

**APPENDIX A**  
**STATE AND REGIONAL PLANS GOALS AND POLICIES**



### 1. STATE PLANS AND POLICIES

#### NEVADA STRATEGIC HIGHWAY SAFETY PLAN

##### Education Strategies

| <b>STRATEGY 4: PROVIDE PEDESTRIAN SAFETY EDUCATION FOR PEDESTRIANS AND MOTORISTS</b> |  |
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| Definition   | Increase the awareness of pedestrian safety by both the pedestrian and the motorist by providing education, outreach, and training (i.e., meaning of WALK, flashing DON'T WALK and DON'T WALK phases; risks on high volume/speed roadways resulting from disabled vehicle, motorist assist, and crossing multi-lanes; safety education programs in schools; Safe Routes to School; bus riders) and also educate pedestrians on the benefits of improved reflectorization/conspicuity (i.e., reflective clothing).  |
| <b>Technical</b>   |  |
| Description  | This strategy is a broad-based approach to improving pedestrian safety awareness and knowledge for pedestrians and motorists. The goal of this strategy is to not only provide information, but to change behaviors to reduce the risk of pedestrian crashes. Motivation to change behavior can be provided through several approaches including, educational campaigns and programs, public awareness campaigns, campaigns to targeted groups (i.e., school age kids, elderly, motorists, transit rider, etc.) and settings (i.e., school zones, downtowns, Las Vegas Strip, transit stops, etc.), and individual campaigns (i.e., pediatrician discussing child pedestrian safety with parents). Additional information on these approaches and example programs are presented in Strategy 9.1 D1 of <i>NCHRP Report 500, Volume 10: A Guide for Reducing Collisions Involving Pedestrians</i> .   |
| Target(s)  | This strategy could be a broad-based approach intended to address all forms, types and circumstances in pedestrian crashes, or the program can be aimed at high-risk groups if the program's extent is limited by available resources.   |
| Goal   | The statewide traffic safety goal is a 33% reduction in the fatality crash rate from 1.91 in 2003 to 1.27 by 2008. Achieving this goal is expected to reduce the annual number of traffic fatalities by 100 in 2008. Between 1998 and 2002, there were a total of 276 pedestrian fatalities (nearly 16% of all fatalities), which is an annual average of 55 fatalities per year. To achieve Nevada's safety goal, the number of annual pedestrian fatalities needs to be reduced by 16. It is unlikely that pedestrian education alone could achieve such a goal for pedestrian crashes; therefore, this strategy needs to be part of a more comprehensive approach to address fatalities (i.e., such as coupled with enforcement campaigns or engineering improvements).<br><br>Ideally all programs would be implemented statewide; however, 90% of pedestrian fatalities occur in Clark County (72%) and Washoe County (18%). This would suggest that at a minimum there should be a renewed focus on pedestrian safety in these two counties. |
| Responsive and Preventative Plans  | Like most education strategies, this education strategy is typically a preventative approach to reduce pedestrian fatalities. A responsive plan for deploying the strategy would be to target only high risk population groups or high risk areas (i.e., Clark and Washoe Counties) instead of a broad-based, statewide approach.  |
| Expected Effectiveness   | (Proven/Tried/Experimental) In NCHRP Report 500, Volume 10 (Strategy 9.1 D1), it was reported that there have been numerous studies on the effectiveness of various pedestrian education programs. One program reviewed was a NHTSA film aimed at grades K-3, which helped reduce dart and dash crashes by 30% among 4- to 6-year-olds in Los Angeles, Columbus, and Milwaukee. Follow-up film for grades 4-7 was determined to be responsible for a 20% reduction in the number of 9- to 12-year olds in pedestrian crashes in Milwaukee. The follow-up film was also credited with the positive results in children's observed behavior and increased information retention in Connecticut.<br><br>A team of highway safety experts concluded that a statewide pedestrian education program is expected to prevent one pedestrian fatality every five years.   |

### STRATEGY 4: PROVIDE PEDESTRIAN SAFETY EDUCATION FOR PEDESTRIANS AND MOTORISTS

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| Keys to Success                                  | <p>The first element of success for an education program is to reach a large number of people. But it is also important that these people are reach with hard-hitting, high quality material that will encourage a change in behavior. Ideally, programs would also be comprehensive and ongoing (i.e., every year there is a new group of kindergartners that need to be taught how to be safe walking to school). Especially in the Reno and Las Vegas areas, the high number of visitors and tourists (either as pedestrians or motorists) means the programs need to be ever present and easily seen.</p> <p>Finally, engineering (Critical Strategy #12) and enforcement (Critical Strategy #8) strategies used in conjunction with education strategies can help improve the program's results.</p> |
| Potential Difficulties                           | <p>Developing an effective message that will actually improve pedestrian and drivers' behavior will be a major challenge. If an effective message has been created, it will still have no impact if it isn't heard and it is possible that the task of getting the message out to the population (broad-based or target population) will prove difficult.</p> <p>As with many strategies, the cost associated with implementation can be prohibitive when budgets are already constrained. It will be incumbent on agencies and law makers to set aside funding and make the programs a priority.</p>   |
| Appropriate Measures and Data                    | <p>Surveys on the issue of pedestrian safety knowledge and common practices can be conducted before and after programs to measure how well the programs were at increasing awareness and motivating a change in behavior. Another piece of information that should be collected is the number of individuals that have been through an educational program, especially those in high risk groups, such as elderly, young, or transit riders.</p> <p>Ultimately, the frequency of pedestrian crashes need to be monitored to see if there is a decrease. Depending on the program, this may include looking at statewide totals or pedestrian crashes involving specific groups or in specific locations (i.e., school zone, Clark County, etc.)</p>   |
| <b>Organizational and Institutional</b>          |   |
| Champion   | Department of Public Safety   |
| Organizational, Institutional, and Policy Issues | Generally there are expected to be few agency issues. Most of these programs should fit well within the duties of existing safety agencies and/or safety advocacy groups within Nevada.   |
| Issues Affecting Implementation Time             | The time to develop and implement new programs or develop materials that can be shared with pedestrians and motorists should take less than six months. Prior to this, the State may need to take time analyze crash data to identify target groups or locations.   |
| Costs Involved                                   | Costs will have large variations depending on the number of programs initiated, the size of the audience being reached, and the method of education (i.e., television versus brochures). It has been estimated that the cost to operate an outreach program will cost approximately \$500,000 per year to cover staff time, print materials, and media costs.   |
| Training and Other Personnel Needs               | Nevada's existing agencies likely have staff with sufficient training to implement and run these programs.  |
| Legislative Needs                                | None identified.  |

### Enforcement Strategies

| <b>STRATEGY 8: ENFORCE PEDESTRIAN LAWS AT HIGH CRASH LOCATIONS (JUDICIAL FOLLOW-THRU)</b> |  |
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| Definition  | Raise motorist and pedestrian compliance with pedestrian safety laws through implementation of enforcement campaigns in high crash locations and at other locations with similar geometry, control, and exposure characteristics. Increase the effectiveness of enforcement of pedestrian laws by educating the court system on the importance of judicial follow through on citations.  |
| <b>Technical</b>  |  |
| Description   | <p>In order to improve pedestrian safety, this strategy recommends using traditional law enforcement techniques at locations or along corridors with a high incident of pedestrian crashes. Pedestrian safety laws should also be enforced in locations where there may not be a crash problem, but roadway and traffic characteristics are similar to locations that have a pedestrian crash problem. Within Nevada, there are several safety laws that are related to pedestrian safety. These laws include, but are not limited to: speeding; drunk driving; public intoxication of pedestrians; pedestrians must use sidewalk or walk on left side of street facing traffic if sidewalk is unavailable; pedestrians must use nearest crosswalk, pedestrian bridge or tunnel; pedestrians must obey traffic signal controls; pedestrians cannot cross intersection diagonally unless designed to do so; drivers must yield to pedestrians in a crosswalk; drivers must yield at all times to a blind person using a white cane or service animal; at school zones, driver must wait for all people to clear the road before proceeding; before passing a vehicle stopped in a travel lane, a driver must slow or stop to make sure vehicle is not waiting for a pedestrian to cross. In order to prevent pedestrian fatalities, enforcing the vehicle laws in this list will likely prove to be as important as enforcing the pedestrian laws.</p> <p>As mentioned in other critical strategies, this strategy also includes a component to educate judges and prosecutors to ensure citations are upheld. Over time, frequent dismissal or reducing of charges can instill into a population that traffic laws are not really that important. Education and meetings with judges and prosecutors could be done on an individual basis or presentation could be made to the judges forums held in Reno.</p> |
| Target(s)   | This strategy targets all forms of pedestrian crashes, but especially those that happen in high-incident locations.  |
| Goal  | <p>The statewide traffic safety goal is a 33% reduction in the fatality crash rate from 1.91 in 2003 to 1.27 by 2008. Achieving this goal is expected to reduce the annual number of traffic fatalities by 100 in 2008. Between 1998 and 2002, there were a total of 276 pedestrian fatalities (nearly 16% of all fatalities), which is an annual average of 55 fatalities per year. To achieve Nevada's safety goal, the annual number of pedestrian fatalities needs to be reduced by 16.</p> <p>Ideally all programs would be implemented statewide; however, 90% of pedestrian fatalities occur in Clark County (72%) and Washoe County (18%). This would suggest that at a minimum there should be a renewed focus of enforcing pedestrian safety laws in these two counties.</p>   |
| Responsive and Preventative Plans   | <p>Increased law enforcement of pedestrian safety laws where there has been a history of high crash risk would be a reactive deployment. However, this strategy can be deployed proactively by identifying locations where there has yet to be a crash problem, but the location or corridor has characteristics (cross-section design, traffic volumes, pedestrian volumes, intersection control, cross-walk marking and location) similar to locations with a crash problem.</p> <p>Judicial follow-through of citations is reactive to people caught violating pedestrian laws. However, it will be proactive in sending a message to the public that these laws are important to pedestrian safety and then enforcing them is believed to be equally important to improving safety.</p>  |
| Expected Effectiveness  | (Tried/Experimental) Little effectiveness information is available; therefore a group of highway safety experts from Nevada has estimated that increased enforcement at ten high incident locations could prevent one traffic fatality per year. The effectiveness of each court that takes a strict approach to pedestrian safety laws could result in one pedestrian fatality prevented each year.   |

### STRATEGY 8: ENFORCE PEDESTRIAN LAWS AT HIGH CRASH LOCATIONS (JUDICIAL FOLLOW-THRU)

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| Keys to Success                                  | <p>To be effective, pedestrians and motorist first must have an understanding pedestrian safety laws and secondly that there is a change in attitude in the court system on punishing violators.</p> <p>Getting the media (TV, radio, and print) involved and backing the enforcement campaigns will prove to be a valuable component to actually changing peoples' behavior (pedestrians and motorists).</p> <p>Support for moving from the status quo to strict adherence to safety laws (even for first time offenders) is needed by the general population and judicial system.</p>  |
| Potential Difficulties                           | <p>Most of these laws would likely result in a citation that would never make it to a court (i.e., the offender chooses to pay the fine and not contest the citation). For these laws, it is unlikely there is much of a potential to further overload the courts. However, several laws, such as speeding and related to intoxication, which can carry heavier fines and penalties may result in a larger work load if prosecutors refuse to reduce charges as part of a plea bargain; thereby, initially increasing the number of people in the court or jail system. However as information spreads about the judicial system strictly upholding the law, this may be a deterrent and actually decrease the number of people in the court system.</p> |
| Appropriate Measures and Data                    | <p>Within the jurisdictions where enforcement is increased and judges and prosecutors are refusing to reduce traffic safety charges, one should look for a reduction in the number pedestrian crashes. There may be an initial increase in citations issued, but would expect to decrease as the news spreads about the program.</p>   |
| <b>Organizational and Institutional</b>          |  |
| Champion   | Department of Public Safety and local law enforcement.   |
| Organizational, Institutional, and Policy Issues | Judges and prosecutors are extremely independent in their decision making. It is critical that a policy is created that provides for strict enforcement of penalties while simultaneously respecting the unbiased role of the judiciary.   |
| Issues Affecting Implementation Time             | <p>Additional and targeted enforcement could be implemented as soon as funding is identified and these "hot spots" are identified. The time to identify locations without a crash problem but have characteristics similar to locations with a crash problem may take several additional months. Overall, an enforcement program should be able to be implemented within one year of finding the funding.</p> <p>The time to change the culture of the courts will vary. However, development and production of materials to distribute and identification of persons to meet with the court employees should take no more than six months.</p>  |
| Costs Involved                                   | <p>The cost of this strategy can vary depending on how aggressively it is deployed. But an expected cost to conduct statewide enforcement at high crash locations (or locations with similar characteristics) is \$750,000 per year (Note: Refer to Critical Strategy #7 for a cost breakdown of a similar program, Click It or Ticket.) An approximate cost for staff time and related expenses to educate the courts (i.e., judges and prosecutors) on the importance of judicial follow through is \$100,000 per year.</p>  |
| Training and Other Personnel Needs               | <p>Agencies may need to hire additional officers in order to provide increase traffic patrol or at least be willing to pay overtime.</p> <p>The court systems may need additional staff if enforcing traffic laws increases the workload significantly.</p>  |
| Legislative Needs                                | None identified.   |

### Engineering Strategies

| <b>STRATEGY 12: INCREASE PEDESTRIAN SAFETY BY CONSTRUCTING SIDEWALKS, REFUGE ISLANDS, AND UPGRADING SIGNALS</b> |  |
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| Definition  | To address pedestrian crashes, reduce pedestrian exposure to vehicular traffic and improve sight distance and/or visibility between motor vehicles and pedestrians. This may include improving pedestrian and bicycle facilities to reduce conflicts between motorists and non-motorists by providing sidewalks/walkways and curb ramps; constructing pedestrian refuge islands and raised medians; eliminating screening by physical objects; and installing or upgrading traffic and pedestrian signals (i.e., improved timing, count down timers, image displays, extended delay to accommodate elderly, advanced WALK display, etc.)   |
| <b>Technical</b>  |  |
| Description   | <p>Providing facilities that help separate pedestrian traffic from vehicular traffic is the first approach to reducing pedestrian related crashes. Ideas to help separate the two forms of traffic include providing separate facilities, such as sidewalks/walkways parallel to streets and roadways or even constructing mixed-use paths if appropriate. For pedestrians needing to cross a road, curb ramps can be added to help pedestrians know where to cross and pedestrian islands and raised medians can provide a haven for pedestrians as they make the crossing in stages.</p> <p>Improved pedestrian and traffic signal equipment and timing can also reduce a pedestrian's exposure to traffic. Some of the newer equipment (i.e., pedestrian count down timers) may increase a pedestrian's awareness and prevent them from making a mistake when crossing a road. Improving timings will help assure a pedestrian has enough time to safely cross.</p> <p>Another part of this strategy is to improve the visibility between the pedestrian and motorists. At a crossing, this may include removing/relocating roadside objects (i.e., signs, bushes, mailbox, etc.) or eliminate parking that can hide a pedestrian. Another strategy to improve the visibility of the pedestrian is to move the curb closer to the travel lane, such as a pedestrian bump-out.</p> |
| Target(s)   | This strategy will target crashes involving a pedestrian.  |
| Goal  | <p>The statewide traffic safety goal is a 33% reduction in the fatality crash rate from 1.91 in 2003 to 1.27 by 2008. Achieving this goal is expected to reduce the annual number of traffic fatalities by 100 in 2008. Between 1998 and 2002, there were a total of 276 pedestrian fatalities (nearly 16% of all fatalities), which is an annual average of 55 fatalities per year. To achieve Nevada's safety goal, the annual number of intersection fatalities needs to be reduced by 16. This strategy would have a greater chance of achieving the pedestrian fatality goal if it was part of a comprehensive program coupled with enforcement and/or education strategies.</p> <p>Ideally all programs would be implemented statewide; however, 90% of pedestrian fatalities occur in Clark County (72%) and Washoe County (18%). This would suggest that at a minimum there should be a renewed focus on pedestrian safety in these two counties. In Nevada, a goal for consideration would be to improve 50 locations each year.</p>  |
| Responsive and Preventative Plans   | <p>This strategy consists of both a responsive and preventative components. Pedestrian facility improvements could be deployed reactively by targeting locations where the crash history is significantly greater than expected (Strategy #20 addresses this need.)</p> <p>A proactive deployment would be to improve locations that may not have a significant crash problem, but have traffic, roadway, and/or pedestrian movement characteristics similar to locations where there is a crash problem. Another proactive deployment would be to incorporate sidewalks, raised medians, refuge islands, and improved signal timing techniques and equipment into all applicable construction projects. A prioritized plan for a system wide implementation may be based on crash history, functional classification, volume, or a combination of these or other factors.</p>   |

### STRATEGY 12: INCREASE PEDESTRIAN SAFETY BY CONSTRUCTING SIDEWALKS, REFUGE ISLANDS, AND UPGRADING SIGNALS

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| <p>Expected Effectiveness</p>                  | <p>(Proven/Tried/Experimental) Several studies were reported in NCHRP Report 500, Volume 10: A Guide for Reducing Collisions Involving Pedestrians (Strategy 9.1 A1), all of which found sidewalks have a strong safety benefit. Generally, the presence of sidewalks were found to reduce crashes that involved a pedestrians walking along the street by 50% - 90%, compared to locations with no sidewalks. One study also found that sidewalks have a large safety benefit in residential and mixed residential areas, but not in commercial areas.</p> <p>Raised medians were found to have the greatest benefit on multi-lane roadways. At an ADT greater than 15,000 and at marked crosswalks, raised medians help reduce the pedestrian crash rate by approximately 46%. Similarly, the presence of raised medians was associated with nearly a 50% reduction in the pedestrian crash rate for multi-lane roadways with an ADT below 15,000. (graph of study results in Volume 10, Strategy 9.1 B2) Other studies have found that painted medians or two-way center left-turn lanes offered pedestrians no significant safety benefit on multi-lane roadways. (Volume 10, Strategy 9.1 A3)</p> <p>To help improve the visibility between motorists and pedestrians, one study looked at the effectiveness of installing advanced yield markings at pedestrian crossings. Driver compliance with the advance markings was reported as high and helped reduce vehicle pedestrian conflicts by as much as 76 percent. (Volume 10, Strategy 9.1 B3)</p> <p><u>Traffic and Pedestrian Signals:</u> (Volume 10, Strategy 9.1 A2)</p> <ul style="list-style-type: none"> <li>• Pedestrian Signal Timing: Early release (a.k.a. advanced WALK) reduced vehicle-pedestrian conflicts by as much as 95% in St. Petersburg, Florida. Leading pedestrian and exclusive pedestrian phases have been found to have positive safety benefits.</li> <li>• Signal Enhancements: Automated pedestrian signals had improved compliance. Countdown timers had fewer pedestrians in the intersection when the DON'T WALK appeared, but had lower pedestrian compliance.</li> <li>• Twenty-one percent of motorists did not obey right-turn-on-red restrictions, and of these violations, 23% resulted in a pedestrian-vehicle conflict. Several strategies found to improve driver compliance included illuminated NO TURN ON RED (NTOR) signs, the NTOR sign that includes a red ball, electronic NTOR sign activated during school crossing times or other critical times, and offset stop bar at intersections where turn-on red is allowed.</li> </ul> |
| <p>Keys to Success</p>                         | <p>A well designed remediation measure (including placement of signs, lighting, pavement markings, etc.) is the first step to an engineering strategy. Other issues to consider in designing pedestrian accommodations include ADA requirements. Especially for new strategies but even for some existing technology (WALK, flashing DON'T WALK, and steady DON'T WALK), pedestrian and driver education is needed.</p> <p>Finally, consistent and statewide deployment will be necessary to have a substantial impact on the number of pedestrian crashes and fatalities.</p>  |
| <p>Potential Difficulties</p>                  | <p>There needs to be a balance between pedestrian and vehicle operations at all signalized intersections. For example, providing pedestrians more time to cross may just cause driver frustration, resulting in actions that can still endanger, the driver or other drivers (i.e., red-light running). This also is tied to the problem of getting driver and pedestrian compliance with traffic laws. Combination of enforcement, education, and engineering strategies may be needed to improve behavior and eliminate dangerous or risky choices.</p>   |
| <p>Appropriate Measures and Data</p>           | <p>There needs to be a tracking of places that have been improved and exactly what improvements were made. At these locations, engineers should track pedestrian conflicts, crash frequency, vehicle volumes, pedestrian volumes, and any other contributing factors.</p>   |
| <p><b>Organizational and Institutional</b></p> |   |
| <p>Champion</p>                                | <p>Nevada Department of Transportation</p>  |

### STRATEGY 12: INCREASE PEDESTRIAN SAFETY BY CONSTRUCTING SIDEWALKS, REFUGE ISLANDS, AND UPGRADING SIGNALS

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| Organizational, Institutional, and Policy Issues | <p>Highway agencies will need to develop guidelines and policies (i.e., land use, functional classification, pedestrian volumes, vehicle volumes, etc.) on when pedestrian accommodations (i.e., sidewalks, raised medians) should be included in construction projects. For example a moderate volume road through a residential area may warrant sidewalks and pedestrian signal crossings, but a high volume road through a rural area could have extremely low or no pedestrians and subsequently no need for special pedestrian accommodations.</p> <p>Agencies should also consider developing best practices, list of potential countermeasures, and listing of improved sites so that decision makers have additional resources when trying to remediate a location.</p>  |
| Issues Affecting Implementation Time             | <p>Identification of locations warranting improvement(s) may take several months, depending on the size of the agencies jurisdiction. After identifying high crash locations or locations that has a high potential for pedestrian crashes, identification of needed countermeasures may require several weeks to several months depending on the number of locations identified. Further implementation of the countermeasures may take only several days to remove physical objects, months to update signal equipment or construct sidewalks or years to reconstruct an intersection or corridor to add raised medians or refuge islands.</p>  |
| Costs Involved                                   | <p>The costs will depend on the project selected. The cost to remove roadside “furniture” that hides pedestrians may cost only several thousand dollars. However, updated traffic and pedestrian signal equipment or constructing raised medians and refuge islands may start at \$100,000 and increase to several hundred thousand dollars per intersection.</p> <ul style="list-style-type: none"> <li>• NCHRP Report 500 (Appendix 8 of Volume10) reported the cost of crossing islands at \$4,000 - \$30,000 each and raised medians as \$15,000 - \$30,000 per 100 feet.</li> <li>• NCHRP Report 500 (Appendix 12 of Volume10) reported the cost of sidewalk with curb and gutter at \$15 per linear foot for curbing, curb ramps at \$800 to \$1,500 each, and \$11 per square foot for sidewalks. For the cost of sidewalks, Nevada’s experience is that sidewalks are expected to cost \$5 per square foot.</li> <li>• NCHRP Report 500 (Appendix 9 of Volume10) reported the cost of traffic signal upgrades as \$40,000 to \$140,000 per intersection while upgrading pedestrian signals could be in the range of \$20,000 to \$40,000 per intersection.</li> </ul> <p>When possible, combining improvements into new construction (or reconstruction) can be more cost efficient for the improvements.</p> |
| Training and Other Personnel Needs               | <p>Highway agency staff (including planning, programming, design, and construction departments) will need to be trained to identify potentially dangerous locations, the contributing factors (roadway, driver, pedestrian), and appropriate remediation measures.</p>  |
| Legislative Needs                                | <p>Local ordinances may be needed to require developers to install sidewalks along roadways.</p>  |

### Data Systems and Data Management Strategies

### STRATEGY 20: DEVELOP CRITERIA TO IDENTIFY HIGH PEDESTRIAN CRASH LOCATIONS AND PLACEMENT, DESIGN AND IMPLEMENTATION GUIDELINES FOR PEDESTRIAN AMENITIES.

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| Definition | <p>Implement a pedestrian safety program targeting pedestrian “high crash locations” in the major urban areas and select rural areas. This includes developing a criterion that provides the ability to identify pedestrian high crash locations and develop guidelines for the placement, design and implementation of pedestrian amenities (i.e., sidewalks, traffic control devices, crosswalks, driveway management, pedestrian friendly designs).</p> |
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**STRATEGY 20: DEVELOP CRITERIA TO IDENTIFY HIGH PEDESTRIAN CRASH LOCATIONS AND PLACEMENT, DESIGN AND IMPLEMENTATION GUIDELINES FOR PEDESTRIAN AMENITIES.**

**Technical**

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| Description                                      | <p>In order to implement targeted enforcement or engineering improvements at high crash locations, a procedure is needed to find the locations. Without a data driven procedure, the method most likely used to identify high crash locations would be to rely on the general public or knowledge of engineers and law enforcement officers in an area. Although this is an important component in the final decision on where to deploy safety devices, the risk is that some high crash locations may go overlooked while some locations included may have a relatively minor problem.</p> <p>The second aspect of this strategy is developing guidelines or templates for the placement and design of pedestrian amenities. The guidelines can range from every day devices such as sidewalks and crosswalks to more uncommon techniques such as a Danish offset. The guidelines for the design and especially placement should take into consideration the characteristics of the adjacent roadway (pedestrian and vehicle volumes, width, number of lanes) as much as possible. The design guidelines for many pedestrian safety devices are likely well developed; however, the general consensus for guidelines on where to place these devices is deficient.</p> |
| Target(s)  | Pedestrian crashes, especially those that are occurring at high crash locations.   |
| Goal   | The statewide traffic safety goal is a 33% reduction in the fatality crash rate from 1.91 in 2003 to 1.27 by 2008. Achieving this goal is expected to reduce the annual number of traffic fatalities by 100 in 2008. Between 1998 and 2002, there were a total of 276 pedestrian fatalities (nearly 16% of all fatalities), which is an annual average of 55 fatalities per year. To achieve Nevada's safety goal, the annual number of pedestrian fatalities needs to be reduced by 16. This strategy is really intended to supplement the deployment of enforcement and engineering strategies by focusing in on the locations where the greatest improvements can be made.  |
| Responsive and Preventative Plans                | A methodology to identify high crash locations is a responsive plan to address pedestrian crashes. Developing guidelines and warrants for the placement and design of pedestrian amenities will be a preventative approach to reducing pedestrian fatalities.  |
| Expected Effectiveness                           | (Experimental) There is no known study of a similar program implemented in another area. Therefore, a panel of safety experts in Nevada concluded that this program could help eliminate at least one pedestrian fatality every five years.  |
| Keys to Success                                  | The output of the strategy is ultimately a process to identify high crash locations and guidelines for the placement, design and implementation of pedestrian safety devices. But the effectiveness of the strategy will rely on if the information is actually used by engineers and law enforcement officers. Also important is complete and timely data (including pedestrian volumes, vehicle volumes, and pedestrian crash information).  |
| Potential Difficulties                           | Collecting the information necessary to identify high pedestrian crash locations and then keeping the information current could prove difficult, especially for large jurisdictions.   |
| Appropriate Measures and Data                    | Agencies should track the number of high crash locations identified, and what was done to improve these locations. At spots where a targeted enforcement campaign or engineering improvement was made, the location continued to be monitored to determine if the area has experience a safety improvement.  |
| <b>Organizational and Institutional</b>          |  |
| Champion   | Nevada Departments of Public Safety and Transportation   |
| Organizational, Institutional, and Policy Issues | Highway agencies will need to create, review and possibly update their policies and guidelines on sidewalks, crosswalks, access management and design guidelines that may be affected by self-enforcing roadways.  |

**STRATEGY 20: DEVELOP CRITERIA TO IDENTIFY HIGH PEDESTRIAN CRASH LOCATIONS AND PLACEMENT, DESIGN AND IMPLEMENTATION GUIDELINES FOR PEDESTRIAN AMENITIES.**

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| Issues Affecting Implementation Time | The data collection and then determining the criteria for a location to classified as high crash are likely to be the components that require the most time.  |
| Costs Involved                       | The initial data collection and continual update of the information is likely to be the largest cost for this strategy. Still, the costs will vary on the size of the jurisdiction or area that is being analyzed. It was estimated that the initial cost for a study to develop guidelines for high crash location identification and pedestrian amenities would be \$250,000. |
| Training and Other Personnel Needs   | Safety specialists with engineering or enforcement agencies will need training on how to perform the analysis to identify high crash locations. Community planners and design engineers will also need to be trained on the fundamentals on design and placement of crosswalks and sidewalks.   |
| Legislative Needs                    | None identified.  |

## 2. REGIONAL AND LOCAL PLANS AND POLICIES

### WASHOE COUNTY MASTER PLAN

The *Washoe County Master Plan* contains seven elements and 13 area plans, and serves as guide to growth and development through goals, policies and action programs that address countywide issues and concerns.

#### **Conservation Element**

Goal 16: Develop a green space network.

Policy C.16.1 Through the adoption of the Open Space and Natural Resource Management Plan and implementation of the policies contained in the Land Use and Transportation Element, Washoe County will promote and facilitate recreational use of green space by pedestrians and bicyclists, and provide access to public facilities, recreation, public transportation and open space.

Goal 22: Reduce mobile source emissions so that Washoe County air quality meets federal, state and local ambient air standards for all pollutants.

Policy C.22.1 Washoe County shall work to reduce mobile source emissions by coordinating with other agencies as identified below.

C.22.1.2 Encourage the Truckee Meadows Regional Planning Agency to use its planning authority to develop an urban form that minimizes the growth of vehicle miles traveled.

C.22.1.3 Encourage the Truckee Meadows Regional Planning Agency to request changes in State Law (NRS 445.493) to require that "Projects of Regional Significance," as a part of their application for development approval, include a quantified analysis of their impact on regional air quality and mitigation in the event that air quality standards are exceeded.

C.22.1.8 Encourage the Regional Transportation Commission to coordinate the implementation of a Regional Employer-Based Trip Reduction Program that will reduce the growth of vehicle miles traveled.

C.22.1.12 Encourage the use of alternative transportation modes (RTC Ride, ridesharing, van pooling, bicycling, etc.) as a means to reduce the growth of vehicle miles traveled.

#### **Housing Element**

Goal 6: Promote Energy and Resource Efficiency.

Policy 6.1: The County will encourage developers to commit to green development practices, and in return will offer a variety of meaningful incentives.

Program 6.1: Developers will be encouraged to do the following:

- Mixed-use developments: Developments that incorporate employment and commercial service opportunities, utilizing integrated designs that stimulate pedestrian and bicycle use for access to internal and external services and amenities.

**Land Use and Transportation Element**

Land Use

Goal 1: Influence future development to abide by sustainable growth practices.

Policy LUT.1.3 Streets should be narrowed and interconnected with bicycle lanes to provide more opportunity for walking and cycling as viable as well as desirable and safe modes of transportation.

Policy LUT.1.4 Residential should be within close proximity to retail/commercial land uses within Suburban Character Management Areas to facilitate both walking and cycling as desirable and safe modes of transportation.

Goal 2: Standards ensure that land use patterns are compatible with suburban development and incorporate mixed-use.

Policy LUT.2.3 Require existing suburban neighborhoods to integrate their street network with new development to create connectivity and promote walking and cycling as safe and desirable modes of transportation and recreation.

- d. Encourage existing neighborhoods to integrate their street network with the new development to create connectivity and fluidity.

Policy LUT.2.4 Development reviews shall include a process to ensure that a safe and reasonable walking/biking route exists between all relevant land uses that promote these alternative transportation modes within a community or region.

- a. The addition of Class 1 and 2 bicycle lanes will be evaluated where appropriate within new suburban developments. The connection of all existing bikeway systems will help provide an efficient interconnected system.
- b. Class 1 bicycle lanes (full grade separation from roadway) are encouraged as much as possible to increase safety and promote cycling and walking as viable and desirable modes of transportation.

Goal 4: Land use patterns allow for a range of housing choices and interconnected streets.

Policy LUT.4.4 Encourage new suburban developments to provide interconnected street networks to improve fluidity between different land uses and encourage walking and cycling as viable and safe modes of transportation.

Goal 5: Development occurs where infrastructure is available.

Policy LUT.5.4 Locate more intense pedestrian and transit-oriented development along major roads, transit corridors, and in activity centers within village centers.

Goal 9: Natural resources are highly valued.

Policy LUT.9.5 Require the connection of open space; trail access and bikeway systems with regard to a multitude of different trail uses.

Goal 13: Washoe County should ensure appropriate resource management of open space designated areas.

Policy LUT.13.6 Preserve the public's use of linear recreational and recreational access facilities, e.g. bicycle and/or pedestrian paths, bridle/equestrian paths, hiking trails, vehicle trails that have been

determined by Washoe County to be linear facilities that by law, ownership and dedication by a public entity, or grant of easement through deed or map dedication are open to access and travel by any members of the general public. Preservation of the public's use may be effected through actions that include, but are not limited to:

- a. Prohibition of the placement of structures or uses that visually or physically impede or impair the use of these facilities;
- b. Notes on permits, approved maps and other planning documents specifying that permanent or temporary impediments on recognized facilities are not permitted;
- c. Optional acceptance of an interest in these facilities (other than fee-simple title) that permits Washoe County to prevent or remove impediments to the use of these facilities.

Goal 14: Washoe County will, to the extent possible, create a cohesive interconnected trail network.

Policy LUT.14.4 Trails shall be interconnected and provide for pedestrian, equestrian, bicycle, and motorized uses, where each use is warranted. Incompatible uses shall be appropriately separated.

Policy LUT.14.5 The County shall work through the Consortium of Cities to assure linkage of municipal and County trails and connections between communities.

Policy LUT.14.6 Where appropriate, new trails should be incorporated into and provided by new development and linked to established trails.

Policy LUT.14.7 Where appropriate, Class 1 bicycle lanes will be constructed.

### Community Design

Goal 17: Future plans should begin to move away from traditional codes and begin to create and implement form-based codes and other sustainable design practices.

Policy LUT.17.4 Retail/commercial should be located within walking distance to homes and at the bottom floor of apartment complexes.

Policy LUT.17.5 The streets are narrow in width and shaded with trees. This type of street network is conducive to efficient cycling and walking.

Goal 18: Suburban communities and neighborhoods, through design, will provide a safe and healthy environment.

Policy LUT.18.1 Design neighborhood circulation to balance the safe and efficient movement of local pedestrian and bicycle traffic with the need to accommodate vehicular traffic.

- a. Maximize the number of walking destinations in proximity to homes through interconnected street networks and the creation and improvement of more sidewalks. Promote safe routes to school incorporating sidewalks and graded interconnected bicycle lanes.

Policy LUT.18.2 Design neighborhood streets with proper widths that encourage walkable communities. *(Graphics demonstrating six roadway design classifications, the suggested street and sidewalk width, speed limits and land use designations associated with each type of roadway system that promote a human scale walkable community are provided in the Washoe County Master Plan.)*

Policy LUT.18.3 Limit auto-related business such as retail, service, or repair of automobiles within pedestrian-oriented districts.

- a. Consider retrofitting poor-functioning pedestrian ways in old neighborhoods.

- b. New developments should create public places where people can gather.
- c. Limit drive-through facilities and auto-related uses, such as the sale, rental, service, or repair of vehicles, in pedestrian-oriented districts. Banks, restaurants and pharmacies that provide in-car service should assure that the drive-through design will not conflict with pedestrian circulation or create stacking of vehicles that can degrade air quality.
- d. Wider walkways coupled with vegetation shall be provided in new development to facilitate pedestrian movement.

Policy LUT.18.5 Promote the development of walkable communities that meet the daily needs of their residents and reduce the need for automobile trips.

Goal 19: Incentives to promote more sustainable development.

Policy LUT.19.1 Certain development practices provide broad benefits to the local community and to the public at large. In order to realize these benefits, residential units in addition to the base density may be earned by committing to one or more of the following development practices:

- e. Mixed-use developments: Developments that incorporate employment and commercial service opportunities, utilizing integrated designs that stimulate pedestrian and bicycle use for access to internal and external services and amenities.

Goal 22: Parking lots should be designed for everyday use and promote the utilization of other modes of transportation.

Policy LUT.22.1 To break up the parking lot, green space, walkways and bicycle lanes should be utilized to accommodate non-motorized travel through the parking lot to facilitate safety.



**Parking Lot**



**Parking with Non-Motorized Travel Accommodations**

To break up the parking lot, green space, walking and bicycle lanes should be constructed to allow individuals utilizing modes of transportation other than the automobile, to walk separated from the automobile in safety to the use.

### Transportation

Goal 29: Transportation systems are seamless and efficient.

Policy LUT.29.1 Promote the connectivity of the neighborhoods within the larger community and region by:

- b. Encourage block lengths that promote pedestrian, cycling, and vehicular circulation.
- c. Where gated communities are created, require public pass-through (vehicular and/or pedestrian) as appropriate to minimize the travel distance.
- f. Development of Class 1 bicycle lanes that separate cyclists and pedestrians for the roadway is encouraged.

Policy LUT.29.3 Establish a high-quality pedestrian-oriented street environment that is visually interesting, comprehensive and varied.

Policy LUT.29.4 Minimize travel times for daily commuters within suburban areas.

- b. Promote the creation of mixed-use villages to allow individuals to walk to work, or utilize public transit.

Policy LUT.29.6 Streets and bicycle lanes within the neighborhood shall form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.

Policy LUT.29.8 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel.

- d. Siting of schools and other activities that have a high level of pedestrian activity are discouraged along arterials.

Policy LUT.29.10 Protect roadway corridors through right-of-way acquisitions and dedications as development occurs. If property acquired or dedicated for roadway purposes is not needed, it may be abandoned or transferred to private ownership through the processes and terms set forth in NRS 278.480. Right-of-way is also encouraged by the County to be used, as appropriate, for non-motorized transportation, such as for pedestrian, equestrian and bicycle trails.

Goal 30: Transportation systems reduce dependence on automobile.

Policy LUT.30.1 Promote and create incentives for alternative modes of transportation before expanding the roadway network through the construction of new roads.

- d. Promote, encourage, support and implement the regional bikeway plan.
- e. Explore and encourage options to increase pedestrian facilities.

Policy LUT.30.2 Encourage the reduction of the proportion of trips made in single occupancy vehicles.

- a. Promote transit-oriented development in suburban areas.
  - i. Transit-oriented development is a mixed-use community within walking distance of a transit stop that mixes residential, retail, office, open space, and public uses in a way that makes it convenient to travel on foot or by public transportation instead of by car.
- b. Explore and encourage options to increase and connect bikeways.
- c. Explore and encourage options to increase and connect pedestrian facilities.
- f. Explore connectivity between bicycle lanes and pedestrian paths with transit.

Policy LUT.30.3 Maximize connectivity of all transportation modes to enhance internal movement within and between individual neighborhoods, including appropriate connections to the regional circulation system.

Goal 31: Washoe County shall create a multimodal corridor along Sun Valley Boulevard to provide travel access to connect with the regional transportation system.

Policy LUT.31.1 The multimodal corridor will be created to accommodate auto, bus, bicycle and pedestrian traffic to facilitate the linkage between these different modes.

Policy LUT.31.2 Washoe County should consider proposing improvements along the Sun Valley Boulevard multimodal corridor for all the various modes of transportation.

- a. Roadway improvements should be considered that support multi-occupant vehicle use and priority corridors, while signal coordination is optimized based on current traffic flow patterns.
- b. For pedestrians, segments of missing sidewalks should be completed to provide direct and continuous connections between destinations and to transit, to continue adding enhanced pedestrian crossings at strategic locations; and continue installation of pedestrian signals and crossing countdown heads.
- c. Complete missing bicycle trails and lanes to provide direct and continuous connections; consider constructing needed underpasses at high volume locations to provide safe connections; and provide bicycle route signals.
- d. Transit should construct enhancements at key high-frequency transit stops including shelters, benches and trash receptacles and operational system efficiency improvements, such as bus bypass lanes, bus signal prioritization and other improvements to increase the efficiency of the bus network.

### **Public Services and Facilities Element**

#### Parks and Recreation

PSF.8.4 Develop a phased regional trail system with access from major population areas and access to regional parks, special use facilities, and public lands.

PSF.8.4.3 The Washoe County Department of Parks and Recreation shall plan to connect existing and planned urban bike lanes and paths with the regional trail system.

PSF.8.5 Develop a phased bicycle system plan.

PSF.8.5.1 The Washoe County Department of Parks and Recreation will develop a phased bicycle system plan with transportation and recreation systems defined and coordinated with the appropriate local, regional and state agencies.

### **Area Plans**

The Area Plans of the *Washoe County Master Plan* focus on the following planning areas of the county, and provide more detail regarding planning policies and action programs for those areas.

- Cold Springs
- Forest
- High Desert
- North Valleys
- Spanish Springs
- Sun Valley
- Tahoe
- Truckee Canyon

- South Valleys
- Southeast Truckee Meadows
- Southwest Truckee Meadows
- Verdi
- Warm Springs

### **CITY OF RENO MASTER PLAN**

The *City of Reno Master Plan* includes Citywide Plans, which cover the City and its sphere of influence, Center and Corridor Plans for regional centers and transit oriented development (TOD) corridors, and Neighborhood Plans.

The Citywide Plans includes a Policy Plan which provides goals, policies, and objectives related to planning within the City of Reno. The policies section of the Policy Plan is divided into five sections: Region, Neighborhood, and Housing; Cultural Resources and the Environment; Public Services, Facilities, and Infrastructure; Civic Services and Participation; and Urban Design. The following policies relate to bicycle and pedestrian planning within the City of Reno.

#### ***Region, Neighborhood, and Housing***

##### Urban Core

Policy UC-1: In specified downtown, center, and corridor pedestrian retail areas, the City should require retail uses at street level and limit blank walls in order to promote a vibrant pedestrian and retail environment.

Policy UC-2: The City should maintain a safe pedestrian environment in its downtown, centers, and corridors through sidewalk maintenance and cleaning.

Policy UC-3: The City should support the development of pedestrian plazas, parks, walkways and commercial enterprises aimed at pedestrians, such as sidewalk cafes and boutiques, with the intent of establishing the Truckee River as the focus of pedestrian activity in the downtown area.

Policy UC-4: When necessary for pedestrian safety, elevated pedestrianways and skyways connecting existing and proposed hotel/casinos, major commercial and cultural attractions and transportation centers may be permitted in the downtown area. Elevated pedestrianways should not be used if it is demonstrated that they may have a detrimental effect on pedestrian vitality at street level.

##### Housing

Policy H-13: New housing development should provide pedestrian, bicycle, and transit access to facilitate the reduction of automobile use, where possible.

#### ***Cultural Resources and the Environment***

##### Open Space and Greenways

Policy OS-3: All regional center, transit oriented development corridor and neighborhood plans, and similar City planning efforts must be consistent with this plan by furthering non-motorized transportation and including provisions for the implementation of bicycle and pedestrian improvements that ensure access and connectivity to the City's trail/bikeway system.

Policy OS-4: The trail/bikeway system should be designed to address both municipal and local needs by connecting neighborhoods externally with the broader regional system, and internally through connections between open space areas, schools, parks, commercial centers, and clusters of homes.

Policy OS-6: A map should be produced that shows the actual alignments (a.k.a., “true trail alignments”) of the trails needed to support the policies in this plan and code developed to support the alignments. This should be completed within a year of the adoption of this plan.

Policy OS-10: New commercial, office, and industrial development should accommodate pedestrian and bicycle access to the local and regional non-motorized transportation network. Access should be accommodated on-street or off-street.

Policy OS-11: Trail access should be made available through a balanced mixture of access points (no parking) and trailheads (parking). Planned neighborhoods should accommodate trailheads where deemed appropriate.

Policy OS-12: Signage identifying bike routes, lanes, and trails should be provided along all bikeways on City streets, within approved residential, commercial, and industrial zones with identified bikeways, and within open space areas.

Policy OS-13: Bike lanes should be constructed on all arterial streets that can accommodate them and striped accordingly as streets are resurfaced or rebuilt.

### ***Public Services, Facilities, and Infrastructure***

#### Transportation

Policy T-1: The City should encourage pedestrian and bicycle access and parking in commercial developments, employment centers, residential areas, and corridors between these uses.

Policy T-2: The City should require employment and commercial centers to provide appropriate facilities for bicycle riders.

Policy T-3: The City should encourage bikeways that offer a mix of speed and beauty, allowing meanders in the path where appropriate given terrain, location and function.

Policy T-4: The City should identify high-priority elements of the bikeways plan that is part of the Regional Transportation Plan and include these in the City's Capital Improvements Program as funds permit.

Policy T-5: The City should work with the Nevada Department of Transportation and Regional Transportation Commission to ensure that elements of the bikeways plan are implemented on non-city projects.

Policy T-6: The City should encourage bikeways as part of a coordinated trip-reduction program. In this context, bikeways are facilities for bicyclists, pedestrians, roller-bladers and the like.

Policy T-11: The City should encourage businesses and new land development which are substantial generators or attractors of traffic to implement programs to reduce trips and/or mitigate air quality impacts.

Policy T-12: The City should support a public transportation system including rapid transit, local transit, para-transit, park and ride, bikeways and trails, etc., which provides timely, efficient service throughout the city.

### Streets, Parking and Access

Policy P-3: Local residential streets should be no wider than necessary to accommodate vehicular access, maintain and encourage a safe pedestrian environment, access parking and utilize land efficiently.

Policy P-11: In the older residential areas of the city, the City should consider “pedestrianizing” sections of some local streets in order to make the area more attractive to potential homeowners by eliminating through traffic.

Policy P-19: The City should require the provision of parking for bicycles in parking lot design.

Policy P-20: The City should consider established pedestrian patterns and children's access to schools and parks when classifying, reclassifying or widening streets.

### Schools

Policy S-3: New housing developments should accommodate design standards that reflect direct and convenient access to public schools. The Community Development Department should require tentative map applications, when appropriate, to document a “Safe Route to school” plan, clearly showing the recommended pedestrian and bicycle routes to schools.

Policy S-4: The City should encourage all school sites to be located next to parks and recreation areas and middle and high school locations near public transportation routes and major bikeways.

### ***Urban Design***

#### Community Development

Policy CD-9: The City should encourage the development of hotel rooms to support the Convention Center. These rooms should be located within a five minute walk of the Convention Center property.

Policy CD-10: The City should require that all future hotel/casino developments or other major attractions adjacent to the Reno-Sparks Convention Center provide for pedestrian access linking them with the Convention Center property.

Policy CD-15: The City should encourage the clustering of services in locations convenient to neighboring residential areas in order to promote fewer vehicle trips.

Policy CD-24: Walkways may be separate facilities on public or private land or combined with bike paths or street rights-of-way.

Policy CD-31: The City should require all new streets and bridges, with the exception of freeways or other potentially hazardous areas for pedestrians, to incorporate provisions for pedestrian and bicycle access which may be separate facilities.

Policy CD-33: Master planned communities, in undeveloped areas and larger developing areas, should contain a center focused upon a green or park, commercial uses like retail and small offices, civic and religious buildings, and a range of housing types all within a five minute walking distance of one another.

Policy CD-34: Mixed and multiple uses should be encouraged throughout Reno. These developments, whether large or small, should promote walkable neighborhoods with services, housing, employment and transit in close proximity to one another.

### Site Design

Policy SD-17: The City should require new subdivisions and planned unit developments to have safe pedestrian walkways and bicycle facilities that provide direct links between streets and major destinations such as bus stops, schools, parks and shopping centers.

Policy SD-18: The City should encourage new and existing commercial and office uses to develop landscaped pedestrian pathways.

The following objectives relate to bicycle and pedestrian planning within the City of Reno.

### **Streets, Parking, and Access**

Objective #17: Pedestrian-oriented Roadways - Use of tree-lined narrow streets with traffic calming devices such as roundabouts, chokers and protected parking is encouraged to reduce through traffic, vehicular speeds, pavement areas and increase open space for pedestrians, thereby fostering a sense of community.

Objective #23: Sidewalks - Sidewalk areas, especially those located at major intersections and areas of significant public exposure shall be wide enough to accommodate such uses as bus loading, news vending, community resource boards, window shopping lanes and other pedestrian traffic needs. In addition to directing activities and movements, sidewalks should provide a safe, public place for people to stand or sit out of the stream of traffic.

## **CITY OF SPARKS MASTER PLAN**

The *City of Sparks Master Plan* was in the update process at the time of this document's publication. The goals and policies presented in this section are in draft form and may differ from the final goals and policies presented in the *Final City of Sparks Master Plan*.

### *Chapter 5: A Connected City*

Goal CC1: Foster the Concept of Moving People - Goal CC1 sets the ground work for future circulation decisions to consider the transport of people, not just moving vehicles from one point to another. This goal's intent is to change the decision-making so that all users of streets are considered when planning, designing, building and operating roadways.

Policy CC1.1: The City will adopt the principles of "Complete Streets" which includes such improvements as sidewalks, bike lanes, wide shoulders, plenty of crossing opportunities, refuge medians, bus shelters, possible special bus lanes, raised crosswalks, audible pedestrian signals, sidewalk bulb-outs, effective/efficient lighting, and aesthetic elements (landscaping, public art, etc.).

Policy CC1.2: The City will provide transportation choices by integrating bicycle and pedestrian facilities into transportation planning.

Policy CC1.3: The City will adopt revised street standards that incorporate "Complete Streets" street design standards and street hierarchy, as resources permits.

Policy CC1.4: The City will promote safety and make it convenient for all users of the transportation system so that even the most vulnerable – children, elderly and persons with disabilities - can travel safely within the public right-of-way.

Policy CC1.5: The City will support a public transportation system including rapid transit, local transit, paratransit, park and ride facilities, and bikeways/trails which provides efficient service throughout the City as public improvements are made.

Goal CC2: Promote Design That Facilitates Multi-Modal Transportation - The transportation system needs to facilitate efficient travel while promoting a variety of motorized and non-motorized modes. Goal CC2 calls for the City to develop an integrated multi-modal transportation system. This goal differs from Goal CC1 in that its intent is to change the construction and implementation process.

Policy CC2.1: Based on the “Complete Streets” Designation Map, the City will require dedication of all right-of-way necessary for improvements to implement multi-modal transportation system improvements as part of the land use entitlement process. Refer to City of Sparks Traffic Calming Guide for guidance.

Policy CC2.2: The City will encourage street patterns and traffic calming such as roundabouts, chokers and speed undulations in residential areas to reduce speed and encourage non-auto travel.

Policy CC2.3: The City will work with businesses and other land uses which are substantial generators or attractors of traffic to implement programs that reduce trips. (For more specific goal and policies relating to air quality refer to Chapter 4 – A Livable City Goal LC13.)

Policy CC2.4: The City will require employment and commercial projects to provide facilities for bicycle riders as part of the land use entitlement process.

Policy CC2.5: In older parts of Sparks, the City will seek opportunities to make multimodal the local streets and to make them more attractive, pedestrian friendly.

Goal CC3: Coordinate Land Use and Circulation Decisions to Promote Alternative Modes of Transportation - The intent of Goal CC3 is to ensure coordination between transportation agencies and other departments within the City for the promotion of an alternative transportation system. Coordination will ensure that all modes of transportation are considered when designing and improving the transportation network.

Policy CC3.3: The City will require that proposed road improvements be reviewed by all permitting departments to ensure design and construction comply with the Complete Street standards.

Policy CC3.5: When reviewing new development, the City will require a multi-modal circulation pattern that integrates new uses with the surrounding area.

Goal CC4: Develop a City-Wide Multi-Use Pathway System - Goal CC4 emphasizes the importance of a City-wide, connected multi-use pathway/network. In order to complete the pathway system, an inventory must be done and the improvements prioritized.

Policy CC4.1: The City will strive for development of a connected trail and sidewalk network (such as recreational trails, multi-use trails, regional trails, sidewalks) that maybe used for both travel and recreation.

Policy CC4.2: As resources permit, the City will conduct an inventory of the sidewalk/trail system to assess existing conditions and prioritize capital improvements needed to complete and maintain the system.

Policy CC4.3: When designing pedestrian pathways/sidewalks, the City will locate the sidewalks to facilitate pedestrian travel addressing the walkability elements.

Policy CC4.4: When reviewing new development, the City will ensure that the plans accommodate pedestrians and bicycles along streets. Whenever possible, trails and bikeways should be detached and wide enough to accommodate pedestrian and bicycle uses in both travel directions.

Policy CC4.6: The City will seek grant funding to expand and improve the pathway network.

### TRUCKEE MEADOWS REGIONAL PLAN

The Truckee Meadows Regional Plan provides a blueprint for development in Washoe County over the next 20 years. The geographic focus of the plan is on the southern 15% of the County. The plan addresses the regional form and pattern, management of our natural resources, provision of infrastructure and services, and plan implementation strategies.

#### *Module 1 – Regional Form and Pattern*

Goal 1.2 - Local government and affected entity master plans, facilities plans and other similar plans will provide for the necessary resources, services and infrastructure to support the densities summarized in Table 1.2.1 of the Regional Plan (Visit [tmrpa.org](http://tmrpa.org) for a copy of the Truckee Meadows Regional Plan and Table 1.2.1).

Policy 1.2.3 - Local government master plans may designate Secondary Corridors. Local government Secondary Corridor plans must:

- 5) specify land use and street design that support increasing intensification that enhances and encourages the use of public transportation and other multi-modal transportation options over time
- 7) ensure that Secondary Corridors are linked to the community, in particular linked to Centers and TOD Corridors, through multi-modal access

Policy 1.2.11 - To conform with the Regional Plan, local governments, in consultation with affected entities, will develop Downtown and Regional Center, TOD Corridor, and Station Area Plans as a component of their master plans that:

- 5) specify land use and street design that supports increasing intensification that enhances and encourages the use of public transportation and other multi-modal transportation options over time
- 8) ensure that TOD Corridors are linked to the community through multi-modal access

Policy 1.2.15 - The Regional Plan identifies the desired future condition for TOD Corridors that:

- 3) employ streetscape, urban design, and capital improvements to promote transportation by transit, walking, and bicycling
- 7) provide pedestrian ways

Policy 1.2.18 - The Regional Plan designates the following general areas for Emerging Employment Centers: east and north Sparks.

To conform with the Regional Plan, local government and affected entity master plans must maintain and improve the viability of these areas as major employment centers with the following master plan provisions:

- 3) require pedestrian connections throughout the areas and to nearby residential areas

Policy 1.2.21 - The Regional Plan encourages a cooperative approach to infill which includes careful coordination of plans between local governments and affected entities at the early stages of planning and project conceptualization, and thoughtful consideration of:

- parks and greenways
- walkability
- alternative modes of transportation
- recreation opportunities

### **Module 2 – Management of the Region’s Natural Resources**

Goal 2.1 - To better coordinate natural resource management, local governments will prepare integrated plans to address natural resources in the region, in consultation with the community and key stakeholders.

Policy 2.1.1 - To conform with the Regional Plan, and to coordinate natural resource management within the region, local government master plans will at least address the management of the following:

- 2) greenways
- 3) open space
- 8) recreation management/uses

Goal 2.4 - The Regional Plan encourages Washoe County, through coordination with local, state, federal, tribal, and private partners, to secure funding to implement the regional open space plan, and requires local governments to revise their master plans to establish a coordinated network of open space and greenways, wherever possible, that links urbanized areas, public facilities including schools, recreation opportunities, and surrounding public lands.

Policy 2.4.2 - To conform with the Regional Plan, master plans of local governments must support and not conflict with the goals and policies of the Regional Plan regarding open space by including open space and greenways plans that must:

- 2) connect trails systems including the Truckee River and the urban core;
- 3) encourage recreation and other uses of open space and greenways by pedestrians and bicyclists;
- 4) provide access to and links between public facilities including recreational facilities, schools, and public transportation;
- 7) ensure connectivity at jurisdictional interfaces.

### **Module 4 – Regional Plan Implementation**

Goal 4.1 - The Regional Planning Commission (RPC) will review the master plans, facilities plans, and other similar plans of local governments and affected entities. These plans will be revised in accordance with policies set forth in the adopted Regional Plan, in order to conform with the regional form and pattern and all applicable goals and policies.

Policy 4.1.6 - The Regional Plan encourages a cooperative approach to planning which includes careful coordination of plans between local governments and affected entities at the early stages of planning and project conceptualization, and thoughtful consideration of:

- parks and greenways
- walkability
- alternative modes of transportation
- recreation opportunities

### 3. DEVELOPMENT CODE

#### CITY OF RENO

##### *Article VIII: New Sidewalks, Curbs, and Gutters*

###### *Section 18.12.801 – Required; Exceptions*

- a. Sidewalks, curbs and gutters shall be required on all lots or parcels of land which are hereafter improved or upon which any building or construction shall take place, with the exception that sidewalks, curbs and gutters are not required in the event of addition to existing structures consisting of 500 square feet or less. In new developments, sidewalk requirements shall be determined at time of map or parcel map approval, typically on both sides of all streets, public and private, unless another means of pedestrian access is approved, or if sidewalk is impractical or is unnecessary for pedestrian access purposes as determined by the administrator.
- b. Upon application by a property owner and for cause shown, the administrator may waive the requirement for curb, gutter and/or sidewalk whenever the administrator determines that granting the waiver is a feasible way to implement the preferred design of LID objectives or that it is not practical to be installed at the time of building or construction due to negative impacts on future road construction or improvements, undesirable obstruction to drainage patterns or flow paths, or public safety. Also, the administrator may waive the sidewalk requirement only in the event of repair, remodeling or addition to existing improvements on all lots or parcels of land or for new construction of a single-family residence where sidewalks within 300 feet of the immediate area do not presently exist or where topographic constraints, walls, or landscape obstruction prevent continuous extension on this property or others. No requests for sidewalk waivers will be considered on any lots or parcels of land, except in IB and IC zones, which are located within one-quarter mile of any elementary school, or where traffic volumes are below 1,000 ADT, or where a pedestrian circulation plan has been adopted for an area that indicates no sidewalks are planned for a site unless the administrator determines that granting the waiver is a feasible way to implement the preferred design of LID objectives. Sidewalks may not be required in I, IB, or IC zones, if approved by the administrator.
- c. In order to have consideration for any provisions as hereinabove stated, the applicant must provide to the city a hold harmless agreement, subject to the approval of the city attorney. The applicant shall also waive any protest or objection pursuant to state statutes to any future assessment district which may be formed to incorporate sidewalk upon all the tracts in the district and such waiver of protest shall be recorded in the office of the county recorder and the provisions thereof complied with by any successor in interest.
- d. The decision of the administration denying the applicant a waiver may be appealed in writing to the city council within ten days after notification of such denial.

###### *Section 18.12.802 – Sidewalk Specifications*

Except in I Zoning Districts, sidewalks shall be concrete walks not less than four feet in width constructed in accordance with applicable city standard specifications. In Zoning District, sidewalks shall be concrete walks or asphalt walks not less than four feet in width constructed in accordance with applicable city standard specifications. Alternative materials may be used in lieu of the above requirements when applied towards the implementation of LID objectives, subject to the approval of the administrator.

### *Section 18.12.803 – Curb and Gutter Specifications*

The flow line of curb and gutter should have a minimum grade of four-tenths of one percent, and curbs and gutters shall be of 3,000 pound concrete with a five-inch type II gravel subbase. "L" type shall be used in all cases where a grade rate of less than six percent is encountered. Alternative materials and designs may be used in lieu of the above requirements when applied towards the implementation of LID objectives, subject to the approval of the administrator.

### *Section 18.12.804 – Commencement and Completion of Construction*

Construction of sidewalks, curbs and gutters shall be commenced within 30 days from the date of issuance of the permit for the work contemplated or the date of completion of the engineering required to establish the street grade, whichever is later, and shall be completed within 60 days from such date.

## **Article XI: Pedestrian Access and Circulation**

### *Section 18.12.1001 – Pedestrian Access Requirements*

- a. Provision of pedestrian access along rights-of-way, between rights-of-way and adjacent buildings, and between buildings shall be mandatory. Where access is clearly unnecessary, it may be waived.
- b. Pedestrian access shall be provided concurrent with the certificate of occupancy of any building permit associated with a discretionary request or that is valued at over ten percent of the assessed value of the structure on the most recent tax roles.
- c. All pedestrian access shall comply with the standards stated in Article VIII (New Sidewalks, Curbs and Gutters) of this chapter.

## **CITY OF SPARKS**

### **Title 12 Public Improvements**

#### Chapter 12.04 Obstructions to Streets and Sidewalks

##### *Section 12.04.020 Unlawful obstruction generally*

- A. It is unlawful for any person to obstruct completely any street or alley in the city for any time, or to place any obstruction therein, without first having obtained permission so to do from the city engineer.

##### *Section 12.16.010 Requirements in general*

In the Tourist/Commercial (TC) district, lots shall have concrete sidewalks a minimum of five feet in width. In all other zoning districts, sidewalks shall be of concrete four feet in width. The inner line of sidewalks must be laid one foot from the property line, but wherever any sidewalk has been constructed under authority of any former ordinance of the city in any manner other than in accordance with the lines established in this section, sidewalks for the remaining properties in the same block shall be so constructed that uniformity of lines may be maintained.

### *Section 12.16.020 Sidewalks ordered built by the city council – Liens for costs*

Any sidewalk ordered built by the city council shall be paid for by the owner of the property which abuts upon the sidewalk. If the owner fails to pay the cost, the cost and all expense entailed by the city in building the sidewalk and collecting of the cost of the same shall be a lien against the property. The lien shall be enforced as other liens under the laws of the state.

### *Section 12.16.030 Property owners to keep sidewalks in repair*

Property owners shall be responsible for the repair and reconstruction of a sidewalk in the public right-of-way that abuts the property of the owner if the owner caused the need for such repair or reconstruction.

### *Section 12.16.035 Maintenance of sidewalks*

- B. Property Owners shall be responsible for the general maintenance of a sidewalk in the public right-of-way that abuts the property of the owner, including, without limitation, sweeping, removal of snow, ice and weeds, and maintenance preventing any grass, shrubs or trees from encroaching upon the sidewalk .
- C. In the event snow and ice on a sidewalk become so hard that it cannot be removed without likelihood of damage to the sidewalk, the person or entity charged with its removal shall cause enough sand or other abrasive to be put on the sidewalk to make travel thereon reasonably safe.

## **Chapter 12.20 Particular Sidewalk Areas**

### *Section 12.20.010 Areas between property lines and curbs*

The widths of areas between property lines and curbs along all streets in the city are established as follows:

- A. On B Street from Stanford Way to 15th Street, on A Street from 9th Street westerly to 15th Street and on all properties abutting on Prater Way, the width shall be twelve feet;
- B. On all thirty or forty foot streets, the width shall be six feet;
- C. On 15th Street from A Street to Prater Way, the width shall be twenty feet;
- D. On 6th Street from B Street to Prater Way, the width shall be twenty-four feet;
- E. On all seventy foot streets, the width shall be seventeen feet;
- F. On Pyramid Way from B Street to the north city limits, the width shall be twelve feet;
- G. After May 1, 1936, in the residential districts where the streets are of varying widths, the widths are established so that when curbs are laid and completed the streets shall be thirty-six feet wide for vehicular traffic.

### *Section 12.20.020 Certain sidewalks on B Street*

All sidewalks constructed on the north side of B Street from 6th Street to 15th Street shall be of cement entirely filling the space from property line to curb.

### *Section 12.20.030 Certain sidewalks on Prater Way*

Sidewalks constructed on the north side of Prater Way between Pyramid Way and 12th Street shall be as follows:

- A. The inner line of the sidewalks shall be located two feet from the property line as they existed on November 12, 1940;
- B. The sidewalks shall be of uniform width and in accordance with the provisions of Section 12.20.010;
- C. The curb and gutter line on Prater Way shall be established to make the street uniform throughout its length.

### *Section 12.20.040 Sidewalks in subdivisions*

- A. Any sidewalk constructed in the Lincoln Park Subdivision, the Huyck Subdivision, the Greenbrae Subdivision, the Barnard Subdivision, the Northmore Subdivision, the Strobel Subdivision and any new subdivision annexed by the city shall be of cement four feet in width and constructed contiguous to the curb line.
- B. Any sidewalk constructed in the following locations in the Newtown Tract shall be four feet in width and constructed contiguous to the curb line:
  - 1. Both sides of I Street from 15th Street to Sullivan Lane;
  - 2. The north side of H Street from 17th Street to Sullivan Lane;
  - 3. The south side of H Street from 19th Street to Sullivan Lane;
  - 4. Both sides of G Street from 15th Street to 16th Street;
  - 5. Both sides of G Street from 18th Street to 19th Street;
  - 6. The north side of G Street from 19th Street to Sullivan Lane;
  - 7. The south side of G Street from 20th Street to Sullivan Lane;
  - 8. Both sides of F Street from 15th Street to 16th Street;
  - 9. The south side of F Street from 16th Street to 17th Street;
  - 10. Both sides of F Street from 17th Street to 19th Street;
  - 11. The north side of F Street from 20th Street to Sullivan Lane;
  - 12. Both sides of E Street from 18th Street to 19th Street;
  - 13. The east side of Sullivan Lane from Prater Way to the north boundary of Frederick Addition;
  - 14. Both sides of 20th Street from F Street north to the north boundary of Newtown Tract;
  - 15. Both sides of 19th Street from F Street north to the north boundary of the Newtown Tract;
  - 16. The east side of 19th Street from Prater Way north to F Street;
  - 17. Both sides of 18th Street from Prater Way north to the north boundary of the Newtown Tract;
  - 18. The east side of 16th Street from Prater Way north to the north boundary of the Newtown Tract;
  - 19. Both sides of 15th Street from Prater Way north to the north boundary of the Newtown Tract.
- C. In all other portions of the Newtown Tract, sidewalks shall be five feet in width and shall conform to lines of walks previously installed.

*Title 17 Subdivisions*

**Chapter 17.16 Design Requirements**

*Section 17.16.070 Curb and gutter – Sidewalks, driveways and curb cuts*

- A. Curb and gutter and sidewalks shall be installed on all streets within the city. Sidewalks in residential areas shall not be less than four feet in width. Sidewalks in commercial areas shall not be less than five feet in width.
- B. Where car storage on any residential lot is accessible from the street or access for motor vehicles is desired in business, commercial or industrial districts, provisions shall be made for a driveway. All driveways shall enter all properties with a standard curb cut. The width of the cuts shall be as set forth in the design standards.
- C. All construction for curb and gutter, sidewalks, driveway approaches and curb cuts shall be in accordance with the city standard details and specifications.

*Section 17.16.080 Pedestrian ways*

- A. Whenever blocks are one thousand feet or more in length, pedestrian ways of not less than five feet in width on dedicated right-of-way may be required through blocks where deemed necessary for circulation and access to schools, playgrounds or similar public facilities.
- B. All pedestrian ways shall be paved with Portland cement concrete and construction shall be in accordance with city standard specifications.

**WASHOE COUNTY**

**Article 436 – Street Design Standards**

*Section 110.436.135 Pedestrian and Bicycle Ways*

Pedestrian and bicycle ways shall be designed in accordance with the provisions of this section.

- a. Sidewalk Widths. In no instance shall sidewalks be less than four (4) feet in width. In commercial areas, sidewalks shall not be less than five (5) feet in width.
- b. Bikeway Design. The design of bikeways shall conform to AASHTO Guide for Development of New Bicycle Facilities, latest edition, unless otherwise specified by the County Code; Standard Specifications for Public Works Construction; Standard Details for Public Works Construction; Regional Transportation Commission guidelines; or this section.
- c. Structural Section. The structural section of public and private bicycle and pedestrian paths shall conform to the following provisions:
  - 1. The structural section shall be based on a soils report recommendation; and
  - 2. The minimum structural section shall be two and one-half (2.5) inches of Type 2 or Type 3 asphalt concrete pavement compacted to ninety-five (95) percent minimum density over an engineered subgrade. Drainage shall be consistent with County standards, including Article 420, Storm Drainage Standards. The pavement shall be sealed in accordance with Washoe County standards.

# MASTER PLAN

## Appendix A

- d. Obstructions. No obstruction (i.e. power poles, street lights, signal poles and controls, water meter boxes, pull boxes, mail boxes, etc.) shall be located within sidewalk areas or pedestrian ways, except as allowed by the County Engineer. Any necessary additional right-of-way that may be required for locating such obstructions at the back of sidewalks shall be dedicated or easements provided for, if needed (e.g. for mailboxes).
- e. Cut and Fill Slopes. Cut and fill slopes shall be set back a minimum of one (1) foot from the back of the sidewalk. If no sidewalk exists, the setback shall be a minimum of five (5) feet from the back of the curb.