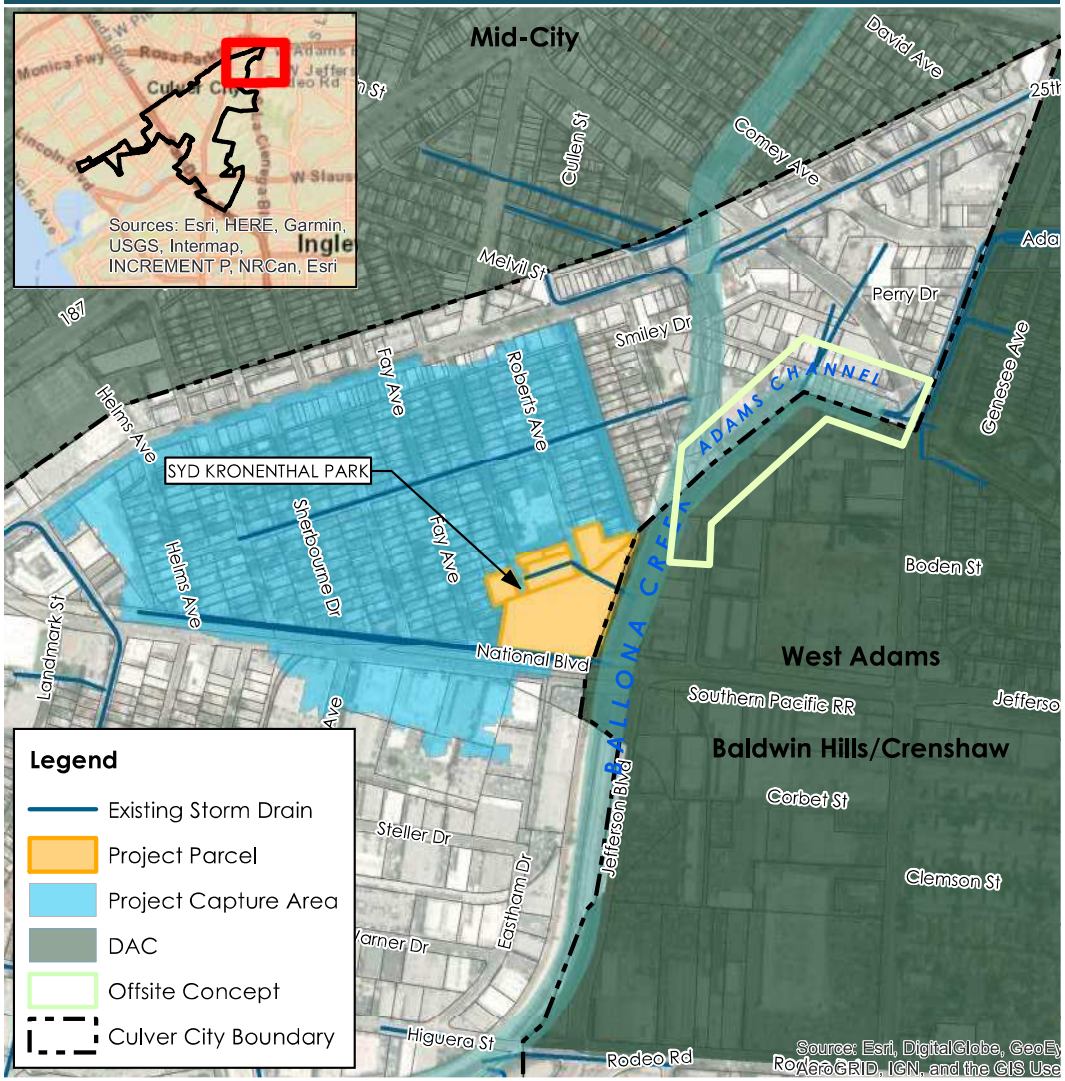
SAFE CLEAN WATER
TECHNICAL RESOURCES

ATTACHMENT 2

FIGURE 1
SYD KRONENTHAL PARK CONCEPT PLAN

PROJECT WATERSHED



SITE DESCRIPTION

Syd Kronenthal Park is a unique opportunity for a stormwater quality improvement project - ideally situated at the northern boundary of Culver City with City of Los Angeles and along the Ballona Creek. Project scope and multi-benefit impact of a successful project in this important location depends on a feasibility analysis. The proposed stormwater capture project ("Project") described in the following application includes runoff diversion from existing storm drains and Ballona Creek/Adams Channel into large-scale underground storage chambers combined with a shallow reservoir for passive irrigation for the park. Project feasibility could unlock other potential project components that include Adams Channel Nature walk, dry or wet weather flow diversions, and associated extensions of existing bike paths further into the City of Los Angeles to broaden the access to the Ballona Creek Bike Path which continues for eight miles to the Ballona Creek Wetlands and Pacific Ocean.

The most cost-effective project variation would include infiltration of the underground storage. However, further study may determine infiltration to be infeasible. Given the ideal location next to the Ballona Creek and just downstream of the Adams Channel tributary, as well as available real estate, the project would still be a valuable water quality asset for water storage during wet weather for diversion to sanitary sewer, year round irrigation, treatment and discharge, or a combination of all the above.

A preliminary analysis to identify this project included review of available soils information; and the project is located within a potential liquification zone area. Additional site-specific geotechnical study is required to determine infiltration feasibility at between 10 and 20 feet below ground surface, as well as groundwater and seismic constraints. Results of the geotechnical study would define the most appropriate type and scope of capture project. Once the type of capture project is defined, technical resources to develop scope and complete the nineteen Feasibility Study requirements.

Although not included in this project concept, the Syd Kronenthal Park facility is considered a "Critical Facility" in the City Hazard Mitigation Plan and includes a community building and Parks and Recreation offices, a daycare, and multipurpose rooms that could present an opportunity for direct reuse inside the buildings.

DESIGN CRITERIA

Precipitation, 85th percentile, 24-hr storm (in)	1.1
Runoff Volume, 85th percentile, 24-hr storm (ac-ft)	4.6
Peak Discharge, 85th Percentile, 24-hr storm (cfs)	18.0
Assumed Design Infiltration Rate (in/hr)	0.25

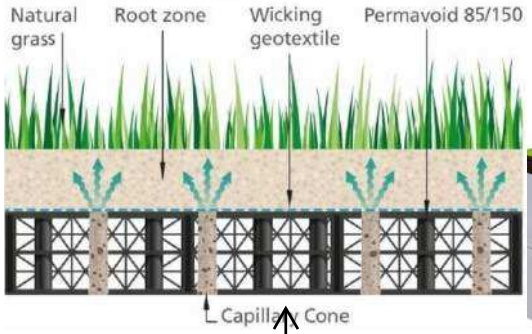
WATERSHED CHARACTERISTICS

Watershed Area (ac)	77.5
Imperviousness (%)	69
Dominant Land Use	Residential – Low Density SF / ROW

PROJECT SITE INFORMATION

Land Owner	Culver City
Street Address	2549 McManus Ave.
Latitude / Longitude	34.027454, -118.377186

CONCEPT DESIGN EXAMPLES

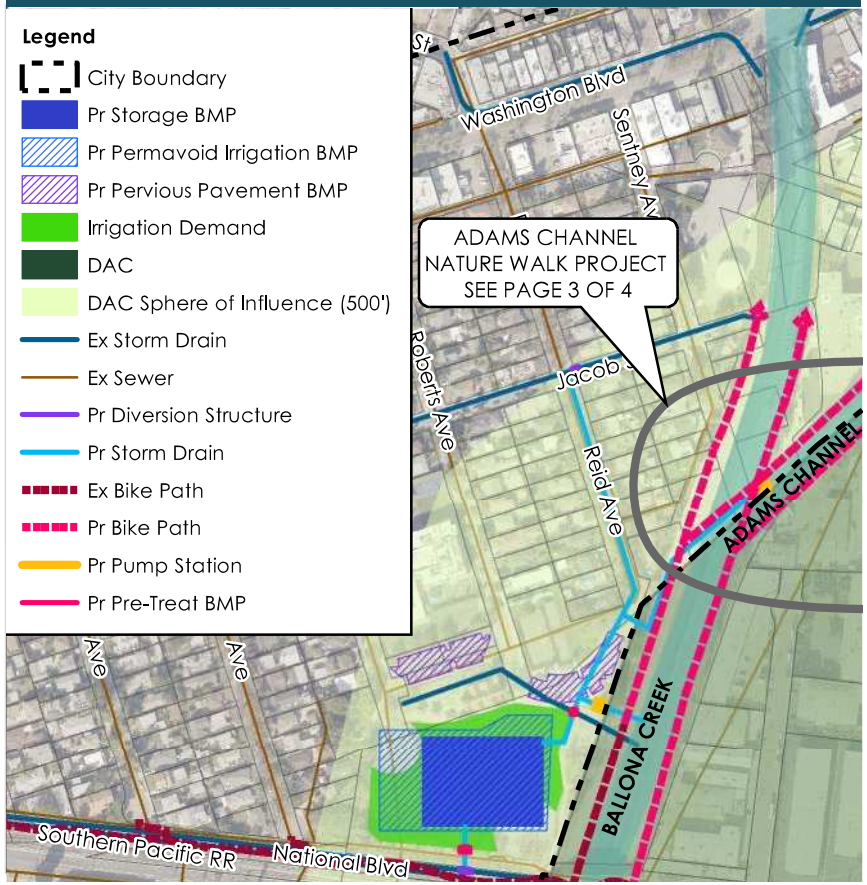


Permavoid Irrigation Shallow Reservoir

Underground Storage

Grasscrete Permeable Pavement

CONCEPT SCHEMATIC



COST ESTIMATE FOR SYD KRONENTHAL PARK PROJECT

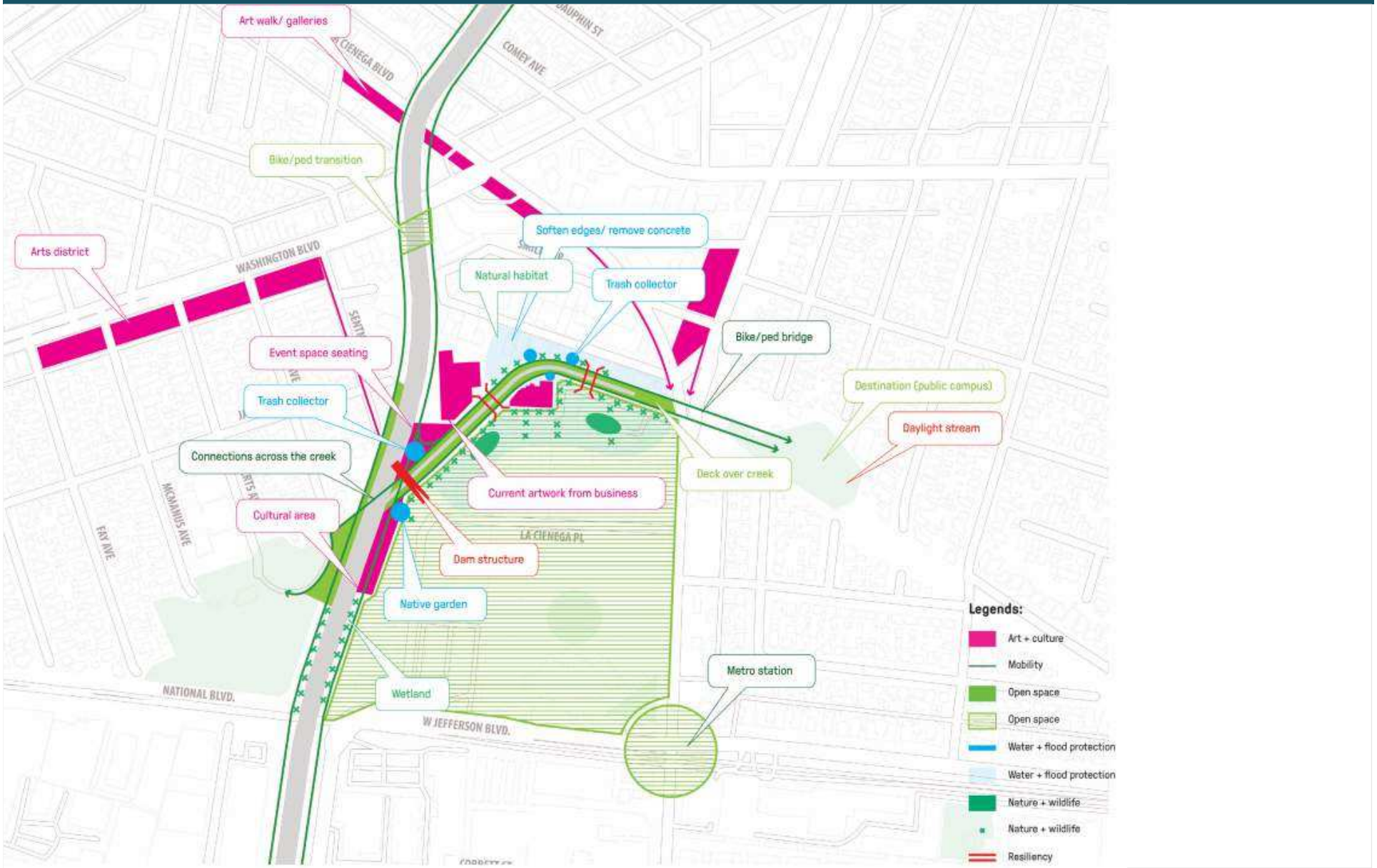
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation Removal	21,907	CY	$50	$
Diversion Structure 0-10 cfs	2	LS	$30,000	$60,000.00
Pre-Treatment 5-10 cfs	2	LS	$20,000	$40,000.00
SD Pipe (24" RCP)	1,000	LF	$200	$200,000.00
Field Permavoid	85,930	SF	$20	$1,718,600
Parking Lot Permavoid	22,798	SF	$20	$455,960
Parking Lot Grasscrete	23,000	SF	$15	$345,000
Infiltration Structure, >10ft Cover(0-5 acft)	259,970	CF	$12.50	$3,249,625
Restoration (park)	94,5631	SF	$3	$283,593
Adams Channel Nature Walk	1	LS	$TBD	$--
Adams Channel or Ballona Creek Pump Station	1	LS	$1,500,000	$1,500,000
			CONSTRUCTION TOTAL	**$8,948,128**
Mobilization (25% construction)				$2,237,032
Contingency (25% construction)				$2,237,032
Design (10%)				$894,813
			TOTAL COST	**$14,317,005**
			COST PER VOLUME MITIGATED ($/ACFT)	**$1,477,077**

PROJECT CHARACTERISTICS

Stormwater BMP	Harvest & Use / Infiltration
Footprint (acres)	1.7
Max Design Height (ft)	6.5
Depth of Excavation (ft)	18
Depth to Groundwater (ft)	28
Pump Requirements	TBD
Design Storage Volume + 24 hr Infiltration (ac-ft)	7.6
Estimated Water Use / Capture Volume (ac-ft)	3.0 / 2.1
Total 24-hr Wet Weather Treatment Volume (ac-ft)	9.7
EWMP Equivalent Volume (ac-ft)	1.8

*Disclaimer: All elements of this conceptual design are planning-level, based on desktop analysis. All assumptions are parameters must be er-evaluated during the detailed design process. Cost estimates are based on available data. Actual costs will vary.

OFFSITE CONCEPTS – ADAMS CHANNEL NATURE WALK



ENVISION ASSESSMENT

CREDIT LIST AND LEVEL OF ACHIEVEMENT

Envision Points Table			Improved	Enhanced	Superior	Conserving	Restorative	Max Points
Quality of Life	Purpose	QL1.1 Improve Community Quality of Life	2	5	10	20	26	
		QL1.2 Enhance Public Health & Safety	2	7	12	16	20	
		QL1.3 Improve Construction Safety	2	5	10	14	—	
		QL1.4 Minimize Noise & Vibration	1	3	6	10	12	
		QL1.5 Minimize Light Pollution	1	3	6	10	12	
		QL1.6 Minimize Construction Impacts	1	2	4	8	—	182
	Wellbeing	QL2.1 Improve Community Mobility	1	3	7	11	14	~~200~~
		QL2.2 Encourage Sustainable Transportation	—	5	8	12	16	
		QL2.3 Improve Access & Wayfinding	1	5	9	14	—	
	Community	QL3.1 Advance Equity & Social Justice	3	6	10	14	18	
		~~QL3.2 Preserve Historic & Cultural Resources~~	—	~~2~~	~~7~~	~~12~~	~~18~~	
		QL3.3 Enhance Views & Local Character	1	3	7	11	14	
		QL3.4 Enhance Public Space & Amenities	1	3	7	11	14	
Leadership	Collaboration	LD1.1 Provide Effective Leadership & Commitment	2	5	12	18	—	
		LD1.2 Foster Collaboration & Teamwork	2	5	12	18	—	
		LD1.3 Provide for Stakeholder Involvement	3	6	9	14	18	
		LD1.4 Pursue Byproduct Synergies	3	6	12	14	18	
	Planning	LD2.1 Establish a Sustainability Management Plan	4	7	12	18	—	
		LD2.2 Plan for Sustainable Communities	4	6	9	12	16	182
		LD2.3 Plan for Long-Term Monitoring & Maintenance	2	5	8	12	—	
		LD2.4 Plan for End-of-Life	2	5	8	14	—	
	Economy	LD3.1 Stimulate Economic Prosperity & Development	3	6	12	20	—	
		LD3.2 Develop Local Skills & Capabilities	2	4	8	12	16	
		LD3.3 Conduct a Life-Cycle Economic Evaluation	5	7	10	12	14	
Resource Allocation	Materials	RA1.1 Support Sustainable Procurement Practices	3	6	9	12	—	
		RA1.2 Use Recycled Materials	4	6	9	16	—	
		~~RA1.3 Reduce Operational Waste~~	~~4~~	~~7~~	~~10~~	~~14~~	—	
		RA1.4 Reduce Construction Waste	4	7	10	16	—	
		RA1.5 Balance Earthwork On Site	2	4	6	8	—	
	Energy	RA2.1 Reduce Operational Energy Consumption	6	12	18	26	—	182
		RA2.2 Reduce Construction Energy Consumption	1	4	8	12	—	~~196~~
		RA2.3 Use Renewable Energy	5	10	15	20	24	
		RA2.4 Commission & Monitor Energy Systems	3	6	12	14	—	
	Water	RA3.1 Preserve Water Resources	3	5	7	9	12	
		RA3.2 Reduce Operational Water Consumption	4	9	13	17	22	
		RA3.3 Reduce Construction Water Consumption	1	3	5	8	—	
		RA3.4 Monitor Water Systems	1	3	6	12	—	
Natural World	Siting	~~NW1.1 Preserve Sites of High Ecological Value~~	~~2~~	~~6~~	~~12~~	~~16~~	~~22~~	
		NW1.2 Provide Wetland & Surface Water Buffers	2	5	10	16	20	
		~~NW1.3 Preserve Prime Farmland~~	—	~~2~~	~~8~~	~~12~~	~~16~~	
		NW1.4 Preserve Undeveloped Land	3	8	12	18	24	
	Conservation	~~NW2.1 Reclaim Brownfields~~	~~11~~	~~13~~	~~16~~	~~19~~	~~22~~	
		NW2.2 Manage Stormwater	2	4	9	17	24	154
		NW2.3 Reduce Pesticide & Fertilizer Impacts	1	2	5	9	12	~~232~~
		NW2.4 Protect Surface & Groundwater Quality	2	5	9	14	20	
	Ecology	~~NW3.1 Enhance Functional Habitats~~	~~2~~	~~5~~	~~9~~	~~15~~	~~18~~	
		NW3.2 Enhance Wetland & Surface Water Functions	3	7	12	18	20	
		NW3.3 Maintain Floodplain Functions	1	3	7	11	14	
		NW3.4 Control Invasive Species	1	2	6	9	12	
		NW3.5 Protect Soil Health	—	3	4	6	8	
Climate and Resilience	Emissions	CR1.1 Reduce Net Embodied Carbon	5	10	15	20	—	
		CR1.2 Reduce Greenhouse Gas Emissions	8	13	18	22	26	
		CR1.3 Reduce Air Pollutant Emissions	2	4	9	14	18	
	Resilience	CR2.1 Avoid Unsuitable Development	3	6	8	12	16	
		CR2.2 Assess Climate Change Vulnerability	8	14	18	20	—	190
		CR2.3 Evaluate Risk and Resilience	11	18	24	26	—	
		CR2.4 Establish Resilience Goals and Strategies	—	8	14	20	—	
		CR2.5 Maximize Resilience	11	15	20	26	—	
		CR2.6 Improve Infrastructure Integration	2	5	9	13	18	
							Maximum Total Points	890

PRELIMINARY SCORE

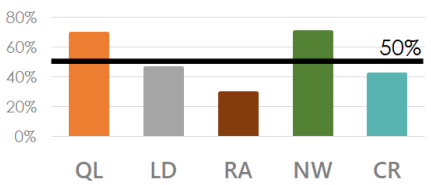
126/182 Quality of Life

84/182 Leadership

53/182 Resource Allocation

108/154 Natural World

80/190 Climate and Resilience



Potential score: 451/890 (50%)

Potential award level: Platinum

KEY SUSTAINABILITY HIGHLIGHTS

QL: Holistic assessment and collaboration to address changing social, economic, and/or environmental conditions. Enhancement of community health and safety by providing critical infrastructure to reduce risks. Creation of new community connections and active transportation facilities.

LD: Strong commitment to sustainability, community involvement, collaboration and partnerships with stakeholders.

RA: Net-positive improvement to watershed resources.

NW: Regional stormwater management, surface and ground water quality improvements, ecosystem enhancement, floodplain restoration.

CR: Climate threats shared with community, integrated risk evaulation with owner and diverse team of key stakeholders.

OPPORTUNITIES TO INCREASE SUSTAINABILITY

QL: Reduce noise, vibration, and light pollution impacts during construction and operation. Empower communities to engage in development process and address injustices or imbalances.

LD: Plan for end of life, develop local skills and capabilities, conduct a life cycle economic evaluation.

RA: Reduce waste, energy and water usage, increase renewable energy, balance earthwork or source/reuse within 25 miles of the site.

CR: Address air pollutant emissions, Incorporate resilience strategies into operation and maintenance of project, measure and quantify benefits of implementing resilience strategies.