

CONSTRUCTION COSTS CASE STUDY



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Complete Streets Construction Cost Case Study: Village Center in the City of La Quinta, CA

Location: City of La Quinta, CA (33.68 N, 116.30 W)

Project Length: 1.5 mi

Project Duration: August 2019–January 2021 (17 mo)







Problem Statement

Officials identified several safety and mobility challenges on the three roadways that serve the village center of the city of La Quinta: Calle Tampico, Eisenhower Drive, and Calle Sinaloa (also known as 52nd Avenue or Avenue 52).

They identified the following challenges:

- Pedestrian crossing opportunities were only at intersections that were spaced more than 1,000 ft apart.
- Crosswalks at intersections had no curb extensions or median refuges to reduce pedestrians' and bicyclists' exposure to vehicle traffic.
- Most vehicles (85 percent) along Calle Tampico, Eisenhower Drive, and Calle Sinaloa traveled faster than the posted speed limit (45 mph, 40 mph, and 40 mph, respectively) according to speed surveys from 2007 through 2014.
- Crosswalks were not clearly visible to motorists, and signalized intersections had as many as 32 conflict points (pedestrian and bicycle, pedestrian and vehicle, and bicycle and vehicle).
- Sidewalks and bicycle lanes were not contiguous (with approximately 30 percent gaps). There was no direct connection for pedestrians and bicyclists to reach Bear Creek Trail, a popular destination and an essential route for children to access school.
- Vehicles exiting driveways merged immediately with high-speed traffic, a complex and difficult maneuver for drivers.
- Sidewalk curb ramps were not compliant with the Americans with Disabilities Act (ADA).⁽¹⁾
- Lighting was inadequate for pedestrians in the project area.

Modal Focus (check all that apply):

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

Project Context

The city of La Quinta has a vibrant village center with restaurants, shops, hotels, the La Quinta Museum, a library, a wellness center, city hall, parks, and an elementary school. Many residents live within half a mile of the village center, and they walk, bicycle, or drive to destinations of interest. Three roadways serve as primary routes to the village center’s attractions: Calle Tampico between Eisenhower Drive and Washington Street, Eisenhower Drive between Calle Tampico and Calle Sinaloa, and Calle Sinaloa and 52nd Avenue between Eisenhower Drive and Washington Street—from Eisenhower Drive to Desert Club Drive.

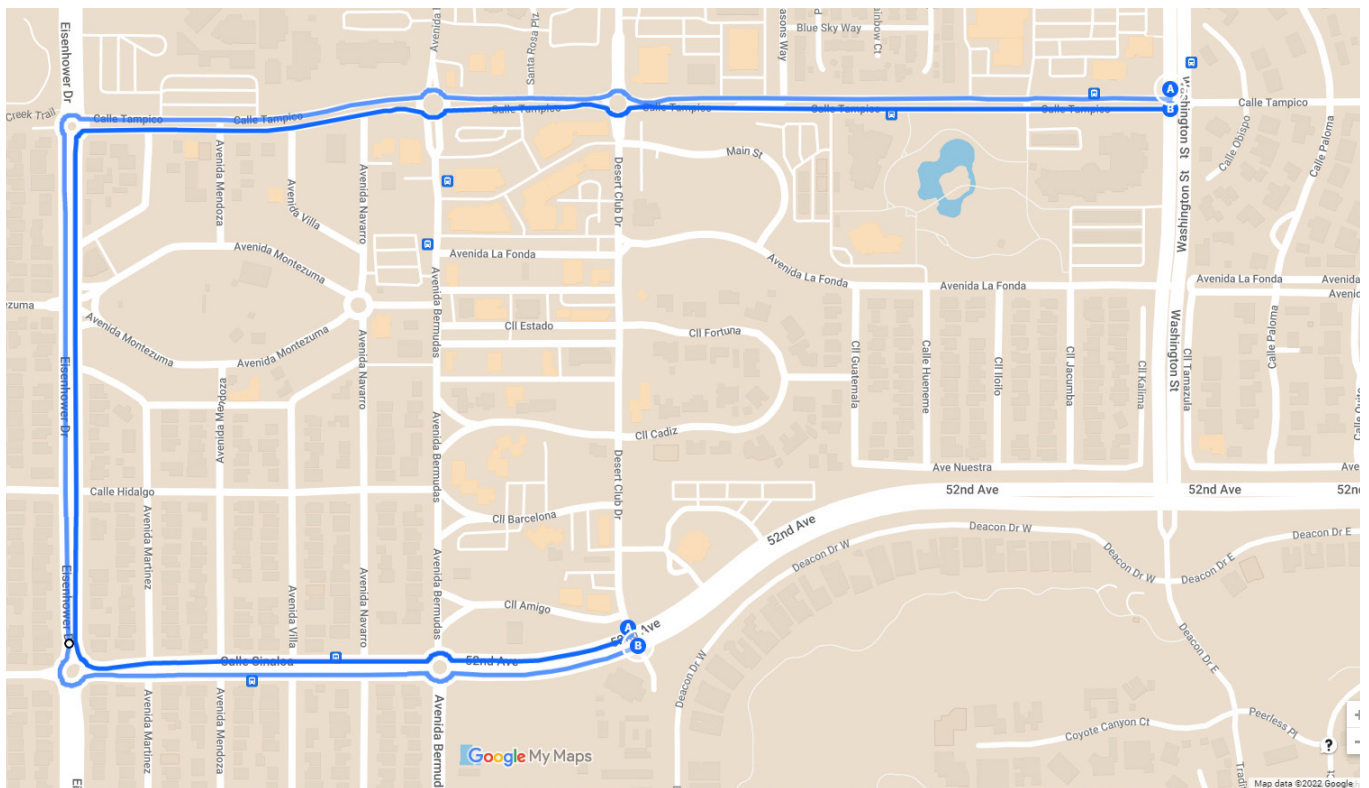
Context refers to the built environment within which the roadway is located. The American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets: The Green Book*, 7th Edition provides information about

traditional functional classifications for roadways as well as context classifications.⁽²⁾ For all three roadways, the roadway context is suburban, and the functional classification is arterial.

Prior to the La Quinta Village Complete Streets project, each of the three roadways had four 12-ft travel lanes and a raised center median. The right-of-way of each roadway was approximately 108 ft wide. Average daily traffic volumes exceeded 10,000 vehicles on all three roadways. Speed surveys showed that 85 percent of all traffic on the three roadways operated above the posted speed limit. Figure 1 shows the project location.

The city of La Quinta had been planning a revitalization of the village center, in part by promoting an environment friendly to pedestrians and bicyclists and by improving safety and mobility for all roadway users. Addressing the problems identified in the La Quinta Village Complete Streets project was part of the revitalization effort.⁽⁴⁾

Figure 1. Map. La Quinta Village Complete Streets project location.⁽³⁾



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

Community Engagement Summary

The city partnered with the Southern California Association of Governments (SCAG) Go Human community engagement program to seek public input on how to revitalize the village center and create an environment friendly to pedestrians and bicyclists while promoting safety and mobility for all users.⁽⁵⁾ The city began gathering input with surveys, virtual consultations, and face-to-face meetings focused on safety and mobility challenges. Feedback indicated a desire for the following changes:

- Improved infrastructure for pedestrians and bicyclists (particularly crossings and refuge areas).
- Traffic calming.
- Reduced points of conflict at intersections.

The city incorporated initial feedback in developing plans for the La Quinta Village Complete Streets project. As

the project progressed, the city engaged further with the community and revised the original project accordingly.¹ The nature of the engagement changed to informing all users—pedestrians, bicyclists, and motorists—on how to use the new or improved infrastructure. Community engagement was bilingual (English and Spanish).

Project Improvements

The city constructed improvements where pedestrian, bicycle, golf cart, and automobile traffic existed. The reduced travel lanes and midblock crosswalks provide access to a park, Old Town La Quinta, and an elementary school. The city also enhanced existing lighting facilities to improve illumination for pedestrians and bicyclists, among others. Table 1 contains a detailed summary of the project improvements. Figure 2, figure 3, figure 4, figure 5, and figure 6 present the before and after improvement photos from a roadway segment at Calle Tampico in La Quinta.

Table 1. Project improvements.

| Problem | Description of Improvements |
|---|---|
| <p>Lack of visibility for pedestrian and bicycle crossings at intersections.</p> <p>Long distances between intersections with no options to cross midblock.</p> | <ul style="list-style-type: none"> • Conventional intersections reconstructed as roundabouts with high-visibility crosswalks. • High-visibility crosswalks midblock (between roundabouts) to reduce the distance between existing intersections. • Rectangular Rapid Flashing Beacons (RRFBs) at midblock crosswalks to further increase visibility. • Pedestrian signals with push buttons to facilitate movement through the crosswalk. • Curb extensions and midblock refuge medians to break the crossing distance into two and thus reduce pedestrian and bicyclist exposure to vehicle traffic |
| <p>Narrow sidewalks with curb ramps that were not compliant with the ADA.</p> <p>Gap in bicycle lane network.</p> | <ul style="list-style-type: none"> • Four travel lanes reduced to two, right-of-way freed up to widen sidewalks, occasional on-street parking, and closed gaps in bicycle networks. • ADA-compliant curb ramps (new and existing). |
| <p>Many conflict points in intersections.</p> <p>Inadequate timing at signalized intersections.</p> | <ul style="list-style-type: none"> • Five single-lane roundabouts with 8 conflict points each replaced signalized and stop-controlled intersections that had 32 conflict points each. • Roundabouts reduced vehicle congestion (stacking and backups) emanating from the intersections. |

¹ California developed specific plans for communities to complement countywide, comprehensive general plans.

Table 1. Project improvements (continued).

| Problem | Description of Improvements |
|---|---|
| Operating speeds greater than posted speed limits. Driveways merged directly into high-speed travel lanes (no turn lanes available). | Traffic calming—the combination of road diet (reduced four travel lanes to two, one lane in each direction) and roundabouts (replaced all five intersections)—reduced operating speeds, which provided a safer environment for merging traffic on the roadway and incoming vehicles from driveways. |
| Inadequate drainage and landscaping infrastructure. | <ul style="list-style-type: none">• Roundabouts, splitter islands, and water quality features designed to enhance and blend into the landscape using the city’s “desert oasis” color palette.• Improved stormwater system. |
| Inadequate lighting. | Enhanced lighting facilities and additions to improve illumination for pedestrians, bicyclists, and other users. |

Figure 2. Photo. The intersection of Calle Sinaloa, Avenida Bermudas, and 52nd Avenue 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. The intersection of Calle Sinaloa, Avenida Bermudas, and 52nd Avenue 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.

Figure 4. Photo. A view of the intersection of Calle Tampico and Avenida Bermudas during 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 5. Photo. Another view of the intersection of Calle Tampico and Avenida Bermudas during 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 6. Photo. A view north along Eisenhower Drive toward the intersection of Eisenhower Drive and Avenida Montezuma.



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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

By implementing the La Quinta Village Complete Streets project and replacing existing intersections with roundabouts, the city reduced congestion and delay along all three roadways. Specifically, traffic-calming measures considerably reduced vehicle speeds and made merging from driveways onto travel lanes less complex and safer. Midblock crosswalks, connectivity to Bear Creek Trail, and closed gaps in bicycle lanes provide safer access to the village center and elementary school. There has also been an increase in pedestrian and bicycle traffic after construction.

Although crash counts are not available since construction was completed because of interruptions arising from the global pandemic, city officials report zero fatalities on the three roadways from the completion of the project in 2021 through June 2022.

Project Funding Sources

- Federal.
- State:
 - Caltrans Active Transportation Program grant.⁽⁶⁾
 - California Senate Bill 1 Road Maintenance and Rehabilitation Account.⁽⁷⁾

- Regional and local:
 - La Quinta Art in Public Places program.⁽⁸⁾
 - Coachella Valley Water District rebate.⁽⁹⁾
 - Special Gas Tax Street Improvement Fund.⁽¹⁰⁾
 - Measure A funds (local ½-cent sales tax dedicated to transportation).⁽¹¹⁾
 - Measure G funds (local 1-cent sales tax).⁽¹²⁾
 - Transportation Uniform Mitigation Fee (development impact fee).⁽¹³⁾

Project Delivery Mechanism

- | | |
|---|---|
| <input type="checkbox"/> Alliance contracting/integrated project delivery (IPD) | <input checked="" 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 type="checkbox"/> Design-bid-build (D-B-B) | <input type="checkbox"/> Indefinite delivery/indefinite quantity (IDIQ) |

Project Costs*

Total Project Costs – \$12,567,196

Construction – \$11,187,115

- Mobilization – \$480,000
- Roadway construction and related activities – \$5,357,564
- Roundabouts – \$2,410,000 (\$482,000 each)
- Lighting (furnish and install street lighting) – \$500,000 (\$8,772 each)
- Concrete sidewalk (becomes shared-use path close to roundabouts) – \$339,346 (\$77 per lin ft)
- Curb ramps (with detectable warning surface) – \$252,950 (\$2,342 each)

Utility Adjustments

\$0

Right-of-Way

\$31,194

Project Website

<https://www.laquintaca.gov/our-city/complete-streets>⁽⁴⁾

- Pedestrian beacons (RRFBs) – \$215,000 (28 units at \$7,679 per unit)
- Pedestrian crossing improvements (median refuge) – \$51,146 (\$2,131 each)
- Road diet (lane striping and markings) – \$90,000
- Asphalt concrete bicycle lane (lane striping, markings, and green-colored surfacing) – \$125,423 (\$28.86 per lin ft)
- Drainage – \$414,100
- Landscaping (irrigation system, planting, cobble rock, crushed rock) – \$951,586

Preliminary Engineering

\$1,348,887

*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 La Quinta Village Complete Streets project location. The original map is the copyright property of Google® My Maps™ and can be accessed at <https://www.google.com/maps/@33.6754344,-116.3014193,17z>.⁽³⁾

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