

CONSTRUCTION COSTS CASE STUDY



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Complete Streets Construction Cost Case Study: 300 West Street Reconstruction Project, Salt Lake City, UT

Location: Salt Lake City, UT (40.74 N, 111.90 W)




Project Length: 1.7 mi

Project Duration: June 2019–October 2022 (40 mo)¹

Problem Statement

The 1.7-mi stretch of 300 West Street between 900 South Street and 2100 South Street¹ in Salt Lake City is a highly traveled road that had mobility and safety challenges for all users. Challenges included intermittent sidewalks in a poor state of repair, with obstructions such as light poles and fire hydrants in the right-of-way (a hinderance to assistive-mobility users); an absence of bicycle lanes; and a lack of amenities and landscaping. Mobility and safety challenges created an inaccessible and unsafe experience for nonmotorists and contributed to a lack of cohesive community character. A significant percentage of the roadway pavement was in poor condition. Lighting inadequacies were outside the scope of this project because lighting is not under the purview of the city's Department of Transportation (DOT).

Modal Focus (check all that apply):

- | | |
|---|---|
| <input checked="" type="checkbox"/>  Pedestrians | <input checked="" type="checkbox"/>  Transit users |
| <input checked="" type="checkbox"/>  Bicyclists | <input type="checkbox"/>  Freight providers |
| <input type="checkbox"/>  Micromobility users | <input checked="" type="checkbox"/>  Motorists |

Project Context

The project involves a 1.7-mi section of 300 West Street with annual average daily traffic of approximately 21,000 vehicles (in 2021). A major freeway corridor (I-15 and I-80) runs parallel to 300 West Street. Within the project limits, there are two freeway interchanges to the west at 2100 South Street and 1300 South Street. Prior to the Complete Street project, the roadway had four to six 12-ft travel lanes (two or three in each direction); intermittent shoulders; and on-street, parallel parking on both sides of the roadway. The curb-to-curb right-of-way (ROW) width is approximately 80 ft. Although the posted speed limit was 35 mph, most vehicles traveled at 40 mph or more. Transit buses use the roadway, and a transit rail line runs parallel to the roadway one block to the east.

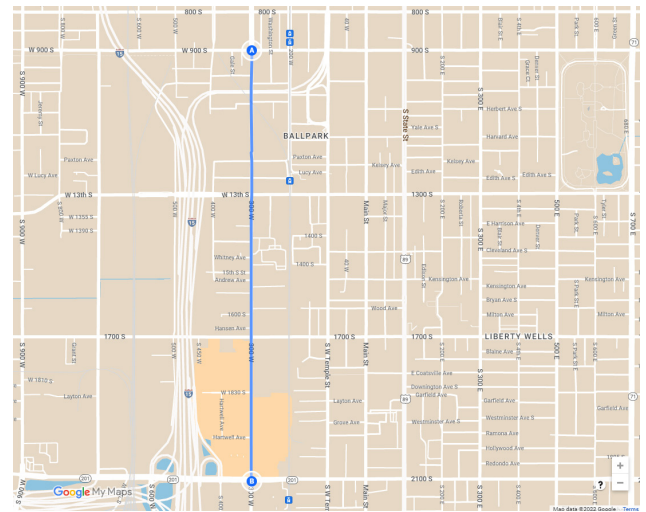
¹ Salt Lake City applies the same cardinal direction name to many streets (e.g., many streets are named South Street or West Street) and differentiates the streets by adding a number preceding the cardinal direction name (e.g., 900 South Street, 2100 South Street).

Context refers to the built environment within which the roadway is located. The road was built in the early 1970s to accommodate freight vehicles servicing manufacturing shops, but restaurants, brew pubs, big-box stores, and strip malls have developed along the roadway. The city had not modified the roadway to reflect the change in use. The roadway lacked the active transportation infrastructure necessary to serve the pedestrians, bicyclists, transit users, and motorists who live nearby and patronize the businesses. The American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets: The Green Book*, 7th Edition provides information about traditional functional classifications for roadways as well as context classifications.⁽¹⁾ For this project, the roadway context is urban, and the functional classification is arterial. Figure 1 presents a map of the project location.

Community Engagement Summary

The city designed the 300 West Street Reconstruction project (from 2100 South Street to 900 South Street) in accordance with Salt Lake City’s Complete Streets ordinance, local plans, and public input obtained in 2019 and early 2020.^(3,4) Community engagement involved focus groups, online and pedestrian intercept surveys, and workshops. Feedback from the community highlighted inadequate sidewalks and crosswalks, aggressive driving at high speeds (e.g., frequent passing, passing on the right), an absence of bicycle lanes, deteriorated pavement surfaces, and a generally unattractive roadway. The city used this feedback to develop draft improvement plans and designs that were subjected to further public scrutiny and updates as the project progressed. The International

Figure 1. Map. Location of 300 West Street Reconstruction project.⁽²⁾



Original map: © 2022 Google® My Maps™.
Modified by FHWA (see Acknowledgement section).

Association for Public Participation (IAP2) awarded the outreach for the project an IAP2 Core Value Award at the association’s United States and Canada conference in 2021.⁽⁵⁾

Project Improvements

Table 1 contains a detailed summary of project improvements. Figure 2 and figure 3 present the before and after improvement photos from a roadway segment on 300 West Street (between 900 South Street and 2100 South Street).

Table 1. Project improvements.

Problem	Description of Improvements
Intermittent sidewalks in a poor state of repair with obstructions in the ROW.	Sidewalks reconstructed and widened to 6 ft on both sides of the roadway, raised to separate pedestrians from vehicle traffic, buffered from the roadway travel lanes by new landscaping, and curb ramps with detectable warning surfaces that are compliant with the Americans with Disabilities Act (ADA). ⁽⁶⁾
Inadequate crosswalk facilities for all users.	At-grade, ADA-compliant crosswalks with accessible pedestrian signals; dual radius corner islands at signalized intersections (protected intersections); and new midblock crossings with refuge islands and pedestrian hybrid beacons.
Absence of bicycle lanes.	A 10-ft, grade-separated, two-way bicycle lane on one side of the street, raised to separate bicyclists from vehicle traffic, buffered from the roadway travel lanes by new landscaping.
High driveway density leading to points of conflict and congestion.	Existing roadway configuration repurposed into four 11-ft travel lanes (two in each direction) and one 12-ft center turn lane, which reduced vehicle operating speeds and provided a safer environment for merging traffic on the roadway and incoming vehicles from driveways.

Table 1. Project improvements (continued).

Problem	Description of Improvements
Inadequate transit facilities.	Bus stops with highly durable surfacing to facilitate bus transit.
Lack of amenities and landscaping.	Landscaping strips, drought-resistant tree canopy and vegetation, and water-wise landscaping improved environmental and aesthetic quality. Improved stormwater drainage by upgrading drainage systems, curb and gutter, and bioretention systems.

Note: This project did not specifically address potential inadequacies with lighting throughout the project area because, in Salt Lake City, lighting is the responsibility of an agency outside the city DOT. However, spot improvements, such as relocating light poles and providing a conduit for future lighting, were done as part of this project.

Figure 2. Photo. A roadway segment on 300 West Street before improvement.



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These images are intended to be examples of real-world, existing conditions; the conditions shown in the photos are not limited to best practices, approved designs, or approved behaviors, and may reflect conditions that are not recommended.

Figure 3. Photo. A roadway segment on 300 West Street after improvement.



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These images are intended to be examples of real-world, existing conditions; the conditions shown in the photos are not limited to best practices, approved designs, or approved behaviors, and may reflect conditions that are not recommended.

Project Results

Feedback from users and community members since completion of the first phases of this project indicates general satisfaction with the enhancements in safety, mobility, aesthetics, and comfort. The road diet decreased vehicle speeds and shortened the crossing distance for pedestrians and bicyclists. Raised sidewalks and bicycle lanes improved user visibility and safety. The landscape strips, tree canopy, and drought-resistant landscaping served as a buffer between vehicles and active transportation users and improved the environment.

Project Funding Sources

- State: Class C Road Funds.²⁽⁷⁾
- Local:
 - Local bond.
 - Impact fees.
 - Public utilities (water, storm drain, sewer).

Project Delivery Mechanism

- | | |
|---|--|
| <input type="checkbox"/> Alliance contracting/integrated project delivery (IPD) | <input type="checkbox"/> Construction manager/general contractor (CM/GC) |
| <input type="checkbox"/> Progressive design-build (PBD) | <input type="checkbox"/> Public-private partnership (P3) |
| <input type="checkbox"/> Design-build (D-B) | <input type="checkbox"/> Project bundling |
| <input checked="" type="checkbox"/> Design-bid-build (D-B-B) | <input type="checkbox"/> Indefinite delivery/indefinite quantity (IDIQ) |

² The Utah Legislature established the Class B and C 300 system funding program in 1937 as a means of aiding counties and incorporated municipalities for the improvement of roads and streets throughout the State. The funds differ from ordinary local revenues because they are subject to administrative direction by the State. The Utah DOT is the administrative authority on behalf of the State.

Project Costs*

Total Project Costs – \$18,678,459

Construction

- Mobilization – \$2,095,550
- Traffic control (upgrade signal and detection) – \$978,514
- Roadway construction and related activities – \$7,397,234
- Lighting (furnish and install street lighting) – \$224,476 (\$37,412 each)
- Concrete sidewalk – \$442,600 (\$5 per sq ft)
- Curb ramps (with detectable warning surface) – \$156,600 (\$2,610 per sq ft)

Utility Adjustments

\$262,000

Right-of-Way

\$0

Project Website

<https://www.slcc.gov/mystreet/300west/>⁽³⁾

- Pedestrian hybrid beacons – \$238,754 (4 units at \$59,688 per unit)
- Pedestrian crossing improvements (crosswalks, refuge islands) – \$176,400
- Road diet (lane striping and markings) – \$106,534
- Concrete bicycle lane (colored) – \$920,000 (\$12 per sq ft)
- Drainage – \$2,008,065
- Landscaping (irrigation system, planting, cobble rock, crushed rock) – \$893,525

Preliminary Engineering

\$2,778,207

*Project costs include improvements that benefit mobility in general and may have been necessary regardless of any safety improvements.

Acknowledgment

The map in figure 1 was modified by the authors to mark the path of the 300 West Street Reconstruction project location in Salt Lake City. The original map is the copyright property of Google® My Maps™ and can be accessed at <https://www.google.com/maps/place/40%C2%B044'24.0%22N+111%C2%B054'00.0%22W/@40.7368984,-111.9028431,15.25z/>.⁽²⁾

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