the elements included in WE-STEP standards in order of their importance to you or your organization.



Mentimeter

# Instructions

Go to

**www.menti.com**

Enter the code

**7186 7956**

Or use QR code

# In a few words, describe your vision for the future of western Sarpy County.

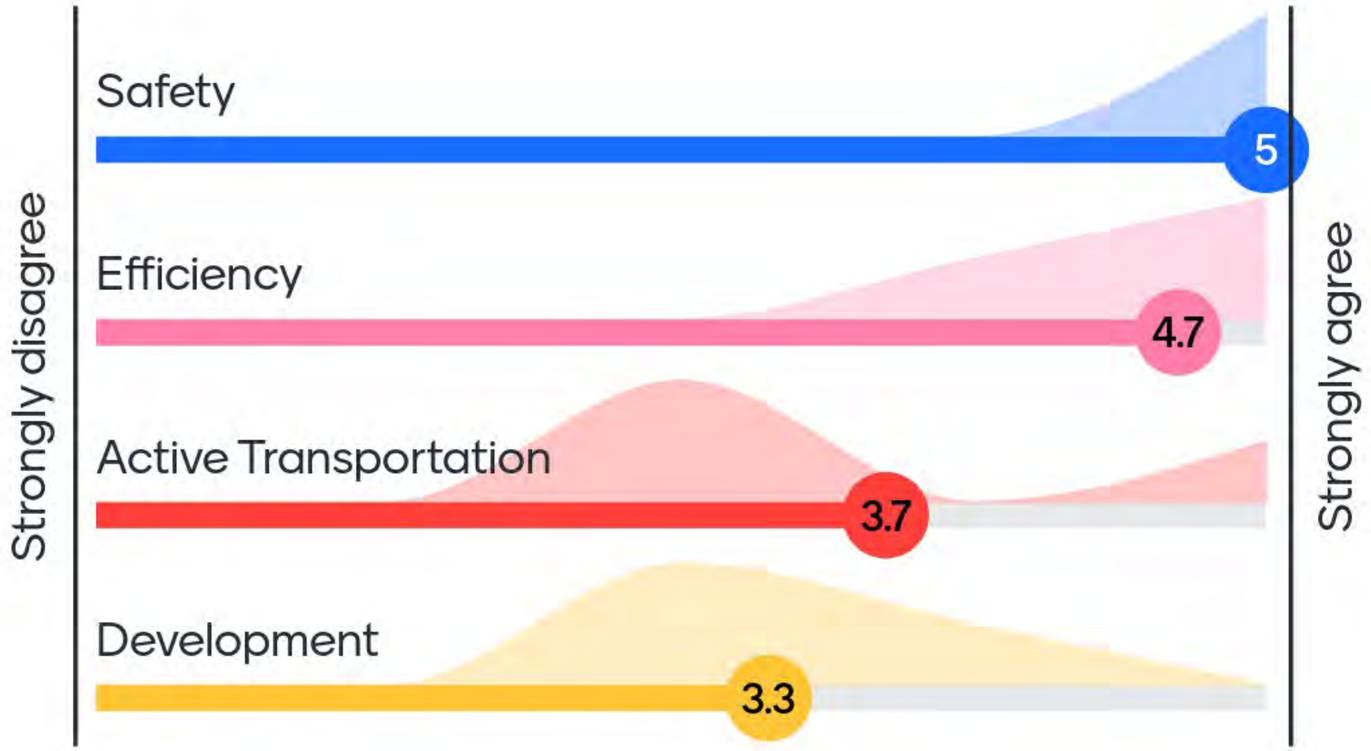
5 responses

# Share an example of how transportation connectivity affects you or your organization.

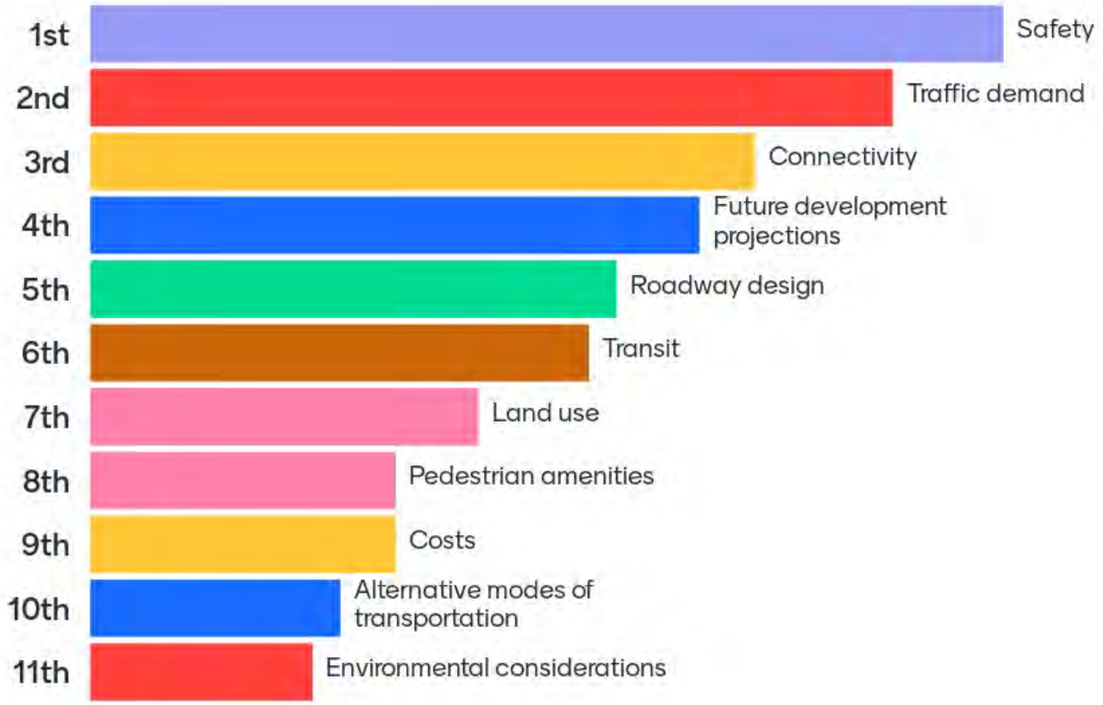
Traffic flow and pedestrian safety along with emergency response accessibility are the primary concerns for the SCSO.

Delay response, access to developments

# Scales


Strongly disagree
Strongly agree
Safety
5
Efficiency
4.7
Active Transportation
3.7
Development
3.3

# Please rank the considerations of WE-STEP in order of their importance to you or your organization.



# Please rank the elements included in WE-STEP standards in order of their importance to you or your organization.

Mentimeter

# Instructions

Go to

**www.menti.com**

Enter the code

**8749 3195**

Or use QR code

# In a few words, describe your vision for the future of western Sarpy County.

14 responses

# Share an example of how transportation connectivity affects you or your organization.

Quality of life

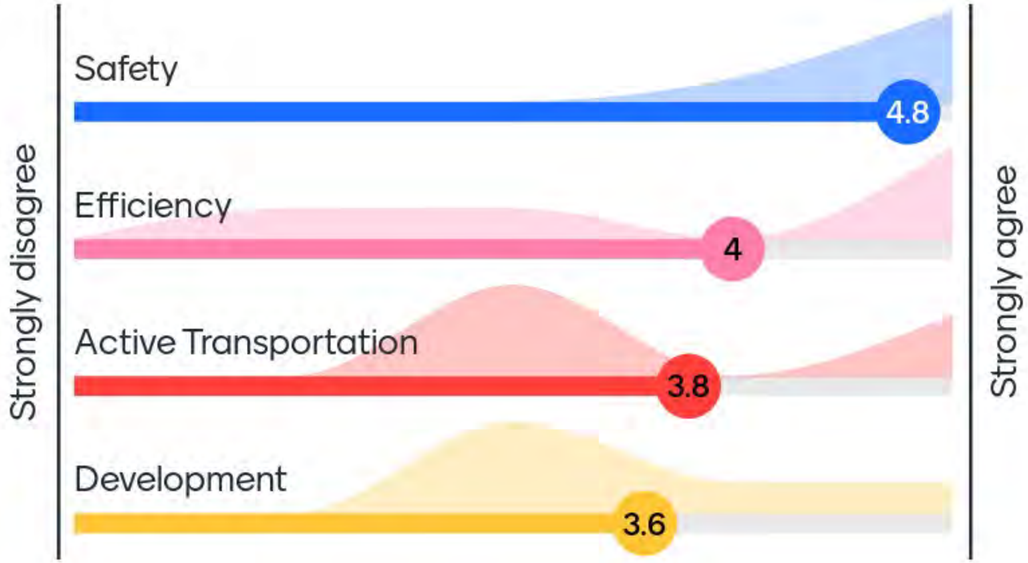
Bussing schedules

We operate the bike share program and want to be able to provide bike share as a safe active transportation option across the entire county.

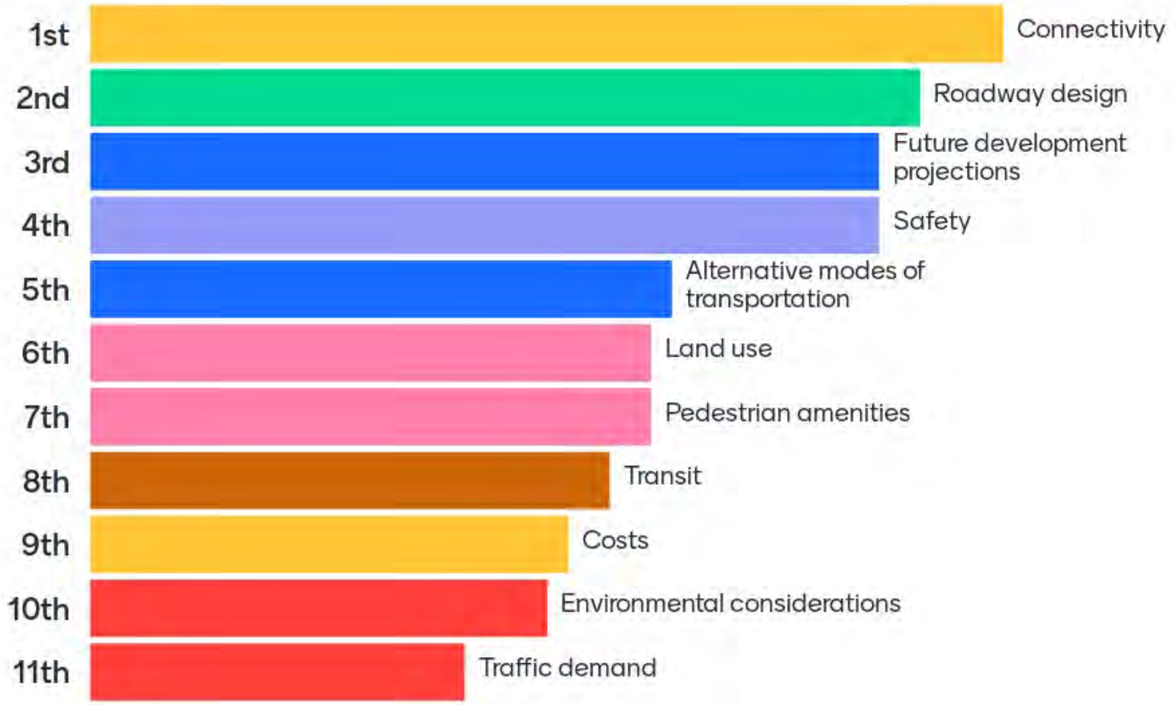
Take a lot of throughput traffic /shortcomings of other transportation networks.

As a utiltiy we are often challenged to find space. Consistency is much easier to work through.

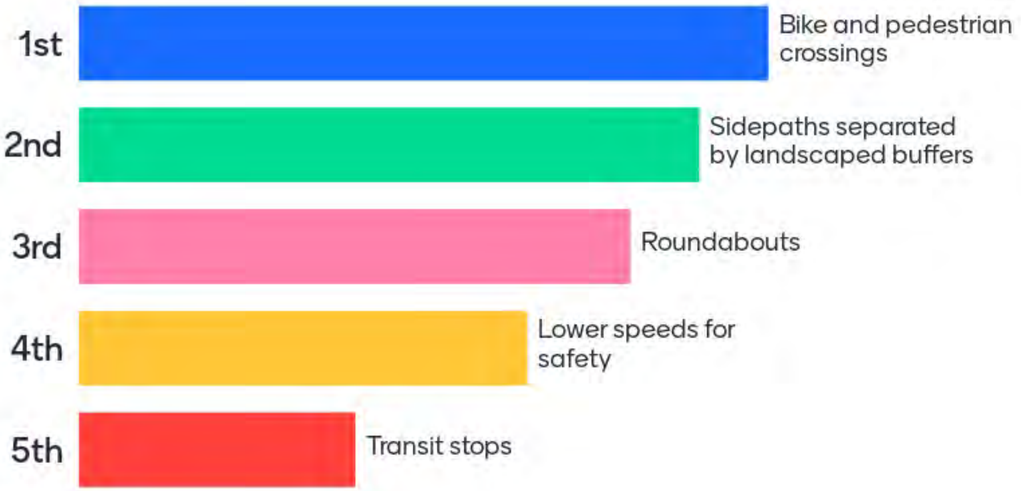
# Please rank the following goal areas of WE-STEP by their level of importance to you or your organization.



# Please rank the considerations of WE-STEP in order of their importance to you or your organization.



# Please rank the elements included in WE-STEP standards in order of their importance to you or your organization.



Mentimeter

# Instructions

Go to

**www.menti.com**

Enter the code

**4407 8494**

Or use QR code

# In a few words, describe your vision for the future of western Sarpy County.

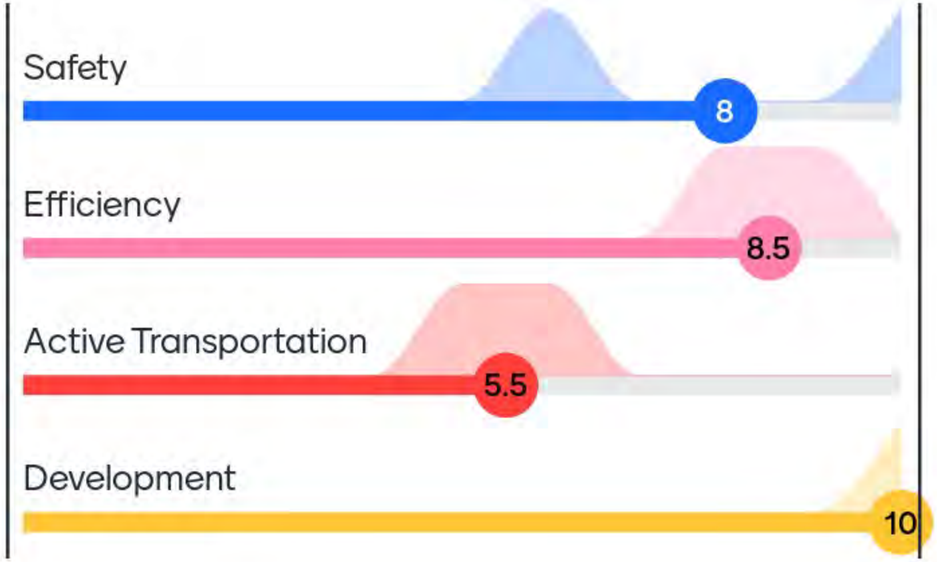
0 responses

# Share an example of how transportation connectivity affects you or your organization.

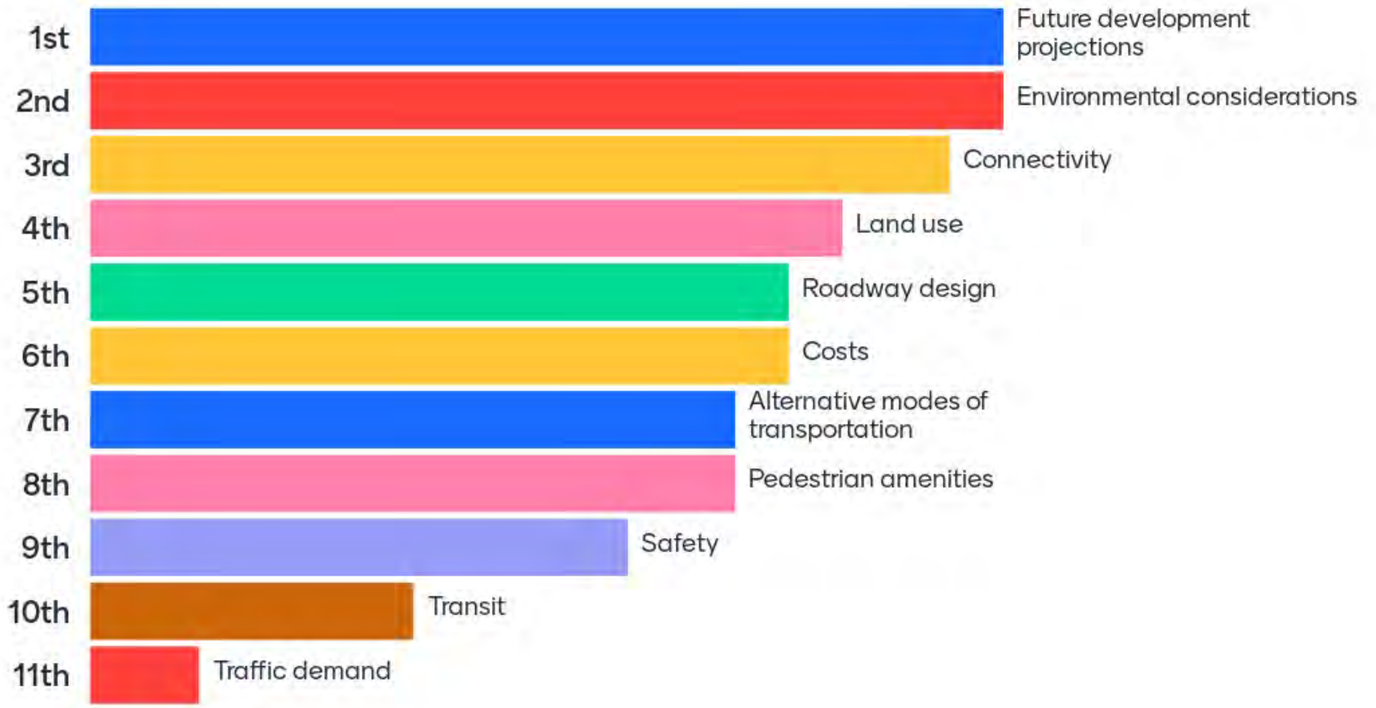
Drives the utility growth

Park connectivity and recreation access

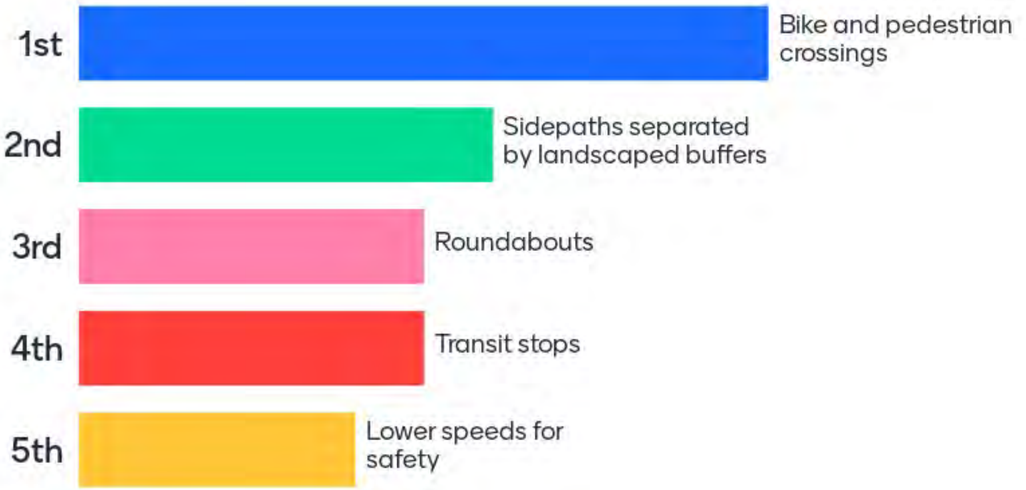
# Please rank the following goal areas of WE-STEP by their level of importance to you or your organization.



# Please rank the considerations of WE-STEP in order of their importance to you or your organization.



# Please rank the elements included in WE-STEP standards in order of their importance to you or your organization.



Virtual

Mentimeter

# Instructions

Go to

**www.menti.com**

Enter the code

**3915 4789**

Or use QR code

4

# In a few words, describe your vision for the future of western Sarpy County.

15 responses

# Share an example of how transportation connectivity affects you or your organization.

No Public transportation haults business growth in Sarpy and linking workers to the area

Better flow to small communities and small business retailers

We have over 3000 employees with over 25% that have expressed interest in access to Omaha public transportation. Would increase our reach to future hires.

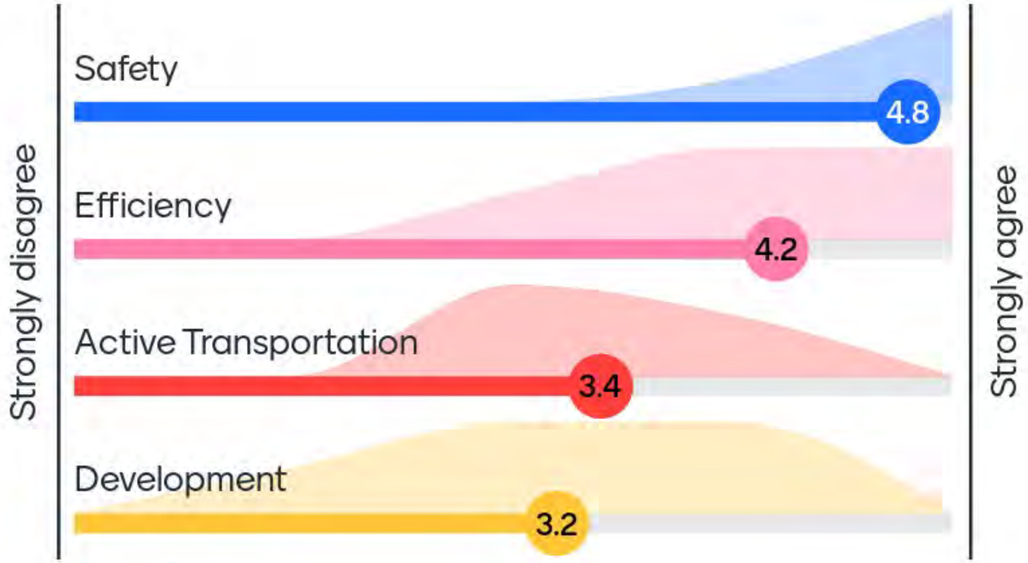
I live and work in Sarpy in the logistics field. Trucks need better maneuverability

Needs easy access to the freeway system. Wider roads for our employees to travel on.

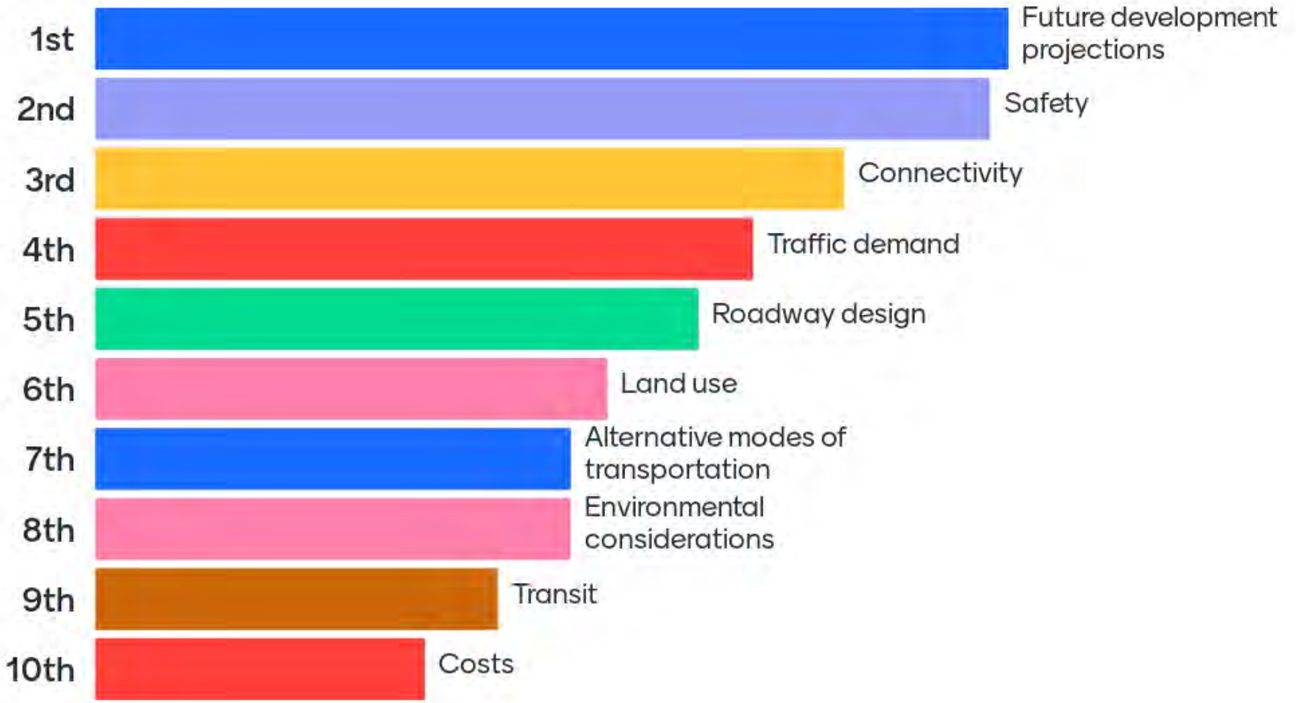
We cover a large portion of Sarpy, but our schools currently are pretty centralized... getting people to and from our schools to their communities is imperative.

EfficiencyDevelopmentSafetyActive Transportation

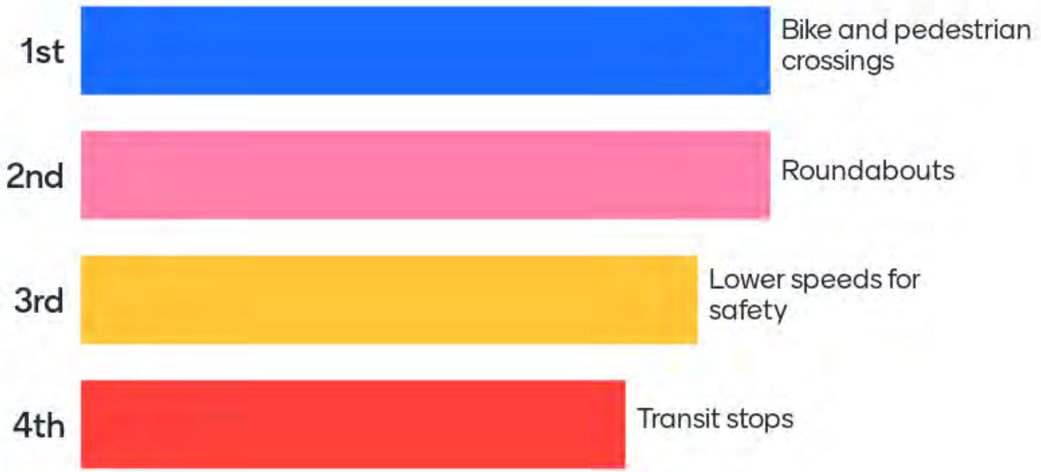
# Please rank the following goal areas of WE-STEP by their level of importance to you or your organization.



# Please rank the considerations of WE-STEP in order of their importance to you or your organization.



# Please rank the elements included in WE-STEP standards in order of their importance to you or your organization.



# Which are some high priority corridors for expansion in western Sarpy County?

Access to I80 west of 120th Street

Less restrictive access to I-80, hwy 75, etc.

72nd to 84th north/south corridor

132nd from Giles towards 370. Better access to I80 from 370

Expressway over Highway 370!

Long terms plans for Platteview road... will have serious impacts in our future

Hwy 370 between 144th and 132nd we struggle with the traffic lights and better access to site.

Platteview Rd and Pflug expansion creates issues with future planning and too close to community

# Engagement Appendix 10: Boards & Commissions Presentation

# WESTERN SARPY TRANSPORTATION ENHANCEMENT PLAN

*Gretna, Springfield, Papillion, Sarpy County*

Interim Update

Spring 2024

# Agenda

- Study Background & Objectives
- WE-STEP Progress
- Network Planning Considerations
- Next Steps

# Study Background & Objectives

# Plan Background

- Long-term plan funded by a Heartland 2050 grant written by the City of Gretna to study long-range transportation network needs
  - Federal grant funds: $100,000
  - Involved communities are over-matching funds

MAPA
Omaha - Council Bluffs Metropolitan Area Planning Agency

Sarpy County Nebraska

Gretna
THE GREAT LIFE

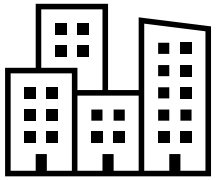
City of Papillion
Founded in 1870

Springfield
Nebraska

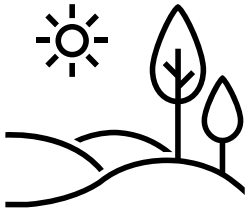
# Plan Goal

**Provide a flexible framework for changing communities to facilitate a connected and consistent future transportation network for all users, beyond what the existing transportation system in the area can offer.**

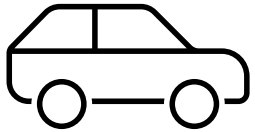
# Plan Considerations



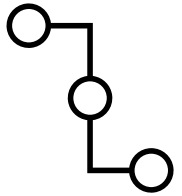
Future development projections



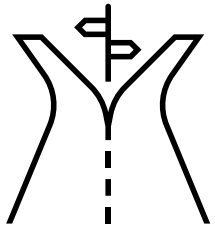
Land use



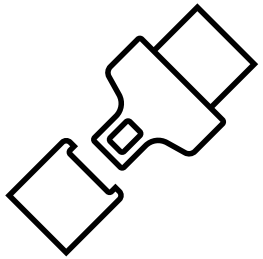
Traffic demand



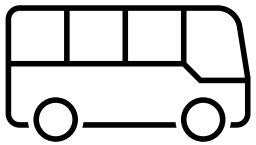
Connectivity



Roadway design



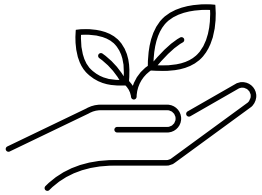
Safety



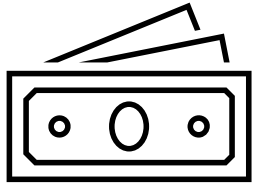
Transit

Alternative modes of transportation

Pedestrian amenities



Environmental considerations



Costs

# WE-STEP Progress

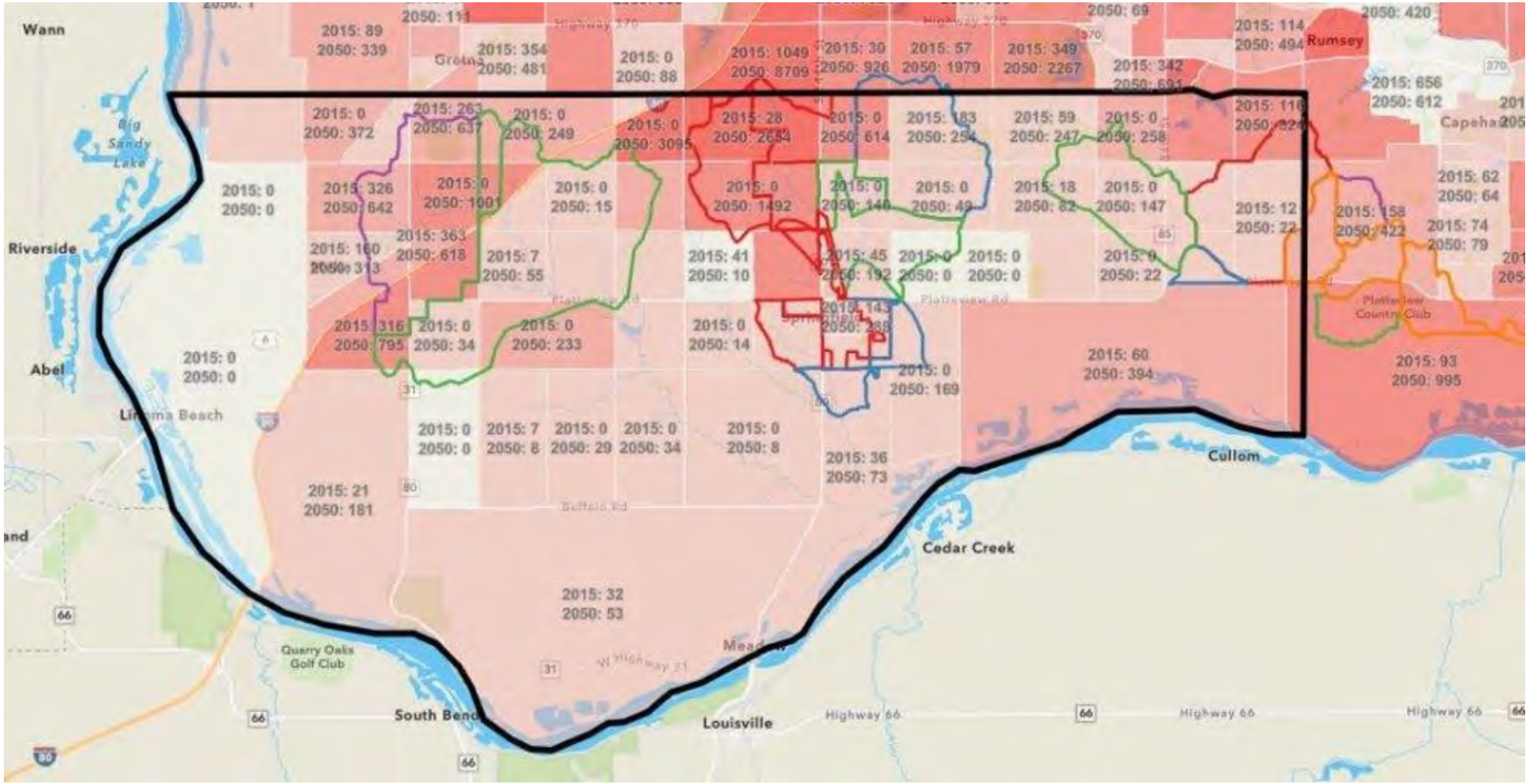
# Progress to Date

1. Reviewed past studies and plans from each jurisdiction

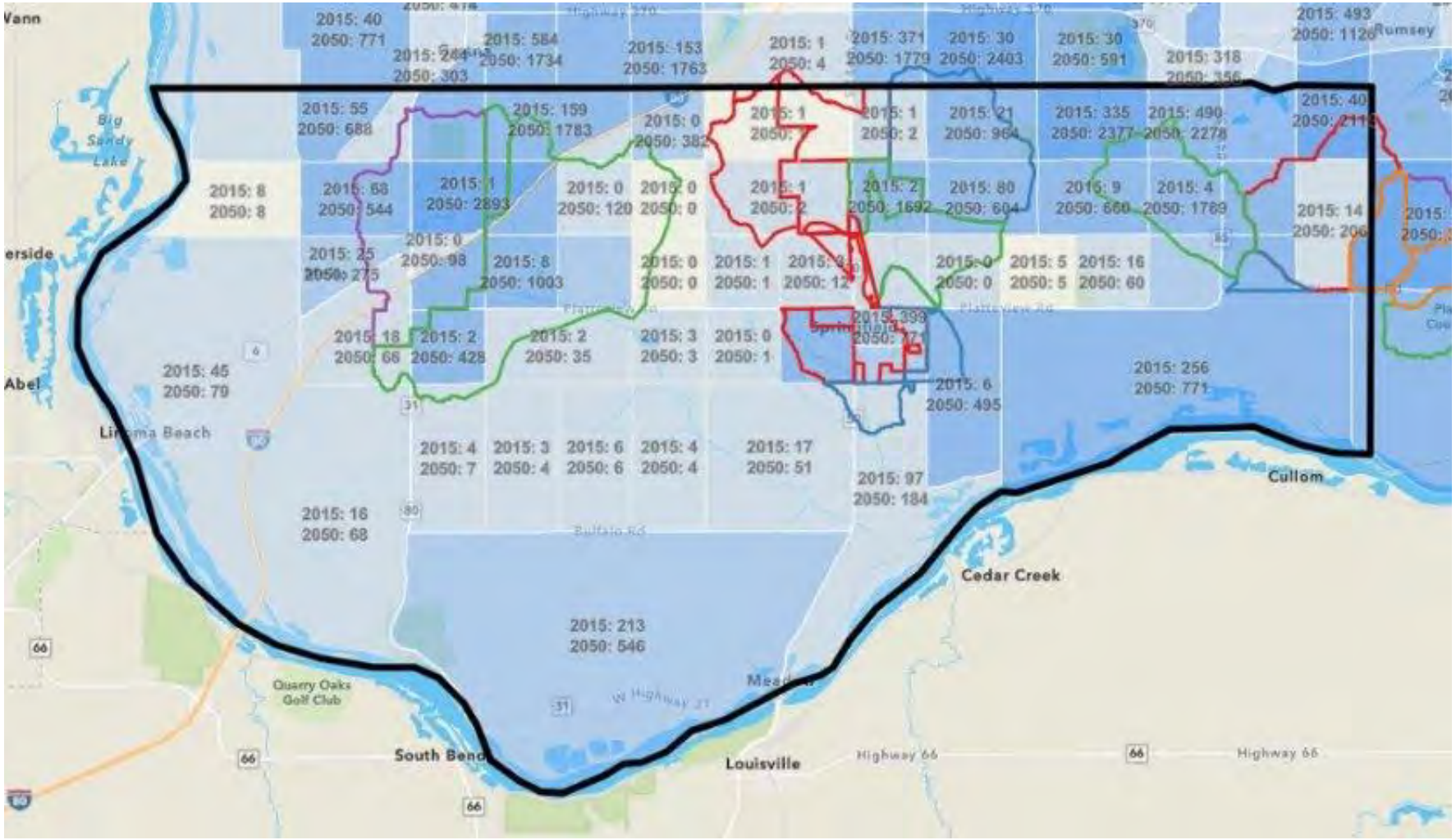
# Progress to Date

2 Considered long-term needs for 2050 and beyond (50+ years)

# Forecasted Employment Growth (through 2050)



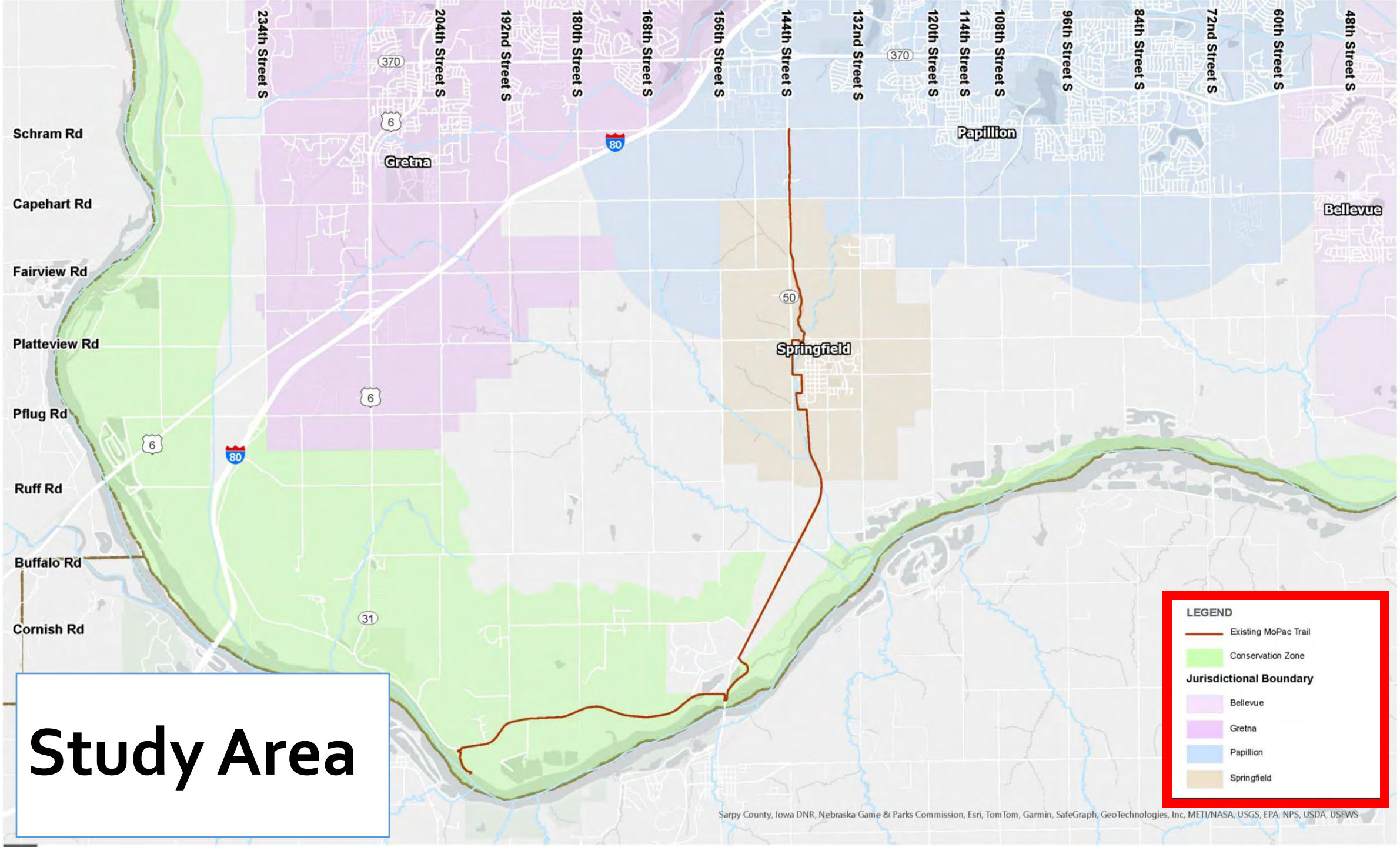
# Forecasted Household Growth (through 2050)



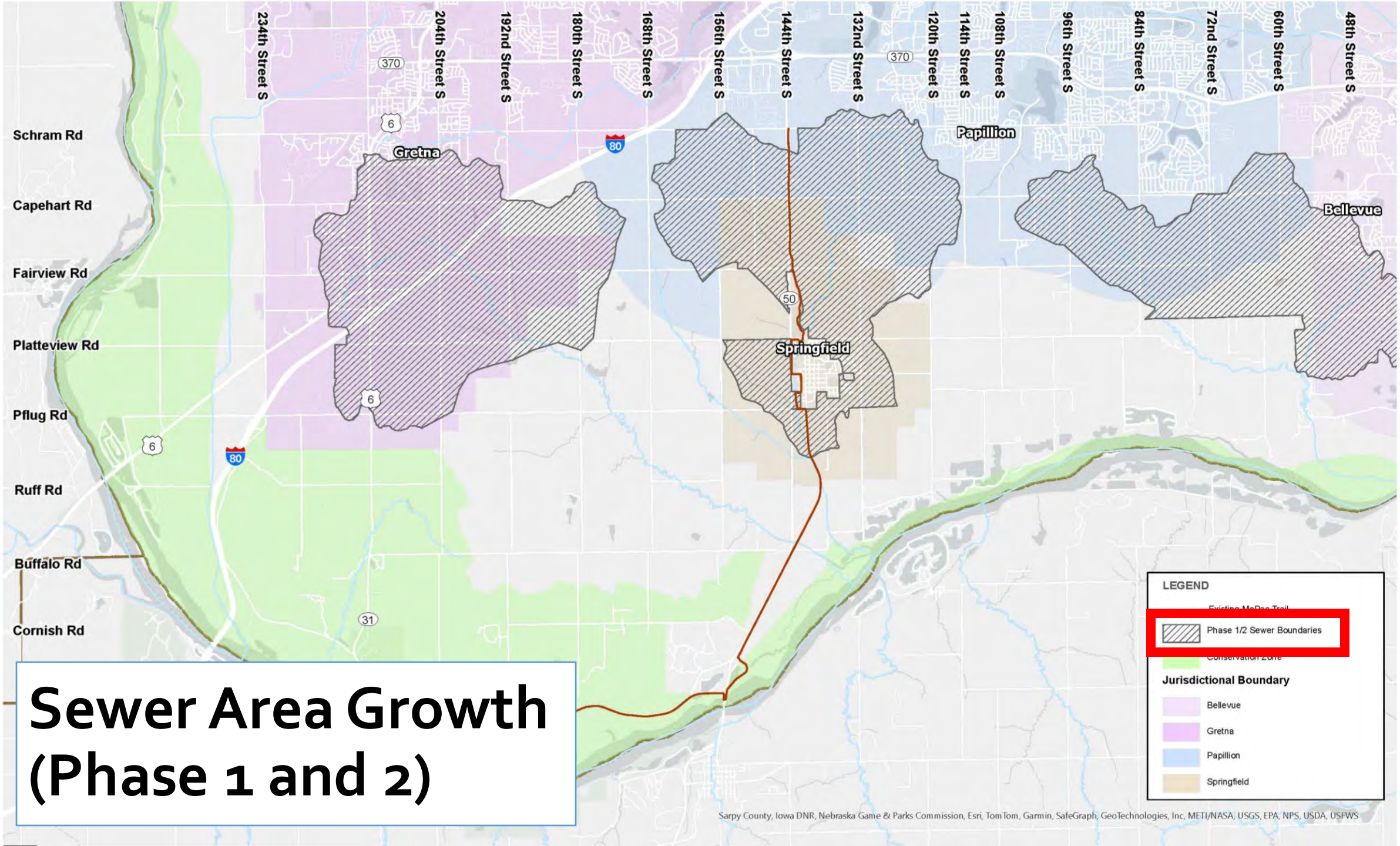
# Forecasted Traffic Volume Growth (through 2050)

# Progress to Date

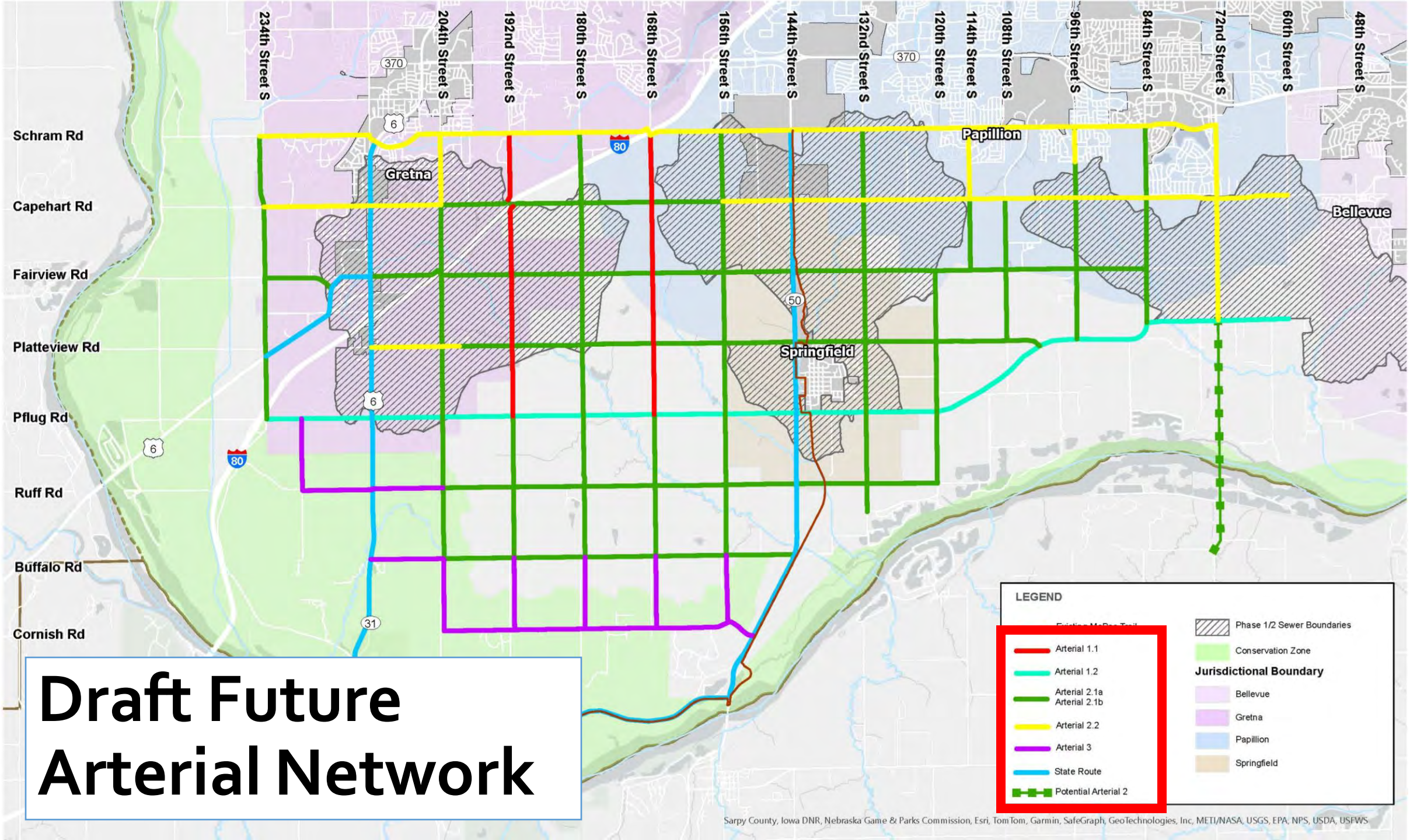
3 Developed a regional transportation network


234th Street S
204th Street S
192nd Street S
180th Street S
168th Street S
156th Street S
144th Street S
132nd Street S
120th Street S
114th Street S
108th Street S
96th Street S
84th Street S
72nd Street S
60th Street S
48th Street S
Schram Rd
Capehart Rd
Fairview Rd
Platteview Rd
Pflug Rd
Ruff Rd
Buffalo Rd
Cornish Rd
Gretna
Papillion
Bellevue
Springfield
370
6
80
50
31
LEGEND
Existing MoPac Trail
Conservation Zone
Jurisdictional Boundary
Bellevue
Gretna
Papillion
Springfield
Sarpy County, Iowa DNR, Nebraska Game & Parks Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

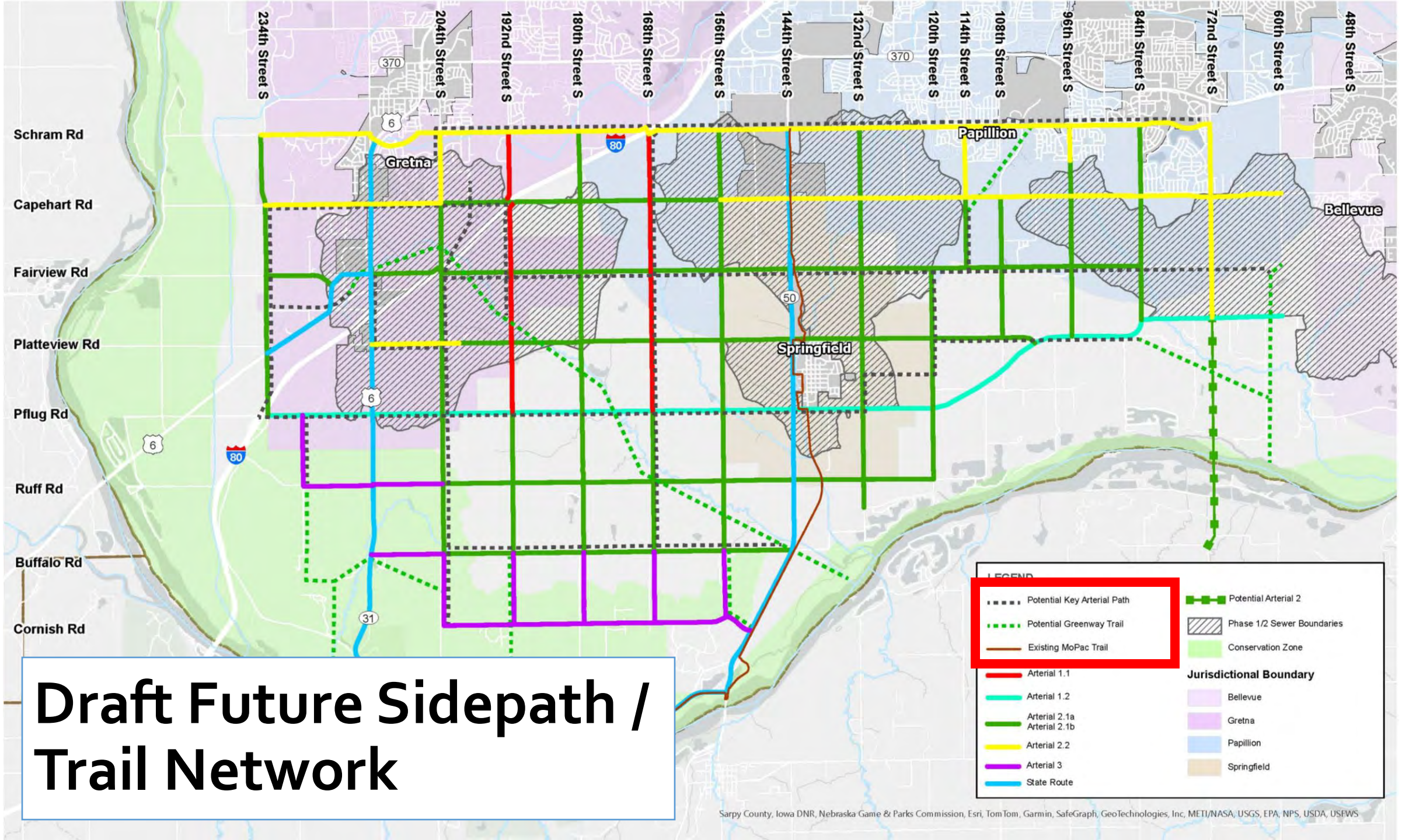
# Study Area




# Sewer Area Growth (Phase 1 and 2)




# Draft Future Arterial Network



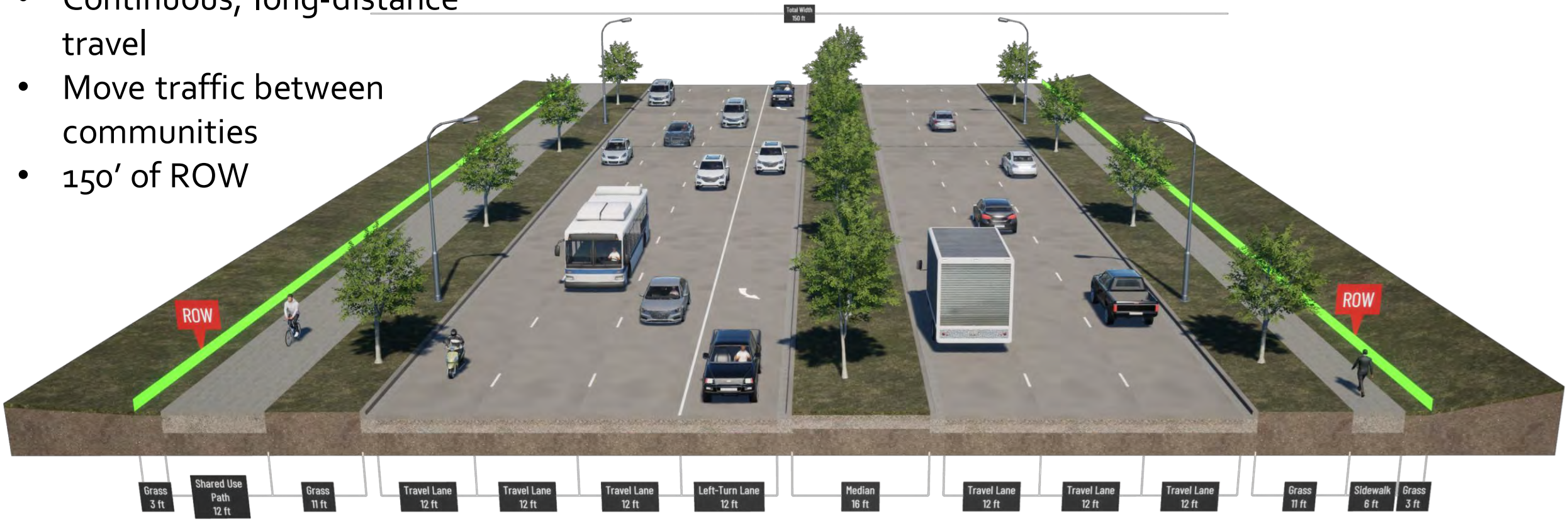

# Draft Future Sidepath / Trail Network

# Progress to Date

4 Developed corridor classifications and design standards

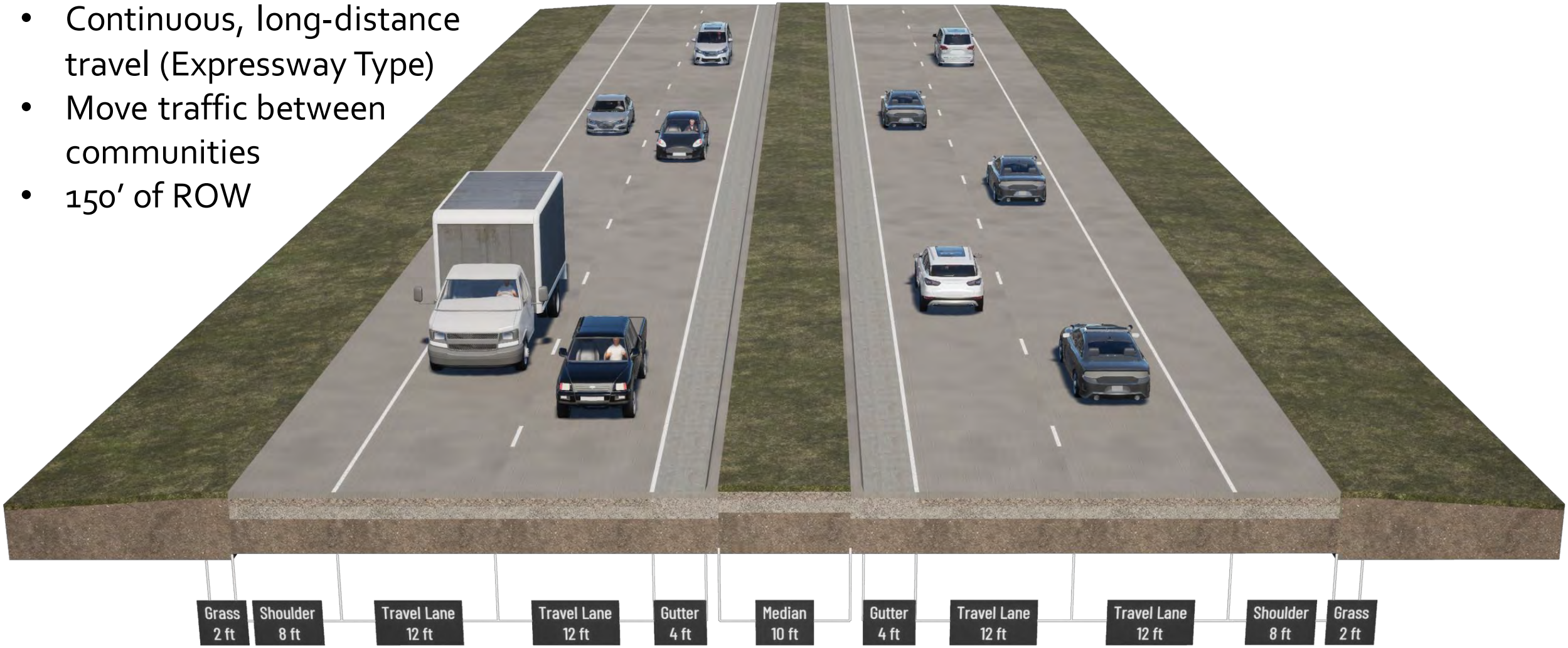
# Type 1.1 Arterial (Ultimate Build)

- Continuous, long-distance travel
- Move traffic between communities
- 150’ of ROW



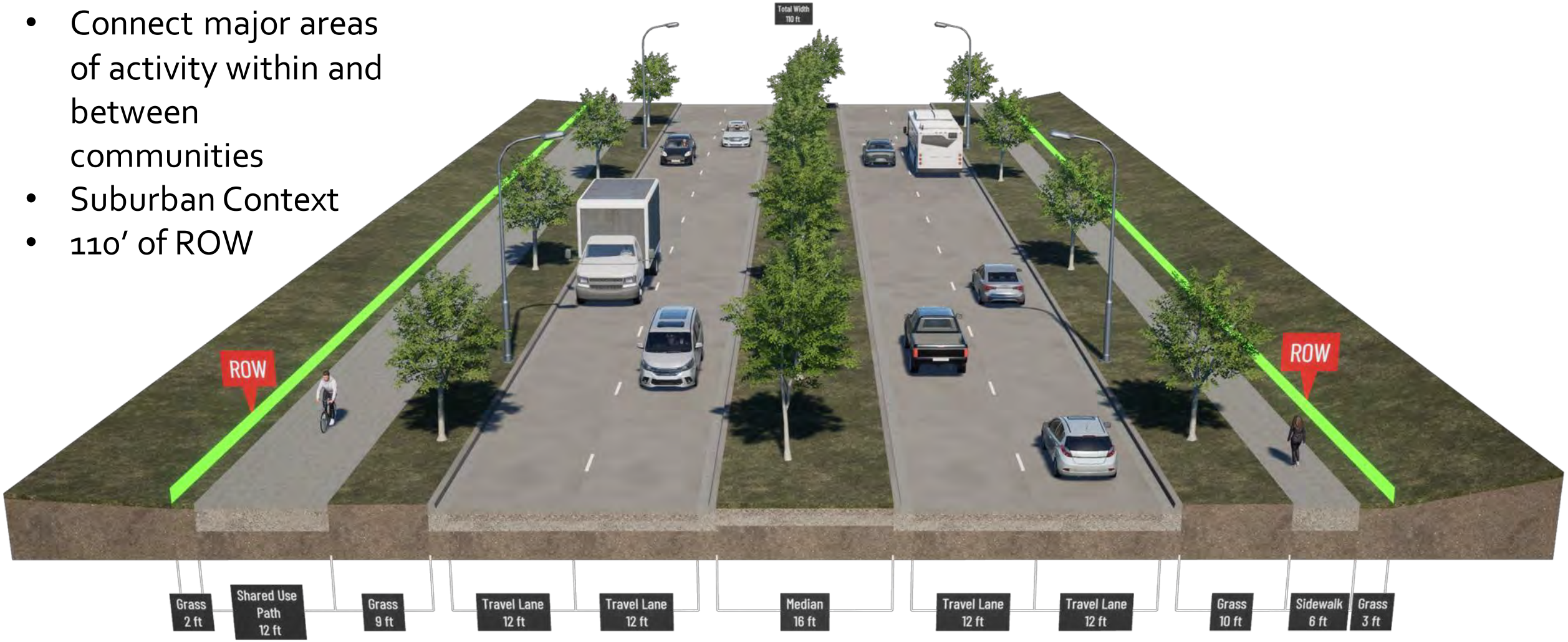
# Type 1.2 Arterial (Ultimate Build)

- Continuous, long-distance travel (Expressway Type)
- Move traffic between communities
- 150’ of ROW



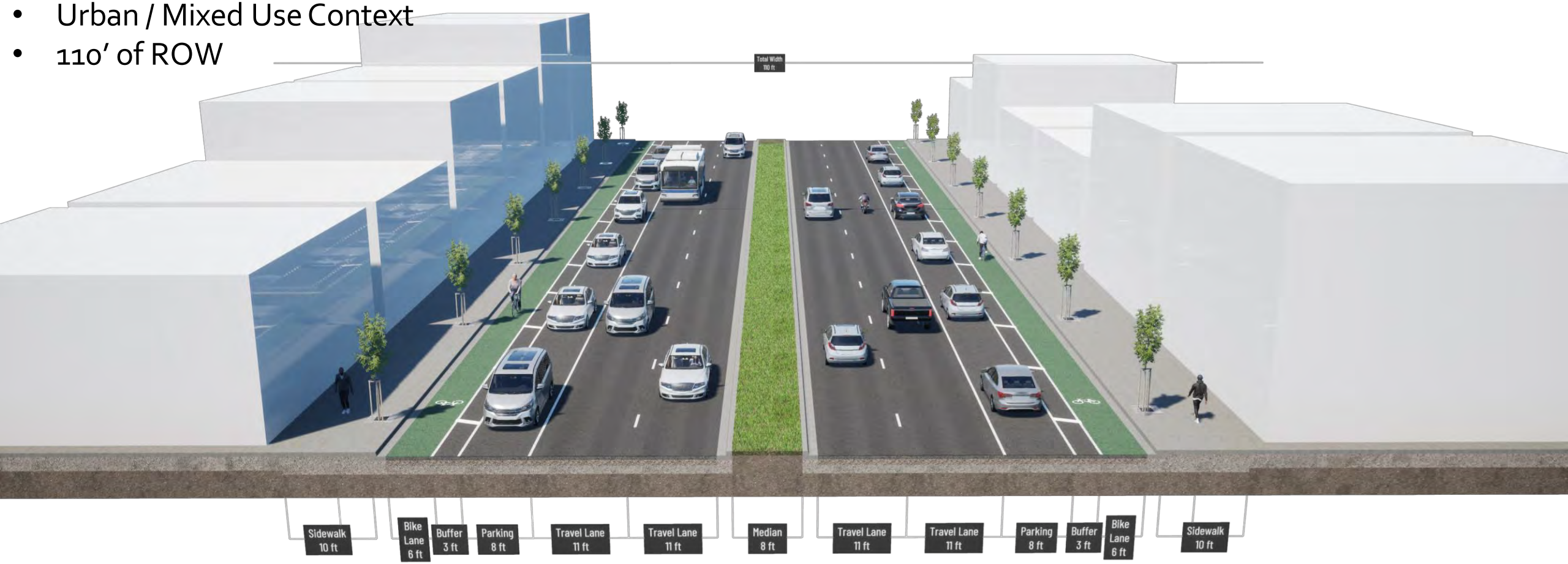
# Type 2.1a Arterial (Ultimate - Suburban)

- Connect major areas of activity within and between communities
- Suburban Context
- 110’ of ROW



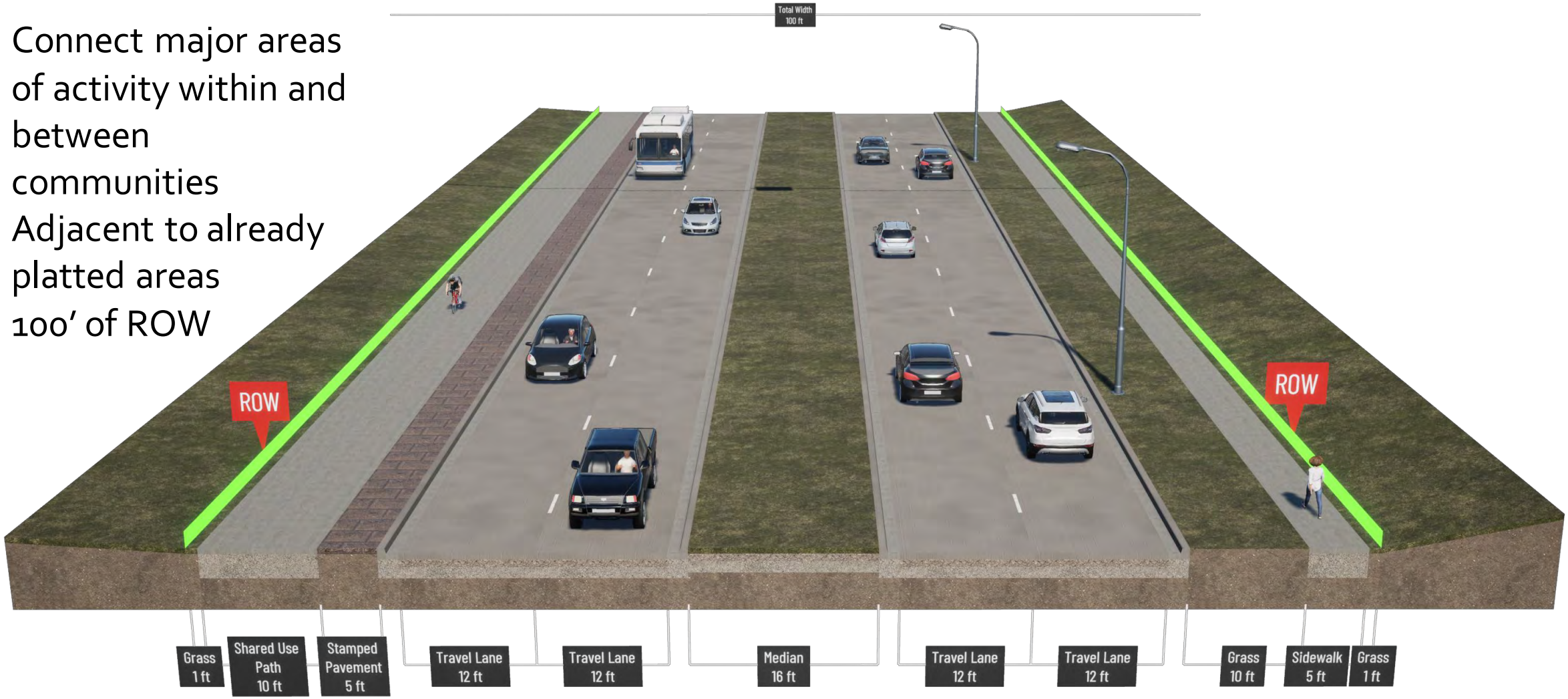
# Type 2.1b Arterial (Ultimate Build – Urban Mixed Use)

- Connect major areas of activity within and between communities
- Urban / Mixed Use Context
- 110’ of ROW



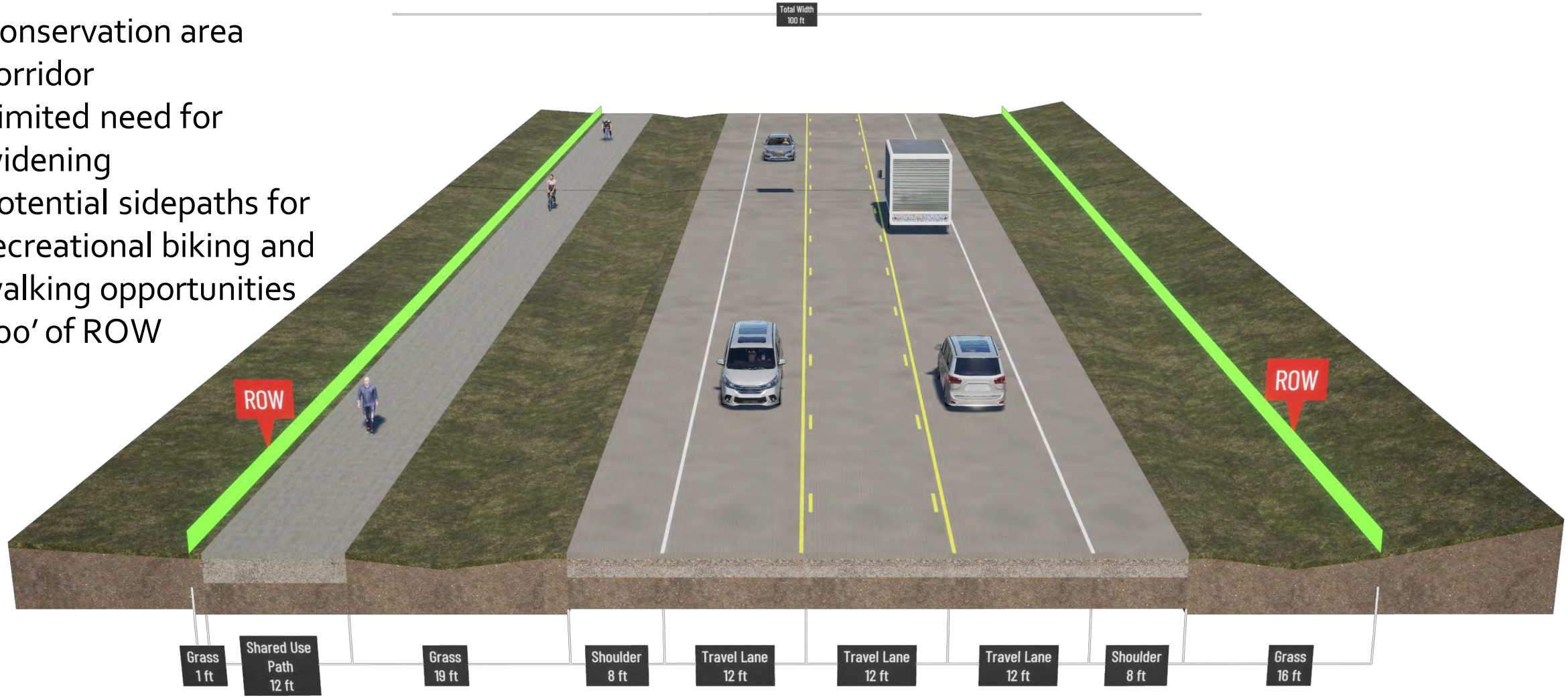
# Type 2.2 Arterial (Ultimate)

- Connect major areas of activity within and between communities
- Adjacent to already platted areas
- 100’ of ROW



# Type 3 Arterial (Ultimate)

- Conservation area corridor
- Limited need for widening
- Potential sidepaths for recreational biking and walking opportunities
- 100’ of ROW

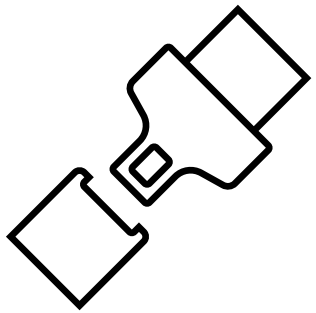


# Progress to Date

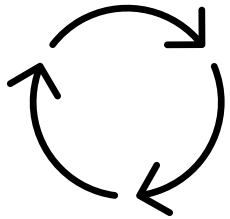
5 Developed decision making tool to assist jurisdictions in implementing WE-STEP standards

# Network Planning Considerations

# Network Planning Considerations

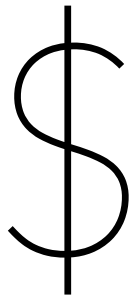


Safety



Roundabouts

Pedestrian / Multimodal Considerations



Planning for Cost Effective Decision Making

# Safety

Crashes occur more frequently at intersections or access points

A raised median is safer for all users of the transportation network

High speed vehicle traffic does not create a safe space for pedestrians and bicyclists

Roundabouts are safer than signalized intersections in most instances

# Roundabouts

- Roundabouts considered where feasible
- Long-term cost-effective compared to traffic signals
- Improved safety for all users, reducing all crashes by 33% and fatal and serious injury crashes by 80% compared to signals
- Continuous traffic flow and can reduce congestion

# Pedestrian / Multimodal Considerations

- Planning for pedestrian use and other multimodal options for transportation
  - Shared Use Path
  - Sidewalk
  - Landscaped Buffer
- The location of a section of roadway in a more urban, suburban, or rural area may influence availability of these features and on-street parking

Shared Use Path

Sidewalk

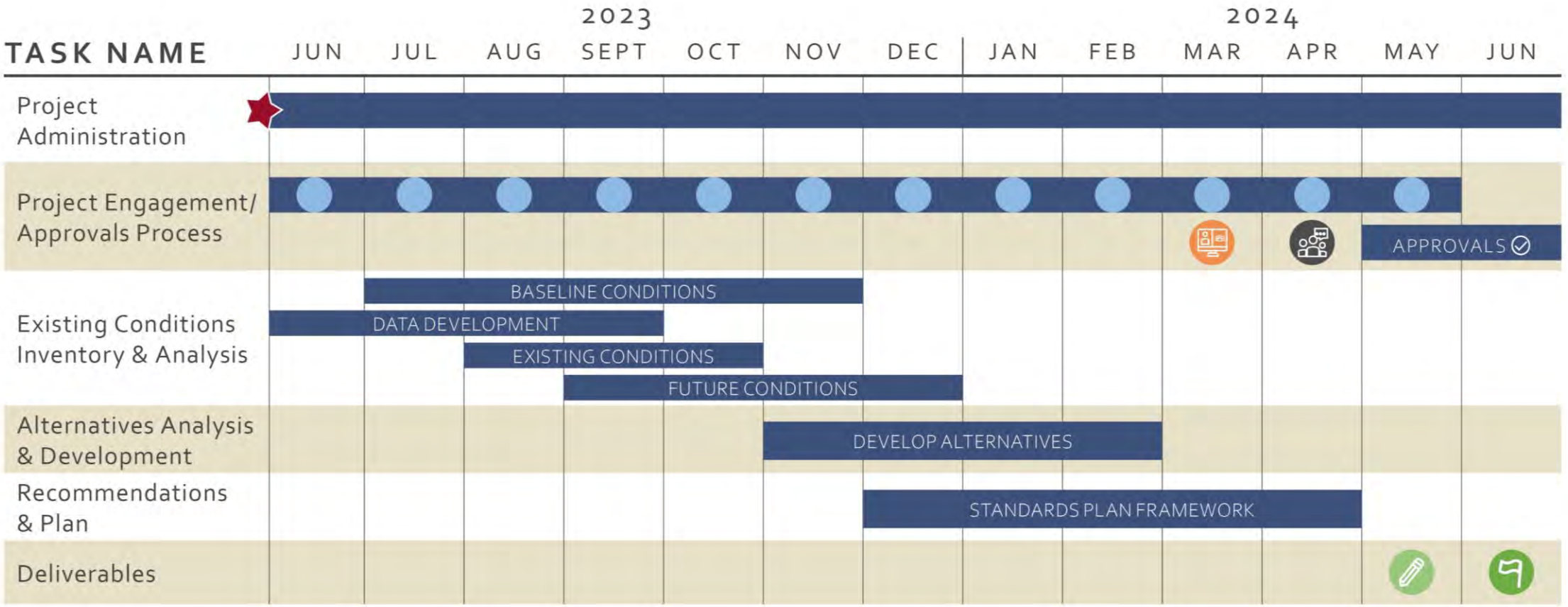
Landscaped Buffer

# Planning for Cost Effective Decision Making

- It is important to the partner agencies that the plan provides cost-effective actions for all agencies
- The plan will allow for flexibility in implementation that will vary as communities change
  - Interim improvements can cost-effectively implement part of the ultimate streetscape to save on long-term costs.

# Next Steps

# Next Steps


2023
2024
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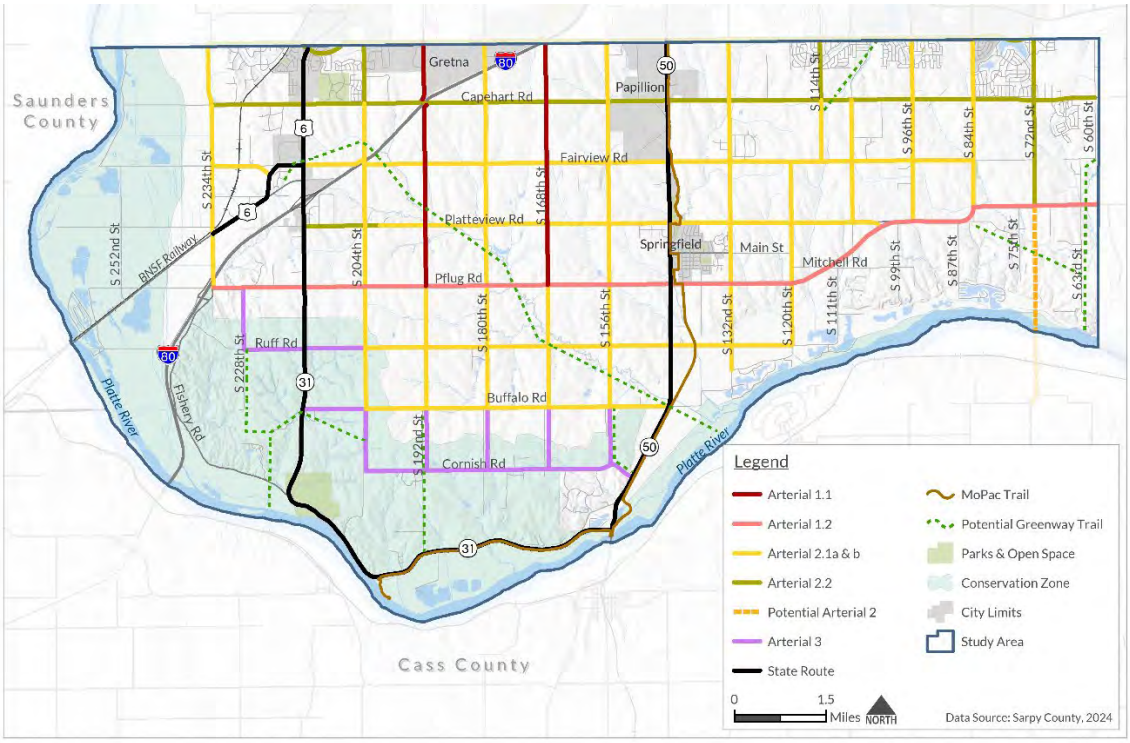
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
Project Administration
Project Engagement/ Approvals Process
APPROVALS
Existing Conditions Inventory & Analysis
BASELINE CONDITIONS
DATA DEVELOPMENT
EXISTING CONDITIONS
FUTURE CONDITIONS
Alternatives Analysis & Development
DEVELOP ALTERNATIVES
Recommendations & Plan
STANDARDS PLAN FRAMEWORK
Deliverables
KEY
Notice-to-Proceed
Online Public Meeting
Small Group Meetings
Progress Meeting
Draft Plan
Final Plan

# APPENDIX C: DESIGN GUIDANCE/ STANDARDS CHECKLIST

# WE-STEP Development Checklist

**General**

1. Provide a project area map of the study area limits. List the corridor(s), arterials and collectors, adjacent to or within the development.
2. What corresponding roadway classifications (Arterial 1.1, Arterial 1.2,Collectors, etc.) is within the study area? What ROW width will be acquired for this project?




3. List any designed or constructed projects within a 1-mile radius along the corridor(s) listed in Item 1 above.
    a. What was the cross section determined during previous projects (interim and/or ultimate).
    b. Does the existing alignment offset for this project (N, S, E, or W) align with previous projects adjacent to study area?
4. Does MAPA's Travel Demand Model horizon year traffic forecast (WE-STEP Land Use Scenarios) align with Item 2 above?
    a. If TDM Output < 20,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 3-lane section.
    b. If 20,000 < TDM Output < 45,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 4-lane divided section.
    c. If TDM Output > 45,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 6-lane section

    If the Horizon Year traffic forecast does not align with Item 2, justification needs to be provided for deviation.

**Access Points**

5. If the development is adding a new access point, confirm the following:
    a. Full Access Intersections are at ¼ Mile Spacing
    b. RIRO or ¾ Access at 1/8 Mile Spacing
    c. Existing access points align with proposed spacing.

    Provide justification if access points do not align with 1/8 and ¼ mile spacing listed above.
6. If the development is adding a new access point at the ¼ mile, does the access through the development conform to the WE-STEP through-route policy?
    a. Provide development plans highlighting proposed through-routes.
        i. Add "stub outs" callouts for border of development that doesn't connect to the arterial network.
    b. List traffic calming measures along through-routes
    c. List pedestrian and bicycle accommodations along through-routes

**Traffic Operations**

7. Provide the approach for estimating future year volumes / forecasts. Provide an ITE Code from the current edition of ITE's Trip Generation Manual and the calculation for site-generated trips (when applicable). If
8. List the analysis study peak hour(s). Provide justification for selecting study hours if different than AM and PM peak hour. List any unique traffic observations / assumptions used it operations analysis.
9. Provide a map of trip distribution percentages (when applicable – if ITE Codes were utilized). List any unique distribution.
10. Calculate roundabout level of service for all proposed full access intersections on the arterial system.
    a. If horizon year (Opening year + 20 Years) roundabout LOS < LOS 'F', strongly consider roundabout
    b. If roundabouts exist elsewhere along the study corridor (within X miles), strongly consider roundabout
    c. If horizon year roundabout LOS = LOS 'F', perform signal warrant analysis and determine LOS for signalized intersection.

**Roadway Design**

11. Determine if an ultimate vertical profile exists for the study corridor(s). If available, use ultimate vertical profile for design and locating access points tie-in locations.
12. If a roundabout is recommended within the study area, design shall follow guidelines from the following sources
    a. NCHRP 1043 (updated version of NCHRP 672)
13. List the design and posted speed(s) within the study area, as identified in Item 2.
    a. Does the proposed project align with the design speeds elsewhere in the corridor?
    b. List roadway and intersection elements included in design to reduce / calm traffic speeds within the study area.

14. List Construction Standards, based on the following hierarchy:
    a. Omaha Standards (Specifications/Plates/Design Guides)
    b. NDOT (Specifications/Plans/Design Manual) – *required when intersecting a state route*
    c. Other – (SUDAS, etc)

**Active Transportation**

15. Elsewhere in the study area, which side of the road is the multi-use trail and sidewalks on (N, S, E, or W). Align multi-use trail and sidewalks on the side of the proposed roadway that matches previous projects. Provide justification if not able to align with previous design and construction.
16. Are any mid-block crossing being recommended? If so,
    a. Are RRFB's being recommended? Provide justification if not
    b. Are sight obstructions (like landscaping, poles, etc) placed at an acceptable distance away from the crossing(s)?
    c. Is the vertical or horizontal profile a concern for the mid-block crossing?
17. Refer to 6c – confirm bicycle and pedestrian accommodations do not have "gaps" in the system.
18. Does transit serve this area? Identify any stop location wants / needs from an employer

**Bridges & Culverts**

19. If a bridge/culvert is located within the study area, are there adequate setbacks from the abutments/end of culvert to the nearest access point?
20. If a bridge is being added / replaced, is there enough lateral & vertical clearance under the bridge to provide a future trail connection.

**Utilities**

21. Elsewhere in the study area, identify which side of the road each of the following utilities are located: water, storm sewer, sanitary sewer, gas, power, communications.
22. Contact utility providers in the study area and list anticipated location and utility extensions within project area.
23. If project typical section includes interim offset 3-lane alternative, identify location of proposed utilities within ROW to avoid conflict with ultimate roadway buildout.

**References**

- Omaha Complete Streets Design Guide (19-08-01_TFTC_Omaha_Complete_Streets_Design_Guide_AUGUST.pdf (cityofomaha.org))
- NACTO Urban Street Design Guide (Urban Street Design Guide | National Association of City Transportation Officials (nacto.org))

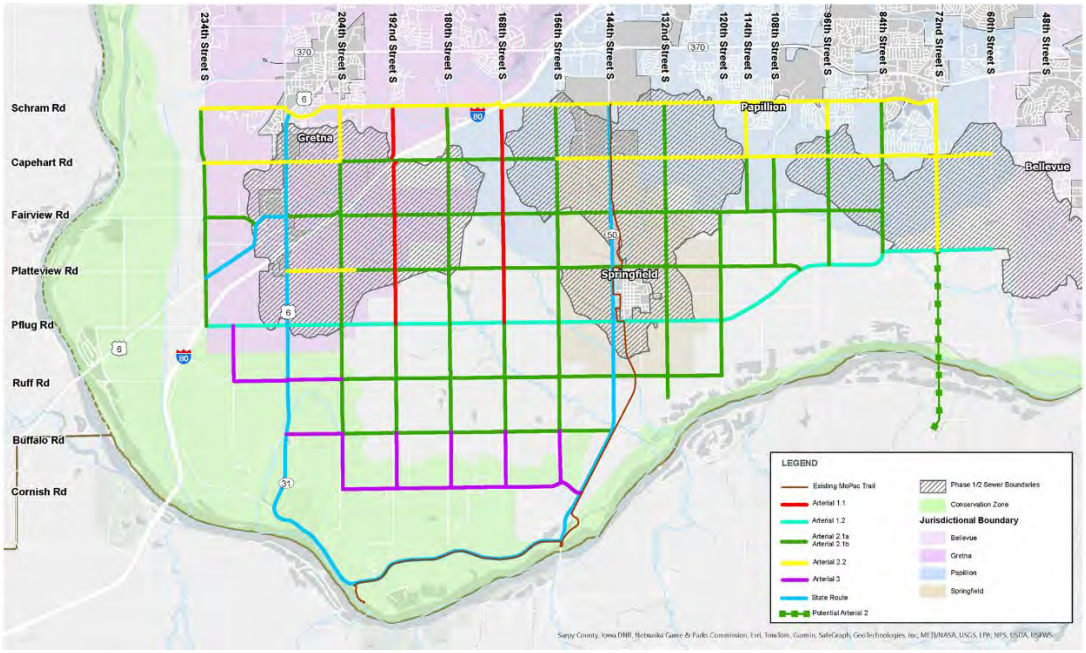
**Abbreviations**

- TDM: Travel Demand Model
- MAPA: Metro Area Planning Agency
- RIRO: Right-In-Right-Out
- ITE: Institute for Transportation Engineers
- N, S, E, & W: North, South, East, and West
- Others

# Stage 1: Project Identification

- **Corridor/Street**
  - Provide a project area map of the study area. List the corridor(s) and limits adjacent to the development.
- **Logical Termini**
  - Identify the limits of the project.
- **Existing Geometry**
  - Provide a brief description of the existing geometry:
    - Number of lanes
    - Median type
    - Turn lanes
    - Drainage features
    - Shoulders and/or curb and gutter
    - Pedestrian/bicycle accommodations
      - Sidewalks/trails
      - Bike lanes
- **Speed**
  - Identify the current design and posted speed limit(s).
- **Average AADT**
  - Document the average AADT along the corridor and the year of the traffic count.
- **Existing Federal Functional Classification**
  - Identify a standard list of Roadway Classifications that can be used across all jurisdictions. The list below is provided by the City of Omaha.
    - Interstate
    - Other Freeways & Expressways
    - Other Principal Arterial
    - Minor Arterial
    - Major Collector
    - Minor Collector
- **Existing Land Use/Context Zones**
  - Identify a standard list of land use/context zones that can be used across all jurisdictions. The list below is provided by the City of Omaha:
    - Downtown
    - Neighborhood commercial
    - Mixed use and major commercial
    - Traditional neighborhoods
    - Suburban neighborhoods
    - Parks
    - Industrial
- **Multijurisdictional** (yes/no)
- **State Highway** (yes/no)
- **Freight Systems**
  - Review federal, state, and local freight system plans and maps.

- **Transit Systems**
    - Review transit routes along corridor
    - Identify location of existing bus stops
- **Safety Information**
    - Presence of fatal crashes
    - Presence of major injuries
    - Presence of pedestrian/bicycle crashes
    - Other known safety issues
- **Existing Development**
    - Identify existing development in the area.
    - Identify location of nearby police stations, fire stations, and other emergency facilities.
- **Existing corridor study**
    - Identify if an existing corridor study exists and how current it is.
    - List any designed or constructed projects along the corridor(s).
        - What was the cross section determined for the traffic studies?
        - Was there an interim section developed / constructed?
- **ROW**
    - Select ROW width for dedication based on the following information:
        - Available ROW based on adjacent platted land.
        - Future facility type (use WE-STEP map below).
        - Provide additional ROW at intersections to account for future intersection features such as roundabout, curb returns, etc.



# Stage 2: Interim Design

- **Triggers**
  - Triggers that may lead to the need for stage 2 – interim design include:
    - Capacity demands (changes in traffic volumes, travel patterns or modes)
    - Development/redevelopment opportunities
    - Infrastructure condition
    - Public concerns
    - Safety
    - Traffic operations
- **General**
  - Check MAPA's Travel Demand Model (WE-STEP Land Use Scenarios)
    - If TDM Output < 20,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 3-lane section.
    - If 20,000 < TDM Output < 45,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 4-lane divided section.
    - If TDM Output > 45,000 Daily Trips, traffic study should consider traffic analysis for an ultimate 6-lane section.
  - If moving forward with a 3-lane interim section, align section offset on North or East side of corridor.
    - Provide justification if a different alignment is considered.
    - Extend driveways if future or existing development is on opposite side of offset.
  - Consider collector routes as plats are approved and the network begins to develop (reference the Collector Route policy in the WE-STEP guide).
- **Access Management**
  - If the development is adding a new access point, confirm the following:
    - Full Access Intersections are at 1/4 Mile Spacing
    - RIRO or 3/4 Access at 1/8 Mile Spacing
    - Provide justification if access points do not align with 1/8 and 1/4 mile spacing listed above.
  - If the development is adding a new access point at the 1/4 mile, confirm that access through the development conforms to the WE-STEP through-route policy.
    - Provide development plans highlighting proposed through-routes.
    - List traffic calming measures along through-routes.
    - List pedestrian and bicycle accommodations along through-routes.
- **Traffic Operations**
  - List the analysis study peak hour(s). Provide justification for selecting study hours that differ from the AM and PM peak hour.
  - Provide the ITE Code from the current edition of ITE's Trip Generation Manual and the calculation for site-generated trips.
  - Provide a map of trip distribution percentages (OK to assume the same distribution for AM and PM peak hours).

- Identify which Traffic Impact Study (TIS) category is required for the proposed access to development or lane use that will generate or has the potential to generate traffic volumes exceeding 100 vehicle trips during the highest peak hour of the development.
    - Category I
        - This category includes developments which generate 100 to 500 peak hour trips. The study horizon should be limited to the opening year of the development. The minimum study area should include site access drives and adjacent signalized intersections and/or major unsignalized street intersections.
    - Category II
        - This category includes developments that generate 500 to 1,000 peak hour trips. The study horizon should include the opening year of the development and five years after opening. The minimum study area should include site access drives and adjacent signalized intersections and/or major unsignalized street intersections within one-half mile of the development.
    - Category III
        - This category includes developments that generate 1,000 or more peak hour trips. The study horizon should include the opening year of the development, five years after opening and ten years after opening. The minimum study area should include site access drives and adjacent signalized intersections and/or major unsignalized street intersections within one mile of the development.
    - Category 0
        - A Traffic Impact Study may be required for any proposed access regardless of trips generated within a location identified by Public Works and Utilities as a safety problem area, high crash location, a high emphasis access management corridor or any site accessing a street or adjacent to an intersection operating at a Level of Service (LOS) E or F.
- Calculate roundabout level of service for all proposed full access intersections on the arterial system.
    - If horizon year roundabout LOS < LOS 'F', strongly consider roundabout.
    - If roundabouts exist elsewhere along the study corridor (within X miles), strongly consider roundabout.
    - If horizon year roundabout LOS = LOS 'F', perform signal warrant analysis and determine LOS for signalized intersection.

- **Roadway Design**
    - Determine if an ultimate vertical profile exists for the study corridor(s). If available, use ultimate vertical profile for design and tie-in locations for access points.
    - If a roundabout is recommended within the study area, utilize NCHRP 1043 for design guidance.
    - List the design speed for the corridor(s) within the study area.
        - Verify that this design speed aligns with the design speeds elsewhere in the corridor.

        - List roadway and intersection elements included in design to reduce / calm traffic speeds within the study area. Some examples include:
            - Medians
            - Pinchpoint
            - Chicane
            - Lane shift
            - Speed hump
            - On-street parking
            - Roundabout
            - Diverter
            - Signal progression
            - Building lines
            - Street trees
    - List Construction Standards, based on the following hierarchy:
        - Omaha Standards (Specifications/Plates/Design Guides)
        - NDOT (Specifications/Plans/Design Manual) – required when intersecting a state route
        - Other – (SUDAS, etc)
- **Bridges & Culverts**
    - If a bridge/culvert is located within the study area, provide adequate setbacks from the abutments/end of culvert to the nearest access point. Confirm setbacks with queuing analysis in Traffic Impact Study.
    - If a bridge is being added / replaced, verify there enough lateral & vertical clearance under the bridge to provide a future trail connection.
- **Active Transportation**
    - Verify if there is a trail network on or adjacent to the corridor. If so, identify the side of the road that the multi-use trail is on (N, S, E, or W). Align the new multi-use trail on the proposed roadway to match with the existing trail. Provide justification if not able to align with previous design and construction.
    - Consider the need for mid-block crossings. If recommended,
        - Consider RRFB's and provide justification if not recommended.
        - Identify sight obstructions (like landscaping, poles, etc) that are not placed at an acceptable distance away from the crossing(s).
        - Identify if the vertical or horizontal profile is a concern for the mid-block crossing.
    - Confirm bicycle and pedestrian accommodations do not have "gaps" in the through-route system.

# Stage 3: Ultimate Design

- **Triggers**
  - Triggers that may lead to the need for stage 3 – ultimate design include:
    - Capacity demands (changes in traffic volumes, travel patterns or modes)
    - Development/redevelopment opportunities
    - Infrastructure condition
    - Public concerns
    - Safety
    - Traffic operations
- **General**
  - Implement the Collector Route policy outlined in the WE-STEP guide.
    - Collector roads are at ½ mile spacing.
    - Local roads are at ¼ mile spacing.
    - Collector road considerations
      - Limited access
      - No single-family lot driveways
      - Limited on-street parking
      - Roundabouts at ½ miles (consider at ¼ mile)
- **Access Management**
  - If the development is adding a new access point, confirm the following:
    - Full Access Intersections are at 1/4 Mile Spacing
    - RIRO or 3/4 Access at 1/8 Mile Spacing
    - Provide justification if access points do not align with 1/8 and 1/4 mile spacing listed above.
  - If the development is adding a new access point at the 1/4 mile, confirm that access through the development conforms to the WE-STEP through-route policy.
    - Provide development plans highlighting proposed through-routes.
    - List traffic calming measures along through-routes.
    - List pedestrian and bicycle accommodations along through-routes.
- **Traffic Operations**
  - List the analysis study peak hour(s). Provide justification for selecting study hours that differ from the AM and PM peak hour.
  - Provide the ITE Code from the current edition of ITE's Trip Generation Manual and the calculation for site-generated trips.
  - Provide a map of trip distribution percentages (OK to assume the same distribution for AM and PM peak hours).
  - Identify which Traffic Impact Study (TIS) category is required for the proposed access to development or lane use that will generate or has the potential to generate traffic volumes exceeding 100 vehicle trips during the highest peak hour of the development.
    - Category I
      - This category includes developments which generate 100 to 500 peak hour trips. The study horizon should be limited to the opening year of the development. The minimum study area should include site access

drives and adjacent signalized intersections and/or major unsignalized street intersections.

- Category II
  - This category includes developments that generate 500 to 1,000 peak hour trips. The study horizon should include the opening year of the development and five years after opening. The minimum study area should include site access drives and adjacent signalized intersections and/or major unsignalized street intersections within one-half mile of the development.
- Category III
  - This category includes developments that generate 1,000 or more peak hour trips. The study horizon should include the opening year of the development, five years after opening and ten years after opening. The minimum study area should include site access drives and adjacent signalized intersections and/or major unsignalized street intersections within one mile of the development.
- Category 0
  - A Traffic Impact Study may be required for any proposed access regardless of trips generated within a location identified by Public Works and Utilities as a safety problem area, high crash location, a high emphasis access management corridor or any site accessing a street or adjacent to an intersection operating at a Level of Service (LOS) E or F.

- Calculate roundabout level of service for all proposed full access intersections on the arterial system.
  - If horizon year roundabout LOS < LOS 'F', strongly consider roundabout.
  - If roundabouts exist elsewhere along the study corridor (within X miles), strongly consider roundabout.
  - If horizon year roundabout LOS = LOS 'F', perform signal warrant analysis and determine LOS for signalized intersection.

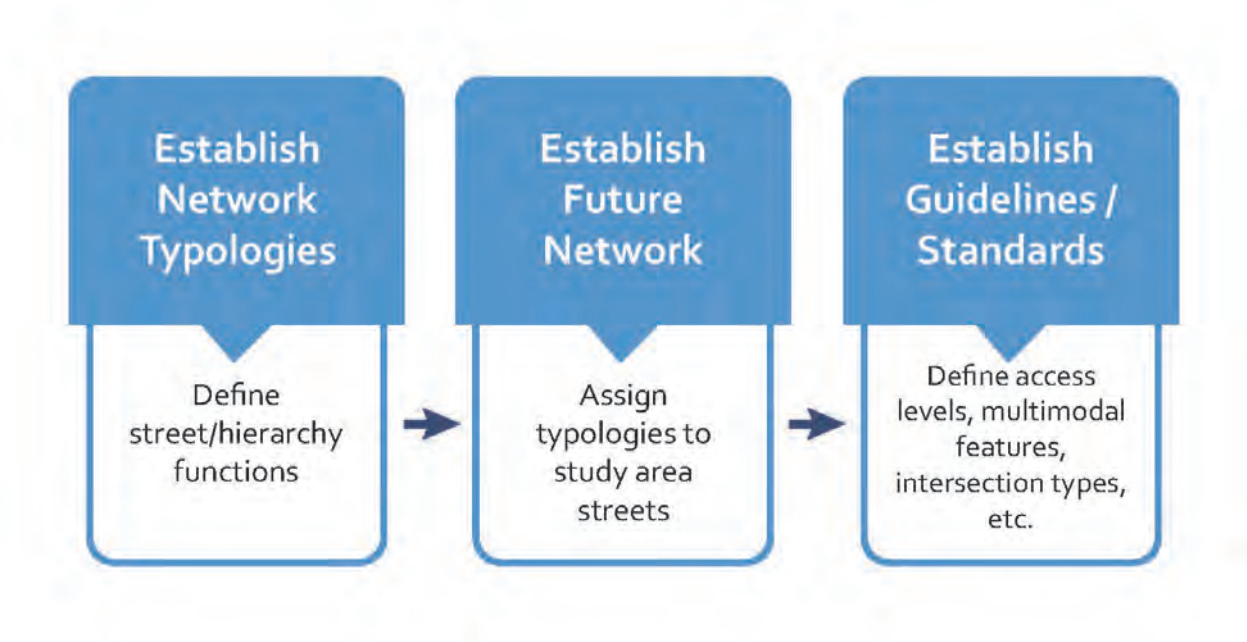
- **Roadway Design**
  - Determine if an ultimate vertical profile exists for the study corridor(s). If available, use ultimate vertical profile for design and tie-in locations for access points.
  - If a roundabout is recommended within the study area, utilize NCHRP 1043 for design guidance.
  - List the design speed for the corridor(s) within the study area.
    - Verify that this design speed aligns with the design speeds elsewhere in the corridor.
    - List roadway and intersection elements included in design to reduce / calm traffic speeds within the study area. Some examples include:
      - Medians
      - Pinchpoint
      - Chicane
      - Lane shift
      - Speed hump

        - On-street parking
        - Roundabout
        - Diverter
        - Signal progression
        - Building lines
        - Street trees
    - List Construction Standards, based on the following hierarchy:
        - Omaha Standards (Specifications/Plates/Design Guides)
        - NDOT (Specifications/Plans/Design Manual) – required when intersecting a state route
        - Other – (SUDAS, etc)
- **Bridges & Culverts**
    - If a bridge/culvert is located within the study area, provide adequate setbacks from the abutments/end of culvert to the nearest access point. Confirm setbacks with queuing analysis in Traffic Impact Study.
    - If a bridge is being added / replaced, verify there enough lateral & vertical clearance under the bridge to provide a future trail connection.
- **Active Transportation**
    - Verify if there is a trail network on or adjacent to the corridor. If so, identify the side of the road that the multi-use trail is on (N, S, E, or W). Align the new multi-use trail on the proposed roadway to match with the existing trail. Provide justification if not able to align with previous design and construction.
    - Consider the need for mid-block crossings. If recommended,
        - Consider RRFB's and provide justification if not recommended.
        - Identify sight obstructions (like landscaping, poles, etc) that are not placed at an acceptable distance away from the crossing(s).
        - Is the vertical or horizontal profile a concern for the mid-block crossing?
    - Confirm bicycle and pedestrian accommodations do not have "gaps" in the through-route system.

# APPENDIX D: RECOMMENDATIONS DEVELOPMENT SUMMARY

# Task 4 and 5 Summary – Guidance / Standards Evaluation and Recommendations

The WE-STEP study is tasked with establishing a recommended future street network and associated standards for each of the network corridor typologies and making a set of recommendations for implementation. Developing the guidelines / standards and ultimate recommendations followed this general process:




Core **performance objectives** were established by the team to help guide the development of plan recommendations. In addition to network recommendations, this memo also provides multimodal guidance and systemic safety planning considerations to use going into network implementation.

## Performance Objectives

A set of performance objectives were developed to help evaluate how well ideas generated for the WE-STEP system fit with stakeholder and agency study area goals. These performance objectives guided the decision-making process that led to plan recommendations. The performance objectives are documented and described in **Table 1**.

Table 1. WE-STEP Performance Objectives

| Performance Objectives | Description and Considerations |
|---|---|
| Future development projections and land use | Areas of future urban scale development should provide corridors that will have sufficient multimodal access and capacity. Typology designations are flexible to respond to adjacent land use context. |
| Travel demand | Multimodal travel demand is a direct result of land use patterns; more development leads to more trips. Corridors were designated to meet reasonably anticipated travel throughout the WE-STEP study area. |
| Connectivity | A well-connected network has a dense set of street connections with many through connections. High connectivity leads to decreased travel distances and increased route choice for more direct travel. |
| Roadway design | Roadway design considerations overlap with many of the other performance objectives including safety, connectivity, and cost. In many cases design is less an objective rather than a tool for implementation. |
| Safety | Safety is becoming the primary consideration in transportation planning and was a primary consideration in WE-STEP. Features and standards are included in the study that increase travel safety for all system users. |
| Transit Access | There is currently no transit service in the study area due to its predominantly rural nature. However, as the study area urbanizes, the network needs to plan for transit access. Many stakeholders recognize that transit access may be important in the future. |
| Bicycle and Pedestrian Access | As the study area urbanizes, the opportunities for bikeable and walkable trips will increase significantly. Decisions made in this study considered how to create safe bicycle and pedestrian connections. |
| Environmental Considerations | An environmental screening was a part of Task 3, and the future network recognizes environmental constraints, including conservation areas where limited future development is anticipated. |
| Freight and Emergency Response Access | Recommendations for network connections and standards recognize that larger freight and emergency response vehicles will be traversing the future network and standards will need to accommodate these uses. |
| Cost | The scalable network recommendations in WE-STEP recognize that as corridors transition from rural to urban corridors, there are opportunities to reduce long-term lifecycle costs. |

## Network Typologies

A range of street typologies were identified for the WE-STEP study area that could serve the various transportation modes within a given context. The future 2050 MAPA model was reviewed for insights into the future growth areas that are most immediately anticipated. The MAPA model was in the process of being updated during this study and, given the higher-than expected recent growth of study area development, it is thought that these forecasts might be somewhat underrepresenting growth in the WE-STEP area by 2050. The following principles were established by the Steering and Technical Advisory Committee (STAC) for WE-STEP:

- The typologies should be distinct from Federal and state functional classes.
- The typologies should accommodate all modes of travel.

- The typologies should be flexible to its surrounding land use.
- The typologies should be flexible to accommodate an interim and an ultimate cross-section.

## Arterial Typologies

Given the desire to look beyond the 2050 travel patterns identified in the MAPA model, the typologies identified two different categories of main growth arterials:

- Arterial 1 - Highest level of mobility arterial with no on street parking and the ability to expand to 6-lanes of traffic in addition to bicycle and pedestrian infrastructure.
- Arterial 2 – Typical arterial corridor with a high level of mobility, no on street parking, and the ability to expand to 4-lanes of traffic in addition to bicycle and pedestrian infrastructure. Every arterial on the one-mile grid will at least be an Arterial 2 in the WE-STEP growth area defined by the potential sewered area, shown in **Figure 2**.

A third typology, Arterial 3, was added to address conservation area corridors. If development occurs in these areas, it is anticipated to be limited, so the need for widening should be limited. These corridors could potentially have sidepaths for recreational biking and walking opportunities.

To accommodate these mobility and functional needs of these two typologies, the general characteristics of each were:

- Right-of-Ways:
  - Arterial 1: 150 foot wide right-of-way
  - Arterial 2: 110 foot wide right-of-way
  - Arterial 3: 100 foot wide right-of-way
- Access Control:
  - Full Access every 1/4 mile (Arterial 1 and 2).
  - Partial Access at 1/8 mile(Arterial 1 and 2).

  *An illustration of recommended access control standards is shown in **Figure 1**.*
- Bicycle and Pedestrian Infrastructure:
  - All Arterial 1 and Arterial 2 routes will have an adjacent sidepath, with a recommended width of 12 feet.
  - Pedestrian crossings at all controlled intersections and key non-controlled intersections.

### WE-STEP TYPOLOGIES

**Arterial 1**: Highest mobility corridors with 150' dedicated right-of-way.

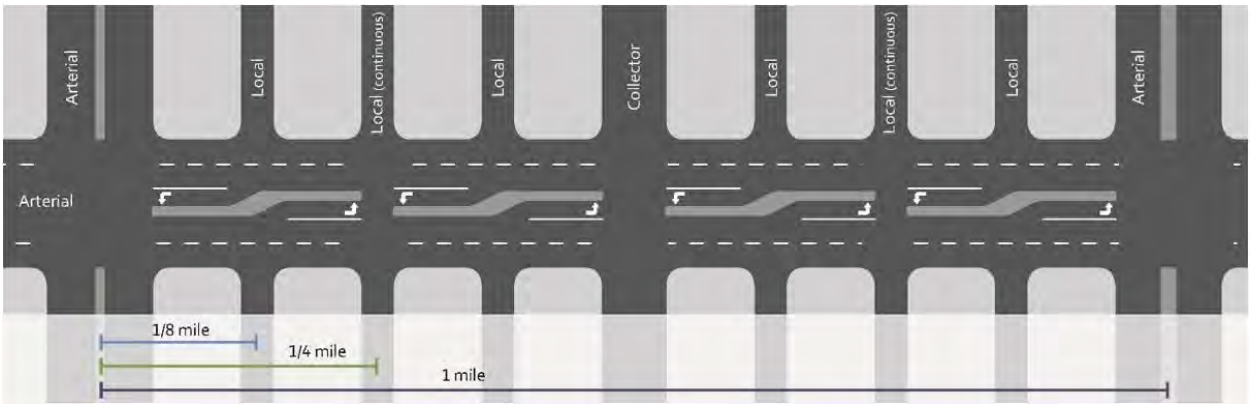
**Arterial 2**: High mobility corridors that accommodate all modal users, developed on the one-mile grid.

**Arterial 3**: Conservation area arterials, anticipated to remain rural roads for the foreseeable future. If development occurs along these corridors a right-of-way of 100' width is recommended to accommodate a potential turn lane and potential recreational trails in the long-term.

**Collector**: Corridors that connect neighborhoods and connect to arterials. Located 1/2 mile from arterials.

In some of the corridors, particularly in the northern parts of the study area large portions of some corridors are already being platted due to development in process. In these corridors (Arterial 2.2), right-of-way is set at 100 foot wide due to past policy in the WE-STEP jurisdictions.

FIGURE 1: Recommended Access Control Standards




Note that 1/8-mile spacing access may provide 3/4 access intersections (provide left-turns off of the arterial, but not onto). 1/4-mile spacing intersections may be roundabouts or signalized intersections.

A series of roadway design criteria (**Table 2**) wer developed for each of the arterial typologies. The design criteria include recommendations for posted speed, lane width, vertical alignment, and other roadway features. Arterial typologies are illustrated in the **Appendix**. An example of how an interim 3-lane cross-section might be developed is also shown.

Table 2. General Roadway Criteria

| General Roadway Criteria | Arterial 1.1 | Arterial 1.2 | Arterial 2.1a | Arterial 2.1b | Arterial 2.2 | Arterial 3 |
|---|---|---|---|---|---|---|
| ***Posted Speed*** | 40-45 | 50+ | 30-45 | 25-30 | 30-45 | 45-55 |
| ***Ultimate Number of Lanes*** | 6 | 4 | 4 | 4 | 4 | 3 |
| ***Lane Width*** | 11'-12' | 12' | 11'-12' | 11'-12' | 11'-12' | 11'-12' |
| ***Right-of-Way*** | 150' | varies | 110' | 110' | 100' | 100' |
| ***Roadway Width*** | 104' | 84' | 68' | 90' | 68' | 52' |
| ***Vertical Alignment*** | Ultimate Vertical Profile or AASHTO Standards | | | | | |
| ***Shoulder / Curb & Gutter*** | 2' curb & gutter | 8' shoulder | 2' curb & gutter | 2' curb & gutter | 2' curb & gutter | 8' shoulder |
| ***Sidewalk with Landscaped Buffer*** | 6' | - | 6' | 6' | 5' | - |
| ***On-Street Parking Allowed*** | No | No | No | Yes | No | No |
| ***On-Street Parking Width*** | - | - | - | 8' | - | - |
| ***Shared Use Path Required*** | 1 side | No | 1 side | No | 1 side | 1 side |
| ***Shared Use Path*** | 12' | - | 12' | - | 12' | 12' |

### Collector Typologies

The STAC recognized the following benefits of a system of continuous collector and local streets within the one-mile grid:

- This system of grid street provides a resilient system where an incident or closure on one segment allows for multiple alternative paths with less negative impacts due to rerouted traffic.
- Less out-of-direction travel due to multiple route choices for each trip, particularly for shorter trips within a neighborhood or subarea. This eliminates the need to travel to an arterial for trips less than a few miles long.
- Improved connectivity for pedestrians and bicyclists. These trips tend to be shorter, and the distance and directness of connections have a significant impact of the practicality and probability someone can and will walk or bike for that shorter trip.
- Potentially delayed or eliminated need for arterial improvements and widenings due to traffic dispersing to collector and local streets for some trips.

The collector typology was identified such that it would ideally:

- Have no direct driveway access.
- A right-of-way width of 60 feet.
- Typical pavement width of 36 feet that could accommodate on-street parking or bike lanes.
- Recommendations for speed control and safety features like chicanes and roundabouts.

Collector typologies are illustrated in the **Appendix**.

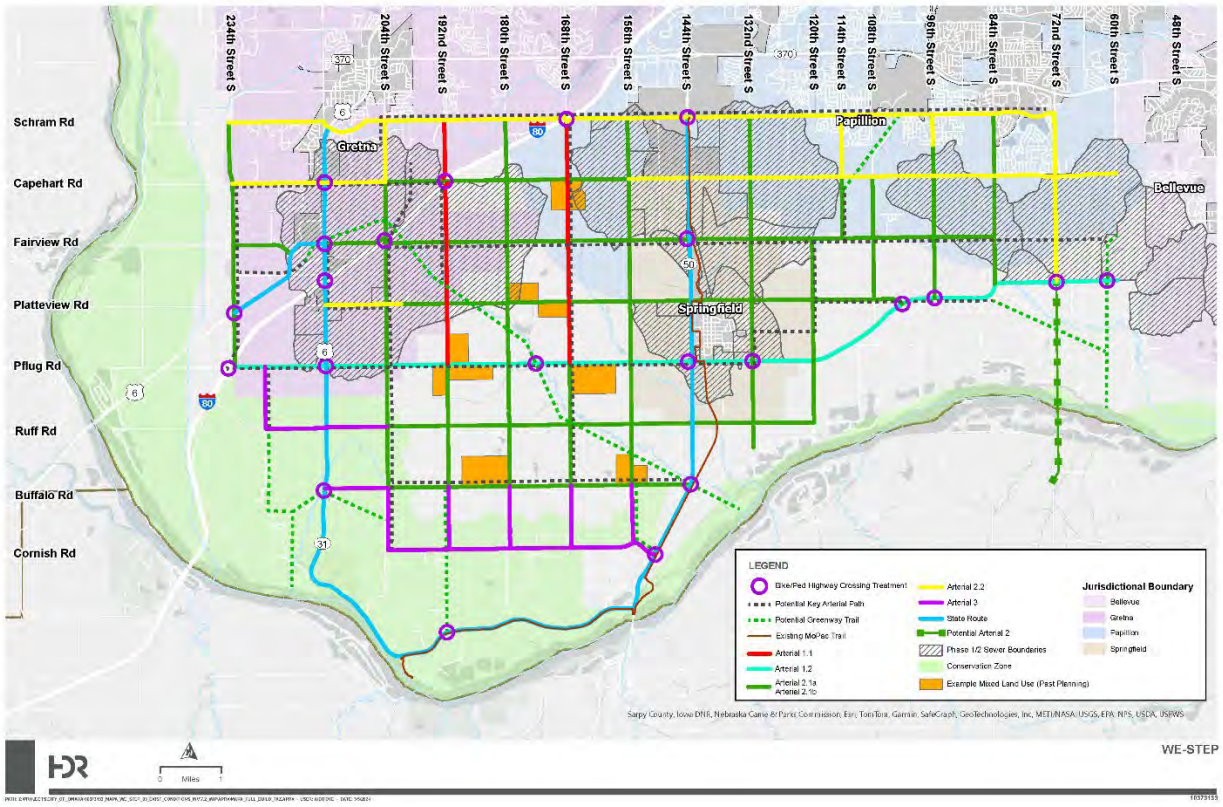
## Establishing the Future Network

A future network was established with each corridor being assigned the relevant typology. The network was established based on the latest information available in the study area, including:

- Travel demand model runs through the year 2050. The input data used an older version of the MAPA model, which indicated lower growth in the WE-STEP are than the latest land use growth assumption. Thus, the traffic forecasts did not assume as much land use and traffic growth as the in-progress model updates (anticipated for late 2024) will assume.
- Current planning for new I-80 interchange access in Sarpy County anticipates that the 168$^{th}$ Street and 192$^{nd}$ Street corridors have the greatest potential for future I-80 interchanges. Both of these corridors also have significant connections to the northern parts of Sarpy County and Douglas County, indicating that these two corridors are the highest mobility corridors (Arterial 1) in the WE-STEP area.
- Northern portions of the network were developing quickly during this study, particularly Schram and Capehart corridors. Thus, these right-of-way constrained corridors were designated Arterial 2.2 to reflect the limited 100-foot right-of-way widths available.
- A conservation district (CD) overlay is designated for much of the southwest portions of the WE-STEP area which limits the development potential. Thus, this part of the network was given an Arterial 3 designation.

The recommended WE-STEP arterial network is shown in **Figure 2**.

FIGURE 2: Study Area Priority Arterials and Trail Network



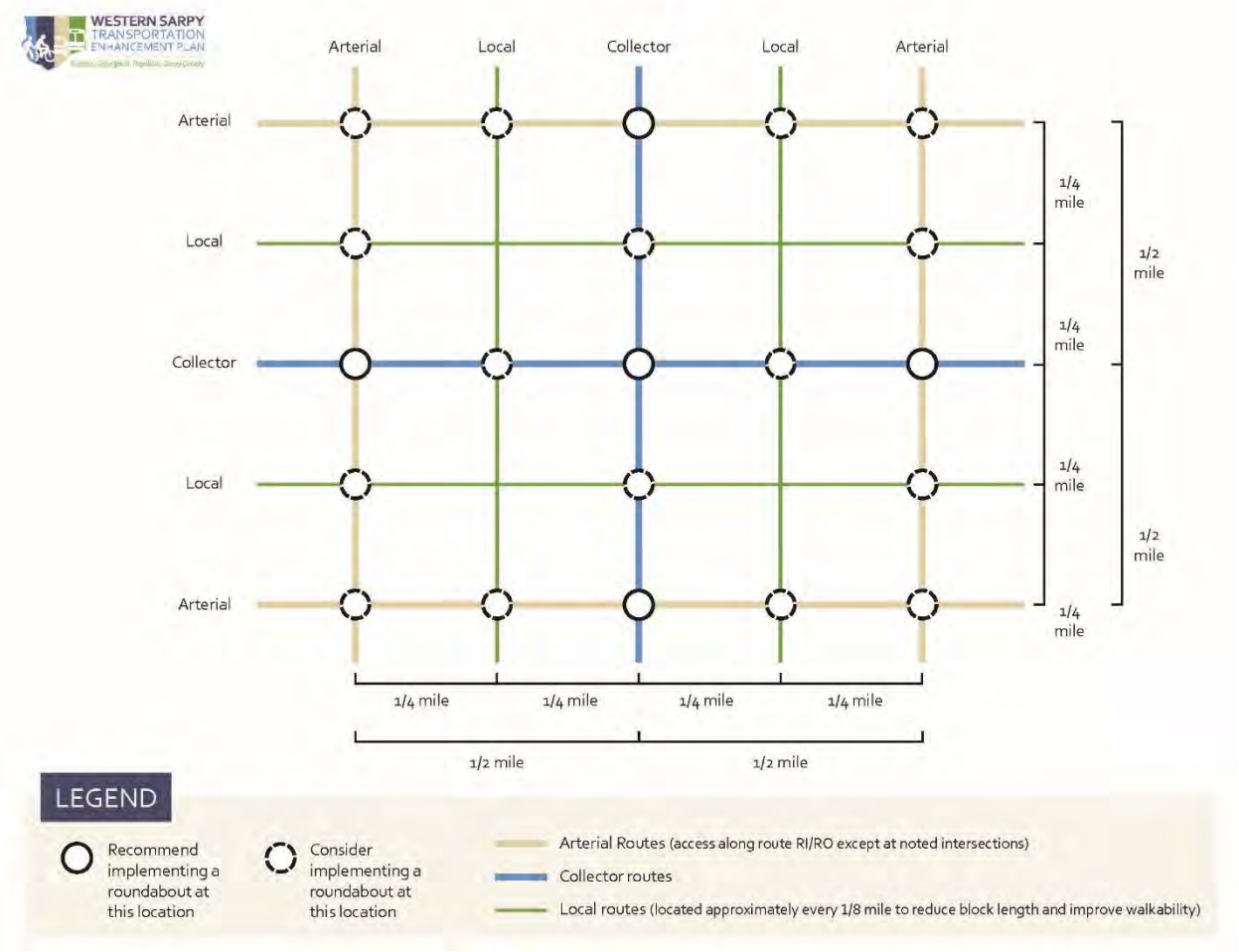

## Collector and Through Route Policy

To reflect the benefits of a continuous collector routes and connected grid system outlined early in this study, the study team recommended a collector and through-route policy. This policy states that where existing human and development barriers do not exist, every section of the network within the 1-mile grid should include three continuous local streets approximately every 1/4 mile. Specifically:

- The ½ mile street in the middle of the section should be designated a collector street when possible.
- The three through streets from each section should form an intersection and align with three through streets on all adjacent sections. This network design overlaps with the access control elements of the WE-STEP arterials that bound each section, such that a full access intersection will occur at the 1/4 mile spacing interval with the three through-route streets.
- Roundabouts are an intersection type that could potentially be implemented as a part of this policy. More information is provided on the traffic safety and flow benefits later in this document.

The illustration of this policy and associated potential roundabout intersection control is shown in **Figure 3**.

FIGURE 3: Recommended Collector and Through Route Policy




## Active Transportation Routes

### Sidewalks

Sidewalks are paved routes that typically parallel the street network, with a separation from the motorized travel lanes. They are designed for people walking and must be compliant with the Americans with Disabilities Act. The minimum recommend width is 6 feet; however, wider sidewalks may be appropriate to support walkable land uses. Sidewalks are proposed on one side of all arterial streets, with a shared use path on the opposite side. Sidewalks are proposed on both sides of all collector and local streets. In mixed-use urban nodes that might develop, typologies have been developed that would allow for wider sidewalks and street-oriented buildings and on-street parking.

### Shared Use Paths

Shared use paths are paved, off-road routes that are designed for bi-directional travel for all non-motorized users. The minimum recommended width is 10 feet; however, 12 feet provides more comfort when supporting a mix of users and allows people to walk or bike side by side rather than single file. Most riders are comfortable using shared use paths and they are considered suitable for people of all

ages and abilities. Paved shared use paths can serve as both destinations and connectors, enabling people to walk or bike to their desired locations safely and conveniently. Shared use paths are recommended along all future arterial streets, with a separation buffer from the motorized travel lanes where possible. When a shared use path parallels a street, it may be referred to as a "sidepath."

## Active Transportation Crossings

Intersections and midblock street crossings present conflict points between different types of roadway users which can lead to crashes. To improve safety conditions, there are several intersection treatments that can be used which improve the visibility of people biking and walking to motorists through dedication of roadway space, signage, signals, or facility design.

### Controlled Crossings

Controlled crossings are most often found at the intersections of two streets. Controls may include traffic signals or STOP signs for one or more approaches of the intersection. In areas where these intersections include shared use paths or sidewalks, the crossing may also include:

- **Painted stop bar:** indicates to the motorist where to stop.
- **Continental style marked crosswalk at school and shared use path crossings:** indicates to the motorist that pedestrians may be crossing and indicates to the pedestrian where to cross.
- **Detectable warnings (truncated domes) and ramps:** provides ADA compliance.
- **Pedestrian countdown timers at traffic signals:** indicates time remaining to cross, which reassures pedestrians on ability to cross before the signal changes.
- **Turning Vehicles Yield to Pedestrians (or Bicycle/Pedestrians) sign (MUTCD R10-15):** indicates to motorist to yield to people using the trail at a signalized crossing where vehicles are allowed to make a right turn on red.
- **Pedestrian refuge islands:** provides protected area in the middle of the street for people crossing, which is particularly useful when crossing the ultimate build out cross-section of Arterial 1 and Arterial 2 streets which include 4 or 6 travel lanes and medians.

Figure 4: Continental Crosswalk with Curb Ramps

### Uncontrolled or Midblock Crossings

Uncontrolled crossings are locations where designated sidewalks or shared use paths intersect roadways without any traffic control. Uncontrolled crossings are commonly found at midblock locations, sidewalk or shared use path crossings, or intersections with only two-way traffic control. These crossings require enhancements to improve visibility and establish right-of-way for people walking or biking across the street and to enhance safety for all users.

Improvements for these crossings depend on factors like road type, width, traffic volume, speed, and the specific context of the location. To determine suitable interventions, the FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, provides guidance as shown in **Figure 5.** Locations with uncontrolled crossings would

benefit from continental style marked crosswalks (**Figure 4**), detectable warnings, crossing signage, and median islands if crossing three or more lanes. Additional treatments may include:

- **Yield pavement markings**: indicates to motorists where to yield to pedestrians.
- **Bicycle/pedestrian crossing warning signs**: This includes crossing warning signs and advance warning signs and in-street pedestrian crossing signs.
- **Crossing beacons**: This includes Rectangular Rapid Flashing Beacons (RRFB) which draws driver attention to pedestrians in the crosswalk and Pedestrian Hybrid Beacons that directs vehicular traffic to stop as people use the crosswalk.
- **Curb extensions**: also known as bulb-outs, this narrows the roadway to slow motorists and shortens the crossing distance for pedestrians.

**Figure 5: Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations**

| Roadway Configuration | Posted Speed Limit and AADT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Vehicle AADT <9,000 | | | Vehicle AADT 9,000–15,000 | | | Vehicle AADT >15,000 | | |
| | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph |
| 2 lanes (1 lane in each direction) | ❶ 2 4 5 6 | ❶ 5 6 7 9 | ① 5 6 ❼ ❾ | ❶ 4 5 6 | ❶ 5 6 7 9 | ① 5 6 ❼ ❾ | ❶ 4 5 6 7 9 | ① 5 6 7 9 | ① 5 6 ❾ |
| 3 lanes with raised median (1 lane in each direction) | ❶ 2 3 4 5 7 9 | ❶ ❸ 5 7 9 | ① ❸ 5 ❼ ❾ | ① 3 4 5 7 9 | ① ❸ 5 ❼ ❾ | ① ❸ 5 ❼ ❾ | ① ❸ 4 5 7 9 | ① ❸ 5 ❼ ❾ | ① ❸ 5 ❾ |
| 3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane) | ❶ 2 3 4 5 6 7 9 | ❶ ❸ 5 6 7 9 | ① ❸ 5 6 ❾ | ① 3 4 5 6 7 9 | ① ❸ 5 6 ❼ ❾ | ① ❸ 5 6 ❾ | ① ❸ 4 5 6 7 9 | ① ❸ 5 6 ❾ | ① ❸ 5 6 ❾ |
| 4+ lanes with raised median (2 or more lanes in each direction) | ❶ ❸ 5 7 8 9 | ❶ ❸ 5 7 8 9 | ① ❸ 5 8 ❾ | ① ❸ 5 7 8 9 | ① ❸ 5 ❼ 8 ❾ | ① ❸ 5 8 ❾ | ① ❸ 5 ❼ 8 ❾ | ① ❸ 5 8 ❾ | ① ❸ 5 8 ❾ |
| 4+ lanes w/o raised median (2 or more lanes in each direction) | ❶ ❸ 5 6 7 8 9 | ① ❸ 5 ❻ 7 8 9 | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ 7 8 9 | ① ❸ 5 ❻ ❼ 8 ❾ | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ ❼ 8 ❾ | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ 8 ❾ |

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- ● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- ○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

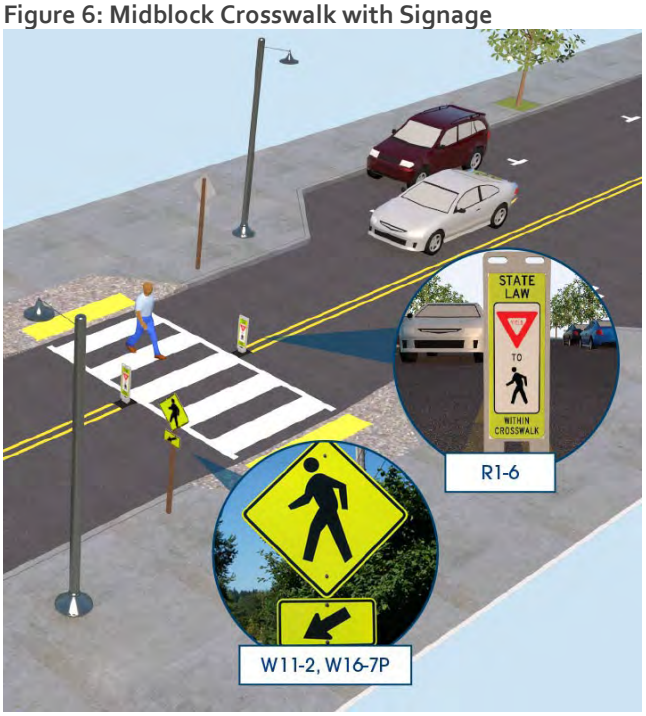
The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Rectangular Rapid-Flashing Beacon (RRFB)**
8 Road Diet
9 Pedestrian Hybrid Beacon (PHB)**

Source: Federal Highway Administration

**Figures 6-8** show example illustrations of Active Transportation Crossings. Priority should be given to midblock crossings near key pedestrian generators like schools, parks, and other amenities. All midblock crossings must be marked with appropriate signage and pavement markings and shall incorporate the recommended improvements based on the specific roadway context.

**Figure 6: Midblock Crosswalk with Signage**

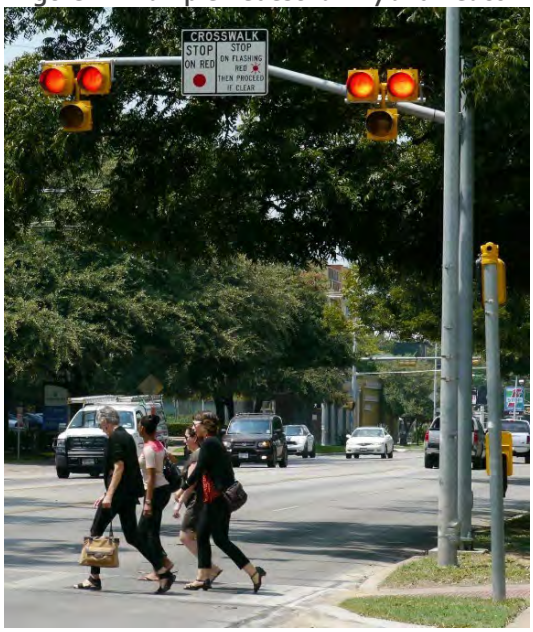



Source: FHWA

**Figure 7: Example Curb Extension**


Souce: NACTO

**Figure 8: Example Pedestrian Hybrid Beacon**

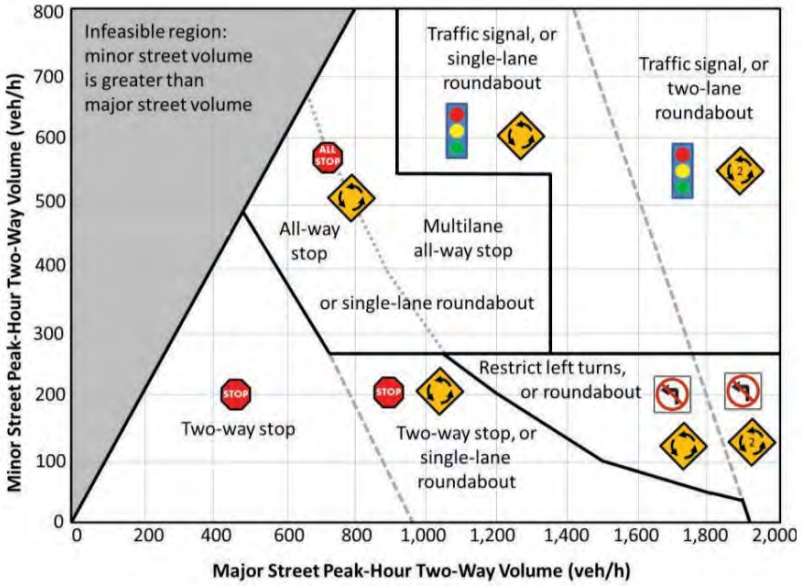



Source: City of Austin, *Signal Requests | AustinTexas.gov*

## Systematic Safety Considerations

Crashes skew heavily to intersections, midblock crossings, and access points (such as driveways). Implementing an access spacing standard, as shown in **Figure 1**, helps reduce crash potential by only allowing full access intersections at the ¼ mile. Installing raised medians on the arterials can also provide a safer facility for all users. Raised medians may provide refuge for pedestrians and bicycles at mid-block crossings.

**Figure 9. Intersection control type by peak hour volume (50/50 volume distribution)**

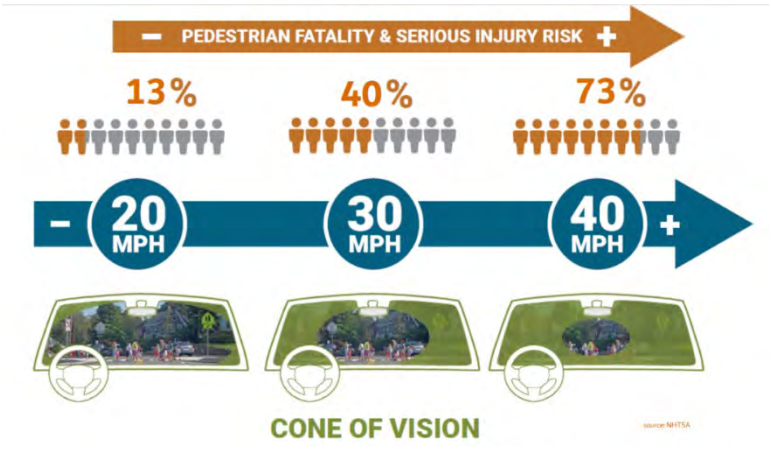



(a) 50/50 Volume Distribution on Each Street

Source: NCHRP 825

Another safety concern is overbuilding intersections for expected growth. Intersections should be sized for opening day needs for safety reasons despite the risk to long-term operations. It is also recommended that enough right-of-way be acquired to accommodate any future buildout. Roundabouts are a recommended intersection control type due to their safety benefits and efficiency at keeping people moving. **Figure 9** shows that single lane roundabouts cover a very large range of operating conditions. Roundabouts also have lower ongoing costs for management and maintenance, and they decrease almost 80% of fatal and serious injury crashes in areas where they have been introduced as a safety countermeasure.

**Figure 10. Speed & Pedestrian Risk**




Source: NHTSA

Sidewalks and shared-use paths are highly recommended to provide separation between vehicles and pedestrians and cyclists. As shown in **Figure 10**, the faster a vehicle is traveling, the greater the risk for a pedestrian fatality or serious injury. Sidewalks provide safe routes for pedestrians to use that are separated from vehicles. However, cyclists' speeds can be unsafe for pedestrians and sidewalks do not provide enough space for the two users to interact safely and comfortably. Shared-use paths provide a better facility for both pedestrians and bicyclists to use due to the increased width that allows for safe passing.

## Public Transit Considerations

Existing transit service in the WE-STEP area is provided through a service contract with the Regional Metropolitan Transit Authority of Omaha (Metro). Bellevue and Papillion currently pay a nominal fee to Metro to provide contracted transit service in the form of express routes not currently in the study area. The previously completed Sarpy County Transit Feasibility Study (August 2017) included the WE-STEP study area and identified potential future improvements such as:

- A Gretna/Bellevue Express Route.
- A countywide demand-response service.
- Fixed-route corridor service on 168th, 144th, 84th, and 72nd Streets.
- An express route to Springfield and Gretna/Nebraska Crossing.

The improvements proposed in the Transit Feasibility Study includes elements such as new infrastructure (including park-and-ride facilities), additional planning and design studies, and identifying funding and a governance structure, including the possibility for WE-STEP partner agencies to join Metro provides an option for funding and a governance structure.

The existing and near future development of western Sarpy County urban and suburban areas (developed areas that are part of Gretna, Springfield, and Papillion) contain enough potential transit ridership market to begin the implementation of these concepts. As new developments are built and the street and road network is improved, it will be important to consider the potential implementation of transit service through placement of sidewalks and other active transportation to increase accessibility as well as the placement of bus routes and bus stops.

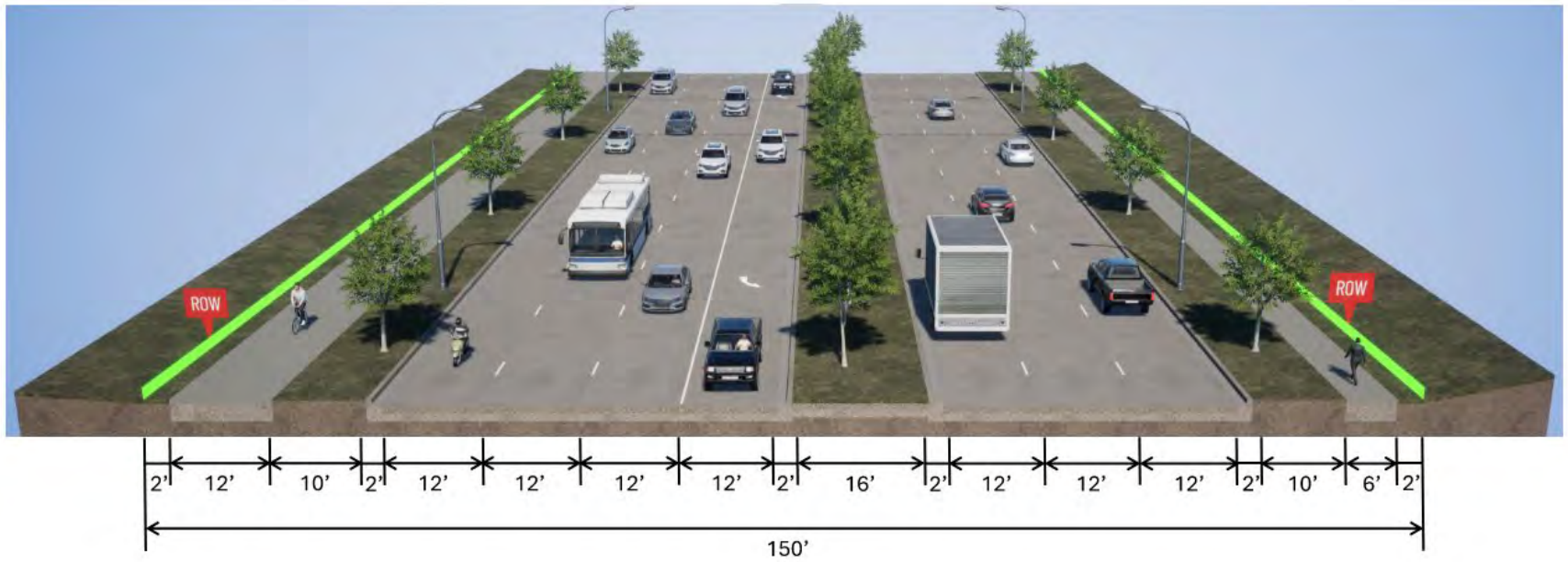
## Summary

The alternatives and recommendations phase of WE-STEP first developed a set of typologies that would meet the range of demands and modal needs of future WE-STEP system users. The next step establishes the future WE-STEP network by overlaying those typologies onto the area corridors. Finally, the standards and elements associated with the network were defined based on input of technical staff and system stakeholders.

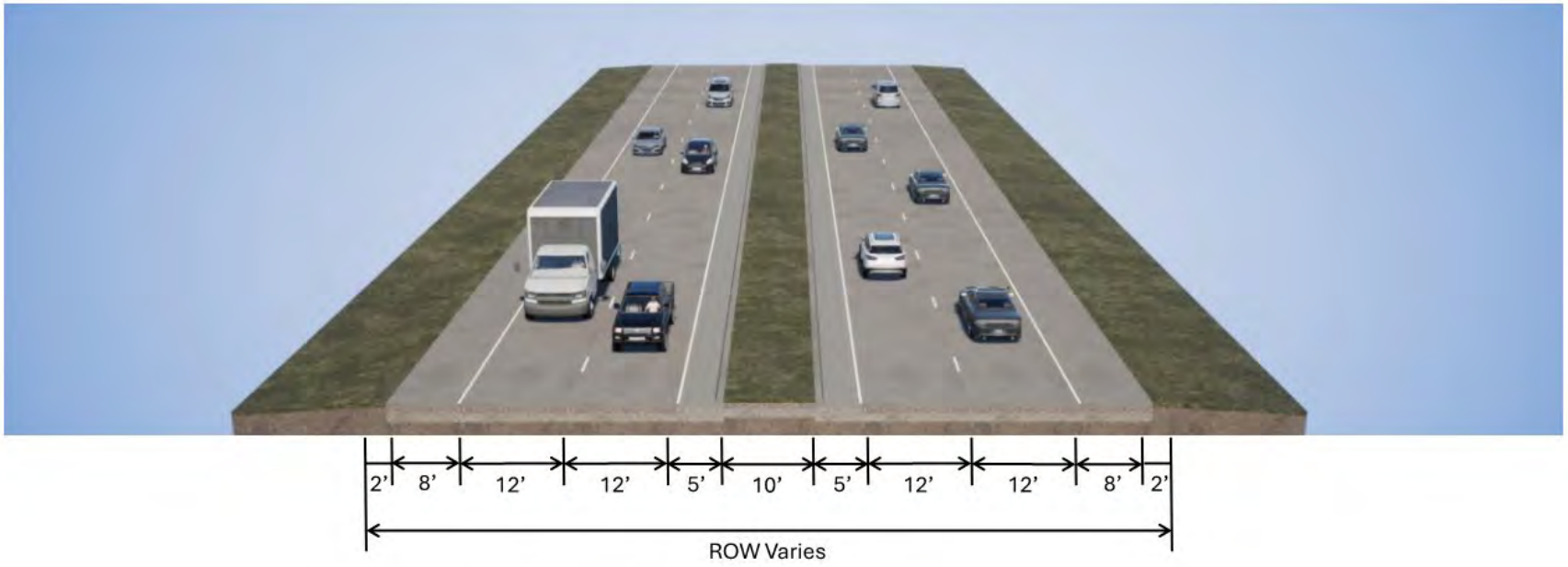
The next steps in the study will be to develop a set of application steps and toolbox for WE-STEP standards implementation, test the toolbox approach on soon-to-be-developed corridors like 156th Street and 204th Street, and run network scenarios with the MAPA travel demand model when it is available in late 2024.

# Appendix – Typology Cross-Section Illustrations

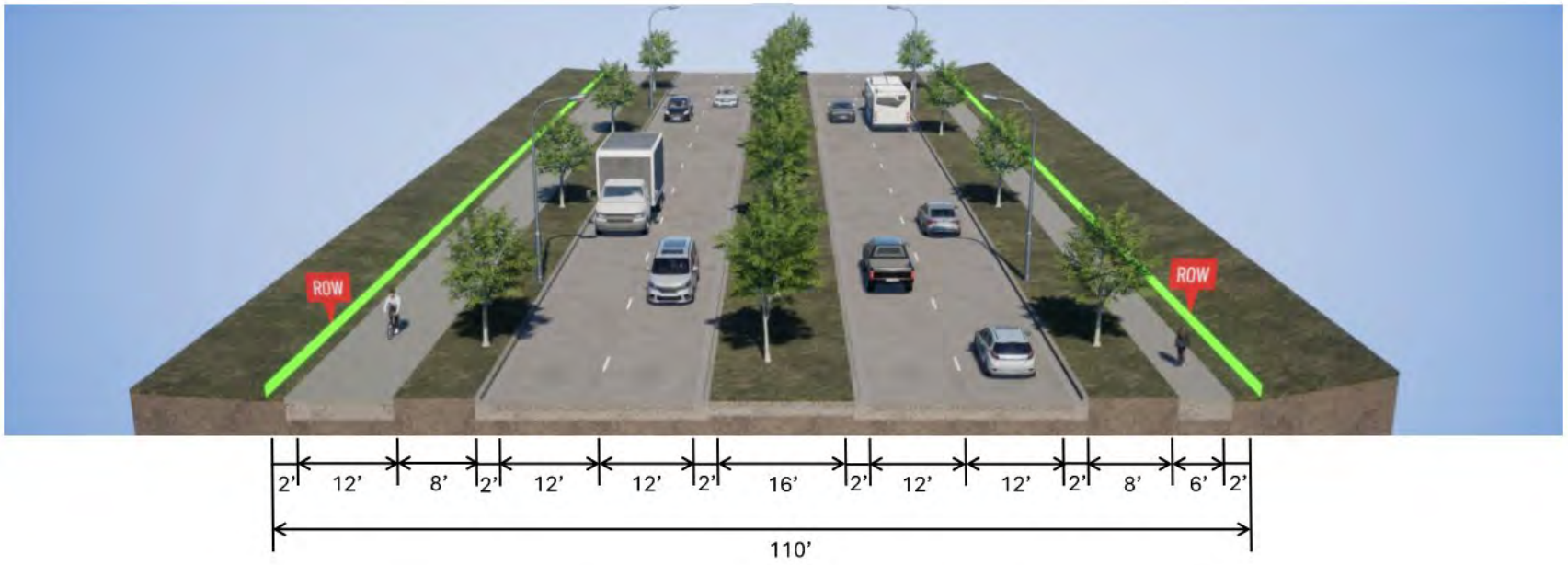
## Arterial 1.1 – Ultimate Cross-Section



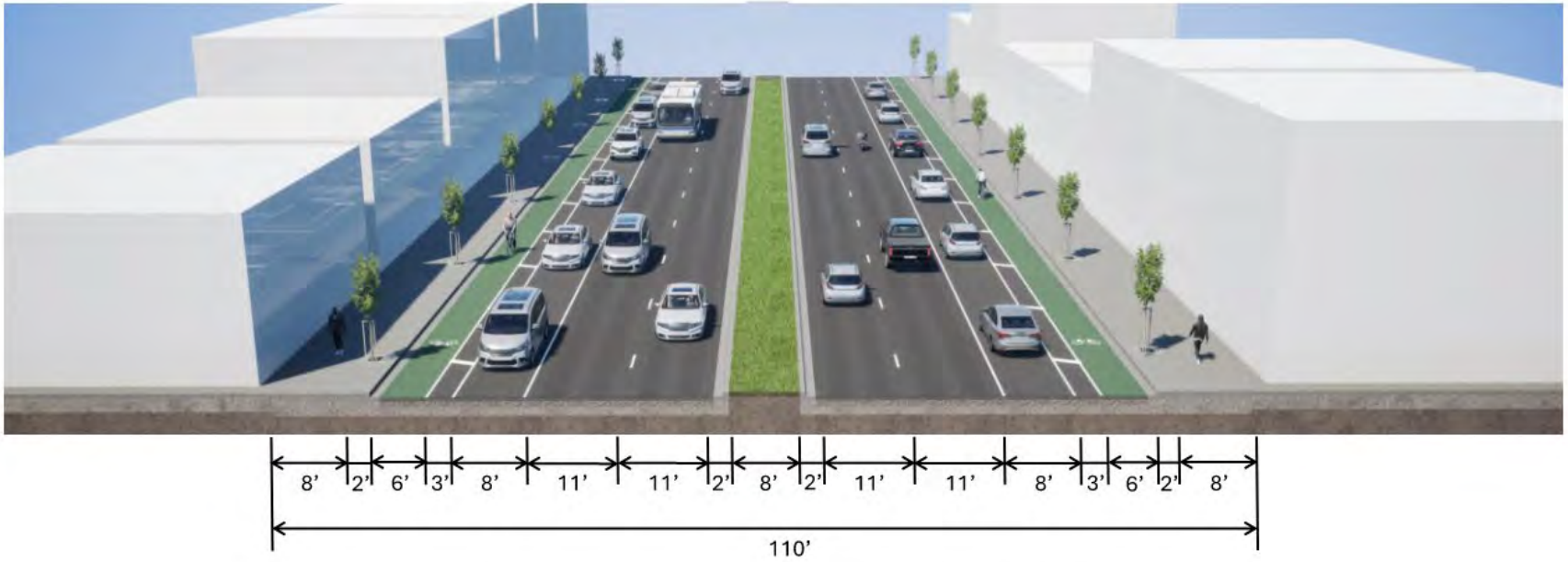
## Arterial 1.2 – State Highway / Expressway Ultimate Cross-Section



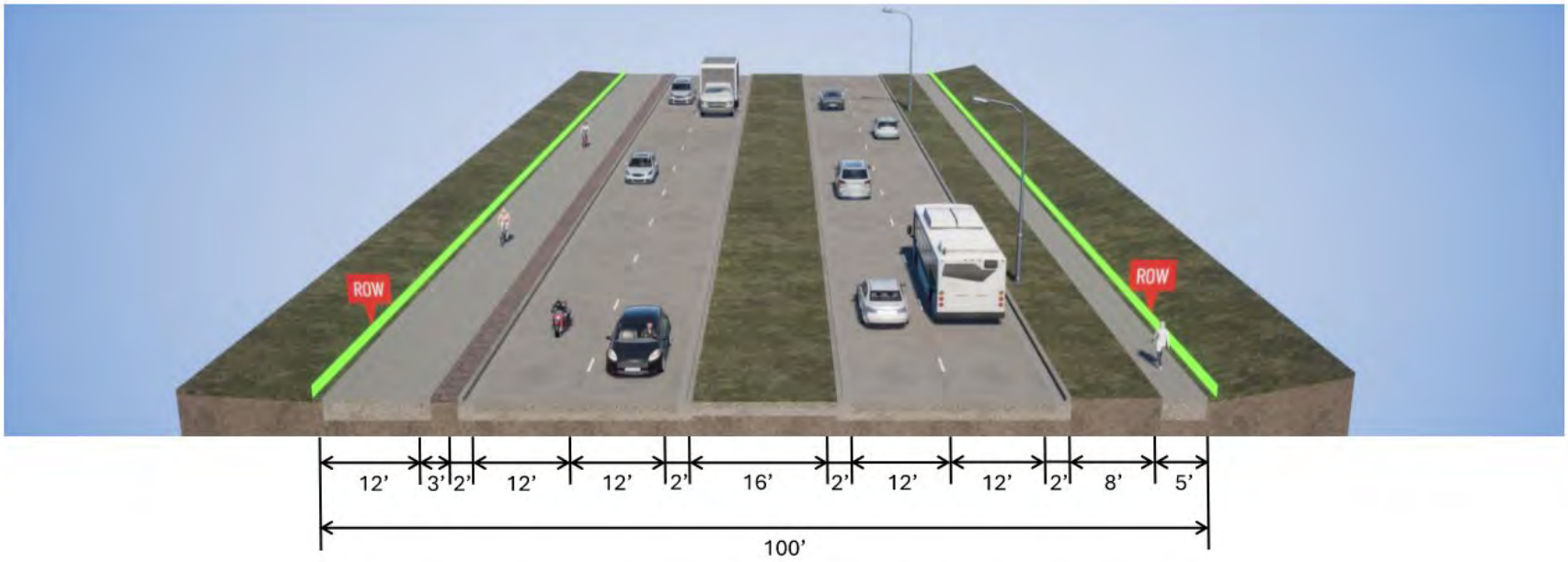
## Arterial 2.1 – Option A: Suburban Context Ultimate Cross-Section



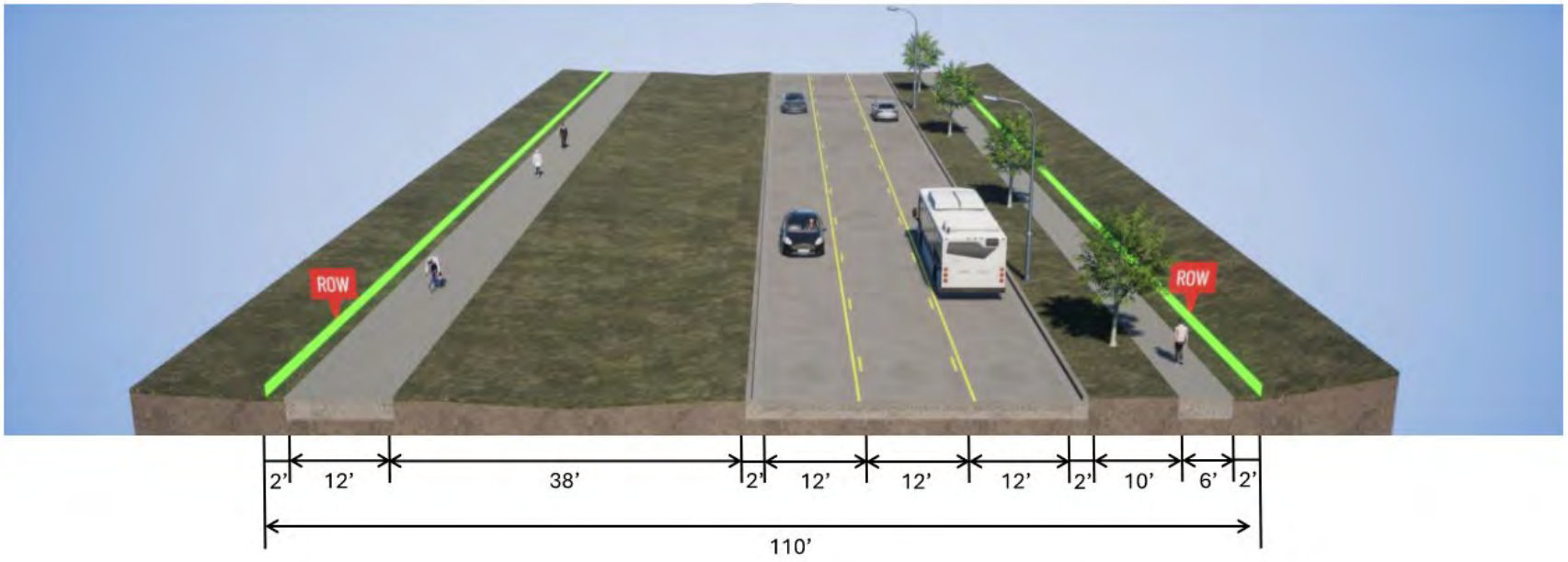
## Arterial 2.1 – Option B: Mixed-Use Urban Context Ultimate Cross-Section



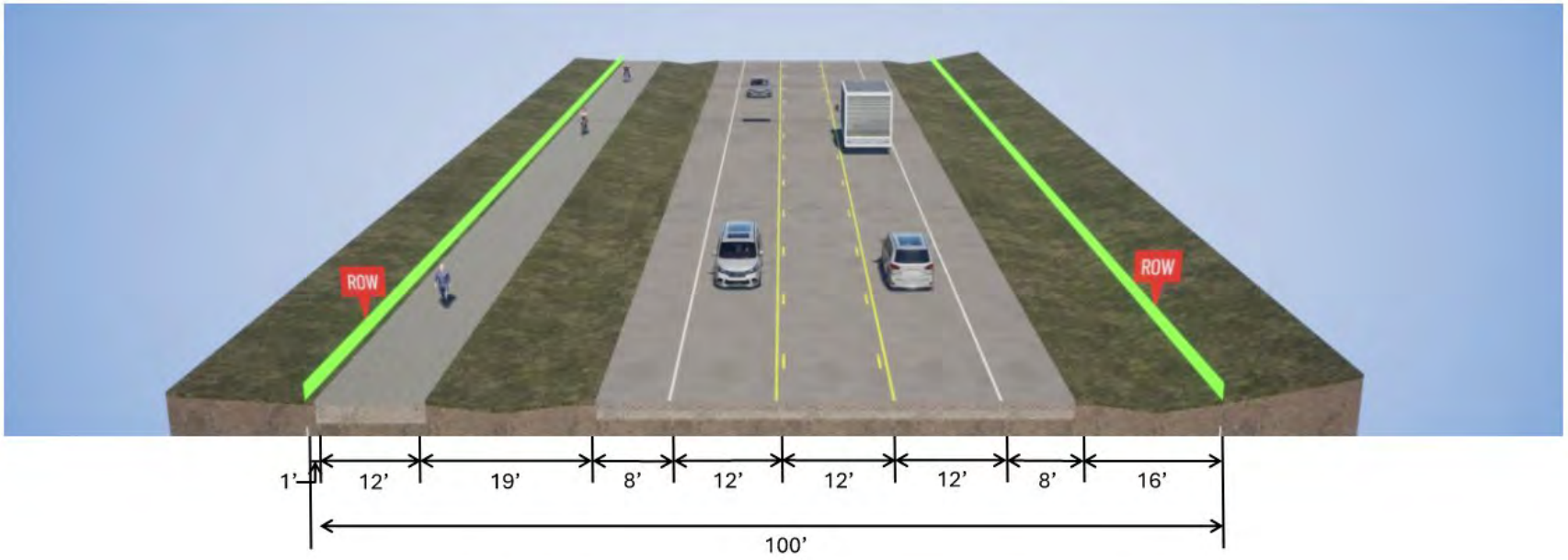
## Arterial 2.2 – Constrained Right-of-Way Ultimate Cross-Section



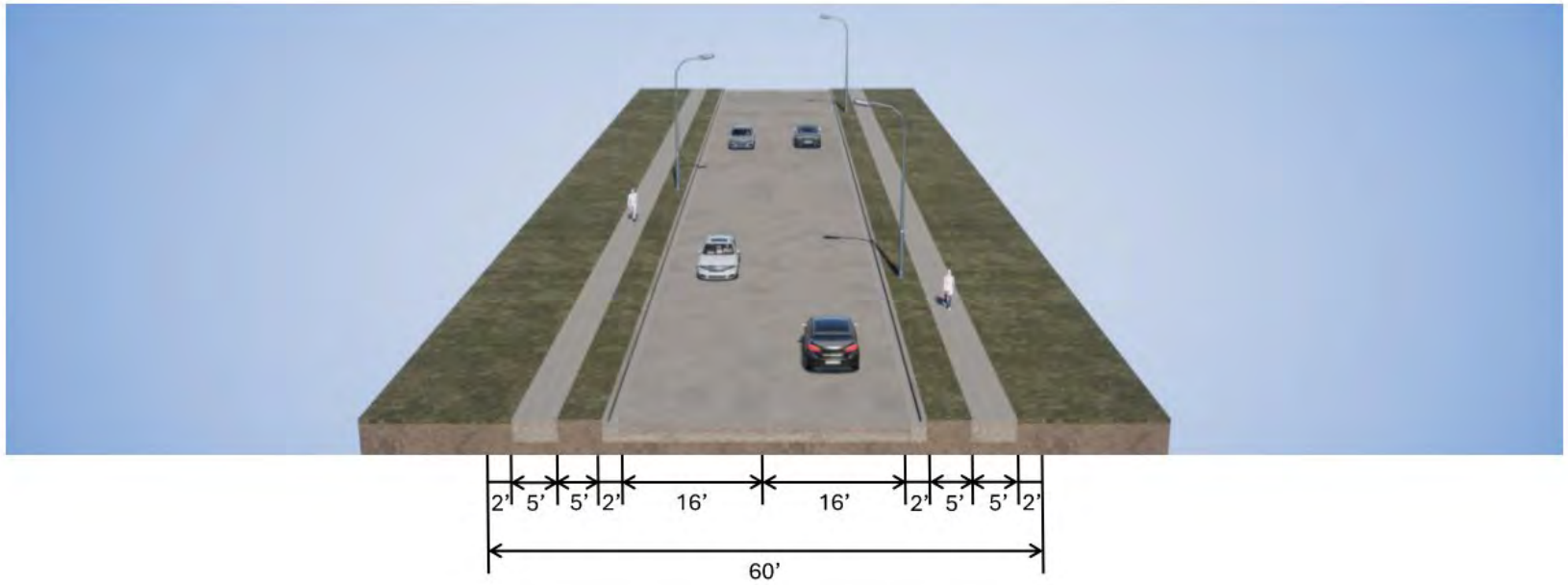
## Arterial 1 or 2 – Interim 3-Lane Cross Section



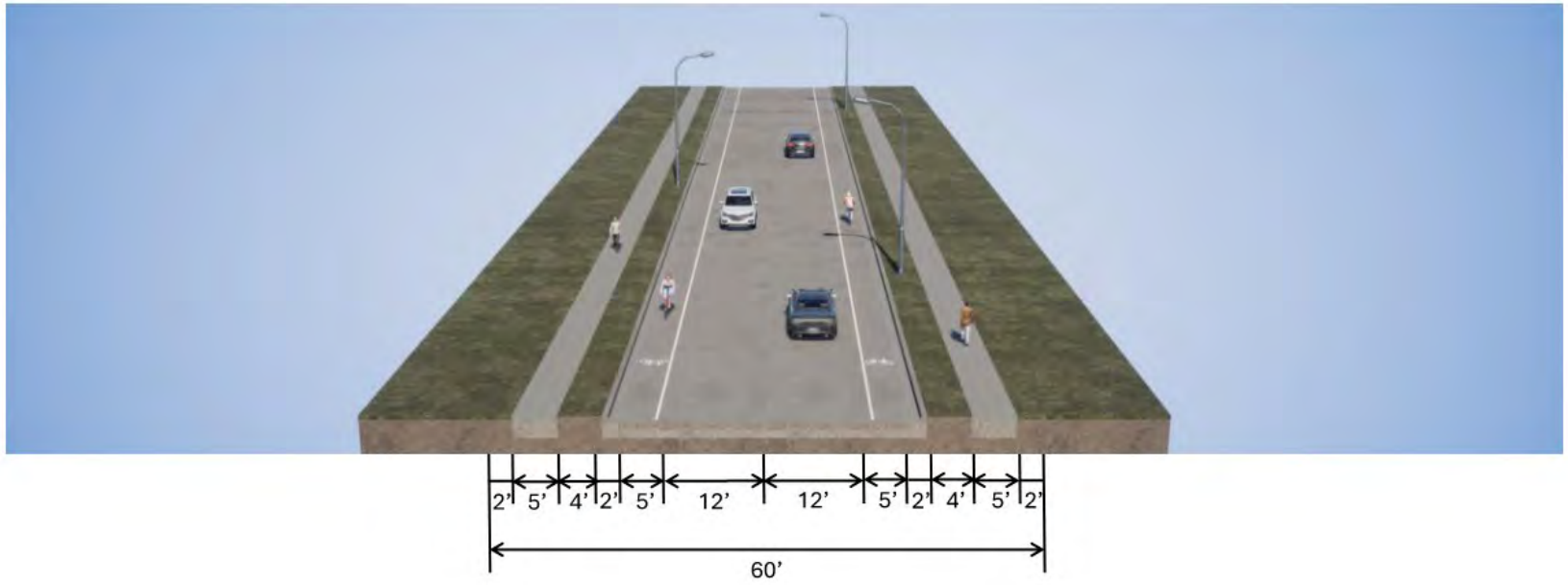
## Arterial 3 – Conservation Area Ultimate Cross-Section (if necessary)



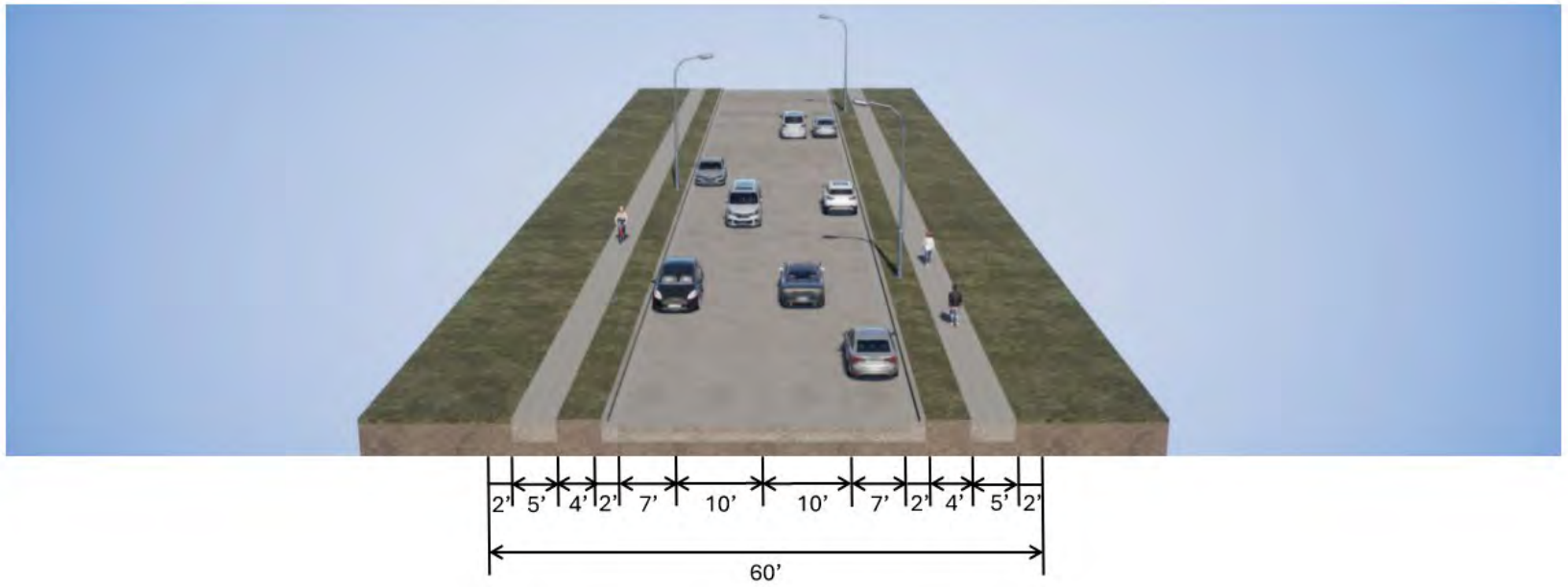
## Collector Option 1



## Collector Option 2 with Bike Lanes

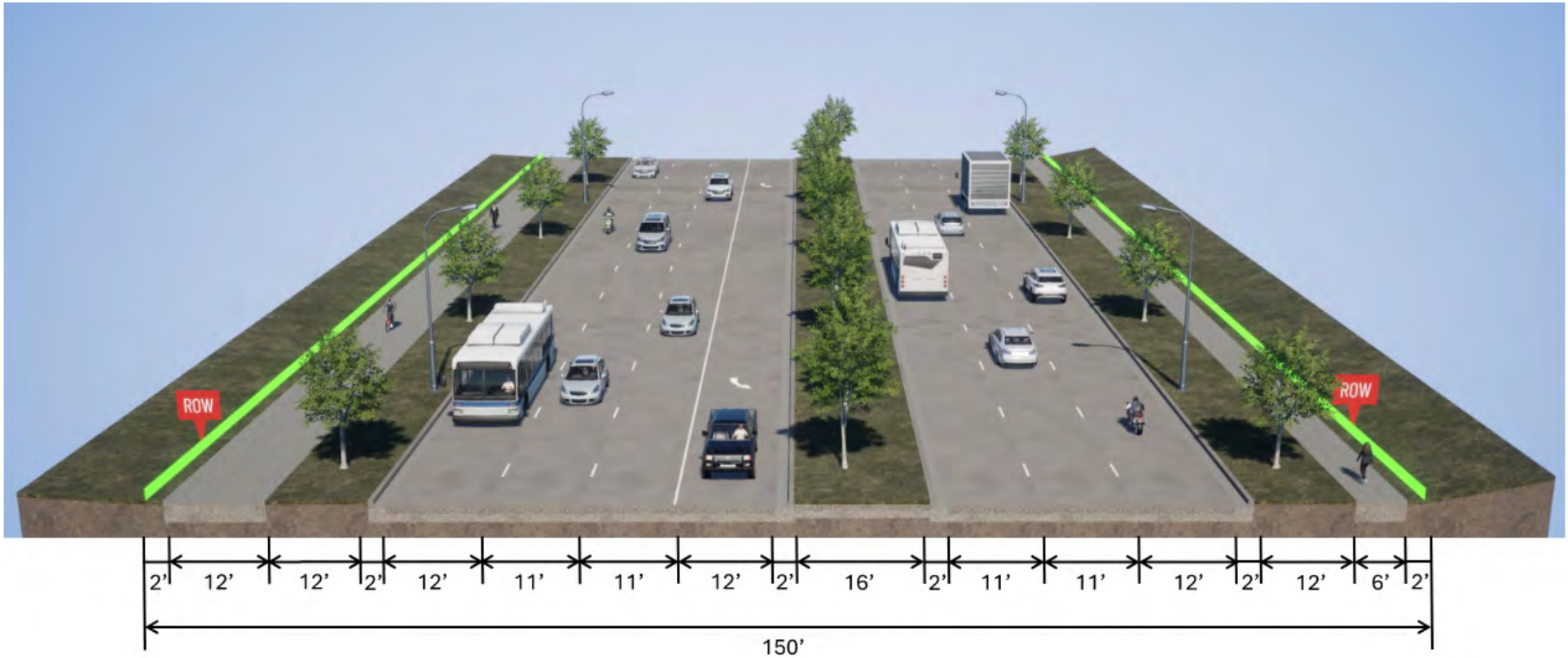


## Collector Option 3 with On-Street Parking



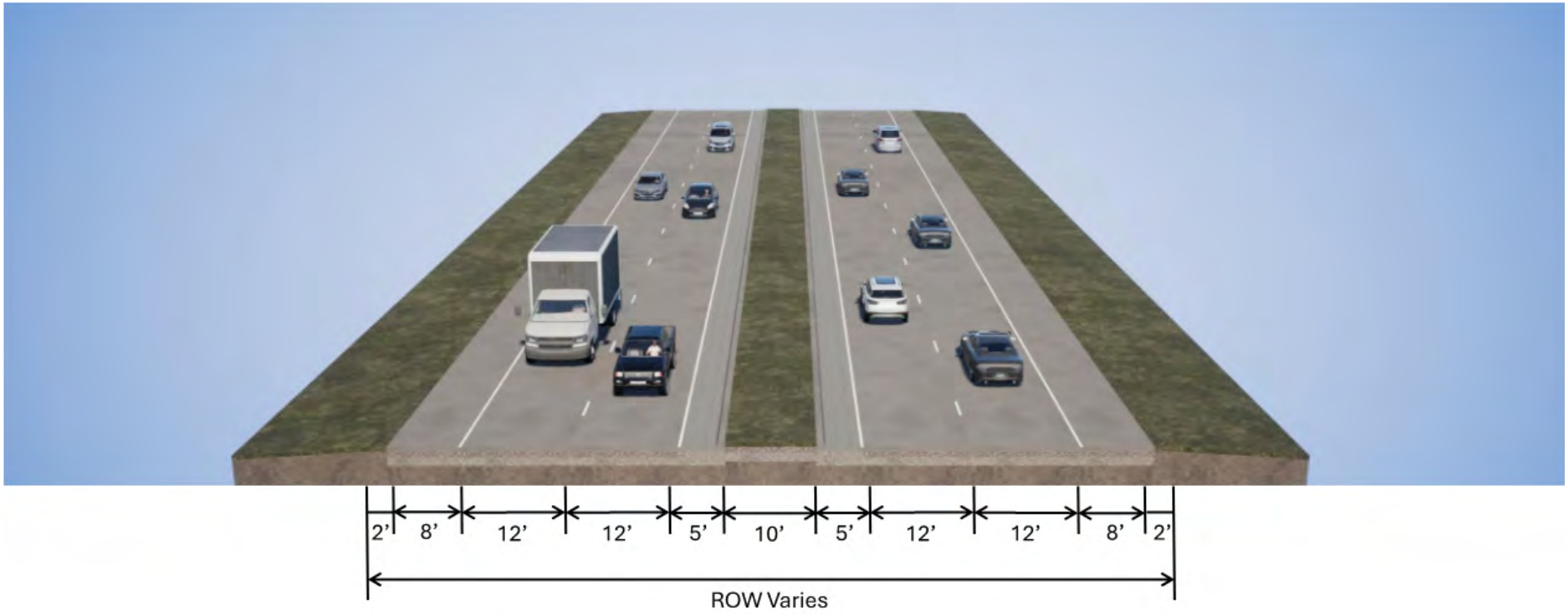
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 1.1 – Ultimate Cross Section



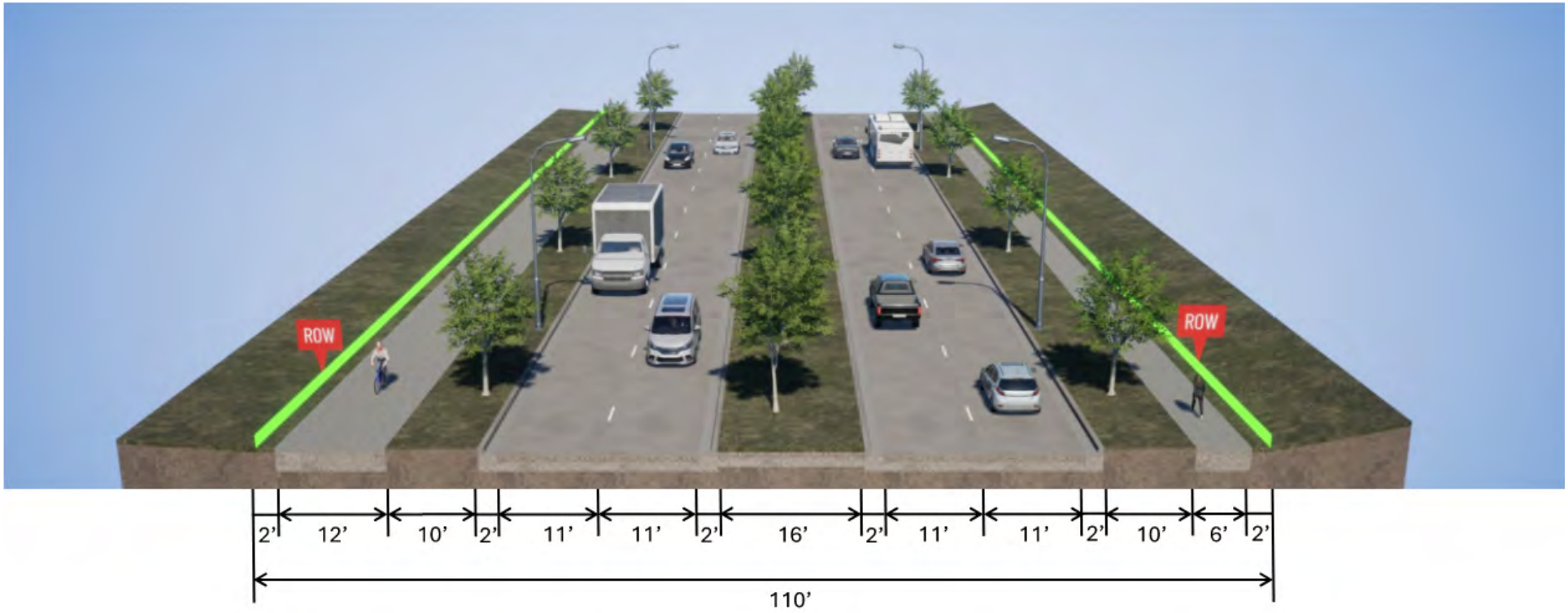
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Southern Sarpy Expressway – State Highway/Expressway Ultimate Cross Section



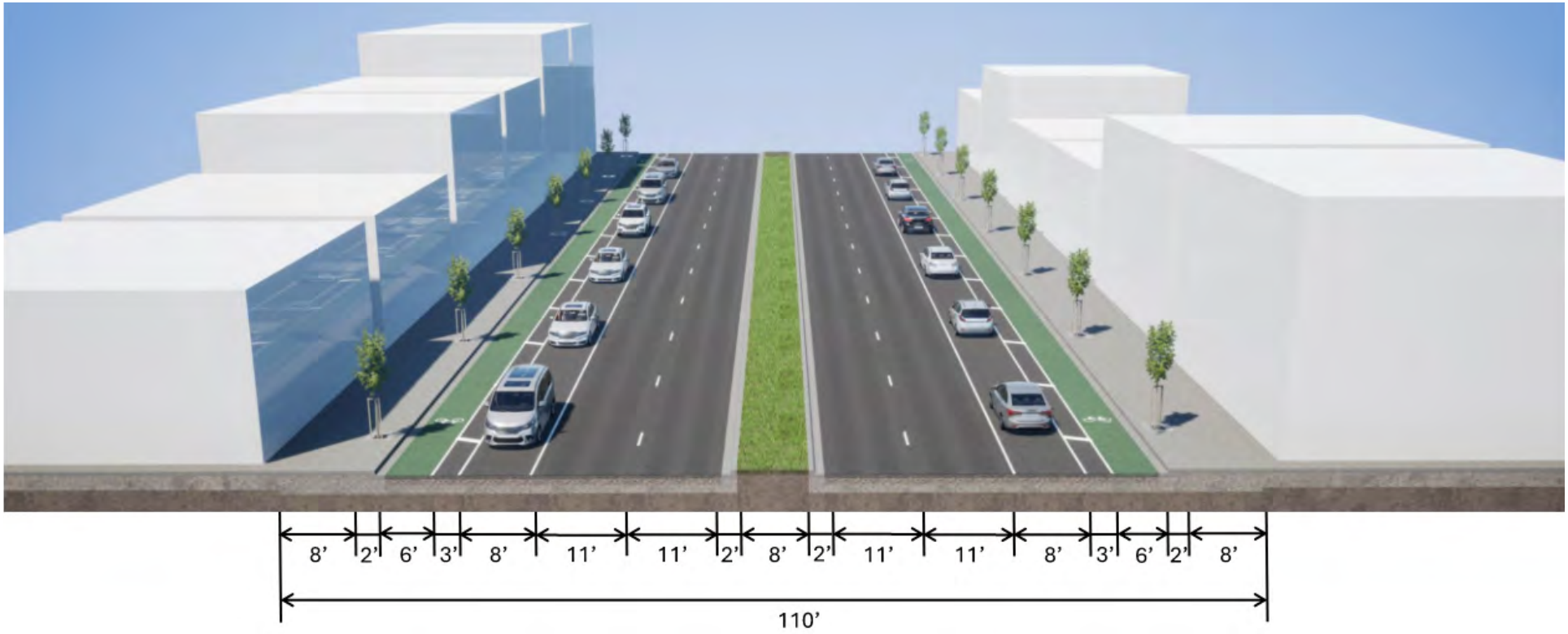
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 2.1a – Suburban Context Ultimate Cross Section



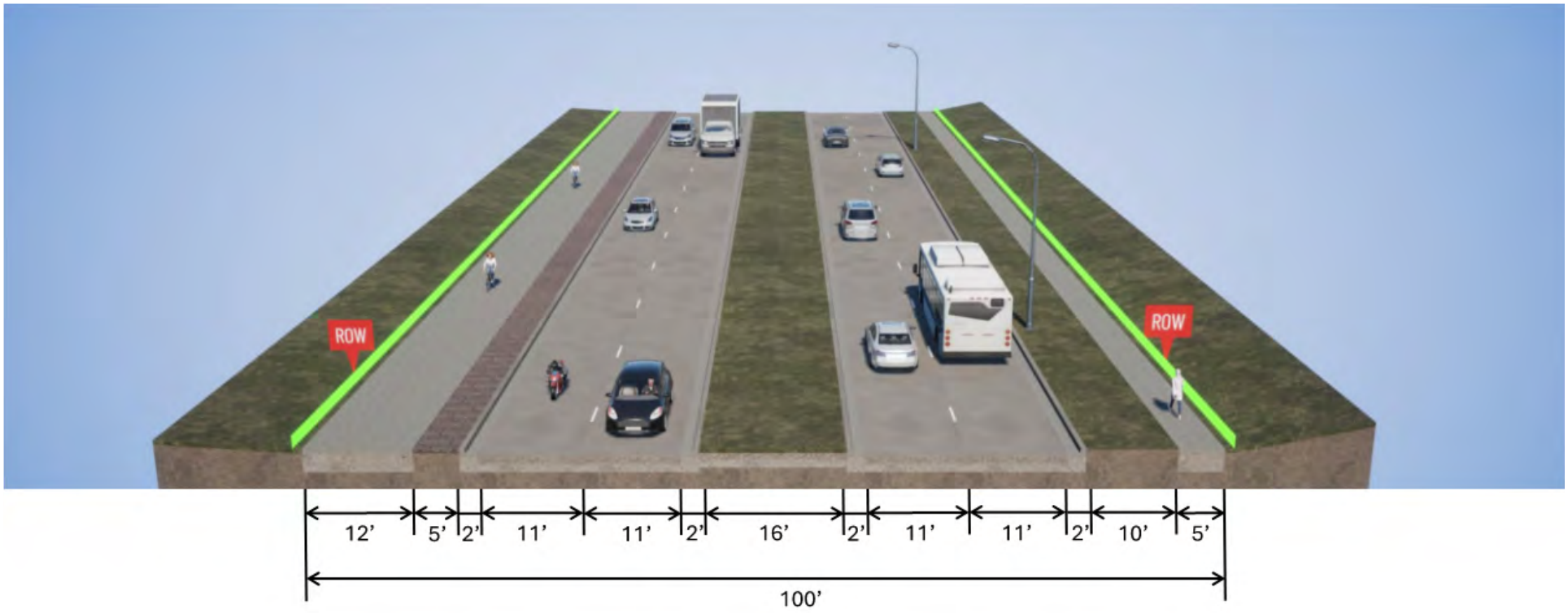
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 2.1b – Mixed-Use Urban Context Ultimate Cross Section



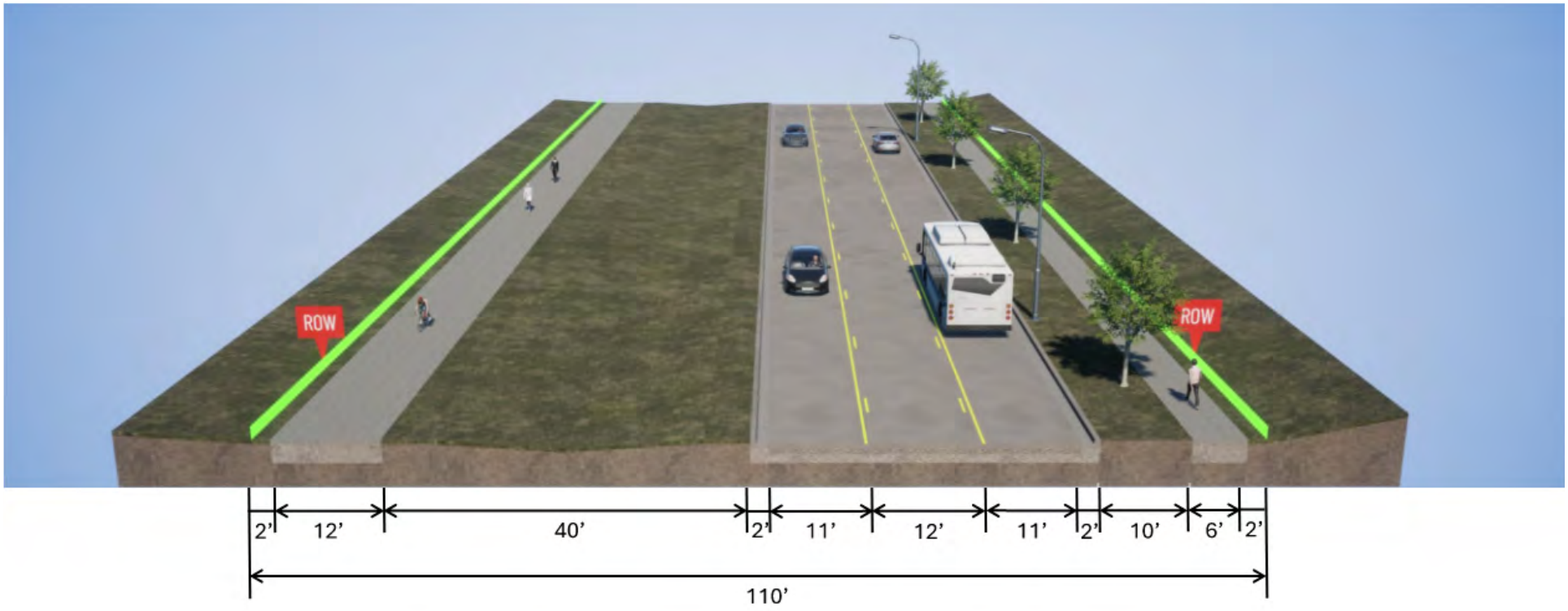
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 2.2 – Constrained ROW Ultimate Cross Section



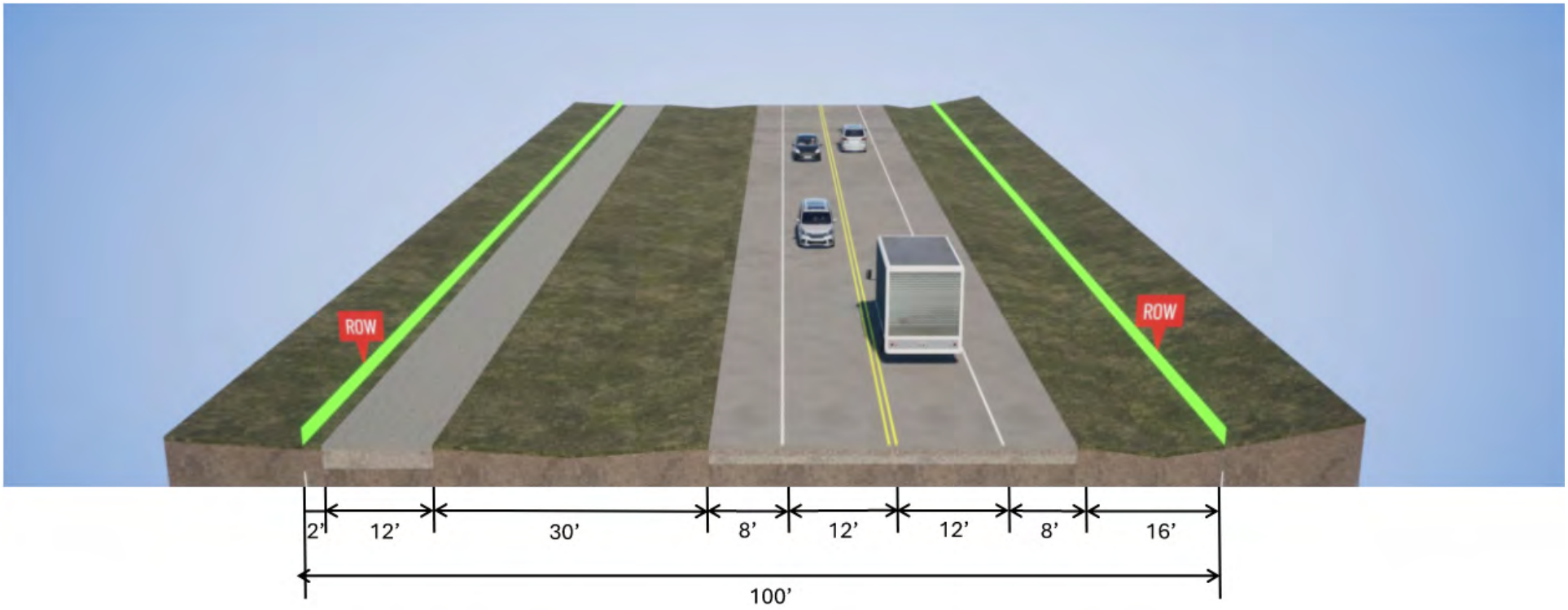
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 1 or 2 – Interim Three-Lane Cross Section



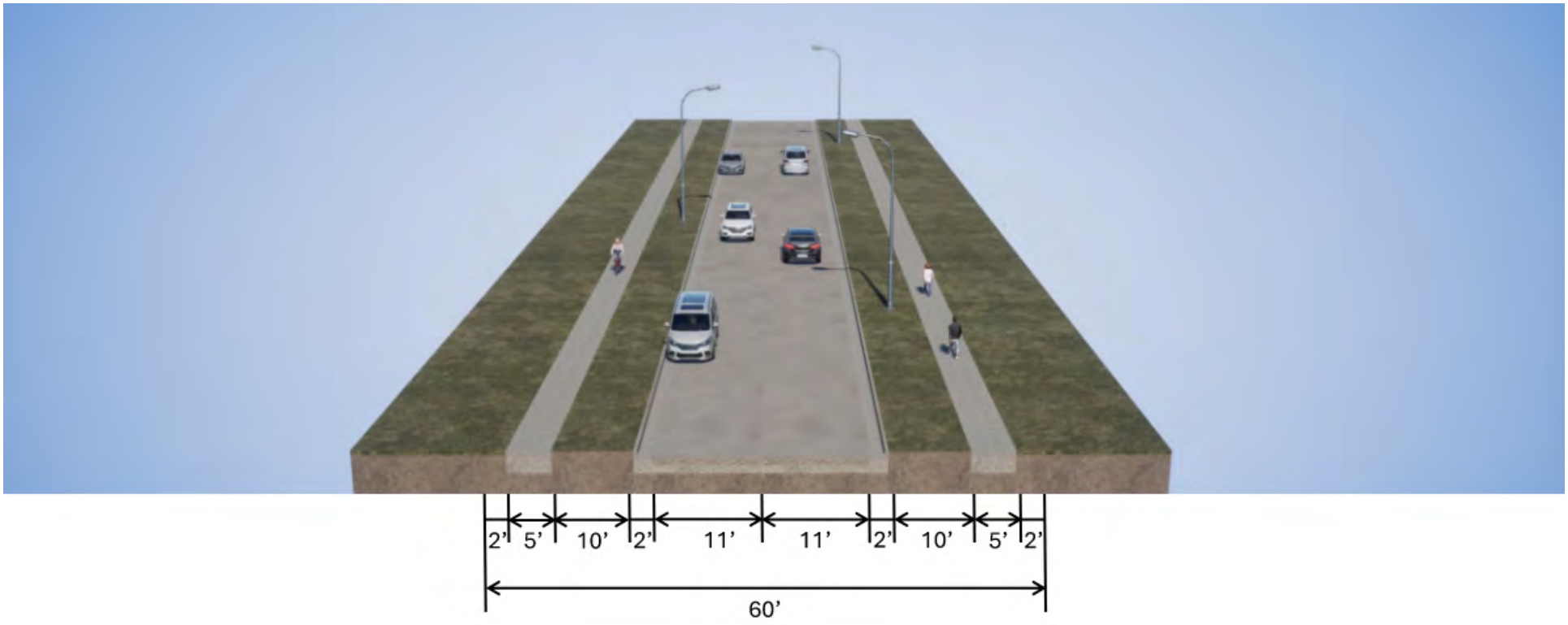
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Arterial 3 – Conservation Area Ultimate Cross Section (if necessary)



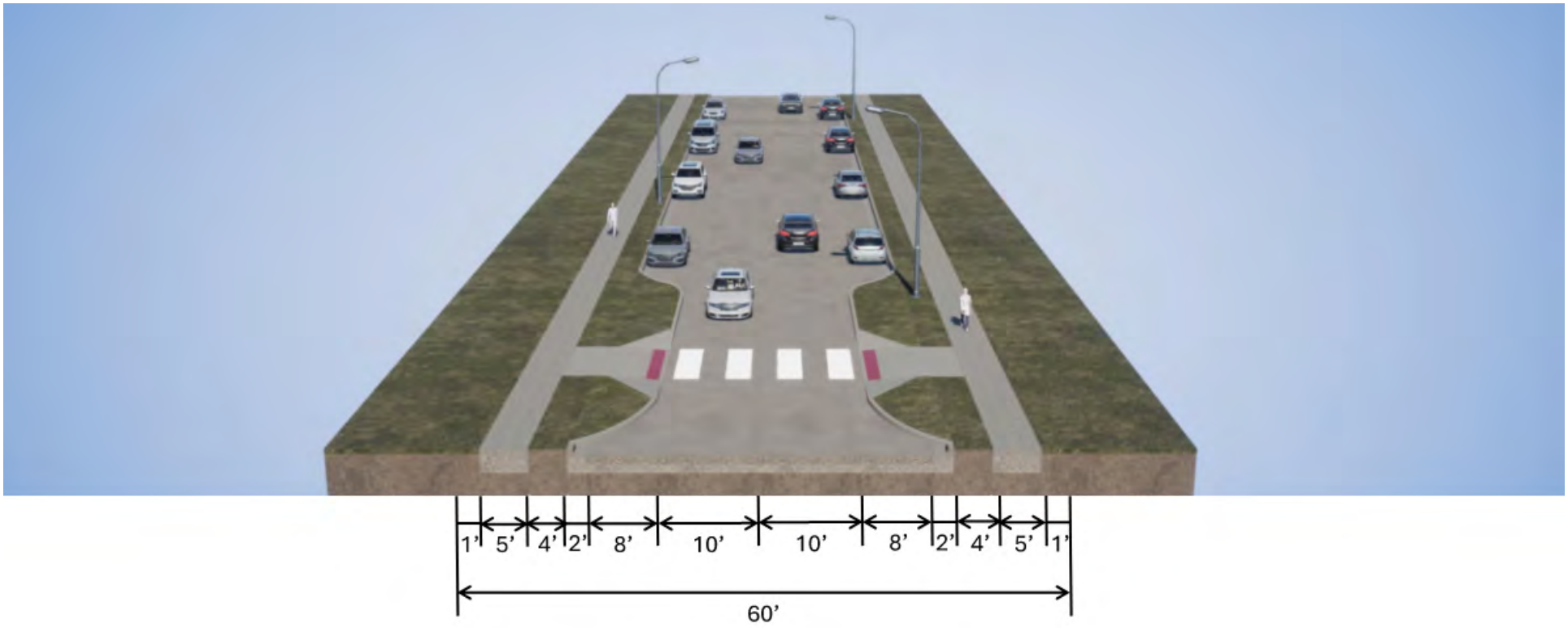
# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Collector Option 1



# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Collector Option 2 with On-Street Parking



# APPENDIX E: TYPOLOGY CROSS-SECTION ILLUSTRATIONS

## Collector Option 3 with On-Street Bike Lanes