

APPENDIX E

**INFRASTRUCTURE NEEDS
ANALYSIS TECHNICAL REPORT**

LARKSPUR STATION AREA PLAN
Infrastructure Needs Analysis Technical Report
June 17, 2013 (revised December 10, 2013)

BKF Engineers has prepared an analysis of the anticipated infrastructure improvements associated with the Preferred Plan identified in the Land Use Alternatives Analysis Report for the Larkspur SMART Station Area Plan. The analysis includes utility and circulation infrastructure as well as new public parks and other amenities and improvements to two existing parks. This analysis will necessarily be refined as additional infrastructure improvements are identified during the EIR process and Station Area Plan development and will be included in the final plan.

The focus for utilities in this report is on sewer and water with respect to capacity and future impact. Joint trench utilities (power, phone, cable and natural gas) are already in place in the station area roads, and these utility providers are required to supply service to new customers upon request. For storm, state law mandates that developments over 10,000 sf shall not allow more water off-site than the current site condition does. This means that future development will not have a significant impact on the existing storm system.

1. Existing Utility Infrastructure

In order to document the utility infrastructure anticipated under the Preferred Land Use Plan, we first developed conceptual infrastructure demands for domestic water, sanitary sewer and storm drain based on the existing and proposed land uses and densities. We then compared these with our findings from the Existing Conditions report to confirm if adequate infrastructure is in place or if additional infrastructure mitigation is required to support the proposed uses.

Through research conducted in the Existing Conditions Report phase, we found that the station area benefits from well-developed regional and local water, sewer and storm infrastructure networks that in general have sufficient capacity to accommodate the proposed land uses and densities without modification to existing mains. New utility infrastructure improvements are therefore primarily limited to installation of utility services for new development parcels. No existing streets have been identified for re-alignment, modification or re-construction and no improvements to utility mains within the public streets are anticipated as a result of new construction in the station area.

A summary of the existing conditions of the water, sewer and storm systems within the station area follows:

Water

Marin Municipal Water District (MMWD) owns and operates the existing domestic water facilities within the SMART Station Area Plan. MMWD provides water to an area of 147 square miles within south and central Marin County through a distribution and transmission piping system of about 900 miles in total pipe length. The majority of water supplied to this region consists of surface water runoff from Lagunitas Creek stored in MMWD reservoirs. The balance of the water, approximately 25% of the total supply, comes from the Russian River Basin in Sonoma County under a contract with the Sonoma County Water Agency (SCWA).

MMWD has three water treatment plants that treat the reservoir water prior to distribution to the District's service area customers. Surface water that fills the reservoirs is treated at either the San Geronimo Treatment Plant in Woodacre or the Bon Tempe Treatment Plant in the Mt. Tamalpais Watershed. The balance of the water supply is imported from the SCWA and is treated at MMWD's Ignacio treatment facility.

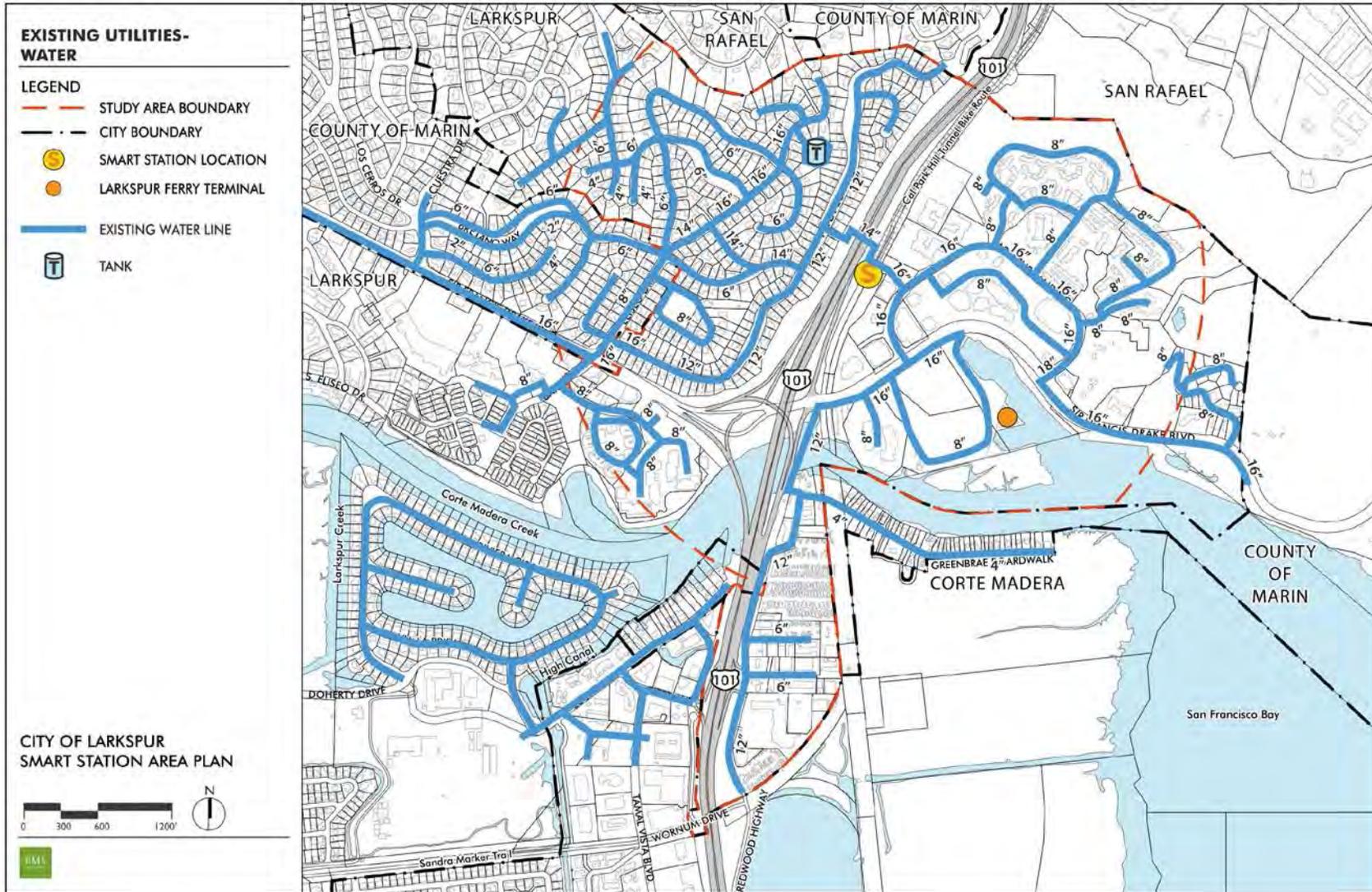
The Marin Municipal Water District (MMWD) water storage capacity, treatment capacity, and distribution systems are currently functioning within normal operating ranges. MMWD defines its service in the Larkspur SAP as very good with sufficiently sized pipes, modern construction, and good service pressures. Standard water service installations and the relocation of existing infrastructure may be necessary to support redevelopment. The redevelopment of the study area is not anticipated however to trigger improvements to regional storage capacity or treatment facilities. No new potable water supply projects are necessary to increase the amount of available potable water supply.

MMWD also has recycled water available that provides a drought-resistant supply of water to portions of their district for non-potable uses. The current recycled water service area includes portions of Terra Linda, Marinwood, Santa Venetia and the Marin Civic Center. Although a recycled water source has not yet been identified for the Larkspur area, redevelopment of the station area would likely require installation of recycled water infrastructure in anticipation of future availability.

Long term water supply for most communities within the San Francisco Bay Area region continues to be a concern. MMWD adopted the 2010 Urban Water Management Plan (UWMP) in July 2011. The UWMP included an assessment of water demand and supplies over a 25 year planning horizon (2010-2035). The conclusion of the assessment was that the District's commitment to water conservation and implementation of the Water Conservation Master Plan, as well as, its commitment to complying with the Water Conservation Bill of 2009 are projected to maintain water demand at a level that can be supplied from existing water supply sources. The Water Conservation Bill of 2009 includes elements of the 20x2020 Water Conservation Plan which was designed to reduce the statewide per capita urban water use by 20 percent by the year 2020.

In addition to the water conservation goals set by the state with the 20x2020 Plan, the City of Larkspur has recently adopted amendments to their Municipal Code with Ordinance 990 on May 1, 2013, which will assist in meeting the goals set by the 20x2020 Plan. For new residential construction, or residential alteration projects of various values, minimum levels of compliance with the 2010 Edition of the California Green Building Standards Code have been adopted. For new non-residential construction, or alterations of various values, minimum levels of compliance with LEED must be met. Both of these "green construction codes" have various options for compliance at their different levels which could reduce energy consumption and water consumption (and therefore wastewater production). This leaves room for selection as to how to meet the requirements for all projects. However, for all non-residential construction projects, the new Municipal Code specifies that LEED Water Efficiency Pre-requisite 1 (WE P1) must be met at a baseline as a minimum. WE P1 states that water consumption for the building must be 20% below its established baseline.

Figure 1: Existing Water Infrastructure



Sewer

Sewer facilities within the Study Area are owned and maintained by several different utility agencies within the region including Sanitary District No. 1 (Ross Valley Sanitary District), Sanitary District No. 2 (Corte Madera), and Central Marin Sanitation Agency. Sanitary District No. 1 is responsible for wastewater collection and maintenance of the sewer facilities in the Larkspur SAP sub-areas 1A and 1B. Sanitary Sewer Facilities located within SAP sub-area 2 fall under the jurisdiction of Sanitary District No. 2. Both districts ultimately convey their sewage to the CMSA sanitation treatment plant located in San Rafael through the large 54" transmission force main in Sir Francis Drake Boulevard.

The Ross Valley Sanitary District service area includes the communities of Fairfax, San Anselmo, Ross, Larkspur, Bon Air, Sleepy Hollow, Kentfield, Kent Woodlands, Oak Manor, and Greenbrae, plus Murray Park and San Quentin Prison. RVSD's sewer facilities within the two sub-areas consist of gravity and pressure force mains of various sizes and materials including polyvinyl chloride (PVC), vitrified clay (VCP), high density polyethylene (HDPE), and cast iron (CIP). In addition to the over 40,000 linear feet of sewer pipes, RVSD also owns and maintains four sewer pump stations within the Larkspur SAP. These pump stations and associated force mains convey sewage within areas of flat topography where it is not feasible to provide gravity flow and to convey sewage to the CMSA facilities.

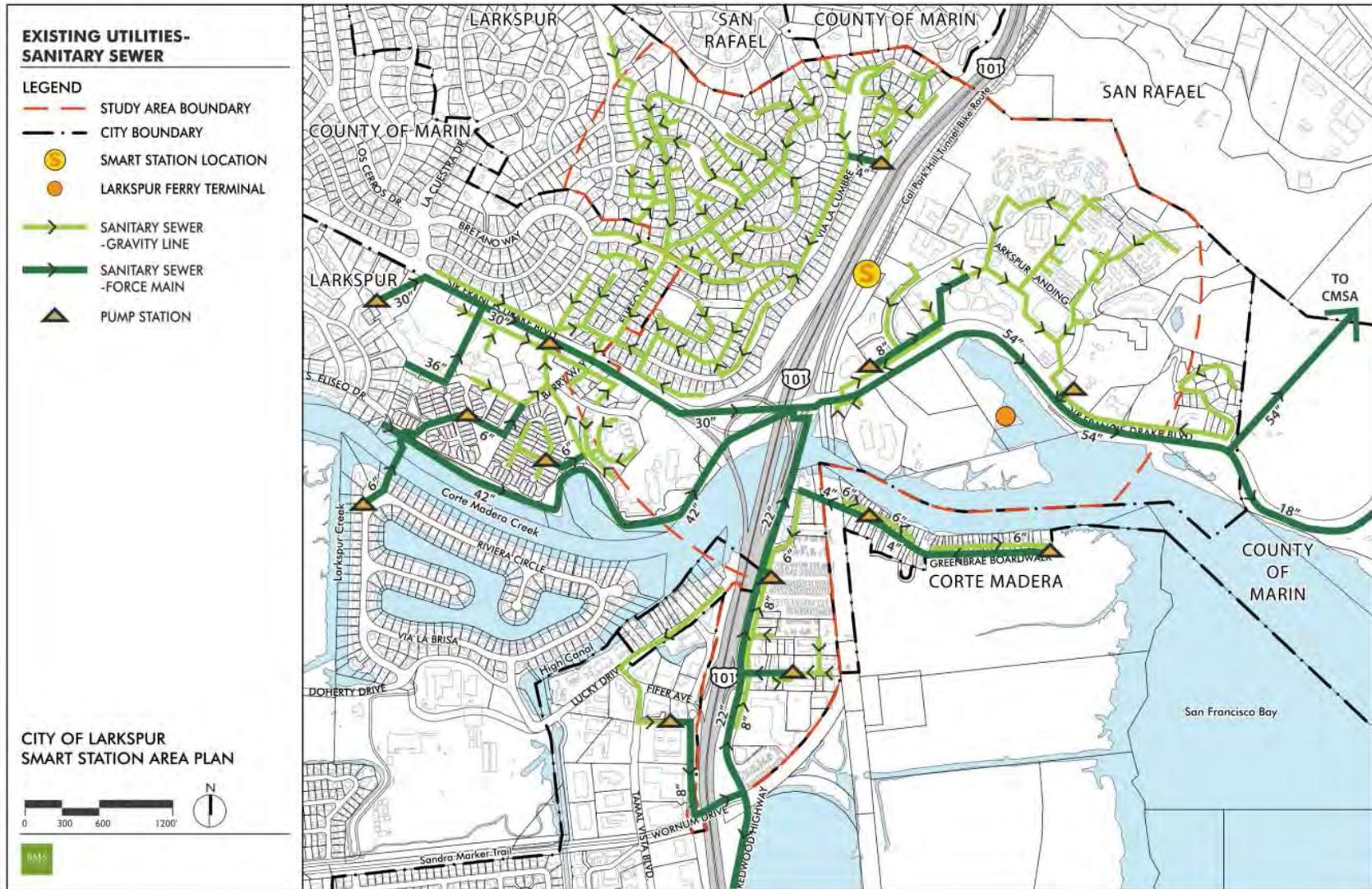
The major sewer trunk line within sub-area 2 is a 22" force main that conveys the areas sewer flow north within Redwood Highway with an ultimate connection to CMSA's 54" force main in Sir Francis Drake Boulevard at Hwy 101. Gravity mains within this sub-area are limited to a few service lines within the retail center and in Redwood Highway. Two pump stations located within sub-area 2 as well as one pump station located just west of the SAP at Fifer Avenue and Tamal Vista Boulevard pump to the 22" force main. Sanitary District No. 2 owns and maintains all of the sewer facilities within this sub-area with the exception of the maintenance for the pump stations. That maintenance is contracted out directly to CSMA.

Much of the sewer infrastructure within the Larkspur SAP is old. The District having been established in 1899, many of the facilities currently in service were installed prior to 1950. In January 2007, knowing that the system was aging, the District published their most recent Sewer System Replacement Plan. This plan documented a specific strategy for maintenance and replacement of existing lines on a timeline commensurate with the known state of the system at that time. Since 2011, the District has been in the process of performing a video assessment of the entire system. They are about 50% complete as of March 2013, and the process has been shedding new light on the condition of the existing sewer mains, although no new assessment or plan has yet been published. Most recently, on March 25, 2013, the San Francisco Bay Region of the California Regional Water Quality Control Board issued a Tentative Cease and Desist Order for the Ross Valley Sanitary District. A public hearing will be held on May 8, 2012. In light of the recent discovery of the deteriorated state of the system, a new, more accelerated rate of main replacement is likely to be implemented. A complete, new evaluation and report of the system is yet to be completed, and it is not clear at this time if lines in the station area are included among the ones of highest concern. In either case, replacement of sewer lines due to age is something that would necessarily occur, regardless of new development in any area of the District.

As private properties within the Larkspur SAP are developed, project-specific capacity and condition analysis of the applicable sewer facilities adjacent to the project should be performed to identify any impacts to the system. Impacted facilities may require mitigation, which could include modifications to the pump stations. Extensions of the main lines and construction of new services may also be required for the areas of the study that have limited existing infrastructure. Modifications such as these would be the responsibility of the private development.

The Central Marin Sanitation Agency (CMSA) wastewater treatment plant treats an average of about 11 million gallons of wastewater per day and serves the communities of Larkspur, San Rafael, Ross Valley, and Corte Madera. As part of their NPDES permit requirements, CMSA completed improvements to their treatment facilities in 2010 that increased their treatment capacity from 90 MGD to 125 MGD and their hydraulic capacity from 90 MGD to over 155 MGD. Additionally, the requirements for future reduction of water use set by the 20x2020 Plan and the Municipal Code will mean a corresponding reduction in production of wastewater per land use. Further, in order to meet LEED compliance goals, larger non-residential projects may opt to install grey water systems to treat and reuse wastewater on-site. Redevelopment of the Larkspur SAP is not anticipated to significantly impact the capacity of the CMSA treatment plant.

Figure 2: Existing Sewer Infrastructure



Storm

Major Storm Drainage infrastructure within the Study Area is owned and operated by the City of Larkspur and maintained by the City's maintenance division. The City is responsible for maintaining the drainage infrastructure from drain pipes to flood channels to natural creeks. Specifically, the City is responsible for protecting the City citizens from flooding. Local collection systems consisting of underground pipes, concrete channels, culverts, and swales collect and convey storm drainage to the creeks and San Francisco Bay.

The Larkspur Specific Plan consists of parcels that range from developed land with high percentages of impervious areas (sub-areas 1A and 2) to parcels that contain more landscaping and open space (sub-area 1B north of SFD). It is assumed that the majority of storm water runoff currently flows from these parcels directly into the public storm drain infrastructure with little to no retention or treatment. This can have negative impacts on downstream capacity as well as water quality in the creeks and Bay.

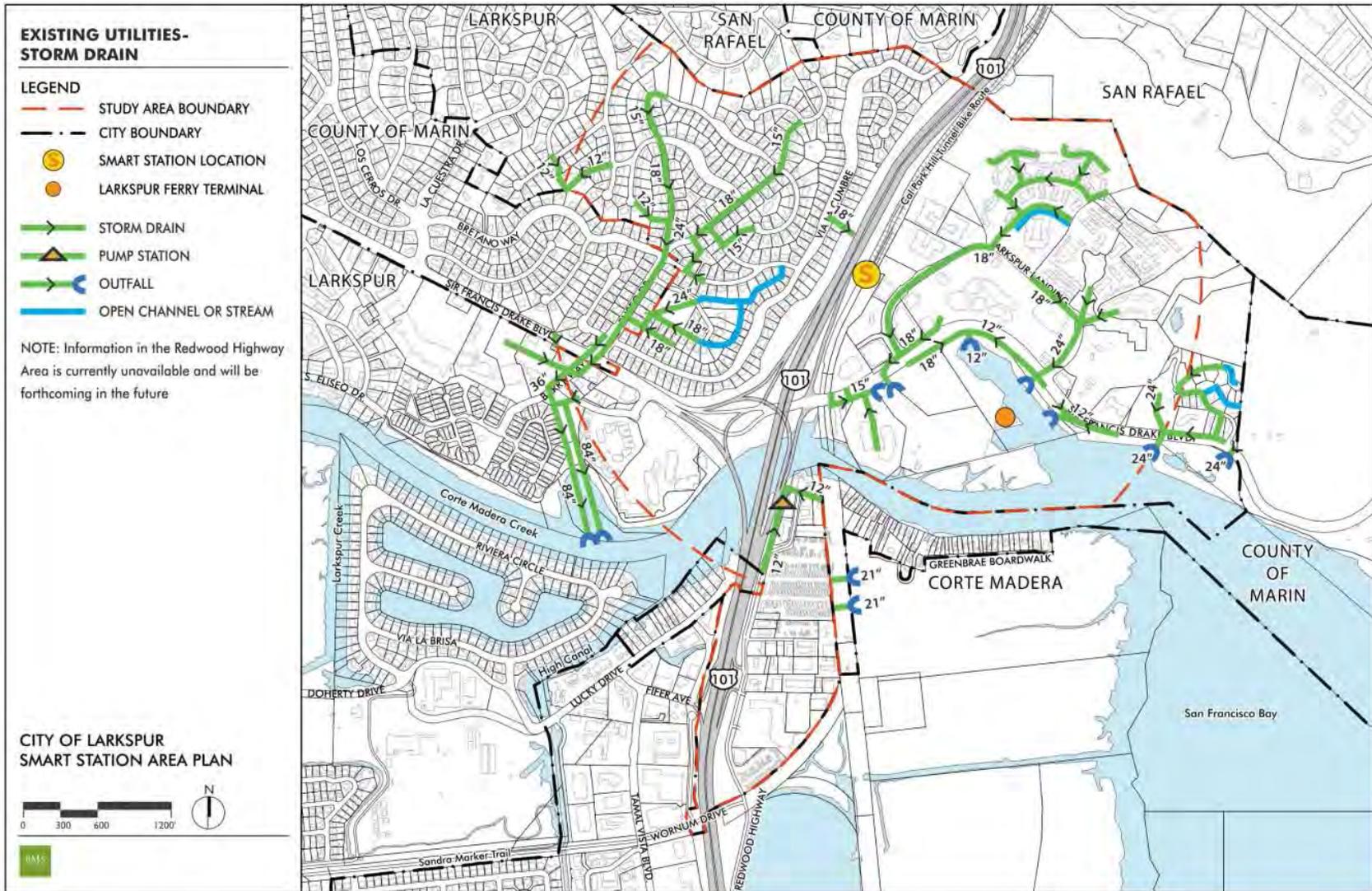
As development occurs, changes in the amount of impervious surface within each parcel can impact the runoff characteristics of the region. Both new development and redevelopment projects that would increase the amount of storm water runoff will be subject to mitigating these increases so that post-construction storm water runoff is not greater than the pre-construction condition. By managing storm water runoff through development, also referred to as hydromodification, the water capacity and quality of the streams and receiving waters can be preserved.

Storm water quality also needs to be taken into consideration as the station area redevelops. New developments that create or replace more than 10,000 square feet of impervious surface must comply with Provision C.3 of the Marin County municipal storm water permit and with the California State Water Board. Commonly accepted measures for water quality treatment include such treatment methods as bioswales, flow-through planters and detention basins, as well as green roofs. Both individual project level as well as regional level storm water management programs should be considered to achieve overall storm water quality compliance. Marin County coordinates stormwater requirements primarily through their MCSTOPPP program: Marin County Stormwater Pollution Prevention Program.

In addition to County C.3 requirements, the new adoption of green building requirements into the City's Municipal Code presents the opportunity for developers to meet minimum thresholds by implementing measures to reduce stormwater runoff or improve stormwater quality.

The end result of all the current state and regional storm water regulations is that future development will, as a legal necessity, have a negligible impact on the existing storm drain system. Over time, it is more likely that peak flows in the system will be less than present-day, and, the water conveyed to the Bay will be higher quality.

Figure 3: Existing Storm Infrastructure



2. Infrastructure Demands

The Preferred Plan, Alternative 4, developed by the station area plan has targeted development rates and land uses for the identified opportunity sites. Land use for the Preferred Plan compared to current land use is detailed in Table 1 for all opportunity sites.

Table 1: Preferred Plan Matrix

Site	Existing Land Use		Alternative 4 Preferred Plan		
1 FERRY	Public Facility/Transit	25,000 sf	Residential	35 dus/ac	300 dus
			Public Facility/Transit to remain		25,000 sf
			Public Park		1 ac
			Retail - ground floor		2,500 sf
2 AIRPORTER	Public Facility/Transit	2,500 sf	Public Facility/Transit to remain		2,500 sf
3 LARKSPUR OFFICES & CINEMA	Office (Admin & Prof) Cinema	190,000 sf 16,000 sf	Office to remain		190,000 sf
			Office (additional)		50,000 sf
			Cinema to remain		16,000 sf
			Retail		35,000 sf
4 MARIN CNTRY MT	Office Retail (Gen Commercial)	45,000 sf 175,000 sf	Residential	30 dus/ac	300 dus
			Retail (additional)		40,000 sf
			Retail to remain		175,000 sf
5 SANITARY DISTR	Vacant*	0 sf	Residential	35 dus/ac	250 dus
			Hotel	60,000 sf =	100 rooms
			Office		12,500 sf
6 DRAKES LANDING	Office (Admin & Prof)	126,000 sf	Residential	30 dus/ac	70 dus
			Office to remain		126,000 sf
7 OFFICES	Office (Admin & Prof)	18,000 sf	Office	0.5 FAR	40,000 sf

*Ordinances 951 and 954 approved the precise development plans for the residential and hotel portions of the development (respectively). Reso. 34/05 amended the land use category for a portion of the parcel to Public Facilities; however, there was never a precise plan approval for exact square footage allowances and other development standards for the public facilities portion of the property.

Based on the above numbers for land use by study area site (numbered 1-7), water demands were estimated for existing and proposed conditions and calculations were made to determine the changes in demand. Estimates represent an “order of magnitude” study which would be refined with specific project design in the future. Estimated rates of water use were assigned to each land use based on current usage rates (not accounting for future conservation measures which may reduce expected demands by customers). Water consumption rates represent average daily rates per land use as observed by another Bay Area water agency, as MMWD did not have rates available.

Table 2: Water Consumption Rates by Land Use

		Water Consumption Rates				
		Office/ Public	Hotel	Retail/ Cinema	Residential	Industrial/ Auto-Serving
Unit →		GPD/SF	GPD/Room	GPD/SF	GPD	GPD/SF
		0.1035	175.00	0.2820	179	0.1035

Assigning the Water Consumption Rates shown in Table 2 to the existing land uses on the opportunity sites summarized in Table 1, the following daily rates of consumption are estimated. In total, existing water demand for the station area opportunity sites is estimated to amount to approximately 0.1 Million Gallons per Day (MGD).

Table 3: Estimated Water Usage for Opportunity Sites’ Existing Land Use

		Estimated Water Demand: Existing Land Use				
		Office/ Public	Hotel	Retail/ Cinema	Residential	Industrial/ Auto-Serving
Site ↓	Unit →	GPD	GPD	GPD	GPD	GPD
1		2,588	0	0	0	0
2		259	0	0	0	0
3		19,665	0	4,512	0	0
4		4,658	0	49,350	0	0
5		0	0	0	0	0
6		13,041	0	0	0	0
7		1,863	0	0	0	0
	Total →	42,073	0	53,862	0	0

Assigning the Water Consumption Rates shown in Table 2 to the proposed land uses for opportunity sites in the Preferred Alternate plan as shown in Table 1, the following rates of consumption are estimated. In total, applying current water usage rates, future water demand for opportunity sites in the station area is estimated to amount to approximately 0.3 MGD. When considering compliance with the California Green Building Standards Code requirements, the projection is reduced to 0.24 MGD. Table 4 below shows the future rates with current usages.

Table 4: Water Usage for Preferred Plan Opportunity Sites

		Alternative 4: Preferred Plan				
		Office/ Public	Hotel	Retail/ Cinema	Residential	Industrial/ Auto-Serving
Site ↓	Unit →	GPD	GPD	GPD	GPD	GPD
1		2,588	0	705	53,700	0
2		259	0	0	0	0
3		24,840	0	14,382	0	0
4		0	0	60,630	53,700	0
5		1,294	17,500	0	44,750	0
6		13,041	0	0	12,530	0
7		4,140	0	0	0	0
	Total →	46,161	17,500	75,717	164,680	0

The Marin Municipal Water District (MMWD) Urban Water Management Plan (UWMP) accounts for some regional growth in their future estimates for water demand and system design. Development proposed by the Preferred Plan represents more than a 300% increase in water demand as compared with the current demand in the station area. The 300% increase is reduced to 254% if looking at the 20% reduced future use rates. Only a portion of this increase is accounted for in the UWMP. The 2010 UWMP is based on ABAG’s predictions for population growth published in 2009, showing a population increase in Larkspur of 1,100 residents from 2010 to 2030. This Preferred Plan estimates that the development will bring in 2,033 new residents. The MMWD will publish a new UWMP in 2015. They are anticipating inclusion of updated growth estimates for the City of Larkspur based on this Preferred Plan. At this time, it is estimated that current MMWD storage facilities and distribution network are adequate to accommodate the growth, however water supply must be confirmed. New projects may be required to install infrastructure for recycled water, although it is not clear at this time what standards will trigger implementation.

As a general estimate, sewer flows for dry weather can be estimated as 90% of the water usage rates. Using this rule, existing land uses in the station area would generate an estimated 0.09 MGD of sewer flow in dry weather, while the future flows with the proposed Preferred Plan would be approximately 0.27 MGD, or an additional 0.19 MGD of sewer flow. Since the Central Marin Sanitation Agency (CMSA) wastewater treatment plant currently treats an average of 11 MGD, the anticipated flows represent about 2.5% of current treatment rates. However, with the current capacity of the plant at 125 MGD, it represents only about 0.2% of total capacity. Again, the future numbers will be lower than anticipated after the 20x2020 Plan is fully implemented. It’s important to note that, while the existing lines may require replacement in the near future due to deteriorating structural integrity, the current line sizes appear to be adequate to support the development of the Preferred Plan for the station area. Aging lines requiring repair or replacement would require the work whether or not there was any new development in the area.

Since current State storm water requirements mandate that new developments or re-developed areas greater than 10,000 sf must maintain post-construction stormwater flows from the site at

pre-construction levels, no changes are anticipated for the study area as a whole. However, projects will need to treat their generated flows individually to ensure flows are not increased, whether the projects are public or private. Additionally, all stormwater flows will need to be treated to prevent pollution. Commonly accepted measures include such treatment methods as bioswales, flow-through planters and detention basins, as well as green roofs.

Joint trench utilities (power, phone, cable and natural gas) are already in place in the station area roads. These utility providers are required to supply service to new customers upon request. Relocation of roadways would necessitate relocation of joint trench utilities, and construction on currently undeveloped parcels would likely require new services be connected.

Based on the above findings, there are not anticipated to be any significant City of Larkspur costs associated with utility modifications or upgrades to mains. Standard operations and maintenance practices and schedules already in place are expected to accommodate functionality of existing lines. Private development projects would be responsible for extending utilities to their site or modifying existing services. If determination is made in the future that a given development would have a negative impact on public facilities, that development would be required to facilitate modifications.

3. Circulation Improvements

The Preferred Plan includes a number of circulation improvements throughout the station area that are proposed under other projects, including the Central Marin Ferry Connection and the Greenbrae Corridor Improvement Project. Additional circulation infrastructure improvements being proposed under this Station Area Plan include sidewalk and street crossing improvements intended to facilitate better pedestrian circulation throughout the Larkspur Landing Area (see Figure 4). Improvements include linking existing pedestrian walkways and installing new street crosswalks. The analysis does not take into consideration costs associated with land acquisition to establish public right-of-way or private improvement modifications to mitigate conflicts if existing rights-of-way are insufficient for the new sidewalks.

Our analysis includes soft costs for Design, Inspection, Staking, Construction Administration and Project Management.

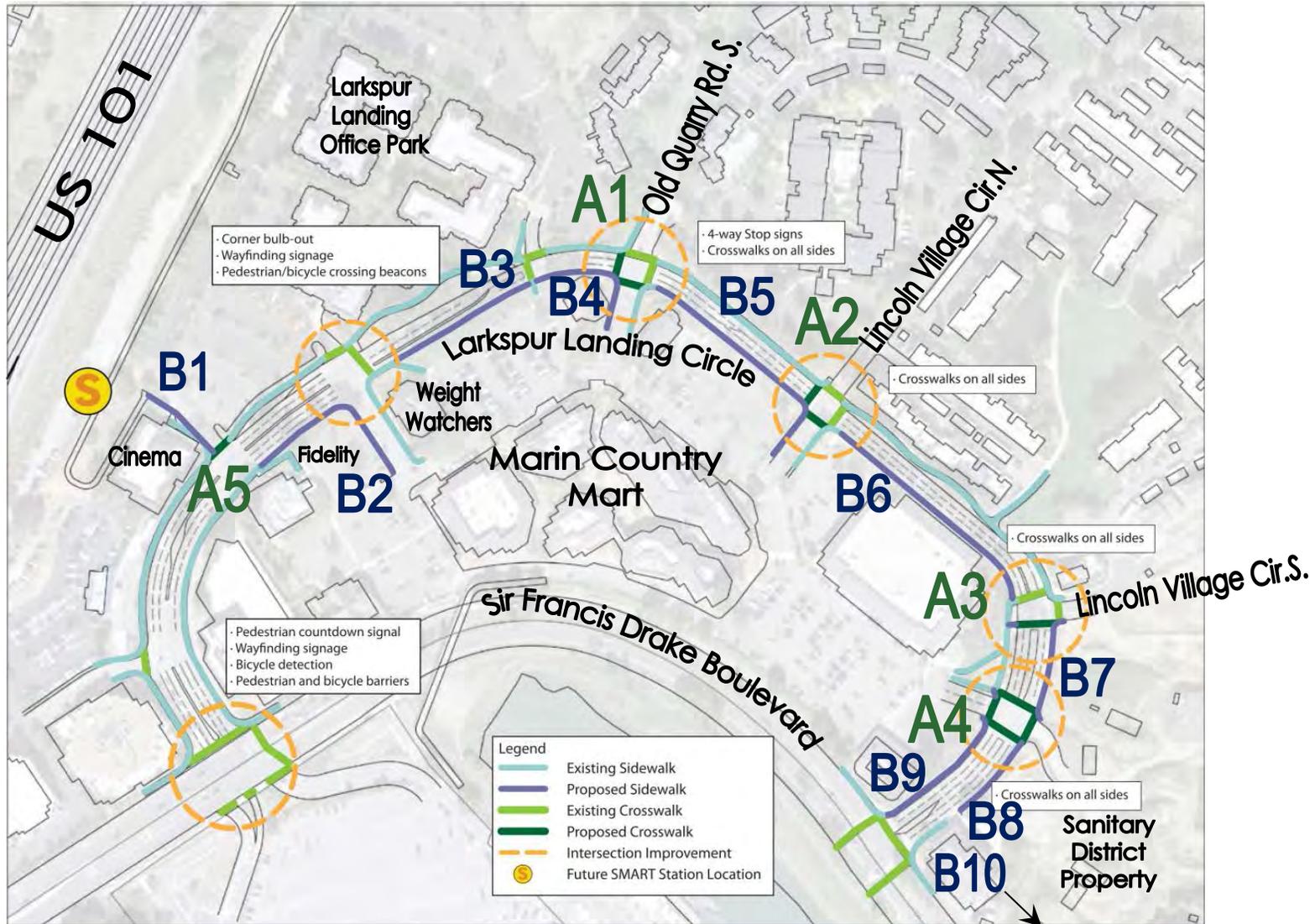
Local Crosswalk Improvements

Five existing intersections along Larkspur Landing Circle have been identified for crosswalk upgrades to improve pedestrian circulation for the ultimate buildout of the station area (See Figure 5). These intersections identified for additional improvements are at Larkspur Landing Circle and:

- A1. Old Quarry Road South
- A2. Lincoln Village Circle (North)
- A3. Lincoln Village Circle (South)
- A4. Sanitary District Property entrance/Marin Country Mart south entrance
- A5. Entry to Cinema site

Costs associated with these improvements were estimated based on generally expected site conditions and reflect industry average construction costs. New crosswalks were assumed to be striped to match existing crossings, with the of addition in-pavement lighting.

Figure 4: Larkspur Landing Circle Improvements



New Sidewalk Improvements

Existing sidewalk along the length of Larkspur Landing Circle is not continuous on either side. Along with the crosswalk improvements identified above, unimproved segments of sidewalk were identified for installation. Similar to our methodology for assigning cost values to the previously mentioned crosswalk improvements, we have assigned costs based on specific improvements generally expected in standard conditions. These include landscape and irrigation, street lighting, street trees, signage and stormwater BMPs in addition to the demo, grading, earthwork, base rock and concrete required for the sidewalk itself.

The following sidewalk segments are proposed:

- B1. Cinema Frontage off Larkspur Landing Circle (LLC)
- B2. LLC (South frontage) Fidelity building to Marin Country Mart (MCM) entry
- B3. LLC (South frontage) Weight Watchers building to Office Park east entry
- B4. LLC (South frontage) Office Park east entry to Old Quarry Road S. into MCM
- B5. LLC (South frontage) Old Quarry Road S. to Lincoln Village Circle N. and into MCM
- B6. LLC (South frontage) Lincoln Village Circle N. Lincoln Village Circle S.
- B7. LLC (East frontage) Lincoln Village Circle S. to Sanitary District Site
- B8. LLC (Southeast frontage) Sanitary District Site to Offices
- B9. LLC (Northwest frontage) MCM south entry to Sir Francis Drake Blvd.
- B10. Sir Francis Drake Blvd. (North frontage) east of the Melting Pot

A summary of the estimated costs associated with the proposed crosswalk and sidewalk improvements is provided in Table 5 below. In addition to the other assumptions, the sidewalk along Sir Francis Drake Boulevard is assumed to not require any major earthwork or retaining wall work and that ample flat space exists along the existing roadway, but that a safety rail would be required.

Table 5: Circulation Improvements Costs

ITEM	DESCRIPTION	UNITS	UNIT COST	QUANTITY	COST
A	LOCAL CROSSWALK IMPROVEMENTS				
1	Larkspur Landing Circle & Old Quarry Rd. S.	EA	\$26,300	2	\$53,000
2	Larkspur Landing Circle & Lincoln Village Circle N.	EA	\$26,300	2	\$53,000
3	Larkspur Landing Circle & Lincoln Village Circle S.	EA	\$26,300	1	\$30,000
4	Larkspur Landing Circle & Sanitary Dist. Site	EA	\$26,300	4	\$110,000
5	Larkspur Landing Circle & Cinema Site	EA	\$26,300	1	\$30,000
	LOCAL CROSSWALK IMPROVEMENTS SUBTOTAL				\$276,000
					Design, Soft Costs, Mapping (at 15%) \$41,400
					Inspection, Staking, C/A (at 10%) \$27,600
					Project Management (at 5%) \$13,800
					TOTAL CONSTRUCTION COST \$358,800
B	NEW SIDEWALK IMPROVEMENTS				
1	Cinema Frontage off Larkspur Landing Circle (LLC)	LF	\$300	165	\$49,500
2	LLC (South frontage) Fidelity bldg to Marin Country Mart (MCM) entry	LF	\$300	335	\$100,500
3	LLC (South frontage) Weight Watchers bldg to Office Park east entry	LF	\$300	280	\$84,000
4	LLC (South frontage) Office Park east entry to Old Quarry Road S. into MCM	LF	\$300	290	\$87,000
5	LLC (South frontage) Old Quarry Road S. to Lincoln Village Circle N. and into MCM	LF	\$300	500	\$150,000
6	LLC (South frontage) Lincoln Village Circle N. Lincoln Village Circle S.	LF	\$300	435	\$130,500
7	LLC (East frontage) Lincoln Village Circle S. to Sanitary District Site	LF	\$300	195	\$58,500
8	LLC (Southeast frontage) Sanitary District Site to Offices	LF	\$300	170	\$51,000
9	LLC (Northwest frontage) MCM south entry to Sir Francis Drake Blvd.	LF	\$300	270	\$81,000
10	Sir Francis Drake Blvd. (North frontage) east of the Melting Pot ⁽⁶⁾	LF	\$250	400	\$100,000
	NEW SIDEWALK IMPROVEMENTS SUBTOTAL				\$892,000
					Design, Soft Costs, Mapping (at 15%) \$133,800
					Inspection, Staking, C/A (at 10%) \$89,200
					Project Management (at 5%) \$44,600
					TOTAL CONSTRUCTION COST \$1,159,600

4. Public Facilities and Open Space Improvements

In addition to the circulation and pedestrian improvements described above, the Preferred Plan proposes the provision of new public open space as well as improvements to existing public parks. Two public plazas are proposed, including one along the frontage of the Marin Country Mart, overlooking Sir Francis Drake Boulevard and the bayfront and another at the south end of the Ferry Terminal parking lot. While these facilities are not yet precisely defined, some assumptions have been made as to spacing of pedestrian lighting, paving and landscaping in order to provide estimates for planning purposes. These should be considered “order of magnitude” estimates.

Along with the new plaza areas, existing facilities have been recommended for upgrades along Sir Francis Drake Boulevard. The existing medians from the US 101 north-bound off and on ramps to the Melting Pot, just to the east of Larkspur Landing Circle are currently partially paved and partially landscaped. Although Sir Francis Drake Boulevard is Caltrans right-of-way in this area, the medians are maintained by the City of Larkspur. An estimate is provided to cover new landscaping and trees on the three lengths of median, approximately 28,000 sf, here. There is also an existing trail approximately 2,800 feet in length along the south side of Sir Francis Drake Boulevard, from the Ferry Terminal to Remillard Park. Some costs are estimated here for improvements to the trail in the form of landscaping, lighting and occasional benches.

Also as a part of this analysis, cost estimates for improvements to Miwok Park and Remillard Park, which were originally detailed in a May 1999 report titled “Larkspur Mini Parks Master Plan,” have been updated for 2013 costs. The original report provided itemized improvements and costs and was updated in July 2000. A 45% rate of inflation was applied to the costs shown from 1999. This rate was taken from the Turner Construction Cost Index. Our updates also include soft costs for Design, Inspection, Staking, Construction Administration and Project Management and are summarized in Table 6. A summary of the proposed park improvements is included in the Urban Design Guidelines section of the Station Area Plan.

Table 6: Public Facility Improvements Costs

C	PUBLIC FACILITY IMPROVEMENTS				
1	Marin Country Mart Promenade	SF	\$300	37,000	\$11,100,000
2	Ferry Terminal Plaza	SF	\$300	34,000	\$10,200,000
3	Upgrades to Existing Path: Ferry Terminal to Remillard Park	LF	\$140	2,765	\$387,100
4	Upgrades to Existing Median: Sir Francis Drake Blvd, US 101 to Melting Pot	SF	\$26	28,000	\$728,000
5	Upgrades to Existing Facilities: Miwok Park	LS	\$478,700	1	\$478,700
6	Upgrades to Existing Facilities: Remillard Park	LS	\$165,400	1	\$165,400
	PUBLIC FACILITY IMPROVEMENTS SUBTOTAL				\$23,059,200
				Design, Soft Costs, Mapping (at 15%)	\$3,458,880
				Inspection, Staking, C/A (at 10%)	\$2,305,920
				Project Management (at 5%)	\$1,152,960
				TOTAL CONSTRUCTION COST	\$29,976,960

The Larkspur SMART station platform and parking improvements would be funded through SMART at a future date and are not included in this analysis as a public facility improvement cost to be incurred by the City of Larkspur.

Figure 5: Public Facilities and Open Space Improvements



5. Phasing

Each of the proposed improvement projects would be relatively simple to conduct in self-contained phasing. Since there are no lengths of roadway planned for modification, there will not be a need to redirect traffic through significant detours. Pedestrian crossing upgrades can be conducted one-half street width at a time with traffic control as needed. The intersections and sidewalk segments could be done one at a time or spread out over time depending on availability of funding. For the larger improvements at the SMART station and Ferry Terminal, minor traffic control would be needed onsite for the duration of the projects and projects could be completed as funding is available.

6. Funding Strategy *[Provided by BAE Urban Economics]*

The physical improvements proposed by BKF Engineering for the Station Area Plan are of two primary types:

1) A combination of crosswalk, sidewalk and existing site improvement which are relatively modest in scale (approximately \$2 million) and can reasonably be achieved in a relatively short time-frame (1-5 years). The City's existing Capital Improvement Plan (CIP) Fund would be the primary source for funding these improvements drawing on a range of sources that have historically been used to fund infrastructure in Larkspur. These improvements would also enhance the overall walkability and transit connectivity of the area and would likely be considered very competitive for OneBay Area Grant (OBAG) Funding from MTC¹. According to the City's most recently adopted budget, the most important sources for the Capital Improvements Fund include:

- State and Regional Funds (Including those identified as part of the OBAG Program)
- Nonmotorized Transportation Pilot Program (NTTP) Grants (Included under Federal SAFETEA described below and also allocated through the OBAG process).
- Transfers from City General Fund
- General Plan Fees
- Public Private Partner Program

2) Major public facilities improvements, primarily to the Marin Country Mart and the Ferry Plaza Terminal. The approximately \$30 million in needed improvements for public facilities will require more significant planning and financial resources and potentially a longer time-frame for implementation. In order to fund these improvements, value capture² mechanisms such as Community Benefits Districts and other types of Special Assessment Districts (SADs) will likely be needed to bridge the gap between existing public resources and overall project financing needs.

More specific information on potential funding sources is included in Appendix A.

¹ More information from MTC can be obtained here: www.mtc.ca.gov/funding/onebayarea/

² Value capture encompasses a set of public financing approaches which attempt to recapture all or part of the increased land values that accrue to property owners as the result of infrastructure investments. Common value capture mechanisms include Special Assessment Districts, Fees, Exactions and a variety of public-private partnership models.

APPENDIX A: POTENTIAL FUNDING SOURCES

Infrastructure Financing District (IFD)

With the dissolution of California Redevelopment, infrastructure financing districts (IFDs) provide an alternative mechanism for California communities to collect tax increment to fund necessary infrastructure and other improvements. Jurisdictions must specify the portion of tax increment to collect over the designated period, as well as the list of projects that the IFD would fund. Once approved, the local government can collect tax increment within the district for use in infrastructure projects, including site acquisition.

There are two challenges to creating an IFD. First, the jurisdiction must get approval from all other taxing entities that would forfeit a portion of their tax revenues. Each entity must pass a resolution accepting the creation of the IFD and the portion of increment they would commit. Second, the creation of an IFD requires approval from a two-thirds majority of registered district voters. Obtaining approval from both the other taxing entities and voters could be difficult, particularly in the current economic climate.

Legislation was considered in the State legislature in 2012 which would have made the formation of IFDs as an alternative to Redevelopment somewhat less cumbersome, but was vetoed by Governor Brown. New legislation may be taken up in 2013.

Sources and Examples:

Rincon Hill IFD, 2010 – Prepared by Keyser Marston
Port of San Francisco IFD Policy, December, 2012
Basic Information from CA State Senate web site:
senweb03.senate.ca.gov/committee/standing/GOVERNANCE/IFDINFORMATION.HTM

Assessment Districts (Including Community Benefits Districts)

Assessment districts provide a mechanism for property owners to choose to levy an additional tax upon themselves for identified purposes. California law allows the creation of assessment districts for a wide variety of purposes; these can either fund capital improvements, or be established for operating costs (such as lighting and landscaping districts).

There are two primary challenges in establishing assessment districts, particularly for already developed areas. The first challenge is that total property taxes can only rise a certain amount before new development is disadvantaged relative to properties not subject to an assessment. The second challenge is that assessment districts require a majority vote of property owners weighted by property value to pass. In an area with numerous small properties and extensive residential development the prospect of a tax increase may be difficult to pass.

A Business Improvement District (BID) is a type of assessment district that can assess either business owners or property owners (or both) to fund promotional, marketing, and other activities including additional maintenance or other public services or improvements. Related to the traditional BID model, Community Benefits Districts have recently been established in various

California cities to provide a steady stream of funding for services and programs in primarily infill areas³.

Development Impact Fees

Cities and counties levy impact fees upon new development to mitigate the effects of that development. The establishment of an impact fee requires documentation through a study that meets the requirements of AB1600 for establishment of a clear nexus between the fee to be collected and the improvements that will mitigate the impact of development.

Revenue Bonds

Public activities that are revenue generating, and create sufficient cash flow to cover operating costs and debt service can potentially issue tax-free municipal debt to cover the cost of capital improvements. A common example of this is revenue bonds for parking garage construction where there is pay parking.

General Fund Debt Obligations

New commercial and lodging projects could generate significant new sales tax and transit occupancy (lodging) tax revenues that will flow into the City's General Fund. This new money could be used to finance debt service on tax-exempt debt obligations so that existing activities provided through the General Fund are not impacted. Such a General Obligation bond, however, requires a two-thirds vote of local residents (except for educational facilities) to approve. Alternatively, for facilities that can serve as collateral for debt, certificates of participation are a public finance technique that does not necessarily require a public vote.

State Sources

Most of these are administered regionally through the MTC OBAG funding process which now favors infill areas. In Marin County, 50% of all County-dedicated OBAG funding (\$10 Million for the current four year cycle) will be allocated to urban, infill areas like the Community Plan project area.

Safe Routes to School (SR2S)

Like the Federal Safe Routes to School (SRTS), the State's Safe Routes to School program can provide funding for infrastructure projects that are located within the vicinity of a school. Round 10 of funding provides \$45 million over two years for these projects. Cities and counties apply to Caltrans for grants and must match 10 percent of funds. The maximum grant allowed is \$450,000 for a \$500,000 project. AB 57 extended this program indefinitely.

Proposition 1B Programs

In 2007, Californians passed Proposition 1B (Prop 1B), the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006. Prop 1B provided \$19.925 billion for a variety of transportation improvements across California. Although the State has spent most of the funds from Prop 1B, approximately \$4 billion remains available for transportation infrastructure improvements. After 2012, California will have likely exhausted this resource.

³ More information on CFDs can be obtained here: newcityamerica.com/whatiscbd.asp

Bicycle Transportation Account

Caltrans provides grants for infrastructure projects that benefit bicycle commuters through its Bicycle Transportation Account. The project must increase the safety and convenience of bicycle commuters. Cities and counties interested in this funding source must create a Bicycle Transportation Plan (BTP) and submit it to their Regional Transportation Planning Agencies for approval.

Federal Sources

SAFETEA-LU/Surface Transportation Reauthorization Program

President Obama wants to replace the 55-program SAFETEA-LU with the Surface Transportation Reauthorization Program. This program serves the entire Department of Transportation (FHWA), and includes several departments, including the Federal Highway Administration (\$70.5 billion) and the Federal Transit Administration (\$22.2 billion). Congress has not yet passed the Surface Transportation Reauthorization Program, but keeps extending SAFETEA-LU. SAFETEA-LU grants are highly competitive, often drawing in more funding requests than available monies.

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

Cities and counties can apply to Caltrans and their local COGs and regional transportation entities for FHWA grants that fund infrastructure and transportation improvements that improve air quality. These grants exist under the current SAFETEA-LU program, and require 20 percent matching funds. In FY 2011-2012, CMAQ contributed \$491.8 million to California, with an average grant of \$14 per person served.⁴

Transportation, Community, and System Preservation (TCSP) Program

Caltrans typically awards TCSP grants, which exist under the current SAFETEA-LU program. TCSP grants provide funding for projects that reduce the impacts of transportation on the environment, reduce the need for costly future investments in public infrastructure, or provides efficient access to jobs, services, and centers of trade. As with other FHWA grants, TCSP funds require a 20 percent match.

Transportation Investment Generating Economic Recovery (TIGER) Grants

In 2009, the Federal government provided funding for “shovel ready” infrastructure projects to stimulate the economy. This was part of the American Recovery and Reinvestment Act of 2009 (ARRA). Although ARRA is over, the Federal government will use other funding sources to continue providing TIGER grants. These grants can be used to fund transportation projects that promise significant economic and environmental impacts to a region, state, or nation.

Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) Grants

Cities, counties, states, or transportation agencies can apply for TIGGER grants to fund projects that reduce the energy consumption or the greenhouse gas emissions of transportation systems. These grants are very competitive and require zero to 20 percent matching.

⁴ Caltrans reports the populations and total grants per region, but does not provide a list of projects. Thus, the average grant is reported on a per capita basis.

Safe Routes to School (SRTS)

Under SAFETEA-LU, the Federal government provides grants to fund infrastructure improvements that calm traffic or provide better bicycle and pedestrian access within two miles of a school. These grants can be used for streetscape improvements, as well as traffic calming infrastructure projects.

Recreation Trails Program

The Federal Highway Administration (FHWA) provides funding to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreation trail uses. The FWHA has apportioned \$2.7 million to California for fiscal year 2012-13. There is no match required.

National Scenic Byways Program

The FWHA provides funding for improvements to scenic byways. The grants provide merit based funding for byway projects each year and require a 20 percent match. Projects can include signage, pedestrian access improvements, planning, or any activity that improves a scenic byway.

CDBG Infrastructure Financing

For cities and counties not under the HUD CDBG entitlement program, HUD offers grants that can fund infrastructure improvements, provided that low-income residents represent 51 percent of project benefactors. There are two kinds of grants:

- **General Allocation Grants:** The project must address a health and safety need. More competitive projects will benefit a larger percentage of low-income persons. Typical award is \$500,000.
- **Over the Counter (OTC) Grants:** Typically award \$2.5 million per project. These grants support off-site infrastructure to support business or economic development.

State Loan Programs

Infrastructure State Revolving Loan Fund (ISRF)

The California Infrastructure and Economic Development Bank (I-Bank) loans money for infrastructure projects around the state. The I-Bank is the state's general purpose financing authority that finances public infrastructure and private development projects that promote economic development and revitalize communities.

Federal Loan Programs

Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA)

Under the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA), the FWHA provides Federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and potentially more favorable interest rates than can be found in private capital markets for similar instruments. Surface transportation projects, including transit infrastructure projects are eligible for these loans.