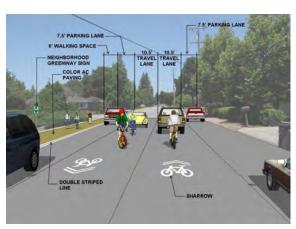
Joint Cities Coordinated Stevens Creek Trail Feasibility Study









Prepared for: Cities of Sunnyvale, Cupertino, Los Altos and Mountain View and Santa Clara Valley Water District

In conjunction with:

Joint Cities Working Team
Citizens Working Group

September 2015

Joint Cities Coordinated Stevens Creek Trail Feasibility Study

Prepared for: Cities of Sunnyvale, Cupertino, Los Altos and Mountain View and Santa Clara Valley Water District

In conjunction with:

Joint Cities Working Team
Citizens Working Group

Prepared by:
Sokale Environmental Planning
Hill Associates
Mark Thomas & Company
Fehr and Peers
Cotton, Shires and Associates

September 2015

Thank you to all who have participated in the preparation of the Joint Cities Coordinated Stevens Creek Trail Feasibility Study. The investigation was completed under the direction of the Joint Cities Working Team and guidance of the Citizens Working Group. Community members provided comments that helped shape the recommendations prepared by the Citizens Working Group and Joint Cities Working Team.

Joint Cities Working Team

Jeannie Bruins, Mayor Pro Tem, City of Los Altos
Ronit Bryant, Councilmember, City of Mountain View*
Nai Hsueh, Director, District 5, Santa Clara Valley Water District
Patrick Kwok, Boardmember, District 5, Santa Clara Valley Water District*
Orrin Mahoney, Councilmember, City of Cupertino*
Tara Martin-Milius, Vice Mayor, City of Sunnyvale
Tom Means, Councilmember, City of Mountain View*
Chris Moylan, Councilmember, City of Sunnyvale*
Darcy Paul, Councilmember, City of Cupertino
Megan Satterlee, Mayor, City of Los Altos*
Patricia Showalter, Vice Mayor, City of Mountain View

Citizens Working Group

LaNae Avra, City of Los Altos
Judy Fulton, City of Los Altos
Rocky Gunderson, City of Cupertino
Camie Hackson, City of Sunnyvale
Gary Hedden, City of Los Altos
Ross Heitkamp, City of Mountain View
Rodney Jenny, City of Cupertino*
Larry Klein, City of Sunnyvale
Jim Miller, City of Cupertino
Anne Ng, City of Cupertino
Tim Oey, City of Sunnyvale
Jasneet Sharma, City of Mountain View
Greg Unangst, City of Mountain View

Public Agency Staff

City of Sunnyvale

Kent Steffens, Assistant City Manager Manuel Pineda, Director of Public Works Jack Witthaus, Transportation & Traffic Manager* Patricia Lord, Senior Management Analyst* Carla Ochoa, Traffic Engineer Christina Uribe, Administrative Aide - Confidential

City of Cupertino

Mark Linder, Director of Parks and Recreation* Gail Seeds, Park Improvement Manager

City of Los Altos

Cedric Novenario, Transportation Services Manager

City of Mountain View

J.P. de la Montaigne, Community Services Director Bob Kagiyama, Deputy Public Works Director* John Marchant, Recreation Manager

Santa Clara Valley Water District

Chris Elias, Lower Peninsula Watershed Deputy Operating Officer* Liang Lee, Hydraulics Unit Manager Pat Showalter, Senior Project Manager*

County of Santa Clara, Parks and Recreation Department

Jane Mark, Senior Park Planner*
Will Fourt, Park Planner
* Denotes Past Member

Lead Consultant

Sokale Environmental Planning Newark, California

Jana Sokale, Principal Planner

Subconsultants

Hill Associates, Landscape Architecture Aptos, California

Bruce Hill, Principal Landscape Architect Dominic Lopez, Landscape Architect

Mark Thomas & Company, Civil and Structural Engineering San Jose, California

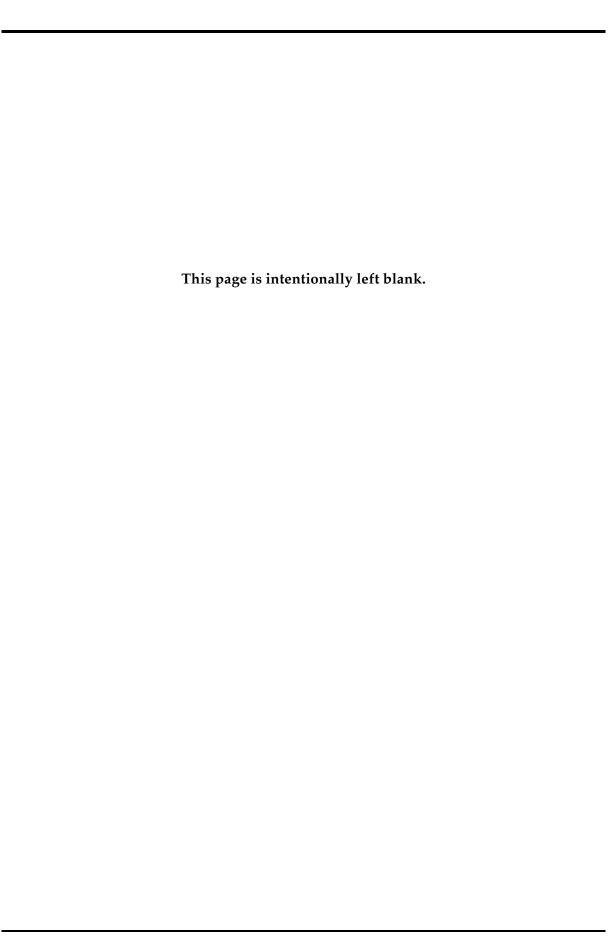
Po Chen, Structure Division Manager

Fehr & Peers, Traffic Engineering San Jose, California

Nikki Nagaya, Senior Transportation Engineer Alexandra Sweet, Transportation Planner Ian Moore, Senior Associate

Cotton, Shires and Associates, Consulting Engineers and Geologists Los Gatos, California

Ted Sayre, Principal Engineering Geologist David Schrier, Principal Geotechnical Engineer



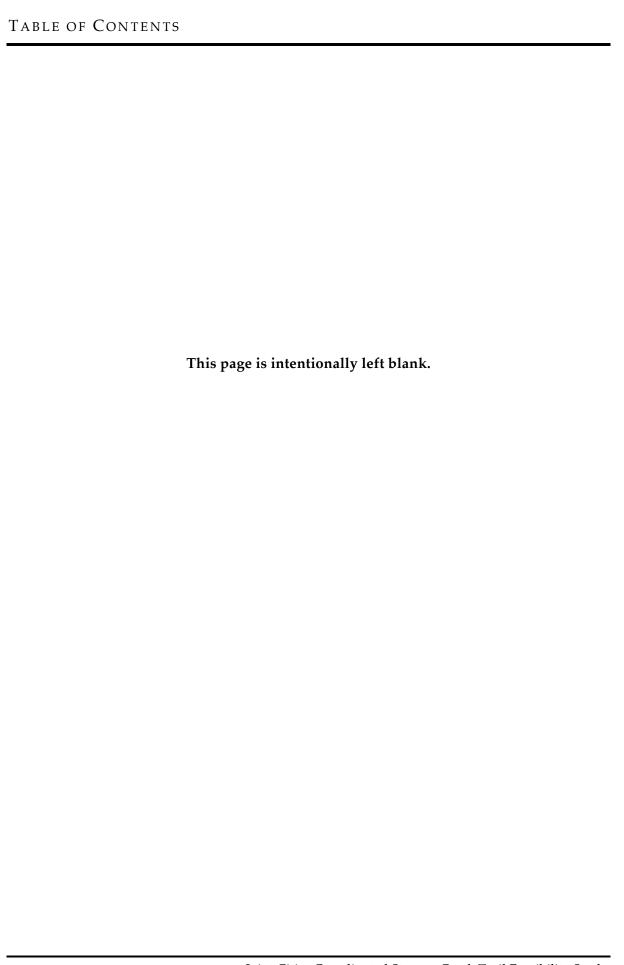
Executive Summary	i
Chapter 1 – Purpose and Benefits	1
Purpose	2
Regional Setting	2
Watershed Setting	2
History of the "Stevens Creek Park Chain" Concept	3
Stevens Creek: A Plan of Opportunities	4
Regional Trail Planning Efforts	4
Past City Trail Planning Efforts	5
Current Status of Trail Development	5
Mountain View Stevens Creek Trail, Reach 4, Segment 2 Final EIR	5
Cupertino Stevens Creek Corridor Master Plan and Restoration Plan	5
Los Altos Stevens Creek Trail Feasibility Report	6
Bicycle and Pedestrian Goals and Policies of the Four Cities	6
Sunnyvale General Plan	6
Los Altos General Plan	8
Cupertino General Plan	8
	10
J J	13
J ()J	14
O .	14
	15
	15
	15
	15
	17
	17
	17
	18
	18
Environmental Benefits	19
	19
Improved Air Quality	19
Health Benefits	20
Chapter 2 – Feasibility Criteria and Existing Conditions	21
	22
	22
1	22
Top-of-Bank Width	27
	 28
	-0 28
	<u>2</u> 9
	3 0
Special Status Species	31
1 1	32
	33
	34 26
	36
California Department of Transportation Highway Design Manual:	37
Santa Clara Valley Transportation Authority Bicycle Technical Guidelines	38

AASHTO Guide for the Development of Bicycle Facilities	
Summary of Referenced Design Guidelines	39
Unique Traffic Conditions	40
Bicycle and Pedestrian Collisions	40
y .	41
On-Street Feasibility Summary	
Feasibility Report Definitions	41
Engineered Structures	41
Chapter 3 – Alignment Options	47
Creek Corridor and Bernardo Paths	48
Connecting to Foothill	48
Connecting to I-280 Overpass	48
Creek Corridor Path and City Streets	50
Fremont Ave/Grant Rd Option	50
Fallen Leaf Lane Option	50
Belleville Way Option	50
Partial Creek Corridor Path to Mary Avenue	51
All City Streets	51
The City offects	01
Chapter 4 – Pedestrian/Bicycle Paths	53
Creek Corridor Path	54
Location and Ownership	54
Site Analysis Summary	54
Creek Character, Plant Communities and Wildlife	
Conceptual Alignments	
Access to the Open Space from the North	55
Option 1 – Relocate the Soundwall	55
Option 2 – Extend Trail behind Parking Lot at Heatherstone Apartments	
Option 3 – Use City Streets to Mockingbird Lane	56
Crossing the Creek	56
Access from the Open Space to Fremont Avenue	
Option 1 – Trail Underpass beneath State Route 85	
Option 2 – Pedestrian Overcrossing to Bernardo Avenue	
Option 3 – Pedestrian Overcrossing to Mountain View High School	
Option 4 – Pedestrian/Bicycle Bridge to West Remington Drive	
Bernardo Avenue Path	63
Roadway Conditions	
Conceptual Alignment	63
Crossing State Route 85 at Homestead Road	
Fallen Leaf Lane Path	64
Fremont Avenue/Grant Road Path	65
Foothill Expressway Path	65
Interstate 280/Foothill Expressway Interchange Modifications	
Padastrian Overgrossing at Interstate 280	69
Pedestrian Overcrossing at Interstate 280	70
Grade Separated Crossing at Stevens Creek Boulevard	
Connection to Rancho San Antonio County Park	70
Chapter 5 – On-Street Routes	73
Study Segment 1	
Existing Facilities	
Feasible Facilities	

Study Seg	gment 2	77
	ng Facilities	77
Feasil	ole Facilities	77
Study Seg	gment 3	79
		79
Feasil	ole Facilities	79
Study Seg	gment 4	82
Existi	ng Facilities	82
Feasil		82
Chanter	6 – Development Challenge	83
Rudo	et Assumptions	83
	1	85
		86
		87
		88
		89
		90
		91
		92
	ng Area and Trail Access to Rancho San Antonio County Park	92
Land	onstruction Budget Estimate	93
Lanu	Acquisitions and Easements	93
Chapter	7 – References	
		95
		97
Append	ices	
Appe	ndix A – Summary of Meetings	
Appe	ndix B – Summary of Studied Routes	
Appe	ndix C – Summary of Public Comments	
Maps		
Map 1 –	Study Area Map	2
Map 2 –	Study Segment 1: Dale/Heatherstone to Fremont Avenue Ownership Map	23
	Study Segment 2: Fremont Avenue to Homestead Road Ownership Map	
Map 1	Study Segment 3: Homestead Road to Stevens Creek Boulevard	26
Map 4 –	Ownership Map	20
Map 5 –	Study Segment 1: Dale/Heatherstone to Fremont Avenue Habitat and	28
-	Land Availability Map	
Map 6 –	Study Segment 2: Fremont Avenue to Homestead Road Habitat and	29
-	Land Availability Map	
Map 7 –	Study Segment 3: Homestead Road to Stevens Creek Boulevard Habitat	30
•	and Land Availability Map	
Map 8 –		49
Map 9 –	Study Segment 1: Dale / Heatherstone to Fremont Avenue Alignments Map	
	Study Segment 2: Fremont Avenue to Homestead Road Alignments Map	
	Study Segment 3: Homestead Road to Stevens Creek Boulevard	
· F	Alignments Map	
Map 12 –	Study Segment 4: Stevens Creek Boulevard Connection to Rancho	68
r	San Antonio County Park Alignments Man	55

Illustration	18	
	1 – Trail underpass beneath State Route 85 north of Fremont Avenue	59
	2 – Astoria to The Dalles on Bernardo	
Illustration 3	3 – The Dalles to Helena on Bernardo	64
	4 – Fallen Leaf Lane as a Signed Bike Route	
Illustration 5	5 – Fallen Leaf Lane as a Neighborhood Greenway with Walking Space	79
	3 3 1	
Figures		
Figure 1 –	Sunnyvale General Plan goals and polices relating to pedestrian	7
8	and bicycle facilities.	
Figure 2 –	Los Altos General Plan goals and polices relating to the movement of pedestrian and bicycle facilities.	8
Figure 3 –	Cupertino General Plan goals and polices relating to pedestrian	9
Figure 4 –	Cupertino General Plan goals and polices relating to trails and creeks	10
Figure 5 –	Mountain View General Plan goals and polices relating to pedestrian and bicycle facilities.	11
Figure 6 –	Mountain View General Plan goals and polices relating to parks,	12
rigare o	open space and trails.	14
Figure 7 –	Trail planning process	14
Figure 8 –	Summary of parks, schools and attractions within the study area	16
Figure 9 –	1995 Santa Clara Countywide Trails Master Plan Definitions	18
Figure 10 –	Countywide Trails Master Plan Guideline G-2 – Shared Use Trail –	25
0-	Paved Tread Double Track.	
Figure 11 –	Top-of-Bank Land Availability Criteria	27
Figure 12 –	Wildlife species with the potential to occur within the study area	32
Figure 13 –	Summary of grade-separated crossing feasibility at existing roadway bridges along Stevens Creek.	34
Figure 14 –	Summary of grade-separated crossing feasibility at other structures	35
118411111	in the study area.	
Figure 15 –	Caltrans Bikeway Designations.	37
	Bicycle Lane Widths on Arterials/Collectors at a Range of Posted Speeds	39
	Summary of 2008-2013 Bicycle and Pedestrian Collisions on Studied	40
O	Roadways.	
Figure 18 –	Dale/Heatherstone to Fremont Avenue feasibility of studied roadways to	43
O	support pedestrian and bicycle facilities for linking the Stevens Creek Trail	
Figure 19 –	Fremont Avenue to Homestead Road feasibility of studied roadways to	44
_	support pedestrian and bicycle facilities for linking the Stevens Creek Trail	
Figure 20 –	Homestead Road to Stevens Creek Boulevard feasibility of studied	45
	arterial roadways to support pedestrian and bicycle facilities for	
	linking the Stevens Creek Trail	
Figure 21 –	Homestead Road to Stevens Creek Boulevard feasibility of studied	46
	residential streets to support pedestrian and bicycle facilities for	
	linking the Stevens Creek Trail.	
Figure 22 –		56
	Engineering solutions for constrained areas along State Route 85 soundwall.	
	Grade-separated options for connecting to Fremont Avenue	
	Plan view of path parallel to Foothill Expressway	
Figure 26 –	Cross-section of reconfigured Foothill Expressway underpassbeneath Interstate 280	66
Figure 27 –	Potentially feasible pedestrian overcrossings of Interstate 280	70
Figure 28 –	Staging Area and Trail Connection Concept Plan	71

Figure 29 – Dale/Heatherstone to Fremont Avenue existing and feasible	76
Figure 30 – Fremont Avenue to Homestead Road existing and feasible	78
Figure 31 – Homestead Řoad to Stevens Creek Boulevard existing and feasible on-street bicycle facilities on collector and arterial streets.	80
Figure 32 – Homestead Road to Stevens Creek Boulevard existing and feasible on-street bicycle facilities on residential streets.	81
Figure 33 – Unit Cost Estimates for On-Street Bicycle and Pedestrian Improvements.	85
Figure 34 – Creek Corridor Path – Option 1 Trail Underpass beneath Highway 85 Construction Budget Estimate	86
Figure 35 – Creek Corridor Path – Option 2 Trail Overcrossing Spanning Fremont Avenue Construction Budget Estimate	87
Figure 36 – Bernardo Avenue Path Construction Budget Estimate	88
Figure 37 – State Route 85 Crossing at Homestead Road Construction Budget Estimate	89
Figure 38 – Foothill Expressway Path Construction Budget Estimate	90
Figure 39 – Pedestrian Overcrossing at Interstate 280 Construction Budget Estimate	91
Figure 40 – Staging Area and Trail Access to Rancho San Antonio County Park	92



This feasibility report explores the potential for extending the Stevens Creek Trail through the cities of Sunnyvale, Cupertino, Los Altos and Mountain View. The study evaluated the technical feasibility of developing bicycle and pedestrian facilities along approximately four miles of creek corridor and surrounding city streets. The goal of the study was to assess the feasibility of a wide range of potential alignments that could close the gap in the trail between the Dale/Heatherstone pedestrian overcrossing in Mountain View and Stevens Creek Boulevard in Cupertino.

The study area boundaries extend from Heatherstone Way to the north, Mary Avenue to the east, Grant Road to the west and to Stevens Creek Boulevard to the south. The study area also includes the open space lands along Stevens Creek Boulevard and adjacent to Rancho San Antonio County Park in Cupertino.

The four cities initiated this study and have worked collaboratively to identify options to complete the Stevens Creek Trail. Goals and policies regarding the development of the Stevens Creek Trail have been integrated into the long-range planning documents of all the cities. The trail could provide access to eleven city parks, two regional parks and open space preserves, 16 K-12 schools and DeAnza College. The trail currently connects to the San Francisco Bay Trail and the Bay Area Ridge Trail providing access to other regional open space lands. The trail also provides access to Caltrain and Light Rail in downtown Mountain View providing opportunities for multi-modal commuting.

The feasibility study determined that a variety of routes and facility types are feasible through the four cities, but challenges are associated with each alignment. This feasibility study assessed the potential for developing the routes against a variety of adopted design guidelines for bicycle and pedestrian facilities and by establishing criteria to measure land availability, habitat roadway and sensitivity and creek crossings. The report provides decision makers with an assessment of the technical feasibility for extending the trail by identifying potential alignments and conceptual engineering solutions.

The feasibility study is the first step in a trail planning process. The feasible alignments provide a range of choices for decision makers to consider for completing the trail through the four cities. The next step would involve the development of a which would be trail master plan, under evaluated the California Environmental Quality Act (CEQA). All future trail planning and environmental review will provide opportunities for public involvement.

The study area was divided into four study segments to facilitate the presentation of the feasibility findings. The segments vary by length and begin and end at city streets. The four study segments include (*See Maps 9-12 – Alignment Maps*):

- ◆ Study Segment 1: Dale Avenue/ Heatherstone Way to Fremont Avenue
- ◆ Study Segment 2: Fremont Avenue to Homestead Road
- ◆ Study Segment 3: Homestead Road to Stevens Creek Boulevard
- ◆ Study Segment 4: Trail Connections to Rancho San Antonio County Park via Stevens Creek Boulevard

The feasibility report consists of seven chapters. An introductory page precedes each chapter and describes the specific content.

Chapter 1 – Purpose and Benefits describes the purpose, provides an overview of the study area, summarizes the history and current status of trail planning, introduces the adopted pedestrian and bicycle transportation goals and policies of the four cities, discusses the feasibility study methodology and details the significance and benefits of the trail to the community.

Chapter 2 - Feasibility Criteria and Existing Conditions describes criteria used to evaluate the feasibility for connecting the Stevens Creek Trail along city streets and through open space lands along the stream corridor. Land availability, sensitivity, roadway and creek crossings were evaluated within the creek corridor. Roadway width, traffic volume and speed, roadway intersections and pedestrian and bicycle collision history were evaluated for on-street routes. This chapter also defines the types of pedestrian and bicycle facilities and engineered structures evaluated for the trail.

Chapter 3 – Alignment Options provides an introduction to the feasible alignments for completing the trail through the four cities. These alignments represent complete routes through the four cities, but do not represent every feasible segment or type of facility studied (See Map 8 – Alignment Options Map).

Chapter 4 - Pedestrian/Bicycle Paths details the feasible pedestrian/bicycle paths. These routes most closely approximate the trail user experience present in the constructed sections of the trail in Mountain View and Cupertino. The assessments of land availability, habitat sensitivity and roadway, creek and onstreet crossing feasibilities are highlighted for each feasible alignment. These routes provide for the exclusive use of pedestrians and bicyclists and minimize roadway crossings. Pedestrian/bicycle paths are feasible both in the open space parcels along the creek and within the public rightof-way of a few streets. This chapter also describes the engineered structures needed for the routes.

Chapter 5 – On-Street Routes describes the feasible on-street bicycle and pedestrian facilities. Roadway width, traffic volume and speed, roadway intersections and pedestrian and bicycle collision history were evaluated for on-street routes to determine the opportunities and constraints. This feasibility study reviewed a wide

range of on-street routes and identifies the types of bicycle and pedestrian facilities that are feasible on each street.

Chapter 6 – Development Challenge provides unit cost estimates for constructing on-street bicycle and pedestrian facilities and preliminary budget estimates for constructing pedestrian/bicycle path segments. This chapter also identifies six areas along the pedestrian/bicycle path alignments where acquisition of land or easements would facilitate construction.

Chapter 7 – References identifies reports, plans, studies, databases, ordinances, maps and record drawings reviewed in the preparation of the feasibility report. This chapter also identifies all persons contacted during the study.