SHOPP Asset Management Pilot Request Form

SHOPPCPR: Ver 3 11/14

Submittal Date

Caltrans

Division of Transportation Programming
State Highway Operation and Protection Program (SHOPP)

Project Manager: Troy Arseneau

Phone: (707) 445-6377

Dist	County	Route	Prefix	PM	Prefix	PM	EA	PPNO	Project ID
01	Humboldt	101		85.8			X	X	X

☐ Includes Multiple Locations (Complete Page 2 of this Form)

MPO: Non-MPO

Project Location/Description (Include the nearest city, town or landmark)

US 101 and State Route 255 (SR 255) in Arcata, Humboldt County at US 101 post mile 85.83

Need for project and proposed improvements (Elaborate using PID language)

An interchange improvement has been identified at this location in the Humboldt County Regional Transportation Plan. The City of Arcata has recommended converting the existing cloverleaf interchange to a "dumbbell" type interchange, with a teardrop roundabout at the east and west end of the interchange. In addition, the roadway will be reconfigured through a road diet. Improvements include:
15-foot travel lanes, 5 foot bike lanes, 8 foot sidewalks, Removal of the existing cloverleaf ramps, and Revegetation of the cloverleaf ramp areas with native species.

PA&ED / M200	02/01/2021	R/W Cert / M410	02/01/2022	CCA / M600	09/01/2026
PS&E / M380	12/01/2021	RTL / M460	03/01/2022	END Project / M800	12/01/2027

Capital ($1,000)
(Escalated to FY of Programming)

	FY	Cost
R/W	2021/22	$1,250
Construction	2021/22	$10,650
	Total Capital	$11,900

Support ($1,000)

	FY	Cost
PA & ED	2021/22	$840
PS & E	2021/22	$1,480
R/W	2021/22	$340
Construction	2021/22	$1,140
	Total Support	$3,800

Legislative District Numbers
(Separate multiple Districts with a comma)

State Assembly	2
State Senate	2
Congressional	2

☐ Approved ☐ Denied

CAPITAL CONSTRUCTION COST ESCALATION RATE: 3.5%

District SFP (Print)	ML Suchanek ~~Jaime Matteoli~~	District SFP (Sign)		Phone	(707) 441-4581
District Director (Print)	Charlie Fielder	District Director (Sign)		Phone	(707) 445 6445
SHOPP Exec. (Print)		SHOPP Exec. (Sign)		Phone	

Nomination for the Asset Management Project Pilot

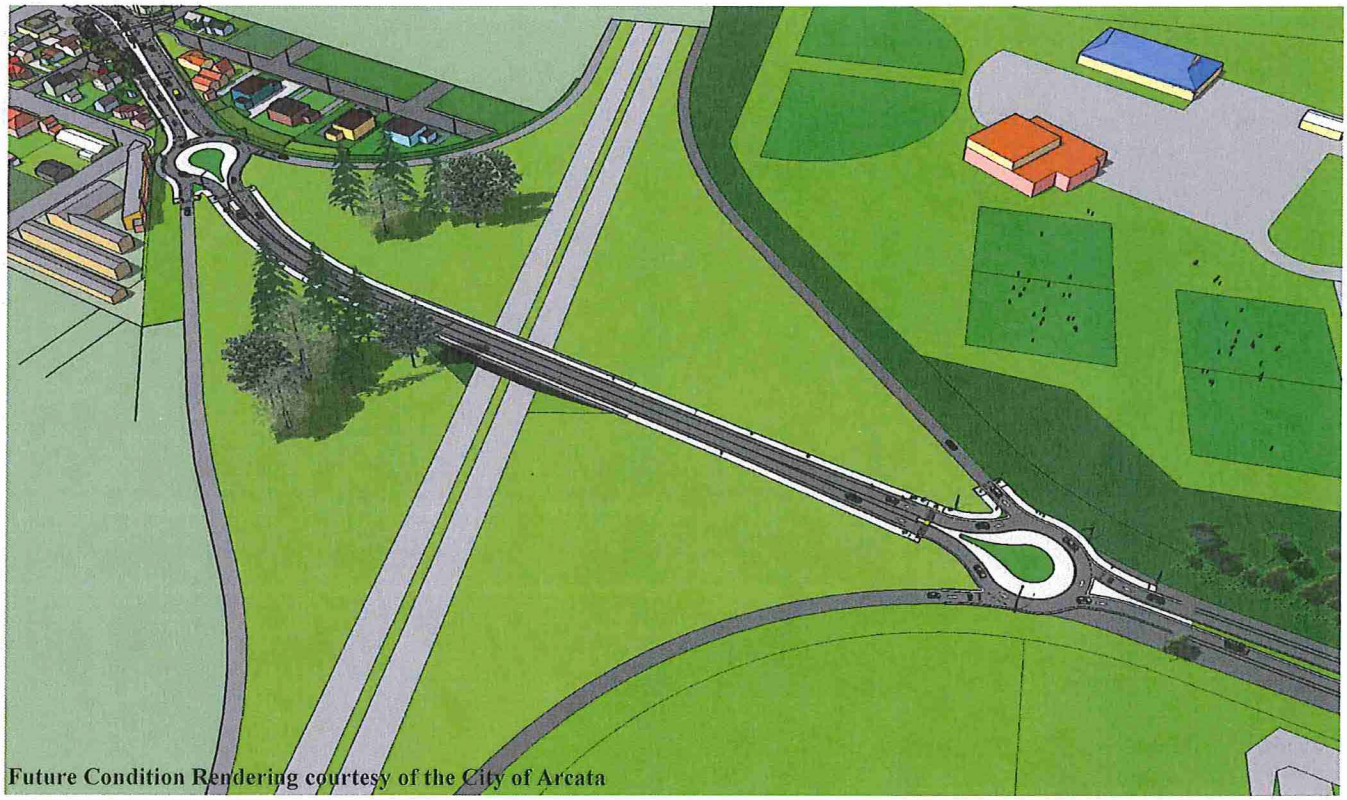
US 101/SR 255 interchange

Hum 101 PM 85.83/ Hum 255 PM 8.77

August 2015

This project proposes the use of the State Highway Operation and Protection Program (SHOPP) Asset Management pilot program to address multi-modal transportation needs and maintenance on US 101 and State Route 255 (SR 255) in Humboldt County at US 101 post mile 85.83. This pilot program nomination will describe the project and provide quantitative and qualitative assessment of the project relative to the Strategic Management Plan goals and state highway assets on the segment.

A multi-disciplinary team from District 1 identified and developed this project nomination. A project selection team met twice to identify potential projects and select projects to be nominated to this pilot program. The project selection team included representatives from District Management, Advance Planning, Regional Planning, System Planning, SHOPP Program Advisors and Coordinators, Traffic Operations, Traffic Safety, and Programming. District 1 Advance Planning and System Planning developed this project nomination with support from District SHOPP Advisors and in partnership with City of Arcata.



SAMOA BOULEVARD ROUTE 255 / U.S. 101 ROUNDABOUTS, PEDESTRIAN & BICYCLE IMPROVEMENTS PROJECT 2015

AERIAL VIEW LOOKING NORTH

Project Background

An interchange improvement has been identified at this location in the Humboldt County Regional Transportation Plan. The City of Arcata has recommended converting the existing cloverleaf interchange to a "dumbbell" type interchange, with a teardrop roundabout at the east and west end of the interchange. In addition, the roadway will be reconfigured through a road diet (four lanes to two lanes). Improvements include:

- 15-foot travel lanes,

- 5 foot bike lanes,
- 8 foot sidewalks,
- Removal of the existing cloverleaf ramps and approaches for drainage improvements,
- Revegetation of the cloverleaf ramp areas with native species, and
- Gateway improvements building upon previous AARA/TEA projects.

Scope of Work

Item (SHOPP Program Code)	Strategic Objectives (Goal)*	Performance Measures	Description of Work	Capital Cost ($1,000)
Roundabout and interchange reconfiguration (310)	User Safety (1) Worker Safety (1) Efficiently Manage Operations (2) People, Planet, Prosperity (3) Active Trans. (1) Complete Streets (4) Collaboration (5)	Construction of two roundabouts and interchange improvements	Costs include: Construction of two roundabouts, removal of four cloverleaf ramps, Bike lanes, raised median, and sidewalks	$8,400
ADA ramps (378)	People (3) Complete Streets (4)	Construct 8 ADA curb ramps	Cost includes the construction of 8 ADA curb ramps	$40
Census Station Replacement (240)	Efficiently Manage Operations (2) Improve integration and operation (4)	Replace one two-lane census station	Cost includes the replacement and upgrade of one census station	$60
			Total	$8,500

*Goal Number:
(1) Safety & Health
(2) Stewardship & Efficiency
(3) Sustainability, Livability and Economy
(4) System Performance
(5) Organizational Excellence
**Support 40% of Capital cost

Safety and Health

Between 1/1/2012 and 12/31/2014, there were two collisions involving cyclists in the vicinity of the proposed area. Pedestrians have no crosswalks at the off-ramps, and the sidewalks are not built to current ADA requirements/standards. The width of the existing sidewalk is approximately 2 feet. The safety benefits for the Samoa Blvd Roundabouts project will be achieved by constructing teardrop roundabouts and a roadway reconfiguration or "Road Diet." This project proposes to construct teardrop roundabouts at the west and east ends of the US Route 101 and Route 255 interchange. With the construction of the roundabouts, the cloverleaf ramps of the 101 northbound and southbound entrance and exit ramps will be eliminated, reducing conflict points at the interchange. Safety benefits of roundabouts include fewer conflict points and lower speeds, which typically results in fewer collisions with less severity (from

Chapter 405.10 of the Highway Design Manual). Roundabouts are now included in Chapter 4.2.6. of the Highway Safety Improvement Program Guidelines (2014) and have a Collision Reduction Factor (CRF) of 30%. With the elimination of the cloverleaf ramps and addition of the teardrop roundabouts, this location is expected to have 23 collisions reduced over the lifetime of the project.

The existing overcrossing will be reconfigured to two 15-ft travel lanes, two 5-ft bike lanes, and two 8-ft sidewalks, which will better accommodate bicyclists and pedestrians who use the overcrossing. A "Road Diet," or roadway reconfiguration, is a safety countermeasure and is part of the Federal Highway Administrations "Nine Proven Safety Countermeasures." The benefits of the new roadway configuration include an overall 29% reduction in all roadway collisions.

Access and crossings for both pedestrian and bicyclists are difficult within the project area. The proposed roundabouts and improvements to existing structure would improve vehicular, pedestrian and bicycle circulation.

Bike lanes, sidewalks, and crossings provide opportunities for physical activity and promote healthy lifestyles. The addition of non-motorized assets will help achieve Caltrans' goal of increasing non-motorized mode share. It is anticipated that sidewalk and bike lane improvements at these locations will also decrease the number of injuries and fatalities to vulnerable users such as pedestrians and bicyclists.

Stewardship and Efficiency Needs

The following assets will be improved or added during this project:

Asset	Total Quantity	Pre-Project Condition				Post- Project Condition		
		Good	Fair	Poor		Good	Fair	Poor
Sidewalks	24,600 sq ft	0	0	1320		24,600	0	0
Roundabouts	2	New Asset				2	0	0
Bike Lanes	0.6 miles	New Asset				0.6	0	0
Crosswalks	4	New Asset				4	0	0
ADA Ramps	8	New Asset				8	0	0
Census Station	1	0	1	0		1	0	0

Adding bike lanes, sidewalks, roundabouts, and ADA infrastructure will all improve the State's assets, including non-motorized assets.

By adding Intelligent Transportation System components to the scope, traffic data collection can be accessed remotely. Remote retrieval reduces trips to field locations by Caltrans staff which will reduce greenhouse gas generation from internal operational pollutants.

Sustainability, Livability and Economy

Air quality is expected to improve over the existing conditions with the construction of the proposed project. Long-term greenhouse gas emissions are expected to be reduced through improved pedestrian and bicycle transportation. In addition, quality of life will be improved through fewer delays, slower speeds, and active transportation infrastructure. Storm water runoff will be reduced through a reduction of 2.25 acres of impervious surface.

A breakdown of sustainability, livability, and economy objectives is provided as Attachment F.

System Performance

Circulation for both vehicular and non-motorized users will be improved as a result of the project. Roundabouts allow continuous free flow of vehicles and bicycles when no conflicts exist. This results in less noise and air pollution and reduces overall delays at roundabout intersections (HDM chapter 405.10). A similar "dumbbell" type interchange north of the project (Hum 101 PM 88.80) has been implemented with success.

One census station will be replaced and upgraded within the project limits (HUM-255-8.643, ID 18050).

Organizational Excellence

The City of Arcata has indicated they support the development of this project, and are willing to work with the District and provide assistance as needed, including aiding in the preparation of this pilot program nomination. As this project is in the countywide regional transportation plan, the Humboldt County Association of Governments may also participate in the development of the project.

Funding Plan and Recommendation

	Items	Cost ($1,000)
Capital Cost	Roadway Constr.	$8,400
	Structures Constr.	$0.00
	R/W	$1,000
	Subtotal	**$9,500**
Support Cost	PA&ED (0-Phase)	$836
	PS&E (1-Phase)	$1.482
	R/W (2-Phase)	$342
	Constr. (3-Phase)	$1,140
	Subtotal	**$3,800**
	Total Project Cost	**$13,300**

The District proposed to fund this project for $13,300,000 entirely through the SHOPP Asset Management program pilot; this includes a capital cost of $9,500,000 and $3,800,000 for support. In doing so, the Department will contribute to satisfying the targets set forth in the 2015 Strategic Plan and begin the practice of implementing Caltrans' new Mission, Vision, and Goals.

The majority of this project cost is in the reconfiguration of the interchange. As all of the project must be constructed at once (e.g. one roundabout cannot be constructed alone or cloverleaf ramps removed without roundabouts), there will be no applicable savings from combined support costs versus using a single asset approach.

If this project is chosen for the pilot program, a project initiation document will be prepared using resources provided by headquarters. After project initiation, funding will come from the SHOPP Asset Management Program.

Attachments:

Attachment A: Project Location Map

Attachment B: Project Existing Conditions

Attachment C: Conceptual Layout of the Proposed Roundabouts

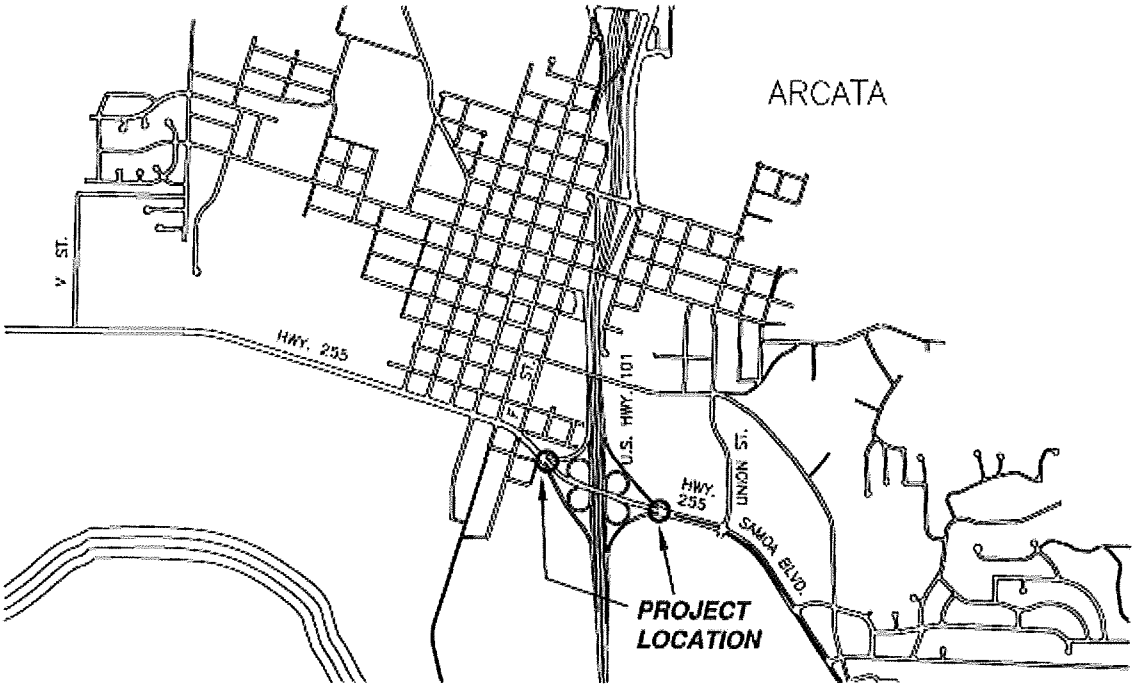
Attachment D: Conceptual Cross section of Overpass

[redacted]

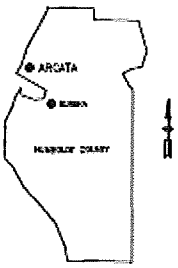
Attachment F: Sustainability Matrix

Attachment A: Project Location Map

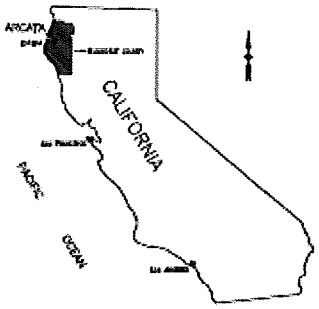
SAMOA BLVD. HIGHWAY 255 / U.S. HIGHWAY 101 ROUNDABOUTS, PEDESTRIAN & BICYCLE IMPROVEMENTS PROJECT 2015



CITY MAP



COUNTY MAP



STATE MAP

Attachment B: Project Existing Conditions

Figure 1 Aerial View of Existing Interchange

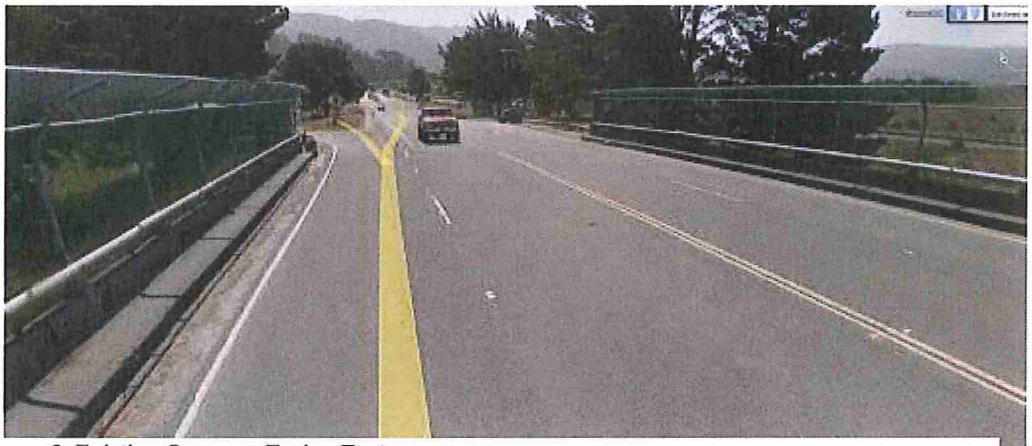


Figure 3 Existing Overpass Facing East

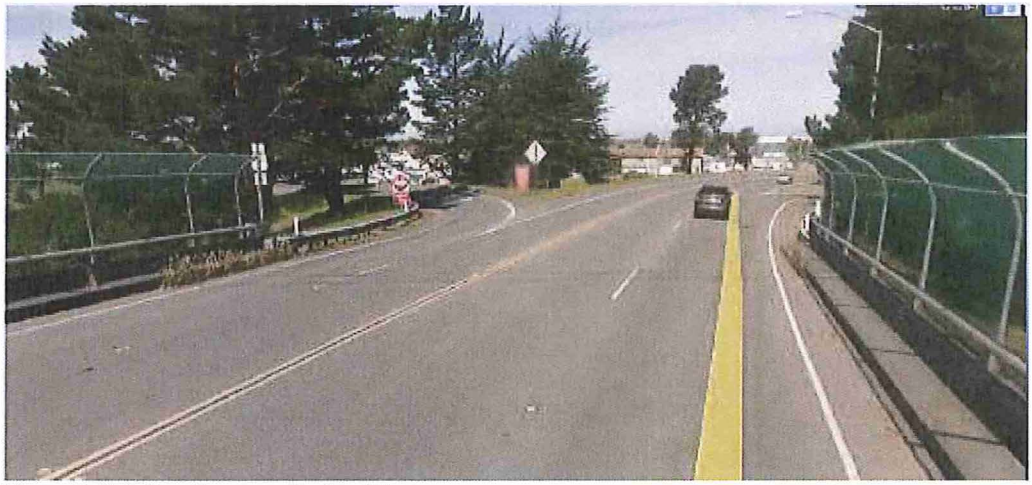


Figure 2 Existing Overpass Facing West

Attachment C: Conceptual Layout of the Proposed Roundabouts

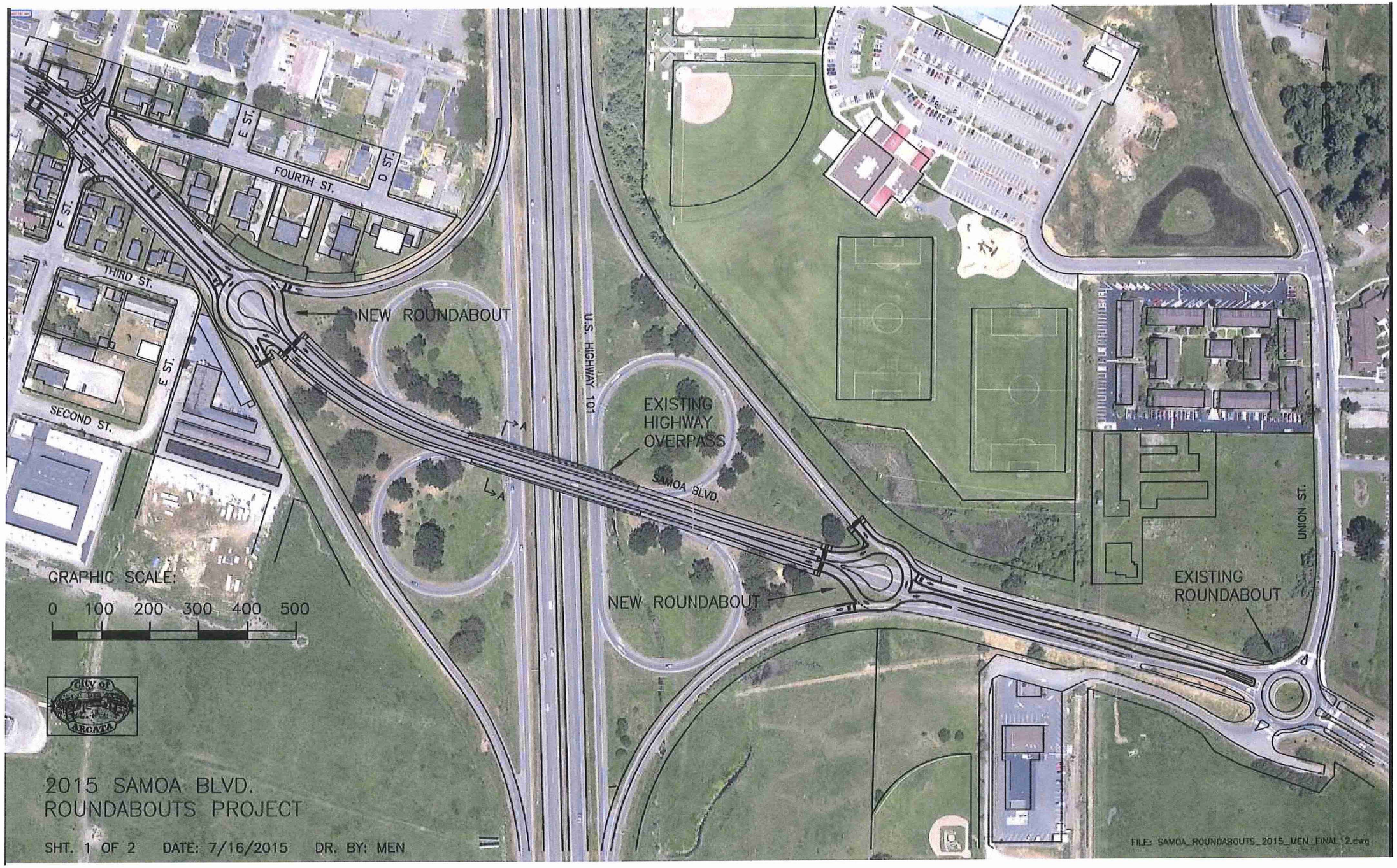


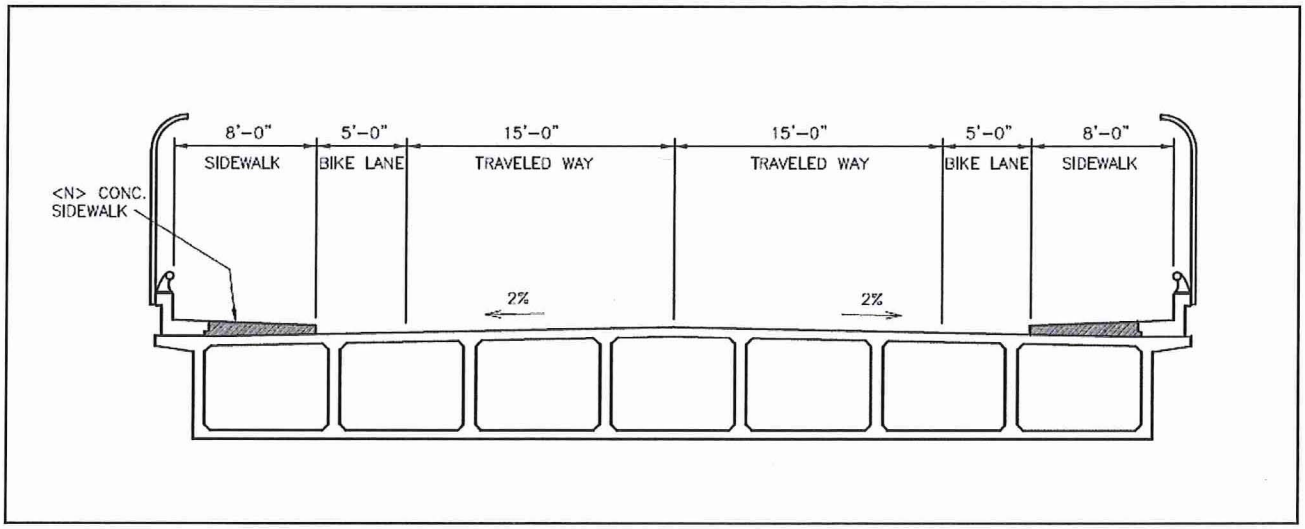
Figure 4 Aerial View of Proposed Improvements (courtesy of City of Arcata)

Figure 5 Proposed Layout, View from F Street Looking East (courtesy of City of Arcata)

Figure 6 Proposed Layout, View from Existing Samoa Blvd. Bridge (courtesy of City of Arcata)

Figure 7 Proposed East Roundabout (courtesy of City of Arcata)

Attachment D: Conceptual Cross Section of Overpass



Attachment F: Sustainbility Matrix

	Sustainability Goal measures	Project Title: US 101 SR 255 Asset Management Pilot	Yes/No	Description (of Yes responses)
Quality of Life				
		Stimulate Sustainable Growth and Development *(Envision QL 1.2)*		
		Intent: Support and stimulate sustainable growth and development, including improvements in job growth, capacity building, productivity, business attractiveness and livability.		
1	Prosperity	Will the project enhance the community's quality of life and economic prosperity?	Yes	Roundabouts have been implemented in a similar manner north of the project and have been well received. In addition, non-motorized circulation will be improved throughout the project including ADA infrastructure. This will be an additional phase in gateway improvements for the City of Arcata.
		Improve Community Mobility and Access *(Envision QL 1.2)*		
		Intent: Locate, design and construct the project in a way that eases traffic congestion, improves mobility and access, does not promote urban sprawl, and otherwise improves community livability.		
2	Access	Will the project provide good, safe access to adjacent facilities, amenities and transportation hubs, including appropriate wayfinding signage?	Yes	Non-motorized accessibility and connectivity will be improved throughout the project, and connect to a previous complete streets/road diet project on SR 255
3	Non-Auto Mode Share	Will the project encourage the use of transit and/or non-motorized transportation?	Yes	Non-motorized accessibility and connectivity will be improved throughout the project, and connect to a previous complete streets/road diet project on SR 255
4	Non-Auto Mode Share	Has the project team coordinated the design with other infrastructure assets to improve walkability and livability?	Yes	The project team has coordinated with the City of Arcata and improvements will connect with previous improvements on SR 255
		Preserve Historic and Cultural Resources *(Envision QL 3.1)*		
		Intent: Preserve or restore significant historical and cultural sites and related resources to preserve and enhance community cultural resources.		
5	Env	Will the project minimize impacts on historic and cultural resources? (Consulted the tribal, historic and cultural resource staff in Environmental (PQS)?	Yes	The project team will coordinate with environmental planning, the district Native American Liason, and local tribes
		Enhance Public Space *(Envision QL 3.3)*		
		Intent: Improve existing public space including parks, plazas, recreational facilities, or wildlife refuges to enhance community livability.		
6	Livability	Will the proposed project make meaningful enhancements to public space or address Section 4(f) properties, (examples include parks, plazas, recreational facilities, or wildlife refuges) to enhance community, livability, and quality of life?	Yes	Community, Livability, and quality of life will all be improved through bike lanes, sidewalks, and roundabouts
Leadership				
		Foster Collaboration and Teamwork *(Envision LD 1.3)*		
		Intent: Eliminate conflicting design elements, and optimize system by using integrated design and delivery methodologies and collaborative processes.		
7	Sustainable Corridor Master Plan (SCMP)	Are the project owner and the project team intending to take a Context Sensitive Solutions view of the project?	Yes	The project team will work with the City of Arcata and the public to determine the best context sensitive solution for the project
		Improve Infrastructure Integration *(Envision LD 2.2)*		
		Intent: Design the project to take into account the operational relationships among other elements of community infrastructure which results in an overall improvement in infrastructure efficiency and effectiveness.		
8	Livability	Will the project team seek input from local stakeholders regarding how the project impacts or enhances the community infrastructure?	Yes	The project team will work with the City of Arcata and the public to inform and gather feedback
9	Freight	Will the project address the needs on the priority freight network included in the Freight Mobility Plan?	No	Not a priority freight network
Resource Allocation				
		Use Recycled Materials *(Envision RA 1.3)*		
		Intent: Minimize transportation costs and impacts and retain regional benefits through specifying local sources.		
10	Resource Consumption	Will the project team consider reuse of existing materials or recycled materials or use of materials from within 100 miles of the project site?	Yes	This project will be consistent with Deputy Directitives DD-17 and DD-105
		Reduce Energy Consumption *(Envision RA 2.1)*		
		Intent: Conserve energy by reducing overall operation and maintenance energy consumption throughout the project life cycle.		

	Sustainability Goal measures	Project Title: US 101 SR 255 Asset Management Pilot	Yes/No	Description (of Yes responses)
11	Energy	Can the project incorporate reducing eneregy consumption or generating energy supply during the construction phase or after as a purpose for the project?	No	
Natural World				
		Preserve Prime Habitat and Species *(Envision NW 1.1)*		
		Intent: Avoid placing the project – and the site compound/temporary works – on land that has been identified as of high ecological value or as having species of high value.		
12	Env	Does the project concept incorporate solutions to preserve, improve or connect important natural resources (habitat, species needs, or fish and wildlife movement corridors)?	Yes	Drainage improvements through removal of cloverleaf ramps and approaches; also detention ponds can potentially be created at these locations
		Protect Wetlands and Surface Water *(Envision NW 1.2)*		
		Intent: Protect, buffer, enhance and restore areas designated as wetlands, shorelines, and waterbodies by providing natural buffer zones, vegetation and soil protection zones.		
13	Water	Does the project concept address or enhance adjacent wetlands, hydraulic connection and waters functions, values, or existing deficiencies?	Yes	Drainage improvements through removal of cloverleaf ramps and approaches; also detention ponds can potentially be created at these locations
		Preserve Prime Farmland *(Envision NW 1.3)*		
		Intent: Identify and protect soils designated as prime farmland, unique farmland, or farmland of statewide importance.		
14	Env	Does the project concept improve or enhance the existing farming conditions or associated interface with the transportation facility (water conveyance, quality, habitat preservation, weed management, farming operation, etc.)?	Yes	Drainage improvements through removal of cloverleaf ramps and approaches; also detention ponds can potentially be created at these locations
		Preserve Floodplain Functions *(Envision NW 1.5)*		
		Intent: Preserve floodplain functions by limiting development and development impacts to maintain water management capacities and capabilities.		
15	Water	Does the project concept allow for natural floodplain functions restored or rectified related to existing infrastructure impingements?	No	
		Manage Stormwater *(Envision NW 2.1)*		
		Intent: Minimize the impact of infrastructure on stormwater runoff quantity and quality.		
16	Water Quality	Can the project be designed to treat more than minimum stormwater treatment requirements, for example post construction or TMDL compliance units?	Yes	The area of impervious surface will be reduced, and future un-used right-of-way may be used for landscaping
		Roadside Vegetation Environment *(Envision NW 3.4)*		
		Intent: Use appropriate non-invasive species and control or eliminate existing invasive species.		
17	Env	Does the project concept incorporate improvements to roadside vegetation through restorative actions to native/appropriate vegetation to reduce/eliminate need for future management (maintenance, water use, pesticides, invasive species, etc.)?	Yes	Future un-used right-of-way may be rehabilitated with native vegetation
Climate & Risk				
		Reduce Greenhouse Gas Emissions *(Envision CR 1.1)*		
		Intent: Conduct a comprehensive life-cycle carbon analysis and use this assessment to reduce the anticipated amount of net greenhouse gas emissions during the life cycle of the project, reducing project contribution to climate change.		
18	GHG	Based on a life-cycle carbon assessment, will the project be designed in a way that substantially reduces carbon emissions?	Yes	Roundabouts are more efficient than traditional intersections and ramps, and will a lower
		Assess Climate Threat *(Envision CR 2.1)*		
		Intent: Develop a comprehensive Climate Vulnerability Assessment and Adaptation Plan.		
19	Resiliency	Will the project address potential risks or vulnerability deficiencies identifed in state, regional, local or site specific plans?	No	
		Manage Heat Island Effects *(Envision CR 2.5)*		
		Intent: Minimize surfaces with a high solar reflectance index (SRI) to reduce localized heat accumulation and manage microclimates.		
20	Green Infrastructure	Will the project be designed to include green infrastructure such as reducing heat island effects by reducing the percentage of low solar reflectance index (SRI) surfaces?	Yes	A significant portion of SRI surface (ashpalt concrete) at the US 101 SR 255 interchange will be removed.