

Mayor
Larry Jacobsen



Council Members
Erin Mann
Kay Sweeten
Nathan Laursen
Norman Larsen
Garrett Mansell

MEMORANDUM

TO: Nibley City Council, Mayor, and City Manager
FROM: Tom Dickinson, P.E., City Engineer
DATE: September 17, 2024
RE: Traffic Calming Technical Memo- 1200 West Roadway Project

This memorandum describes the intent and effectiveness of traffic calming measures that have been designed and constructed in the 1200 West roadway improvement project. It is important to note that the 1200 West project is not complete as of date. Upcoming pavement markings at intersections and other sections of the roadway will help delineate travel lanes and will help make more sense to the public when the roadway is reopened.

Greetings,

Of interest and concern from the public is the narrowness and curvature of the newly constructed 1200 West project that extends from 2980 South to 2500 South, specifically the location of concrete barriers and the concrete islands that are placed at each intersection. These features, although new to Nibley, are traffic calming measures proven effective by the US Federal Highway Administration (FHWA). Implementation of safety countermeasures (traffic calming) forces deliberate driving habits and turn movements resulting in self and continual enforcement of safe travel along corridors and through intersections. Drivers MUST slow down.

FHWA defines the primary purpose of traffic calming as measures to support the livability and vitality of residential and commercial areas through improvements in non-motorist safety, mobility, and comfort. These objectives are typically achieved by reducing the speeds of vehicles on a single street or street network. Traffic calming measures consist of horizontal, vertical, lane narrowing, roadside and other features meant to produce desired effects.

During the initial planning stages, there were concerns that a new and improved 1200 West corridor would result in a high number of fast-moving vehicles that would create a barrier for pedestrians and other travelers crossing 1200 West. To mitigate the possibility, the 1200 West project design and construction incorporated several safety measures that are proven to effectively reduce vehicle speeds and enhance mobility of non-motorist safety. The traffic calming measures noted below were presented to staff and City Council during the planning process then selected and implemented into the design and construction of the 1200 West roadway improvement project.

The following traffic calming treatments are included in the 1200 West project and discussed below:

- Mountable Concrete Islands and Bulb outs
- Bike Path Separated by Concrete Barriers
- Narrow Vehicle Travel Lanes
- Chicanes
- Colored Pavement Markings

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Mountable Concrete Islands and Bulb outs

Mountable concrete islands and bulb outs are proven safety countermeasures that were designed and installed at side roads that intersect with 1200 West. Placement of the islands reduces the width of the roadway at each approach reducing the distance and amount of time that a pedestrian or bicyclist is exposed to vehicle travel and helps delineate which way a pedestrian will be traveling prior to entering the intersection.

Narrow intersections increase a driver's attentiveness as they approach an intersection from the main or side road. The narrow throat of the intersection also reduces the speed of vehicles turning into neighborhoods from the main road (1200 West). Bulb outs create a taper for vehicles approaching 1200 West from sides streets. Mountable concrete islands maintain consistent narrowness through the intersection to 1200 West. Curbing surrounding the concrete islands is "mountable" and will allow vehicles pulling trailers to slowly drive over the curb if necessary. The concrete islands also reduce the width of the bike path approaching each intersection. Narrowing of the bike path is intended to slow bikers down and to shift bicyclists into a narrower corridor, increasing visibility to drivers approaching the intersection.

The configuration of intersections connecting to 1200 West very much resembles the 200 West 300 South intersection in Salt Lake City. The 200 West 300 South intersection, installed almost 10 years ago, is the second of its kind in the United States and is noted as the busiest and most studied fully protected intersection in the nation. It has been found to be safe and efficient.

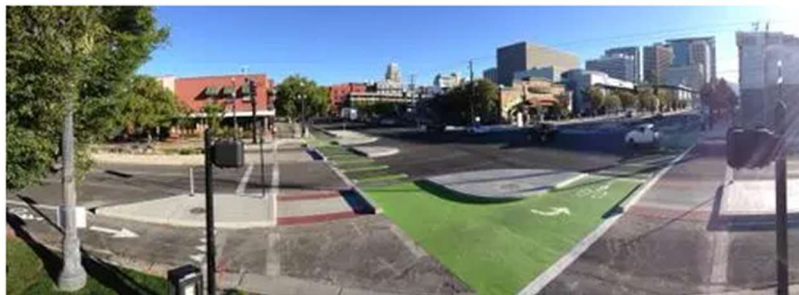
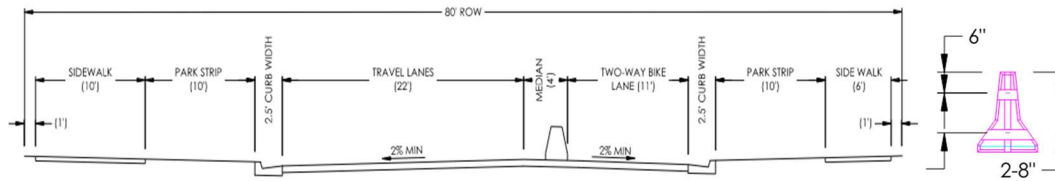


Photo: Alta Planning- 200 West 300 South, Salt Lake City

Bike Path Separated by Concrete Barriers

FHWA notes that separated bike lanes can improve traffic safety for all street users. Separated bike lanes can help to organize traffic modes while also reducing pedestrian crossing distances and can contribute to increased bicycling volumes in part by providing a safe bicycling environment that is more appealing to users of different age, skill, and ability. Separation of bicycle paths is commonly achieved through pavement markings, reflective delineators, raised curbs or "armadillos", and other ways.



1200 West typical road Cross-section

The 1200 West project utilizes 32-inch-tall concrete barriers that provide a physical protective barrier to users. Placement of barriers intentionally reduces lane widths and introduces curvature to the roadway. The shorter barrier maintains visibility of pedestrians while providing a safe haven for all users of the separated path.

Narrow Vehicle Travel Lanes

Studies show a direct correlation between lane width and vehicle speeds. It has been found that regardless of the posted speed limit, travelers tend to drive as fast as they feel comfortable. Historically modern roadways have been designed and constructed with 12-foot-wide travel lanes and some freeways have even wider lanes and shoulders that allow vehicles to travel at higher speeds. The National Association of City Transportation Officials (NACTO) has found that 10-foot-wide travel lanes widths are appropriate in urban areas and have a positive impact on a street's safety without impacting traffic operations. For designated truck routes, 11-foot-wide travel lanes are sufficient.

The 1200 West roadway was designed and constructed with 11-foot-wide vehicle travel lanes that will allow use by cars and trucks. Concrete barriers separating the bike path are intentionally placed to restrict lane width and provide curvature with the intent to reduce vehicle speeds.

Chicanes

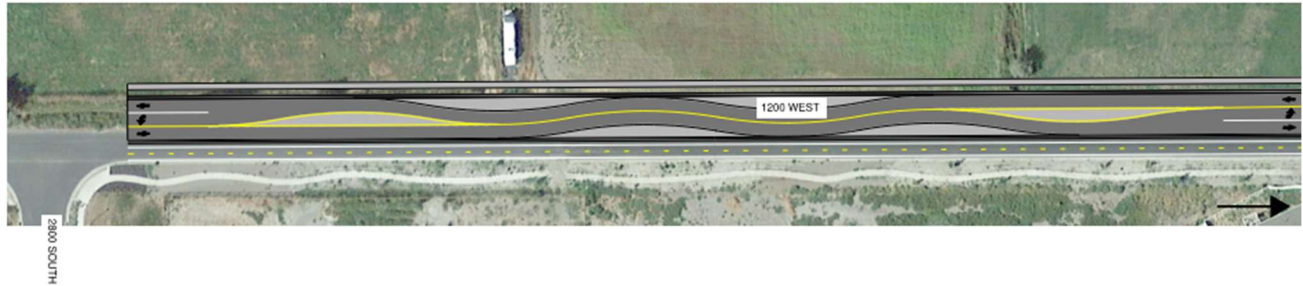
A chicane is a series of alternating curves or lane shifts located in a position that forces a motorist to steer back and forth rather than in a straight line. Chicanes and curvilinear roadways are very effective at maintaining safe vehicle speed. Three field studies have measured reductions between 3 and 9 miles per hour (FHWA).

The design and construction of the 1200 West project includes chicanes intended to reduce the speed at which a motorist is comfortable traveling through the treatment area. Chicanes can be combined with curb extensions that can alternate from side to side of a roadway. The concrete barriers along 1200 West above have intentionally been placed to introduce curves and narrowed lanes to ensure safe vehicle speeds.

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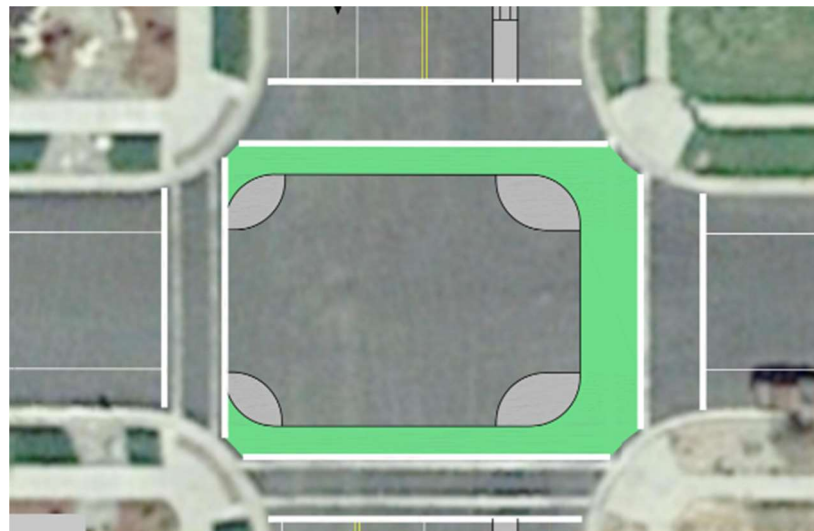
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Chicanes- 1200 West road project (CRS)

Colored Pavement Markings

Colored pavement markings will be installed at intersections along 1200 West to delineate and define intersections for motorists and bicycles. The colored pavement increases visibility of the intersection, identifies potential areas of conflict with other modes of travel, and reinforces priority to bicyclists in conflict areas. Using colored pavement raises motorist and bicyclist awareness to conflicts and increases bicyclist comfort through the delineated areas.



Colored pavement markings

Summary

Traffic calming can be a key element of a successful complete street, which is a roadway that is designed and functions to enable safe travel by all uses of all abilities. Although new to Nibley, roadway safety countermeasures are not new to transportation planning and design. Paying deliberate attention to the needs of all roadway users helps increase the quality of life in urban, suburban, and rural areas by reducing automobile speeds allowing safe options for travel within and around communities.

Nibley City's 1200 West project utilizes several traffic calming measures that have been

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proven to increase safety for all users. Through planning, design, and construction, the 1200 West project balances multiple modes of travel through deliberate attentiveness to vehicle, bicycle, and pedestrian needs.

If you'd like more information on safety treatments, please visit the FHWA and or NACTO websites.

<https://highways.dot.gov/safety/speed-management/traffic-calming-eprimer/module-3-part-1>

<https://nacto.org/publication/urban-street-design-guide/street-design-elements/>

Respectfully,

A handwritten signature in blue ink, appearing to read "Tom Dickinson", is written over a light blue horizontal line.

Tom Dickinson, P.E.
City Engineer