

PART I: General Project Information

1. **Project Title/Project Name:** Bay/High Roundabout
2. **Project summary:** Funding for design through construction of a new roundabout at the Bay/High intersection to reduce greenhouse gas emissions, increase safety, and improve mobility for all modes.
3. **Project Location:** The intersection of Bay Drive and High Street in Santa Cruz.
 - **Project Length:** N/A
 - **Caltrans Roadway Classification:**
 - Bay Drive: Other principal arterial
 - High Street: Minor Arterial
4. **Total Funding Requested:** \$1,600,000

Total Project Cost: \$2,150,000
5. **Project Applicant:** City of Santa Cruz
6. **Project Priority:** This is priority number # 3 of # 4 applications submitted.
7. **Detailed Project Description/Scope:**

With General plan buildout this intersection will operate at LOS F and currently has collisions associated with unprotected left-turns.

This project will design, permit, and construct a roundabout at the intersection of Bay Drive and High Street. This project will increase safety for all roadway users, increase efficiency, and decrease GHG emissions. The Bay/High Roundabout will include facilities for all users, including autos, pedestrians, bicyclists, and transit users. Best practices in roundabout design will be used.

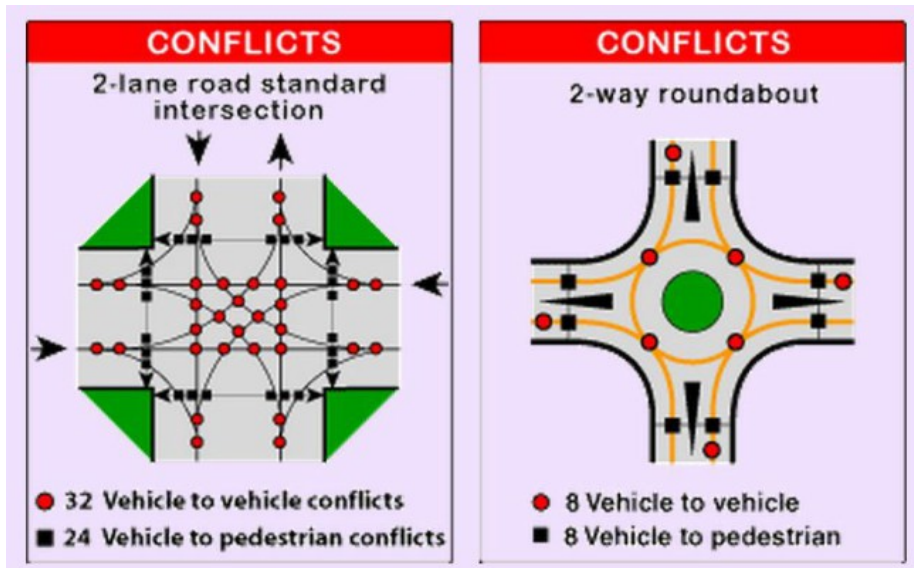
There will be coordination with applicable agencies, including METRO, UCSC, and the County as needed throughout the project.

8. **What accommodations, if any, are included for bicyclists, pedestrians, and/or transit in the proposed project?**

This project will improve accommodations for all modes.

For transit, efficiency will be improved via having to yield instead of stop.

For pedestrians and cyclists, safety will be improved by reducing autos speeds and reducing the number of potential conflict points. Best practices in bicycle and pedestrian design features will be incorporated in to the project, including sidewalks and bike lanes.



9. If the proposed project does not incorporate both bicycle and pedestrian facilities, or if the proposed project would hinder bicycle or pedestrian travel, list reasons why the project is being proposed as designed.

N/A

10. Project Cost by Mode: (Approximate percentage of total project costs related to different transportation modes.)

	% of Total Cost by Mode
Pavement Preservation (rehab, overlay, etc)	0%
Road –Auto Serving	75%
Bicycle	5%
Pedestrian	15%
Transit	5%
TSM*	0%
TDM*	0%
Planning	0%
TOTAL	100%

11. Regional Transportation Plan (RTP):

- Is project included in the 2014 RTP or draft 2040 RTP? Yes
- If yes, RTP Project Number (ID#): (from [RTP Project List](#)) SC-P109
- Project costs are identified as: “Constrained” and/or “Unconstrained” in the RTP

*TSM=Transportation System Management (ex. ITS, signal synchronization);

*TDM=Transportation Demand Management (ex. rideshare programs)

12. **Project Schedule**

Project Milestone – Capital Projects			Month/Year
Begin Environmental (PA&ED) Phase	Document Type (ex. EIR, Cat Ex, Neg Dec, etc)	MND	11/1/2018
Circulate Draft Environmental Document			4/1/2019
End Environmental Phase (PA&ED Milestone)			7/1/2019
Begin Design (PS&E) Phase			11/1/2018
End Design Phase (complete PS&E)			9/1/2019
Begin Right of Way Phase			9/1/2019
End Right of Way Phase (Right of Way Certification Milestone)			10/1/2019
Request Authorization to Proceed with Construction (completion of all prior tasks)			12/1/2019
Advertise/go out to bid			2/1/2020
Award Contract			4/1/2020
End Construction Phase (Construction Contract Acceptance Milestone)			11/2/2020
End Closeout Phase (Closeout Report)			3/1/2021

13. **Contact** Person/Project Manager Name: **James Burr, PE**

Telephone Number: 831-420-5426 E-mail: jburr@cityofsantacruz.com

PART II: Project Benefits

Given the large backlog of transportation needs in the region and the extremely limited amount of funding available, it is important to ensure that funds are used cost effectively to maximize benefits to the transportation system. Additionally state and federal rules, as well as RTC policies, require consideration of how projects will contribute towards implementation of the long-range transportation plan (*Regional Transportation Plan*), the achievement of one or more transportation goals, and implementation of state and federal policies including the California Complete Streets Act of 2008, SB375, and the Federal FAST Act.

Information in this section will be used to evaluate projects. Projects are not expected to address all of the following. Please write N/A if something is not applicable to your project.

1. Generally, what are the benefits of this project? (ex. goal/purpose/benefit of project; problem to be addressed; importance to the community)

Roundabouts improve safety and efficiency and reduce greenhouse gas emissions.

According to the Federal Highway Commission, roundabouts can reduce the number of serious collisions by 78-82% when compared to traditional stoplight intersections. Serious collisions are those that cause injury and death. The Federal Highway Commission also cites the reduction in conflict points as another reason roundabouts are much safer. A traditional intersection has 32 points of conflict. These are the points where traffic merges together, separates, or crosses traffic. Compared to an intersection, a roundabout has only eight conflict points.

Additionally, the Monterey Bay Area Complete Streets Master Plan lists other benefits of roundabouts as:

- Little to no delay for pedestrians, who have to cross only one direction of traffic at a time.
- Improved accessibility to intersections for bicyclists through reduced conflicts and vehicle speeds.
- A smaller carbon footprint. Less lighting is required for operation and fuel consumption is reduced as motor vehicles spend less time idling and don't have to accelerate as often from a dead stop.
- Little to no stopping during periods of low flow.
- Significantly reduced maintenance and operational costs required by signals and lights
- Reduced delay, travel time, and vehicle queue lengths.
- Lowered noise levels.
- Less fuel consumption and air pollution.
- Simplified intersections.
- Facilitated U-turns.
- The ability to create a gateway and/or a transition between distinct areas through landscaping.

This project will improve the overall function of the Bay/High intersection for all modes.

2. How many people will directly use or directly be served by this project per day?

of direct users per day: 21,356 autos , 9799 transit, 3,801 bikes, 3,317 pedestrians

of indirect users: na

Basis for estimates: UCSC Settlement Agreement Monitoring Report:

(http://lrtp.ucsc.edu/MonitoringReports/2015-16_Settlement_Report.pdf) , Santa Cruz METRO Quarterly Average Ridership by Route for UCSC routes multiplied by number of trips/day

(<http://scmttd.com/images/department/board/archive/agendas/2017/scmttd-bod-agenda-08-25-17A.pdf>) . Bike and pedestrians counts are estimates extrapolating Census mode split data (10.2% bike, 8.9% walk) to

the total trip volume.

3. Which groups will be the primary users of this facility/project/program?

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Commuters | <input type="checkbox"/> Youth | <input checked="" type="checkbox"/> College Students |
| <input checked="" type="checkbox"/> Low income residents | <input checked="" type="checkbox"/> Elementary Schools | <input checked="" type="checkbox"/> Visitors |
| <input type="checkbox"/> Seniors | <input type="checkbox"/> Middle Schools | <input type="checkbox"/> Trucks (goods movement) |
| <input checked="" type="checkbox"/> Disabled | <input type="checkbox"/> High Schools | <input checked="" type="checkbox"/> Recreational users |
| <input checked="" type="checkbox"/> Other: <u>UCSC students and staff</u> | | |

a. Briefly describe any indirect or secondary beneficiaries of the project: NA

4. What are the key destinations served by this project and distance from project/facility?

(including on a map is encouraged, but not required)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Employment centers <u>0 mi-1.6 mi</u> | <input type="checkbox"/> Senior centers <u>Enter distance</u> |
| <input type="checkbox"/> Senior housing <u>Enter distance</u> | <input type="checkbox"/> K-12 Schools <u>Enter distance</u> |
| <input type="checkbox"/> Groceries/Services <u>Enter distance</u> | <input type="checkbox"/> Retail/Commercial cent <u>Enter distance</u> |
| <input checked="" type="checkbox"/> Transit centers <u>0 mi (Bay/High major transfer point)</u> | <input type="checkbox"/> Visitor destination <u>Enter distance</u> |
| <input type="checkbox"/> Parks/recreational area <u>Enter distance</u> | <input checked="" type="checkbox"/> Civic/public facilities <u>0 mi</u> |
| <input checked="" type="checkbox"/> Other destinations: <u>UCSC campus*, 0 mi</u> | |

***note: this project is at the entrance to UCSC. Distances vary based upon where on campus the user is traveling.**

a. Are planned (future) land use projects anticipated to increase travel through project area?

- Yes – significant growth in travel
 Yes – mild growth in travel
 No – No growth in travel

List planned transportation and/or land use projects that could affect circulation in the project area in the future – if any: Campus housing projects, increase in campus enrollment.

5. Existing Roadway Conditions – Projects on Roadways only – N/A for other projects

a. Provide information on existing and projected conditions/context for projects on roadways

	Existing	With project (write "N/C" if no change)
<u>Functional classification</u> of this road*	Other Principal arterial (Bay) Minor Arterial (High)	N/C
# of automobile lanes (2, 4, 3, etc)	NB/EB: 3 SB/WB:3	NB/EB: 1 SB/WB: 1
2-Way Center Turn Lane (Yes/No)	N	N
Sidewalks (none, one side or both?)	Both	N/C
Sidewalk width (in feet)	5'	5' minimum
Landscaping (Yes/No)	Yes	N/C
On-Street Parking (Yes/No)	No	N/C
Bike lane width	5'	5' minimum after the roundabout
Intersections (Signalized/unsignalized)	Signalized	Unsignalized-roundabout
Pavement condition (PCI if available - or poor, fair, good)	92	N/C

Posted speed limit	30	N/C
Traffic Volumes	<u>21,356 autos</u>	28,700 maximum (2021, LRDP maximum)
Transit Route/Stops (Yes/No)	Yes	N/C
Truck Route (Yes/No)	Yes	N/C

*Note: STIP and STBG funds cannot be used on roads functionally classified as "local" or "rural minor collectors". See: http://dot.ca.gov/hq/tsip/hseb/crs_maps/index.php for classification information.

6. What travel condition(s) are improved or impacted as a result of the proposed project?

Safety: Improves transportation safety

How will project improve safety? According to the Federal Highway Commission, roundabouts can reduce the number of serious collisions by 78-82% when compared to traditional stoplight intersections.

- There is a history of collisions in the project area
- Number of severe injury or fatal incidents in project area in past 10 years: 14
- Reduces potential for conflict between cyclists and/or pedestrians and vehicles
- Safety improved for youth, vulnerable users (pedestrians/bicyclist), and/or transportation disadvantaged (low income, seniors, disabled, minority status)
- Provides access to/for emergency services
- There are currently perceived safety issues in the project area
- Reduces automobile speeds (e.g. traffic calming, speed limit, etc)

System Preservation: Preserves existing transportation infrastructure/facilities or services

- Improves Pavement Condition
- Extends useful life of a facility
- Maintains service
- Maintains state of good repair
- Repair/replace existing infrastructure/facility
- Other: _____

Why is this location/facility a priority over other facilities? (e.g. is project part of a pavement management plan?) _____

Reduces Vehicle Miles Traveled (VMT)

Shifts automobile travel to alternative modes.

Number of **trips per day** expected to shift from automobile to alternative mode as a result of this project: _____

- Decreases the number of people traveling in single occupancy vehicles
- Improves access to alternative modes (walk, bike, bus, carpool, etc)
- Increases the percentage of people that could walk, bike, or take transit to key destinations within 30-minutes or less
- New bike or pedestrian path
- Increases ridesharing
- Increases telework options
- Expands Transportation Demand Management (TDM) Programs

Reduces the need for travel

- Increases walking
 - There are currently lacking/insufficient pedestrian facilities
 - There are currently NO safe parallel pedestrian facilities
 - Improves connectivity, fills gap in sidewalk/pedestrian path network
 - Reduces distance to walk trip between locations by _____ miles
 - Adds new sidewalks or paths on: one or both sides of the street
 - Widens sidewalk path of travel for current and projected pedestrian volumes
 - Adds missing curb ramps
 - Upgrades facility to meet ADA accessibility requirements, implement ADA Implementation Plan
 - Reduces pedestrian crossing distance
 - Adds pedestrian signal heads
 - Adds pedestrian-actuated traffic signals or automatic pedestrian cycles
 - Adds audible countdown at intersection
 - Adds pedestrian-level lighting
 - Adds high visibility crosswalks
 - Adds illumination at crosswalks
 - Other crosswalk enhancements
 - Adds median safety islands
 - Minimizes driveways
 - Adds wayfinding signage
 - Adds shade trees (street trees)
 - Adds planter or buffer strips
 - Adds benches or other types of seating

- Increases bicycling
 - There are currently lacking/insufficient bicycle facilities
 - There are currently NO safe parallel bicycle facilities
 - Improves connectivity, fills gap in bicycle network
 - Reduces distance to bike (on bike lane or path) between locations by miles miles
 - New Class I bicycle path
 - New Class II bicycle path
 - New Class IV bikeway (e.g. “protected bikeway” or a “cycle track”)
 - Shared-Lane Marking (Sharrow)
 - New bicycle boulevard
 - Widens bicycle lanes from ____ feet to ____ feet wide
 - Widens outside lanes or improve shoulders
 - Adds bicycle actuation at signals (i.e., loop detectors and stencil or other means to make signals responsive to bicycles)
 - Adds bicycle box at intersection
 - Adds color-treated bicycle lane
 - Adds floating bicycle lane
 - Adds signs, signals and pavement markings specifically related to bicycle operation on roadways or shared-use facilities
 - Adds route/wayfinding signage
 - Adds long-term bicycle parking (e.g., for commuters and residents)

- Adds short-term bicycle parking
 - Increases public transit usage
 - There are currently lacking/insufficient transit facilities
 - There is currently lacking/insufficient transit service
 - Improves connectivity of transit, fills gap in transit network
 - Improves transit service reliability, frequency and/or efficiency
 - ITS/signal priority
 - Priority bus lane
 - Bus bulbs/pull outs
 - Increases transit service, reduces headways
 - Increases access to transit
 - Adds sidewalks to bus stops
 - Adds bicycle racks on buses
 - Improves access for people with disabilities
 - Adds bus stop(s)
 - Improves bus stop/station (adds/upgrades seating, lighting, shade/shelter, trash can, route information/maps, etc)
 - Provides real time bus arrival information
 - Adds Wi-Fi on bus
 - Reduces air pollution
 - Reduces greenhouse gas emissions (GHG)
 - Reduces fuel consumption
 - Cold in-place recycling or other lower emission paving process
 - Other: _____
 - Change in travel times and travel time reliability for what modes: _____
 - Makes travel times more reliable/predictable (consistency or dependability in travel times)
 - Reduces travel times
 - Reduces total traffic congestion
 - Reduces peak period traffic congestion X AM peak X PM peak
 - Shifts peak travel to off-peak periods
 - Reduces freight traffic congestion
 - Improves efficiency of the transportation system. Which modes? all
 - Implements Transportation System Management (TSM) programs/projects
 - Increases miles facility/service can carry passengers and/or freight/goods
 - Reduces disparities in safety and access for people who are transportation disadvantaged due to age, income, disability, minority status, or limited English proficiency
- How does project reduce disparities?
- Provides access to low income housing
 - Improves access to jobs
 - Provides access to senior life services (e.g. hospital, doctors office, senior center, etc.)
 - Other: _____

Increases ecological function (such as: increases tree canopy; improves habitat;
 improves water quality; reduces storm water runoff; enhances sensitive areas)

Other benefit(s). Please explain, if not addressed in prior questions:

7. Will project result in the elimination or reduction of an existing bike path or sidewalk? Will the proposed project sever or remove all or part of an existing pedestrian or bicycle facility or block or hinder pedestrian or bicycle movement? Yes No.

8. Has RTC previously funded a project in this area, what project and what year? (e.g. facility being upgraded, removed, modified, or replaced was previously funded by RTC)
No.

9. For ROADWAY Projects - Complete Streets Implementation/Design. Given the street design and existing and future conditions, please complete the following (for projects on roadways). (See the [Monterey Bay Area Complete Street Guidebook](#) for more information, definitions.)

a. Describe how this project is consistent with recommendations for street type in guidebook:

This project is consistent with the intersection principles of the Monterey Bay Complete Streets Guidebook (page 55).

b. Is the project area a candidate for the following?

- Road Diet (3 or more lanes, but ADT <20,000, history of bicycle collisions) Yes No
- Traffic Calming: Yes No
- Roundabout: Yes No
- Transit/Bike/Ped Prioritization at Intersection: Yes No
- Transit-Oriented Development/Transit Corridor (15 min. headways): Yes No
- Neighborhood Shared Street (e.g. "greenway" that reduces vehicle speeds, partial street closures, public spaces and amenities that encourage biking or walking): Yes No
- Pedestrian place/universal street (ex. roadway or alley with restricted vehicle access which often is serves as a plaza for assorted businesses): Yes No

c. Is the complete streets cross section/design for this type of street (as recommended in the Guidebook) supportable for this project? Yes No

If not, explain why:

Lack of ROW width

Insufficient Funding

Trees/environmental constraints

Existing Structures

Other: It's at an intersection, not a segment. This utilizes a roundabout, which is one of the recommended intersection treatments

d. What alternative designs were considered, if any?

Protected left turns with traffic signal.

e. What refinements of the cross section/design were needed?

- Removed/partial zones (Guidebook Ch. 5) for:
 Pedestrians Bicyclists Landscaping Vehicles Parking

- Considered alternative routes/locations for:
 Pedestrians Bicyclists Landscaping Vehicles Parking

f. Exemptions to Complete Streets (refer to Ch. 6 of the Guidebook)

- Is the project exempt from accommodating certain users? Yes No
- Is the cost excessively disproportionate to the need or probable use? Yes No
- There is a documented absence of current and future need? Yes No
- Other: _____

10. Describe the public input plan for this project.

This project has previously been considered by City Council. This project is included in the current adopted Capital Improvement Program, which was adopted by City Council. Additionally, this project is included in the 2014 RTC RTP.

Future public input will be sought at the City of Santa Cruz Transportation and Public Works Commission and the City Council. Additionally, if the RTC advisory committees are interested in commenting, staff will present the designs.

City of Santa Cruz staff will also coordinate with applicable agencies, including UCSC, METRO, and the County as needed.

11. Stakeholder Outreach: Which stakeholder groups have already provided input, or will be asked to provide input in future, on project scope and design?

Group	Provided input	Will seek input	Group	Provided input	Will seek input
Neighborhood Group			Transit Agency	yes	yes
Business Association			Adjacent jurisdictions	yes	yes
School	yes	yes	Environmental Groups		
Property Owners	yes	yes	Transportation Disadvantaged		
Bicycle Committees		yes	Senior Group	yes	yes
Pedestrian Committee			Other (define)		

Have specific changes to the project/program been requested by stakeholders? Yes No
 Please explain:

12. Describe project readiness/deliverability and potential risks to project schedule:

This project is ready to begin design. Staff anticipates coordinating heavily with UCSC and METRO during this design to ensure all modes of travel are accommodated.

Potential challenges to this schedule include coordination between agencies and providing access to the UCSC community and surrounding neighborhoods during construction.

**PART III
Project Budget & Funding Plan**

CAPITAL PROJECTS

Complete both sections A. "Cost/Funding Summary" and B. "Detailed Cost Estimate"

A. Cost/Funding Summary

Enter the amount to be expended for each project phase in each fiscal year by funding source.
Totals should calculate automatically if electronic file is used.

Project Title:

Bay/High Roundabout

Round figures to the nearest thousand dollars

Sources (Specify fund source type - ex. STBG, RSTP, STIP, AB2766, Local, TDA, etc)	Source Total	Committed or Uncommitted?	Phase of Work			
			Environmental (PA/ED)	Design (PS&E)	Right-of-Way (ROW)	Construction
New Funds Requested from RTC:	\$1,600,000	Uncommitted	\$0	\$0	\$0	\$1,600,000
Local: Traffic Impact Fees	\$550,000		\$50,000	\$190,000	\$10,000	\$300,000
Source 3:	\$0		\$0	\$0	\$0	\$0
Source 4:	\$0		\$0	\$0	\$0	\$0
Source 5:	\$0		\$0	\$0	\$0	\$0
Source 6:	\$0		\$0	\$0	\$0	\$0
Source 7:	\$0		\$0	\$0	\$0	\$0
Total	\$2,150,000		\$50,000	\$190,000	\$10,000	\$1,900,000

Fiscal Year each component to begin

(e.g. FY17/18, FY18/19, FY19/20, FY20/21, FY21/22, FY22/23)

FY 18/19	FY18/19	FY18/19	FY19/20
Environmental (PA/ED)	Design (PS&E)	Right-of-Way (ROW)	Construction

B. "Detailed Cost Estimate"

Project Title:	Bay/High Roundabout
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Item No.	Engineer's Estimate				
1	Environmental Studies and Permits				\$50,000
2	Plans, Specifications, and Estimate				\$190,000
	RIGHT OF WAY				
3	Right of Way Acquisition				\$10,000
4	Right of Way Support				\$0
5	Utility Relocation (exclude if included in construction)				\$0
	TOTAL RIGHT OF WAY COMPONENT COST				\$10,000
	CONSTRUCTION (update items to match actual items for project)				
	Item Description	Quantity	Units	Unit Cost	Total
6	Roadway Ex	6200	CY	\$30.00	\$186,000
7	Clearing and Grubbing	1	LS	\$20,000.00	\$20,000
8	PCC Pavement (Truck Apron)	85	CY	\$500.00	\$42,500
9	Minor Concrete (Stamped Paving)	11	CY	\$400.00	\$4,400
10	Minor Concrete (Island Curb)	26	CY	\$400.00	\$10,400
11	Minor Concrete (C,G & Sidewalk/SUP)	241	CY	\$400.00	\$96,400
12	Asphalt Concrete	4136	Ton	\$200.00	\$827,200
13	Aggregate Base	3715	CY	\$51.00	\$189,465
14	Storm Drain	1	LS	\$75,000.00	\$75,000
15	Intersection lighting	1	LS	\$60,000.00	\$60,000
16	Traffic stripes, pavement markers, signs and markings	1	LS	\$50,000.00	\$50,000
17	Traffic Control	1	LS	\$100,000.00	\$100,000
18	Utility Relocation (City share)	1	LS	\$100,000.00	\$100,000
23	Enviro Mitigation	1	LS	\$50,000.00	\$50,000
25	Landscape/Irrigation	18991	SF	\$5.00	\$94,955
26	Erosion Control	8000	SF	\$1.00	\$8,000
	SUBTOTAL CONSTRUCTION ITEMS				\$1,728,320
				CONTINGENCY	\$172,832
	TOTAL CONSTRUCTION COST				\$1,901,152
Total Cost					2,151,152



Figure 1: Vicinity Map



Figure 1 On High Street, looking west



Figure 2 On Bay, looking north