



HIGHLAND CITY

HIGHLAND CITY COUNCIL MINUTES

Tuesday, September 5, 2023

Approved October 17, 2023

Highland City Council Chambers, 5400 West Civic Center Drive, Highland Utah 84003

VIRTUAL PARTICIPATION



YouTube Live: <http://bit.ly/HC-youtube>



Email comments prior to meeting: council@highlandcity.org

6:00 PM WORK SESSION – TRAFFIC CALMING TOOLBOX

The meeting was called to order by Mayor Kurt Ostler as a work session at 6:08 pm. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting.

PRESIDING: Mayor Kurt Ostler

COUNCIL MEMBERS

PRESENT: Timothy A. Ball, Brittney P. Bills, Kim Rodela, Scott L. Smith

CITY STAFF PRESENT: City Administrator Erin Wells, City Attorney Rob Patterson, City Recorder Stephannie Cottle, City Engineer/Public Works Director Andy Spencer, Police Chief Brian Gwilliam, Fire Chief Brian Patten

OTHERS PRESENT: Jon Hart, Doug Cortney, Elizabeth Rice, Shawn Seager, Jeremy Searle

Shawn Seager, Wall Consultant Group (WCG), used the aid of a PowerPoint presentation to summarize the draft version of the proposed Highland Traffic Calming and Pedestrian Safety Manual. He reviewed the following components of the documents;

- Table of contents.
- Executive summary.
- The process for considering traffic calming requests consistently.
- Goals for the traffic calming manual.
- Goals for pedestrian safety manual.
- Crash data.
- Traffic calming options/roadway classifications.
- Measures that would be inappropriate for Highland City.

High level discussion among the Mayor, Council, staff, and representatives of WCG centered on the application process for a resident to follow if they are interested in working with the City to have a traffic calming measure installed, with a focus on the scoring criteria that would be used to evaluate an application; the minimum time frame for a City response to an application; prioritization of applications based upon the number of complaints the City has received, which may not be in line with the recommendations of the policy; the importance of regular

status reports from the staff about active applications or decisions that have been made regarding past applications; cost estimates for temporary traffic calming measures; differences between temporary and permanent traffic calming tools; appropriate application fees; consideration of a private/public effort to install a traffic calming tool in a certain neighborhood or if individuals can install a traffic calming tool for an area that does not warrant a tool based upon the City's policy and scoring criteria.

City Administrator Wells indicated that she would use the feedback to work with staff and WCG to further modify the document for continued review in the next work session meeting.

The Work Session adjourned at 6:49 pm.

7:00 PM REGULAR SESSION

Call to Order – Mayor Kurt Ostler

Invocation – Rajan Zed, President, Universal Society of Hinduism

Pledge of Allegiance – Council Member Kim Rodela

The meeting was called to order by Mayor Kurt Ostler as a regular session at 7:06 pm. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting. The prayer was offered by Rajan Zed, President, Universal Society of Hinduism, and those in attendance were led in the Pledge of Allegiance by Council Member Kim Rodela.

PRESIDING: Mayor Kurt Ostler

COUNCIL MEMBERS

PRESENT: Timothy A. Ball, Brittney P. Bills, Kim Rodela, Scott L. Smith

CITY STAFF PRESENT: City Administrator Erin Wells, Assistant City Administrator/Community Development Director Jay Baughman, City Attorney Rob Patterson, City Recorder Stephannie Cottle, Finance Director Tyler Bahr, City Engineer/Public Works Director Andy Spencer, Cemetery Sexton Trever Aston, Communications Specialist Brooklyn Wild, Police Chief Brian Gwilliam, Fire Chief Brian Patten

OTHERS PRESENT: Jon Hart, Shaun Seager, Jeremy Searle, Doug Cortney, Jeremy Meldrum, Mark S. Greenwood, J. Weaver, Ryan Warnick, Shauna Larson, Aislynn Tolman-Hill, Daymar Swenson, Jason Garrett, Nicole M. dela Vega, Matt N. Neill, Rich Farr, Allie Carlson, Daniel Alldredge, Brandon Balkman, Sherry Kramer, Kurt Nelson, Nick Nelson, Suzanne Mann, Wesley Warren, Robin Wise, Cary Wise, Elizabeth Rice, Ron Campbell

1. UNSCHEDULED PUBLIC APPEARANCES

Please limit comments to three minutes per person. Please state your name.

Wesley Warren stated that he walks his dog on the Highland Glen trail and there is a path that students from Lone Peak have made to connect to the trail and he wondered if it would be possible to install steps on that trail to make it safer/easier to navigate the slope. He stated he is willing to look into options for having the school provide labor to help complete the project if the City is willing to consent to it. He asked if the City owns the land, to which Council Member Smith answered yes, noting the City purchased the land. Mr. Warren stated he will look into options for installing steps in the area.

Brandon Balkman discussed the matter of allowing alcohol sales in Highland City; he suggested that the City's decision be based on preserving residents' freedom of choice. He noted some are more concerned about the commerce aspect of the decision, but he feels choice is the most important. He then addressed the Beacon Hill park trail that is missing one small section of paving. He suggested that the paving be installed to complete the trail.

Rich Farlan stated he is the head coach of the Lone Peak Lacrosse Team; prior to coaching at the high school, he ran the local youth lacrosse club. He stated that the City's decision to potentially lease the Lone Peak fields to SURF soccer is a horrible decision that will be very damaging to youth sports and opportunities in this area. There are other soccer groups and many other sports groups that need access to field space. The high school also uses the fields occasionally for other sports. The value that is being put on the fields for an exclusive lease is about \$200,000 for 10 years, which equates to just \$20,000 per year. This is catastrophically low and if the City wanted to make revenue off of the fields, it would be better to get rid of the property and sell it for several million and place the money in an endowment. He noted, however, that was not the purpose of the fields, and they were developed using taxpayer dollars for the benefit of the community and leasing them to one singular organization is contrary to that purpose. Youth lacrosse players pay \$150 per season, and they are coached by unpaid coaches and volunteers and the goal is to make this sport and other sports available to youth and the fields should be used for those purposes. Also, high school sports will need to find another place to practice.

Daniel Aldridge stated he is the current director of the youth lacrosse program, which is not a club program that pays coaches. It is as close to a recreation sport as possible for the sport of lacrosse in the State of Utah, but the reason it is not managed by the City is that there are not enough teams to host a city league. The teams travel to play recreation teams in other cities and of the \$150 each player pays, the majority of those funds are allocated to paying for field reservations. If the program is forced to move to high school fields, the costs would increase. He has appreciated the City working with the lacrosse program in the past and would like to continue operating in that same fashion.

Council Member Smith stated it is his understanding the City contacted Lone Peak High School at least twice during a recent request for proposals (RFP) period regarding renting the fields that have been referenced by Mr. Farland and Mr. Aldridge; he is surprised to now hear that those groups want to continue using the fields. City Administrator Wells stated that the City did reach out Lone Peak High School about the matter. She noted she has received multiple emails today regarding this issue and she sent a response back to each sender to inform them of the process to date; the only proposal the City received was from SURF soccer. Council Member Smith then asked if Lone Peak High School was paying to use the fields for their sports events. Ms. Wells stated that the City does have a field rental policy and a rate specifically for non-profit entities or school groups; if the High School was actually renting the fields, they would have paid, but if they were just showing up to use the fields they would not have been paying.

Council Member Rodela asked who from the High School communicated with the City. Ms. Wells stated that she received an email from the school principal as well as the vice principal that is over athletics; she also had a verbal conversation with that same principal. Mayor Ostler then summarized the agreement the City has reached with SURF soccer, after which Assistant City Administrator/Community Development Director Baughman noted that SURF has not asked for exclusive rights/access to the fields, but they have asked for priority access. Council Member Rodela asked if the High School lacrosse team can still practice on the fields, to which Mr. Baughman stated that it may be possible to negotiate those terms with SURF soccer, but they were hoping for less intense uses of the field when they were not using it.

Doug Cortney expressed concerns about item six on tonight's agenda, the pressurized irrigation (PI) well modification project; on its face the project seems reasonable, but he is concerned about the need to conserve

culinary water and not drain local aquifers more than absolutely necessary. He does not see an emergency need for PI water and is concerned about creating a system that allows using culinary water for PI purposes.

Sherry Kramer echoed the comments of made by the coaches who spoke about use of the sports fields; the fields near the high school have been used for many years and the process that was set up to allow for their use has worked well. She has an issue with public land that has been paid for by residents being subject to an exclusive lease with one particular club. The City should be interested in making the land open to the public or available for reservation on a first come, first served basis. She has spoken with another resident who has a child that plays for another soccer club, and they use the fields all the time; it would be detrimental to other users for the City to sign an agreement with SURF soccer.

2. PRESENTATIONS

a. Health Department – Aislynn Tolman-Hill, Public Information Officer

The Council will hear a presentation regarding contaminants in secondary water.

Mayor Ostler noted this item has been added to the agenda due to the recent E. coli outbreaks in Lehi City; the City's water sources and ponds are tested regularly for E. coli and the Highland Glen pond regularly has the bacteria present. The City has posted "no swimming" signs at the pond due to this issue. He has invited representatives of the Utah County Health Department to address concerns regarding E. coli.

Aislynn Tolman-Hill, Lisa Garrett, David Swenson, and Jason Garrett of the Health Department, used the aid of a PowerPoint presentation to discuss concerns regarding E. coli, which is a bacteria found in the environment, foods, and intestines of people and animals. E. coli are a large and diverse group of bacteria and although most strains of E. coli are harmless, others can make people sick. Some kinds of E. coli can cause diarrhea, while others cause urinary tract infections, respiratory illness and pneumonia, and other illnesses. There are six different strains of e. coli and the one that has been found recently is the Shiga toxin-producing E. coli and this is the most common pathotype heard about in the news related to foodborne outbreaks. They discussed the most common way that people encounter e. coli, but indicated that the source of the recent outbreak has not been identified. Ponds and irrigation waters are untreated and unregulated. Recreating in these water sources can be harmful and dangerous when bacteria is present. Choosing to recreate in these bodies/water systems are essentially "use at your own risk." In terms of prevention, people should not use pressurized irrigation water for drinking or play and they should avoid swallowing water when swimming or playing in lakes, ponds, streams, swimming pools, and backyard 'kiddie' pools. Additional prevention methods include washing of hands, cooking meats thoroughly, and preventing cross contamination of food preparation areas.

High level discussion between the Mayor, Council, and Health Department residents centered on the use of local ponds as swimming facilities/recreation areas; educational materials that should be distributed to the public; and treatment of bodies of water throughout the County for e. coli.

b. Highland Fling – Robin Wise, Civic Events Coordinator

The Council will hear a presentation on the 2023 Highland Fling "Our Slice of Paradise". The presentation will include a recap of events and a financial report.

Robin Wise, Civic Events Coordinator, thanked the Mayor and Council for their participation in various Highland Fling events; there were 26 total events and over 2000 hours were donated to make the celebration a success. She reviewed the calendar of events during the Fling and recognized the members of the Highland Fling Committee that made each of the events a success. She also thanked City staff that provided support for the events, as well

as the Youth Council for their participation and support. Recommendations for 2024 include working to develop a theme for the next celebration and mail out the magazine that includes the schedule of events two weeks earlier than this year.

Mayor Ostler thanked everyone who was involved in making the celebration a success. Council Member Rodela stated one of her favorite events of the Fling is the senior citizens dinner and she thanked the events staff for their efforts to continue that tradition.

3. CONSENT ITEMS

Items on the consent agenda are of a routine nature or have been previously studied by the City Council. They are intended to be acted upon in one motion. Council members may pull items from consent if they would like them considered separately.

- a. **Approval of Meeting Minutes** *General City Management - Stephannie Cottle, City Recorder*
Regular City Council Meeting – July 18, 2023
- b. **ACTION/RESOLUTION: Lone Peak Public Safety Board Appointment** *General City Management - Kurt Ostler, Mayor*
The City Council will consider the appointment of Kim Rodela as an alternate to the Lone Peak Public Safety District Board of Directors. The Council will take appropriate action.
- c. **RESOLUTION: Update to the Lone Peak Interlocal Agreement** *General City Management - Rob Patterson, City Attorney*
The City Council will hold a public meeting to consider updates to the Lone Peak Interlocal agreement. The Council will take appropriate action.
- d. **RESOLUTION: Reorganization of Timpanogos Special Service District** *General City Management - Rob Patterson, City Attorney*
The City Council will hold a public meeting to consider approving the resolution supporting the reorganization of the Timpanogos Special Service District (TSSD) in becoming an Independent Service District separate from Utah County. The Council will take appropriate action.

Council Member Smith asked to pull items 3b and 3c from the consent agenda for further discussion.

Council Member Kim Rodela MOVED that the City Council approve consent item 3a, the approval of meeting minutes from July 18, 2023 and 3d Reorganization of Timpanogos Special Service District.

Council Member Scott L. Smith SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

Council Member Smith stated that item 3b is an action to appoint Council Member Rodela to the Lone Peak Public Safety Board and he discussed past activities of the Board, which Council Member Bills also serves as a board member.

He then addressed item 3c, an update to the Lone Peak Interlocal Agreement, and asked if the main changes are grammatical and if the members of the Safety Board are comfortable with the changes. City Attorney Patterson stated that the Interlocal Agreement calls for a management committee for the District and this committee consists of administrators from both Highland and Alpine cities, but it did not include the Finance Director; one amendment to the agreement will be to clarify that the Finance Director will be part of the management committee. Mayor Ostler asked if the amendments would give either city increased oversight of the District. Mr. Patterson answered no and indicated that the amendment clarifies that the Finance Director of Highland handles budgetary matters and provides financial reports to the Board. Council Member Smith asked Council Member Bills if she is comfortable with the changes, to which Council Member Bills answered yes.

Council Member Scott L. Smith MOVED that the City Council approve consent item 3b appointing Kim Rodela as alternate to LPPSD board of directors and 3c to approve the update to the Lone Peak Public Safety Interlocal Agreement.

Council Member Brittney P. Bills SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

4. PUBLIC HEARING/ORDINANCE: TEXT AMENDMENT - SENSITIVE LANDS *Development Code Update (Legislative) - Rob Patterson, City Attorney*

The City Council will hold a public hearing to consider a proposal by Highland City Staff to amend certain sections of the Development Code and to adopt a new chapter 8 in the Development Code related to the regulation of development on sensitive lands. The City Council will take appropriate action.

City Attorney Patterson explained that during the May 16, 2023, City Council meeting, City staff discussed whether the City Council would be interested in adopting more specific and detailed sensitive land regulations. The Council expressed support for the ordinance to reduce the City's liability and protect current and future residents. On June 27, 2023, City staff had a similar discussion with the Planning Commission. The Planning Commission likewise supported the preparation of a sensitive lands ordinance. The Commission gave direction that the ordinance should encompass a variety of ground and soil issues (faults, soils, etc.), and that the ordinance should, to the extent practicable, provide fewer hard limits on development and more direction on mitigating unsafe or dangerous land and development conditions. Based on the feedback from the City Council and Planning Commission, City staff prepared a draft sensitive lands ordinance. The proposed amendment imposes regulations on the development of and construction on sensitive lands as follows:

1. Incorporates the sensitive lands ordinance into existing City review procedures.
2. Defines "sensitive lands" as land currently or historically subject to geologic hazards, environmentally sensitive areas, flood hazards, and/or steep slopes.

3. Requires an applicant for any subdivision on or development of property containing sensitive lands to perform a sensitive lands analysis, which identifies, delineates, and proposes mitigation efforts to manage and mitigate the development's impact on affected sensitive lands.
 - a. Sensitive lands analysis may require certain maps (topographical maps showing slopes, flood plain identification, wetlands delineation) and reports and studies (soil investigation, geotechnical reports, hydrologic reports)
 - b. City staff will review the sensitive lands analysis and provide a staff report that confirms the permissible development areas and required mitigation for the sensitive lands within the proposed development
4. Regulates development related to geologic hazards and slopes:
 - a. No development land subject to landslides/geologic hazards without appropriate studies, engineering, and other documentation of mitigation of danger or on slopes greater than 25%
 - b. Regulations and restrictions on cut/fills, grading, erosion control/revegetation, and fill areas
 - c. Limitations on road slopes and roads on steep slopes
 - d. Requirements to regrade disturbed slopes to conform to adjacent property and manage affected drainage channels
5. Regulates development related to environmentally sensitive areas
 - a. Wetlands, streams, rivers, and irrigation channels must be identified, and new setbacks imposed (15' wetlands, 50' streams/rivers, 10' irrigation)
 - b. Regulation of increased runoff and drainage to wetlands, streams, rivers, and irrigation channels
 - c. Protection of identified and threatened wildlife and wildlife habitat
 - d. Requires flood plain and flood-prone areas to comply with existing City regulations on floods
6. Standard appeal and variance process, with the addition of a special appeal process managed and decided by experts for geological hazards.

Mr. Patterson then engaged in dialogue with the Council regarding the history of the ordinance and similar ordinances employed in other communities; subdivision layout regulations; preservation of conservation areas and drainage channels; specific areas of the City that would be subject to the proposed ordinance; the importance of preventing any liability the City could incur by allowing developers to build in unstable areas; and the process a developer will be required to go through if they are pursuing development of sensitive lands. Council requested that the language on 5-8-104 be clarified replacing "other than dedicated open space or conservation areas" with "other than lots or parcels designated as non-buildable or dedicated for open space, conservation, drainage areas, or similar purposes".

Mayor Kurt Ostler opened the public hearing at 8:44 pm.

Elizabeth Rice stated she supports this proposal and would recommend taking it a step further by approaching the State of Utah to prevent developers from doing whatever they want on sensitive lands. In the City of Draper, a developer built homes in an area that the City told them was unstable and there was a land slide and homes were destroyed. She recently watched a home built in her neighborhood on 9600 North in the hollow, but she thought that area was 'off limits' for development.

There were no additional public comments.

Mayor Kurt Ostler closed the public hearing at 8:45 p.m.

Council Member Kim Rodela MOVED that the City Council ADOPT the proposed ordinance amending certain sections of the Development Code and adopting a new chapter 8 in the Development Code related to the regulation of development on sensitive lands, with clarification on 5-8-104 replacing "(other than dedicated open space or conservation areas)" with: "(other than lots or parcels designated as non-buildable or dedicated for open space, conservation, drainage areas, or similar purposes)"

Council Member Scott L. Smith SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

5. ACTION: PRELIMINARY PLAT - MAGNOLIA ESTATES *Land Use (Administrative) - Jay Baughman, Assistant City Administrator/Community Development Director*

The City Council will consider a request by the developers for preliminary plat approval of an 8-lot subdivision in the R-1-40 Zone located south of 4697 W. 11200 N. The City Council will take appropriate action.

Assistant City Administrator/Community Development Director Baughman explained the applicant is requesting preliminary plat approval of eight (8) single-family residential lots located on 7.82 acres at approximately 4697 W. 11200 N. The lot sizes meet the requirements of the R-1-40 Zone by having only one (1) lot that is less than 30,000 square feet. The north side of lot two will not provide access to 11200 North Street except by private drive. There will be no connection from Manor Drive/Magnolia Drive to Snowflake Drive due to concerns that connecting those roads would provide a dangerous thoroughfare. There will be a 10-foot pedestrian access inside of a 35' PUE between the two roads. The 10' pedestrian access will be dedicated to and owned by the City. The Planning Commission held a public hearing on August 29, 2023. Several citizens and other interested parties turned out at the hearing to voice their opinion on the matter. A resident that lives adjacent to the development on the West participated in the public hearing, stating that when she and her husband built their house nine years ago, they wanted to put in a cul-de-sac but were told by the City they could not because they lacked the required space in relation to their desired lot size. At the time, a short-term turnaround bulb was put in as a temporary solution. Now that the street is not going through, the resident expressed concern that the temporary solution is now a permanent one. Other comments were questions about the development, neither for nor against, including questions as to a potential future access north to 11200 North. Some commenters spoke in regard to safety concerns on Manor Drive while construction vehicles would be in the area.

The Planning Commission voted seven to zero to recommend approval of the preliminary plat and staff recommends the City Council accept the findings, and approve of the proposed preliminary plat with the following stipulations:

1. The final plat shall be in substantial conformance with the preliminary plat received July 5, 2023.
2. All public improvements shall be installed as required by the City Engineer.
3. The civil construction plans shall meet all requirements as determined by the City Engineer.
4. Staff will coordinate with the developer regarding a reimbursement agreement for sewer extension in Manor Drive.
5. Parcel A shall be shown as a dedication/conveyance to Highland City, all indication that Parcel A is also public utility easement shall be removed from the plat.

Council Member Smith provided background information regarding this application for the benefit of the public in attendance; the City held an open house two years ago and it was heavily attended by residents along Manor Drive. There were concerns expressed by the residents and he feels the City and the developer have addressed many of the concerns regarding the road configuration and the increase in traffic through neighborhoods if certain

road connections were made. He stated he feels the current proposal is a good compromise and the new lots and homes will be beautiful and will benefit the area. Council Member Rodela agreed. Council Member Bills agreed the plan is an improvement when compared to past applications for development of the property. However, she feels it is important to acknowledge the problems on Snowflake Drive and she feels the City needs to come up with a solution; she recommended finding a way to make the temporary turnaround not look so temporary. City Engineer/Public Works Director Spencer discussed the incorporation and improvement of areas of the cul-de-sac; which would help to improve the appearance of the area.

Mayor Ostler stated that the staff report regarding this item indicates the City will reimburse the developer for certain improvements, but he would like to know the exact cost of such reimbursements to ensure that the costs are competitive and fair. Mr. Spencer stated that the improvement work will be competitively bid to ensure that costs are fair. He briefly explained the sewer improvements to be completed in the project and noted that the City will have the ability to reject any costs and direct the developer to only proceed with the improvements that are necessary for the subject property. City Attorney Patterson added that any reimbursement agreement will be presented to the Council for approval.

Mayor Kurt Ostler opened this item for public comment at 9:04 p.m.

There were no public comments.

Mayor Kurt Ostler closed the public comment at 9:04 p.m.

Council Member Kim Rodela MOVED that the City Council accept the findings and APPROVE the preliminary plat for the Magnolia Estates subdivision subject to the following stipulations recommended by Staff and the Planning Commission and work with residents on Snowflake drive to come up with solution.

- 1. The final plat shall be in substantial conformance with the preliminary plat received July 5, 2023.*
- 2. All public improvements shall be installed as required by the City Engineer.*
- 3. The civil construction plans shall meet all requirements as determined by the City Engineer.*
- 4. Staff will coordinate with the developer regarding a reimbursement agreement for sewer extension in Manor Drive.*
- 5. Parcel A shall be shown as a dedication/conveyance to Highland City, all indication that Parcel A is also public utility easement shall be removed from the plat.*

Council Member Scott L. Smith SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

6. ACTION: CHANGE ORDER #1 WITH VANCON, INC. FOR PI WELL MODIFICATIONS *General City Management – Andy Spencer, City Engineer/Public Works Director*

The City Council will consider a change order with VanCon Inc. at Well #4 to facilitate a connection to the pressurized irrigation system from the existing culinary well. The Council will take appropriate action.

City Engineer/Public Works Director Spencer explained on March 21, 2023, the Council approved a construction contract with VanCon, Inc. in an amount up to \$1,522,535 for the construction of the new well house for Well #4. With the drilling and development of the new Well #4, staff realized the opportunity to use the current well at this site for a backup source for the City's pressurized irrigation (PI) system. The purpose of this change order would be to disconnect the piping from the old well previously connected to the culinary system and reconnect it to the PI system with necessary backflow prevention. This would provide an additional source of water in drought years or failure of other PI wells. The existing well is a \$1M~2M asset to the City. This change order allows the City to make use of that asset rather than entirely abandoning it. The primary use of the well site #4 would remain to provide Culinary water to the residents of Highland. This reuse of the old well for PI would only be utilized in emergency situations if all other options have been exhausted. At the time the existing well was used for PI, the new culinary well would be turned off to prevent problems in the PI well in the event the culinary well drew down the water level too low. Staff would operate another culinary well to maintain sufficient culinary water to residents while the PI well is being used. Both wells would not be operated at the same time under any circumstances. The cost of this project is \$100,825 with a 10% Contingency. Funding for this expense was not included in the FY24 budget. As this expenditure was not included in the budget, it will need to be funded by the pressurized irrigation enterprise fund and may be included as part of the mid-year budget adjustments unless otherwise directed by the Council. However, there are \$2,132,699 in funds allocated in GL53-40-60, PI Capital Expenses/Projects in the FY2024 budget. These funds have been allocated for the 6000 West pump station. That pump station is currently in design and will be bid this winter. If bids come in less than the budgeted amounts, there may not need to be a budget adjustment. Additionally, in the PI rate studies, the City expenses for the PI meter project were anticipated to be larger than is currently forecasted. As such, there are funds available for this expense. Staff recommends approving a Change Order with Van Con Inc. in the amount of \$100,825.79 including a 10% contingency for the project at Well #4 to facilitate a connection to the pressurized irrigation system from the existing culinary well.

Council Member Smith noted he is supportive of this proposal; the aquifer is replenished in good water years and wells are only used to supplement PI in very dry years. Mr. Spencer stated that is correct and the City does not regularly rely upon these wells for PI.

There was brief discussion about arrangements Highland City has with other cities for trading water in drought years, with Mr. Spencer noting that such trades are only considered in very dire conditions and the cities work together to strike an appropriate balance of trading.

Council Member Smith asked if the City has sufficient water supply to serve the City at its projected buildout population. Mr. Spencer stated that all master planning projects are based upon buildout projections and the City also participates with the Northern Utah County Aquifer Council to monitor aquifer recovery and the capacity of the water supply in this area. He considers this project to be like an insurance policy for the City and making use of an asset that the City has at its disposal.

Council Member Scott L. Smith MOVED that City Council APPROVE change order #1 with Van Con Inc. for the connection of the existing well #4 to the pressurized irrigation system in an amount up to \$100,825 and AUTHORIZE the City Administrator to sign the documents.

Council Member Brittney P. Bills SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

7. ACTION: CONSTRUCTION CONTRACT WITH ECKLES PAVING FOR 11830 N General City Management – Andy Spencer, City Engineer/Public Works Director

The City Council will consider approving a construction contract with Eckles Paving for the removal and replacement of the asphalt for a cul-de-sac located at approximately 6023 W. 11830 N. The Council will take appropriate action.

City Engineer/Public Works Director Spencer explained the Council has not previously been advised of the issue as an unforeseen water leak is the catalyst for the consideration. Earlier this summer in July, a leak was called in by a resident reporting water surfacing up through the roadway in the 11830 Cul-de-sac. Crews responded and repaired the leaking water line. It appeared the line had been leaking for some time resulting in significant damage to the asphalt extending outside the area that was removed for the repair of the waterline. The existing asphalt within this area is in poor condition with much of the area severely cracked and settling possibly resulting from the leaking water line. It appears more appropriate to replace the entire cul-de-sac and waterway instead of placing a patch in what otherwise is a very poor condition road. The cost of this project is \$75,319, including a 10% contingency. Funding for this expense is included in GL 56-40-70, Road Fee Projects within the FY2024 budget. Staff recommends the removal and replacement of the asphalt located at approximately 6023 W. 11830 N. This is a cul-de-sac that needs asphalt replacement following a water leak that disturbed the existing asphalt.

Council Member Scott L. Smith MOVED that City Council APPROVE a construction contract with Eckles Paving in an amount up to \$75,319 and AUTHORIZE the City Administrator to sign the contract documents.

Council Member Kim Rodela SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

8. EXPEDITED ITEMS

a. RESOLUTION: Vacancy Voting and Appointment Procedures *General City Management – Rob Patterson, City Attorney*

The City Council will consider the adoption of an amendment to establish procedures for the interviewing, voting, and appointment of candidates to fill a council office vacancy. The City Council will take appropriate action.

City Attorney Patterson stated that the Council discussed appointment procedures during its meeting on August 15, 2023. The Council reviewed several options from other cities and directed staff to prepare procedures that allowed for a short presentation from candidates, limited questions from the council, a process to narrow the number of candidates before voting to appoint, and to have council votes/ballots be confidential. Staff has developed a proposed resolution that provides formal procedures that can be provided to all applicants; the resolution establishes:

1. Two-minute introduction from a candidate, followed by one question to the candidate from each of the council members, including the mayor.
2. Each council member other than the mayor nominates, by secret ballot, 2 candidates to be considered for appointment, resulting in 2 to 8 final candidates.
3. The final candidates will be brought to the council again, and each council member, including the mayor, can ask one additional question to each final candidate.
4. The council then votes to appoint a candidate from among the final candidates by secret ballot.
5. All ballots and nominations will be collected and counted by the city recorder, with the city attorney observing and assisting.
6. Ties will allow the mayor to vote, and if ties remain after the mayor votes, they will be broken according to the coin-toss procedures set out in state law.
7. Once voting begins (after the nomination process), any candidate that receives 3 votes is appointed to fill the vacancy.

Staff recommends the City Council consider the resolution and ADOPT the proposed resolution, with any changes desired by the City Council, so the Council has established policies prior to the special meeting to fill the council vacancy on September 12, 2023.

Council Member Bills asked if the order of candidates will rotate during the question-and-answer phase of the process. Mr. Patterson stated that the candidates will appear in alphabetical order; after their two-minute introduction, they will engage in a question-and-answer period with the Council. The Council can ask the same questions of all candidates or ask each candidate different questions.

City Administrator Wells noted that the meeting during which the new Council Member will be selected has been advertised to start at 6:00 p.m.; she added that one of the applicants has indicated that they cannot attend in person, and they have asked if they can participate via electronic means and that is not addressed in the policy. Council Member Smith stated he would lean to require them to appear in person. Mayor Ostler stated he feels electronic participation would be a disadvantage for the candidate. Council Member Ball stated that he would like to understand the circumstances surrounding the applicant's inability to attend in person before making a decision. Council Member Rodela indicated she would be comfortable allowing the applicant to participate via electronic means, but agreed that it would be a disadvantage. Council Member Bills agreed. Council Member Ball stated that he is willing to allow electronic participation. Mayor Ostler stated there was another individual who expressed interest in applying for the position, but they chose not to because they could not physically attend the September 12 meeting; given that the Council is willing to allow electronic participation, he feels it would be appropriate to reach out to that individual and give them the opportunity to still apply if they would like to. The Council supported allowing the individual to apply.

Council Member Timothy A. Ball MOVED that the City Council ADOPT the proposed resolution adopting procedures governing the appointment, interview, and voting process for filling vacancies in city council offices, including the zoom option and allowing the individual who had been rejected to reapply.

Council Member Kim Rodela SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>No</i>

The motion passed 3:1.

Mayor Ostler acknowledged the applicants who were present and invited them to introduce themselves; this included: Ron Campbell, Patrick Springer, Allie Carlson, Landon Densley, Nicole de la Vega, Doug Cortney, Ryan Warnick, Sherry Kramer, John Weaver, Elizabeth Rice, and Wesley Warren.

b. ACTION: PI Meter Construction Contract change order for continuation of PI meter installation with Hydro Vac Excavation, LLC *General City Management - Andy Spencer, City Engineer/Public Works Director*

The City Council will consider approving a change order to the construction contract with Hydro Vac Excavation, LLC for the continuation of the Pressurized Irrigation Meter installation project. The Council will take appropriate action.

City Engineer/Public Works Director Spencer explained on February 7, 2023, City Council approved a construction contract with Hydro Vac Excavation, LLC for the first phase of the PI meter installation project. The bid documents provide at the City's option for an extension of the contract for the ensuing years of meter installation. The bid from Hydro Vac includes a 10% increase for the installation of meters in 2024 and 2025. The City determined at that time to evaluate Hydro Vac's performance in 2023 before making decisions relative to future years. City Council has previously accepted grant funding through the Bureau of Reclamation and Utah State Department of Water Resources the funding for the PI meter project. On August 15, 2023, City Council gave staff direction to continue moving forward with Hydro Vac for next year's work and to allow them to install over the winter months. The cost of this change order including a 10 percent contingency is \$2,314,206. Funding for the PI meter project is included in GL 53-40-50, PI Grant Expenditures, within the FY2024 budget. Pending the timing billing (FY24 vs FY25) for parts and installation, it may be necessary to adjust the end of year budget for the PI Grant Expenditures; however, sufficient funds are available due to the grant reimbursements that are available as the City pays the expenses of the project. Staff recommend a continuation of the installation construction contract with Hydro Vac Excavation, LLC to continue installing PI meters throughout the winter 2023/24 months in anticipation of completion of the residential installations in all areas of the City by October of 2024. City staff are pleased with the installation of the meters thus far and recommend continuing working with Hydro Vac for future phases of the project.

There was brief discussion regarding Hydro Vac's ability to perform the work.

Council Member Scott L. Smith MOVED that City Council APPROVE the change order to the construction contract with Hydro Vac Excavation, LLC in an amount up to \$2,314,206 and AUTHORIZE the City Administrator to sign the necessary contracts.

Council Member Brittney P. Bills SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed 4:0.

9. DISCUSSION: CEMETERY MAINTENANCE BUILDING *General City Management – Andy Spencer, City Engineer/Public Works Director*

The City Council will discuss the installation of a cemetery maintenance building. The Council will take appropriate action.

City Engineer/Public Works Director Spencer explained the City Council approved within the FY2024 budget for the Cemetery Perpetual Fund, Capital Outlay line item 21-43-74 with the amount of \$48,000 to be used for Cemetery Improvements. In 1999 Highland City began the construction of the cemetery. In 2004-05 the expansion of the cemetery was contracted. During the planning and construction phases of the cemetery there has been a location designated for a maintenance/storage area for excess dirt and equipment to be placed and for operations and maintenance purposes. Currently, there is a Conex on site to store some of the equipment. The equipment and drive mats are all stored outside. The combination of dirt and equipment can create an unsightly area of the cemetery. The adopted budget included money for a second Conex and roof structure between the Conex containers to create a carport. Staff feels that a building as suggested will be a better appearance and allow for more security for the equipment than the previously contemplated option. The purpose for constructing a maintenance building on this site is to house the trucks, skid steer, mini-ex and other equipment needed to operate and maintain the cemetery. The building will also allow the dirt to be screened from view in the cemetery. Currently most of the larger equipment is being stored outside in the elements causing unnecessary ageing and distress of equipment. Staff have researched potential building options and suggest the City move forward with the building concept provided. Council input is requested to ensure the building is acceptable and is in harmony with the aesthetics of the cemetery. Staff recommends the installation of a maintenance building to be installed in the designated cemetery maintenance area for storage of equipment related to operations of the cemetery.

Mayor Ostler facilitated discussion among the Council and staff regarding the idea of building a cemetery maintenance building; there was a focus on materials to be used and the Council directed Mr. Spencer to obtain three bids for the Council to consider before making a decision. Mr. Spencer stated that he also thinks it would be good for residents living near the cemetery to provide input.

10. MAYOR/COUNCIL AND STAFF COMMUNICATION ITEMS

The City Council may discuss and receive updates on City events, projects, and issues from the Mayor, City Council members, and city staff. Topics discussed will be informational only. No final action will be taken on communication items.

e. Folkman Angel – Stephannie Cottle, City Recorder

City Recorder Cottle presented images of an angel statue, which represents a young lady buried in the cemetery. The family approached the City about placing the statue in the cemetery; they originally wanted to use it as her headstone, but that was not approved because the base requirements could not support the weight and size of the angel. They ultimately chose to place the angel near the pavilion and the family has volunteered to install landscaping in that area as well. City Engineer/Public Works Director Spencer stated that staff would like to pursue an agreement with the family regarding maintenance of the landscaping.

Council Member Timothy A. Ball MOVED to extend the meeting to 10:30 pm. Council Member Scott L. Smith SECONDED the motion. All voted in favor and the motion passed unanimously.

Mayor Ostler recessed the meeting at 10:11 p.m. The meeting reconvened at 10:20 p.m.

a. Alcohol Information Session – Erin Wells, City Administrator

City Administrator Wells provided the Council and Mayor with a draft of the summary document regarding a public survey and information about the MNG Highland Development proposal and amendments to the City's ordinances allowing alcohol sales. She invited feedback from the Mayor and Council about appropriate changes to the document. The Mayor and Council offered suggested edits intended to clarify the information provided in the document; condense/shorten the document; clear up confusing or conflicting information; offering an explanation on the differences between State law and City law; and the importance of the City taking a neutral position on the matter. Relative to the MNG narrative, feedback from the Mayor and Council centered on the importance of communicating that the information is from MNG and not the City; and shortening the document to get it to fit on one page. Ms. Wells indicated she will adjust the documents to reflect the feedback provided by the Council and send it to the Mayor and Council for continued review.

b. PI Long Term Obligations - *Andy Spencer, City Engineer/Public Works Director & Tyler Bahr, Finance Director*

This item was not discussed.

c. Financial Report - *Tyler Bahr, Finance Director*

This item was not discussed.

d. David Stewart Contract - *Andy Spencer, City Engineer/Public Works Director*

City Engineer/Public Works Director Spencer explained the City's current contract with David Stewart expires on September 30, 2023; the contract price was \$100,000 and during the contract period, Mr. Stewart secured \$1 million in grant funding for the City. The Fiscal Year (FY) budget includes another \$100,000 for similar services. Mr. Stewart submitted a grant application for GOEO funding and will provide legislative assistance regarding the following:

- Address any affordable housing, land-use control, building and development revenue restriction legislation.
- Address any legislation seeking to eliminate Justice Courts
- Transportation Utility Fee - Work with legislator that will be sponsoring bill and ensure parameters are favorable

Mr. Spencer concluded staff needs feedback from the Council to determine if they would still like to proceed with executing the FY24 contract at their next business meeting. The Council discussed the work to be performed by Mr. Stewart and how that differs from the services provided by the Utah League of Cities and Towns (ULCT). Mr. Stewart stated that his service is unique as it can be targeted to the cities that he represents; the ULCT considers advocacy that would serve all its city members and the end solution may not be something that actually benefits all communities. He cited the use of transportation fees as an example and noted that not all cities have those types of fees so the ULCT may not have as great a focus on that issue as he will.

Mayor Ostler polled the Council to determine if they would still like to contract with Mr. Stewart; Council Member Smith stated he is supportive of contracting with Mr. Stewart again this year. Council Member Rodela stated she needs to think more about the issue because \$100,000 is a large amount. Council Member Bills stated she does not like that cities must use lobbyists to secure funds; she has a fundamental concern with this type of contract, and she will also need to think more about it. Council Member Ball agreed but noted that the City needs grant funding, and he is supportive of contracting with Mr. Stewart in order to secure that funding. Mayor Ostler stated he is supportive of bringing the contract back to the Council at their next business meeting for action.

f. Day of Service - *Andy Spencer, City Engineer/Public Works Director*

City Engineer/Public Works Director Spencer explained the next day of service will be this Saturday at Highland Glen Park; work to be performed includes pruning trees by the south bathroom, painting benches on the southeast side of the park, clean up the shore, and pick up trash around the lake. He invited residents to participate in the clean up and encouraged residents to attend the breakfast at the Fire Station at 7:00 a.m.

g. Alpine Highway Fence

Council Member Smith stated he would like to have discussion about this issue at the next business meeting; he still feels the City needs to help residents with this issue.

Council Member Bills asked if the City has already collected all of its expected cell tower revenue. Finance Director Bahr stated that the City has hit a quarter of its anticipated revenue.

h. Future Meetings

- September 12, Special City Council Meeting 6:00 pm, City Hall
- September 13, Lone Peak Public Safety District Meeting, 7:30 am, City Hall
- September 19, City Council Meeting, 7:00 pm, City Hall
- September 26, Planning Commission Meeting, 7:00 pm, City Hall

11. CLOSED SESSION

The City Council may recess to convene in a closed session to discuss items, as provided by Utah Code Annotated §52-4-205.

There was no closed session.

ADJOURNMENT

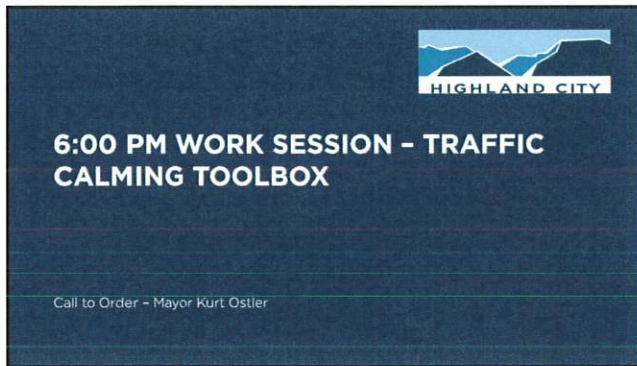
Council Member Scott L. Smith MOVED to adjourn the regular meeting and Council Member Brittney P. Bills SECONDED the motion. All voted in favor and the motion passed unanimously.

The meeting adjourned at 11:37 pm.

I, Stephannie Cottle, City Recorder of Highland City, hereby certify that the foregoing minutes represent a true, accurate and complete record of the meeting held on September 5, 2023. This document constitutes the official minutes for the Highland City Council Meeting.



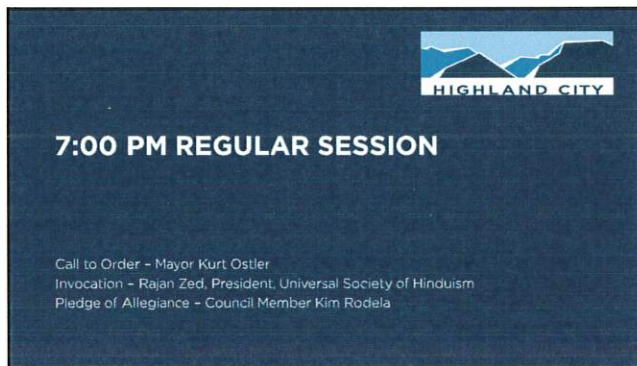
Stephannie Cottle, CMC
City Recorder



1



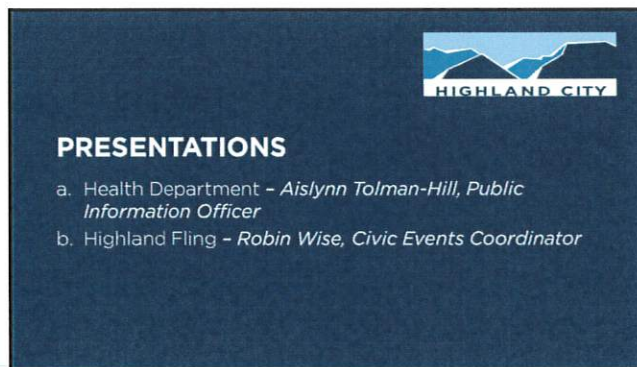
2



3



4



5



6



Monday, July 31st

- Highland Fling Kickoff
 - Pie Eating Contest
 - Pie Baking Contest
 - Dutch Oven Demonstration
 - Dutch Oven Dinner



7



Tuesday, Aug 1st

- Car Show
- Service Project
 - Plastic Bag Mats for Homeless



8



Wednesday, Aug 2nd

- Food Drive
 - Tabitha's Way
- Kid's Night
 - Library
- Horseshoe Tournament



9



Thursday, Aug 3rd

- Baby Celebration
 - Cowabunga! Surf's Up!
- Splash of Paradise
 - Fire Truck Spray
- Backyard Garden Tours



10



Friday, Aug 4th

- Play Day Rodeo
- Art Show
- 5k Glow Run
- Highland's Got Talent
- Disc Golf Tournament



11



Saturday, Aug 5th

- Grand Parade
 - Grand Marshal
- Friend's of the Library Book Sale
 - Gave out free book coupons for the library book sale
- Highland Games/Strongman



12

Saturday, Aug 5th

- Vendors and Food Trucks
- Kid's Zone
- Stage Entertainment
- Fireworks

13

CONSENT ITEMS (5 minutes)

3a. ACTION: Approval of Meeting Minutes: July 18, 2023
General City Management

3b. ACTION/RESOLUTION: Lone Peak Public Safety Board Appointment
General City Management

3c. RESOLUTION: Update to the Lone Peak Interlocal Agreement
General City Management

3d. RESOLUTION: Reorganization of Timpanogos Special Service District
General City Management

14

Motion to Approve

I MOVE that the City Council approve consent item 3a, the approval of meeting minutes from July 18, 2023, item 3b. Appointment of Kim Rodela as an alternate to the Lone Peak Public Safety District Board of Directors, item 3c Update to the Lone Peak Interlocal Agreement, and 3d Reorganization of Timpanogos Special Service District.

15

TEXT AMENDMENT – SENSITIVE LANDS Development Code Update (Legislative)

Item 4 – Public Hearing/Ordinance
Presented by – Rob Patterson
City Attorney

16

Motion to Approve

I move that the City Council ADOPT the proposed ordinance amending certain sections of the Development Code and adopting a new chapter 8 in the Development Code related to the regulation of development on sensitive lands.

17

PRELIMINARY PLAT – MAGNOLIA ESTATES (Land Use Administrative)

Item 5 – Action
Presented by – Jay Baughman
Assistant City Administrator/Community Development Director

18



PRELIMINARY PLAT - MAGNOLIA ESTATES
Land Use (Administrative)

Item 3 - Public Hearing
Presented by - Jay Baughman
Assistant City Administrator / Community Development Director

19

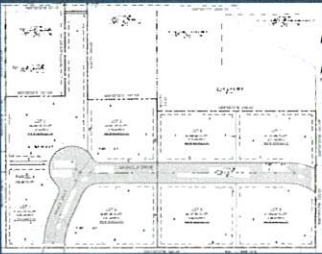
Vicinity Map



- General Plan Land Use: Low density residential
- R-1-40 Zone

20

Preliminary Plat



- 8 lots
- 1 lot under 30,000 sq ft (27,412 square feet)
- Access: Manor Drive and Snowflake (east)

21

Citizen Participation

- Notice posted August 14, 2023
 - State and City websites
 - City Hall
 - 500' radius letters
- No comments directly related to the Magnolia Estates subdivision

22



PRELIMINARY PLAT - MAGNOLIA ESTATES
Land Use (Administrative)

Item 3 - Public Hearing
Presented by - Jay Baughman
Assistant City Administrator / Community Development Director

23

Vicinity Map



- General Plan Land Use: Low density residential
- R-1-40 Zone

24

Preliminary Plat



- 8 lots
- 1 lot under 30,000 sq ft (27,412 square feet)
- Access: Manor Drive and Snowflake (east)

25

Citizen Participation

- Notice posted August 14, 2023
 - State and City websites
 - City Hall
 - 500' radius letters
- No comments directly related to the Magnolia Estates subdivision
 - One email regarding Snowflake Drive on the west

26



27

Planning Commission

- August 29 Public Hearing
 - Nine people spoke during the public hearing:
 - Two against
 - Two for
 - Five were neutral/asked questions
- Voted 5:0 recommending APPROVAL

28

Planning Commission

Planning Commission recommended APPROVAL with stipulations:

1. The final plat shall be in substantial conformance with the preliminary plat received July 5, 2023.
2. All public improvements shall be installed as required by the City Engineer.
3. The civil construction plans shall meet all requirements as determined by the City Engineer.
4. Staff will coordinate with the developer regarding a reimbursement agreement for sewer extension in Manor Drive.
5. Parcel A shall be shown as a dedication/conveyance to Highland City, all indication that Parcel A is also public utility easement shall be removed from the plat.

29

Administrative Land-Use Decision

- The developer has met all legal requirements, and the plat appears to satisfy all City code and standards
- The City cannot require any more from the developer than City code requires
- The City must approve the plat as presented unless the plat does not satisfy City code or standards

30

Motion to Approve

I move that the City Council accept the findings and APPROVE the preliminary plat for the Magnolia Estates subdivision subject to the stipulations recommended by Staff and the Planning Commission.

31



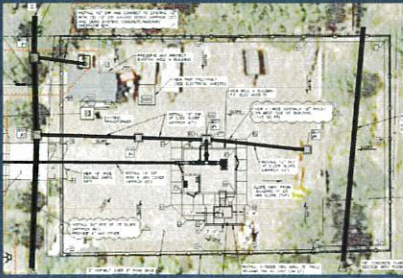
CHANGE ORDER #1 WITH VANCON, INC. FOR PI WELL MODIFICATIONS

General City Management

Item 6 - Action
Presented by - Andy Spencer
City Engineer/Public Works Director

32

Site Plan



33

Motion to Approve

I move that City Council APPROVE change order #1 with Van Con Inc. for the connection of the existing well to the pressurized irrigation system in an amount up to \$100,825 and AUTHORIZE the City Administrator to sign the documents.

34



CONSTRUCTION CONTRACT WITH ECKLES PAVING FOR 11830 N

General City Management

Item 7 - Action
Presented by - Andy Spencer
City Engineer/Public Works Director

35

Location Map



36

Motion to Approve

I move that City Council APPROVE a construction contract with Eckles Paving in an amount up to \$75,319 and AUTHORIZE the City Administrator to sign the contract documents.

37



VACANCY VOTING AND APPOINTMENT PROCEDURES *General City Management*

Item 8a – Expedited Resolution
Presented by – Rob Patterson
City Attorney

38

Applicants for City Council Vacancy

Ronald V. Campbell
Allie Carlson
Doug Cortney
Nicole M. de la Vega
Landon Densley
Kevin Greene
Sherry Kramer
Jon Lefrandt
Jeremy Meldrum
Erin K. Pritchett

Elizabeth Rice
Brian Sargent
Patrick Springer
Helen Anjalee Taylor
Ryan Warnick
Wesley Warren
John B. Weaver

39

Motion to Approve

I move that the City Council ADOPT the proposed resolution adopting procedures governing the appointment, interview, and voting process for filling vacancies in city council offices.

40



PI METER CONSTRUCTION CONTRACT CHANGE ORDER WITH HYDRO VAC EXCAVATION, LLC *General City Management*

Item 8b – Expedited Action
Presented by – Andy Spencer
City Engineer/Public Works Director

41

Motion to Approve

I move that City Council APPROVE the change order to the construction contract with Hydro Vac Excavation, LLC in an amount up to \$2,314,206 and AUTHORIZE the City Administrator to sign the necessary contracts.

42



CEMETERY MAINTENANCE BUILDING

Item 9 - Discussion
Presented by - Andy Spencer
City Engineer/Public Works Director

43

Budget

- FY2024 Budget has \$48,000 for cemetery structure.
- Originally conceived as an additional Connex and a constructed roof.

44

Location



45

Current Status



46

Original Concept Examples



47

Current Concept



SIDING AND TRIM COLOR OPTIONS									
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green

ROOF COLOR OPTIONS									
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green
White	Black	Dark Grey	Medium Grey	Light Grey	Dark Blue	Medium Blue	Light Blue	Dark Green	Medium Green

48



ALCOHOL INFORMATION SESSION

Item 10a - Communication
Presented by - Erin Wells
City Administrator

49

Content & Survey Feedback

- Overall Communications Message
- Survey

50

Next Steps

- ASAP - Postcard and webpage launched advertising Information Session
- September 18 - Information Session at 7:00PM at MRJH
- ~September 19 - Mailed surveys arrive
- September 30 - Surveys Due
- October 17 - Item brought back to Council

51



DAVID STEWART CONTRACT

Item 10d - Communication
Presented by - Andy Spencer
City Engineer/Public Works Director

52

Current Contract

- Oct. 1, 2022 - Sept. 30, 2023
- Cost: \$100,000
- Grant Received \$1M
- Legislative Assistance
 - Connecting roads from other cities (Blue Bison)

53

FY2024

- FY2024 budget includes \$100,000 for contract.
- Grant GOEO, Submitted
- Planned Legislative Assistance
 - Address any affordable housing, land-use control, building and development revenue restriction legislation.
 - Address any legislation seeking to eliminate Justice Courts
 - Transportation Utility Fee - Work with legislator that will be sponsoring bill and ensure parameters are favorable

54



FOLKMAN ANGEL

Item 10e - Communication
Presented by - Stephannie Cottle, City Recorder

55



56



57



58



DAY OF SERVICE

Item 10f - Communication
Presented by - Andy Spencer
City Engineer/Public Works Director

59

Day of Service 2023

- Saturday, September 9, 2023
- Highland Glen - 8 am - 12 pm
 - Pruning trees near burn location (south bathroom area)
 - Painting benches
 - Pond cleanup (shore and near shore areas)

60



FUTURE MEETINGS

- September 9, Day of Service, 8:00 am, Highland Glen
- September 12, Special City Council Meeting, 6:00 pm, City Hall
- September 13, Lone Peak Public Safety District Meeting, 7:30 am, City Hall
- September 18, Alcohol Information Session, 7:00 pm, Mountain Ridge Jr High
- September 19, City Council Meeting, 7:00 pm, City Hall
- September 26, Planning Commission Meeting, 7:00 pm, City Hall

Item 10g - Communication

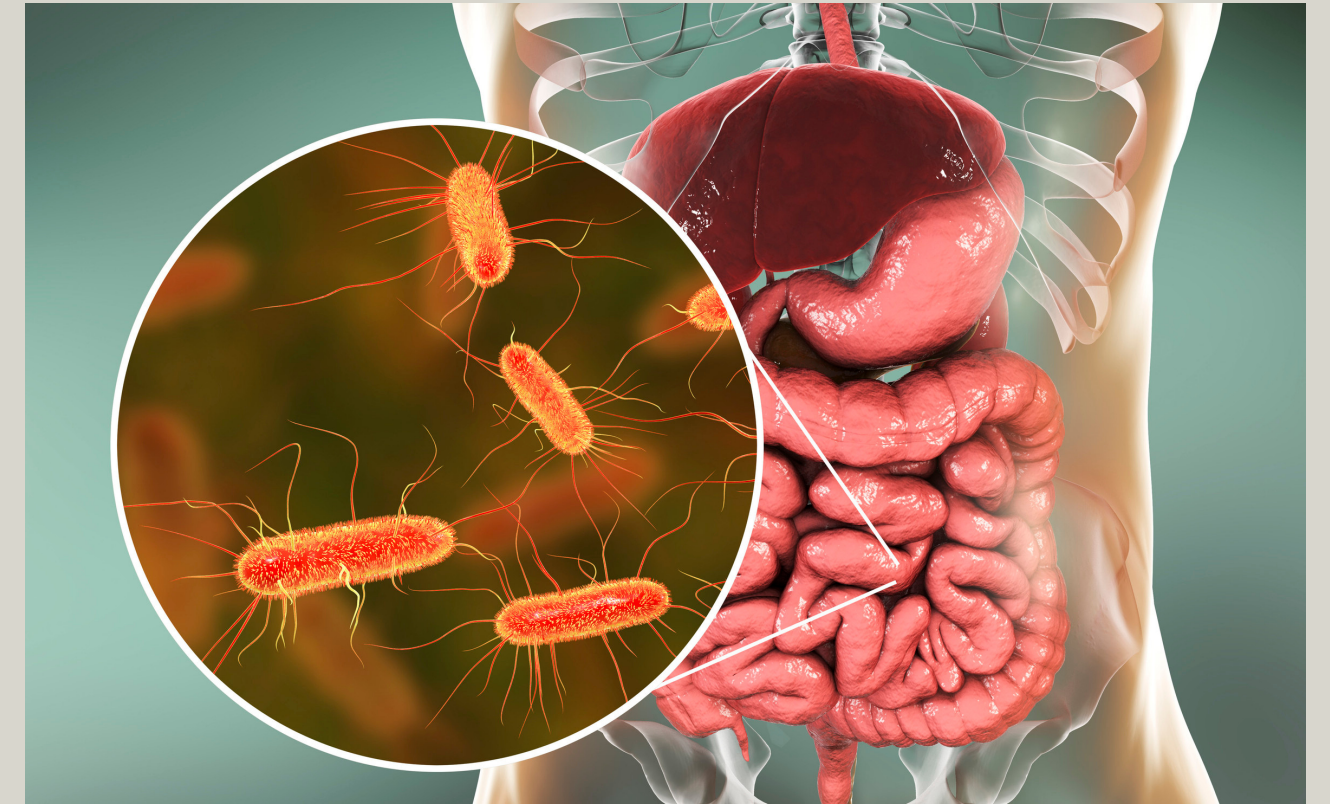
A microscopic view of several Escherichia coli (E. coli) bacteria. The bacteria are rod-shaped with a textured, bumpy surface and many fine, hair-like flagella extending from them. They are set against a solid blue background.

Escherichia coli

E. COLI

WHAT IS E. COLI

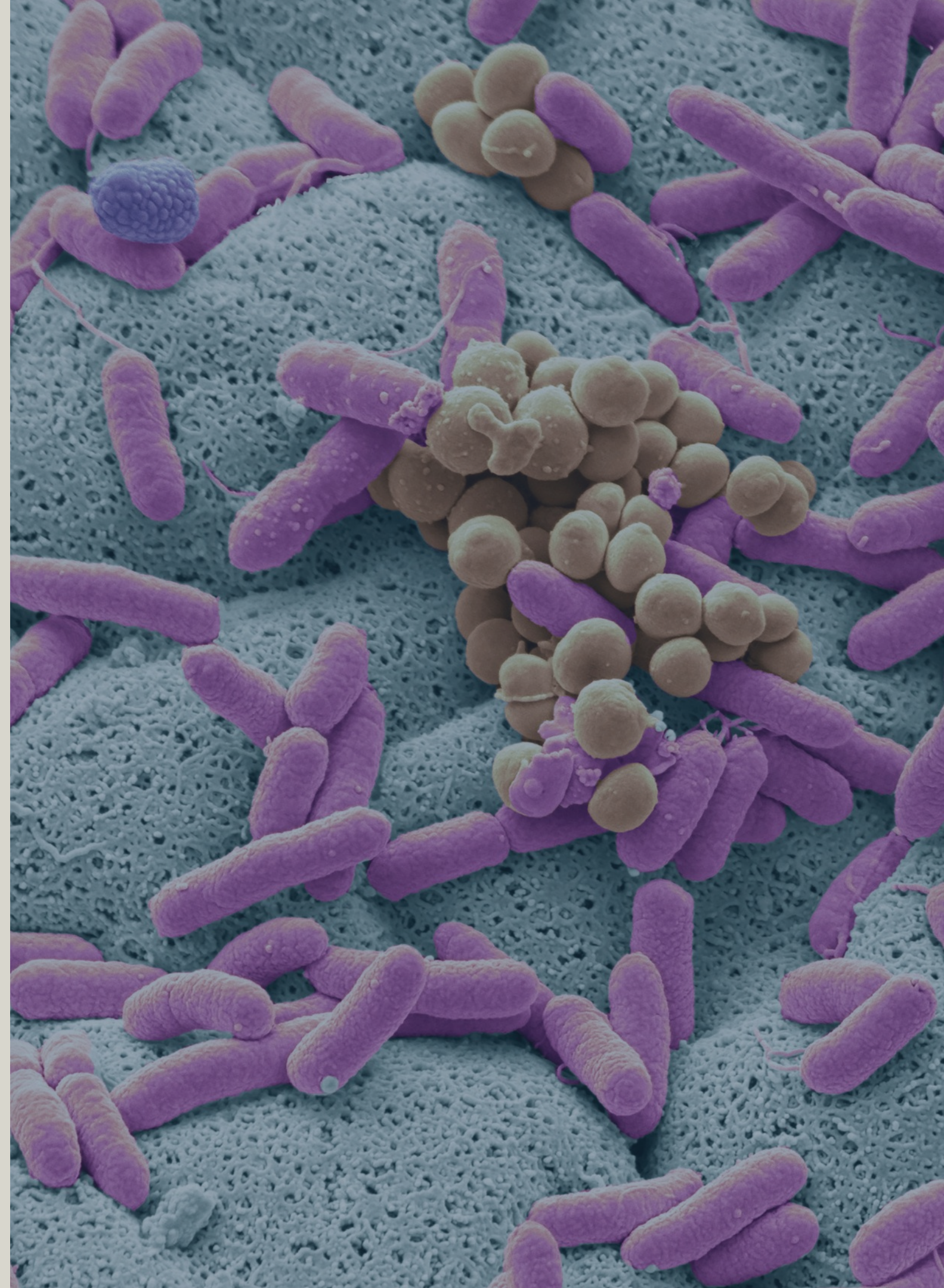
- A bacteria found in the environment, foods, and intestines of people and animals.
- E. coli are a large and diverse group of bacteria. Although most strains of E. coli are harmless, others can make you sick.
- Some kinds of E. coli can cause diarrhea, while others cause urinary tract infections, respiratory illness and pneumonia, and other illnesses.



Different Strains of E. coli

6 pathotypes are associated with diarrhea and collectively are referred to as diarrheagenic E. coli.

- Shiga toxin-producing E. coli (STEC) This pathotype is the one most commonly heard about in the news in association with foodborne outbreaks.
- Enterotoxigenic E. coli (ETEC)
- Enteropathogenic E. coli (EPEC)
- Enteroaggregative E. coli (EAEC)
- Enteroinvasive E. coli (EIEC)
- Diffusely adherent E. coli (DAEC)



Epi concerns of E. coli O157:H7

The is the strain that has been found recently, as well as in many foodborne illness outbreak nationally.





EXPECTATIONS

for ponds and irrigation water

Pond and Irrigation Water

Ponds and irrigation waters are untreated and unregulated. Recreating in these water sources can be harmful and dangerous when bacteria is present.

Choosing to recreate in these bodies/water systems are essentially "use at your own risk."





HOW TO PREVENT

E. coli infections in humans

Prevention

- DO NOT use pressurized irrigation water for drinking or play
 - Slip-n-slides
 - bounce houses
 - water tables
 - kiddie pools
- AVOID swallowing water when swimming or playing in lakes, ponds, streams, swimming pools, and backyard “kiddie” pools



Prevention

- WASH YOUR HANDS thoroughly after using the bathroom or changing diapers and before preparing or eating food.
- WASH YOUR HANDS after contact with animals or their environments (at farms, petting zoos, fairs, even your own backyard).



Prevention

- COOK meats thoroughly.
- PREVENT cross-contamination in food preparation areas by thoroughly washing hands, counters, cutting boards, and utensils after they touch raw meat.
- Lehi residents are currently advised to cook or can all produce that has been watered with irrigation water systems.



The background of the image is a solid blue color with a repeating pattern of white question marks. The question marks are of varying sizes and are slightly offset from each other, creating a sense of depth and movement. They are distributed evenly across the entire frame.

QUESTIONS?

REFERENCE

Centers for Disease Control and Prevention. (2014, December 1). Questions and answers. Centers for Disease Control and Prevention. <https://www.cdc.gov/ecoli/general/index.html>



**FOR MORE INFORMATION ABOUT
E. COLI (ESCHERICHIA COLI)**

Before filling out the included survey, please review the information below to better understand this complex issue

Background

The commercial property northeast of CVS and north of Quick Quack Car Wash is approved for retail and office development. The property owner, MNG Highland Development, has submitted plans for the development of a retail shopping center and has requested the City allow restaurants to sell alcoholic beverages. To help the City Council make this decision, the Council is seeking resident feedback on this topic.

Below is information written by the City regarding this requested change and an outline of current City and State regarding the sale of alcoholic beverages. The City also previously held an Information Meeting on September 18 on this topic. You can see a video of that meeting at hereisthelink.com along with additional information on this item.

Also included in this package is information provided by the property owner.

The Requested Change

MNG Highland Development has requested a change to Highland's laws to allow the sale of alcoholic beverages in restaurants in their commercial development. The change would allow restaurants to obtain a "Full-Service Restaurant License" which under state law allows beer, wine, mixed drinks, and spirits to be sold to customers. If approved, restaurants would have to follow all state alcohol regulations including the requirements that all alcohol (1) be consumed on-site and (2) served only with a food order. Their proposed request would apply only to this commercial area, not city-wide.

Current City Law

[Highland City Municipal Code 5.12.020](#) and [Ordinance 1977-09](#) prohibit the sale of beer City-wide. When these codes were approved in 1977 and in 2000, the sale of alcohol was more regulated by state law and thus by banning beer, the City was effectively banning the retail sale of all alcohol in the City.

In addition, in all but one commercial zone in the City, alcohol sales of any kind are expressly prohibited. In the one commercial zone that does not prohibit alcohol sales (the area surrounding Macey's), the City Council has historically put limitations on individual businesses coming in to not allow alcohol sales.

These laws and Council actions mean that there are no public businesses currently in Highland that sell alcohol. *(While the Alpine Country Club does serve alcohol, they are a private club and existed before the City was incorporated, and thus their alcohol sales are grandfathered in.)* However, due to what seems to be an unintended ambiguity in the code, a restaurant could currently open in the Macey's area, and if properly licensed by the state, could sell alcoholic beverages other than beer. This gap will be resolved as a part of this process.

Current State Law Regarding Restaurant Alcohol Licenses

The State of Utah regulates commercial restaurant alcohol sales and consumption, as outlined in [Utah Code Title 32B](#). Key regulations include:

• Drinking age of 21 years	• Limits percentage of alcohol per drink
• State license required	• Special employee training requirements
• Less than 20% of total sales can come from alcohol	• Minimum distance of restaurant from schools, churches, etc.
• Limits number of drinks served per customer	• Alcohol must be consumed on site and served with food

Implications to the Potential Change & Other City Council Considerations

After Council decides on this request by MNG Highland Development, LLC in this specific area, they plan to make their decision applicable City-wide. Below are the business implications of doing so:

APPROVING the change to the City's alcohol laws throughout the City would mean:

- Alcohol sales in restaurants would be allowed in commercial zones city-wide. They could sell beer, wine, and other types of alcohol for on-premise consumption only to a restaurant patron as part of a food order.
- Grocery and convenience stores would continue to be prohibited from selling alcoholic beverages.
- Liquor stores and bars would still be prohibited.
- The Sunday business closure law would remain unchanged.

DENYING the change to the City's alcohol laws throughout the City would mean:

- City law would be changed to ban all alcohol sales in all commercial zones in the City.
- No restaurants, grocery, or convenience stores, could sell any type of alcohol.
- Liquor stores and bars would remain prohibited.

Information Provided by MNG Highland Development, LLC.

Applicant narrative to be inserted here.

Developer Narrative

We are requesting that restaurants who seek to open and operate in the Highland Mains project have the discretion to sell alcohol as a part of their offering. Over a period of 12 months of marketing and leasing, every full-service sit-down restaurant that has expressed interest in being a part of this project has requested and required the ability to curate their food and beverage menu in the same manner that they would in any other location where they operate.

Our initial plans for this shopping center were conceived in 2021, saw high demand from local chain fast food and quick-serve restaurants, and included several with drive-thru facilities. We commenced construction in the summer of 2022. Below is the site layout we started to build.

Insert illustration of original site plan

While this plan would bring quick-serve and drive-thru restaurant options for the community, it had no unique character to draw interest from full-service restaurant operators or unique retailers. As is typical to a suburban strip center, the initial plan is vehicular oriented with outdoor seating areas flanked by parking lots and traffic lanes, and would do nothing more than provide a place to sit and eat that happens to be outside. While our initial plan includes some plaza space, it does nothing to create a space for intimate outdoor dining nor have appeal as a community gathering place.

Within days of starting construction, persuaded by conversations with residents and visits to unique retail centers outside of Utah County, we realized that what we had planned did not do justice to the community it would serve. While we were confident it would be successful, we believed the community deserved something that would be more meaningful and distinct to Highland. We halted the construction and went back to the drawing board.

Below are illustrations of our revised plans. The revisions create a much more expansive pedestrian centric community gathering place appointed with firepits, a large grass and performance area, play structures for children and extensive seating. It creates a space that through landscape, architecture, design, and the mountain backdrop, will be unique in Utah. With this new design, we've seen strong interest from boutique retailers, health, fitness, and wellness concepts, and the many unique chef-curated restaurants who sell alcohol as part of their offering. For many of these interested restaurant operators, Highland Mains would be a first to Utah or at least a first to Utah County.

These revised plans can now accommodate at least 4 large full-service restaurants that will serve as the anchors for the entire shopping center. We are in negotiations with several restaurant operators to occupy these anchor spaces. These are not national chains, such as Olive Garden, Applebees or Chilis, but local Utah operators with experience in the Salt Lake and/or Park City markets, or concepts that have been successful nationally and are looking to expand to Utah. These are the types of restaurants most residents of Highland likely now take a lengthy drive to dine with family or friends and to celebrate special occasions. Without these

restaurants, the development of Highland Mains in its current form is not viable. And, because these operators require the freedom to provide a full-service restaurant experience, which includes the sale of alcoholic beverages, we respectfully request that this right be granted.

Without the full-service restaurants that would like to be a part of this project, we will need to revert to the initial plan proposed which featured quick-serve drive-thru restaurants as a customer draw. Our hope is that the community will look at our updated project holistically and see a net benefit in what this project can bring to the community if given the opportunity.

Insert illustration/renderings of current plan

Recently a request was submitted to the City to change current laws to allow for alcohol sales as part of the operation of a restaurant. City Council is seeking resident feedback on this proposal. Before filling out the survey below, we ask that you **please review the information sheet included**.

Please note that each survey contains a unique code to ensure integrity in the results.

To expedite the results, we ask that anyone who is able to take the survey online do so at hereisthelink.com. You can also scan the QR code included below. Online surveys will need to input the unique identification code included at the top of this survey.

If you need to take the physical survey, you can mail it back to City Hall, include it in your utility bill payment, drop it in our utility drop box north of City Hall, or bring it in to our front desk.

Two surveys have been included in each mailing. We ask that everyone 18 and older in your household complete the survey. If more than two adults live in your home, please call City Hall at 801-756-5751 and additional survey(s) will be provided to you.

Surveys are due no later than Saturday, September 30, 2023.

Thank you for taking the time to make your voice heard. The City anticipates City Council voting on this item on Tuesday, October 17.

- 1) Should City Council allow restaurants to sell alcoholic beverages to restaurant patrons, provided such alcohol sales are (1) accompanied with a purchase of food, (2) limited to consumption on restaurant property, and (3) follow all other Utah State Code requirements?
 - Yes (answer questions 2 and 3)
 - No (move to question 3)
- 2) What type of alcoholic beverages should the City allow in restaurants?
 - Beer and wine only (Limited-service restaurant)
 - Alcoholic beverages allowed under Utah State Code including beer, wine, mixed drinks, and distilled spirits (Full-service restaurant)
- 3) If you would like to provide a brief explanation on your answers above, please do so here.

HIGHLAND TRAFFIC CALMING AND PEDESTRIAN SAFETY MANUAL



JUNE 2023



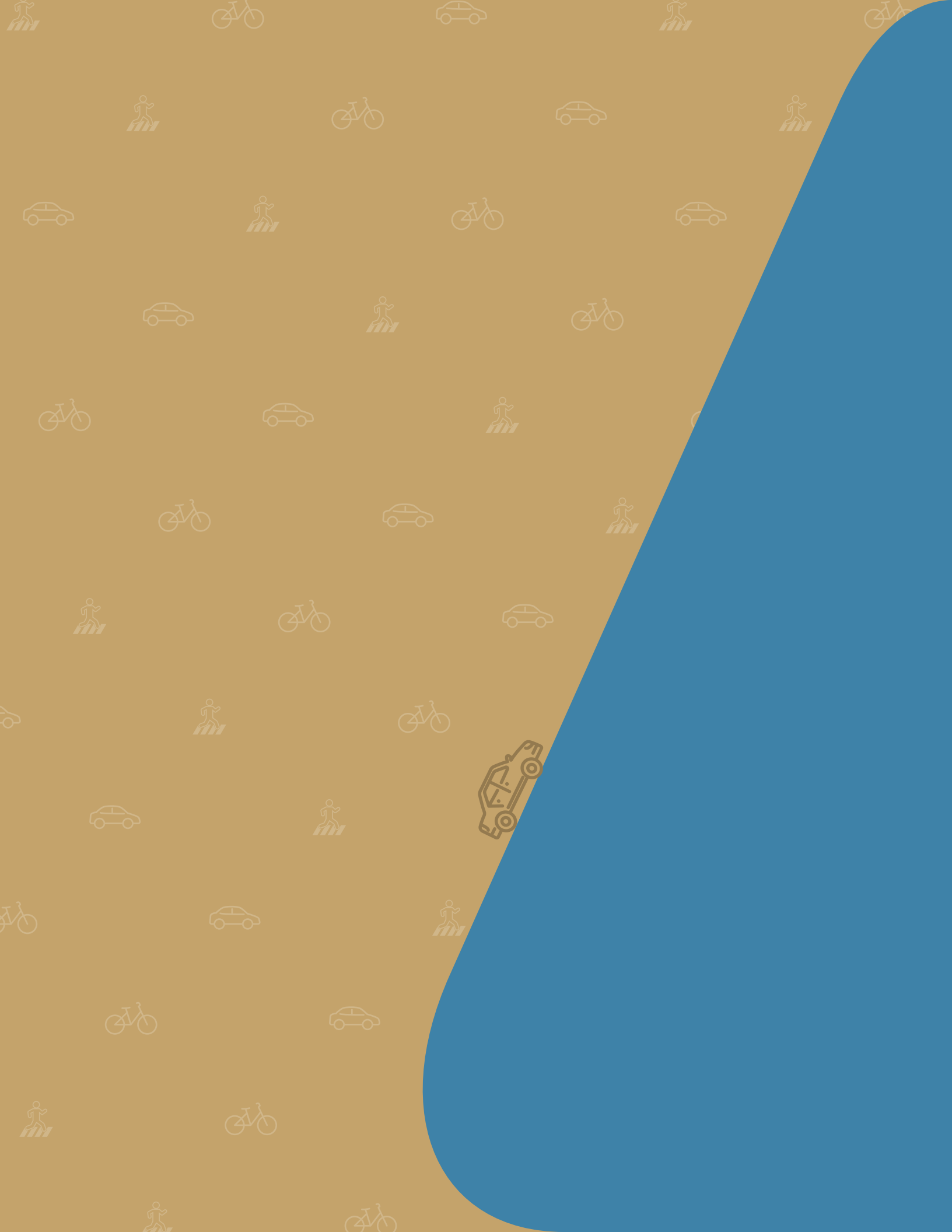
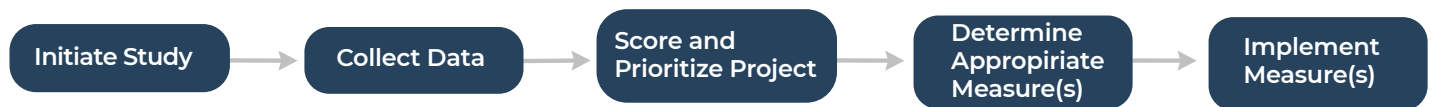


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EXECUTIVE SUMMARY

The Highland Traffic Calming and Pedestrian Safety Manual serves to define the objectives of traffic calming measures and outlines potential implementations for Highland City. Passive, active, and temporary measures are discussed. The manual covers the factors that determine the most suitable traffic calming measure, including roadway classification, sight triangles, access management, and design standards. A process for implementing traffic calming is established, as outlined below.



Initiate study

- Neighborhood residents request traffic calming
- City Identifies area where traffic calming is needed

Collect Data

- Collect data to identify, confirm, and quantify issues

Score and Prioritize Project

- Evaluate data to determine project urgency

Determine Appropriate Measure(s)

- Determine which measure or combination of measures is appropriate

Implement Measure(s)

- Install traffic calming measure(s)

“While traffic calming measures can bring many positive benefits to communities, they can also have some negative impacts such as causing inconvenience or frustration for drivers.”

INTRODUCTION

The Institute of Transportation Engineers (ITE) describes traffic calming as “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.”¹ Traffic calming measures are designed to reduce vehicle speeds in residential and other areas where pedestrians, cyclists, and turning/parking vehicles interact.

While traffic calming measures can bring many positive benefits to communities, they can also have some negative impacts such as causing inconvenience or frustration for drivers. For example, increased delay to the driver’s journey can be a negative impact. The installation of traffic calming measures can lead to increased traffic on alternative routes, potentially causing congestion and safety problems in those areas. Some traffic calming devices can also increase noise pollution.

¹ Lockwood, Ian. ITE Traffic Calming Definition. ITE Journal, July 1997, pg. 22.



Goals for Traffic Calming Manual

The objective of the Highland City Traffic Calming is to provide guidance on when traffic calming is warranted and assist in determining which traffic calming measure should be used. This document establishes a procedure that allows for a consistent approach for traffic calming projects. The measures discussed align with both emergency response considerations and the city's long-term maintenance plan, and are consistent with American Association of Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and Manual on Uniform Traffic Control Device (MUTCD) standards.

Goals for Pedestrian Safety Manual

The goal of the Pedestrian Safety Manual is to provide guidance on when pedestrian safety measures are warranted and assist in determining which measure should be used. Similar to traffic calming, the objective of pedestrian safety measures is to make walking and other forms of non-motorized travel safer and more enjoyable for people of all ages and to reduce the number of pedestrian fatalities and injuries caused by crashes involving motor vehicles.

From 2018 – 2022 there were 22 pedestrian and bicycle related crashes. 3 of these crashes resulted in serious injury, and the crash in 2020 resulted in a fatality. A summary table of this data can be shown in Table 1. The measures outlined in the Pedestrian and Bicycle Safety section of this Manual aim to reduce the number of crashes by making pedestrians are more visible to drivers, reducing the length of roadway a pedestrian must cross.

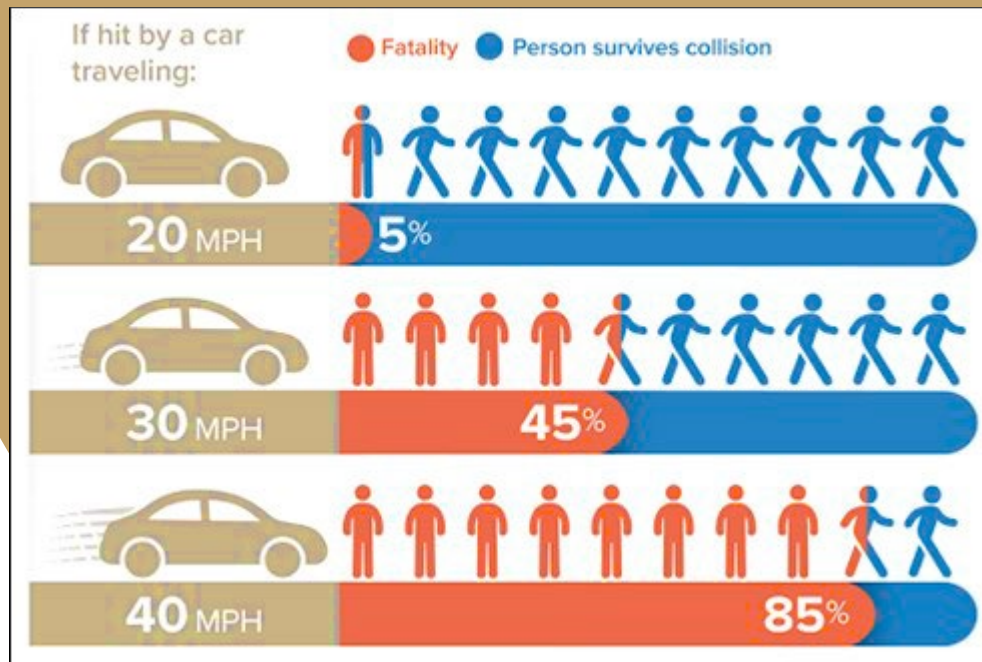
Table 1: Active Transportation Crash Data Summary

Year	Total Active Transportation Related Crashes	Severe Active Transportation Related Crashes (Fatal / Serious Injury)
2018	4	1
2019	4	1
2020	4	1
2021	4	0
2022	6	1
Total	22	4

Data via AASHTOWARE (Numetric)

In addition to this document, Highland City has an Active Transportation Plan (ATP). The ATP shows both current and proposed walking and bike paths in Highland City, as well as measures that can be used to improve the safety and walkability of those paths. The pedestrian safety measures presented in this document may be used to complement those suggested in the ATP.

Reducing Vehicle Speed Saves Lives



Reducing Speeding-Related Crashes Involving Passenger Vehicles, National Traffic Safety Board, 2017

“It’s important to carefully evaluate the location and the specific needs of the community before selecting and implementing traffic calming measures.”

Finding the Right Solution

Implementing the correct traffic calming and pedestrian safety measures is crucial because it can have a significant impact on the safety and livability of a community. The wrong measures can have unintended consequences and may even make the situation worse.

The correct measures should be implemented for the following reasons:



Safety: The primary goal of traffic calming measures is to reduce the speed of traffic, which in turn can reduce the number and severity of crashes involving pedestrians, cyclists, and motor vehicles. However, the wrong measures can create new hazards or exacerbate existing ones.



Cost-effectiveness:

Implementing the wrong traffic calming measures can be costly in terms of both money and time. Beyond just initial costs, the wrong traffic calming measure can increase long-term maintenance costs for

Highland City



the city. By selecting the right measures, it's possible to achieve the desired results while minimizing costs.



Community Acceptance: The wrong traffic calming measures can cause frustration and anger among residents, which can undermine community support for traffic calming efforts.



Environmental Impact: Some traffic calming measures can increase noise pollution and air pollution from idling vehicles. It's important to consider the environmental impact of any traffic calming measures and to select those that minimize negative effects on the environment.

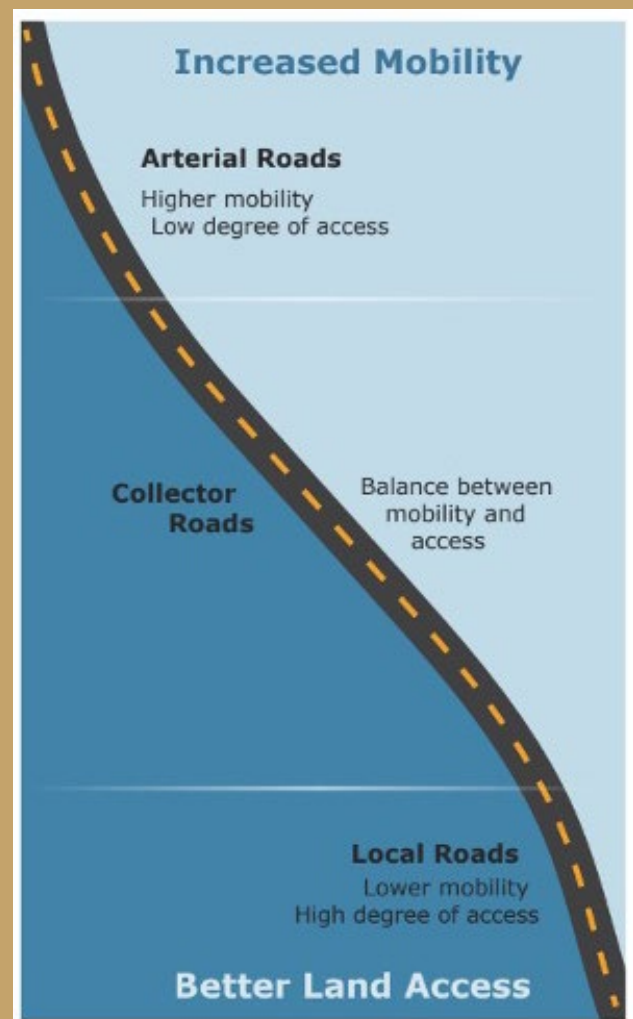
Implementing the correct traffic calming measures is essential for improving safety, cost-effectiveness, community acceptance, and minimizing negative environmental impact. It's important to carefully evaluate the location and the specific needs of the community before selecting and implementing traffic calming measures.

Roadway Classification

The roadway system is hierarchical, with different classifications based on attributes like speed, access, and mobility. Functional classification indicates a road's role within the transportation system.

The classifications of Highland City roadways used in this Manual are arterials, major collectors, minor collectors, neighborhood collectors, and local streets:

- **Arterial**—An arterial roadway has high mobility and little access. Arterials typically have between five to seven travel lanes. Arterial roadways have no on-street parking. The target speed limit for arterial roadways is 45 MPH or greater.
- **Major Collector**—A collector roadway provides both mobility and access. Major collectors connect local, minor collectors and neighborhood collectors with arterial roadways. Major Collectors typically have three lanes. Parking is discouraged on major collectors. The target speed limit for major collectors is between 35 and 40 MPH.
- **Minor Collector**—A collector roadway provides both mobility and access. Minor collectors connect local and neighborhood collector roadways with major collectors and arterial roadways.



Minor Collectors typically have two lanes with additional lanes at high capacity intersections. Parking is discouraged on minor collectors. The target speed limit for minor collectors is between 30 and 35 MPH.

- **Neighborhood Collector**—A collector roadway provides both mobility and access. Neighborhood collectors connect local roadways with major and minor collectors, as well as arterial roadways. Neighborhood Collectors typically have two lanes with parking on each side. The target speed limit for major collectors is between 25 and 30 MPH.
- **Local**—A local roadway provides full access to adjacent land uses but allows for little mobility. Local roads typically have two lanes with parking on each side. The target speed limit for local roadways is 25 MPH.

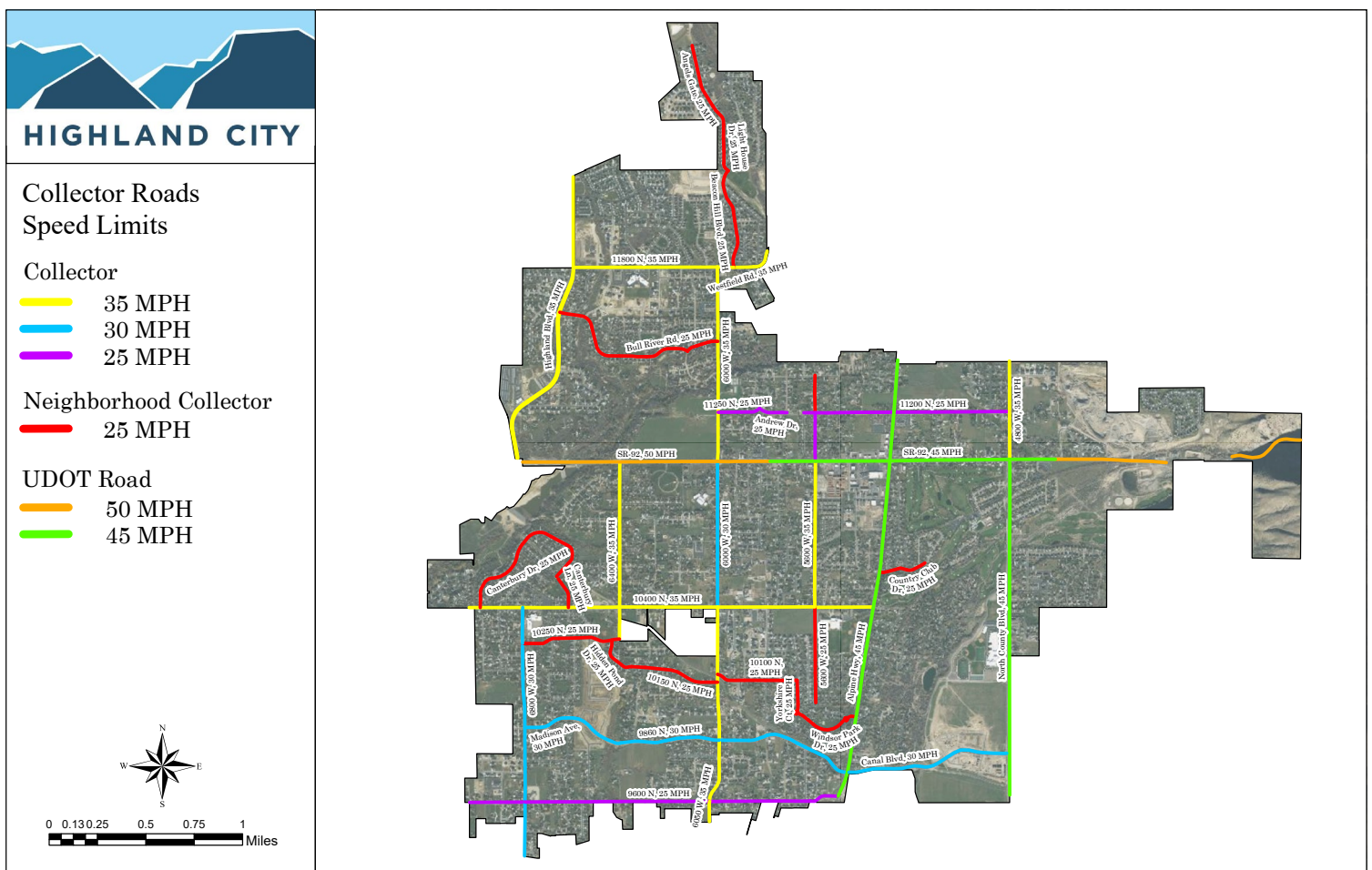


Figure 1—Map of collector speed limits in Highland City

Figure 1 shows a map of current Highland City and the speed limits of the roadways. The speed limit on unmarked local roadways within Highland is 25 MPH.

TRAFFIC CALMING MEASURES

This section outlines traffic calming measures Highland City has determined appropriate to implement within city limits. Traffic calming measures should only be implemented when recommended by an engineering study.



When implementing traffic calming measures, it is important to note that often one single measure will not result in reduced speeds. Combining multiple traffic calming measures creates a cumulative effect on speed reduction. Individual traffic calming measures may have limitations or be less effective on their own. By using multiple measures, any potential weaknesses of one measure can be compensated for by the strengths of others. This comprehensive approach increases the chances of achieving the desired speed reduction goals.

Passive Measures

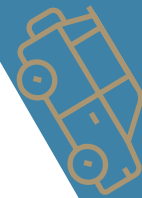
Passive traffic calming measures aim to reduce speed by changing driver behavior through visual cues such as roadway striping and signage. There are no physical changes to the roadway. Passive measures can be installed on any roadway and in combination with active measures. They are less expensive and can provide cost-effective solutions to increasing safety. Listed below are passive measures that Highland City has determined are acceptable to use. Details regarding these passive measures can be found in **Appendix A**.

- Radar Speed Sign
- Pavement speed limit marking
- Optical speed bars
- Additional speed limit signs
- Striping narrower lanes
- Landscaping
- Crosswalks
(also meets pedestrian criteria)
- Enforcement
- Education

Active Measures

Active traffic calming measures require a change in driver speed due to physical changes in the roadway. The driver must actively engage when interacting with the traffic calming measure. Active measures are more expensive to implement but can be more effective in reducing

“When implementing traffic calming measures, it is important to note that often one single measure will not result in reduced speeds. Combining multiple traffic calming measures creates a cumulative effect on speed reduction.”



vehicle speeds. Below are active calming measures Highland City has determined are acceptable to use. Details regarding these active measures can be found in **Appendix A**.

- Roadway design (curves, shoulders, side treatments)
- Curb extensions (bulb-outs)
- Medians
- Road Diet
- Raised crosswalk
- Roundabouts
- Traffic circles
- Neckdowns
- On-street parking
- Raised intersection
- Chicanes
- Speed Cushions
- Speed Tables

“Collector roads often have higher posted speed limits. While speed tables may be employed on these roads, driving over them at higher speeds can lead to passenger discomfort and potential vehicle damage.”

Temporary Traffic Calming Measures

Temporary speed reduction measures act as substitutes for permanent active traffic calming measures. These options can be more cost-effective and offer the flexibility to be moved when necessary. They require less construction time and provide a quick response to urgent issues, allowing the city to assess their effectiveness before considering permanent measures. However, they may not be as durable or effective as permanent active measures. Some temporary measures such as rubber speed tables may need to be removed in snow seasons so as to not hinder snowplows. Below are temporary traffic control measures that can be implemented in Highland City.

- Rubber speed table
- Rubber speed cushions
 - Rubber curbs
 - Traffic Circle
 - Bulb-out

Rubber speed tables and speed bumps provide similar results to traditional speed humps and speed tables. For information regarding those traffic calming measures, see **Appendix A**.

Rubber curbs are made of durable, flexible materials such as recycled rubber or plastic. They are usually modular in design, allowing them to be easily installed or removed as needed. Rubber curbs can be shaped into several configurations, allowing them to be used to create traffic circles, bulb-outs, and chicanes. For information regarding those traffic calming measures, see **Appendix A**.



“Rubber curbs can be shaped into several configurations, allowing them to be used to create traffic circles, bulb-outs, and chicanes.”



Inappropriate Measures for Highland City

Highland City staff has determined the following traffic calming measures are inappropriate for traffic calming within the city:

- Diagonal divertors
- Rumble strips
- Speed bumps/humps

Rumble strips are inappropriate due to the damage that can be done to the vehicles and difficulties with plowing/roadway maintenance. Diagonal divertors have been deemed inappropriate due to the restricted access that occurs when they are installed. Although these measures may be suitable for implementation in other regions, they do not meet the goals for traffic calming in Highland City. Collector roads often have higher posted speed limits. While speed tables may be employed on these roads, driving over them at higher speeds can lead to passenger discomfort and potential vehicle damage.

Stop Signs Should Not be Used for Speed Reduction

In addition to the measures listed above, stop signs are inappropriate for speed. Stop signs should never be used for traffic calming because they are designed for a specific purpose, which is to assign the right-of-way at an intersection. **The MUTCD states that “stop signs should not be used for speed control” (MUTCD 2003).** Using stop signs for traffic calming purposes can have unintended consequences. Research by the Ohio Department of Transportation² has found that installing a stop sign when it is not warranted results in decreased pedestrian safety, increased speeds between intersections, and an increased rate of collisions. ITE found similar results, as well as an increase in noise pollution and fuel consumption.³

²Intersection Safety: Myth Versus Reality, Ohio Department of Transportation, July 2013

³Chadda, H., & Carter, E., Multi-Way Stop Signs- Have We Gone Too Far? ITE Journal, May 1983, pg. 21



PEDESTRIAN AND BICYCLE SAFETY

The purpose of this section is to outline pedestrian and bicycle safety measures that Highland City has determined appropriate to implement within city limits. Pedestrian safety measures make crosswalks safer by either making pedestrians more visible to drivers, or reducing the amount of roadway a pedestrian has to cross.

Listed below are pedestrian safety measures that are appropriate to implement within Highland City.

Information on the other measures can be found in **Appendix A**. Some measures are repeated from the passive and active measures list.

- Rectangular rapid-flashing beacon (RRFB)
- Crosswalk markings (striping)
- Raised crosswalk
- Yield to pedestrians sign and stop line
- In-street pedestrian crossing sign
- Curb extension
- Pedestrian refugee island
- Road diet
- Pedestrian hybrid beacon (PHB), also known as a High-Intensity Activated Crosswalk (HAWK)
 - An RRFB and a PHB should not be installed at the same location

In addition to this Manual, the Highland City Active Transportation Plan also contains pedestrian safety measures. In conjunction with the measures presented in this document, it is advisable to also refer to the ATP and consider its recommendations.

The Federal Highway Administration (FHWA) Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations⁴ features a table titled “Application of pedestrian crash countermeasures by roadway feature,” which offers countermeasure options for a range of roadway conditions. This table is shown in Figure 2. Each matrix cell of this table suggests potential pedestrian safety measures that may be suitable for specific pedestrian crossings.

⁴Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, FHWA, July 2018.

The UDOT policy on marked pedestrian crosswalks⁵ states that all trail crossings should have a marked crosswalk. At non-trail crossings, UDOT policy is to implement a crosswalk if more than 20 pedestrians are observed crossing during the peak hour. On smaller city roads, 20 pedestrians crossing in one hour is very unlikely. Therefore, Highland City has adopted a different scoring system to determine if a crosswalk should be installed. This scoring system can be found in the Project Prioritization

In addition to this Manual, the Highland City Active Transportation Plan also contains multiple pedestrian safety measures. In conjunction with the measures presented in this document, it is advisable to also refer to the ATP and consider its recommendations.

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑨
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 ⑦ ⑨	① 3 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑦ ⑨	① ③ 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑨
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 ⑨	① 3 4 5 6 7 9	① ③ 5 6 ⑦ ⑨	① ③ 5 6 ⑨	① ③ 4 5 6 7 9	① ③ 5 6 ⑨	① ③ 5 6 ⑨
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 ⑨	① ③ 5 7 8 9	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 8 ⑨
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 8 ⑨
Given the set of conditions in a cell, # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location. ● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location. ○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.* The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.					1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs 2 Raised crosswalk 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line 4 In-Street Pedestrian Crossing sign 5 Curb extension 6 Pedestrian refuge island 7 Rectangular Rapid-Flashing Beacon (RRFB)** 8 Road Diet 9 Pedestrian Hybrid Beacon (PHB)**				

Figure 2—Application of pedestrian crash countermeasures by roadway feature from FHWA
 ** a RRFB and a PHB should not be installed at the same crossing location

⁵ Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, FHWA, July 2018.

ROADWAY CRITERIA

Emergency Routes

Speed tables, speed humps, and raised crosswalks or raised intersections **are not allowed** on streets designated as emergency response routes by Highland City Police and Fire Departments. This is to avoid impacting emergency vehicle operations. Faster response times are crucial for saving lives and minimizing property damage during emergencies. These measures on emergency routes can hinder response times, reducing the chances of saving lives. Figure 3 displays the specific emergency routes where these measures are not allowed.

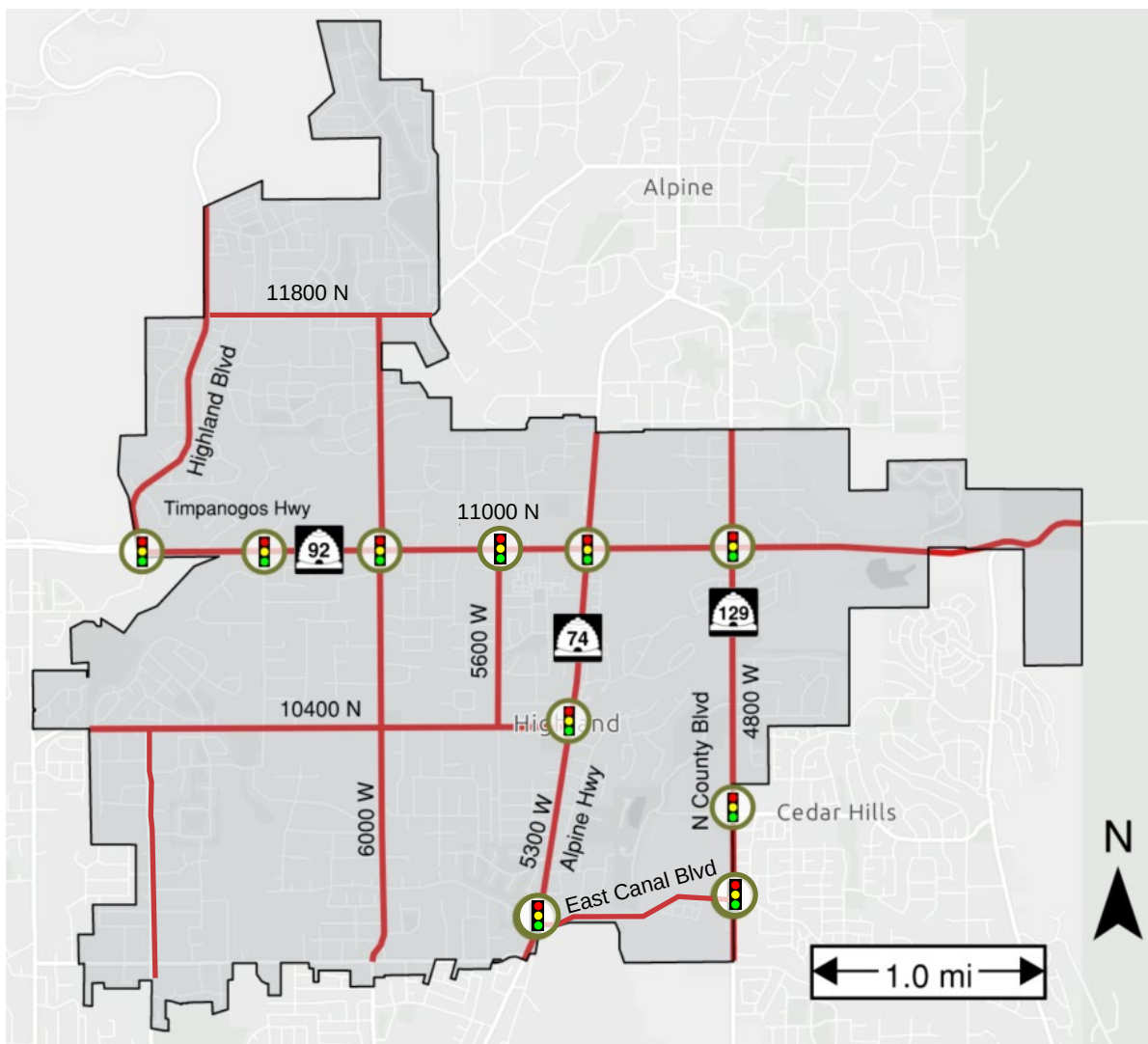


Figure 3—Emergency routes in Highland City

Roadway Jurisdiction

Highland City can only install traffic calming measures on roadways over which it has jurisdiction. The city is responsible for maintaining and managing the public streets within its boundaries. They have the authority to regulate the use of their roads and ensure the safety of all road users.

Highland City contains roads within its boundaries that fall outside their jurisdiction and are under the control of other governing bodies, such as UDOT. UDOT has jurisdiction over Timpanogos Highway (SR-92), Alpine Highway (SR-74)a, and North County Blvd (SR-129) within Highland. These roadways are shown in Figure 4. UDOT has its own regulations and procedures for installing traffic calming measures, and it is not within the authority of Highland City to make decisions or changes to these roads without permission or cooperation from UDOT.

Highland has limited resources and budgets for implementing traffic calming measures, and the city prioritizes areas with the highest need. Focusing efforts and resources on areas within their jurisdiction ensures the most effective use of resources and provides the greatest benefit to the Highland City communities.

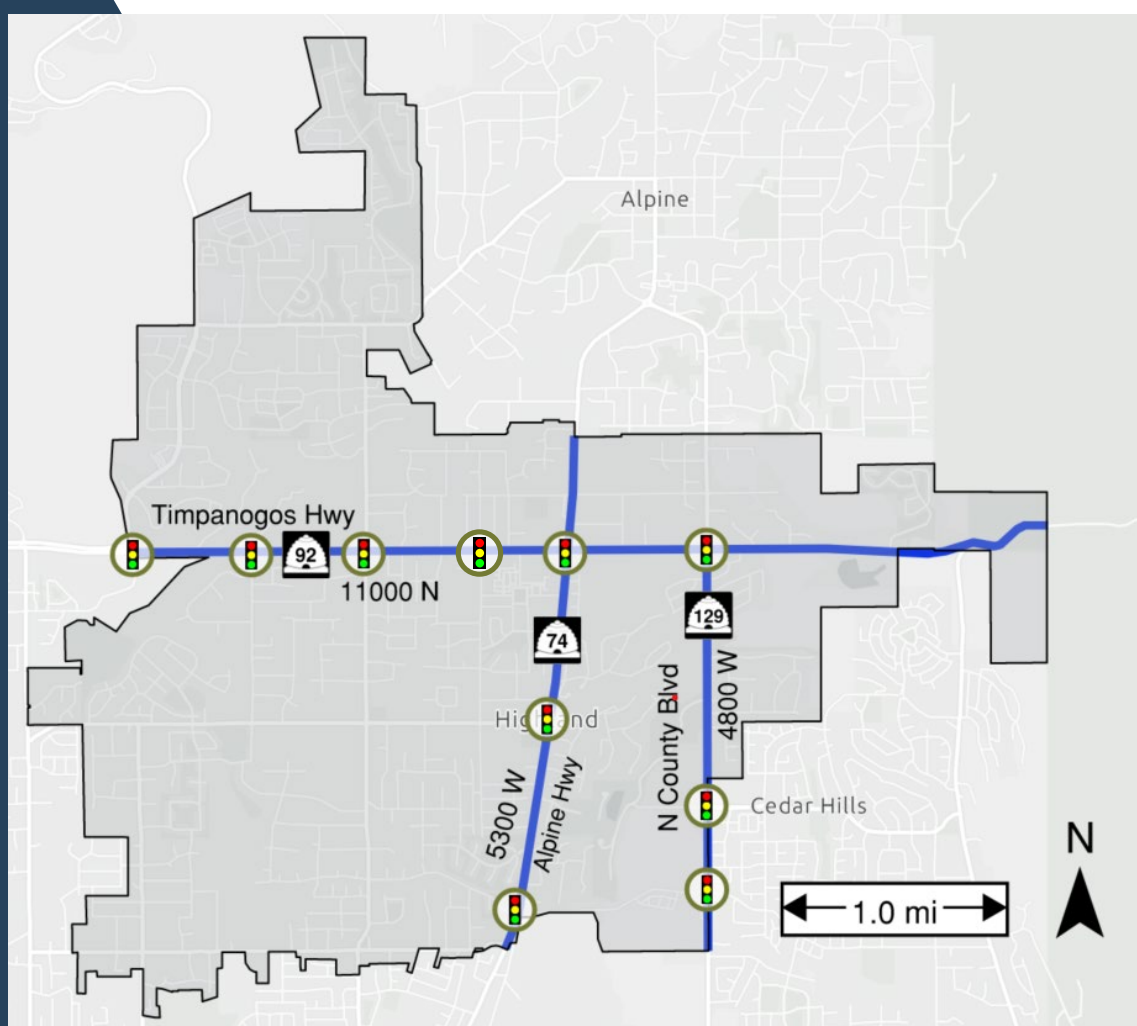


Figure 4—UDOT-owned roads in Highland City

PROCESS

The process for traffic calming and pedestrian safety projects in Highland City is outlined in Figure 5.

The aim is to establish a fair and consistent approach for all submitted projects, prioritizing urgent locations.

The process is an administrative process implemented by the Highland City staff. The Highland City council, as a legislative entity, does not participate in this process unless an appeal is submitted. In the event of an appeal, the council will determine if an exception will be made which will subsequently be executed by the city staff.

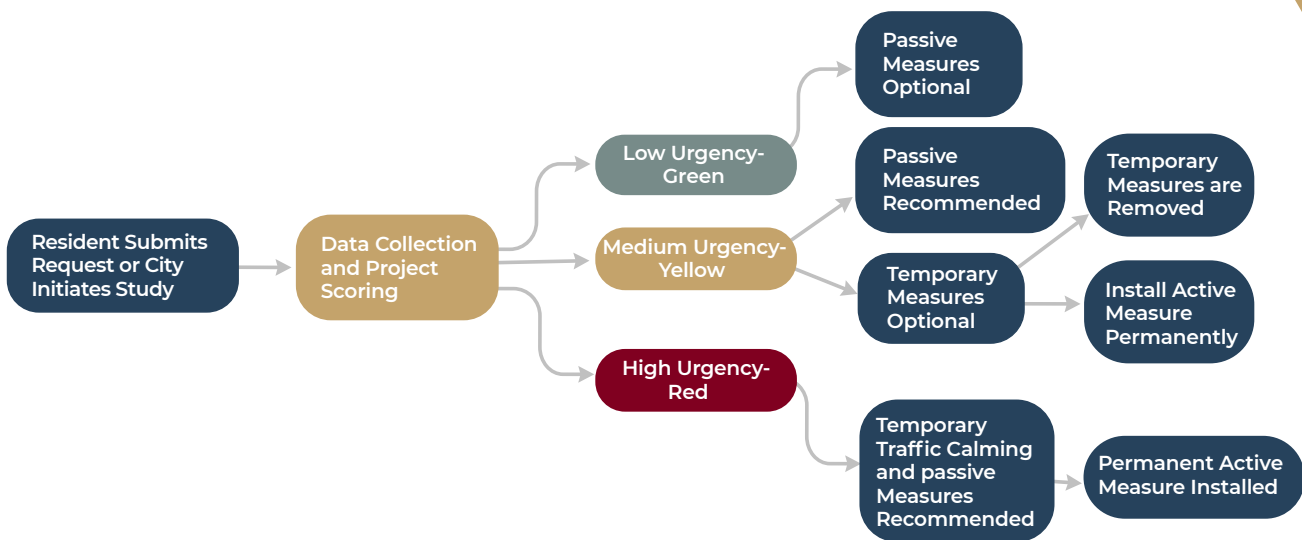


Figure 5: Process for traffic calming implementation in Highland City

Application Submittal

Any resident of Highland City may request a traffic calming study for a location on their street of residence. This should be done by completing a “Request for Traffic Calming” form included in **Appendix B**. The following information is required:

- Applicant information
- Study location
- Description of issue
 - What times the issue is most prominent
 - What is the main concern
- Names and signatures of at least five other residents who reside on the same street
- A \$25 fee

Highland City staff can also initiate traffic calming requests for suitable locations. Areas evaluated within the past two years are ineligible, except in cases of recent crashes or significant changes in development, such as new neighborhoods, roadway configurations, or speed limits. The application and signatures should be submitted to the Highland City Public Works Department for review, either online through highlandcity.org or in-person drop-off.



Data Collection and Project Scoring

After receiving a traffic calming request form, the city will collect the following data from the requested site:

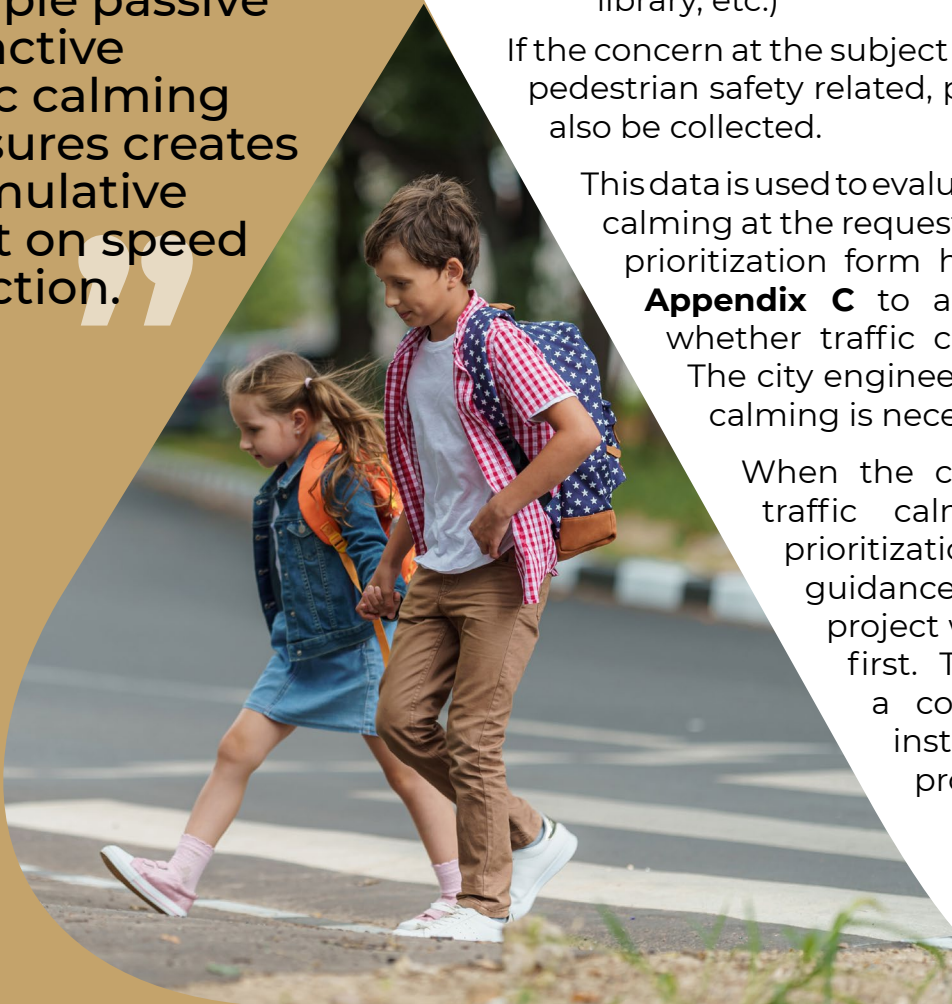
- **Speed data**—two weeks of data will be collected to obtain a representative sample.
 - 85th percentile
 - Percent of drivers driving 10 MPH over speed limit
- **Vehicle counts**—two weeks of data will be collected to obtain a representative sample.
 - 24-hour count to determine the daily traffic
- **Historic crash data**
 - Last five years
- **Sight distance**
 - Stopping sight distance at study location
- **Roadway context**
 - Bus routes
 - Bike lanes present
 - Crosswalks or trail crossings present
 - Nearby schools
 - Nearby pedestrian generators (public park, library, etc.)

If the concern at the subject location is specifically pedestrian safety related, pedestrian counts will also be collected.

This data is used to evaluate the need for traffic calming at the requested location. A project prioritization form has been included in **Appendix C** to assist in determining whether traffic calming is warranted. The city engineer determines if traffic calming is necessary.

When the city receives multiple traffic calming requests, the prioritization form provides guidance in determining which project will receive treatment first. This helps to ensure a consistent process for installing traffic calming projects.

“It is important to note that often one single measure will not result in reduced speeds. Combining multiple passive and active traffic calming measures creates a cumulative effect on speed reduction.”



Project is Low Urgency (Green)

A project that scores less than 40 points is considered “Green” (low urgency). No traffic calming measures are required at this location. Passive measures may be installed if the city engineer feels it is appropriate. If residents want a passive measure and City does not find it warranted, residents can pay for the device and City will install it.

Project is Medium Urgency (Yellow)

A project that scores between 40 and 79 points is considered “Yellow” (medium urgency). Passive measures are recommended at this location. Temporary measures may be installed if the city engineer feels it is appropriate. If the response to the temporary measures is positive, then permanent active measures may be installed. If not, they may be removed.

Project is High Urgency (Red)

A project that scores 80 or more points is considered “Red” (high urgency). Both passive and temporary measures are recommended at this location. The temporary measures should eventually be replaced with permanent active measures if proven effective, well received by citizens, and budgets are sufficient.

Traffic Calming Measure Flowcharts

While all speed reduction measures are valuable, not all measures are suitable in every scenario. The following flowcharts provide guidance to help the community implement a proper traffic calming measure based on the roadway classification outlined in earlier sections of this manual.

Passive measures can be implemented on any roadway. Rubber curbs can be used to create temporary roundabouts, bulb-outs, or chicanes on roadways where those measures are suggested. More than one measure may be required to reduce vehicle speeds.

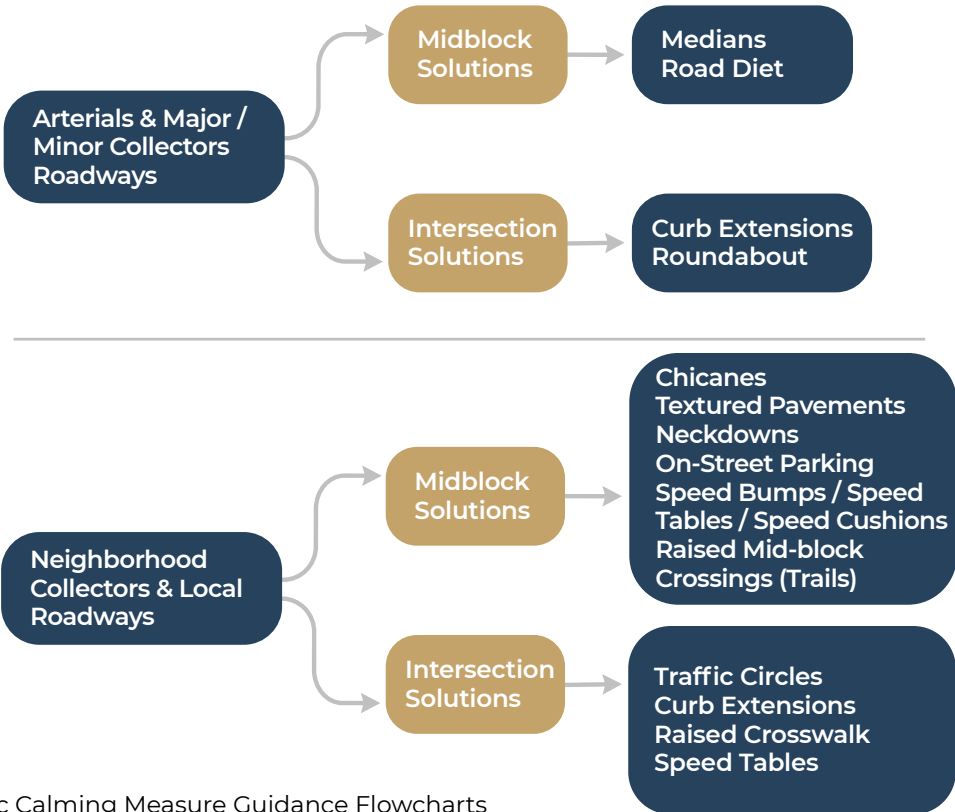


Figure 6: Traffic Calming Measure Guidance Flowcharts

FUNDING AND POLICY

Funding for traffic calming projects is obtained through the city budget. Other sources besides Highland City funds could be available for traffic calming projects as well, including:

- **The Utah Department of Transportation (UDOT) Safe Routes to School (SRTS) Program:** The goal of the SRTS Program is to assist and encourage students living within 1.5 to 2 miles of school to walk or bike. Funding can be used for non-infrastructure and infrastructure-type projects (i.e., physical improvements—primarily new sidewalks, but also school pavement markings, signage, bicycle parking, etc.). The deadline each year is in October.
- **UDOT Transportation Alternatives (TAP):** eligible projects include Bike facilities (on- and off-road), trails, sidewalks (off-state routes), vehicle-caused wildlife mortality reductions, and other qualifying transportation alternative projects. Region Three will consider contributing up to 60 percent of the project cost, with a maximum department-paid cost of \$300,000. The deadline each year is in March.
- **UDOT Active Transportation Investment Fund (ATIF):** To be used for the planning, design, construction, maintenance, reconstruction, or renovation of paved pedestrian or paved non-motorized trail projects that are prioritized through the Utah Transportation Commission. The use of the funds is also required to serve a regional purpose and must be part of an active transportation investment plan. The deadline each year is in March.
- **UDOT TTIF First and Last Mile:** Eligible project must be a pedestrian or nonmotorized transportation project that provides connection to a public transit system and is maintained by the local government or district. The deadline each year is in March.
- **Mountainland Association of Governments Transportation Improvement Program (MAG TIP):** MAG TIP, administered by Mountainland Association of Governments, provides funding for local governments. MAG TIP funds support bicycle and pedestrian facilities, including construction, planning, design, traffic calming, lighting, and ADA accessibility projects. The application deadline is every other year.



ACCESS MANAGEMENT

Access management is a process of controlling the location and number access to and from roadways, driveways, and other transportation facilities to improve safety, mobility, and efficiency of the transportation network. Benefits of access management include:

Improved safety: Access management can help reduce the number of crashes on roadways by limiting the number of points where vehicles can enter or exit a roadway. This can also help reduce conflicts between vehicles and pedestrians, thereby increasing safety.

Improved mobility: By managing access points to a roadway, traffic flow can be improved, reducing delays and travel times for motorists. This can also help reduce congestion and improve the overall capacity of the transportation network.

Improved aesthetics: Access management can also help improve the appearance of roadways by reducing the number of curb cuts and other access points, resulting in a more attractive and inviting environment.

Table 2 outlines the access management standards. The distances in the table are from curb to curb. When determining the appropriate access management, the highest functional classification governs (arterials, followed by collectors, then local roads).

Table 2: Access Management Standards				
Roadway Classification	Minimum signal spacing (A)	Street spacing (B)	Driveway spacing (C)	Corner distance (D)
Arterial	2,640 ft	660 ft	350 ft	350 ft
Major collector	1,320 ft	330 ft	150 ft	150 ft
Minor collector	1,320 ft	330 ft	150 ft	150 ft
Neighborhood Collector	1,320 ft	330 ft	150 ft	150 ft
Local	N/A	150 ft	100 ft	30 ft

SIGHT TRIANGLES

Sight triangles are clear, unobstructed areas required at intersections or driveways for drivers' visibility. They help drivers make safe decisions while navigating these areas, reducing the risk of crashes. Figure 7 is a figure from the Highland City Design Criteria⁶ that shows the sight triangles for a right-turning and left-turning vehicle.

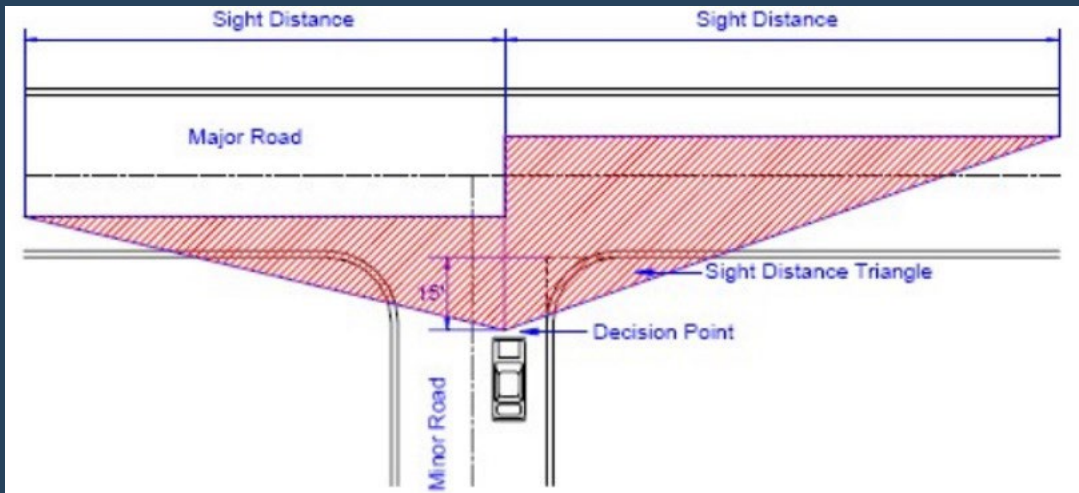


Figure 7: Sight Distance Triangle

Sight distance triangles are calculated based on the stopping sight distance of the road being intersected. The following roadway classifications have the design stopping sight distance:

- Arterial – 425 feet
- Major, minor, and neighborhood collectors – 300 feet
- Local roadways – 200 feet

DESIGN STANDARDS

Design consistency is crucial in traffic engineering to ensure uniformity and predictability in traffic calming and pedestrian safety measures. Consistent designs meeting driver expectations enhance road safety by reducing confusion and minimizing the risk of crashes. Designs for traffic calming and pedestrian safety measures shall be consistent with the standards presented in American Association of Highway and Transportation Officials (AASHTO), the Manual on Uniform Traffic Control Devices (MUTCD), the Federal Highway administration (FHWA), and the National Association of City Transportation Officials (NACTO). By designing according to these standards, Highland City takes measures to absolve itself from any liability associated with the utilization of these designs.





APPENDICES

Appendix A:

Approved Traffic Calming Measures
for Highland City

- Passive Measures
- Active Measures
- Pedestrian Safety Measures

Appendix B:

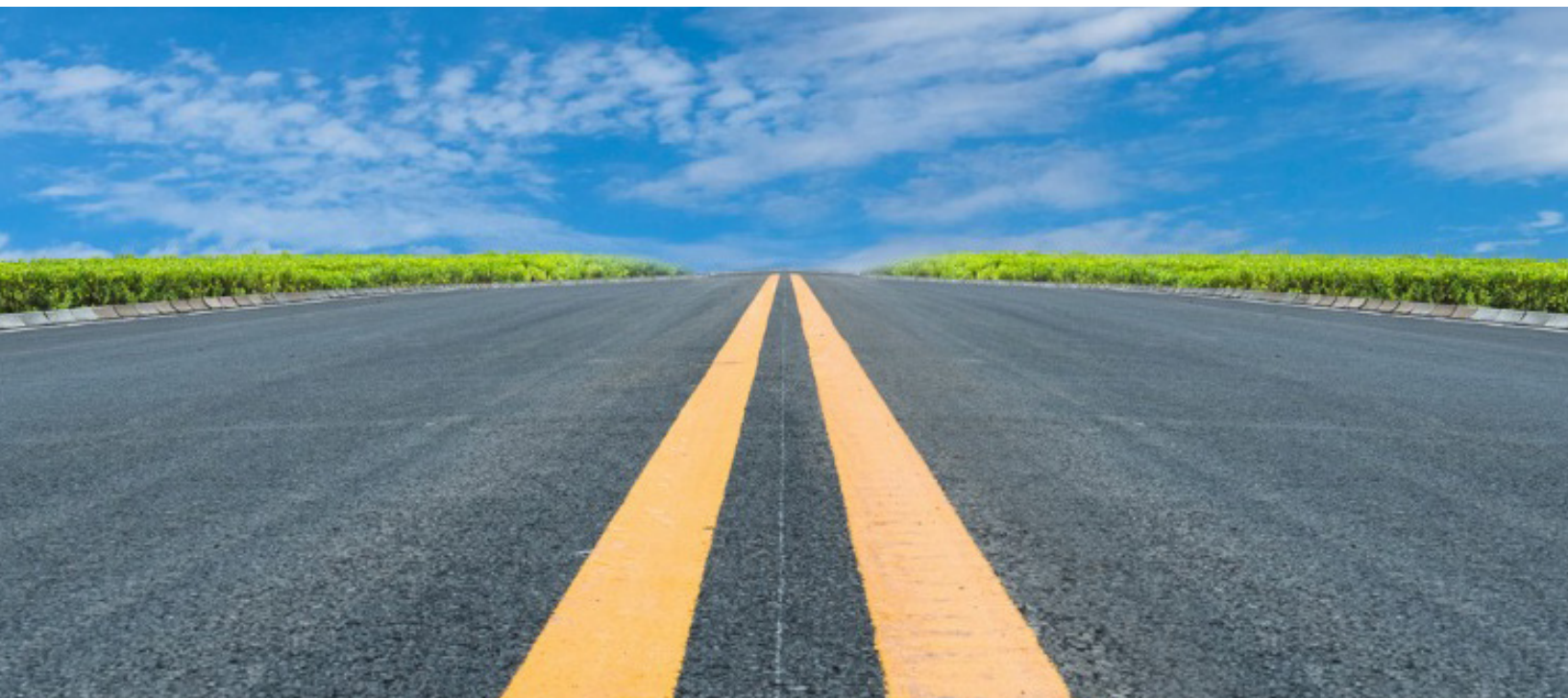
Highland City Traffic Calming and Pedestrian
Safety Request Form

Appendix C:

Highland City Traffic Calming and Pedestrian
Safety Prioritization Form

APPENDIX A:

**Approved Traffic Calming
Measures for Highland City**



WHAT ARE SPEED MANAGEMENT STUDIES?

Speed Management Studies are an alternative to typical speed studies. These studies may indicate that the 85th percentile speed is much greater than the posted speed limit, but instead of raising the speed limit, speed management should be considered to instead lower the 85th percentile speed.

HOW DO I REQUEST A SPEED MANAGEMENT STUDY?

Speed Management Studies are performed through the UDOT traffic studies process in the same manner as traditional speed studies, signal warrants, left-turn studies, and many other common study types. Request are generally initiated at the regional or community level then are submitted through Workflow Manager by UDOT Region traffic engineers.

WHERE TO UTILIZE SPEED MANAGEMENT STUDIES?

Speed Management Studies should be utilized when there is a disconnect between vehicle speeds and the roadway context or when 85th percentile speeds are higher than recommended for safety. This includes situations when non-motorists are commonly present, when adjacent land uses are not consistent with roadway character, or when the roadway design does not match the traveling speed.

SPEED MANAGEMENT $\neq$ ARTIFICIALLY LOWERING SPEED LIMITS

Speed management is a holistic approach to dealing with speed. Research has shown that artificially lowering speed limits generally does not lead to lower vehicle speeds. Speed limits should be lowered in conjunction with speed management measures.

SPEED MANAGEMENT MAY MEAN “ENGINEERING UP”

When there is a disconnect between vehicle speeds and roadway design the solution may not always be to slow traffic. Sometimes on key connectors carrying significant traffic the solution may be to design the roadway to better accommodate the speeds in which users want to travel. This could mean wider shoulders, median barrier, consolidated accesses, improved alignment, etc.

Source: UDOT Speed info management sheets, March 2022

Speed Management is considered within the framework of the **Safe System Approach**¹, which means designing a roadway in which impacts on the human body are kept at tolerable levels. Examples of this are as follows:

- 1 If a roadway has frequent pedestrian or bicycle users, then speeds should be managed so that an impact is less likely to be fatal. If speeds can't be reduced, vulnerable roadway users need to be separated from vehicular traffic.
- 2 If there is a high likelihood of centerline crossing crashes, then speeds should be managed so that a head-on crash is less likely to be fatal. If speeds can't be reduced, centerline crossing can be mitigated via median barrier.

This guide focuses specifically on measures to slow traffic. Design improvements to accommodate higher speeds could be an outcome of a speed management study, but specific recommendations would not be provided.

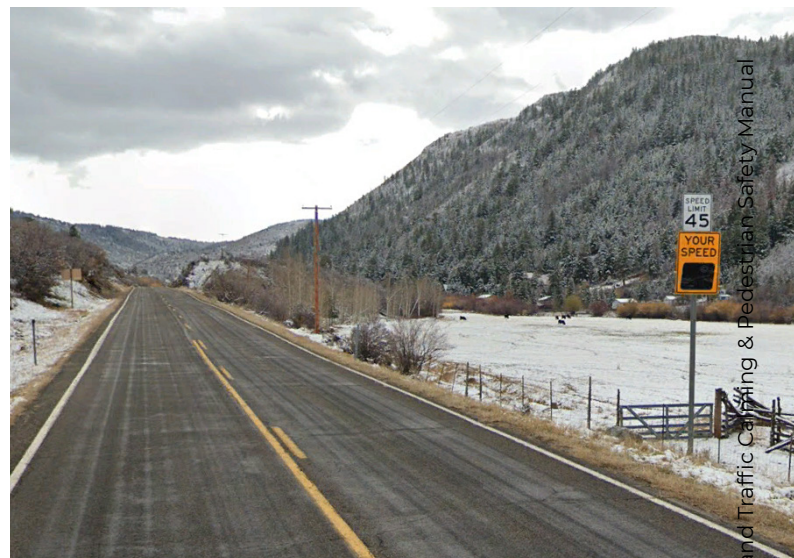
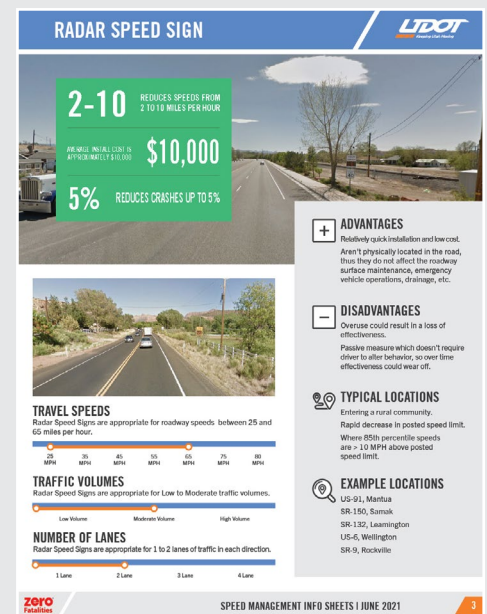
INFO SHEETS

Information sheets on a range of speed management measures are provided to help guide the study engineer when selecting appropriate treatments.

These info sheets highlight key aspects of each speed management measure including advantages, disadvantages, costs, implementation considerations, and example/typical locations.

- Radar Speed Sign
- Pavement Speed Limit Marking
- Optical Speed Bars
- Road Diet
- Median Island
- Roundabout
- Roadway Narrowing (bike lanes, lane narrowing, on-street parking, etc.)
- Curb Extensions (bulb-outs)
- Roadside Gateway Features (street trees, lighting, signage, banners, public art, etc.)

For guidance on roadway safety improvements outside of speed management please consult the Safety Countermeasure Fact Sheets.



¹ https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

Source: UDOT Speed info management sheets, March 2022



**PASSIVE
MEASURES**

2-10 MPH

REDUCES SPEEDS FROM
2 TO 10 MILES PER HOUR

AVERAGE INSTALL COST IS
APPROXIMATELY \$10,000

\$10,000

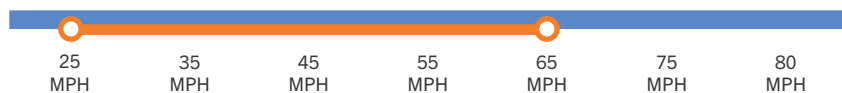
5%

REDUCES CRASHES UP TO 5%



TRAVEL SPEEDS

Radar Speed Signs are appropriate for roadway speeds between 25 and 65 miles per hour.



TRAFFIC VOLUMES

Radar Speed Signs are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Radar Speed Signs are appropriate for 1 to 2 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Relatively quick installation and low cost.

Aren't physically located in the road, thus they do not affect the roadway surface maintenance, emergency vehicle operations, drainage, etc.



DISADVANTAGES

Overuse could result in a loss of effectiveness.

Passive measure which doesn't require driver to alter behavior, so over time effectiveness could wear off.



TYPICAL LOCATIONS

Entering a rural community.

Rapid decrease in posted speed limit.

Where 85th percentile speeds are > 10 MPH above posted speed limit.



EXAMPLE LOCATIONS

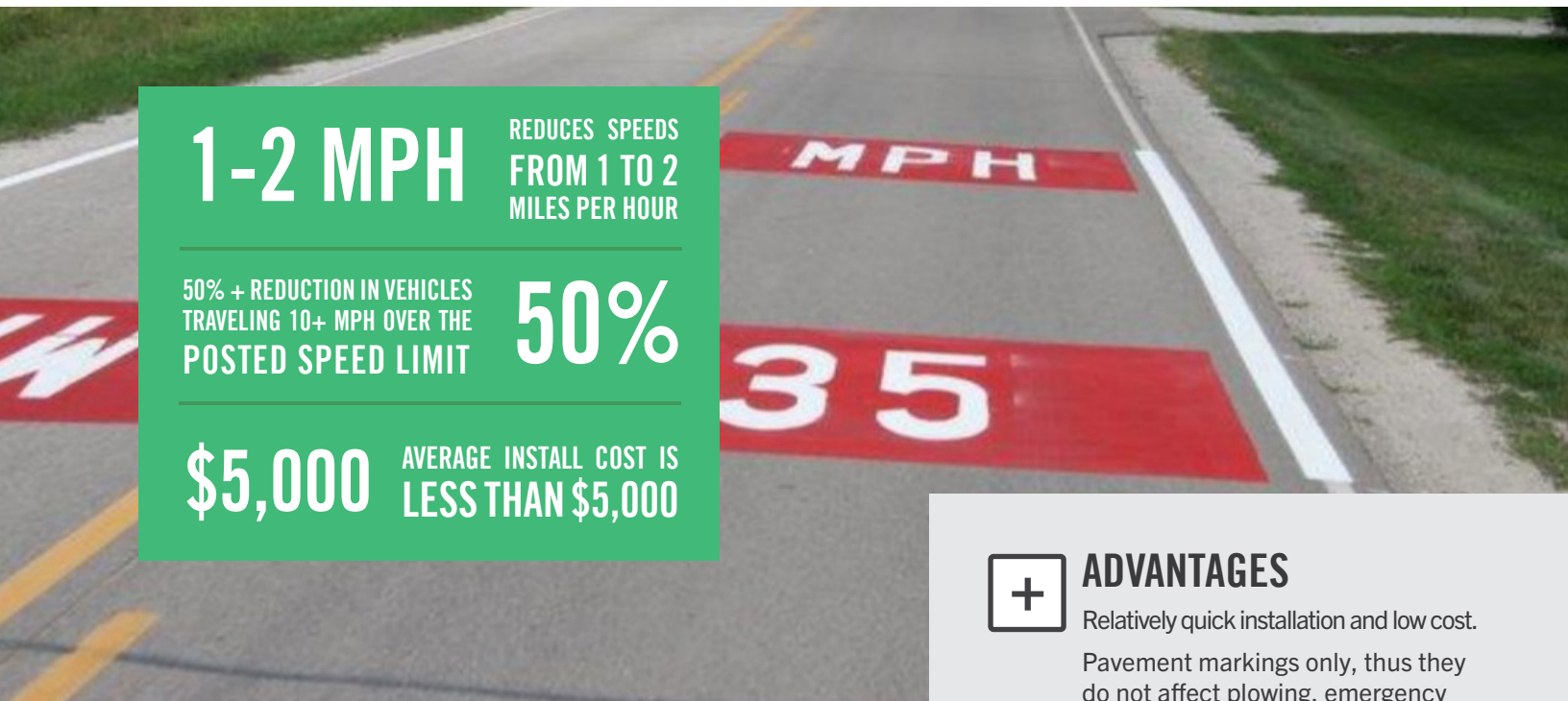
US-91, Mantua

S.R. 150, Samak

S.R. 132, Leamington

US-6, Wellington

S.R. 9, Rockville



1-2 MPH

REDUCES SPEEDS
FROM 1 TO 2
MILES PER HOUR

50% + REDUCTION IN VEHICLES
TRAVELING 10+ MPH OVER THE
POSTED SPEED LIMIT

50%

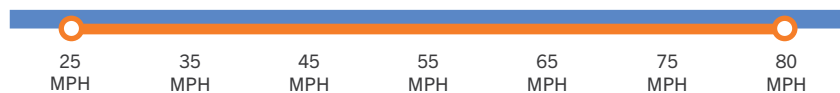
\$5,000

AVERAGE INSTALL COST IS
LESS THAN \$5,000



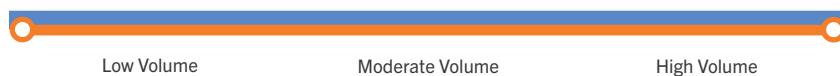
TRAVEL SPEEDS

Pavement Speed Limit Markings are appropriate for ALL roadway speeds.



TRAFFIC VOLUMES

Pavement Speed Limit Markings are appropriate for ALL traffic volumes.



NUMBER OF LANES

Pavement Speed Limit Markings are appropriate for ALL lanes of traffic.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Relatively quick installation and low cost.

Pavement markings only, thus they do not affect plowing, emergency vehicle operations, drainage, etc.



DISADVANTAGES

Passive measure which doesn't require driver to alter behavior, so over time effectiveness could wear off.

In the traveled way, thus wear off over time.



TYPICAL LOCATIONS

Any location where additional emphasis is needed. (curves, entering developed areas, reduction in posted speed limit).



EXAMPLE LOCATIONS

I-80 Eastbound at I-15, SLC

TRANSVERSE MARKINGS WITH REDUCING SPACING TO PROVIDE THE VISUAL ILLUSION OF INCREASING SPEEDS

REDUCES SPEEDS FROM 0 TO 3 MILES PER HOUR

0-3 MPH

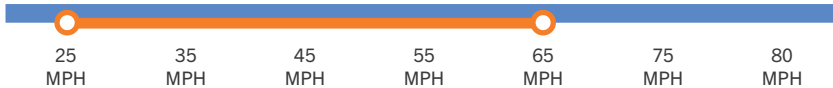
\$5,000

AVERAGE INSTALL COST IS LESS THAN \$5,000



TRAVEL SPEEDS

Optical Speed Bars are appropriate for roadway speeds between 25 and 65 miles per hour.



TRAFFIC VOLUMES

Optical Speed Bars are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Optical Speed Bars are appropriate for 1 to 2 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Relatively quick installation and low cost.

Pavement markings only, thus they do not affect plowing, emergency vehicle operations, drainage, etc.



DISADVANTAGES

Passive measure which doesn't require driver to alter behavior, so over time effectiveness could wear off.

In the traveled way, thus wear off over time.



TYPICAL LOCATIONS

Curves and entering rural communities.



EXAMPLE LOCATIONS

None within Utah

**STARTING AT \$20,000
PER MILE (STRIPING ONLY)**

0-3 MPH MINOR (0 TO 3 MILES PER HOUR)
EFFECT ON VEHICLE SPEED
WITHOUT OTHER CHANGES

**PROVIDES SPACE FOR
BIKE LANES OR PARKING**



ADVANTAGES

Potentially improved bike facilities or increased on-street parking.

Low cost.



DISADVANTAGES

Without other changes has not been shown to drastically vehicle speeds.



TYPICAL LOCATIONS

Combined with other treatments. Where treatments are needed for bicycle activity, high demand for parking, etc. and not just lowering vehicle speeds.

Roadways with wider pavement section than needed.



EXAMPLE LOCATIONS

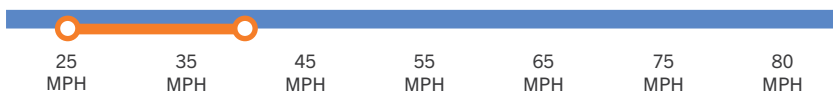
200 South @ 800 East, SLC

Daybreak Parkway, South Jordan



TRAVEL SPEEDS

Roadway Narrowing is appropriate for roadway speeds between 25 and 40 miles per hour.



TRAFFIC VOLUMES

Roadway Narrowing is appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Roadway Narrowing is appropriate for 1 to 3 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



0-4 MPH REDUCES SPEEDS
0-4 MILES PER HOUR

AVERAGE INSTALLATION
COSTS ARE \$5,000
TO \$10,000

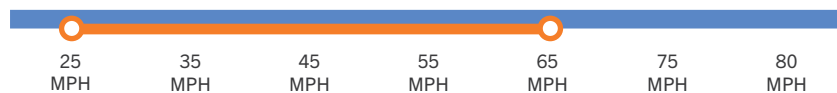
\$5-10,000

INCREASES SPEED COMPLIANCE



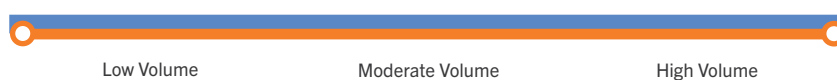
TRAVEL SPEEDS

Landscaping is appropriate for roadway speeds between 25 and 65 miles per hour.



TRAFFIC VOLUMES

Landscaping is appropriate for LOW to HIGH traffic volumes.



NUMBER OF LANES

Landscaping is appropriate for 1 to 4 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Mid-level treatment provides a physical change without rebuilding a road

Provides continuous narrowing of perceived width

Improves streetscape aesthetics and reduces heat-island effect

Works well in conjunction with other treatments



DISADVANTAGES

Must be designed to avoid creating sight distance triangle obstructions

Often requires maintenance

May be challenging in a dry climate



TYPICAL LOCATIONS

Along transition zones

At gateways

Within developed areas



EXAMPLE LOCATIONS

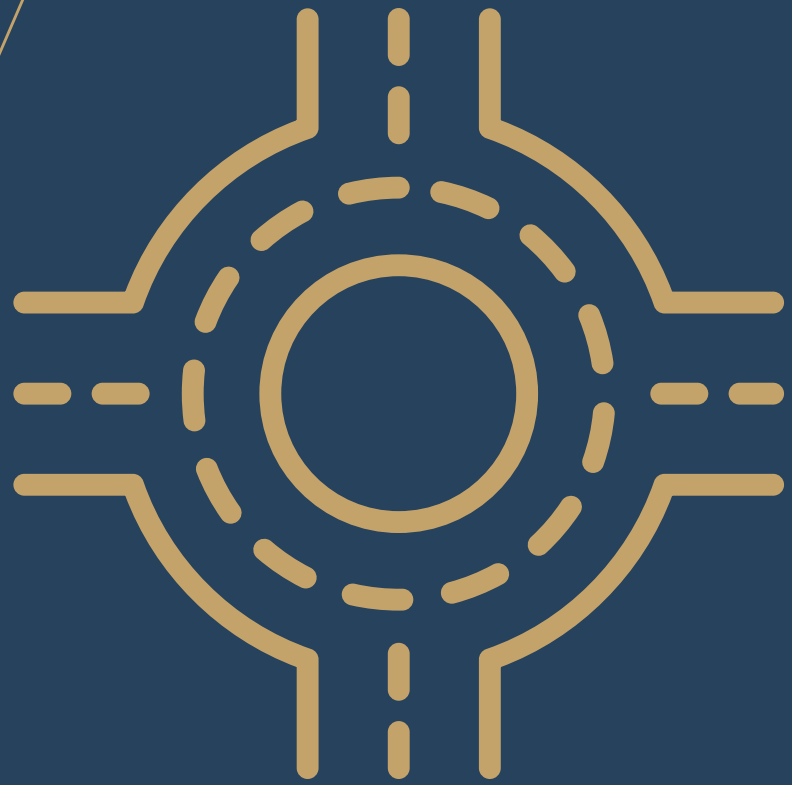
St George S.R. 34

Hurricane S.R. 9

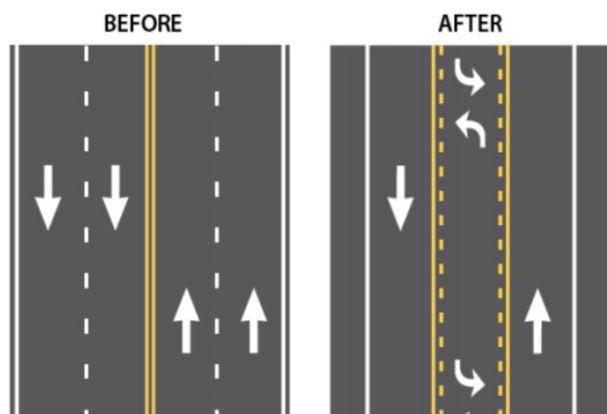
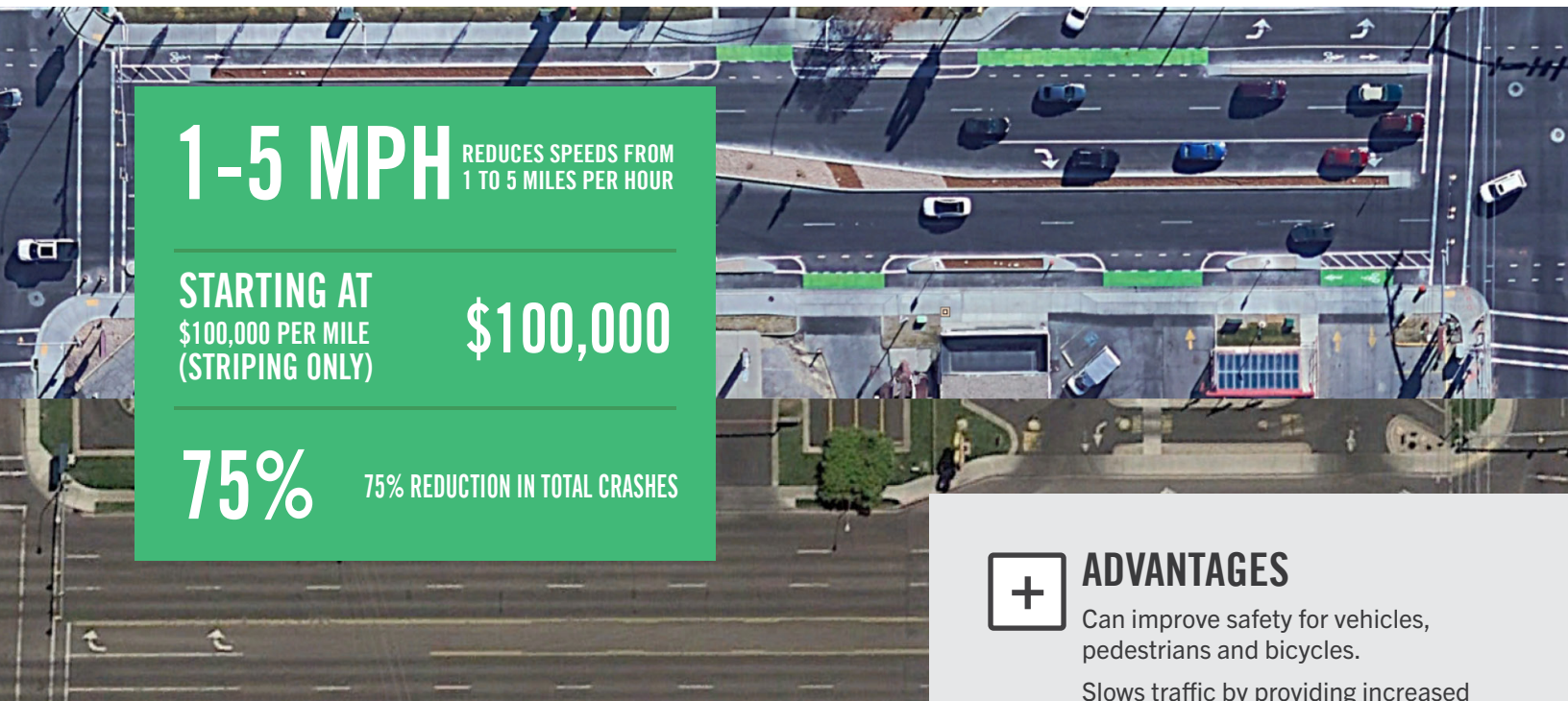
Brigham City S.R. 13

Park City S.R. 248

Farmington S.R. 106

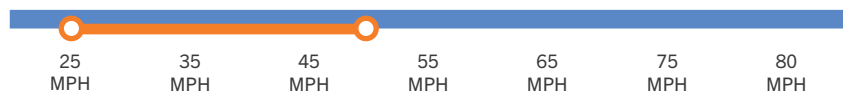


ACTIVE MEASURES



TRAVEL SPEEDS

Road Diets are appropriate for roadway speeds between 25 and 50 miles per hour.



TRAFFIC VOLUMES

Road Diets are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Road Diets are appropriate for 2 to 4 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Can improve safety for vehicles, pedestrians and bicycles.

Slows traffic by providing increased friction.



DISADVANTAGES

Could impact roadway capacity, and emergency services/evacuation times.



TYPICAL LOCATIONS

Roadways with frequent curb cuts and with traffic volumes that are lower than roadway capacity.



EXAMPLE LOCATIONS

S.R. 258, Elsinore

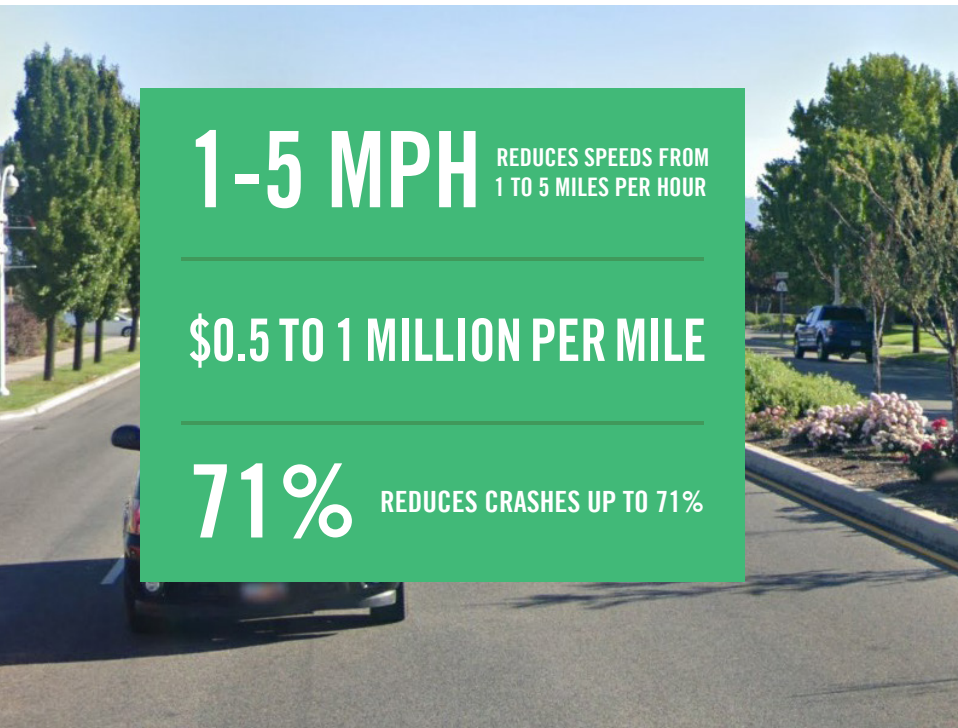
S.R. 118, Richfield

Cougar Blvd, Provo

200 West, SLC

California Ave

(east of Redwood Rd), SLC



1-5 MPH REDUCES SPEEDS FROM 1 TO 5 MILES PER HOUR

\$0.5 TO 1 MILLION PER MILE

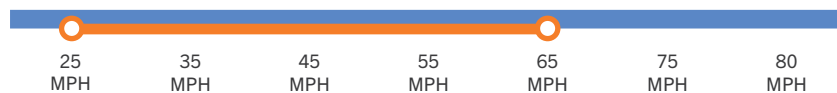
71% REDUCES CRASHES UP TO 71%



Treatment also includes curb extensions

TRAVEL SPEEDS

Median Islands are appropriate for roadway speeds between 25 and 65 miles per hour.



TRAFFIC VOLUMES

Median Islands are appropriate for ALL traffic volumes.



NUMBER OF LANES

Median Islands are appropriate for All lanes of traffic.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Physical treatment so effectiveness does not wear off with time.

Provides improved pedestrian crossing.

Landscaped medians improve aesthetics as well as reduce travel speeds.



DISADVANTAGES

Increased maintenance. Could require additional right-of-way.

Back to back curb medians without landscaping have not been shown to reduce travel speeds.



TYPICAL LOCATIONS

Roadways with two-way left-turn lanes and where u-turns, alternate access, or median openings can be accommodated. Existing and potential pedestrian crossing locations.



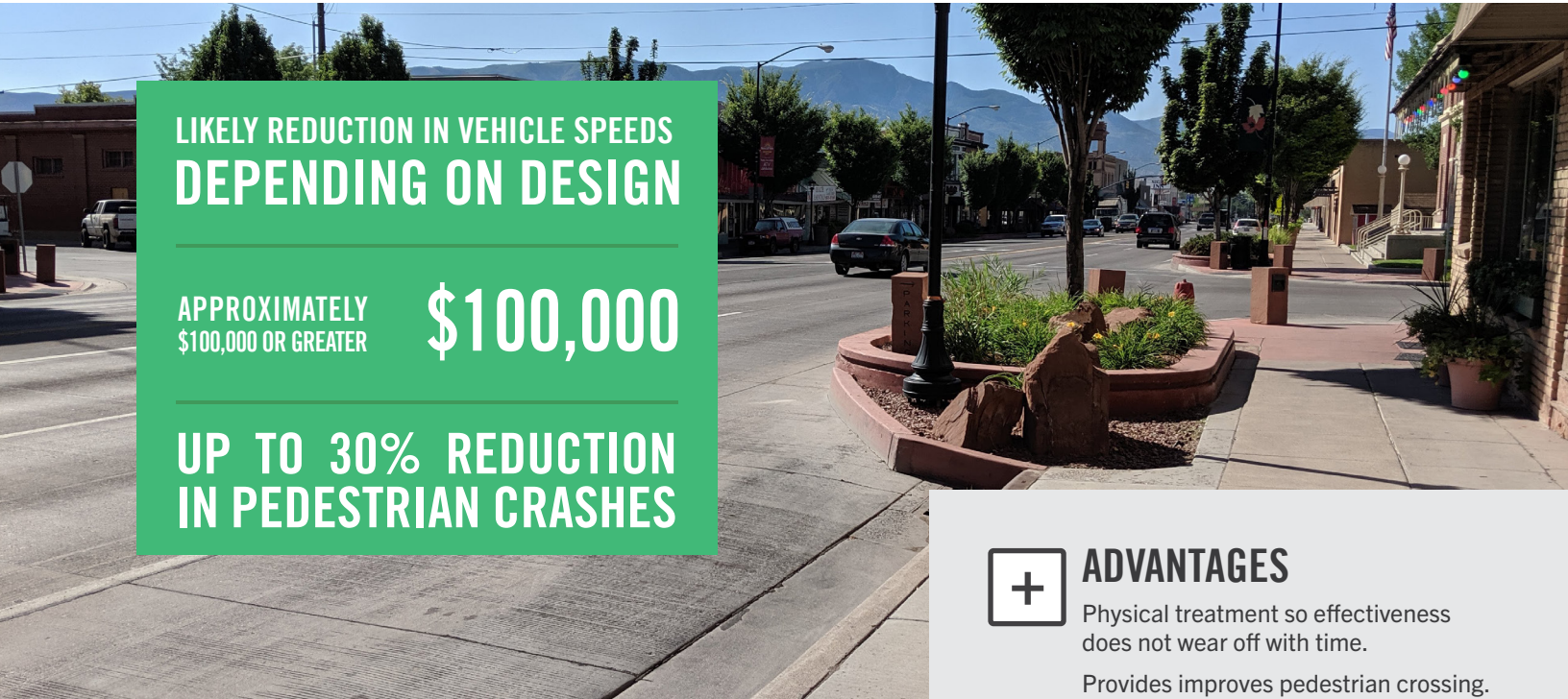
EXAMPLE LOCATIONS

US-89, downtown Ogden

US-89 @ 50 North, SLC

S.R. 68 @ 5500 South, Taylorsville

S.R. 34, St. George



LIKELY REDUCTION IN VEHICLE SPEEDS
DEPENDING ON DESIGN

APPROXIMATELY
\$100,000 OR GREATER

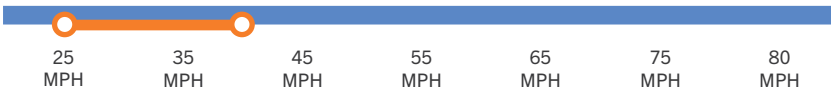
\$100,000

UP TO 30% REDUCTION
IN PEDESTRIAN CRASHES



TRAVEL SPEEDS

Curb Extensions are appropriate for roadway speeds between 25 and 40 miles per hour.



TRAFFIC VOLUMES

Curb Extensions are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Curb Extensions are appropriate for 1 to 2 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Physical treatment so effectiveness does not wear off with time.

Provides improves pedestrian crossing.



DISADVANTAGES

Increased maintenance. Could interfere with large vehicle movements.



TYPICAL LOCATIONS

Corridors with on-street parking.
Intersections with pedestrian activity and a small number of turning heavy vehicles.

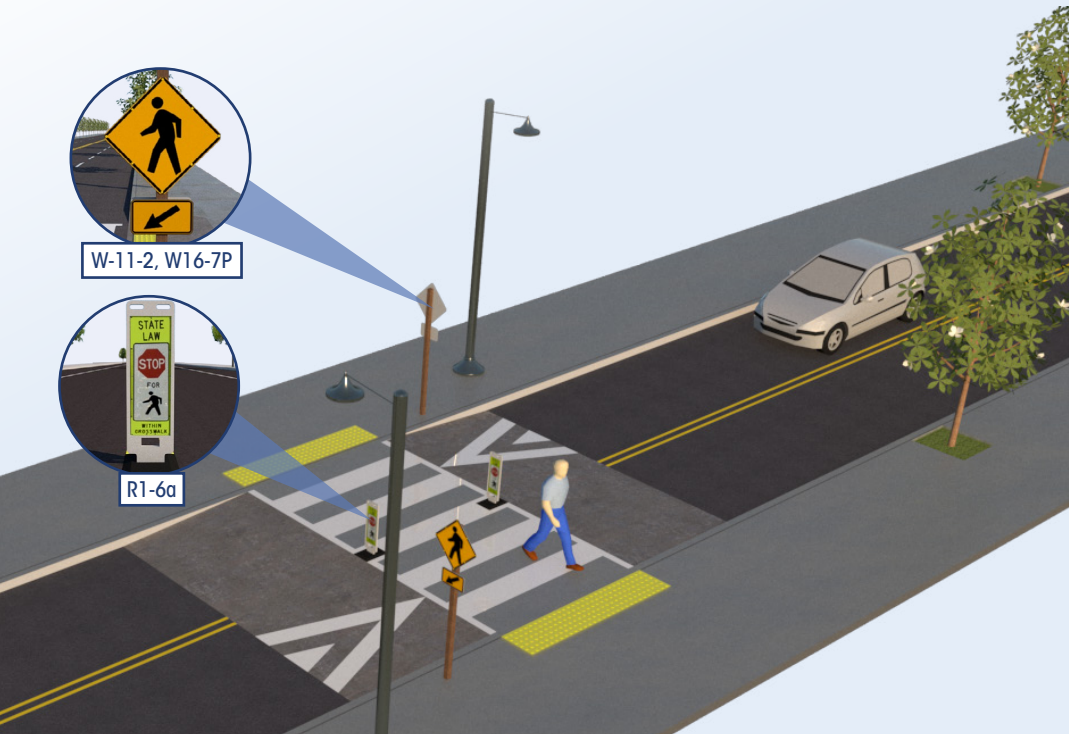


EXAMPLE LOCATIONS

US-89, downtown Ogden
US-89 & 500 N, SLC
US-40, downtown Ogden
S.R. 120, Richfield
US-89, Gunnison
S.R. 12, Triopic

Safe Transportation For Every Pedestrian

A Counter Measure Tech Sheet



Raised crosswalks are ramped speed tables spanning the entire width of the roadway, often placed at midblock crossing locations. The crosswalk is demarcated with paint and/or special paving materials. These crosswalks act as traffic-calming measures that allow the pedestrian to cross at grade with the sidewalk.

In addition to their use on local and collector streets, raised crosswalks can be installed in campus settings, shopping centers, and pick-up/drop-off zones (e.g., airports, schools, transit centers).

Raised crosswalks are flush with the height of the sidewalk. The crosswalk table is typically at least 10 feet wide and designed to allow the front and rear wheels of a passenger vehicle to be on top of the table at the same time. Detectable warnings (truncated domes) and curb ramps are installed at the street edge for pedestrians with impaired vision.

 Local and collector roads with high speeds pose a significant challenge for pedestrians crossing the roadway.

 A raised crosswalk can reduce vehicle speeds and enhance the pedestrian crossing environment.

.....

Raised crosswalks can reduce pedestrian crashes by

45%



.....

FEATURES:

- Elevated crossing makes the pedestrian more prominent in the driver's field of vision, and allows pedestrians to cross at grade with the sidewalk
- Approach ramps may reduce vehicle speeds and improve motorist yielding

OFTEN USED WITH:

- Crosswalk visibility enhancements



Boston, MA. Photo: Peter Furth / nacto.org

CONSIDERATIONS

Raised crosswalks are typically installed on 2-lane or 3-lane roads with speed limits of 30 mph or less and annual average daily traffic (AADT) below about 9,000. Raised crossings should generally be avoided on truck routes, emergency routes, and arterial streets.

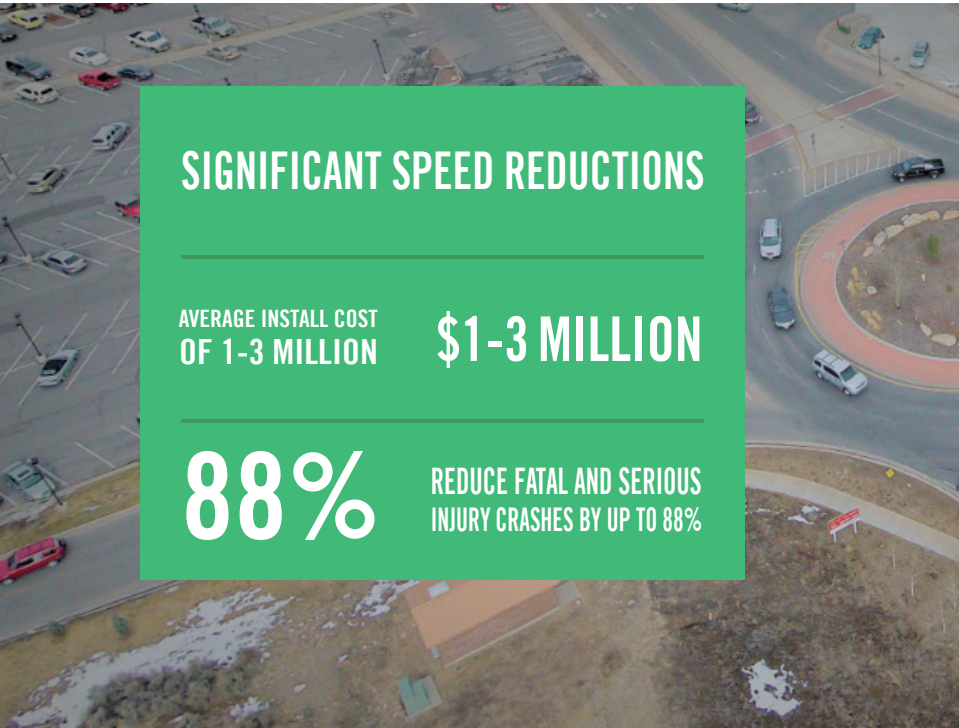
Drainage can be an issue. Raised crosswalks may be installed with curb extensions where parking exists. They may also be used at intersections, particularly at the entrance of the minor street.

Since this countermeasure can cause discomfort and noise (especially with larger vehicles), it may be appropriate to get public buy-in. Raised crosswalks may not be appropriate for bus transit routes or primary emergency vehicle routes. For States that experience regular snowfall, snowplowing can be a concern.

References

- Federal Highway Administration. (2013). "Raised Pedestrian Crossings" in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. Available: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=7
- Thomas, L., Thirsk, N. J., & Zegeer, C. (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington D.C.
- Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.
- Elvik, R., Christensen, P., and Amundsen, A. (2004). "Speed and Road Accidents An Evaluation of the Power Model." Transportøkonomisk Institutt, Oslo, Norway.

Source: <https://www.fhwa.dot.gov/innovation/everydaycounts/edc-4.cfm>



SIGNIFICANT SPEED REDUCTIONS

AVERAGE INSTALL COST
OF 1-3 MILLION

\$1-3 MILLION

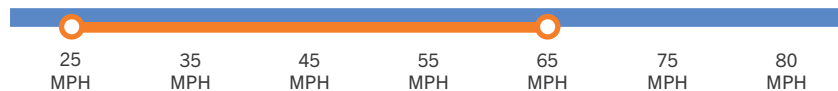
88%

REDUCE FATAL AND SERIOUS
INJURY CRASHES BY UP TO 88%



TRAVEL SPEEDS

Roundabouts are appropriate for roadway speeds between 25 and 65 miles per hour.



TRAFFIC VOLUMES

Roundabouts are appropriate for Low to Moderate traffic volumes.

**High volume roadways may be possible with additional review / design.*



NUMBER OF LANES

Roundabouts are appropriate for 1 to 2 lanes of traffic in each direction.

**3 lane roadways may be possible with additional review / design.*



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Alters vehicle path thus necessitates major reductions in speed.

Major safety improvements.

Can handle a wide range of mainline and turning traffic.

Pedestrian safety improved due to lower speeds.



DISADVANTAGES

Relatively expensive. May require additional right-of-way.



TYPICAL LOCATIONS

Intersections with available right-of-way. Where speeds, safety, and congestion are all concerns.



EXAMPLE LOCATIONS

I-80 interchange, Jeremy Ranch Park City

S.R.63, Oljato-Monument Valley

S.R. 12 & S.R. 63, Bryce Canyon

S.R. 130, Enoch

Description:

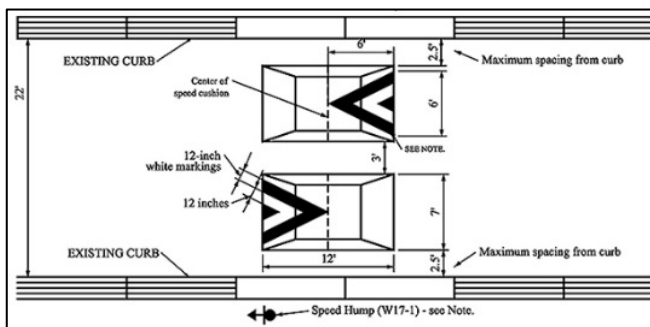
- Two or more raised areas placed laterally across a roadway with gaps between raised areas
- Height and length similar to a speed hump; spacing of gaps allow emergency vehicles to pass through at higher speeds
- Often placed in a series (typically spaced 260 to 500 feet apart)
- Sometimes called speed lump, speed slot, and speed pillow

Applications:

- Appropriate on local and collector streets
- Appropriate at mid-block locations only
- Not appropriate on grades greater than 8 percent



(Source: James Barrera, Horrocks, New Mexico)



(Source: Delaware Department of Transportation)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Two or more cushions at each location
- Typically 12 to 14 feet in length and 7 feet in width
- Cushion heights range between 3 and 4 inches, with trend toward 3 - 3 ½ inches maximum
- Speed cushion shapes include parabolic, circular, and sinusoidal
- Material can be asphalt or rubber
- Often have associated signing (advance-warning sign before first cushion at each cushion)
- Typically have pavement markings (zigzag, shark's tooth, chevron, zebra)
- Some have speed advisories

Potential Impacts:

- Limited-to-no impact on non-emergency access
- Speeds determined by height and spacing; speed reductions between cushions have been observed averaging 20 and 25 percent
- Speeds typically increase by 0.5 mph midway between cushions for each 100 feet of separation
- Studies indicate that average traffic volumes have reduced by 20 percent depending on alternative routes available
- Average collision rates have been reduced by 13 percent on treated streets

Emergency Response Issues:

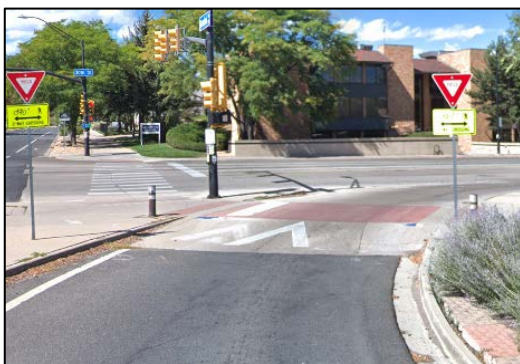
- Speed cushions have minimal impact on emergency response times, with less than a 1 second delay experienced by most emergency vehicles

Description:

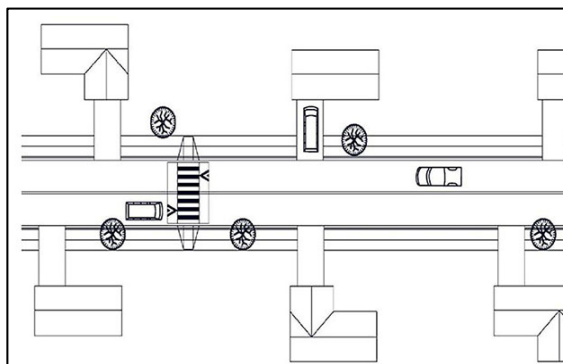
- Long, raised speed humps with a flat section in the middle and ramps on the ends; sometimes constructed with brick or other textured materials on the flat section
- If placed at a pedestrian crossing, it is referred to as a raised crosswalk
- If placed only in one direction on a road, it is called an offset speed table

Applications:

- Appropriate for local and collector streets; mid-block or at intersections, with/without crosswalks
- Can be used on a one-lane one-way or two-lane two-way street
- Not appropriate for roads with 85th percentile speeds of 45 mph or more
- Typically long enough for the entire wheelbase of a passenger car to rest on top or within limits of ramps
- Work well in combination with textured crosswalks, curb extensions, and curb radius reductions
- Can be applied both with and without sidewalks or dedicated bicycle facilities
- Typically installed along closed-section roads (i.e. curb and gutter) but feasible on open section



(Source: Google Maps, Boulder, Colorado)



(Source: Delaware Department of Transportation)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- ITE recommended practice – “Guidelines for the Design and Application of Speed Humps”
- Most common height is between 3 and 4 inches (reported as high as 6 inches)
- Ramps are typically 6 feet long (reported up to 10 feet long) and are either parabolic or linear
- Careful design is needed for drainage
- Posted speed typically 30 mph or less

Potential Impacts:

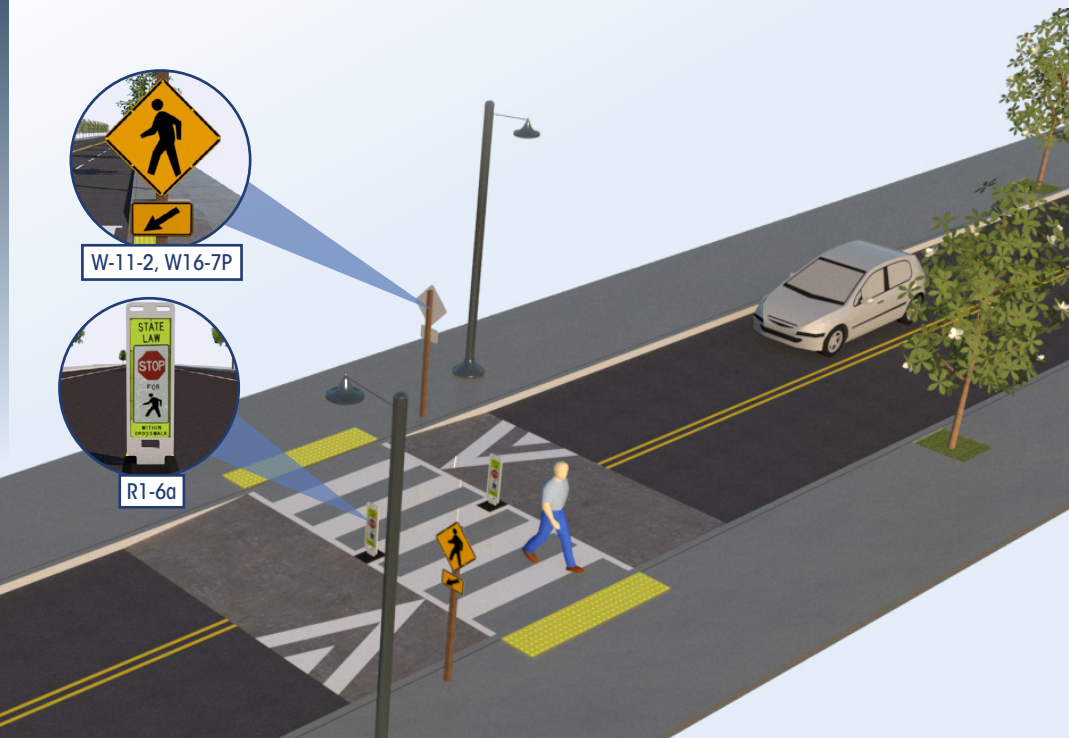
- No impact on non-emergency access
- Speeds reductions typically less than for speed humps (typical traversing speeds between 25 and 27 miles per hour)
- Speeds typically decline approximately 0.5 to 1 mph midway between tables for each 100 feet beyond the 200-foot approach and exit points of consecutive speed tables
- Average traffic volumes diversions of 20 percent when a series of speed tables are implemented
- Average crash rate reduction of 45 percent on treated streets
- Increase pedestrian visibility and likelihood of driver yield compliance
- Generally not appropriate for BRT bus routes

Emergency Response Issues:

- Typically preferred by fire departments over speed humps, but not appropriate for primary emergency vehicle routes; typically less than 3 seconds of delay per table for fire trucks



PEDESTRIAN SAFETY MEASURES



Raised crosswalks are ramped speed tables spanning the entire width of the roadway, often placed at midblock crossing locations. The crosswalk is demarcated with paint and/or special paving materials. These crosswalks act as traffic-calming measures that allow the pedestrian to cross at grade with the sidewalk.

In addition to their use on local and collector streets, raised crosswalks can be installed in campus settings, shopping centers, and pick-up/drop-off zones (e.g., airports, schools, transit centers).

Raised crosswalks are flush with the height of the sidewalk. The crosswalk table is typically at least 10 feet wide and designed to allow the front and rear wheels of a passenger vehicle to be on top of the table at the same time. Detectable warnings (truncated domes) and curb ramps are installed at the street edge for pedestrians with impaired vision.

 Local and collector roads with high speeds pose a significant challenge for pedestrians crossing the roadway.

 A raised crosswalk can reduce vehicle speeds and enhance the pedestrian crossing environment.

.....

Raised crosswalks can reduce pedestrian crashes by

45%



.....

FEATURES:

- Elevated crossing makes the pedestrian more prominent in the driver's field of vision, and allows pedestrians to cross at grade with the sidewalk
- Approach ramps may reduce vehicle speeds and improve motorist yielding

OFTEN USED WITH:

- Crosswalk visibility enhancements



CONSIDERATIONS

Raised crosswalks are typically installed on 2-lane or 3-lane roads with speed limits of 30 mph or less and annual average daily traffic (AADT) below about 9,000. Raised crossings should generally be avoided on truck routes, emergency routes, and arterial streets.

Drainage can be an issue. Raised crosswalks may be installed with curb extensions where parking exists. They may also be used at intersections, particularly at the entrance of the minor street.

Since this countermeasure can cause discomfort and noise (especially with larger vehicles), it may be appropriate to get public buy-in. Raised crosswalks may not be appropriate for bus transit routes or primary emergency vehicle routes. For States that experience regular snowfall, snowplowing can be a concern.

References

- Federal Highway Administration. (2013). "Raised Pedestrian Crossings" in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. Available: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=7
- Thomas, L., Thirsk, N. J., & Zegeer, C. (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington D.C.
- Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.
- Elvik, R., Christensen, P., and Amundsen, A. (2004). "Speed and Road Accidents An Evaluation of the Power Model." Transportøkonomisk Institutt, Oslo, Norway.

Source: <https://www.fhwa.dot.gov/innovation/everydaycounts/edc-4.cfm>

This example combines curb extensions, high-visibility markings, overhead lighting, and in-street signs on a two-lane roadway.



This group of countermeasures includes improved lighting, advance or in-street warning signage, pavement markings, and geometric design elements. Such features may be used in combination to indicate optimal or preferred locations for people to cross and to help reinforce the driver requirement to yield the right-of-way to pedestrians at crossing locations.

For multi-lane roadway crossings where vehicle AADTs are in excess of 10,000, a marked crosswalk alone is typically not sufficient (Zegeer, 2005). Under such conditions, more substantial crossing improvements are also needed to prevent an increase in pedestrian crash potential. Examples of more substantial treatments include the refuge island, PHB, and RRFB.



Poor lighting conditions, obstructions such as parked cars, and horizontal or vertical roadway curvature can reduce visibility at crosswalks, contributing to higher crash rates.



Crosswalk visibility enhancements help make crosswalks and/or pedestrians more visible and can help pedestrians decide where to cross.

Crosswalk visibility enhancements can reduce crashes by

23–48%



FEATURES:

- High visibility marking improves visibility of the crosswalk compared to the standard parallel lines.
- Parking restriction on the crosswalk approach improves the sightlines for motorists and pedestrians.
- Advance STOP or YIELD markings & signs reduce the risk of a multiple threat crash.
- Curb extension improves sight distance between drivers and pedestrians and narrows crossing distance.
- In street STOP or YIELD signs may improve driver yielding rates.

June 2018, Updated | FHWA-SA-18-061

Source: FHWA Crosswalk Visibility Enhancements Tech Sheet June 2018
[“ITE Traffic Calming Fact Sheets, May 2018](#)

High-visibility crosswalk marking. High-visibility crosswalks are preferred over parallel line crosswalks and should be provided at all established midblock pedestrian crossings. They should also be considered at uncontrolled intersections.

Parking restriction on the crosswalk approach. Parking restriction can include the removal of parking space markings, installation of new “parking prohibition” pavement markings or curb paint, and signs. The minimum setback is 20 feet in advance of the crosswalk where speeds are 25 mph or less, and 30 feet where speeds are between 26 and 35 mph.

Advance YIELD or STOP markings and signs.¹ The stop bar or “sharks teeth” yield markings are placed 20 to 50 feet in advance of a marked crosswalk to indicate where vehicles are required to stop or yield in compliance with the accompanying “STOP Here for Pedestrians” or “YIELD Here to Pedestrians” sign.

Curb extension. This treatment, also referred to as bulb-outs, extends the sidewalk or curb line out into the parking lane, which reduces the effective street width. Curb extensions must not extend into travel lanes and should not extend across bicycle lanes.

Improved nighttime lighting.

Consideration should be given to placing lights in advance of midblock and intersection crosswalks on both approaches to illuminate the front of the pedestrian and avoid creating a silhouette.

In-street STOP or YIELD to pedestrian sign.² These signs serve to remind road users of laws regarding right-of-way, and they may be appropriate on 2-lane or 3-lane roads where speed limits are 30 mph or less. The sign can be placed in between travel lanes or in a median.

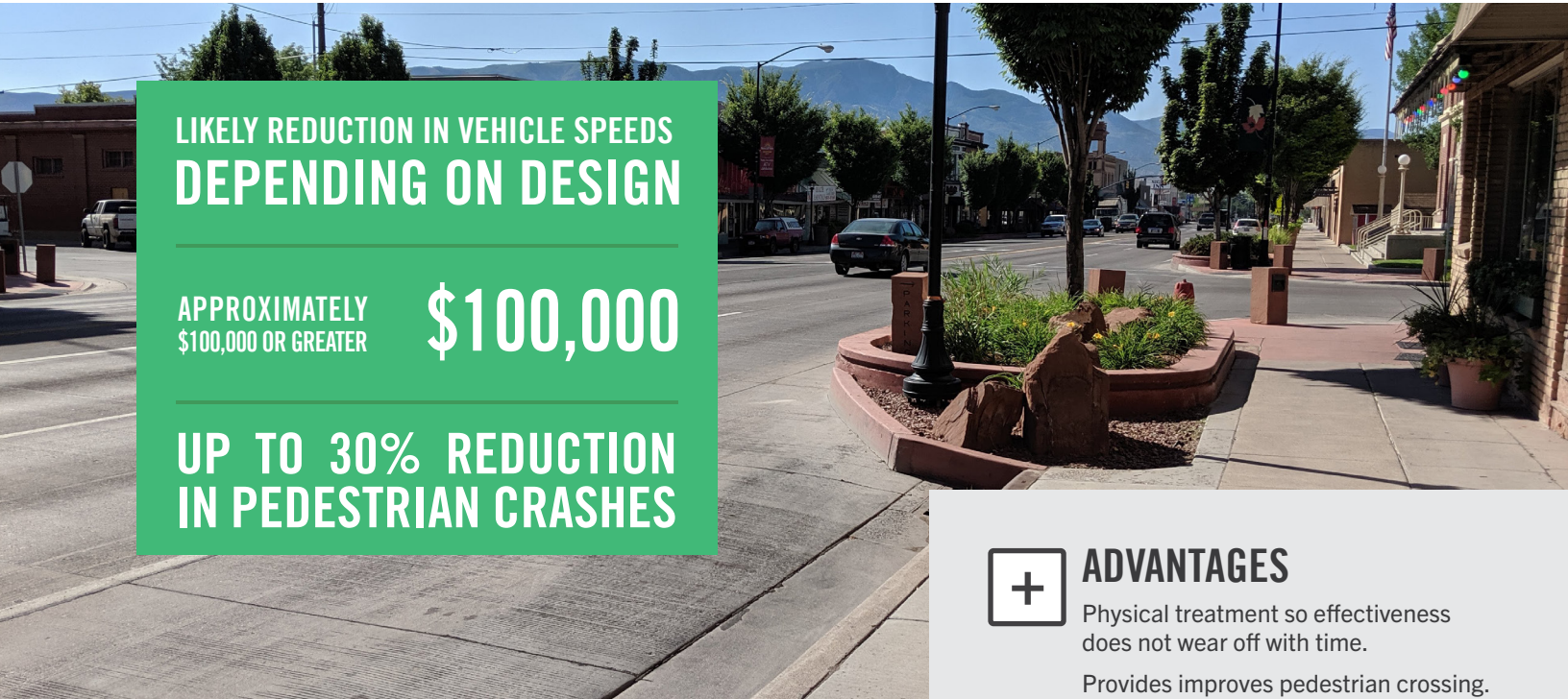
¹MUTCD section 2B.12 In-Street and Overhead Pedestrian Crossing Signs (R1-6, R1-6a, R1-9, and R1-9a)

²MUTCD reference: Section 2B.11 Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)

References

- Harkey, D.L., R. Srinivasan, J. Baek, F. Council, K. Eccles, N. Lefler, F. Gross, B. Persaud, C. Lyon, E. Hauer, and J. Bonneson. (2008). NCHRP Report 617: Crash Reduction Factors for Traffic Engineering and ITS Improvements. Transportation Research Board, Washington, D.C.
- Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten. (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington, D.C.
- Gibbons, R. B., Edwards, C., Williams, B., & Andersen, C. K. (2008). Informational Report on Lighting Design for Midblock Crosswalks. Report No. FHWA-HRT-08-053. Federal Highway Administration.
- Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.
- Federal Highway Administration. (2013). Multiple webpages in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System:
- Marked Crosswalks and Enhancements: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=4
 - Lighting and Illumination: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=8
 - Parking Restrictions: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=9
 - Curb Extensions: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=5
 - Advance Stop/Yield Lines: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=13

Source: FHWA Crosswalk Visibility Enhancements Tech Sheet June 2018



LIKELY REDUCTION IN VEHICLE SPEEDS
DEPENDING ON DESIGN

APPROXIMATELY
\$100,000 OR GREATER

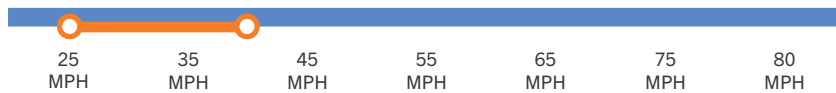
\$100,000

UP TO 30% REDUCTION
IN PEDESTRIAN CRASHES



TRAVEL SPEEDS

Curb Extensions are appropriate for roadway speeds between 25 and 40 miles per hour.



TRAFFIC VOLUMES

Curb Extensions are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Curb Extensions are appropriate for 1 to 2 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Physical treatment so effectiveness does not wear off with time.

Provides improves pedestrian crossing.



DISADVANTAGES

Increased maintenance. Could interfere with large vehicle movements.



TYPICAL LOCATIONS

Corridors with on-street parking.
Intersections with pedestrian activity and a small number of turning heavy vehicles.



EXAMPLE LOCATIONS

US-89, downtown Ogden
US-89 & 500 N, SLC
US-40, downtown Ogden
S.R. 120, Richfield
US-89, Gunnison
S.R. 12, Triopic

Safe Transportation For Every Pedestrian

A Counter Measure Tech Sheet



A pedestrian refuge island is a median with a refuge area that is intended to help protect pedestrians who are crossing a multilane road. This countermeasure is sometimes referred to as a crossing island, refuge island, or pedestrian island. The presence of a pedestrian refuge island at a midblock location or intersection allows pedestrians to focus on one direction of traffic at a time as they cross, and gives them a place to wait for an adequate gap in oncoming traffic before finishing the second phase of a crossing.

Refuge islands are highly desirable for midblock pedestrian crossings on roads with four or more travel lanes, especially where speed limits are 35 mph or greater and/or where annual average daily traffic (AADT) is 9,000 or higher. They are also a candidate treatment option for uncontrolled pedestrian crossings on 3-lane or 2-lane roads that have high vehicle speeds or volumes. When installed at a midblock crossing, the island should be supplemented with a marked high-visibility crosswalk.



The combination of a long crossing distance and multiple lanes of oncoming traffic can create an unsafe pedestrian environment.



A pedestrian refuge island can improve safety and comfort by providing pedestrians with the option of waiting in the median area before beginning the next stage of the crossing.

.....

Pedestrian refuge islands can reduce pedestrian crashes by

32%



.....

FEATURES:

- Median can enhance visibility of the crossing and reduce speed of approaching vehicles.
- Refuge area provides a place to rest and reduces the amount of time a pedestrian is in the roadway

OFTEN USED WITH:

- Crosswalk visibility enhancements
- Curb extensions (where road width allows)



Asheville, NC. Photo: Lyubov Zuyeva, pedbikeimages.org

CONSIDERATIONS

The design must accommodate pedestrians with disabilities. Islands should be at least 4 feet wide (preferably 8 feet) and of adequate length to allow the anticipated number of pedestrians to stand and wait for gaps in traffic before crossing. The cut-through must include detectable warnings if island width is at least 6 feet.

Islands should be illuminated or highlighted with street lights, signs, and/or reflectors to ensure that they are visible to motorists. They can be constructed so that crossing pedestrians are directed to the right, so they can more easily view oncoming traffic after they are halfway through the crossing. If applicable, evaluate the impact of the island on bicycle facility design.

References

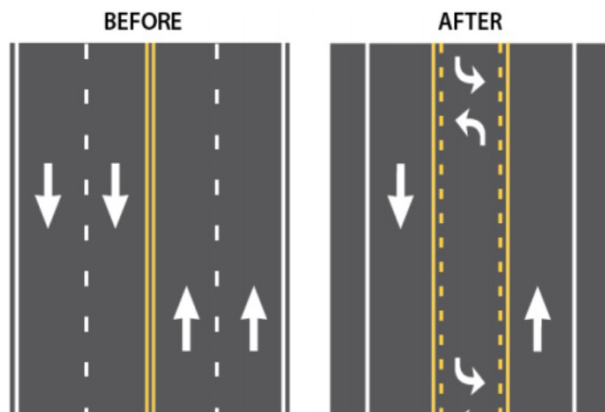
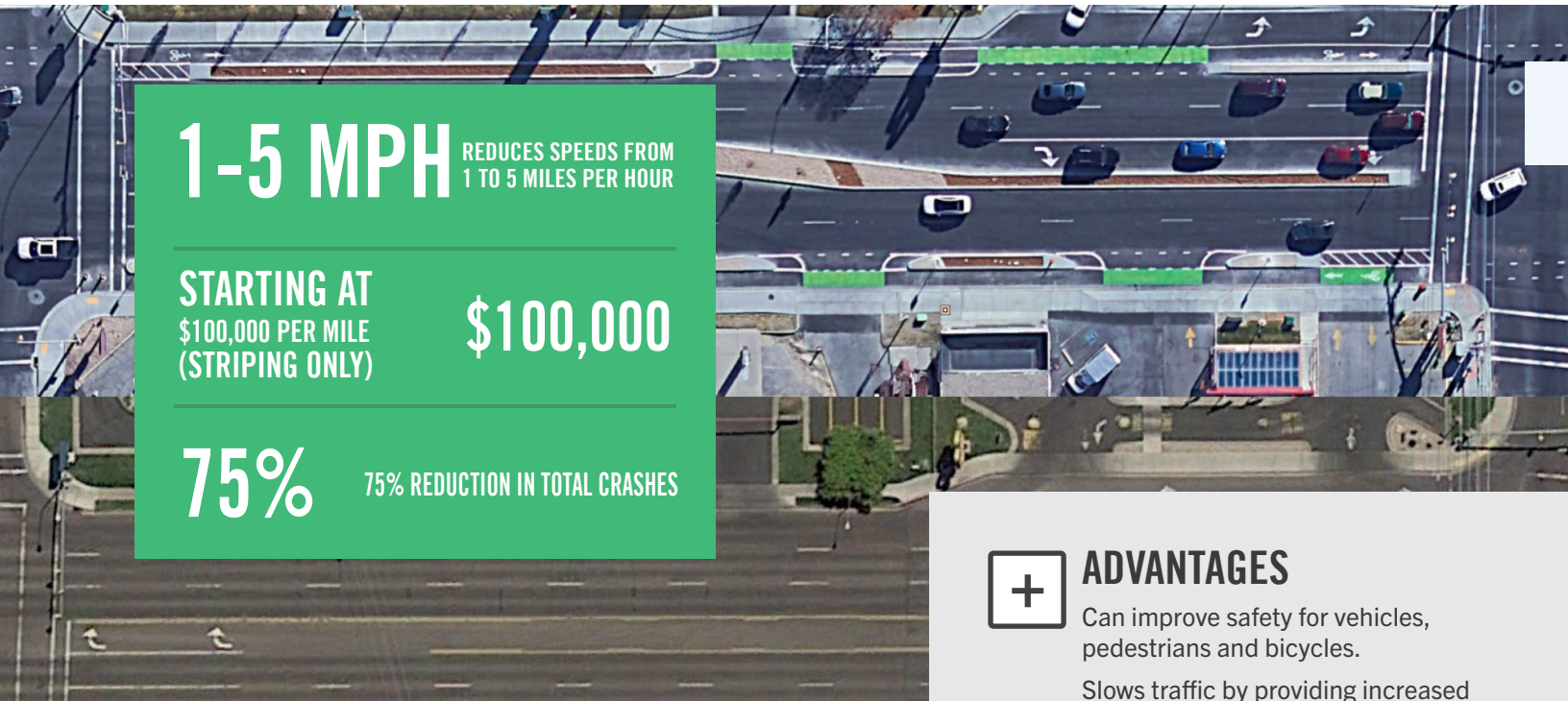
Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten. (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington, D.C.

Federal Highway Administration. (2013). "Crossing Islands" in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. Available: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=6

Federal Highway Administration. "Medians and Pedestrian Crossing Islands in Urban and Suburban Areas." Proven Safety Countermeasures. Available: https://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_011.cfm

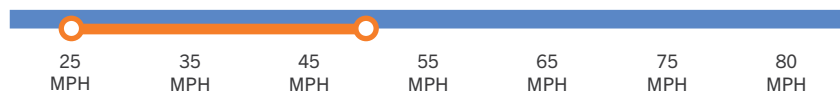
Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.

Source: FHWA Crosswalk Visibility Enhancements Tech Sheet June 2018
<https://www.fhwa.dot.gov/innovation/everydaycounts/edc-4.cfm>



TRAVEL SPEEDS

Road Diets are appropriate for roadway speeds between 25 and 50 miles per hour.



TRAFFIC VOLUMES

Road Diets are appropriate for Low to Moderate traffic volumes.



NUMBER OF LANES

Road Diets are appropriate for 2 to 4 lanes of traffic in each direction.



Source: UDOT Speed Info Management Sheets, March 2022



ADVANTAGES

Can improve safety for vehicles, pedestrians and bicycles.

Slows traffic by providing increased friction.



DISADVANTAGES

Could impact roadway capacity, and emergency services/evacuation times.



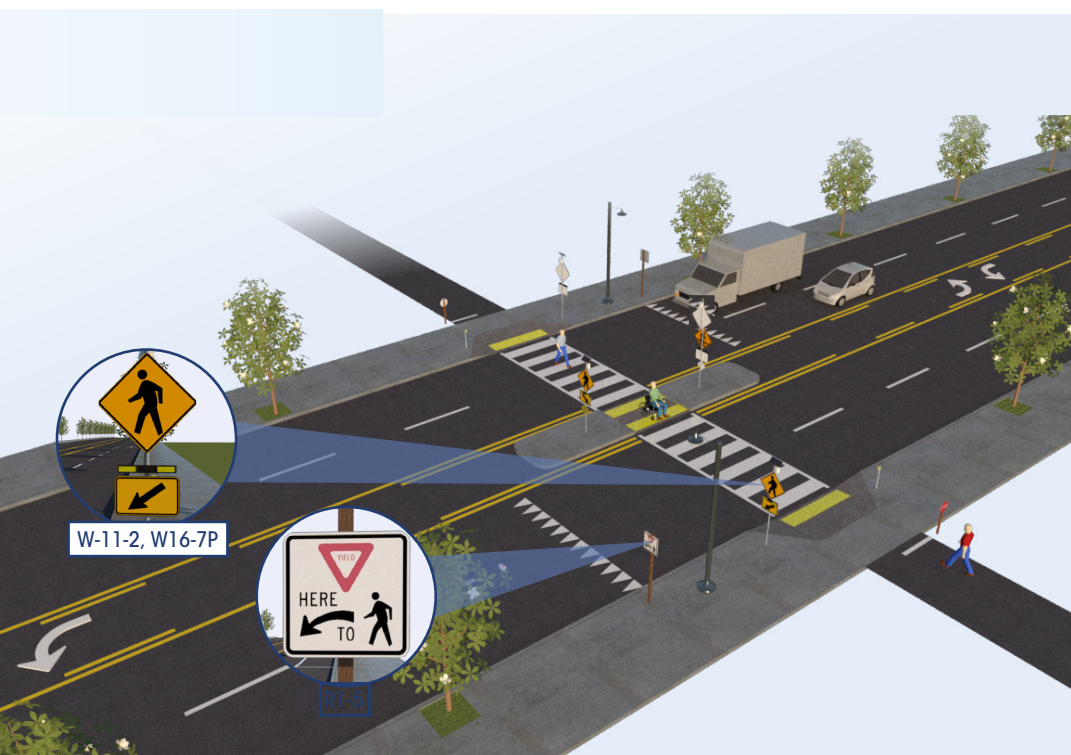
TYPICAL LOCATIONS

Roadways with frequent curb cuts and with traffic volumes that are lower than roadway capacity.



EXAMPLE LOCATIONS

S.R. 258, Elsinore
S.R. 118, Richfield
Cougar Blvd, Provo
200 West, SLC
California Ave
(east of Redwood Rd), SLC



RRFBs are pedestrian-actuated conspicuity enhancements used in combination with a pedestrian, school, or trail crossing warning sign to improve safety at uncontrolled, marked crosswalks. The device includes two rectangular-shaped yellow indications, each with an LED-array-based light source, that flash with high frequency when activated.

The RRFB is a treatment option at many types of established pedestrian crossings. Research indicates RRFBs can result in motorist yielding rates as high as 98 percent at marked crosswalks. However, yielding rates as low as 19 percent have also been noted. Compliance rates varied most per the city location, posted speed limit, crossing distance, and whether the road was one- or two-way. RRFBs are particularly effective at multilane crossings with speed limits less than 40 mph. Consider the Pedestrian Hybrid Beacon (PHB) instead for roadways with higher speeds. FHWA's *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations* (HSA-17-072) provides specific conditions where practitioners should strongly consider the PHB instead of the RRFB.

⚠ Multiple lanes of traffic create challenges for pedestrians crossing at unsignalized locations.

💡 RRFBs can make crosswalks and/or pedestrians more visible at a marked crosswalk.

RRFBs can reduce pedestrian crashes by **47%**



FEATURES:

- Enhanced warning improves motorist yielding

OFTEN USED WITH:

- Crosswalk visibility enhancements
- Pedestrian refuge island
- Advance STOP or YIELD markings and signs



Princeton, NJ. Photo: VHB

CONSIDERATIONS

FHWA has issued interim approval for the use of the RRFB (IA-21). State and local agencies must request and receive permission to use this interim approval before they can use the RRFB. IA-21 does not provide guidance or criteria based on number of lanes, speed, or traffic volumes.

RRFBs are placed on both ends of a crosswalk. If the crosswalk contains a pedestrian refuge island or other type of median, an RRFB should be placed to the right of the crosswalk and on the median (instead of the left side of the crosswalk).

RRFBs typically draw power from standalone solar panel units, but may also be wired to a traditional power source. IA-21 provides conditions for the use of accessible pedestrian features with the RRFB assembly. When RRFBs are not in common use in a community, consider conducting an outreach effort to educate the public and law enforcement officers on their purpose and use.

References

MUTCD section 2B.12 In-Street and Overhead Pedestrian Crossing Signs (R1-6, R1-6a, R1-9, and R1-9a).

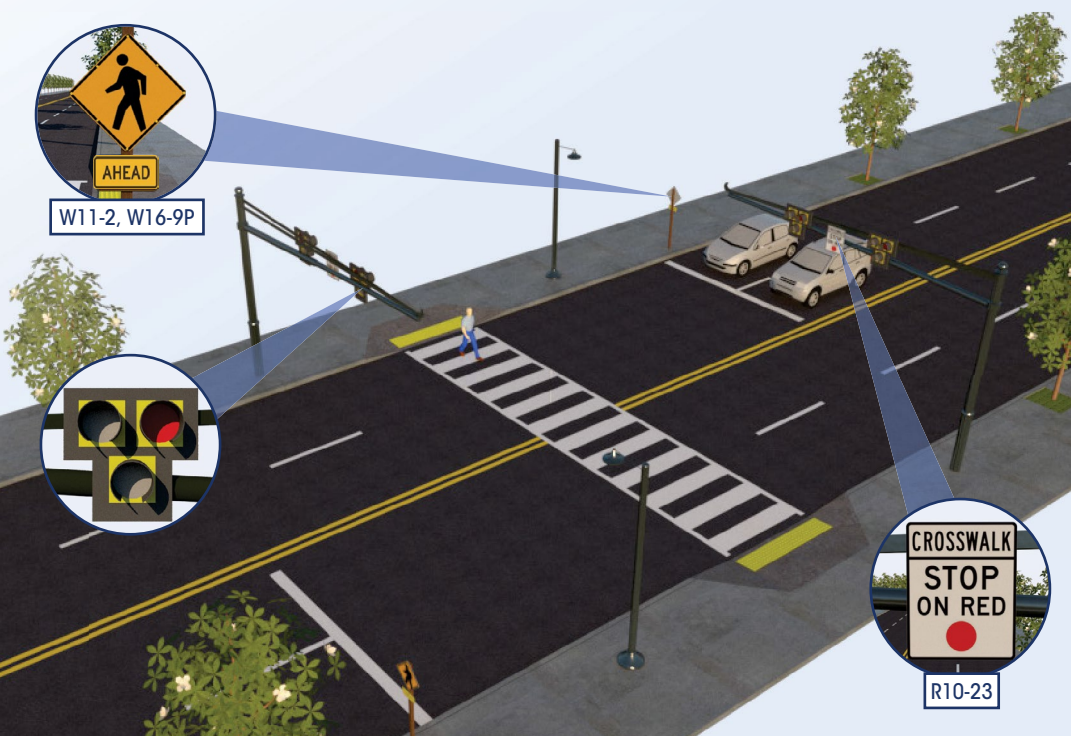
Fitzpatrick, K., M. Brewer, R. Avelar, and T. Lindheimer. "Will You Stop for Me? Roadway Design and Traffic Control Device Influences on Drivers Yielding to Pedestrians in a Crosswalk with a Rectangular Rapid-Flashing Beacon." Report No. TTI-CTS-0010. Texas A&M Transportation Institute, College Station, Texas. June 2016. <https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-CTS-0010.pdf>

Federal Highway Administration. (2018). MUTCD – Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21). U.S. Department of Transportation, Washington, DC.

Federal Highway Administration. (2013). "Rectangular Rapid Flash Beacon" in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. Available: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=54

Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.

Source: FHWA Rectangular-Rapid Flashing Beacon (RRFB) Tech Sheet June 2018
<https://www.fhwa.dot.gov/innovation/everydaycounts/edc-4.cfm>



PHB or High-Intensity Activated Crosswalk (HAWK)

A Pedestrian Hybrid Beacon head consists of two red lenses above a single yellow lens. Unlike a traffic signal, the PHB rests in dark until a pedestrian activates it via pushbutton or other form of detection. When activated, the beacon displays a sequence of flashing and solid lights that indicate the pedestrian walk interval and when it is safe for drivers to proceed (see figure on back page).

The PHB is often considered for installation at locations where pedestrians need to cross and vehicle speeds or volumes are high, but traffic signal warrants are not met. These devices have been successfully used at school crossings, parks, senior centers, and other pedestrian crossings on multilane streets. PHBs are typically installed at the side of the road or on mast arms over midblock pedestrian crossings.

 High speeds and multiple lanes of traffic create challenges for pedestrians crossing at unsignalized locations.

 PHBs can warn and control traffic at unsignalized locations and assist pedestrians in crossing a street or highway at a marked crosswalk.

PHBs can reduce pedestrian crashes by **55%**



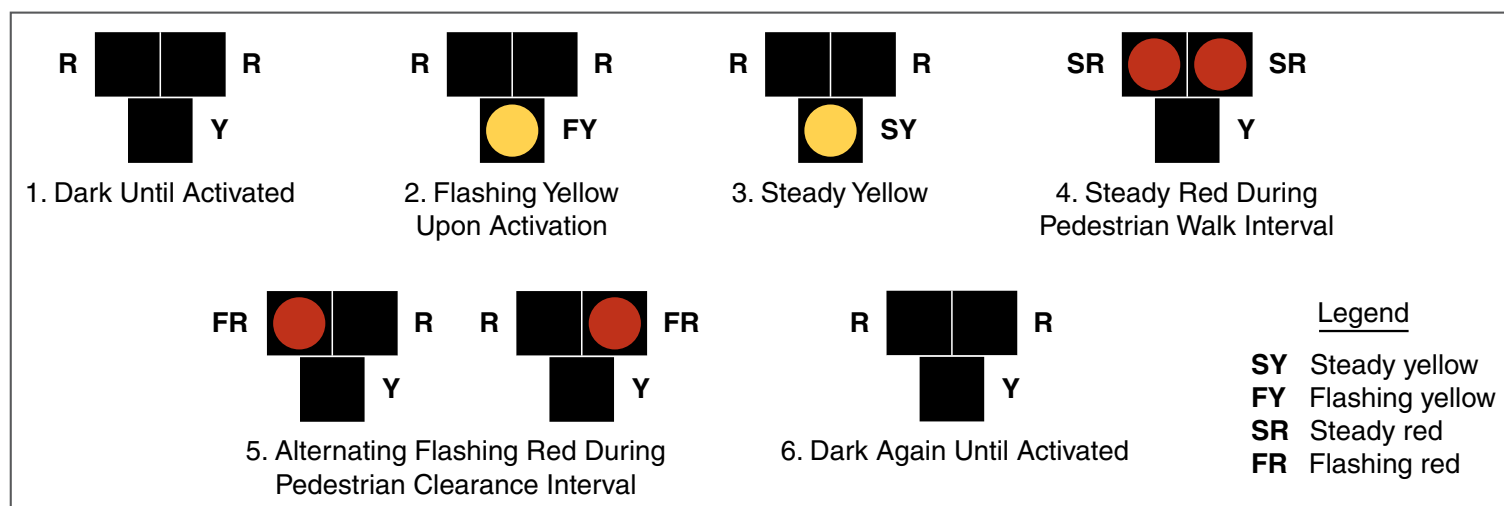
FEATURES:

- Beacons stop all lanes of traffic, which can reduce pedestrian crashes.

OFTEN USED WITH:

- High-visibility crosswalk markings
- Raised islands
- Advance STOP or YIELD signs and markings

Figure 4F-3. Sequence for a Pedestrian Hybrid Beacon from FHWA's *Manual on Uniform Traffic Control Devices*, 2009 Edition, p. 511



When a pedestrian activates a PHB, a flashing yellow light is followed by a solid yellow light, alerting drivers to slow. A solid red light requires drivers to stop while pedestrians have the right-of-way to cross the street. When the pedestrian signals display a flashing DON'T WALK indication, the overhead beacon flashes red, and drivers may proceed if the crosswalk is clear.

CONSIDERATIONS

PHBs are a candidate treatment for roads with three or more lanes that generally have annual average daily traffic (AADT) above 9,000. PHBs should be strongly considered for all midblock and intersection crossings where the roadway speed limits are equal to or greater than 40 miles per hour (mph). The PHB should meet the application guidelines provided in the *Manual on Uniform Traffic Control Devices* for existing or projected pedestrian volumes.

PHBs are intended for installation at midblock locations, but can be installed at intersections. They should only be installed

in conjunction with marked crosswalks and pedestrian countdown signals.

When PHBs are not in common use in a community, consider conducting an outreach effort to educate the public and law enforcement officers on the PHBs' purpose and use.

References

- Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten. (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington, D.C.
- Federal Highway Administration. (2013). "Pedestrian Hybrid Beacon" in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. Available: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=53
- Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.

Source: FHWA Pedestrian Hybrid Beacon (PHB) Tech Sheet June 2018

APPENDIX B:

**Highland City Traffic Calming and
Pedestrian Safety Request Form**

Highland City Traffic Calming & Pedestrian Safety Request Form

Applicant Information

Applicant Name: _____

Applicant Address: _____

Applicant Phone Number: _____

Applicant Email: _____

Study Location Information

Street Name: _____

Beginning address or cross street: _____

Ending address or cross street: _____

Locations that have been evaluated less than 2 years ago are not viable for consideration **UNLESS** a recent crash has happened, or development has changed (new neighborhood, roadway lane configuration, change in speed limit).

Description of Issue

What is the concern at this location? When is the issue the worst (dates, times)? Is this a speed, pedestrian safety, or volume concern?

Supporting Signatures

Supporting signatures must be residents on the same street as the request for traffic calming. Only one signature is allowed per household.

	Name	Address	Signature	Phone Number
1				
2				
3				
4				
5				

Fee

The required application fee is \$25.

Please attach any relevant documents or photographs to this request form.

APPENDIX C:

**Highland City Traffic Calming and
Pedestrian Safety Prioritization
Form**

Highland City Traffic Calming Prioritization Form

Project information

Project Location: _____

Project Number: _____

Date of Evaluation: _____

Date of Data collection: _____

History

Locations that have been evaluated less than 2 years ago are not viable for consideration **UNLESS** a recent crash has happened, or development has changed (new neighborhood, roadway lane configuration, change in speed limit).

Date of Previous Evaluation (if applicable): _____

85th Percentile speed

Posted speed limit _____

Recorded 85th Percentile speed _____

85th percentile speed less than 5 mph over the speed limit?		0 points
85th percentile speed 5-10 mph over the speed limit?		5 points
85th percentile speed 11-15 mph over the speed limit?		10 points
85th percentile speed 16+ mph over the speed limit?		15 points

Points from 85th percentile speed: _____

Percent Drivers 10 mph over limit

Posted speed limit _____

Percent of drivers that are 10 mph over posted speed limit _____

Less than 10% drivers 10 mph over speed limit?		0 points
10%-15% drivers 10 mph over speed limit?		5 points
16%-20% drivers 10 mph over speed limit?		10 points
20% or more drivers 10 mph over speed limit?		15 points

Points from percent speeders: _____

If any of the above factors receive a score of 15 points individually, then traffic calming should be considered at this location.

Daily Traffic Volumes

Two directional daily vehicle volume _____

Less than 500 vehicles		0 points
Between 500 and 749 vehicles		5 points
Between 750 and 999 vehicles		10 points
Between 999 and 1,249 vehicles		15 points
Greater than 1,250 vehicles		20 points

Points from volume: _____

Stopping Sight Distance

85th Percentile speed: _____

Required stopping sight distance for 85th Percentile speed: _____

Available sight distance: _____

Adequate stopping sight distance?		0 points
Inadequate stopping sight distance?		15 points

Points from stopping sight distance: _____

Crash History (5-year Period)

Number of crashes: _____

Are there any speed related crashes?		15 points
Are there any severe (fatal/suspected serious injury) crashes?		30 points
Do any of the crashes involve ped/bike?		30 points

Points from crash history: _____

Roadway Context

Shared Roadway

If more than 1 of the following applies, choose the value with the most points.

Bus route		10 points
Bike lanes		15 points
Pedestrian crossing		15 points
Trail crossing		20 points
School crossing		25 points

Points from Shared Roadway: _____

Schools

If more than 1 of the following applies, choose the value with the most points.

School within ½ mile of study location		
Elementary		20 points
Middle School		15 points
High school		10 points

Points from Schools: _____

Pedestrian Generator

Pedestrian generator includes facilities with high pedestrian volumes (public park, library, splash pad, etc.)

Pedestrian generator within ¼ mile		15 points
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Points from Pedestrian Generator: _____

Active Transportation (bike, pedestrian, scooter, etc.) Volumes

(ONLY FOR PEDESTRIAN SAFETY STUDY)

Peak hour pedestrian crossing volume _____

Less than 5 pedestrian per hour		0 points
Between 5 and 10		10 points
Greater than 10		20 points
Greater than 20		40 points

Points from volume: _____

Total points _____

If the 85th Percentile speed or percentage drivers 10 mph over speed limit reaches 15 points independently, traffic calming should be considered at this location.

**GREEN-
LOW URGENCY**
Projects scoring under
40 points

Traffic Calming not
required, passive
measures may be
installed.

**YELLOW-
MEDIUM URGENCY**
Projects scoring
between
40 and 79 points

Passive measures
recommended at this
location. Temporary
measures may be
installed.

RED-HIGH URGENCY
Projects scoring
80 or more points

Both passive and tem-
porary measures rec-
ommended at this
location. Temporary
measures should even-
tually be replaced
with permanent active
measures.