Oddie Boulevard | Wells Avenue Corridor Study

FINAL

Corridor Report

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Introduction

Purpose

The purpose of the Oddie Boulevard/Wells Avenue Corridor Study is to identify multimodal transportation (bike, pedestrian, transit, auto) issues and solutions in the Oddie/Wells corridor, which can help to facilitate a more livable, safer, and more vibrant community in the Truckee Meadows. The study and improvements are being planned in concert with the redevelopment efforts currently underway in the City of Sparks.

Project Area

The Corridor extends from Kuenzli Lane in Reno to Pyramid Way in Sparks. The study area includes properties generally lying within 1/2 mile of the corridor. The corridor study includes two freeway interchanges (Wells/I-80 and Oddie/US 395). Two significant planning areas are located within the boundaries of the study: the University of Nevada growth area and Spark Redevelopment Area 2A.

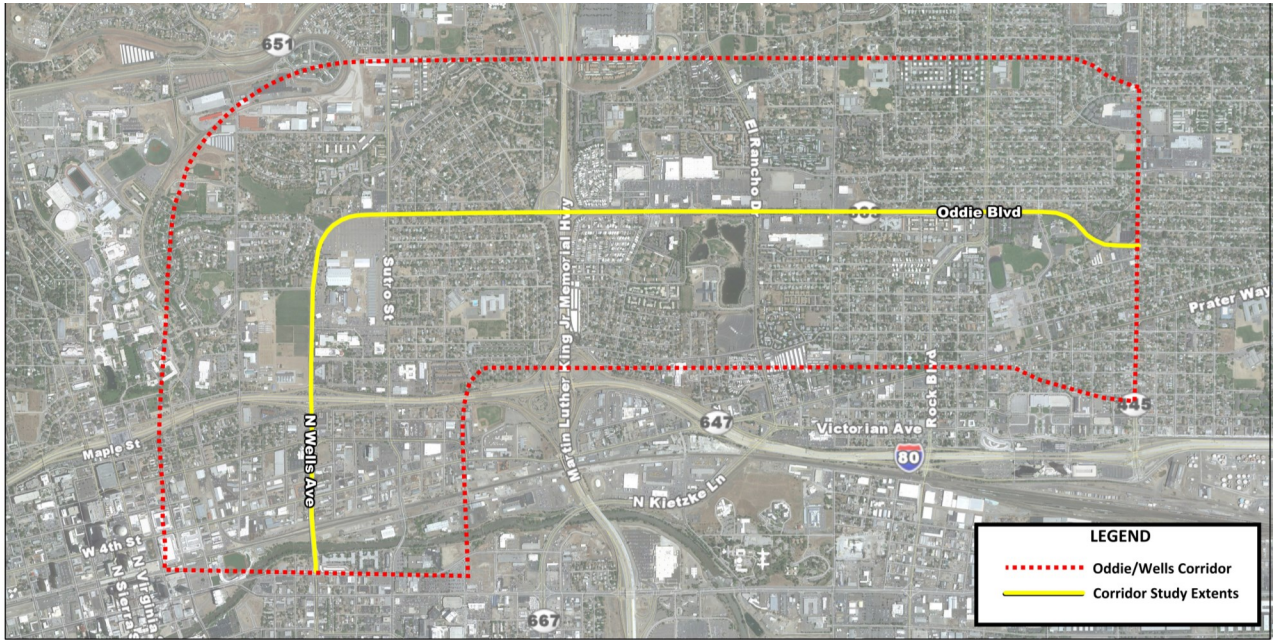


Figure 1 — Study Area

Vision for the Future

As the urban areas of Sparks and Reno continue to transform in the coming decades, the Oddie Boulevard/Wells Avenue Corridor remains as a key travel corridor for both the community and region. Through a combination of strategies and actions, the Corridor will become safer, more attractive, and better integrated with the surrounding neighborhoods. The Corridor will offer convenient travel choices, including walking, cycling, and transit. Corridor improvements will support and catalyze economic development and redevelopment of the greater Sparks Redevelopment Area 2A, Livestock Events Center, and University of Nevada, while enhancing the quality of life for area residents by improving accessibility, safety, and visual character.

The Oddie Boulevard/Wells Avenue Corridor has significant opportunities for revitalization. As a former State Highway, the roadway exhibits the minimalist characteristics (i.e. pedestrian amenities, lighting, etc.) of highways of past decades, as well as limited opportunities for access to adjacent neighborhoods and properties. The existing roadway improvements have limited sidewalk and bicycle facilities and very limited aesthetic improvements (i.e. landscape and street trees).

Many of the transportation and safety improvements in this plan stand on their own merits. However, in an era of increasingly limited public resources and an uncertain economic future, it is vital that public infrastructure investments be made where they can support other important community goals, such as economic development and community revitalization. Therefore, this plan targets investments at locations where revitalization is desired and possible.

The most significant opportunities for revitalization in the corridor exist in and adjacent to the City of Sparks Redevelopment Area 2A. Generally located on the north and south sides of Oddie Boulevard between Silverada Boulevard and Rock Boulevard, this area has been victim to a struggling retail market. Several big box retailers have left this submarket, leaving a large amount of commercial building space and acreage vacant. Economic and market trends are not likely to support these properties ever fully redeveloping as their former retail selves. With the proposed multi-modal improvements, streetscape enhancements, and increased access in this Corridor Plan, there will is a unique opportunity to respond to economic and demographic changes occurring in the region and to transform the area into one or more mixed-use nodes with neighborhood serving commercial, public facilities, and diversification of the existing housing stock.

An additional significant opportunity for revitalization in the corridor exists at the Livestock Events Center. This area has been identified in the University of Nevada's Master Plan as the campus growth area and the location of the future collegiate athletics center, including a new indoor arena. This future opportunity carries additional support service demands, such as restaurants, bars, and commercial uses. This can create a sports related entertainment district on the east edge of the University campus and Downtown Reno. With the proposed improvements to bicycle and pedestrian facilities adjacent to this area, a greater sense of walkability and connectivity with the Downtown and University main campus can be encouraged.

Finally, with the proposals provided in this Corridor Plan, the existing residential areas, located adjacent to the two revitalization areas described above, will gain increased mobility options via the introduction of separated sidewalks, separated or buffered bike lanes, landscape, hardscape and street trees, coordinated pedestrian lighting, and uniform fencing treatments. This will help to enhance the livability of these neighborhoods while also improving their value to existing and future residents who seek to live in neighborhoods that are central to the region's jobs and well served by parks, retail services, and area institutions.

Goals

To support the Vision for the corridor, the following Goals for the study and the Corridor have been established. The goals have been developed through coordination with the project Technical Advisory Committee and by engaging the public. These goals will guide the development of alternatives for improvements within the corridor and establish a long term, 20 year, vision for the future of the corridor.

- Create an "urban, mixed-use" feel on Oddie Boulevard
- Target early development at key nodes where investment can be leveraged to build market momentum
- Maintain strong connection with the University on Wells Avenue
- Create safer streets that are more inviting for families, pedestrians, and bicycles
- Slow traffic down to encourage people to spend time at businesses in the corridor
- Increase safety by improving street lighting
- Improve bicycle facilities
- Improve pedestrian realm of the street
- Create an identity for the entire corridor with coordinated individual themes for Reno and Sparks
- Allow for all travel modes to move smoothly and safely
- Create infrastructure improvements that help catalyze private investment into the corridor
- Enhance pedestrian and bicycle access to adjacent neighborhoods
- Utilize NV Energy decorative streetlight standards in lieu of specialized lighting treatments
- Provide low maintenance landscape treatments

Figure 2 — Simulation of Montello Street Intersection

Summary of Preferred Alternative

Incorporating the Vision and Goals as established by the Technical Advisory Committee, stakeholders and the public, the preferred alternative for the Oddie Boulevard/Wells Avenue Corridor creates a multi-modal, vibrant corridor poised for revitalization. The preferred alternative incorporates pedestrian and bicycle facilities separated from travel lanes throughout much of the corridor. Landscaped parkway planters and medians, in conjunction with coordinated hardscape, lighting and fencing will add character and an aesthetically pleasing look to the once stark state highway. The proposed alternative generally maintains existing lane configurations and includes pedestrian and bicycle facilities and streetscape amenities within the existing ample right of way.

The bicycle facilities proposed throughout most of the corridor will be unique to the Reno/Sparks region. The bike facilities, as proposed, will provide one-way cycle tracks on both sides of the street from Sutro Street to Rock Boulevard. The cycle tracks are located adjacent to the outside travel lanes of the street, but elevated and separated by a curb. The cycle tracks are also separated from the sidewalk by a landscaped parkway planter. The parkway planter discourages pedestrians/cyclist conflicts, while also providing shade from street trees for both pedestrians and cyclists. The result is a protected comfortable environment for both pedestrians and cyclists. For areas in the Corridor that will not have the cycle track option (Kuenzli to Sutro and Rock to Pyramid) wide bike lanes are proposed with a striped buffer. It is anticipated that the Oddie

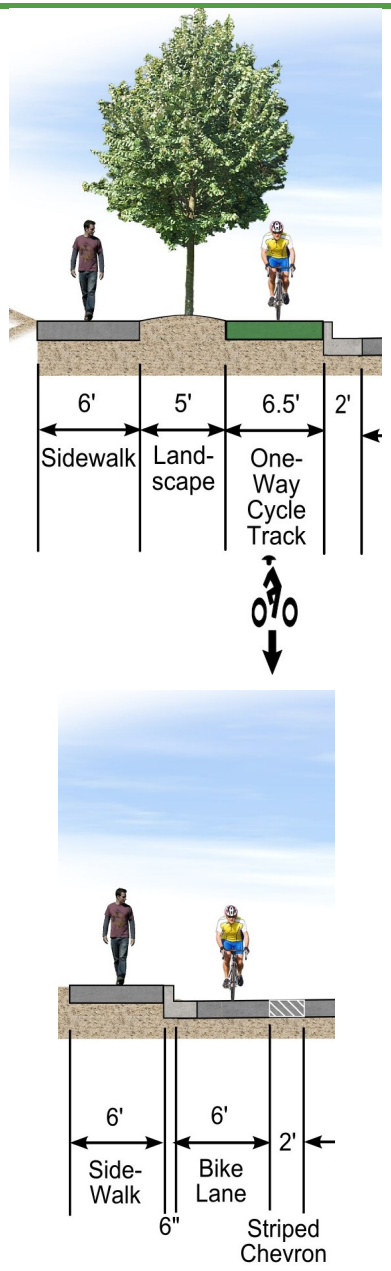


Figure 3 — Bicycle Facility Options

Boulevard/Wells Avenue Corridor will be a primary bicycle route connecting the highly populated residential areas of Sparks to Downtown Reno.

Transit service improvements are also contemplated with the corridor study. Transit service does not currently exist on Oddie Boulevard, due in large part to the lack of facilities to support transit (i.e. sidewalks). The roadway improvements proposed in this Corridor Plan, in conjunction with future transit supportive land development and redevelopment, there will be an increased likelihood that this corridor may become a transit corridor.

Public Engagement

The project team conducted a thorough public outreach campaign for the Corridor Study. The project team assembled and conducted monthly Technical Advisory Committee meetings, two public open houses, and several focus group stakeholder meetings, as well as soliciting comments online via the project website. The input obtained from these outreach endeavors has helped to guide the decision making and preferred alternative for the corridor. Public workshops were promoted via the project website (www.OddieWells.com), through distribution of flyers to businesses along the corridor, as well as known interest groups, postcard mailers to residents within 300-feet of the corridor, and advertisements in the Reno Gazette Journal. All flyers and postcards produced for the project were provided in both English and Spanish. Additionally, Spanish speaking project team members were at each of the public workshops to aid in overall project communication.

The project Technical Advisory Committee (TAC) consisted of: RTC, City of Reno, City of Sparks, NDOT, Truckee Meadows Regional Planning Agency, Washoe County, Washoe County School District, and area business representatives.

Following is a summary of the two public open houses, stakeholder meetings, and their impact on the overall corridor plan.

Community Workshop #1—June 20, 2012

The initial public workshop was held at the Larry Johnson Community Center on June 20, 2012. The open house style format workshop was intended to solicit feedback from the public on the overall goals for the corridor, transit options, roadway alternatives, and redevelopment ideas. Also, participants were encouraged to provide feedback on additional access to adjacent neighborhoods and properties. Approximately 17 people attended the meeting.

At a station dedicated to the project goals, participant were asked to vote for the three goals that were most important to them for this corridor. Figure 4 demonstrates the participants preferences:

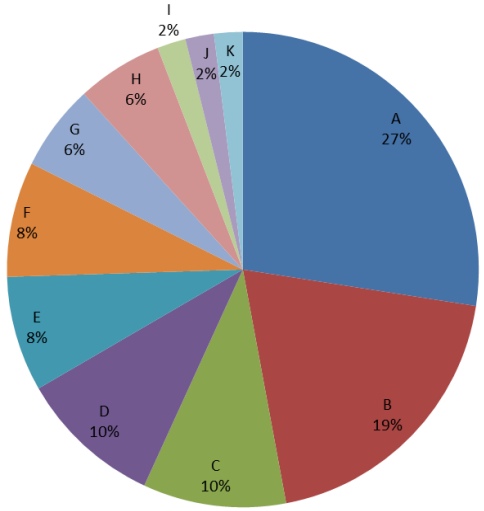


Figure 4 — Project Goals Results

	Votes	Goal
A	14	Create safer streets that are more inviting for families, pedestrians, and bicycles
B	10	Improve bicycle facilities
C	5	All travel modes moving smoothly and safely; good lighting, amenities, and cultural landmarks that have been preserved
D	5	Create infrastructure improvements that help catalyze private investment in the corridor
E	4	Slow traffic down to encourage people to spend time at businesses in the corridor
F	4	Increase access to adjacent neighborhoods for greater neighborhood circulation
G	3	Recreate a “main street” feel on Oddie Boulevard
H	3	Improve pedestrian realm of the street
I	1	Maintain strong connection with the University on Wells Avenue
J	1	Increase safety by improving street lighting
K	1	Create an identity for the entire corridor with coordinated individual themes for Reno and Sparks

At another station, participants were asked their preference between two different alternatives for the various segments of the corridor. Both of the options proposed four travel lanes, bike lanes, sidewalks, and landscaped medians. Generally, Option A included bike lanes that were attached to the outside travel lanes, with very wide sidewalks and street trees located in the sidewalk. Option B included both a cycle track and sidewalk separated from the outside travel lanes by a landscaped parkway strip. The overwhelming preference was for the Option B, most notably because of the separated bike facilities. The chart on the following page shows the outcome of the preference voting by participants.

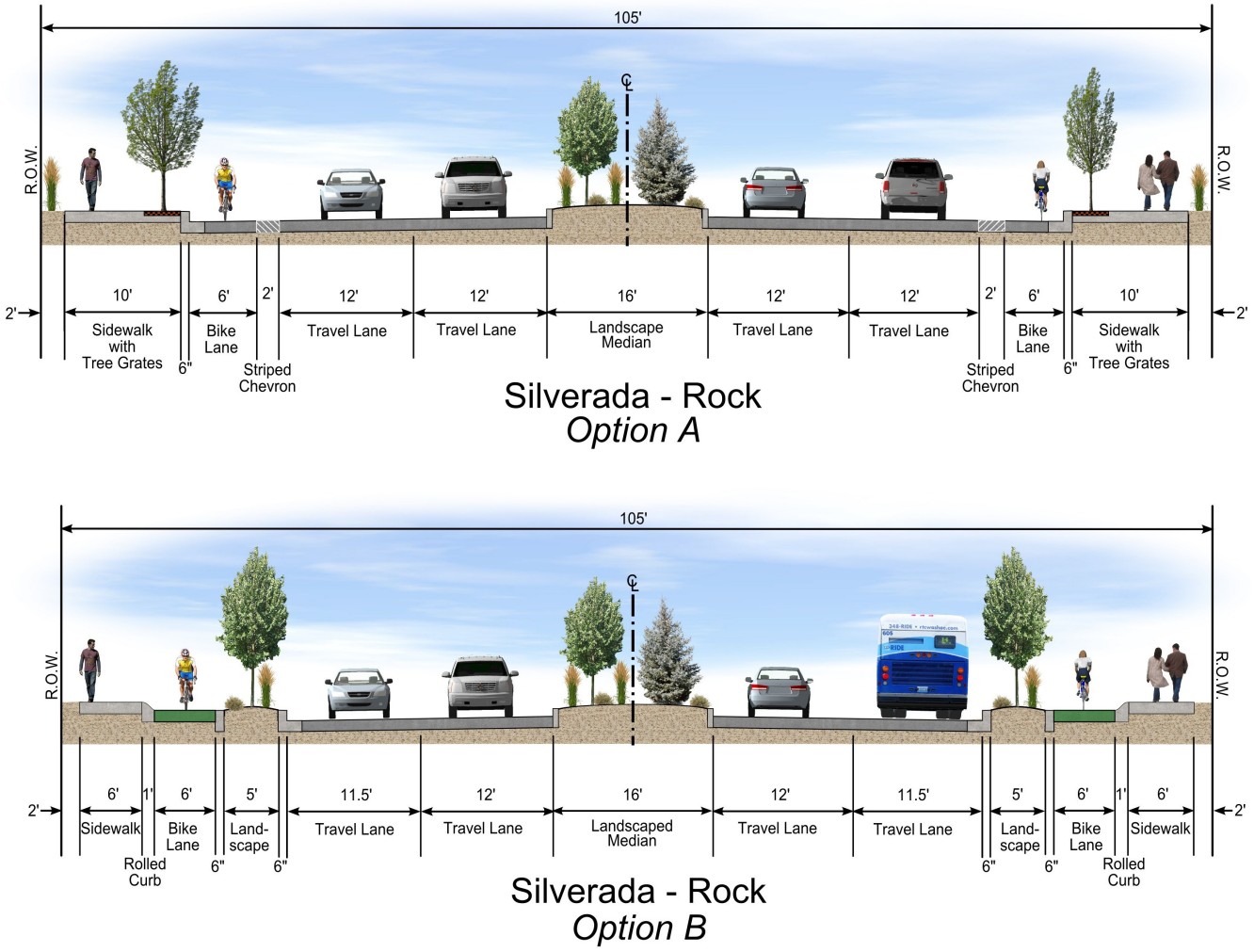


Figure 5 — Example of Options Proposed at Public Workshop

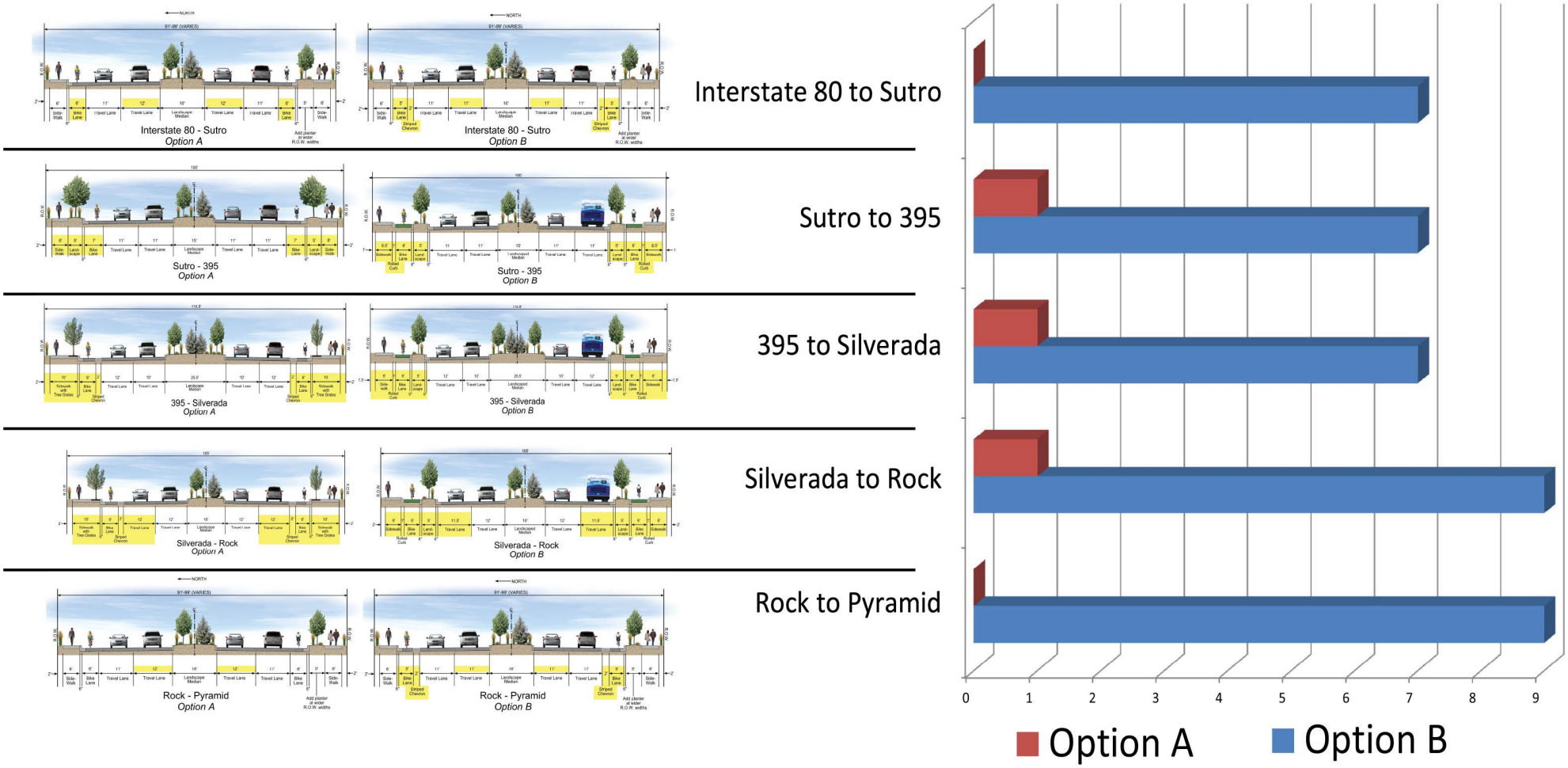


Figure 6 — Public Preferences for Alternatives

Finally, participants were able to comment on several opportunities and constraints in the corridor. These stations asked for feedback on the redevelopment opportunities in the Sparks Redevelopment Area 2A, as well as general access and mobility opportunities/constraints throughout the corridor.

With regard to the redevelopment potential, participants' comments generally revolved around their desire to see a mix of uses, with pedestrian and bicycle amenities.

Figure 7 — Example of Redevelopment Area Comments Received at Public Workshop

Comments received on the overall corridor aerial exhibit addressed access, bicycle and pedestrian conflicts. Following is a summary of the comments received, categorized by subject:

Bicycle Network Improvements:

- Provide transition from Wells Avenue to I-80 multi-use path at I-80 interchange
- Provide bike lanes on Sadleir Way to connect Wells Avenue to University
- US 395 interchange presents difficulties to navigate with on/off ramp movements
- Several traffic signals in the corridor do not respond to bikes and include: El Rancho/ Greenbrae, Sullivan/Greenbrae, 12th/Oddie, El Rancho/Oddie
- Provide bike boxes to facilitate left hand turns for cyclists

Pedestrians:

- Maintain a walking loop around the County/ Livestock Events Center complex with landscaping as an amenity for County employees
- Many Sparks High School students utilize the Rock Boulevard cross walk

Access Management:

- Eliminate barriers (i.e. landscape) between roadway and create more access to existing commercial properties
- Incorporate the frontage road between Rock and Sullivan into Oddie and improve the intersection at Rock Boulevard
- Add right-in/right-out access to Oddie Boulevard for the Sparks United Methodist Church

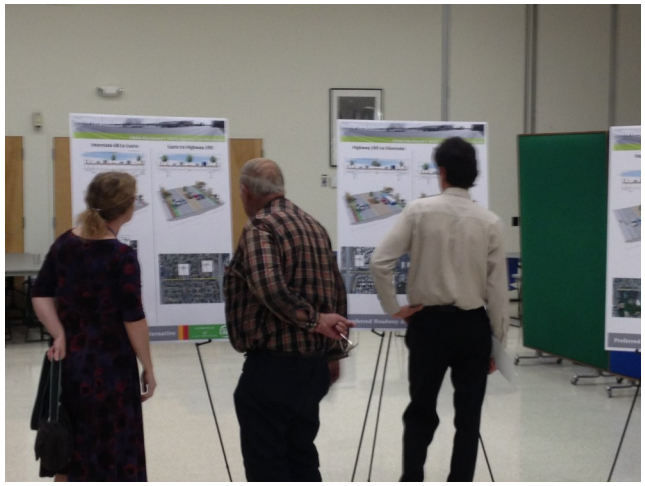
Figure 8 — Example of Comments Received at Public Workshop

Community Workshop #2—October 4, 2012

The second, and final, community workshop was held on October 4, 2012 at the Washoe County Senior Center. Similar to the first workshop, the second was an open house style format. The goal of the second workshop was to seek confirmation of the preferred alternative for the roadway, landscape treatments, as well as transit improvement options. Participants were not asked to vote on any alternatives as in previous meetings, but rather were encouraged to fill out comment cards if they had additional information and/or issues to share with the design team. Eleven people attended the meeting with only two providing comment cards, with the following comments received:

- Do not use bulb outs at crosswalks on Wells between I-80 and Sutro
- Keep the most trees/landscaping possible
- Keep the green cycle track
- Open access to neighborhoods
- Put in "parklets" or benches next to trees
- Have bike actuated signal crossings
- Separate bike/cars with buffered bike lane

Generally, participants provided verbal comments of approval for the proposed direction of the project. The preferred alternative roadway sections and transit recommendations as provided in this report are identical to the materials presented at the second community workshop.



Community Workshop #2

Preferred Alternative Roadway Configuration

Overall

The preferred roadway alternative for the Oddie Boulevard/Wells Avenue Corridor maintains the existing four lane configuration and utilizes the ample existing right of way to provide sidewalk, bike facilities, landscaped medians and parkways (where available widths exist). Individual detailed segment cross sections are provided in this chapter.

The overall goal for the corridor is to create a multi-modal roadway that both improves mobility and vitality for the businesses and residents along the corridor. Unique to this corridor is the introduction of one-way cycle tracks ("detached bike lanes") to a roadway in the Reno/Sparks region. Cycle tracks have been constructed previously in the region (Victorian Avenue for example), but never with a one-way, grade separated track as proposed with this corridor. The one-way cycle tracks are proposed between Sutro Street and Rock Boulevard. The figure to the right identifies these areas that will receive the cycle track versus the areas that will have more standard bike lanes. Please note, in areas with standard bike lanes, the proposed bike lanes are wide and typically have striped buffers to visually separate the cyclists from vehicle traffic.

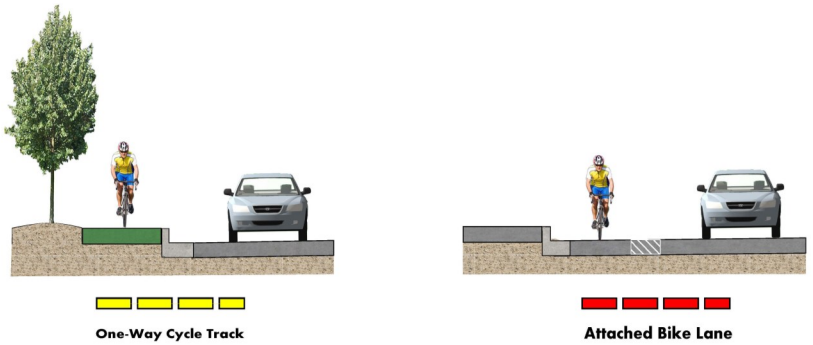


Figure 9 — Overview of Proposed Bicycle Facilities in the Corridor

Streetscape

Landscaping will drastically change the look and feel of this corridor. Nearly completely devoid of landscaping or street trees, the existing condition of the corridor does not compel drivers, pedestrians, or cyclists to have a sense of comfort while utilizing the corridor. Several landscaping concepts were contemplated with the Technical Advisory Committee. The criteria for the landscape treatments centered around pedestrian/cyclist comfort and ease of maintenance. Two landscape options were identified as preferred for the corridor. Option 1 provides a more traditional streetscape adjacent to the sidewalk, with street trees and hardscape in the medians. Option 2 is a more minimalist application, utilizing decorative rock mulches, boulders and native shrubs for a low maintenance intensive option. Option 2 assumes that tree planter pockets with at least 3 trees will be spaced approximately every 300-feet where proposed in the corridor (both in medians and parkway planters). The space in between the planters may be treated with a low maintenance hardscape (i.e. rock mulch, decorative paving, etc.).

Both options include decorative streetlights. It was the consensus of the Technical Advisory Committee to utilize decorative streetlights that are readily available from the NV Energy list of decorative street lamps. It is recommended that the final street lamp selected should offer a decorative element with minimal thematic references.

Fencing is also an important component for unifying the aesthetics of the corridor. There are two different fencing types proposed in this corridor. First, an open view wrought iron fencing similar to that utilized at the Larry D. Johnson Community Center is recommended to replace the existing chain link fence at Paradise Park. This type of open view wrought iron fencing will identify and coordinate these civic use types within the corridor.

The second type of fencing proposed in the corridor may be utilized on residential properties. Existing residential adjacent to the corridor (primarily single family) has greatly varied fencing types from wood, to chain link, to other more, creative material uses. This variation in fence type is an example of the "broken window affect", where properties' degrading condition become somewhat contagious, thus bringing down the overall condition of the neighborhood. By providing unified fencing along the right of way, the adjacent neighborhoods will receive an immediate face lift and may help inspire rejuvenation within the neighborhood. Two types of residential fence types have been proposed. Because a noise study is not a part of this corridor study and would be completed in future stages, it is unknown whether or not sound walls are required to mitigate roadway noise for the adjacent residential uses. The fence types proposed include a decorative wood fence (if sound attenuation is not required) and a concrete decorative sound wall (if sound mitigation is required in the future). Both options are recommendations and future material and design selections may vary with final design.

Additionally, the existing pedestrian bridge at Silverada Boulevard, based upon data collected with this study, may be removed, as the at-grade crosswalk provides an acceptable pedestrian crossing and the bridge is unnecessary. Several ideas have been discussed during this study to reuse the existing superstructure as a gateway feature for the surrounding community. One of the examples of reuse is shown in the landscape treatment examples provided on the following pages. In this example, the spiral ramps, which are separate structures to the bridge itself, are removed, with the bridge being reused as a gateway signage feature. This gateway feature may be an element that is commissioned to an artist for a future art installation on the bridge.

An example of the decorative streetlight options is shown below, with examples of the two landscape treatments and fencing types provided on the following pages.

Figure 10 — Fencing and Lighting Examples

Figure 11 — Option 1 Traditional Landscape Example

Figure 12 — Option 1 Traditional Landscape Example

Figure 13 — Option 1 Traditional Landscape Example

Figure 14 — Option 2 Minimal Landscape Example

Figure 15 — Wood Fence Option

Figure 16 — Wall Option

Traffic Operations Evaluation Frame Work

Level of Service Methodology

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term typically equates seconds of delay per vehicle, or travel time along a roadway segment, to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows. The complete methodology is established in the Highway Capacity Manual published by the Transportation Research Board.

Roadway segments were analyzed using the Average Daily Traffic Thresholds as outlined in the Washoe County Regional Transportation Commission's Regional Transportation Plan (approved 11/21/08). Using this methodology, level of service is estimated by comparing average daily traffic volumes to the LOS threshold values shown in Table 1.

TABLE 1
AVERAGE DAILY TRAFFIC LEVEL OF SERVICE THRESHOLDS BY FACILITY TYPE FOR ROADWAY PLANNING

Facility Type	Maximum Service Flow Rate (daily for given service level)				
Number of Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
Freeway					
4	≤ 28,600	42,700	63,500	80,000	90,200
6	≤ 38,300	61,200	91,100	114,000	135,300
8	51,100	81,500	121,400	153,200	180,400
10	63,800	101,900	151,800	191,500	225,500
Arterial-High Access Control					
2	n/a	9,400	17,300	19,200	20,300
4	n/a	20,400	36,100	38,400	40,600
6	n/a	31,600	54,700	57,600	60,900
8	n/a	42,500	73,200	76,800	81,300
Arterial-Moderate Access Control					
2	n/a	5,500	14,800	17,500	18,600
4	n/a	12,000	32,200	35,200	36,900
6	n/a	18,800	49,600	52,900	55,400
8	n/a	25,600	66,800	70,600	73,900
Arterial/Collector-Low Access Control					
2	n/a	n/a	6,900	13,400	15,100
4	n/a	n/a	15,700	28,400	30,200
6	n/a	n/a	24,800	43,100	45,400
8	n/a	n/a	34,000	57,600	60,600
Arterial/Collector-Ultra-Low Access Control					
2	n/a	n/a	6,500	13,300	14,200
4	n/a	n/a	15,300	27,300	28,600
6	n/a	n/a	24,100	41,200	43,000
8	n/a	n/a	33,300	55,200	57,400

Source: Washoe County Regional Transportation Plan, Table 3-4.

Level of service at intersections is based on delay in accordance with the methods outlined in the Highway Capacity Manual. Table 2 presents the delay thresholds for each level of service grade at unsignalized and signalized intersections. Level of service calculations were performed for the study intersections using the Synchro 7/SimTraffic software package with analysis and results reported in accordance to HCM methodology.

Access Management Policy

The goal of access management is to control the location, quantity, spacing, and design of access points along a major roadway to optimize traffic flow and safety while providing access appropriate to varying land uses and roadway facility types. Maintaining access standards and promoting improved access results in a roadway that operates safely and efficiently for all users.

The RTC established access management guidelines for all regional roadways in the Regional Transportation Plan (RTP). Oddie Boulevard and Wells Avenue are both classified as Moderate Access Controlled (MAC) facilities. The MAC access standards are shown in Table 3.

TABLE 2
LEVEL OF SERVICE DEFINITION FOR INTERSECTIONS

Level of Service	Brief Description	Unsignalized Intersections (average delay/vehicle in seconds)	Signalized Intersections (average delay/vehicle in seconds)
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 15	10 to 20
C	Stable conditions with significant affect from other vehicles.	15 to 25	20 to 35
D	High density traffic conditions still with stable flow.	25 to 35	35 to 55
E	At or near capacity flows.	35 to 50	55 to 80
F	Over capacity conditions.	> 50	> 80

Source: Highway Capacity Manual (2000), Chapters 16 and 17.

Table 3: RTC Access Management Standards for Arterials and Collectors

Access Management Standards-Arterials[1] and Collectors							
Access Management Class	Posted Speeds	Signals per mile and Spacing[6]	Median Type	Left From Major Street? (Spacing from signal)	Left From Minor Street or Driveway?	Right Decel Lanes at Driveways?	Driveway Spacing[2]
High Access Control	45-55 mph	2 or less Minimum spacing 2350 feet	Raised w/channelized turn pockets	Yes 750 ft. minimum	Only at signalized locations	Yes[4]	250 ft./500 ft.
Moderate Access Control	40-45 mph	3 or less Minimum spacing 1590 feet	Raised or painted w/turn pockets	Yes 500' minimum	No, on 6- or 8-lane roadways w/o signal	Yes[5]	200 ft./300 ft.
Low Access Control	35-40 mph	5 or less Minimum spacing 900 feet	Raised or painted w/turn pockets or undivided w/painted turn pockets or two-way, left-turn lane	Yes 350 ft. minimum	Yes	No	150 ft./200 ft.
Ultra-Low Access Control	30-35 mph	8 or less Minimum spacing 560 feet	Raised or painted w/turn pockets or undivided w/painted turn pockets or two-way left-turn lane	Yes 350 ft. minimum	Yes	No	150 ft./200 ft. 100 ft./100 ft.[3]

1 On-street parking shall not be allowed on any new arterials per Policy 7 of the Congestion Management Systems (Chapter 9). Elimination of existing on-street parking shall be considered a priority for major and minor arterials operating at or below the policy level of service.

2 Minimum spacing from signalized intersection/spacing from other driveways.

3 Minimum spacing on collectors.

4 If there are more than 30 inbound, right-turn movements during the peak-hour.

5 If there are more than 60 inbound, right-turn movements during the peak-hour.

6 Minimum signal spacing is for planning purposes only; additional analysis must be made of proposed new signals in the context of existing conditions, planned signalized intersections, and other relevant factors impacting corridor level of service.

Roadway Segment Summaries

Following is a segment by segment summary and analysis of the proposed preferred alternative for the Oddie Boulevard/Wells Avenue Corridor.

Kuenzli Street to Interstate 80

The Kuenzli Street to I-80 segment is recommended to remain largely the same as its current condition. As this segment is so closely related to the operations of I-80 interchange, it is recommended that this segment be analyzed in greater detail by NDOT with the pending I-80 Corridor Study. Below are recommendations and observations made by the planning team during this corridor study.

Pedestrian & Wheelchair Access:

Proposed Improvements

The following improvements are recommended to resolve existing deficiencies and promote pedestrian travel in this roadway segment.

Further evaluate alternatives to construct a pedestrian/bicycle bridge over the railroad tracks and potentially over the Truckee River with the same structure. The lower Wells Avenue bridge does not have much clearance above the river and may not meet flood management requirements. The goal is to connect the Truckee River Trail and Kuenzli Street to 4th Street.

Enhance the pedestrian path along the east side of Wells Avenue between 5th Street and 6th Street including wider sidewalk width (10' for bicycle use), pedestrian lighting, and the removal of overgrown vegetation. This path should be preserved with any future site redevelopment plans.

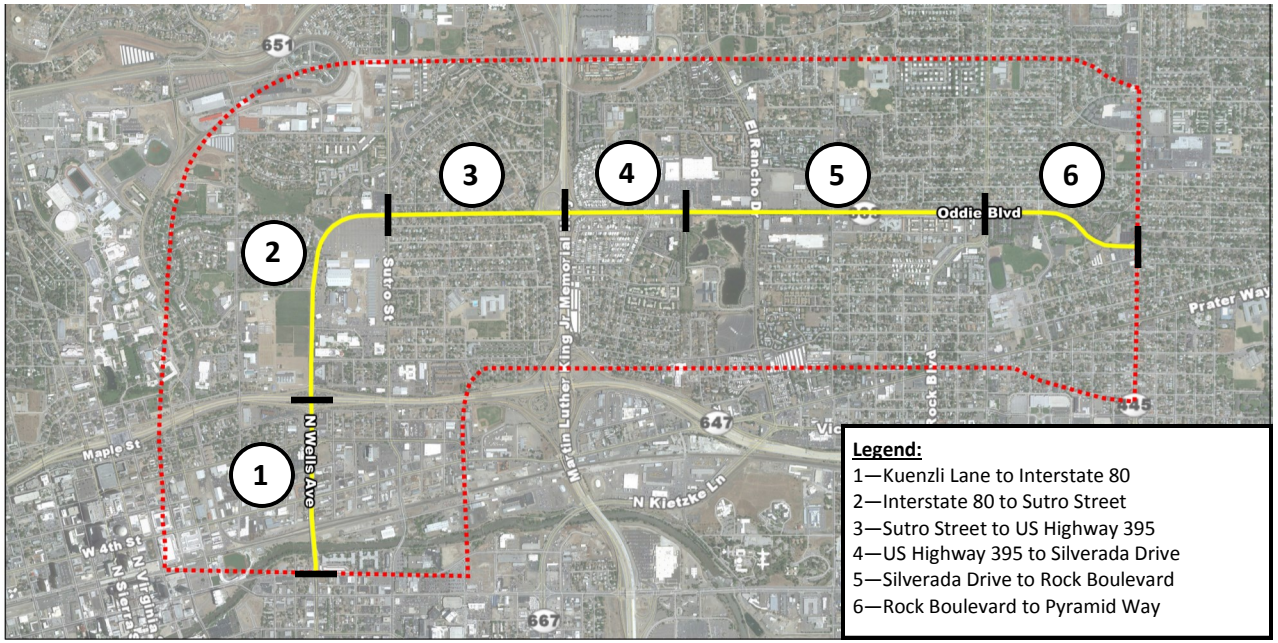


Figure 17 — Roadway Segment Key

Construct sidewalks on both sides of Wells Avenue through the interchange area, and provide consistent width sidewalks south to 6th Street, with any major I-80 interchange modifications.
Install pedestrian scale street lighting with new pedestrian improvements, particularly when beneath bridge structures.

Bicycle Facilities:

Proposed Improvements

Bicycle travel could be encouraged and enhanced through implementation of the following recommendations:

In the near term, consider extending the east/west traveling multi-use path, located just north of the Wells Avenue / I-80 WB Ramp intersection, from Wells Avenue east to Sutro Street. This would link the bicycle lanes on Wells Avenue north of 9th Street to the bicycle facilities planned on Sutro Street and create an effective by-pass of the Wells Avenue/I-80 interchange.

Long term planning and improvements should include bicycle lanes through the interchange area, a formal ped/bike connection between 6th and 4th Streets, and a new bridge from 4th Street south to Kuenzli Street.

Access Management:

Existing Conditions

Wells Avenue, from the westbound I-80 ramp terminals south to 6th Street, was reconfigured in 2005 to increase roadway capacity, improve vehicle progression through the I-80 interchange, and manage the numerous driveways between I-80 and 6th Street. While the Moderate Access Control (MAC) standard is technically not met between 6th Street and the I-80 Eastbound Ramps (both sides) because of the many closely spaced driveways, the installation of a continuous raised median island through this segment established an appropriate level of access management and no other improvements are needed. South of 6th Street the roadway is entirely elevated on the bridge structure and there are no access points or issues.

Recommendations

Existing access points are already appropriately managed in the segment between Kuenzli Street and Interstate 80. Driveway consolidation should be considered when properties are redeveloped since there are so many driveways in this short segment.

Safety Considerations:

There is currently no clearly defined location to cross 5th Street on the east side of Wells Avenue below the bridge structure. Further evaluation should be conducted to determine the need for a marked crosswalk at this location and where the crossing should be located. This location ties the sidewalk to the south and the pedestrian path (proposed to be widened) to the north.

The crosswalk located at the southeast quadrant of the 6th Street/Wells Avenue intersection between the curb return and island is in poor condition overall. There are also trees and other obstructions that restrict the view of pedestrians coming off the path toward this crosswalk. Improvements to the east side path should also include enhancement of the southeast quadrant crosswalk at 6th Street.

Travel Lanes & Intersection Configurations:

Future Traffic Volumes

Projected traffic volumes for the 20 year horizon were developed using the following methodology:

TABLE 4
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/ Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Wells Ave – north of Kuenzli	Arterial 6 lanes, MAC	31,000	C
Wells Ave – north of 6th St.		37,700	C
Wells Ave – north of I-80 east-bound ramps	Arterial 4 lanes, MAC	26,400	C
MAC: Moderate Access Control	Source: Traffic Works, 2012		

Step 1: Determine the existing 2010 average daily traffic volumes (ADT) from existing data.

Step 2: Using RTC travel demand model outputs, calculate the difference between 2008 and 2030 daily traffic volumes.

Step 3: Determine the percent change and percent per year change over the 22 year model range.

Step 4: Review the growth trends and make adjustments for general consistency throughout the corridor. It was assumed that declines in traffic volume are not appropriate for this planning effort and therefore all negative values were changed to provide a positive growth rate. Similarly, extraordinarily high growth rates at individual road segments were reduced to be consistent with adjacent road segments. These are shown on the "adjusted" line of Spreadsheet 1 (provided in the Appendix).

Step 5: Multiply the adjusted growth rate times 20 years to obtain the 20 year growth multiplier.
Step 6: Apply the 20 year multiplier to the existing (2010) traffic volumes to calculate the 20 year horizon forecast volumes (shown in Spreadsheet 1, provided in the Appendix).

Step 7: Check the 20 year projection volumes against NDOT historical data. The future volumes should generally not be less than the highest volumes that have been recorded in the past.

Step 8: Make changes in the "Adjusted %/yr" line if necessary to exceed NDOT historical volumes.
Step 9: Use the 20 year multiplier to factor up existing intersection turning movement counts

and thereby obtain 2030 horizon year turning movements.

Through this process we found the travel demand output growth rates appeared to be too high in this segment (ranging from 2.2 to 3.2% per year) and through discussion with the Technical Advisory Committee ultimately reached a consensus of 1.5%/year annual growth.

Road Segment Analysis

Since this road segment is projected to carry more than 27,000 ADT in the 20 year horizon, the applicable level of service standard is LOS 'E'.

The current roadway configuration between Kuenzli Street and I-80 is shown to function at an acceptable level of service through the 20 year horizon based on daily traffic volumes.

Intersection Analysis

Since traffic operations at intersections are a more thorough indicator of traffic flow and constraints, we also evaluated PM peak hour intersection level of service at the following intersections:

- Kuenzli Street
- 6th Street
- I-80 Eastbound Ramps
- I-80 Westbound Ramps

The intersection level of service is LOS E consistent with the road segment criteria.

Each of the intersections is anticipated to function at an acceptable level of service through the 20 year horizon, however, the volume to capacity ratio at the I-80 Eastbound ramps intersection is very near 1.0 indicating volumes approaching full capacity of the intersection. With the I-80 Westbound ramp intersection at nearly 0.90 it is evident the existing interchange will essentially be at capacity in the 20 year horizon.

Future Roadway & Intersection Configurations

No lane configurations are proposed in this segment since the current lane configurations shown below will provide acceptable operations through the 20 year timeframe. It is anticipated that NDOT will perform a Wells Avenue interchange study within the next 10 years and prepare a long-range plan for I-80 through the study area. That study should determine the necessary configuration beyond 20 years.

The traffic signal at 4th Street/Wells Avenue (below the Wells Avenue bridge) is not likely warranted any longer. Traffic volumes at this location are significantly lower than they were prior to the ReTRAC project which removed the railroad crossing and effectively the south leg of the 4th Street intersection. Consideration should be given to removing the vehicular signal system and potentially replacing it with a pedestrian crossing flasher system or pedestrian only signal. This would improve traffic and transit operations on 4th Street.

Table 5: 20 YEAR HORIZON INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	EXISTING LANE CONFIGURATION			PROPOSED LANE CONFIGURATION		
	V/C	DELAY	LOS	V/C	DELAY	LOS
Wells / Kuenzli	0.60	19.2	B	0.60	19.2	B
Wells / 6th	0.80	44.5	D	0.80	44.5	D
Wells / I-80 EB Ramps	0.95	39.9	D	0.95	39.9	D
Wells / I-80 WB Ramps	0.88	30.3	C	0.88	30.3	C

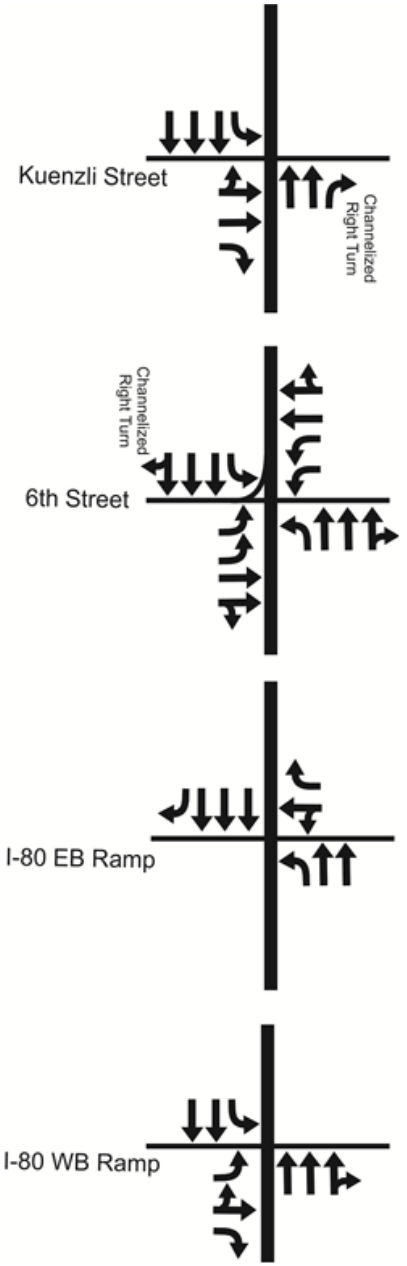


Figure 18 — Lane Configurations

Interstate 80 to Sutro Street

The Interstate 80 to Sutro Street segment contains a major revitalization area identified within the corridor. The Livestock Events Center is identified in the University of Nevada's master plan as an area of growth and expansion of their athletics venues. More specifically, the Livestock Events Center parcel is identified as the location for a future indoor arena to replace (or augment) the Lawlor Events Center. As such, this area will benefit from pedestrian amenities that will help to facilitate a sporting events centered district. Also note worthy in this segment is the existing major event that utilizes the Livestock Events Center, the Reno Rodeo. During the public outreach for this study, representatives from the Reno Rodeo expressed approval of the proposed cross section for this segment. Currently, there are lane restrictions during the rodeo that limit traffic to one lane in one direction, with lanes located on the east side of the street being dedicated to VIP parking. Specifically, the median will allow the Reno Rodeo to utilize the eastside of the roadway for their VIP parking, with the west side of the road allowing for either two lanes in one direction or single lanes in both directions during the rodeo.

The proposed cross section within this segment maintains the existing four travel lanes and center turn lane within the existing right of way. Proposed is a landscaped center median with 6-foot sidewalks and bike lanes separated from the travel lanes with a striped buffer. The right of way in this segment varies as the street turns to the east. As the right of way widens, the proposed cross section includes the addition of a landscaped parkway to separate the sidewalk from the street, on the Livestock Events Center side of the street.

Figure 19 — Segment Overview

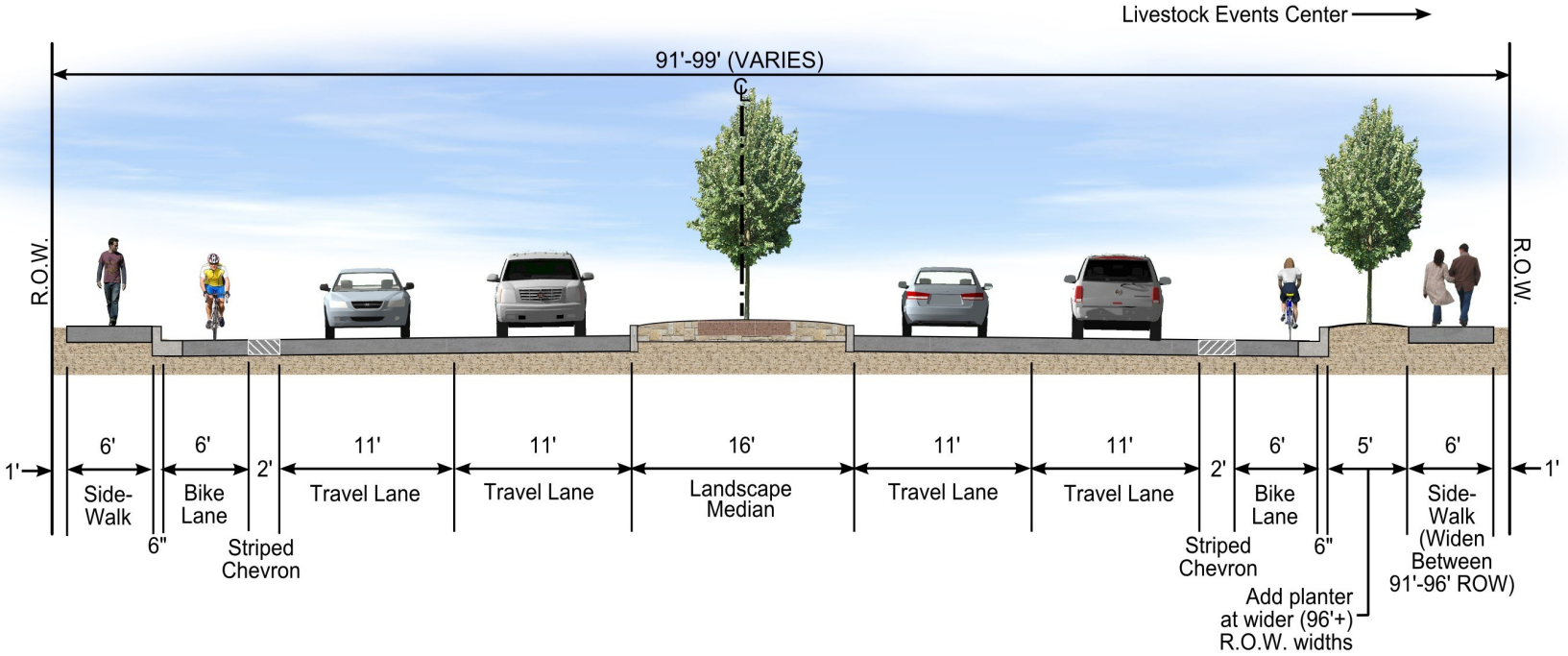


Figure 20 — Proposed Cross Section for I-80 to Sutro Street

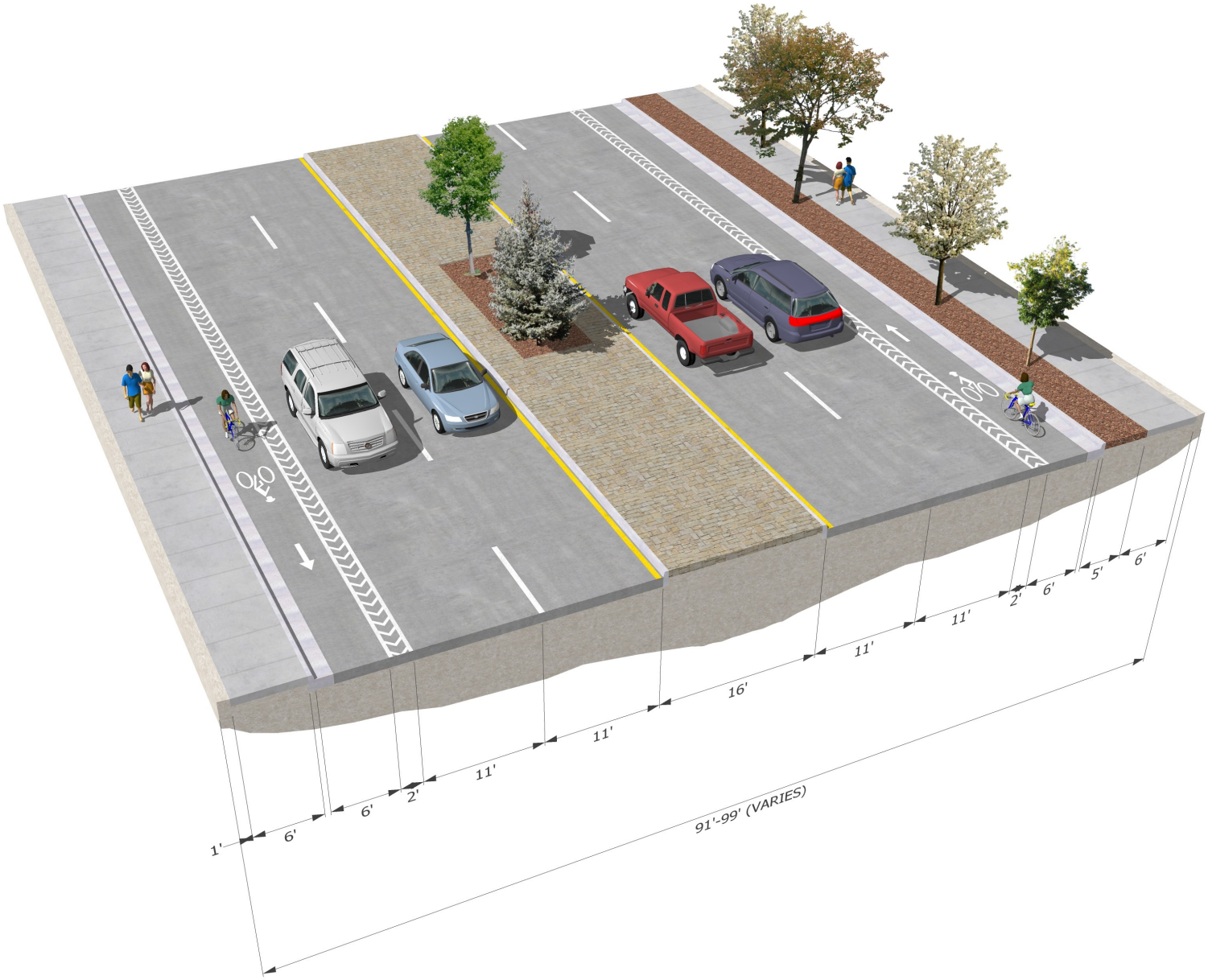


Figure 21 — Proposed Cross Section for I-80 to Sutro Street (Oblique)

Pedestrian & Wheelchair Access:

Proposed Improvements

Several pedestrian upgrades would be beneficial in the segment between I-80 and Sutro Street. They are:

Trim the trees on the east side of the roadway between 9th Street and Sadleir Way and north of the north fairgrounds driveway as these trees crowd the sidewalk width and head clearance.

Widen or relocate the sidewalk, or relocate the street light poles, on the west side of Wells Avenue between 9th Street and Sadleir Way to provide acceptable wheelchair clearance around the poles (currently only 18 inches of width)

Modify the median island on the east leg at Sadleir Way (Livestock Events Center driveway) to install a crosswalk on the east side of Wells Avenue. The existing island is a significant pedestrian and wheelchair travel impediment for pedestrians crossing the driveway entrance. Pedestrian features to activate the traffic signal are also missing and needed on the east side. The pedestrian push buttons and ramps on the northwest and southwest corners also need upgrades to meet ADA standards. Similarly, there is no pedestrian crossing at the north fairgrounds driveway (east side of Wells Avenue) and the existing median should be modified to construct a crosswalk within the driveway entrance.

Remove the barbwire fence top along the convention center grounds, it extends out over the sidewalk and creates a hostile walking environment. Conduct further investigation to determine if the intersection at Wells Avenue/Winston Drive warrants a pedestrian flasher. Note that there are currently sight distance issues at this location because of the roadway curvature and chain link fences. Crosswalk signage should be upgraded to current MUTCD standards if the crosswalk crossing Wells Avenue is to remain.

Bicycle Facilities:

Proposed Improvements

Since this segment has bike lanes on both sides of the roadway north of 9th Street, it is in better condition for cycling than the rest of the corridor. The recommended improvements are therefore limited to:

Manholes located in bike lanes should be raised to grade with appropriate collars. It appears the lids were not raised with the most recent pavement maintenance project(s).

An additional consideration to improve the overall bicycle network would include the addition of bike lanes on Sadleir Way to provide connection to the University.

Access Management:

Existing Conditions

The segments between the I-80 Westbound Ramps and 9th Street (east side) and between Sadleir Way and Sutro Street (west/north side) do not meet the current MAC access control standards because of the closely spaced driveways, their proximity to streets, and the lack of proper spacing between traffic signals. While not ideal, the current driveways do not appear to have a significant impact on traffic operations or safety.

Recommendations

One of the goals of this study is improving overall access to the corridor. With that in mind, we investigated the potential of adding new driveways, streets, and signalized intersections within this segment considering the long-term plans to redevelop the Livestock Events Center and fairgrounds (per the UNR Campus Masterplan).

With regard to new access opportunities, no locations were found where a new signalized intersection or a new street could meet the MAC spacing criteria (1,590 ft) from other signalized intersections/streets. While there are several locations where new right-in/right-out driveways could be installed, none of them are recommended as being necessary at this time.

As the Livestock Events Center redevelops over time, traffic signals and major driveways should only be located opposite Sadleir Way and Winston Drive. A traffic signal would only be appropriate at Winston Drive if the access control classification were changed to Low Access Control (LAC). This potential change was discussed in the existing conditions report.

Safety Considerations:

The most notable safety concern within this segment is the visibility of pedestrians crossing Wells Avenue at Winston Drive. As previously noted, this location deserves further evaluation of sight lines and either removal of the crosswalk or an upgrade to increase pedestrian safety.

Travel Lanes & Intersection Configurations:

Future Traffic Volumes

Future traffic volumes within this segment were developed using the methodology outlined in the Kuenzli Street to I-80 segment discussion. This segment also has a projected growth rate of 1.5% per year which is slightly less than what the travel demand model had shown.

Road Segment Analysis

The policy level of service is LOS 'D' for this segment since the daily traffic volumes are not expected to exceed 27,000 vehicles per day. Comparing the average daily traffic volumes to the LOS thresholds indicates a four-lane arterial (the current configuration) will provide acceptable operations through the 20 year horizon.

Intersection Analysis

The intersection level of service for this segment is LOS 'D' consistent with the road segment criteria. PM peak hour intersection analysis shows acceptable operations at the 9th Street intersection in its current configuration through the 20 year horizon.

Future Roadway & Intersection Configurations

No lane configurations are proposed in this segment since the current lane configurations shown below will provide acceptable operations through the 20 year timeframe. Redevelopment at the Livestock Events Center could cause a need for different lane configurations on the side street approaches but those needs will not be known until redevelopment details are clearly defined.

TABLE 6
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Wells Ave – north of I-80 westbound ramps	Arterial 4 lanes, MAC	20,800	C
Wells Ave – north of 9th St.		13,700	C

MAC: Moderate Access Control Source: Traffic Works, 2012

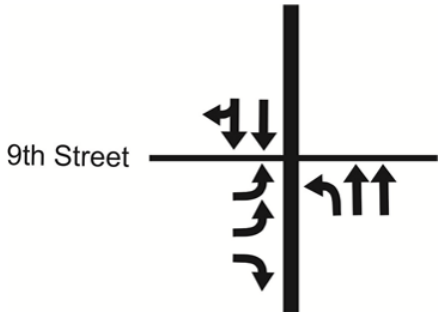


Figure 22 — 9th Street Lane Configuration

Table 7: 20 YEAR HORIZON INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	EXISTING LANE CONFIGURATION			PROPOSED LANE CONFIGURATION		
	V/C	DELAY	LOS	V/C	DELAY	LOS
Wells / 9th	0.43	11.2	B	0.43	11.2	B

Sutro Street to US 395

The segment from Sutro Street to US Highway 395 has predominantly single family residential areas adjacent to the roadway. This segment includes the proposed fencing identified earlier in this chapter (see page 12).

The proposed street cross section includes the existing four travel lanes, landscaped center median, one-way cycle tracks (detached bike lane), and landscape separated wide sidewalks within the existing right of way. The landscape parkways separating the bike lanes and sidewalks offer an opportunity to provide street trees and shade for both alternative modes. Additionally, with the separated bike lanes and landscaped parkway, pedestrians have considerable separation from vehicle traffic, creating a pedestrian friendly environment.

With the proposed improvements and additional access locations into the adjacent subdivisions (discussed later in this section), the neighborhoods within this segment become more walkable, bikable, and livable.

Figure 23 — Segment Overview

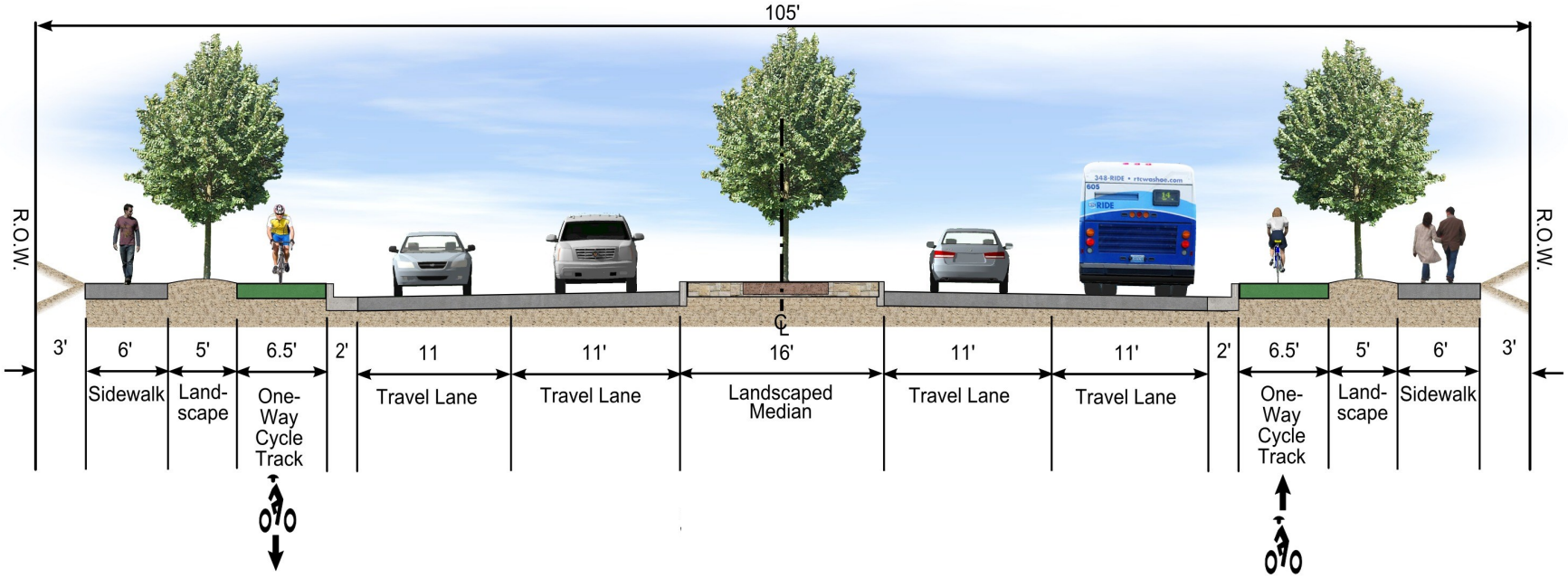


Figure 24 — Proposed Cross Section for Sutro Street to US 395

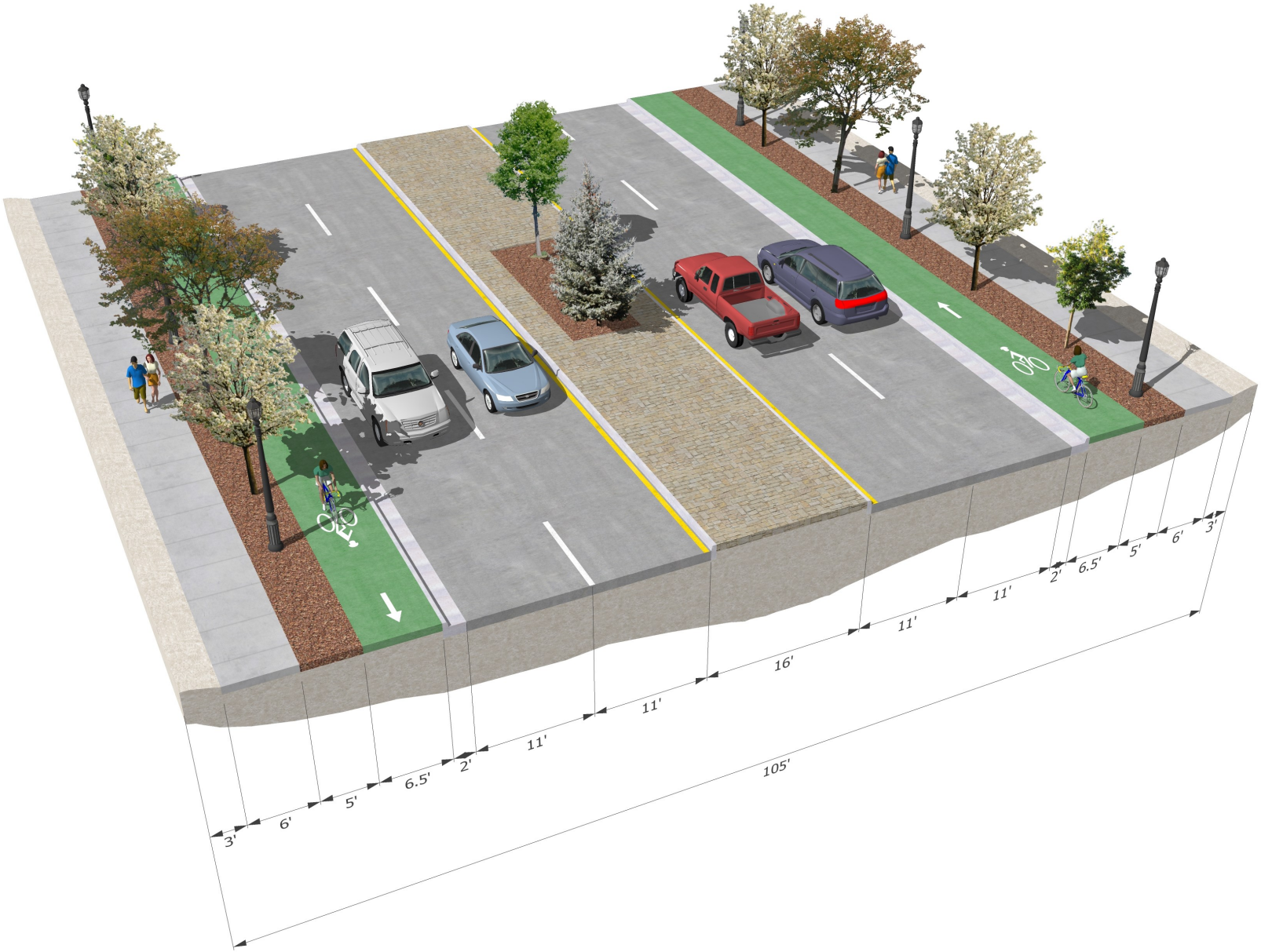


Figure 25 — Proposed Cross Section for Sutro Street to US 395 (Oblique)

Pedestrian & Wheelchair Access:

Proposed Improvements

Significant pedestrian improvements are needed in the Sutro to US 395 segment since this portion of Oddie Boulevard has no existing pedestrian facilities. In addition to the need for continuous walkways on both sides of the roadway, we offer the following recommendations:

Create new pedestrian access points to Oddie Blvd from the adjacent neighborhoods both north and south of Oddie Boulevard. Locations the furthest east (nearest US 395) will provide the best link between residential areas and the commercial centers located east of US 395 near Silverada Boulevard. Helena Way on the north side is a preferred location for new access and a similar location on the south side of the roadway is also highly desirable as shown on Figure 25.

Provide ADA accessible ramps and pedestrian push buttons at the Montello Street intersection.

Bicycle Facilities:

Proposed Improvements

Several roadway cross-sections were considered in the process of reaching a preferred configuration for bicycle facilities. Early concepts included at-grade bicycle lanes, multi-use paths on both sides of the roadway, directional multi-use paths with split grades (bikes below pedestrians) on both sides of the road, and finally directional cycle tracks adjacent to the travel lane but raised to the top of curb elevation. The cycle tracks are intentionally separated from the sidewalks to discourage the mixing of pedestrians and cyclists as their travel speeds are significantly different.

The elevated cycle track at back of curb configuration is preferred because it:

- Provides physical separation from both vehicles and pedestrians
- Is the most visible location approaching intersection and driveway vehicular conflict points
- Is the most expected/common location for cyclists (adjacent to the roadway)
- Is less likely to collect road debris since it is above the curb and gutter
- All other options (except at-grade bike lanes) presented undesirable conflicts with pedestrians or positioned cyclists in locations that would not be as visible to drivers.

Access Management:

Existing Conditions

There are no driveways or unsignalized intersections within this entire segment. Montello Street is the only intersection between Sutro Street and US 395 and serves as the neighborhood collector for both the north and south sides of Oddie Boulevard. Access is currently so limited that significant out of direction travel is necessary within the neighborhoods.

Recommendations

New vehicular access could be created at Helena Street on the north side and at a similar location on the south side of Oddie Boulevard as show on Figure 25. Both connections should be limited to right-in/right-out movements only with a raised median constructed on Oddie Boulevard reinforcing the limited movements. No additional traffic signals should be constructed within this roadway segment.

Consideration was also given to opening a new street connection at Citron Street on the north side of Oddie Boulevard. This option was dismissed however as it was determined to have little benefit to overall circulation.

Safety Considerations:

Trees located along the south side of Oddie Boulevard between Montello and the US 395 ramps are overgrown, block the visibility of signs and diminishing the effectiveness of the already limited street lighting. These trees should be trimmed in the near term and most likely removed with the recommended long-term cross-section improvements.

Travel Lanes & Intersection Configurations:

Future Traffic Volumes

Future traffic volumes within this segment were developed using the methodology outlined in previous sections. However, east of Sutro Street the projected annual traffic volume growth rate is 1.25% per year compared to 1.5% west of Sutro Street. The difference is a result of Sutro Street's regional importance and connection to McCarran Boulevard to the north. The Wells Avenue segment (linking Sutro to I-80) will realize more growth than just the east-west route (Oddie Boulevard).

Road Segment Analysis

With long-term daily traffic volumes below 27,000 ADT, Oddie Boulevard between Sutro Street and the US 395 southbound ramps intersection is designated policy LOS 'D'.

Figure 26 — Future Additional Access Locations

A four-lane cross-section is shown to serve the daily traffic volumes providing an acceptable level of service.

Intersection Analysis

Both the Sutro Street and Montello Street signalized intersections were evaluated during the 20 year horizon PM peak hour. The policy level of service is 'D' for these locations consistent with the road segment policy.

The analysis yields acceptable operations at both locations with the existing lane configurations.

TABLE 8
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Oddie Blvd – east of Sutro	Arterial 4 lanes, MAC	11,000	B
Oddie Blvd – east of Montello		18,300	C

MAC: Moderate Access Control Source: Traffic Works, 2012

Table 9: 20 YEAR HORIZON INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	EXISTING LANE CONFIGURATION			PROPOSED LANE CONFIGURATION		
	V/C	DELAY	LOS	V/C	DELAY	LOS
Oddie / Sutro	0.76	30.6	C	***0.74***	***29.9***	***C***
Oddie / Montello	0.51	23.2	C	0.51	23.2	C

Future Roadway & Intersection Configurations

Only one minor lane configuration change is proposed within this road segment. As part of the Sutro Complete Street project the southbound outside lane on Sutro Street will be converted from a thru/right lane to a right turn only lane (see exhibit to the right). This change is a result of the road reconfiguration south of Wells Avenue and is a natural way to transition from 2 southbound through lanes to 1 southbound through lane. No other lane configurations are proposed in this segment since the current lane configurations will provide acceptable operations through the 20 year timeframe.

A roundabout was considered at the Sutro Street intersection due to reports of a fairly high accident rate at this location. The accident history was reviewed and found to be very diverse (primarily non-repetitive accident types) with the most common type being rear-end collisions as is often associated with signalized intersections. The accident history was not deemed substantial enough to warrant further roundabout evaluation. Instead, we recommend better alignment of the north and southbound travel lanes which will be implemented with the Sutro Complete Street project.

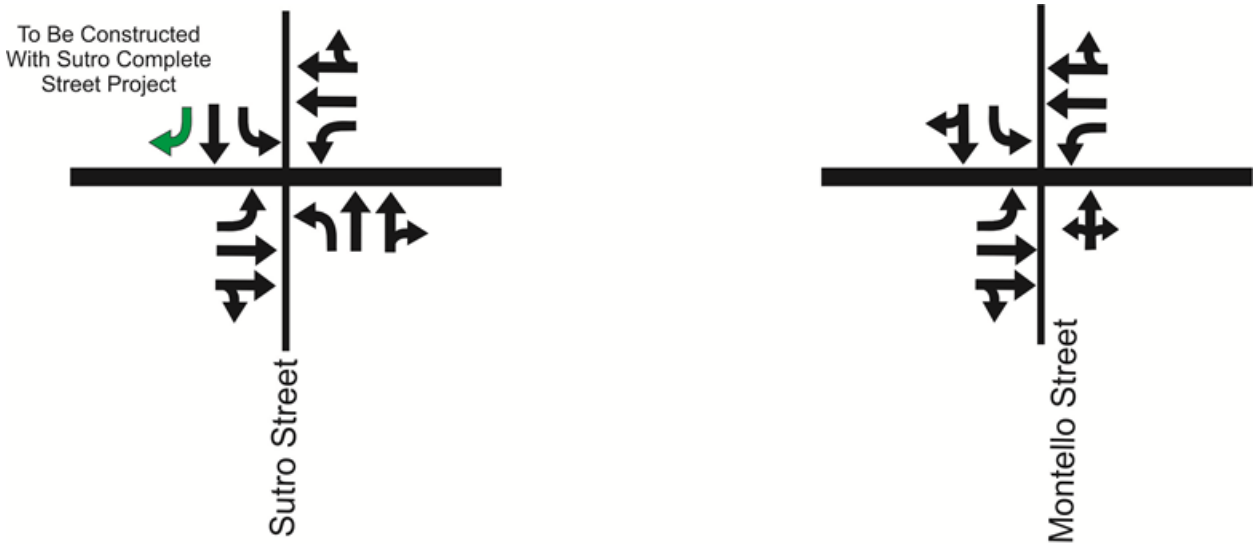


Figure 27 — Sutro and Montello Street Lane Configurations

US 395 to Silverada Boulevard

The US Highway 395 to Silverada segment includes the US 395 interchange, with mobile home parks on both the north and south sides of Oddie Boulevard. The Silverada Boulevard intersection includes the existing pedestrian bridge. Based upon data obtained with this study, it is recommended that the pedestrian bridge be repurposed as a gateway feature in the future. The superstructure for the bridge itself appears to be independent from the spiral ramps. Thus, the ramps may be removed with the bridge structure remaining for reuse as a gateway feature.

The proposed cross section for this segment includes four travel lanes (additional lanes are added eastbound at the Silverada Boulevard intersection to accommodate turning movements), landscaped median, one-way cycle tracks, and landscape separated sidewalks.

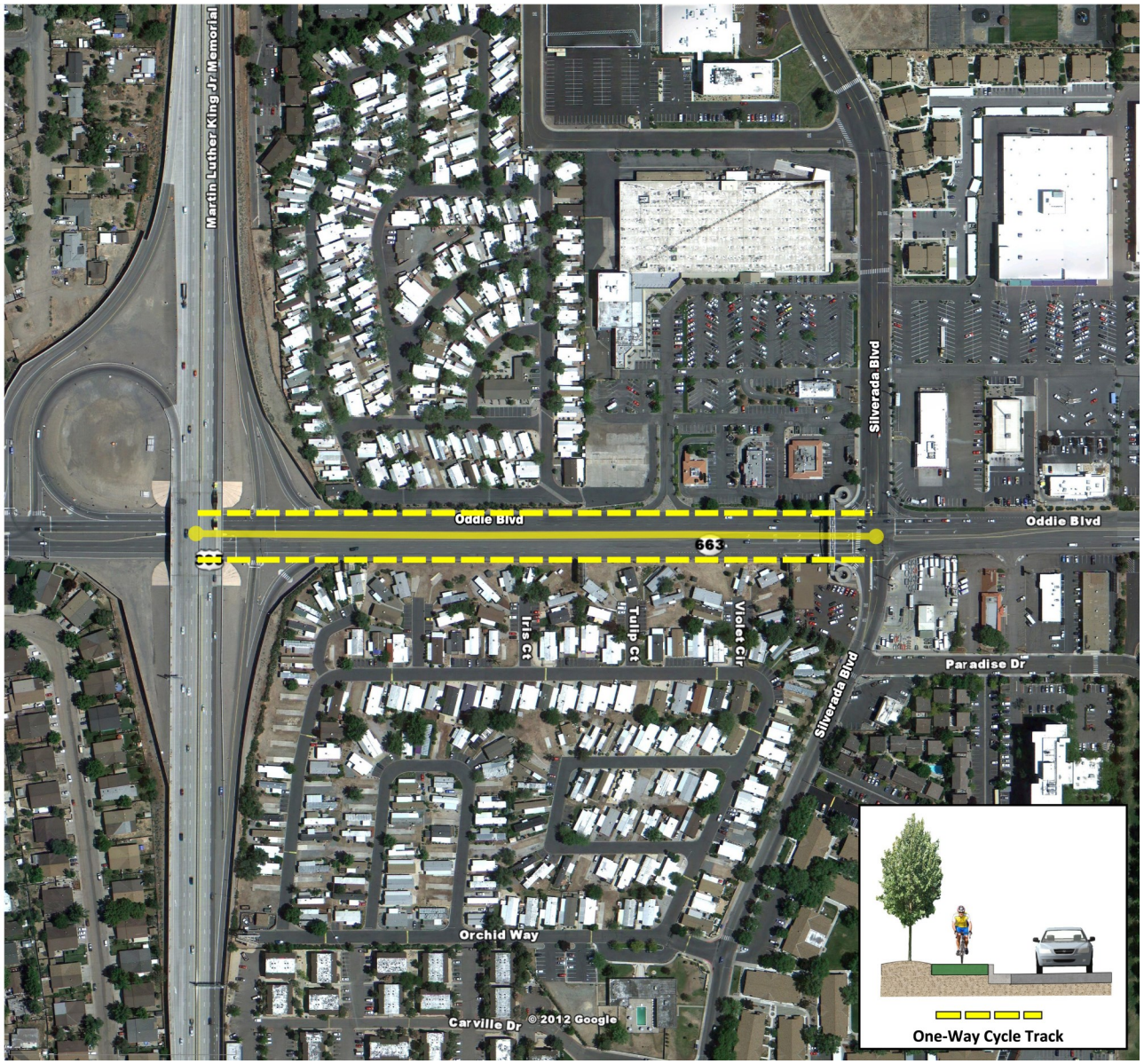


Figure 28 — Segment Overview

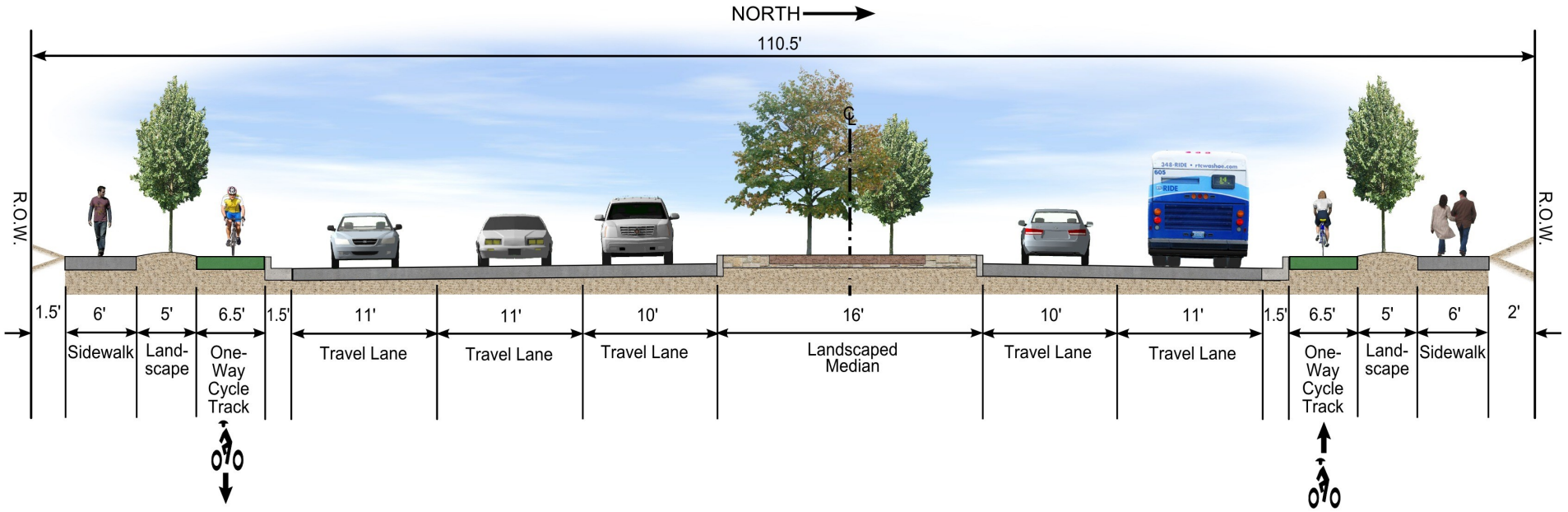


Figure 29 — Proposed Cross Section for US 395 to Silverada Boulevard

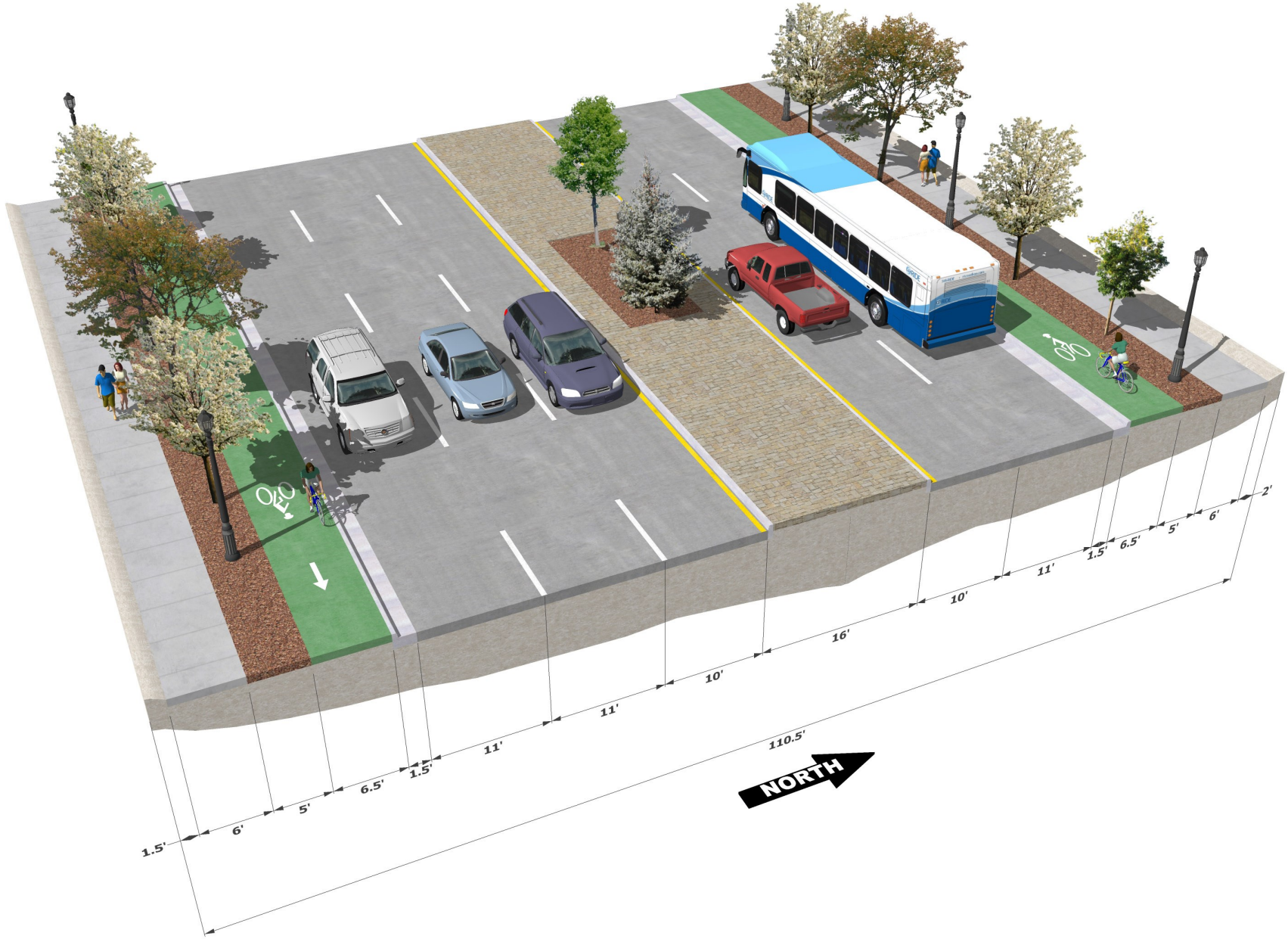


Figure 30 — Proposed Cross Section for US 395 to Silverada Boulevard (Oblique)

Figure 31 — Lane Configuration

Pedestrian & Wheelchair Access:

Proposed Improvements

Similar to the segment east of US 395, this portion of the roadway has no pedestrian facilities other than dated wheelchair ramps and push button signal activation at the US 395 ramp intersections. Significant upgrades are needed as wheelchairs have been observed traveling east and west on the median island between Silverada and the US 395 northbound ramps. The following improvements are needed:

- Construct continuous sidewalks on both sides of the roadway through the full segment length.
- Install lighting under the US 395 overpass.
- Update the pedestrian ramps, push buttons, and pedestrian heads and the ramp terminal intersections.
- Relocate the crosswalk at the southeast quadrant of the US 395 Northbound off-ramp (free right turn movement) so that pedestrians are visible to drivers. The pedestrian ramp and any pedestrians standing there are hidden by the sound walls.
- Upgrade the existing crosswalks at the Silverada intersection and add crosswalks on the north, south and east legs.

We conducted a thorough review of and pedestrian/bicycle/wheelchair counts at the pedestrian bridge crossing Oddie Boulevard on the west side of Silverada Boulevard. The overhead structure is used by only 25% of pedestrians crossing the west leg of the intersections. It is not used by cyclists or wheelchairs. The pedestrian overcrossing has a dated ramp design and is no longer a valuable asset. The bridge could be re-purposed as a gateway and art feature and the ramps removed to create more pedestrian standing room at the intersection.

Bicycle Facilities:

Proposed Improvements

A variety of cross-sections were considered to add much needed bicycle facilities within this segment. The best configuration is again elevated cycle tracks at the back of curb location but that layout will not fit within the entire segment. There are several major lane shifts and auxiliary lanes needed in the interchange area including a free right-turn lane and receiving lane at the northbound off-ramp, an exclusive eastbound right-turn lane at Silverada Boulevard, and dual eastbound left-turn lanes at Silverada Boulevard. Within this segment the bicycle facilities will have to vary and consist of elevated cycle track, a short section of cycle track adjacent to sidewalk, and at-grade bicycle lanes. A preliminary layout was prepared for this more complex interchange area and the bicycle facilities are shown on Figure 30.

Existing Conditions

The Oddie Boulevard/US 395 interchange area has a high level of access control that should be maintained to preserve freeway system functionality. Between 395 and Silverada Boulevard there are currently no access points (for vehicles or pedestrians) on the south side of Oddie Boulevard and there is only one right-in/right-out driveway to the commercial center on the north side of the roadway.

Recommendations

Additional access points, particularly for pedestrians, would be beneficial between US 395 and Silverada Boulevard to allow use of the planned sidewalks and cycle tracks. New access in the near term would require coordination with and the approval of adjacent land owners.

Long-term planning should consider that the mobile home parks could eventually redevelop. With new development proposals, new right-in/ right-out driveways could be constructed on both the north and south sides of Oddie Boulevard between 395 and Silverada. These locations are shown on Figure 31.

Safety Considerations:

As noted in the pedestrian improvements section, better visibility of pedestrians is needed at the US 395 Northbound off-ramp. Relocating the crosswalk with future improvements should address this concern.

It also appears that drivers may be traveling at too high of speeds when entering Oddie Boulevard (free right-turn movement) from the northbound off-ramp. The geometry for this movement should be re-evaluated during design of the proposed cross-section improvements.

Through conversations with City of Reno Police Department staff we learned there is reportedly a repetitive accident type at the US 395 Northbound ramps intersection. There have been numerous accidents involving eastbound left-turns versus westbound through traffic. We reviewed this intersection again but did not find any intersection design features that are unusual or appear to be contributing factors. The eastbound left-turn movement has protected left-turn phasing which is considered the safest phasing strategy.

Figure 32 — Future Additional Potential Access Locations

Travel Lanes & Intersection Configurations:

Future Traffic Volumes

Future traffic volumes within this segment were developed using the methodology outlined in the Kuenzli Street to I-80 segment discussion. This segment has a projected growth rate of 1.25% per year which is significantly different than the negative growth shown in the travel demand model. The technical advisory committee agreed that positive growth should be used for long-term planning purposes.

Road Segment Analysis

With long-term daily traffic volumes exceeding 27,000 ADT, Oddie Boulevard between US 395 and Silverada Boulevard has a LOS 'E' policy designation.

It should be noted that the roadway section east of the 395 Northbound ramps is proposed to have a 5-lane section with 3 eastbound and 2 westbound lanes (currently a 6 lane facility) rather than 4 lanes as shown in the table. The RTP does not provide considerations for a 5 lane facility. Therefore, the level of service reported for a 4-lane facility is a conservative value.

Four lanes west of the northbound ramps and 5 lanes east of the northbound ramps will provide acceptable operating conditions based on the road segment analysis.

Intersection Analysis

20 year horizon PM peak hour level of service analysis was completed for the following intersections:

- US 395 Southbound Ramps
- US 395 Northbound Ramps
- Silverada Boulevard

We also evaluated vehicle queuing at the Silverada Boulevard and US 395 Northbound ramp intersections where significant changes were considered.

In an attempt to fit elevated cycle tracks through the US 395 interchange and Silverada intersection we performed intersection alternatives analyses which considered removing turn lanes. At the US 395 northbound ramps intersection we considered eliminating the northbound free-right movement and receiving lane, and also the outside westbound through lane which becomes a drop lane at the southbound ramps. At Silverada Boulevard we evaluated the options of removing the eastbound exclusive right-turn, removing the westbound exclusive right-turn, removing the southbound free right-turn, and adding a second northbound through lane. The minimum necessary lanes to provide policy level of service (LOS 'E" or better) and maintain reasonable queue lengths are shown on the previous page. These lane restrictions were found to cause unacceptable LOS conditions and were ultimately dismissed for the lane configurations shown on the previous page.

TABLE 10
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Oddie Blvd – east of US 395 southbound ramps	Arterial 4 lanes, MAC	21,200	C
Oddie Blvd – east of US 395 northbound ramps		31,900	C

MAC: Moderate Access Control Source: Traffic Works, 2012

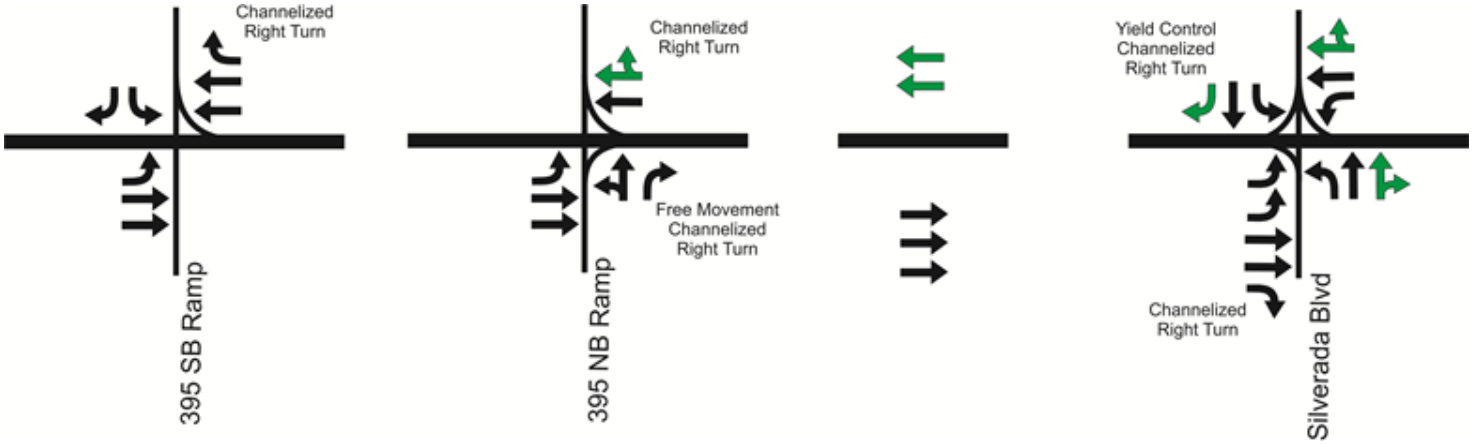


Figure 33 — Lane Configurations

Roundabouts were considered at the Silverada Boulevard, Mall Drive, El Rancho Drive, and Rock Boulevard intersections. The Silverada and Sullivan locations have some merit because they are located at the west and east ends, respectively, of the City of Sparks' Redevelopment Area 2A and could create gateways or "book ends" for this redevelopment district. Ultimately, we did not want to introduce and alternate roundabout intersections between traffic signals. Additionally, the cycle track concept fits well in this corridor as a whole but does not work as well with roundabout intersections as it does with signalized intersections.

Figure 34 — Simulation of Oddie Boulevard and Silverada Boulevard Intersection

Silverada Boulevard to Rock Boulevard

This segment can hold the most impactful improvements in the corridor. This portion of the corridor largely contains all of the City of Sparks Redevelopment Area 2A. This redevelopment area includes the vacant "big box" retail space and acreage. With the improvements proposed in this segment, the area can become much more walkable, as well as providing more access to adjacent commercial properties, thus increasing their market viability. Additionally, with the separated sidewalks and landscaping, should some of the vacant land be redeveloped with residential uses (perhaps multifamily), the added buffer from the roadway will allow for more livability than if similar redevelopment were to occur with the current roadway configuration.

The proposed cross section within this segment includes four travel lanes, landscaped median, one -way cycle tracks, and landscaped separated sidewalks. The improvements are proposed within the existing right of way.

Figure 35 — Segment Overview

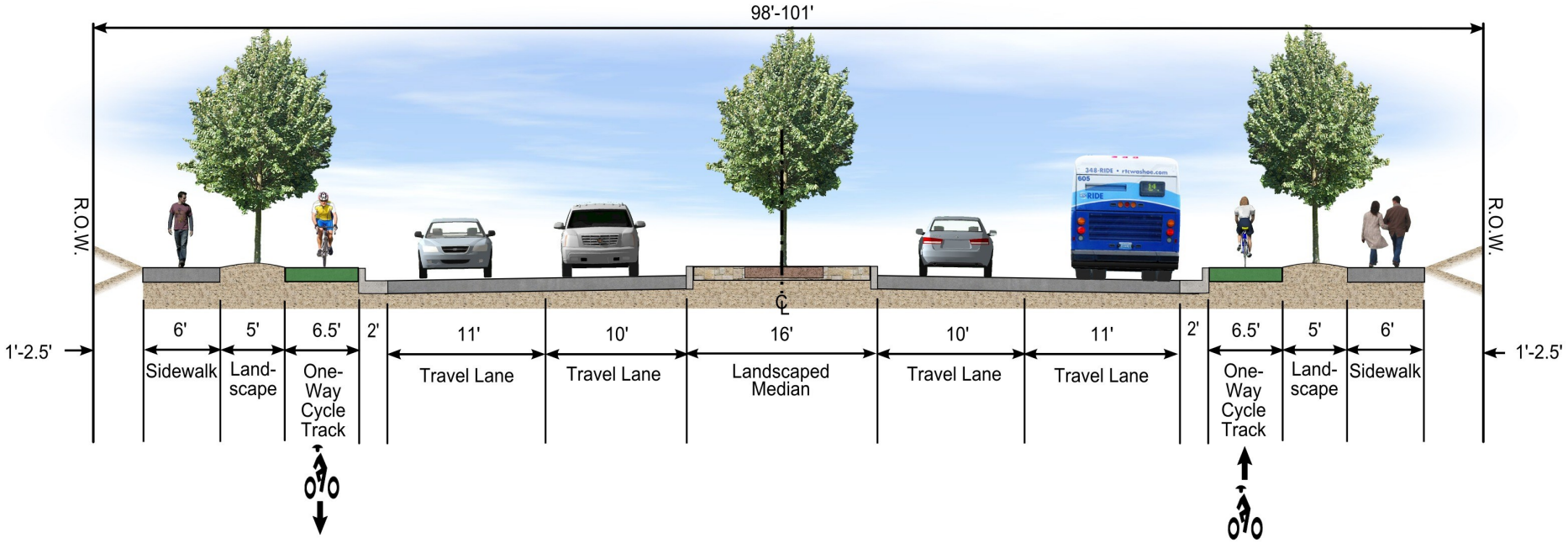


Figure 36 — Proposed Cross Section for Silverada Boulevard to Rock Boulevard

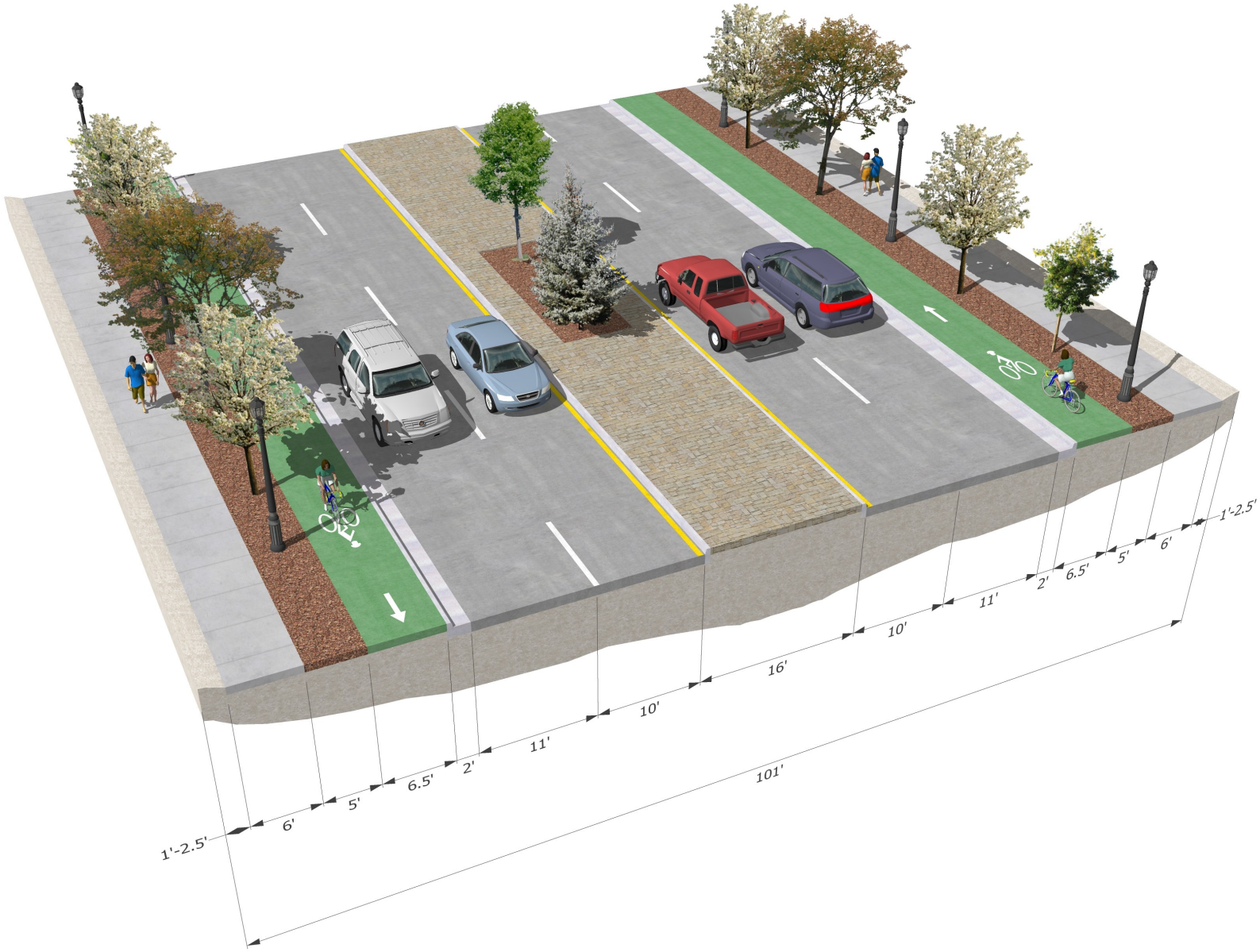


Figure 37 — Proposed Cross Section for Silverada Boulevard to Rock Boulevard (Oblique)

Pedestrian & Wheelchair Access:

There are a variety of existing pedestrian facilities east of Silverada Boulevard but the consistency and continuity through the segment is poor. Of most significant concern is the lack of any walking space on the north side of Oddie Boulevard immediately east of Silverada Boulevard. Elimination of the right-turn lane here should create more than sufficient space to incorporate new pedestrian facilities.

Proposed Improvements

- Construct continuous sidewalks through the full segment length consistent with the preferred cross-section alternative.
- Construct new ADA accessible ramps and push buttons with the reconfiguration.
- Create a new pedestrian/bicycle access connection to Paradise Park. The ideal location appears to be opposite the east side of Mall Drive so that the existing signalized intersection could be used by pedestrians. A crosswalk across Oddie Boulevard and pedestrian features will need to be added to the signal. The location is shown on Figure 37.
- Incorporate new pedestrian connections to adjacent parcels as redevelopment occurs within this primarily commercial portion of the corridor.
- Consider a pedestrian connection to the neighborhood on the north side of Oddie Boulevard perhaps near 17th Street.

Bicycle Facilities:

Elevated directional cycle tracks on both sides of the roadway are the preferred bicycle facility type in this segment. Since there are more driveways in this segment than to the west, more design details and transitions will be needed to fit the improvements in the commercial frontage setting. However, with higher concentrations of commercial use come higher demands for bicycle facilities. In many ways, the segment between Silverada and Rock Boulevards has the greatest need for high quality bicycle facilities.

Access Management:

Existing Conditions

This roadway segment in particular is in the greatest need of increased access. The former NDOT access control policy is much too restrictive for the current setting and there are a number of commercial properties that could become more marketable with better planned and additional access points.

Recommendations

No locations were found where a new signalized intersection or new street could meet the MAC spacing criteria (1,590 ft) from other signalized intersections/streets, and frankly we do not see a need for any new signalized intersections in this segment. There are, however, several locations where either unsignalized full access driveways or limited access driveways (right-in/right-out) are feasible using the MAC criteria. Each of these was outlined in the existing conditions report.

Particular emphasis should be given to better aligning the opposing but offset driveways midway between El Rancho Drive and Sullivan Lane so that full movements could be allowed (both are currently right-in/right-out only) as shown on Figure 38. There are also prime opportunities just east of Sullivan Lane. For example, the land locked and undeveloped parcel on the north side of Oddie (abutting single family residences) could have a full movement driveway if it were located near the east edge of the parcel (see Figure 38). Properties all along the south side of Oddie Boulevard could also have significantly better access to Oddie Boulevard by reconfiguring the frontage road as shown on Figure 40 .

Safety Considerations:

Two safety concerns were identified within this segment. The first is a sight distance issue at El Rancho Drive. The traffic signal controller cabinet is located at back of walk in the northwest quadrant curb return and blocks southbound right-turning driver's views of the crosswalk in that quadrant. Either the controller cabinet or the crosswalk should be relocated for better visibility for both pedestrians and drivers.

The second concern is also a sight distance issue. At the northeast quadrant of the driveway located mid-block between El Rancho Drive and Sullivan Lane, the combination of a poor crosswalk location and overgrown trees creates poor visibility between vehicles making a westbound right-turn and pedestrians in the crosswalk. This crosswalk should be relocated with the planned sidewalk improvements.

Travel Lanes & Intersection Configurations

Future Traffic Volumes

Traffic volumes within this segment are anticipated to increase at 1.25% per year based on the corridor wide forecasting methodology previously described.

Road Segment Analysis

The road segment level of service policy is LOS 'D' since the 20 year horizon traffic volumes are expected to be less than 27,000 ADT. Comparing the future daily traffic volumes to the LOS

Figure 38 — Future Additional Access Locations

Figure 39 — Future Additional Access Locations

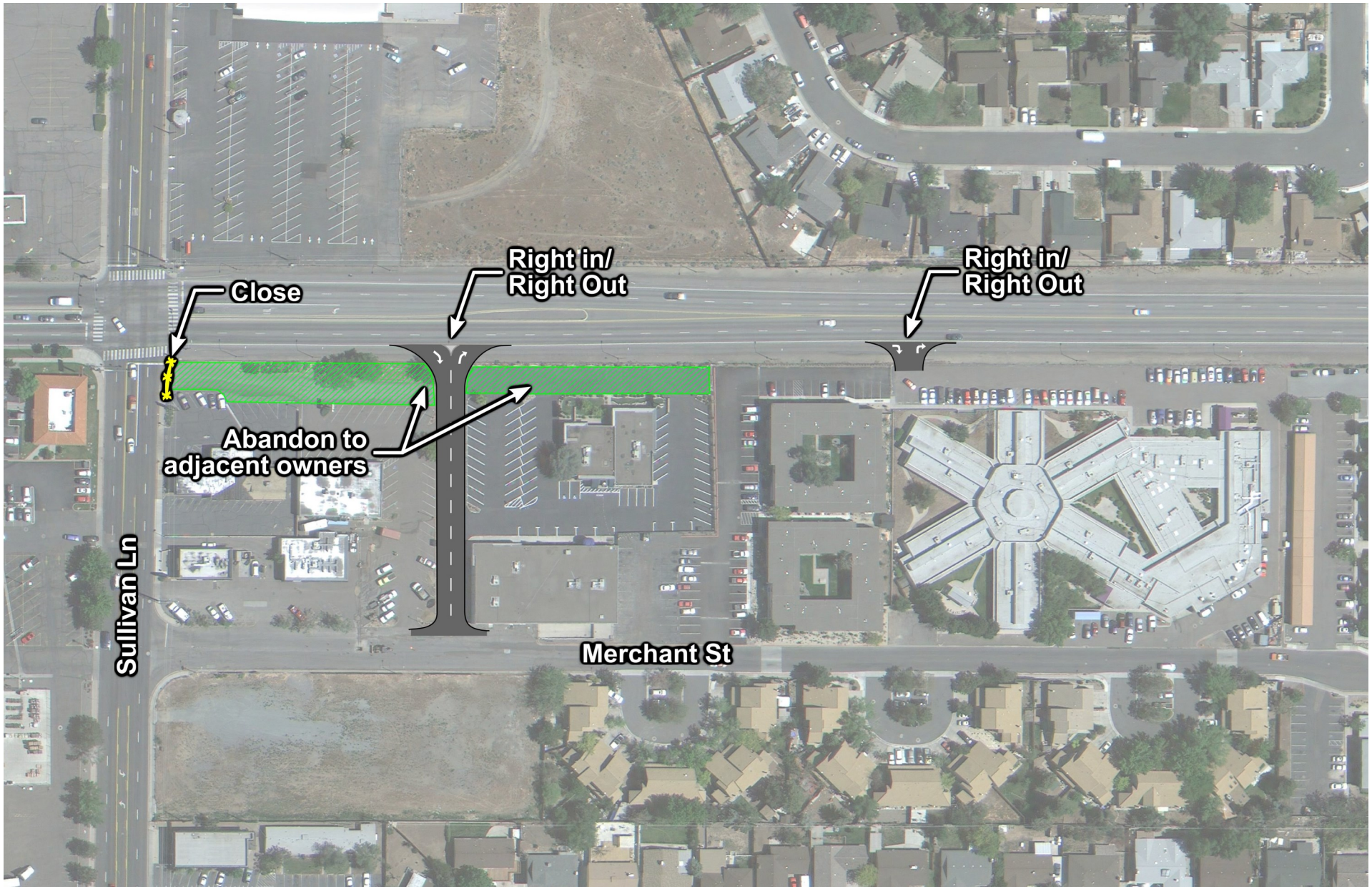


Figure 40 — Future Potential Frontage Road Improvements

Figure 41 — Future Potential Frontage Road Improvements

thresholds indicates the road segments will function at acceptable levels of service through the 20 year horizon.

Four through lanes should be maintained on Oddie Boulevard between Silverada Boulevard and Rock Boulevard.

Intersection Analysis

We performed PM peak hour intersection analysis at the El Rancho Drive and Sullivan Lane intersections to confirm the necessary travel lanes and additionally test the removal of the westbound auxiliary lane currently extending between El Rancho Drive and Mall Drive. The table below shows that removing the southbound free right-turn and auxiliary lane at El Rancho Drive, converting it to a yield controlled movement, would increase delay at the intersection but would not change the overall volume to capacity ratio. Since removing the westbound auxiliary lane does not significantly affect traffic operations at either El Rancho Drive or Silverada Boulevard, we recommend that the entire length of auxiliary lanes from Sullivan Lane to US 395 be removed to allow space for elevated cycle tracks, wide sidewalks, and the landscaping features shown in the preferred alternative cross-sections.

TABLE 11
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Oddie Blvd – east of Silverada	Arterial 4 lanes MAC	23,400	C
Oddie Blvd – east of El Rancho		21,300	C
Oddie Blvd – east of Sullivan		16,000	C
MAC: Moderate Access Control Source: Traffic Works, 2012			

Table 12
Future Roadway Segment Level of Service

Roadway Segment	Class/ Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Oddie Blvd – east of Silverada	Arterial 4 lanes MAC	23,400	C
Oddie Blvd – east of El Rancho		21,300	C
Oddie Blvd – east of Sullivan		16,000	C
MAC: Moderate Access Control Source: Traffic Works, 2012			

Future Roadway & Intersection Configurations

The recommended lane configurations at the study intersections are shown below.

Roundabouts were considered at the Silverada Boulevard, Mall Drive, El Rancho Drive, and Rock Boulevard intersections. The Silverada and Sullivan locations have some merit because they are located at the west and east ends, respectively, of the City of Sparks' Redevelopment Area 2A and could create gateways or "book ends" for this redevelopment district. Ultimately, we did not want to introduce and alternate roundabout intersections between traffic signals. Additionally, the cycle track concept fits well in this corridor as a whole but does not gel as well with roundabout intersections as it does with signalized intersections.

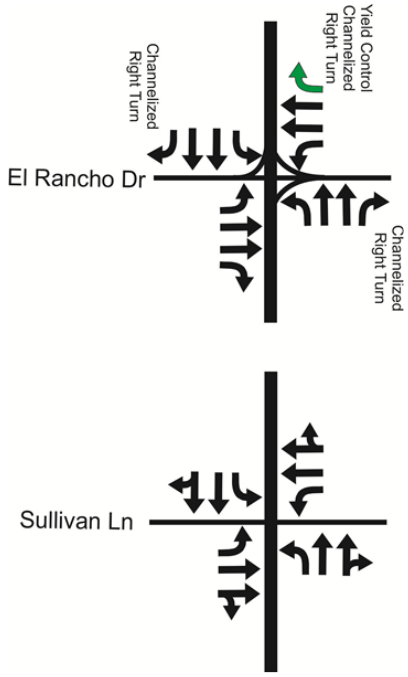


Figure 42 — El Rancho Dr & Sullivan Lane Configurations

Figure 43 — Simulation of improvements between Silverada Boulevard and Rock Boulevard

Rock Boulevard to Pyramid Way

The Rock Boulevard to Pyramid Way segment has a mix of uses adjacent to the right of way, including a large portion being single family residential. This area would be the second area in the corridor to receive future fencing treatments adjacent to residential uses.

The proposed cross section includes four travel lanes, a landscaped median, bike lanes with striped buffer, and wide sidewalks. The right of way varies through this segment and, where the right of way widens, a landscaped parkway may be provided on one side to separate the sidewalk.

Figure 44 — Segment Overview

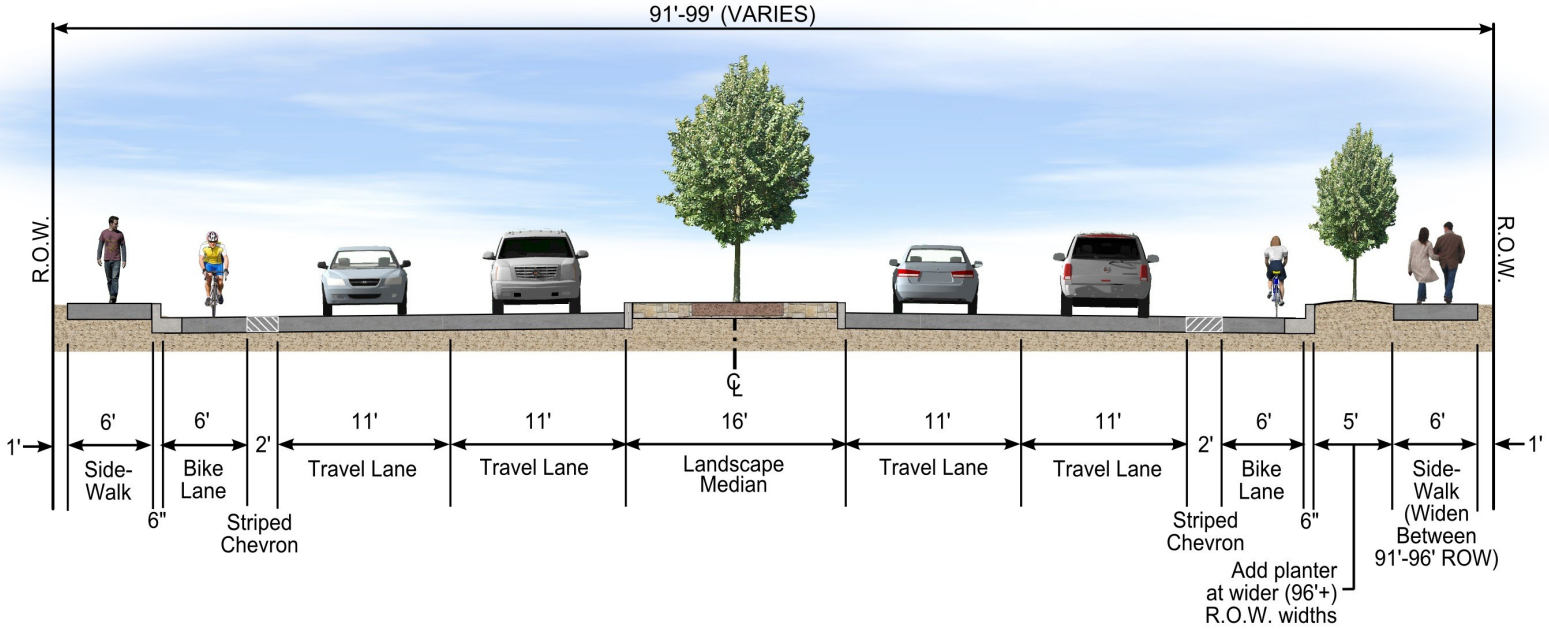


Figure 45 — Proposed Cross Section for Rock Boulevard to Pyramid Way

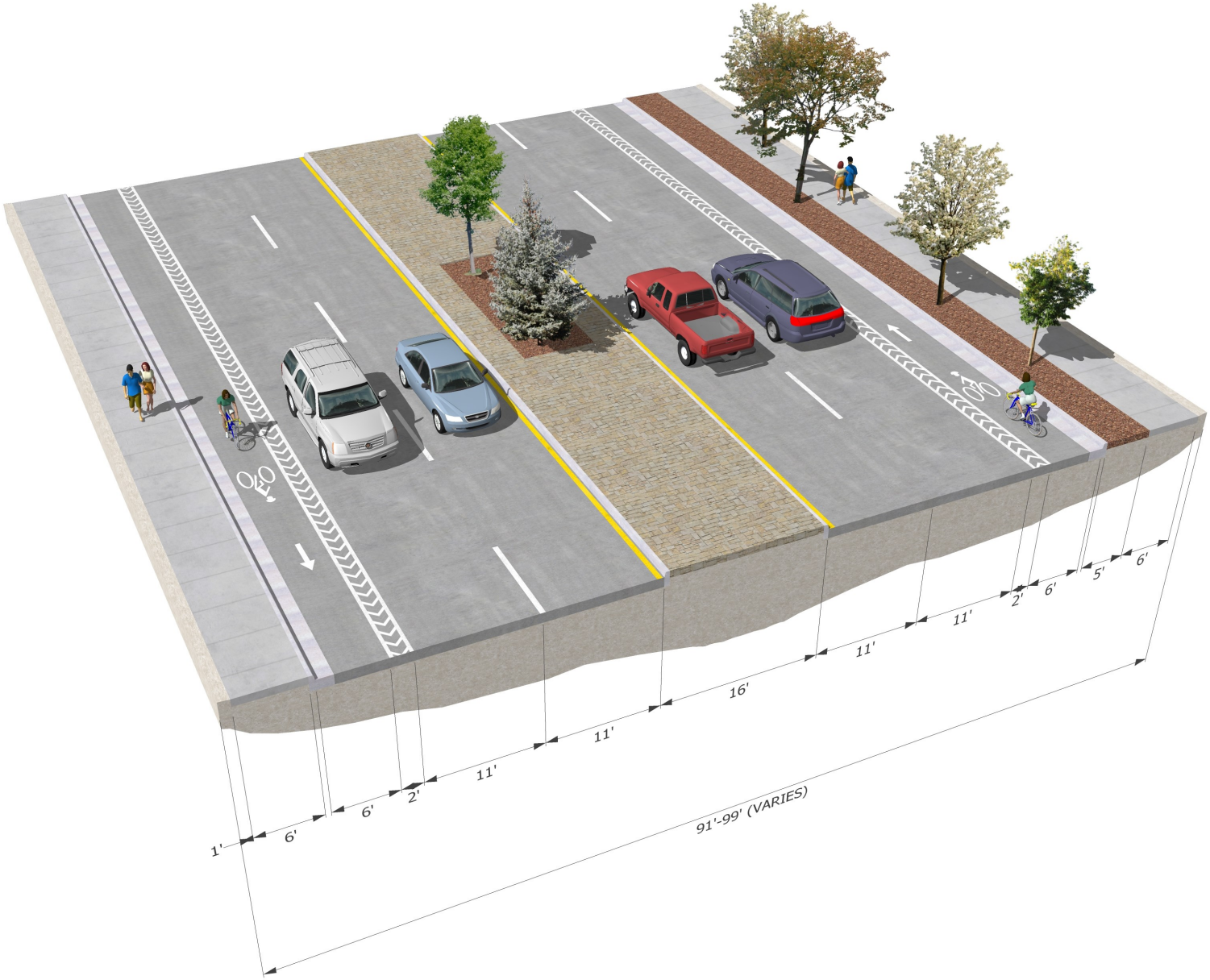


Figure 46 — Proposed Cross Section for Rock Boulevard to Pyramid Way (Oblique)

Pedestrian & Wheelchair Access:

Proposed Improvements

The following are recommendations to provide consistent high-quality pedestrian and wheelchair facilities in the segment east of Rock Boulevard.

- Provide set-back sidewalks as shown in the preferred cross-section. Walkways further from the travel lanes than the existing asphalt paths will create a safer and more inviting pedestrian space.
- Make pedestrian (and bicycle) connection(s) to the apartment complex on the north side of Oddie Boulevard where there is relatively high population density
- Make pedestrian/bicycle connection(s) to Ardmore Park and the Larry Johnson Community Center on the south side of Oddie Boulevard (see Figure 47)
- Construct ADA accessible ramps and push buttons with the roadway reconstruction
- At Pyramid Way, construct sidewalk on the channelizing island in the northwest quadrant of the intersection. There is currently no sidewalk connecting the crosswalks located on either side of the island.

Bicycle Facilities:

Proposed Improvements

A cycle track option is difficult to fit within the existing right of way. Therefore, within this segment a separated bike lane is proposed. During the design phase, attention will need to be given to exactly how these proposed bike lanes will connect to Pyramid Way or through to I Street, given no bike facilities are planned on Pyramid Way.

TABLE 13
FUTURE ROADWAY SEGMENT LEVEL OF SERVICE

Roadway Segment	Class/Lanes/ Access Control	20 YEAR HORIZON	
		Average Daily Traffic	Level of Service
Oddie Blvd – east of Rock	Arterial 4 lanes, MAC	14,200	C
Oddie Blvd – east of 12th St.		11,800	B
MAC: Moderate Access Control	Source: Traffic Works, 2012		

Table 14: 20 YEAR HORIZON INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION	EXISTING LANE CONFIGURATION			PROPOSED LANE CONFIGURATION		
	V/C	DELAY	LOS	V/C	DELAY	LOS
Oddie / Rock	0.62	26.4	C	0.62	26.4	C
Oddie / Pyramid	0.83	43.1	D	0.83	43.1	D

Access Management:

Since there are no driveways and only the 12th

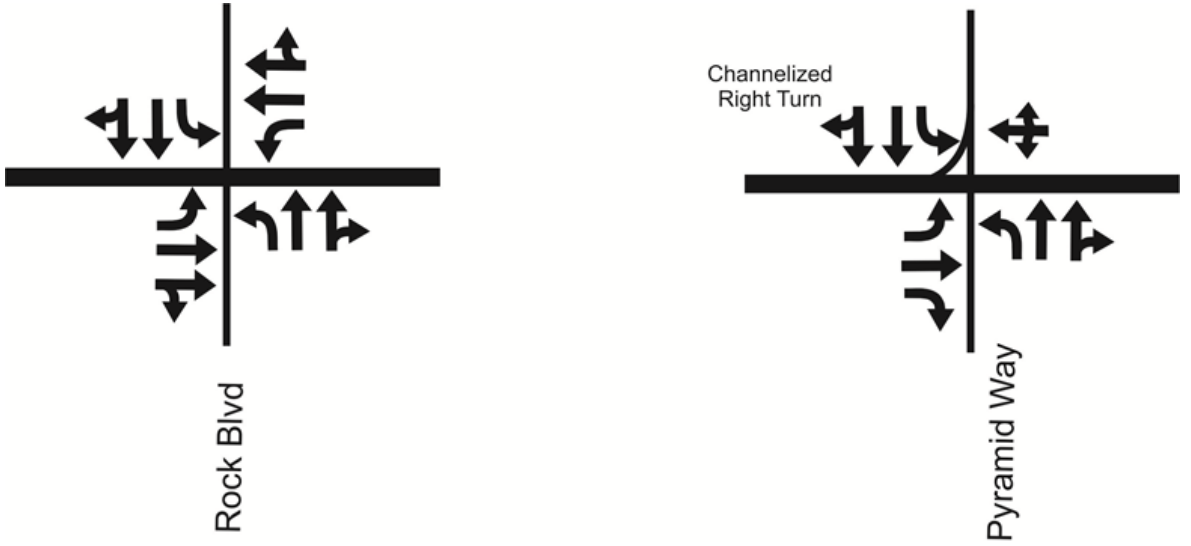


Figure 47 — Rock Blvd. and Pyramid Way Lane Configurations

Figure 48 — Future Potential Access Locations

Street intersection located within this segment there are no current access standard deficiencies. We are aware of only one undeveloped parcel in the segment for which access could be requested in the future. The vacant property immediately west of the Sparks United Methodist Church parking lot (also under church ownership) is located far enough from Pyramid Way that at least a right-in/right-out driveway could be approved under the MAC access standards. A full access driveway may be possible if the access were located at the far west end of the parcel.

Safety Considerations:

We noticed the 12th Street intersection is the only signalized location that does not have exclusive east and westbound left-turn lanes on Oddie Boulevard. Since left-turns must be made from the inside through lanes there is a higher risk of rear-end accidents at this location. We recommend exclusive eastbound and westbound left-turn lanes be constructed during the roadway reconstruction project.

There is also limited sight distance between drivers and pedestrians crossing to the channelizing island on the northwest quadrant of the Pyramid Way intersection. We suggest that trimming of overgrown vegetation, installing advance pedestrian signs, and/or relocating the crosswalk, would all help to mitigate the reduced visibility.

Travel Lanes & Intersection Configurations:

Future Traffic Volumes

Similar to all other roadway segments east of Sutro Street, traffic volumes on this segment are projected to have an annual growth rate of 1.25%.

Road Segment Analysis

The existing 4-lane roadway section was tested with 20 year horizon traffic volumes to identify future capacity needs. The segment east of Rock Boulevard currently carries relatively low traffic volumes for an arterial roadway (less than 15,000 ADT) and would theoretically function at an acceptable level of service with just two travel lanes. The policy level of service for this segment is LOS 'D'. Considering the available right-of-way width and ability to fit the preferred cross-section within it, there is no reason to entertain a reduction in the number travel lanes.

Intersection Analysis

Intersection level of service analysis was performed for the Rock Boulevard and Pyramid Way intersections as a second and more detailed check of capacity needs. Table 14 on page 58 shows both intersections will function at acceptable levels of service (LOS 'D' or better) through the 20 year horizon with the current lane configurations.

Future Roadway & Intersection Configurations

The roadway segment analysis and intersection level of service analysis indicate the current road capacity will accommodate traffic volume growth through the 20 year horizon. This being the case, no changes are recommended (other than the addition of eastbound and westbound left-turn lanes at 12th Street for safety reasons) and the configurations shown in Figure 46 on page 58 should be maintained.

Transit Strategies

Background

While Oddie Boulevard and Wells Avenue provide direct access through the study area, are near quality transit markets, and connect to existing transit services, the corridor's historical uses and road designs have not supported the potential for transit service along the primary roadways. The land use and design changes highlighted in this study can create a more transit friendly corridor along Oddie Boulevard and Wells Avenue leading to new transit routes.

The existing Route 2 within the Study area is a well performing route, primarily serving the high-density multi-family developments north of Oddie Boulevard. Any new service along Oddie Boulevard should be seen as complimentary to the existing service (or a variant of it) and not simply a rerouting of Route 2 down to Oddie Boulevard. away from the existing transit users.

The transformation of the study corridor into a transit corridor will require two main components and each should be in place prior to the implementation of new transit service. These are the creation of new transit markets along the corridor, and the improvement of pedestrian access to potential transit stops in the corridor.

A number of under-utilized large parcels have been identified along the corridor. These provide opportunities for redevelopment as transit-supportive land uses. Such development would be characterized as having higher residential and employment densities, mixed uses, and quality pedestrian access.

Quality pedestrian access is not just needed for new developments but to connect new transit service to existing residential, commercial and employment along the corridor and within walking distance of the potential transit service. The access improvements identified in this study, ranging from sidewalks along the corridor to walking paths into existing residential communities, will greatly improve the potential for transit service in the corridor.

The viability of new transit service is also dependent on:

- The service's ability to connect with major attractions outside of the corridor, either directly or via quality transfer connections;
- The existence of passenger amenities along the corridor, including benches, shelters, lighting etc.; and
- Connections to local and regional bicycle networks.

Recommended Strategies

Figure 48 highlights options for new transit service in the corridor along with some options for facilitating transit. The map represents suggested strategies for new or restructured transit service. Based on the future land use developments, more formal transit planning efforts are required to identify exact routing and service levels.

The graphic illustrates the need for transit supportive developments along the corridor. This study has identified such redevelopment opportunities along Oddie Boulevard east of US 395. As many of these as possible should be redeveloped to generate a sufficient number of transit trip origins and destinations.

The primary transit service along the corridor should be seen as a direct connection through the corridor providing quick travel between destinations outside of the corridor. To further decrease transit travel time, the new service should have a limited number of stops within the corridor. And the frequency of service should be high enough to attract choice riders (those not dependent on transit) to/from developments along/near the corridor.

Lower frequency routes should serve as local connectors, allowing transfers to the primary

transit service in or along the corridor. These neighborhood routes can connect adjoining neighborhoods and operate with lower levels of service. Many of the segments served by the existing Route 2 can be served in this manner.

The primary service should also connect with a number of north-south services to/through the corridor. If not served directly by the final design of the primary service, these will allow connections with the two primary RTC transfer centers, the proposed RTC RAPID service along 4th Street/Prater Way, and major destinations elsewhere in the RTC service area.

Figure 48 also highlights that any new developments along the corridor should provide easy access through them providing pedestrian connections to the corridor from other locations within walking distance. The development itself should not be seen as a barrier to pedestrian or bicycle assess. This is in addition to the need for a quality pedestrian environment along the corridors and improved connections into existing uses adjacent to the corridor.

Subsequent to the conditions described above for transitioning this corridor into a transit corridor, additional transit operation considerations may be contemplated. Although considered with this study, the proposed improvements to the corridor leave open the door for alternative transit operations in the future. Specifically, center running transit could replace the proposed medians in the proposed roadway cross sections. This would require additional study and would only be warranted at an unknown time in the future when transit service has moved to Oddie Boulevard and adjacent uses support a higher level of transit service.

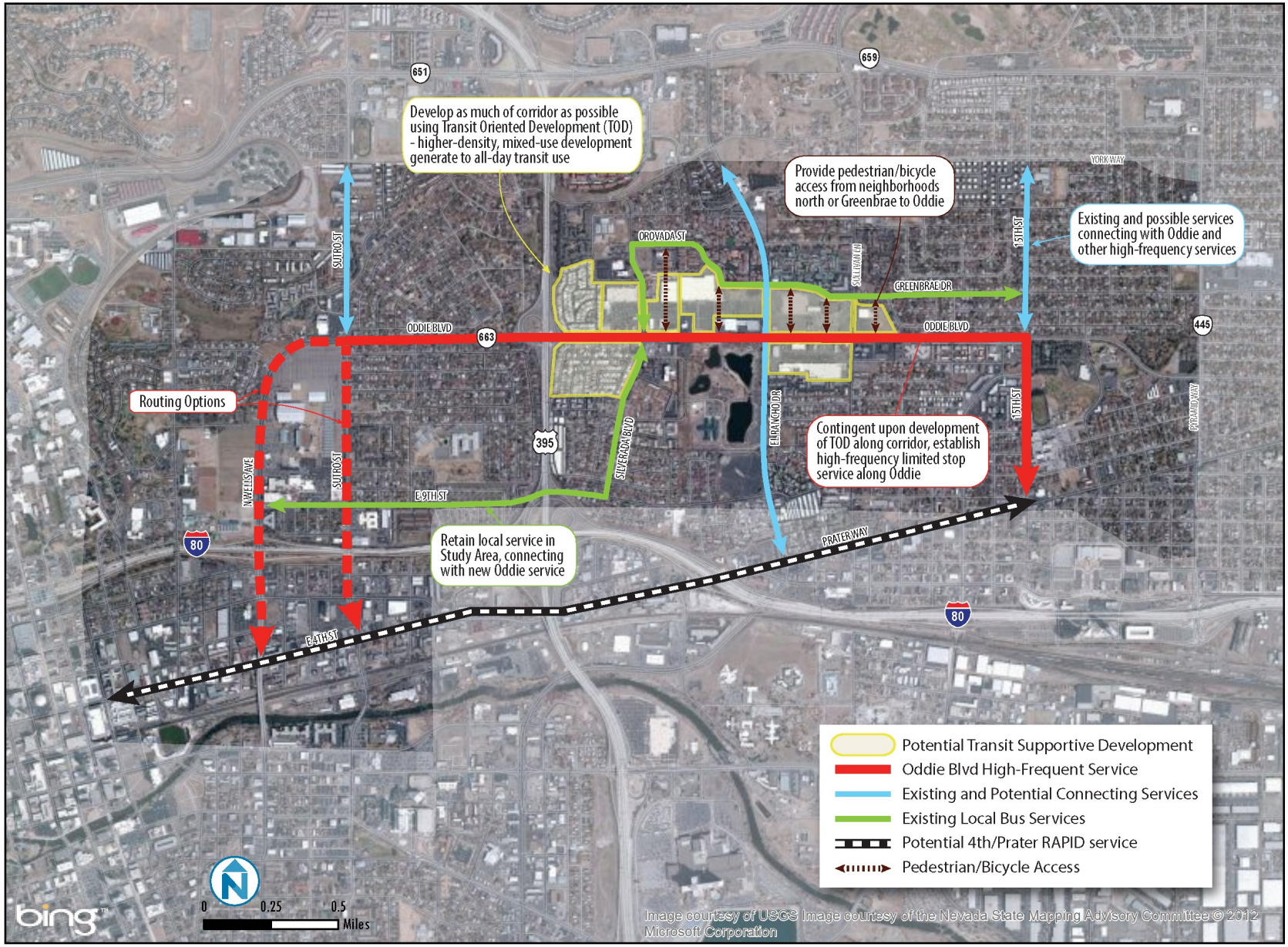


Figure 49 — Transit Service Options

Implementation Strategy

Implementation Plan

The project has developed an implementation plan for the Oddie Boulevard/Wells Avenue Corridor Study. This implementation plan consists of several parts that lay a foundation for ultimate revitalization of this central corridor for the Reno/Sparks community. Included with this implementation strategy are:

- Capital Improvement Cost Estimate
- Local Agency and RTC 20-year Maintenance Estimate
- Redevelopment Strategy

The following project estimates (Table 15) are based upon 2012 construction dollar values. The quantities used in preparing this estimate are based upon planning level documents and are not intended to include every bid item that would be expected should this be a final construction estimate.

The unit prices are largely taken from the standard RTC planning level construction estimates. These estimates have a long history of overall accuracy within the RTC Program of Projects (POP) amounts. In order to verify more completely the anticipated costs, we compared these costs to the 2012 calendar year bids that were available at the time of preparation of this report. Based upon this check, we adjusted AC paving prices up to account for higher pricing experienced in the 2012 calendar year.

Soft costs and contingency were added to the total to complete the budget. Should these prices be extended into future years, it would be advisable to account for a 4% per year increase to allow for inflation as well as other pricing fluctuations.

Additionally, the project team has prepared the following conceptual funding matrix (Table 16), which is intended to provide assistance to the RTC, City of Reno, and City of Sparks for developing construction projects in conjunction with the recommendations of this corridor study. This matrix is conceptual, in that, funding mechanisms are subject to change and dependent on federal funding availability, as well as the overall funding program of projects for the RTC at the time of ultimate construction.

The matrix includes estimated implementation time frames, based upon current needs and deficiencies, as well as feedback from local agencies and the public. Generally, these time frames are divided into:

Short-Term ±1-5 years	Mid-Term ±5-10 years	Long-Term 10+ years

Where a cost estimate has been generated for a project, the dollar amount has been provided for planning purposes. This matrix is fluid and may be utilized in the future to reprioritize projects as necessary when additional funding and/or local agency priorities are modified.

Please note, discretionary funding (i.e. grants, etc.) is always a possibility for the projects in this corridor and has been added to each project line in the funding matrix. As discretionary funds become available, it is advisable that the conceptual funding matrix be revisited for project application toward discretionary funds.

Additionally, a maintenance estimate and schedule has been prepared to help project on-going maintenance costs for the RTC, as well as the Cities of Reno and Sparks. As there is a significant change in the facilities provided within this corridor, a comparison between existing conditions and proposed conditions has been provided to compare and contrast the benefits or drawbacks for the community with the proposed improvements.

Finally, the project team conducted workshops with the City of Sparks and area property owners to develop a conceptual plan for redevelopment of the Sparks Redevelopment Area 2A. An implementation strategy has been developed for one area specifically to demonstrate the impact that infrastructure and transportation improvements may have on this redevelopment area.

Table 15

ODDIE/WELLS CORRIDOR STUDY
PREFERRED ALTERNATIVE ESTIMATE
(MILL / FILL OPTION)

CONSTRUCTION UNIT COSTS			
AC PAVING	$	7.50	SF
CURB & GUTTER	$	30.00	LF
SIDEWALK	$	8.00	SF
STREET LIGHTING	$	200.00	LF
LANDSCAPE/ART	$	100.00	LF
DRAINAGE IMPROVMENTS	$	50.00	LF
PEDESTRIAN RAMPS	$	30.00	LF
PCC Cycle Track (Green)	$	10.00	SF
MEDIAN CURB	$	20.00	LF
SOFT COSTS (INCLUDED IN SEGMENT COST)		23%	
CONTINGENCY		25%	
BUS STOPS	$	500,000.00	LS
INTX SIGNAL IMPROVEMENTS (12 SIGNALS)	$	1,500,000.00	LS
INTX OTHER SIGNAL IMPROVEMENTS (COMM & TSP)	$	1,000,000.00	LS
*NOTE COSTS ARE SHOWN IN 2012 DOLLAR VALUES			

SEGMENTS	COST/LF	LF/SEGMENT	COST/SEGMENT
INTERSTATE 80 TO SUTRO (57 LF AC; CG; 12 LF PCC SW)	$ 1,234.31	4100	$ 5,060,651
SUTRO TO US 395 (44 LF AC; CG; 12 LF PCC SW; 13 LF PCC-CycleTrack)	$ 1,274.28	3100	$ 3,950,268
US 395 TO SILVERADA (42 LF AC; CG; 12 LF PCC SW; 13 LF PCC-CycleTrack)	$ 1,255.83	1500	$ 1,883,745
SILVERADA TO ROCK (42 LF AC; CG; 12 LF PCC SW; 13 LF PCC-CycleTrack)	$ 1,255.83	5900	$ 7,409,397
ROCK TO PYRAMID (57 LF AC; CG; 12 LF PCC SW)	$ 1,234.31	2800	$ 3,456,054

SUBTOTAL	$	21,760,115
BRT STOPS	$	500,000
INTX IMPR	$	2,500,000
CONTINGENCY	$	6,190,029
ROUNDED TOTAL	$	31,000,000

SOUNDWALL CONSTRUCTION COSTS			
DECORATIVE SOUNDWALL	$	3,000,000	LS
RIGHT OF WAY ACQUISTION COSTS	$	260,000	LS
SOFT COSTS (23%)	$	750,000	LS
SOUNDWALL TOTAL	**$**	**4,010,000**	
*NOTE COSTS ARE SHOWN IN 2012 DOLLAR VALUES			

Table 16 - Conceptual Funding Matrix

Program of Project	Short-Term (±1-5 years)	Mid-Term (±5 -10 years)	Long-Term (10+ years)	Potential Funding Source(s)
Interstate 80 to Sutro Street		$5,060,651		*Local Fuel Tax, STP Local, RRIF, Discretionary*
Sutro Street to US 395	$3,950,268			*Local Fuel Tax, STP Local, RRIF, Discretionary*
Soundwall Construction		$4,010,000		*Local Fuel Tax, STP Local, RRIF, Discretionary*
US 395 to Silverada Boulevard	$1,833,745			*Local Fuel Tax, STP Local, RRIF, Discretionary*
Silverada Boulevard to Rock Boulevard	$7409397			*Local Fuel Tax, STP Local, RRIF, Discretionary*
Rock Boulevard to Pyramid Way		$3,456,054		*Local Fuel Tax, STP Local, RRIF, Discretionary*

Note: Enhanced transit stops and intersection signal improvements (including TSP) have not been included in the above segment budgets above and would need to be added in the future at the detailed design phases for the project.

Maintenance Estimate and Schedule

Based upon feedback received from the public and the technical advisory committee, the project team has prepared a maintenance estimate for the proposed improvements, assuming a 20-year life cycle for the proposed facilities. For the sake of drawing a comparison to test the economics of a "complete street" configuration versus the current roadway condition, the project team has prepared an existing conditions and proposed conditions estimate.

Tables 17-20 on the following pages demonstrate the estimated annual maintenance level of service and costs for existing versus proposed improvements. These cost estimates were developed based upon current maintenance unit costs and desired level of service provided by the City of Reno and City of Sparks, as well as the RTC.

Generally, local maintenance consists of long line striping, street sweeping, landscape maintenance, traffic signals, and (in cases where adjacent property owners are unable to do so) sidewalk maintenance. The tables estimate regular annual anticipated level of maintenance costs and service. The estimates assume regular maintenance items and it should be noted that non-annual or variable costs could not be included at this time. Further, these estimates are a snapshot of maintenance costs in 2012 dollars and do not account for inflation over time.

The current condition estimates approximately $52,000 annually. Assuming a 20 year life cycle for the roadway, this equates to an overall cost of approximately $1.04 million for the corridor. The proposed condition estimates that the annual local maintenance costs may increase to $78,000 per annum, with a 20-year life cycle cost of approximately $1.56 million — a $520,000 increase over the life of the project. There may be opportunities to reduce this annual cost through creative approaches to some aspects of roadway maintenance. For example, the local cycling community has shown tremendous interest in this community providing more and better bike facilities. In response to that, the Cities may be able to engage local cycling advocacy groups to develop an "adopt a bike lane" program that could help offset costs for sidewalk and cycle track sweeping. Additionally, the City of Sparks currently utilizes required community service works crews to assist with sidewalk clearing. It is recommended that a continued dialogue take place to continue to find new and creative ways to help local agencies maintain proposed multi-modal improvements throughout the community.

Table 19 shows the estimated per unit costs for preventative maintenance and assumes a maintenance schedule for the next 20 years. This estimate and schedule is based upon assumptions taken from the RTC Preventative Maintenance program.

Table 20 then compares the existing condition with the proposed condition for the 20-year life cycle of the roadway. For comparison purposes, the existing condition is assumed to have been repaved in year one and maintain the current condition of the roadway (and lack of sidewalk). The existing cross section is much larger than the proposed, with more pavement to maintain over the 20-year life of the roadway, however without the multi-modal features of the proposed condition. To maintain the existing pavement within the corridor for the next 20-years, it is estimated to cost approximately $21,196,332. With the proposed improvements, the pavement and sidewalk maintenance over that same time is estimated to be $14,955,163 — a savings of approximately $6,241,169.

Therefore, with the proposed improvements to the roadway there is an opportunity to increase modal choices, as well create a safer, more attractive and livable corridor, while at the same time saving Reno/Sparks taxpayers over **$5.7 million** in maintenance costs over the 20 year lifespan of the roadway.

Table 17

ODDIE/WELLS CORRIDOR STUDY
ANNUAL LOCAL MAINTENANCE ESTIMATE
EXISTING CONDITION

CONSTRUCTION UNIT COSTS				FREQ/YEAR
LONG LINE STRIPING (4" OR 6")	$	0.20	LF	2
STRIPED CHEVRON (WALK BEHIND STRIPER)	$	0.30	LF	2
STREET SWEEPING (REGULAR)	$	31.17	LANE MILE	12
STREET SWEEPING (WINTER)	$	32.50	LANE MILE	9
SIDEWALK SWEEPING (<8' WIDTH)	$	100.00	LANE MILE	6
LANDSCAPE MAINTENANCE	$	0.25	SF	1

SEGMENTS	LF/SEGMENT	COST/SEGMENT
INTERSTATE 80 TO SUTRO (4 LANES; SW MAINTAINED BY ADJ PROPERTY OWNER	4100	$ 11,919.60
SUTRO TO US 395 (4 LANES)	3100	$ 9,013.03
US 395 TO SILVERADA (6 LANES)	1500	$ 5,733.16
SILVERADA TO ROCK (4 LANES)	5900	$ 17,146.10
ROCK TO PYRAMID (4 LANES)	2800	$ 8,133.06
	SUBTOTAL	$ 51,945
	ROUNDED TOTAL	$ **52,000**

**NOTE COSTS ARE SHOWN IN 2012 DOLLAR VALUES*

Table 18

ODDIE/WELLS CORRIDOR STUDY
ANNUAL LOCAL MAINTENANCE ESTIMATE
PROPOSED CONDITION

CONSTRUCTION UNIT COSTS				FREQ/YEAR
LONG LINE STRIPING (4" OR 6")	$	0.20	LF	2
STRIPED CHEVRON (WALK BEHIND STRIPER)	$	0.30	LF	2
STREET SWEEPING (REGULAR)	$	31.17	LANE MILE	12
STREET SWEEPING (WINTER)	$	32.50	LANE MILE	9
SIDEWALK SWEEPING (<8' WIDTH)	$	100.00	LANE MILE	6
LANDSCAPE MAINTENANCE	$	0.25	SF	1

SEGMENTS	LF/SEGMENT	COST/SEGMENT
INTERSTATE 80 TO SUTRO (4 LANES; STRIPED CHEVRON; MEDIAN LS; PARTIAL PARKWAY LS'	4100	$ 16,801.85
SUTRO TO US 395 (4 LANES; CYCLE TRACK; MEDIAN/PARKWAY LS'	3100	$ 13,916.53
US 395 TO SILVERADA (5 LANES; CYCLE TRACK; MEDIAN/PARKWAY LS)	1500	$ 8,729.41
SILVERADA TO ROCK (4 LANES; CYCLE TRACK; MEDIAN/PARKWAY LS)	5900	$ 26,471.60
ROCK TO PYRAMID (4 LANES; STRIPED CHEVRON; MEDIAN LS; PARTIAL PARKWAY LS)	2800	$ 11,464.06
	SUBTOTAL	$ 77,383
	ROUNDED TOTAL	$ **78,000**

**NOTE COSTS ARE SHOWN IN 2012 DOLLAR VALUES*

Table 19

Roadway Maintenance Present worth Life-cycle Costing				
Year	**Item**	**Cost, $/SF**	**Present Worth Factor, 4%**	**Present Worth Dollars**
0	AC Pavement	$ 7.63	1	$7.63
1			0.9615	$0.00
2			0.9246	$0.00
3	Pavement Preservation	$ 0.40	0.889	$0.36
4			0.8548	$0.00
5			0.8219	$0.00
6			0.7903	$0.00
7			0.7599	$0.00
8			0.7307	$0.00
9			0.7026	$0.00
10	Pavement Preservation	$ 0.40	0.6756	$0.27
11			0.6496	$0.00
12			0.6246	$0.00
13			0.6006	$0.00
14			0.5775	$0.00
15			0.5553	$0.00
16			0.5339	$0.00
17	Pavement Preservation	$ 0.40	0.5134	$0.21
18			0.4936	$0.00
19			0.4746	$0.00
20			0.4564	$0.00
Subtotal				$8.46
Salvage Value				$8.50
Total				**$16.96**

Sidewalk Maintenance Present worth Life-cycle Costing				
Year	**Item**	**Cost, $/SF**	**Present Worth Factor, 4%**	**Present Worth Dollars**
0			1	$0.00
1			0.9615	$0.00
2			0.9246	$0.00
3			0.889	$0.00
4			0.8548	$0.00
5	10% Panel Replacements	$ 0.80	0.8219	$0.66
6			0.7903	$0.00
7			0.7599	$0.00
8			0.7307	$0.00
9			0.7026	$0.00
10	10% Panel Replacements	$ 0.80	0.6756	$0.54
11			0.6496	$0.00
12			0.6246	$0.00
13			0.6006	$0.00
14	10% Panel Replacements	$ 0.80	0.5775	$0.46
15			0.5553	$0.00
16			0.5339	$0.00
17			0.5134	$0.00
18			0.4936	$0.00
19			0.4746	$0.00
20	10% Panel Replacements	$ 0.80	0.4564	$0.37
Subtotal				$2.03
Salvage Value				0
Total				**$2.03**

Table 20

20 year Existing Condition Maintenance Costs			
Segment	**Quanitity**	**Unit Price**	**Extension**
I80 to Sutro Paving	266,500	$16.96	$ 4,520,160
I80 to Sutro Sidewalk	41,000	$2.03	$ 83,030
I80 to Sutro Cycle Track	-	$2.03	$ -
Sutro to US 395 Paving	210,800	$16.96	$ 3,575,421
Sutro to US 395 Sidewalk	-	$2.03	$ -
Sutro to US 395 Cycle Track	-	$2.03	$ -
US 395 to Silverada Paving	147,000	$16.96	$ 2,493,296
US 395 to Silverada Sidewalk	-	$2.03	$ -
US 395 to Silverada Cycle Track	-	$2.03	$ -
Silverada to Rock Paving	418,900	$16.96	$ 7,105,047
Silverada to Rock Sidewalk	-	$2.03	$ -
Silverada to Rock Cycle Track	-	$2.03	$ -
Rock to Pyramid Paving	201,600	$16.96	$ 3,419,378
Rock to Pyramid Sidewalk	-	$2.03	$ -
Rock to Pyramid Cycle Track	-	$2.03	$ -
	20 year Maintenance Estimate		$ 21,196,332

20 year Proposed Condition Maintenance Costs			
Segment	**Paving area (SF) original Configuration**	**Unit Price**	**Extension**
I80 to Sutro Paving	233,700	$16.96	$ 3,963,832
I80 to Sutro Sidewalk	49,200	$2.03	$ 99,636
I80 to Sutro Cycle Track	-	$2.03	$ -
Sutro to US 395 Paving	136,400	$16.96	$ 2,313,508
Sutro to US 395 Sidewalk	37,200	$2.03	$ 75,334
Sutro to US 395 Cycle Track	40,300	$2.03	$ 81,612
US 395 to Silverada Paving	63,000	$16.96	$ 1,068,556
US 395 to Silverada Sidewalk	18,000	$2.03	$ 36,452
US 395 to Silverada Cycle Track	19,500	$2.03	$ 39,490
Silverada to Rock Paving	247,800	$16.96	$ 4,202,985
Silverada to Rock Sidewalk	70,800	$2.03	$ 143,378
Silverada to Rock Cycle Track	76,700	$2.03	$ 155,327
Rock to Pyramid Paving	159,600	$16.96	$ 2,707,008
Rock to Pyramid Sidewalk	33,600	$2.03	$ 68,044
Rock to Pyramid Cycle Track	-	$2.03	$ -
	20 year Maintenance Estimate		$ 14,955,163

Redevelopment Implementation

Introduction

Transportation and land use are inextricably linked. A strategy to make major transportation and safety investments in a corridor must consider the challenges and opportunities related to the land uses along its length, since it is the transportation framework that creates the opportunity for, as well as constrains to, adjacent land use development. This section of the report addresses strategies for increasing economic development opportunities along the Oddie-Wells corridor so as to leverage the considerable public infrastructure investments that will be made in the roadway.

The economic development strategy begins by describing the unique situation of corridors and the challenges that they face in terms of adapting to change and new economic and demographic conditions. Drawing on national research and experience in other communities, several best practices are described that can guide the redevelopment of underutilized opportunity sites along Oddie and Wells. Following this section is a summary of the market and physical conditions affecting economic development along Oddie and Wells today. This information then leads to a discussion of a strategy to attracting investment, specifically addressing the opportunities present in the large vacant and underutilized commercial sites near Oddie and El Rancho. A conceptual redevelopment scenario for one of these sites is examined as an example of how redevelopment could occur on this and other sites.

Corridor Redevelopment Principles

Virtually all American metropolitan areas contain long stretches of commercial corridors. While many downtowns have seen dramatic revitalization over the past two decades, including Reno and Sparks, corridor revitalization continues to lag behind. The size and scale of corridors create obstacles not quickly or easily overcome. Commercial corridors represent one of the most pervasive challenges and valuable opportunities for revitalizing American cities. In urban and rural communities, corridors are experiencing rapid declines in property values and market share. Created in a generally laissez-faire environment well suited to the first generation of low-density postwar suburbia, they are no longer suited to the denser, more complex urban context of metropolitan America.

Characterized by low density, generally deteriorating development, swaths of surface parking, and primarily auto-oriented retail, commercial corridors see relatively little pedestrian activity and have inconsistent intensity, size, and mixes of businesses that results in corridors that change personalities often, sometimes every quarter mile. With patches of leapfrogging investment, inconsistent quality, and economic obsolescence, the aggregate effects of well-performing commercial developments that are geographically close but not physically integrated are becoming untenable. While, for example, a single automobile-oriented shopping center is easily accessible, dozens lined along the same suburban arterial may not be. The segment of Oddie Boulevard from U.S. 395 east to Rock Boulevard in Sparks is emblematic of this condition.

Focus Investment and Activity at Nodes

Resulting from the length and patchwork development of corridors, it is challenging to design a revitalization plan that simultaneously addresses the transportation and land use needs and stimulates investment across an entire strip that extends for miles.

As such, it is worthwhile to concentrate public investment and stimulate private growth along strategic nodes of development. Nodes are usually located at key crossroads along a corridor. By concentrating development at nodes, market potential can be concentrated rather than diluted along great distances.

Ideally, nodes should be selected based on a site with existing character, amenities, or established uses. It is most efficient and effective to identify nodes with large, developable parcels in limited ownership in order to avoid complex land assembly and where willing partners can be found. Finally, nodal development is easier when extensive demolition can be avoided.

Over time, as nodes strengthen, the areas along the corridor in between will redevelop as well.

Not All Nodes are Created Equal

A corollary to the above principle is that each node may be quite different from the others. Each node may have a unique character, with some being largely commercial, others residential, and others made up of mixed uses. Similarly, some nodes may be denser than others. This variety is actually beneficial to the corridor as it provides for a range of market-based opportunities depending on the local conditions at each site.

Evolution Will Take Time

The existing condition of Oddie and Wells is the result of many decades of development. Change will neither occur overnight nor all at once. Achieving the vision for this corridor will be an incremental process, with some properties being developed in phases over many years, progressively moving closer to the vision. Planning and development should allow for this evolutionary process—permitting interim uses that do not completely meet the future vision, but move forward from the present while preserving future opportunity.

Balance the Automobile with Transit Opportunities

The reality is that the automobile is currently, and will continue to be, the primary mode of travel in the Reno- Sparks region. Development strategies along Oddie and Wells must provide development opportunities that have adequate vehicular access, visibility, and parking. Through good urban design, the role of transit (perhaps an express bus line) and bicycle and pedestrian traffic can be encouraged and enhanced.

Role of the Public Realm in Catalyzing Development

Given that a corridor is a lengthy ribbon of transportation with many different places along its path, the one element that can give consistency to a corridor is in the public realm. The nature of streets—travel lanes, parking, landscaping, street lighting, street furniture, transit stops, and other features can provide a consistency to the corridor even though the adjacent uses may be ever changing. Since the public realm and transportation are typically the responsibility of the public sector (Sparks and Reno, RTC, NDOT), transportation investments are where public investments can be targeted to best catalyze desired land use change.

Many of the public investments should be made in concert with adjacent private investments through public-private partnerships where the projects can be coordinated and the public is assured that the infrastructure investment will be met with a commensurate private investment. However, in places where the public infrastructure is particularly deteriorated, often an up-front public commitment to revitalization through infrastructure investments may be needed in order to address some of the barriers to private investment such as visual blight, poor access, lack of lighting, and pedestrian safety. A key value of these public investments is to change the perception of what Oddie Boulevard/Wells Avenue are in the marketplace. The streetscape is part of the outward brand of the community and a reinvestment in this area can have a positive change on the perception of the area as a place to invest. In struggling real estate markets where new types of uses are proposed, public investments can provide the assurance necessary to attract private investment on adjacent properties. Planned together, public-private partnerships can enhance the value of each and ensure that the resulting whole is greater than the sum of its parts. Based on results seen in downtown revitalization efforts in other communities, this public investment should result in a leverage of at least five to one over time – that is, five dollars of private investment in adjacent and nearby development for every dollar of public investment in infrastructure.

Oddie-Wells Economic Development Conditions

As part of the Oddie Boulevard/Wells Avenue Corridor Study, the corridor was evaluated from a market and economic development perspective in order to understand how the corridor, as it exists today in 2012, is situated in relation to forecasted economic conditions and the above guiding principles of corridor redevelopment. As detailed in the Existing Conditions Report, this information included a demographic overview of the corridor and adjacent communities, a discussion of local and national demographic trends, an assessment of local real estate market conditions, and a review of physical redevelopment opportunities. A summary of the key findings from this analysis is as follows:

Market Conditions

Demographic shifts: Between retiring Baby Boomers and the younger Generation Y, the shape of American society is changing dramatically. As older Americans retire and younger ones enter the housing market for the first time, a significant shift in housing markets is underway. Both groups show an increased desire for simpler lifestyles where a sense of community and close proximity to jobs, amenities, and services is prioritized over larger homes in far-flung locations. This livability premium is evidenced by the resurgence in downtown Reno, Midtown, and other neighborhoods.

Housing markets in transition: Ongoing mortgage industry challenges and reduced personal incomes keep home ownership out of the reach of many, driving demand for rental housing in cities across the country. At the same time, consumer preferences, especially for the younger Generation

Y, are shifting to rentals, where the flexibility and maintenance-free lifestyle afforded by rentals are attractive features. Combined with a pent-up demand from several years of little multifamily housing development, the apartment vacancy rate in the region has dropped below five percent as of the third quarter of 2012. Population growth, especially among Baby Boomers and Generation Y, is expected to sustain low vacancies for several years.

Hispanic influences: Forty-three percent of residents in the Oddie-Wells corridor (defined as a ½-mile buffer on either side of the corridor) are of Hispanic origin, almost twice the share as in the Reno-Sparks region as a whole. This translates into a range of unique market opportunities for housing and businesses that cater to this demographic group. For example:

- By 2050 it is expected that Hispanics will comprise 24.4 percent of the US population.
- The importance of family and heritage is critical (approximately 61 percent of Hispanic-American families in the US have young children).
- The buying power of Hispanics is expected to grow to $1,482 trillion by 2015.
- Shopping habits and percentage of household income spent on food have important impacts on retail sales.
- There are also similar impacts in household size and housing preferences. Hispanic households are larger and multigenerational, comprised, on average, of 3.54 persons relative to an average of 2.46 among non-Hispanic households.

Household sizes and incomes: Fully 40 percent of households in the corridor are made up of only one person, indicating support for smaller and affordable housing types. Median household income in the corridor is significantly lower than that for the region.

Reno and Sparks economy: The Reno-Sparks economy was hard-hit by the economic recession of 2007-2009, with signs of recovery in many sectors only now being felt in 2012, particularly for the housing construction industry, which is a major factor in the region's economy. Nevada's unemployment rate remains well above the national average.

Retail market: Retail properties in Reno and Sparks have been hit particularly hard by the recession, with vacancy rates in most submarkets remaining well above 10 percent, and above the five to seven percent typically indicative of equilibrium. In the corridor, the Lowe's home improvement store on Oddie Boulevard recently closed (the store relocated to the Legends project), further exacerbating the problem in the study area. With such high vacancies coupled with ongoing economic challenges, many of the vacant retail sites may never be occupied with retail uses again.

Physical Conditions

Amenities and assets: The corridor is centrally located within the region and it provides multiple access points to the regional highway infrastructure with interchanges at I-80 and U.S. 395. The corridor also connects regional activity centers and destinations such as downtown Reno, the University of Nevada at Reno (UNR), the Livestock Events Center, and Teglia's Paradise Park.

Underutilized land: The corridor is characterized by large swaths of vacant or underutilized property, especially in the section of Sparks west of Rock Boulevard. Other sections of the corridor have few uses that directly face the street – as a former state highway, many adjacent properties have their front doors on nearby streets and it is the rear of the property that abuts the corridor.

Character of development: As is common with many corridors, Oddie and Wells have several different "personalities" along their length. Segments of the corridor include large open areas at the Livestock Events Center and the UNR agricultural properties in Reno, to the back sides of homes in adjacent neighborhoods on Wells east of UNR and on Oddie east of Rock Boulevard, to large vacant and underutilized retail sites along the heart of Oddie.

Economic Development Strategy

As described above, the Oddie-Wells corridor incorporates a range of different urban and not-so-urban environments along its length. This diversity is common in most corridors. However, the areas of the corridor where significant land use change is possible are mostly limited to the segment in Sparks from roughly Silverada Boulevard to Rock Boulevard. This area has large parcels, several of which are completely or partially vacant. As indicated by the market analysis, it is unlikely that these sites will ever be fully redeveloped with retail uses. In order to leverage the investment in the right-of-way projects recommended in the plan, other uses for these properties must be considered. This section of the report describes potential uses that could activate these areas and catalyst opportunity sites that could jump-start revitalization.

The Opportunity: A Complete Community

The commercial properties on the north side of Oddie Boulevard are large, comprising over 40 acres from Silverada Boulevard to just past Sullivan Lane. This includes the currently vacant Lowe's building, the former ShopKo site, several vacant parcels, as well as strip commercial buildings with existing tenants. It is rare to find such a large and mostly contiguous site in a location that is so central within the region. As such, these properties provide a unique opportunity to respond to the evolving demographic and economic changes and to redevelop into uses that can serve the surrounding neighborhoods while also meeting the demand for communities that provide a mix of housing and services in close proximity to regional amenities and job centers. The roadway, pedestrian, and bicycle improvements envisioned in the plan directly relate to the vision for the land uses along the corridor and respond to the demographic shifts noted earlier, which place a greater emphasis on walking, multimodal transportation, and quality public places. By meeting the needs of today's and tomorrow's residents, these transportation improvements not only meet certain transportation and safety needs, but they also serve as economic development tools by making this area more attractive as a place to live and work.

As these properties redevelop over time, they can incorporate a range of uses that meet these changing dynamics while also supporting the community's visions for a more mixed-use Oddie Boulevard, greater pedestrian safety and connectivity, and quality public spaces that help create a sense of place.

These uses can include:

A range of housing options: The sites are large enough that multiple housing products could be built over time. These could include townhouses (attached single family homes), apartments, senior housing, affordable housing, and assisted living facilities. A mix of housing types would allow for the properties to redevelop on a faster schedule since each product type could appeal simultaneously to different market segments. Townhouses, in particular, are not very prevalent in the Reno-Sparks area, but they are very common in other parts of the country. Townhouses, due to their small lot size and typically smaller unit size, provide an affordable ownership option for families while also providing benefits of a central location and minimal yard maintenance.

Adaptive reuse of big box stores: As described in the Existing Conditions Report, there are examples from across the country of big box stores being reused for many different non-retail purposes. These can include libraries, churches, medical clinics, schools, and a range of non-retail employment uses.

Connected public spaces: To help make the properties pedestrian friendly for their own tenants and users as well as the surrounding community, pedestrian walkways should be an integral component of site redevelopment. Parking should be efficient and parking areas should be designed to also serve as pedestrian paths where possible. With the addition of new housing, some shared open spaces will also be beneficial in order to create an outdoor amenity for residents.

Redevelopment of this area into a broader mix of residential and commercial uses would be in keeping with the Sparks' existing TOD zoning, which envisions a more integrated mix of uses in a pedestrian-friendly layout. Likewise, such development would add considerable value to the tax base, providing needed revenues for city services as well as tax increment to support redevelopment projects in Sparks' Redevelopment Area 2, which comprises much of the Oddie corridor. This new investment would have a ripple effect on surrounding neighborhoods, maintaining and enhancing their desirability. This, in turn, would have an overall positive impact on property values for the entire city – where there once was a "hole" of diminished value in the heart of the community, there would in the future be a base of

Figure 50 — Housing Examples

Townhouses

Apartments

Senior Housing

Affordable Housing

new investment and higher values.

Redevelopment of these areas will not happen overnight. Some of the challenges to rapid redevelopment include:

Market demand: Properties will only redevelop at the pace that the market can absorb new housing and other uses. While the current market (2012) is supportive of apartments, other uses may need to wait until a broader economic recovery is in place.

Fractured ownership: While there are some large landholdings under single ownership, in the aggregate, there are many different property owners. This will require some land assembly or at least some coordination between owners. Such coordination can take time, since each owner may have differing investment timelines and objectives.

Existing leases: While there are numerous vacancies, there are also many tenants operating businesses on the site, and these tenants have leases of various durations. This can complicate the timing of when certain buildings may be available for redevelopment.

Need for public investment: Much of the redevelopment will be done by the private sector in the form of new housing. However, in an emerging market where there is little precedent for the desired type of land use, public investments are often needed as a first step that addresses critical physical barriers and provides assurance that will attract private investment later. Public investments can include any type of public infrastructure such as the streetscape and safety improvements recommended in this plan as well as other investments such as utility infrastructure, parks, and other community amenities. In the current economic climate, where governments at all levels are facing reduced revenues, the ability to jumpstart development with catalytic public investments will be more challenging. As part of the City of Sparks Redevelopment Area 2, the area could potentially utilize financing and redevelopment assistance provided by the City, assuming that such funds are available and allocated to this project area.

Figure 51 — Adaptive Reuse Examples


Library


School


Church

Figure 52 — Connected Public Spaces


Paths


Pedestrian-friendly Parking


Plazas

Redevelopment Case Study

One potential node for redevelopment is at the intersection of Oddie Boulevard and El Rancho Drive. This node is close to many amenities and services such as a CVS Pharmacy to the west, a Sak'n'Save further west, Teglia's Paradise Park to the southeast, and K-Mart to the south. The northeast corner of this intersection is the site of the former ShopKo store, now vacant (also known as the Plaza 800 block). Elsewhere on the site are several retail uses and other vacant retail spaces. Given the large amount of vacant land and combination of surrounding uses, it could be a good candidate for redevelopment as a mixed-use development. This section of the report evaluates the feasibility of such a redevelopment through a conceptual plan and preliminary economic analysis.

Development Program

A development program is a narrative and quantitative description of how a property or area is recommended for development. Such a program serves as a guide to the physical planners (land planners, architects, landscape architects, and

others) who have responsibility for translating the narrative program into plans for physical land use, transportation, amenities, utilities, and more. A development program includes an overall identity for the project, including its image, how the property is positioned to best serve market opportunity, the brand to be presented, and how the plan unfolds over time. The overall financial objectives are to capture target markets, maintain economic viability, and continually strengthen prospects for financial success. These objectives must be achieved while also addressing consumers' desires and creating a positive, long-term identity for the project.

The development program for the Plaza 800 block is to develop it into a mixed residential community of housing with some support commercial services. Beginning with existing vacant parcels, a mix of townhouses and apartments could be built in the first phase, with additional apartments and senior or assisted living built in subsequent phases as existing leases expire. The site would incorporate a central plaza that would serve as a gathering space for residents as well as a green amenity to create a sense of place for the community. The site would include pedestrian and vehicular connections through the block to break up the large size of the site into smaller development parcels while also providing additional connection options through the site and to the surrounding neighborhood. The adjacent roadway improvements to Oddie Boulevard would complement the new development and help articulate the overall identity of the project.

Table 21 summarizes the development program and a conceptual redevelopment site plan (Figure 52) of the development is provided on page 76.

Financial Analysis

A preliminary financial analysis was conducted to determine whether the proposed development program would be economically feasible under today's economic conditions. As summarized below, the project is potentially feasible as described in the development program. As with any financial analysis, there are numerous assumptions built into it that, if changed, would affect the outcome dramatically. One of the most significant of these is the capitalization rate ("cap rate"), an industry metric used to translate a property's ongoing revenue stream into a near-term property value or purchase. As of 2012, these rates are at historic lows. The cap rate has an inverse impact on project value, so today's low rates translate to high values for properties that produce positive income flows. Other critical assumptions in the analysis include construction costs, land values, rental rates, and operating costs.

Further, this pro forma analysis is simplified in that it does not take into account the phasing of development over time or the impact of existing uses on the site that may produce income for a developer in early years while other parts of the property are developed. The model assumes that the Jiffy Lube and Sparks Coffee buildings are not redeveloped, but instead remain in their current uses. They are therefore not included in the economic analysis.

Table 22 on page 77 summarizes the costs of development. Development costs were derived from local market surveys and from construction industry sources and are estimates only. Including purchase of the land, full build out of the site could cost approximately $44.3 million. The model assumes that utilities are already available at the site and that the cost of internal circulation outside of the main north-south and east-west connector roads is allocated on a proportional basis to each land use and is included in those building costs.

Table 21
Plaza 800 Block Development Program

Land Use	Acres	Density	Amount	Notes
Gross Developable Area	17.3			
less Jiffy Lube site	-0.5			Assumed to remain
less Sparks Coffee site	-0.5			Assumed to remain
Subtotal	16.3			
less 20% for circulation	-3.3			Internal N/S and E/W streets
less Central Plaza	-0.5			
Net Developable Area	12.5			
Commercial/retail	0.5			Small support retail building
Housing				
Apartments	4.2	25/acre	105	1-2 apartment sites
Townhomes	4.2	18/acre	76	townhome neighborhood
Senior Housing	3.6	30/acre	108	senior housing or assisted living
Housing subtotal			289	
Total	12.5			

Source: Leland Consulting Group

Figure 53 — Conceptual Redevelopment Site Plan

Revenues from sales of property on the site include sales of town homes to individual homebuyers as well as the sale of apartment and senior housing buildings to investors or operators. Revenue assumptions are closely tied to industry cap rates, achievable apartment rents, and sales prices for ownership housing. The retail component of the project is assumed to simply break even on construction costs and not generate any profit given current market conditions. In Reno's challenging housing economy, the suggested rental rates are above current market conditions, but may still be achievable given the site's excellent central location and the added value that would be derived from a planned community with a plaza and other shared amenities. The analysis indicates a potential value of $44.8 million (Table 23).

The differential between the project cost and its value is positive, which indicates a project that is, at a conceptual level, above "break even," resulting in a profit of $470,000, or approximately 1.1 percent on project costs. Apartment developers will typically seek projects with a profit margin of eight to 10 percent, however. Therefore, the conceptual project is not profitable enough to attract developers as currently described. Nevertheless, it does indicate that the project is potentially viable and worth consideration if cost savings could be achieved or project rents exceed projections. There are several ways to improve the project financially, which can include:

- Reduce construction costs through efficient design and "value engineering" – achieving construction costs that are lower than industry averages;
- Form a public-private partnership where public

Table 22
Development Cost Estimate

Element	Cost	Notes/Assumptions
Property purchase	$ 3,905,000	Approx. $5.50 per sq. ft. of land, net of Jiffy Lube and Sparks Coffee
Hard Costs		
Plaza construction	$ 436,000	Approx. $20 per sq. ft.
Internal streets	$ 1,140,000	Approx. 1,900 ft. of streets (N/S and E/W), $600 per lineal foot
Commercial/retail construction	$ 480,000	Approx. 6,000 sq. ft., $80 per sq. ft., including some tenant improvement
Commercial/retail parking	$ 72,000	$3,000 per stall, 4 spaces per 1,000 sq. ft.
Townhouse construction	$ 8,208,000	Approx. $90 per sq. ft., 1,200 sq. ft. avg. size, includes parking
Apartment construction	$ 7,140,000	Approx. $80 per sq. ft., 850 sq. ft. avg. size
Apartment parking	$ 410,000	$3,000 per stall, 1.3 spaces per unit
Senior housing	$ 12,096,000	Approx. $140 per sq. ft., 800 sq. ft. avg size, including common areas
Senior housing parking	$ 243,000	$3,000 per stall, 0.75 spaces per unit
Subtotal	$ 34,130,000	
Contingency	$ 3,413,000	10% of hard costs
Soft costs	$ 6,826,000	20% of hard costs, includes design, permits, insurance, etc.
Total Project Costs	$ 44,369,000	

Source: Leland Consulting Group

Table 23
Development Value Estimate

Element	Value	Notes/Assumptions
Commercial/retail	$ 552,000	Assumes break-even on retail space
Apartments	$ 9,826,133	6% vac., 30% oper. costs, Avg. rent of $800/mo., 6.75% cap rate
Senior housing	$ 24,300,000	Approx. $225,000 per unit in value
Townhouses	$ 11,400,000	$150,000 sale price per unit
less marketing costs	$ (684,000)	6% real estate commissions
Total Project Revenues	$ 44,842,133	

Source: Leland Consulting Group

funding is brought in to support some of the open space, infrastructure, and other project elements (such as the central plaza or internal streets);

- Reduce permit fees to reduce the soft costs; and
- Accelerate phasing and sales, which will have a direct impact on value.

In all cases, the project would need a robust marketing program that articulates the uniqueness of the site, its excellent location, and its on- and off -site amenities in order to achieve the rents and sales values that are projected to be above the current averages for the Sparks market. New products that are well located and well designed typically do exceed market averages.

In conclusion, the Plaza 800 site is a unique opportunity to capitalize on current housing and demographic trends to develop a demonstration project that repurposes a vacant and underutilized site to build a new community and amenities that will significantly change the character of Oddie Boulevard for the positive. Despite today's economic conditions, the project appears to be economically viable, subject to several conditions. If this redevelopment model proves successful, it could be "portable" and applied on other vacant and underutilized properties on the Oddie Boulevard corridor and elsewhere.

Appendix A - Future Traffic Volumes

Oddie / Wells - FUTURE TRAFFIC VOLUMES

Date : 5 / 10 / 12

Based on RTC Travel Demand Model Outputs dated 03/16/2012

Location East of:	Kuenzli	6th St.	I-80 EB	I-80 WB	9th St.	Sutro	Montello	395 SB	395 NB	Silverada	El Rancho	Sullivan	Rock	12th St.	Pyramid	
Existing 2010/2011 **Total**	**23,800**	**29,000**	20,300	**16,000**	10,500	8,800	14,600	16,900	**25,500**	18,700	**17,000**	12,800	11,300	**9,400**	3,000	Extrapolated with 12 K-factor
2008																
WB	108	176	159	129	84	57	88	171	158	103	74	68	57	57	20	
EB	176	215	117	98	67	96	127	91	148	111	84	81	63	50	9	
Total	**28,400**	**39,100**	**27,600**	**22,700**	**15,100**	**15,300**	**21,500**	**26,200**	**30,600**	**21,400**	**15,800**	**14,900**	**12,000**	**10,700**	**2,900**	
2018																
WB	123	259	244	156	103	60	94	163	151	95	70	69	55	54	19	
EB	191	317	135	137	91	69	101	69	159	117	88	83	57	44	9	
Total	**31,400**	**57,600**	**37,900**	**29,300**	**19,400**	**12,900**	**19,500**	**23,200**	**31,000**	**21,200**	**15,800**	**15,200**	**11,200**	**9,800**	**2,800**	
2030																
WB	181	289	261	188	132	60	102	175	147	87	66	66	54	52	16	
EB	254	374	161	150	99	60	95	64	149	95	69	64	57	43	7	
Total	**43,500**	**66,300**	**42,200**	**33,800**	**23,100**	**12,000**	**19,700**	**23,900**	**29,600**	**18,200**	**13,500**	**13,000**	**11,100**	**9,500**	**2,300**	
Difference 2008-2030	15,100	27,200	14,600	11,100	8,000	(3,300)	(1,800)	(2,300)	(1,000)	(3,200)	(2,300)	(1,900)	(900)	(1,200)	(600)	Model predicted decreasing volumes
% change	53.17%	69.57%	52.90%	48.90%	52.98%	-21.57%	-8.37%	-8.78%	-3.27%	-14.95%	-14.56%	-12.75%	-7.50%	-11.21%	-20.69%	
% / year	2.42%	3.16%	2.40%	2.22%	2.41%	-0.98%	-0.38%	-0.40%	-0.15%	-0.68%	-0.66%	-0.58%	-0.34%	-0.51%	-0.94%	
ADJUSTED %/yr	1.50%	1.50%	1.50%	1.50%	1.50%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	
20 years multiplier	1.3	1.3	1.3	1.3	1.3	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
30 years multiplier	1.45	1.45	1.45	1.45	1.45	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	
2030 Projected Total	(rounded up to nearest 100) **31,000**	**37,700**	**26,400**	**20,800**	**13,700**	**11,000**	**18,300**	**21,200**	**31,900**	**23,400**	**21,300**	**16,000**	**14,200**	**11,800**	**3,800**	Existing Volume * 20 year multiplier
NDOT Highest Historical Volume		33,500		19,300	13,000		18,000		31,000	21,000	21,700	15,400		11,400		