

Western Dublin
Transportation Impact Fee Update:
Final Report

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FEHR & PEERS



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1. INTRODUCTION

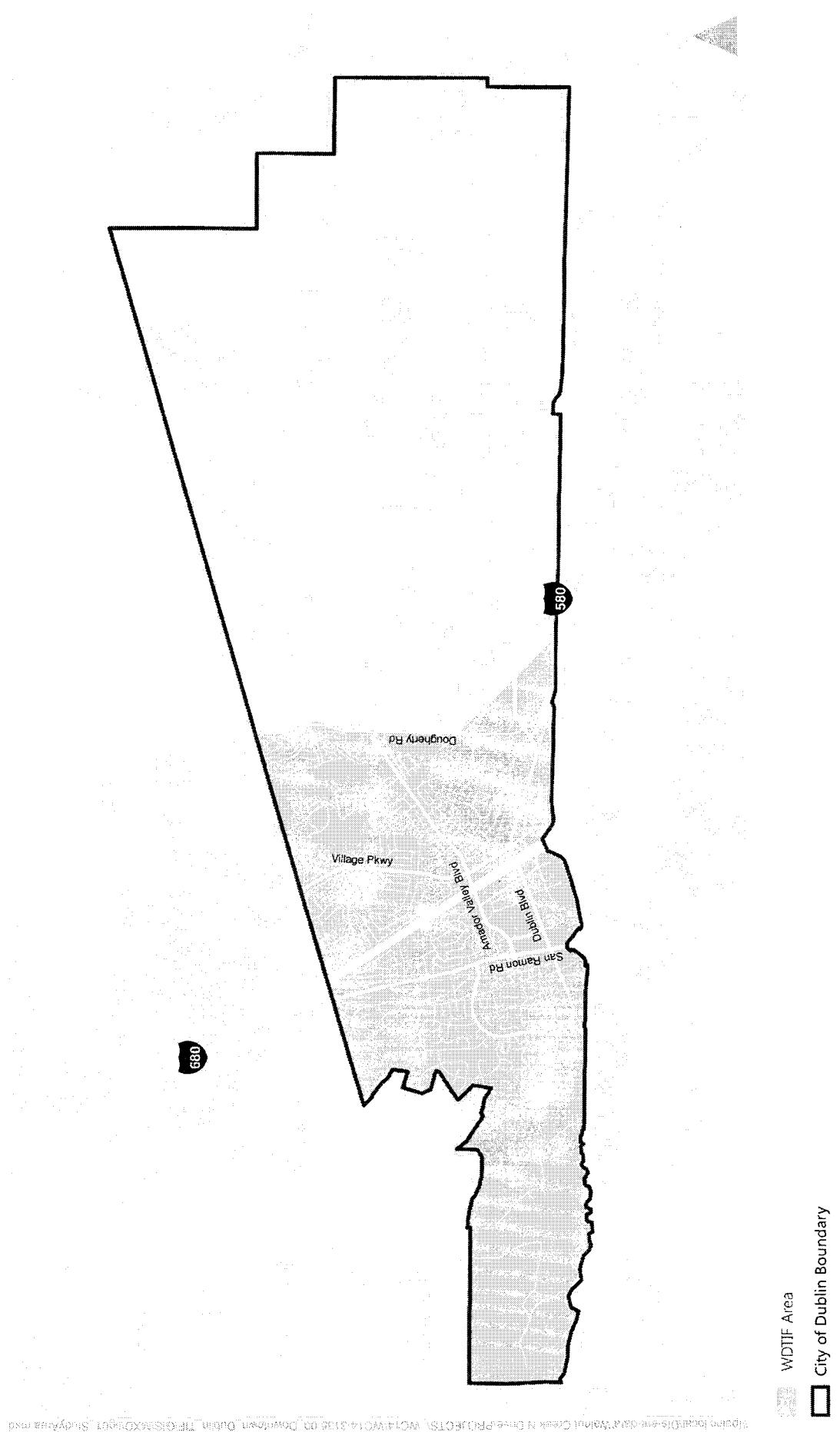
On October 19, 2004, the Dublin City Council adopted (by Resolution #210-04) a Downtown Traffic Impact Fee program, intended to generate funds to allow the City of Dublin to implement a number of important transportation investments planned in the area of the City located west of Dougherty Road and the Iron Horse Trail. The geographic area covered by this program is shown in **Figure 1**. The program has been successfully implemented and the funds generated have been used to construct several improvements to transportation infrastructure in the affected area.

Over the past eleven years, there have been a number of changes that affect the Downtown Traffic Impact Fee area, including updates to the City's General Plan, adoption of the Downtown Dublin Specific Plan, adoption of a citywide Bicycle and Pedestrian Master Plan, and construction of the West Dublin/Pleasanton BART station, among other items. To better reflect these changes, the City determined that the fee program should be updated to incorporate the recent changes and should also be renamed to better reflect the program's scope and intent. The program will now be known as the Western Dublin Transportation Impact Fee (WDTIF). The update process as documented in this report has included updating the list of capital improvement projects to be included in the WDTIF program, updating the growth projections in the geographic area covered by the WDTIF, and updating the fee calculations. (Note that the boundary of the WDTIF area has not been changed and remains as it was defined in the City Council action on October 19, 2004.) This report describes each of these steps and the approach to establishing the "nexus" or relationship between the impacts of new development in the WDTIF area and the fees that could justifiably be charged to construct transportation improvements to serve that new development.



Western Dublin Transportation
Impact Fee Study Area

Figure 1





2. CAPITAL IMPROVEMENT PROJECTS

PROJECT IDENTIFICATION

City staff provided an updated list of capital improvement projects in the area covered by the WDTIF program; as described in detail immediately below, these projects are designed to implement the relevant plans in this area and to support the future development of the area in alignment with the City's stated policy goals. The projects on this updated WDTIF list are primarily intended to improve the operations of the roadway system for users of all travel modes; the projects typically involve elements such as adding or changing turn lanes, adding bicycle lanes, widening sidewalks, and/or improving pedestrian safety by adding crosswalks or changing traffic signal phasing. **Table 1** displays the WDTIF project list, and the project locations are shown in **Figure 2**.

These WDTIF projects have been identified in order to implement the City's General Plan, the Downtown Dublin Specific Plan (DDSP), and the Bicycle and Pedestrian Master Plan (BPMP). In the introduction to the Circulation and Scenic Highways Element of the General Plan (section 5.1), the City describes its vision for a transportation system that "promotes transportation options and independent mobility, increases community safety, encourages healthy, active living, reduces environmental impacts, minimizes impacts to climate change from vehicle emissions, and supports greater social interaction and community identity." Further, the City emphasizes that it is "moving towards a truly comprehensive circulation network that supports multiple modes of transportation including private vehicles, transit, cycling, and walking." With respect to the Downtown area, General Plan section 5.2.2, policy A.6 indicates that the highest priority in the Downtown Dublin area is to maintain the safety of pedestrians and bicyclists and to minimize impacts to transit travel speeds. In addition, section 5.2.5 contains policies specific to the Downtown area; those policies direct the City to use the WDTIF to fund projects that are consistent with the DDSP and the BPMP. One roadway improvement in the WDTIF area is identified in the General Plan; this improvement is the St. Patrick Way extension, which is included as project 8 in the WDTIF list.

In the DDSP, Sections 5.1 and 5.2 address the need for improvements to vehicular, pedestrian and bicycle circulation in order to support the vision of the Specific Plan. The DDSP identifies the extension of St. Patrick Way as being necessary to allow better access through the transit-oriented district and to the West Dublin/Pleasanton BART station. The DDSP also identifies a need for expanding the bicycle network throughout the downtown area and creating improved connections to the West Dublin/Pleasanton BART station. In part because of these recommendations in the DDSP, the City chose to prepare an updated BPMP with a particular focus on improving bicycle and pedestrian connections through the Downtown area and to/from the West Dublin/Pleasanton BART station. Many of the WDTIF projects come directly from the



adopted BPMP. For example, several of the improvements along Village Parkway, Amador Plaza Road, Dublin Boulevard, and the St Patrick Way extension were identified in the BPMP as part of the Downtown Connectivity Project (see pages 128-129 of the BPMP). The St Patrick Way extension was identified as being a critical element of the Downtown Connectivity Project, necessary to provide an east-west connection to the West Dublin/Pleasanton BART station and to accommodate a wider range of users than could be comfortably served by Dublin Boulevard. All of the elements of the Downtown Connectivity Project work in tandem to ensure the integrity and functionality of the downtown transportation network.

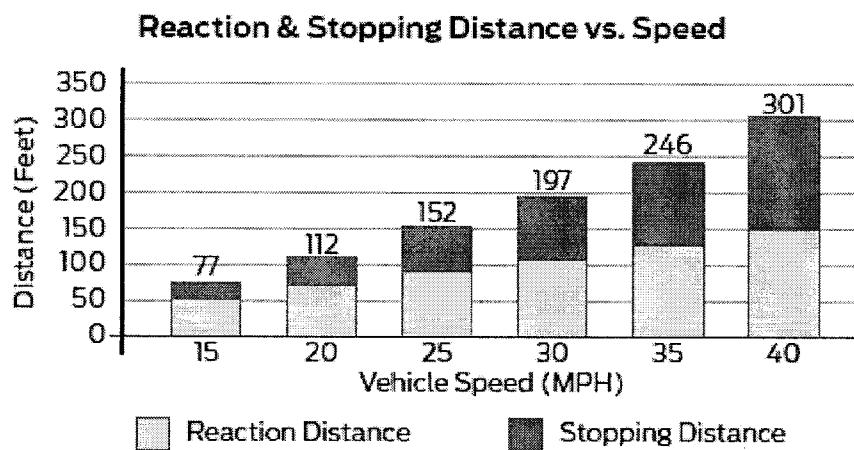
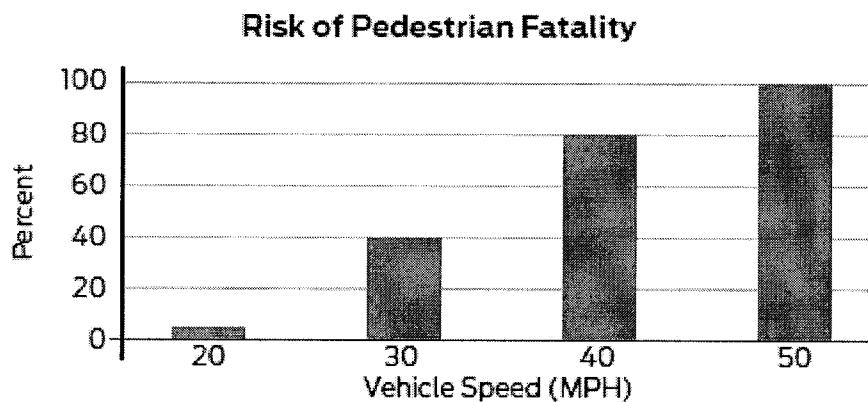
One of the most significant policy changes in the DDSP was the elimination of vehicle Level of Service (LOS) as a transportation system performance standard within the Specific Plan area. Vehicle LOS is a qualitative description, on a scale from A to F, which measures the amount of vehicle delay experienced at an intersection or along a roadway segment. It is defined in the Highway Capacity Manual and is commonly used nationally. Historically, the City of Dublin has typically applied a standard of LOS D for all intersections. The DDSP explicitly removed the LOS standard for any intersection in the Downtown Dublin area; the objective of this change was "to balance vehicular and non-vehicular circulation requirements, and thereby create a more pedestrian-friendly downtown" (DDSP, Section 5.1). As part of the DDSP analysis, it became clear that maintaining the historical LOS standard would mean that the downtown would largely remain an auto-centric area, and would not allow for the land use and circulation changes that the community wanted in order to achieve a more balanced multimodal environment.

In making this change, the City of Dublin anticipated a shift in policy direction that has since occurred at the state level. In 2013, new state legislation (Senate Bill 743) was passed that directed the state Office of Planning and Research (OPR) to develop new guidelines for transportation analysis under the California Environmental Quality Act (CEQA). The legislation said that the new guidelines should remove vehicle LOS as a performance metric to determine environmental impacts under CEQA. This action was taken because it was determined that using LOS as a performance standard did not support broader statewide goals of reducing greenhouse gas emissions, encouraging infill development, and supporting the development of multi-modal transportation networks.

One of the elements involved in supporting multi-modal transportation networks is to make it safer to use such networks. As the City reduces its emphasis on minimizing vehicular delay, it strives to improve access and circulation for all modes of transportation. It also acknowledges that vehicle speeds through the downtown area may get slower, which in turn may provide benefits to commercial uses as motorists are more inclined to pay attention to commercial outlets while driving through the Downtown area at a slower speed. In addition, better access and circulation for all modes of transportation, combined with slower vehicle speeds, is expected to have safety benefits for all system users. Research has consistently demonstrated that higher vehicle speeds are associated with greater frequency and severity of collisions,



and that reducing speeds through better integration of all modes of transportation access is a key element of improving safety outcomes. For example, the National Association of City Transportation Officials (NACTO) publishes the Urban Street Design Guide, which states that "vehicle speed plays a critical role in the cause and severity of crashes," and illustrates that relationship with the following charts:



Source: NACTO *Urban Street Design Guide* Overview

Additionally, OPR's revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA provides detailed discussion and references from several studies concluding that speed is one of the most important factors in determining the cause and severity of collisions. (See the Guidelines at https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf).

Beyond the relationship between traffic speed and safety outcomes, the OPR Guidelines also provide insight into the relationship between land use patterns, the overall level of vehicle travel (as measured by vehicle miles traveled or VMT), and traffic safety. According to the OPR Guidelines, the fundamental relationship between VMT and safety is summarized by Yeo et al. (2014):

"Multiple traffic safety studies showed that higher VMT was positively associated with the occurrence of traffic crashes or fatalities (e.g., Ewing et al. 2002, 2003; NHTSA 2011). The causal relationship between the mileage of total vehicle trips and crash occurrences can be explained by probability. With higher VMT, it is more likely that more crashes will occur (Jang et al. 2012)."

It further explains that sprawl-style development has been shown to lead to elevated crash risk. The cause lies both in higher VMT levels and in design variables which influence speed and driver behavior (Yeo 2014). Ewing et al. (2003) points out that "suburban and outlying intersections have been significantly overrepresented in pedestrian crashes compared with more urban areas, after control for exposure and other location factors."

In summary, with the policy changes adopted by the City and state, as well as the land use program and design guidelines presented in the DDSP, the City is clearly expressing the community's values and vision for the downtown area, articulating a future in which the minimization of vehicular delay is not the primary objective, but rather where the needs of all transportation system users are balanced, where the safety of all system users is improved, and where the land uses and physical design characteristics envisioned in the Specific Plan can be supported by a well-connected and pedestrian-friendly transportation network. The WDTIF projects are designed to implement that vision.

COST ESTIMATES

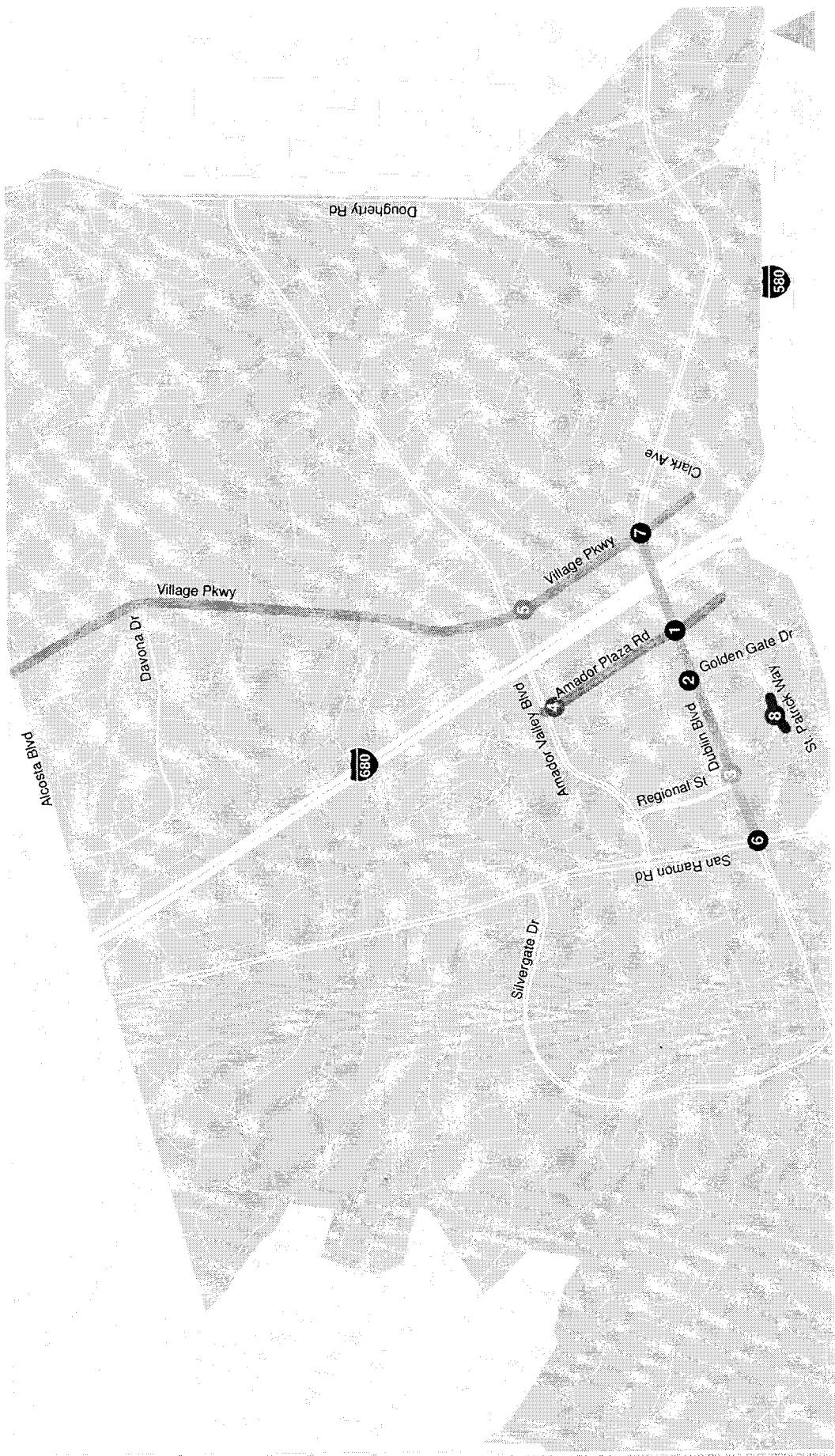
For the purposes of the WDTIF, it is essential to have an estimate of the cost to implement each of the capital improvement projects on the WDTIF project list. Cost estimates were drawn from the most recent plans for each project, or in some cases were developed specifically for this WDTIF study. For example, several of the WDTIF projects were identified in the BPMP, so cost estimates for projects 3 through 7 were drawn directly from that plan. For projects 1 and 2, cost estimates were developed by City staff and reviewed by Fehr & Peers. For project 8, a cost estimate for an adjacent segment of St. Patrick Way had already been developed by the engineer designing that roadway; Fehr & Peers used that as a basis for developing a cost estimate for the middle segment of St. Patrick Way, which is project 8 in this WDTIF list. The estimated cost of each project is shown on Table 1.





More detailed information about the capital improvement projects is provided in **Appendix A**, including a conceptual layout of each project and documentation of the cost estimates described above. (Note that Projects 1 and 2 were carried forward from the previous Downtown Traffic Impact Fee program with few changes, Projects 3 through 7 reflect the "Tier 1" projects from the BPMP, and Project 8 was called for in the General Plan and DDSP.)





Complete Streets Improvements

- 1 Dublin Blvd
- 2 Amador Plaza Rd
- 3 Dublin Blvd & Golden Gate Dr
- 4 Dublin Blvd & San Ramon Rd
- 5 Village Pkwy
- 6 Dublin Blvd & Village Pkwy
- 7 Dublin Blvd & Village Pkwy

Roadway Extension

- 8 St. Patrick Way
- WDTIF Area

Figure 2

Western Dublin Transportation Impact Fee Project Locations

TABLE 1: WDTIF PROJECTS

Project #	Project Name	Description	Estimated Cost	Project Type	Source
1	Dublin Boulevard/Amador Plaza Road Intersection Improvements	Add southbound right turn lane; reduce curb radii and install curb ramps on all corners; improve crosswalks.	\$1,067,400	Congestion Relief/GHG Reduction, and Active Transportation Solutions	Current DTIF and Bicycle/Pedestrian Master Plan
2	Dublin Boulevard/Golden Gate Drive Intersection Improvements	Add one northbound right turn and one left turn lane; install directional curb ramps; install pedestrian countdown signals and audible warning signs; modify signal phasing to include protected left-turns.	\$1,141,000	Congestion Relief/GHG Reduction, and Active Transportation Solutions	Current DTIF and Bicycle/Pedestrian Master Plan
3	Dublin Boulevard Complete Streets Project	<i>Between San Ramon Road and Village Parkway (except for south side between Amador Plaza Rd and Village Pkwy):</i> Obstruction removal from sidewalk (e.g. signs, utility/hydrant relocation), driveway improvements and reconstruction to create clear, level, and continuous pedestrian path of travel; curb extension at driveway 200' east of Regional (south side). <i>Between Amador Plaza Rd and Village Pkwy (south side):</i> Widen existing sidewalk to create Class I path with barrier, lighting under I-680, obstruction removal, median barrier, signal pole relocation at APR and VP, driveway reconstruction, directional bicycle curb ramps	\$1,117,500	Active Transportation Solutions	Bicycle/Pedestrian Master Plan
4	Amador Plaza Road Complete Streets Project	<i>Between Amador Valley Boulevard and St Patrick Way:</i> Add one mid-block pedestrian crossing, add medians, replace sidewalks, upgrade landscaping, and make intersection improvements at Amador Plaza/Amador Valley and at Amador Plaza/St Patrick Way	\$3,770,200	Active Transportation Solutions	Bicycle/Pedestrian Master Plan

TABLE 1: WDTIF PROJECTS

Project #	Project Name	Description	Estimated Cost	Project Type	Source
<i>Between Amador Valley Blvd and Alamo Canal Trail connector:</i>					
5	Village Parkway Complete Streets Project	Add Class I/A bicycle lanes. Village Parkway/Clark Avenue at Alamo Canal Trail to Dublin Public Safety Complex: Add Class I multi-use trail including bike/ped bridge. Clark Avenue between Dublin Blvd and Alamo Canal Trail: Add Class II/A bicycle lanes.	\$770,500	Active Transportation Solutions	Bicycle/Pedestrian Master Plan
6	Dublin Blvd/San Ramon Road Intersection Improvements	Reduce curb radii and install curb ramps on all corners; modify signal phasing to remove permissive northbound right-turn; install pedestrian countdown signals and audible warning signs; potential new crosswalk on south leg.	\$788,800	Active Transportation Solutions	Bicycle/Pedestrian Master Plan
7	Dublin Blvd/Village Parkway Intersection Improvements	Reduce right-turn lane width and turning radii on southbound approach; remove park chop island on northbound approach; reduce curb radii and straighten crosswalks; potential new crosswalk on south leg; potential slip lane removal and curb extensions.	\$336,000	Active Transportation Solutions	Bicycle/Pedestrian Master Plan
8	St Patrick Way Extension	Construct the middle segment of Saint Patrick Way, from its current terminus west of Golden Gate Drive to connect with the new segment of Saint Patrick Way that will be built (by others) extending eastward from Regional Street.	\$3,724,600	Active Transportation Solutions	Congestion Relief/GHG Reduction, and SP, and Bicycle/Pedestrian Master Plan
9	Traffic Signal Upgrades	Upgrade signal communications equipment to improve traffic flow efficiency.	\$250,000	Active Transportation Solutions	Congestion Relief/GHG Reduction, and Active Transportation Solutions
TOTAL					\$12,966,000





3. GROWTH PROJECTIONS

LAND USE GROWTH

An important step in quantifying the nexus relationship is to determine the amount of new development that is anticipated in the planning horizon of the study. In this case, staff from the City's Planning Division provided the numbers of households and jobs in the WDTIF area, both under current conditions and those anticipated to occur by the year 2040. These projections were incorporated into the City of Dublin travel model in the appropriate Transportation Analysis Zones (TAZs) to reflect the correct location of the development. Please see **Appendix B** for a map showing the TAZs that represent the WDTIF area, as well as a table showing the amount of existing and expected future development in each TAZ. As shown in the appendix materials, a substantial amount of new development is anticipated, particularly in the core downtown area generally bounded by I-580, San Ramon Road, Amador Valley Boulevard, and I-680; the number of jobs in this area could increase by about 1,900 (a 13% increase) over current conditions, and the number of housing units could increase by almost 2,400 (a 24% increase), with the majority of potential new residential units primarily located on parcels near the West Dublin/Pleasanton BART station.

TRIP GENERATION

Once the land use assumptions were established, the trip generation associated with those land uses was analyzed. In the DDSP area, Fehr and Peers' MXD+ tool was applied to estimate the trip generation. This tool was selected because traditional methodologies, such as application of the Institute of Transportation Engineers (ITE) *Trip Generation* manual, are primarily based on data collected at single-use, freestanding sites located in suburban areas with very little accessibility by transit, bicycling or walking. These defining characteristics limit the data's applicability to mixed-use or multi-use development projects in more pedestrian-friendly and transit-accessible places. As Dublin's downtown area continues its transition from a relatively conventional suburban setting to a medium-density, mixed-use downtown with frequent and nearby local and regional transit service centered on the West Dublin/Pleasanton BART station, it becomes clearer that the application of traditional data and methodologies, such as ITE, would not accurately estimate the vehicle trip generation from this area.

The development of the MXD+ technique began in response to the limitations in the ITE methodology. With the goal of providing a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of the trip generation characteristics of mixed-use sites. Travel survey data was gathered



from 239 mixed-use developments (called MXDs) in six major metropolitan regions, and correlated with the characteristics of the sites and their surroundings. The findings indicated that the amount of traffic generated by each site is affected by a wide variety of factors including the mix of jobs and residents at the site, the overall size and density of the development, the availability of convenient internal connections for walking or driving between nearby uses, the availability of transit service to the site, and the surrounding trip destinations within the immediate area. None of these factors is explicitly accounted for in the traditional application of the ITE *Trip Generation* manual method.

As part of the study, these characteristics were related statistically to trip behavior observed at the development sites using statistical techniques. These statistical relationships produced equations, known as the EPA MXD model, that predict how the trip generation from a particular mixed-use site would be reduced as compared to the traditional ITE methods. Applying these vehicle trip reduction percentages to the "raw trips" predicted by the ITE methods produces an estimate for the number of vehicle trips traveling in or out of a site. Fehr & Peers created a spreadsheet tool called MXD+ to efficiently apply the EPA MXD model.

Table 2 contains the results of this analysis for the DDSP area.

(Note that the neighborhoods outside of the DDSP area tend to be lower-density areas of predominantly residential land uses, and are somewhat removed from high-capacity transit options. For those reasons, application of the MXD+ technique would not be appropriate in those areas. However, as shown in Appendix B, more than 90% of the projected growth in the WDTIF area is anticipated to occur in the DDSP area, so for the purposes of the WDTIF calculations the MXD+ technique can appropriately be applied.)

TABLE 2: TRIP GENERATION RESULTS IN DOWNTOWN DUBLIN FROM APPLICATION OF MXD+

Time Periods	Existing			2040		
	ITE Trips	MXD+ Trips	Comparison	ITE Trips	MXD+ Trips	Comparison
Daily	64,812	54,858	-15%	88,633	71,603	-19%
AM Peak Hour	2,114	1,849	-13%	3,817	3,144	-18%
PM Peak Hour	6,344	5,059	-20%	8,801	6,777	-23%

Source: Fehr & Peers, 2014.

To provide context for these results, they have been compared to trip generation estimates from other sources. The expected land use growth shown in Table 2 above was incorporated into the City of Dublin travel model, in the appropriate TAZs to reflect the expected location of the new development. The Dublin model was then applied under both existing conditions and the anticipated year 2040 conditions, and the model's estimate of trip generation in the downtown area was extracted. **Table 3** shows the comparison of



PM peak hour trip generation estimates for the downtown area from the basic ITE Trip Generation manual procedure, from the application of the Dublin model, and from the MXD+ application described above.

Note that PM peak hour trips are the focus of this WDTIF study. This is a change from the current application of the fee program, which uses daily trips as the basis for the fee calculations. Most transportation facilities are designed to accommodate usage during peak periods, and the PM peak is the time period during which all of the land uses in the WDTIF area will be active, so it is the time period that will best capture the full range of travel effects caused by the anticipated future development.

For the purposes of the WDTIF program, which focuses on the impacts of new development, the most important piece of information is the estimated growth in trips between existing and future conditions. As shown in Table 3, the Dublin model and the ITE trip generation procedure result in very similar estimates of new trips (2,398 from the model compared to 2,478 from the ITE procedure). The MXD+ application results in a smaller number (1,718) of new trips; this is to be expected, since the MXD model is designed to account for the characteristics of mixed-use sites that are not readily reflected in either the ITE manual or in typical travel demand models, and those characteristics often cause lower levels of vehicle use as compared to conventional suburban single-use sites. The total number of new PM peak hour trips estimated through the MXD+ application will be used to calculate the WDTIF fee per new peak hour trip.

TABLE 3: COMPARISON OF DOWNTOWN PM PEAK HOUR TRIP GENERATION ESTIMATES

Source	Existing	Future	Potential Growth (Future-Existing)
ITE Trip Generation Manual	6,323	8,801	2,478
Dublin Travel Model	4,958	7,356	2,398
ITE with MXD+ Adjustments	5,059	6,777	1,718



4. NEXUS ANALYSIS

EXISTING DEFICIENCIES

An important part of a nexus analysis is to establish whether the transportation facilities that will be addressed by the projects in the fee program are currently deficient. If there are existing deficiencies at any of those locations, then an adjustment should be made in the fee calculations to ensure that new development is not being charged to correct an existing problem.

The most recent study that comprehensively addressed the downtown area was the Downtown Dublin Specific Plan EIR (DDSP EIR), which was adopted in 2011 and amended in 2014. As mentioned previously in the section on Capital Improvement Projects, while the City of Dublin has typically used vehicle Level of Service as a performance measure, with a standard of LOS D or better at all intersections, the DDSP eliminated the use of vehicle Level of Service in the Downtown Dublin area. As part of the traffic impact evaluation in the DDSP EIR, vehicle LOS was analyzed in order to evaluate the impacts of the changes proposed in the DDSP. For the sake of completeness, we reviewed the existing conditions LOS analysis presented in the DDSP EIR for those locations that are affected by WDTIF projects. Note that this step is solely for the purpose of understanding existing conditions, and is not for evaluating impacts of future development.

Seven of the intersections studied in the DDSP EIR are either part of or located very close to one or more of the WDTIF capital improvement projects. **Table 4** shows those seven intersections and summarizes the current operations at those intersections, as reported in the DDSP EIR. (For reference, the Level of Service criteria for signalized intersections from the Highway Capacity Manual is included in **Appendix C**.) As shown, all of the intersections are reported as operating at LOS D or better in both the AM and PM peak hours; this level of operation met the City's standards prior to the adoption of the DDSP, thus indicating that these locations were not deficient at the time the City changed its policy.

Some of the projects in the WDTIF program contain elements designed to improve facilities and accommodations for bicyclists and/or pedestrians. Several of these projects were identified in the *Bicycle and Pedestrian Master Plan*, adopted in October 2014. The BPMP included an analysis of the data related to bicycle- and pedestrian-related collisions (see pages 45-48 of the BPMP). One of the key findings from that analysis was that Dublin ranks better than the statewide average for cities of similar size in terms of the number of pedestrian-auto and bicycle-auto collisions. This result indicates that Dublin does not have an unusually high incidence of pedestrian or bicycle collisions. Thus, the evaluation of existing conditions in the BPMP does not indicate the presence of existing deficiencies in terms of bicycle- and pedestrian-related safety outcomes.



TABLE 4: EXISTING CONDITIONS AT KEY INTERSECTIONS

Intersection	Control ¹	Peak Hour	Existing Conditions	
			Delay ²	LOS
1. Dublin Boulevard & San Ramon Road	Signal	AM	39	D
		PM	36	D
2. Dublin Boulevard & Regional Street	Signal	AM	21	C
		PM	43	D
3. Dublin Boulevard & Golden Gate Drive	Signal	AM	10	B
		PM	27	C
4. Dublin Boulevard & Amador Plaza Road	Signal	AM	35	D
		PM	41	D
5. Dublin Boulevard & Village Parkway	Signal	AM	37	D
		PM	34	C
6. Amador Valley Boulevard & Village Parkway	Signal	AM	50	D
		PM	43	D
7. Amador Valley Boulevard & Amador Plaza Road	Signal	AM	12	B
		PM	18	B

Notes:

1. Signal = signalized intersection.
2. Average intersection delay calculated for signalized intersections using the 2010 HCM method.

Source: DDSP EIR, Table 3.9-3, Page 3-149.

WDTIF PROJECT COST RESPONSIBILITY

As described earlier, the land use projections for the year 2040 were incorporated in the Dublin Model and the model was applied to generate estimates of travel patterns and volumes in the future. A common modeling technique called a select zone analysis was applied within the model to identify the amount of future traffic volume on each roadway link that is generated by land uses in the WDTIF area. On each model link that represents the location of a WDTIF project, the future traffic volume attributable to the WDTIF area was compared to the overall future traffic volume, thereby calculating the share of the usage of that link that can be attributed to the land uses in the WDTIF area. These usage percentages are shown in **Table 5**. These percentages were applied to the cost of each WDTIF infrastructure project, and the resulting amount represents the portion of the cost of each project that will be included in the WDTIF program.

As shown in the table, the WDTIF program would capture about 82% of the total project costs, while other funding sources (such as from grants, County Measure BB funds, or other sources) would be needed to cover the remainder. This means that about 82% of the usage of these facilities comes from residents and employees in the WDTIF area, while the remainder comes from travelers who use these facilities but do not live or work in the WDTIF area. (Please note that the WDTIF % Responsibility for project number 9, the traffic signal upgrades, was set to be equal to the average percentage of the other eight projects; this was done since project 9 does not refer to a specific location, so the select zone modeling technique cannot be used to calculate a % Responsibility for that project.)

TABLE 5: FUTURE DEVELOPMENT RESPONSIBILITY FOR WDTIF PROJECTS

Project No.	Project Name	Estimated Cost	WDTIF % Responsibility	Amount Included in WDTIF
1	Dublin Boulevard/Amador Plaza Road Intersection Improvements	\$1,067,400	75%	\$800,400
2	Dublin Boulevard/Golden Gate Drive Intersection Improvements	\$1,141,000	71%	\$806,200
3	Dublin Boulevard Complete Streets Project	\$1,117,500	70%	\$782,900
4	Amador Plaza Road Complete Streets Project	\$3,770,200	83%	\$3,141,000
5	Village Parkway Complete Streets Project	\$770,500	52%	\$404,100
6	Dublin Blvd/San Ramon Road Intersection Improvements	\$788,800	61%	\$481,400
7	Dublin Blvd/Village Parkway Intersection Improvements	\$336,000	71%	\$238,800
8	St. Patrick Way Extension	\$3,724,600	100%	\$3,724,600
9	Traffic Signal Upgrades	\$250,000	82%	\$199,600
TOTAL		\$12,966,000	82%	\$10,583,500

Source: Fehr & Peers, 2015.



FEE CALCULATION

A fee calculation was completed based on the figures described above. Starting from the amount of project costs eligible to be included in the WDTIF program (approximately \$10.6 million), we subtract the current (as of June 30, 2016) fund balance in the current Downtown Traffic Impact Fee program (approximately \$1.7 million), and the result is divided by the number of new PM peak hour vehicle trips estimated to be generated by new development in the WDTIF area (1,718 trips). **Table 6** shows the results of the calculation.

TABLE 6: WDTIF CALCULATION

Calculation	Value
Total Eligible Project Cost in WDTIF Program	\$10,583,500
Less Current DTIF Fund Balance	(\$1,730,000)
Number of New PM Peak Hour Trips	1,718
Maximum Fee per New PM Peak Hour Trip	\$5,154

Source: Fehr & Peers, 2015.

It is important to note that the fee calculation shown in Table 6 is intended to represent the maximum fee that could be charged to support the list of projects shown above.

The fees would be charged to new development of all types located in the geographic area covered by the WDTIF. In order to allocate the fees equitably among different development types, the fee amounts charged to each land use category should reflect the relative effects of each category on the transportation system. This is consistent with the approach used in the current fee program, which specifies different fee rates for different land use types. Using the maximum fee per new PM peak hour trip calculated in Table 6 above as a basis, the number of PM peak hour trips associated with a representative sample of land use categories has been estimated and the associated fee amount calculated. **Table 7** shows the preliminary results of those calculations, along with an informational comparison of the updated fees to the fee rates currently charged through the existing WDTIF program. Further details about the application of the WDTIF to specific types of land uses will be contained in the Resolution to adopt this fee program update.



TABLE 7: FEE AMOUNTS BY LAND USE CATEGORY

Category	Unit ¹	PM Peak Hour Trip Gen	Updated WDTIF Calculations				Current Fees	
			MXD+ Adjustment	Pass-by Adjustment	Adjusted PM Peak Hour Trips	Fee per Unit	Daily Trip Rate ²	Fee per Unit
Single-Family Residential	DU	1.00	-23%	0	0.77	\$3,969	10	\$2,668
Medium Density Residential	DU	0.62	-23%	0	0.48	\$2,461	7	\$1,869
High Density Residential	DU	0.52	-23%	0	0.40	\$2,064	6	\$1,600
General Office	KSF	1.49	-23%	0	1.15	\$5,913	20	\$5,320
Shopping Center	KSF	3.71	-23%	-35%	1.86	\$9,571	46	\$12,236
Hotel	Room	0.60	-23%	0	0.46	\$2,381	10	\$2,660
Restaurant (sit-down, high turnover)	KSF	9.85	-23%	-35%	4.93	\$25,410	104	\$27,664
Movie Theater (multi-plex)	Screen	13.64	-23%	-35%	6.83	\$35,186	220	\$58,520

1. DU = Dwelling Unit; KSF = Thousand Square Feet.

2. Daily trip rates for the current DTIF are taken from the Downtown Traffic Impact Fee Schedule, Effective December 20, 2004, Exhibit D of Resolution 210-04 to establish the Downtown TIF. The current fees are taken from the fee schedule adopted by the City effective July 1, 2016.

5. SUMMARY OF REQUIRED PROGRAM ELEMENTS

This report has provided a detailed discussion of the elements of the updated Western Dublin Transportation Impact Fee program and explained the analytical techniques used to develop this nexus study. The report addresses all of the fee program elements required by AB 1600, as summarized below.

1. Identifying the purpose of the fee

The General Plan identifies the intent of the impact fee program to fund capital improvement projects that are consistent with the Downtown Dublin Specific Plan and the city's Bicycle and Pedestrian Master Plan. The purpose of the WDTIF program is to mitigate the traffic impacts of new development within the designated WDTIF area, consistent with the land use and transportation policies of the General Plan and the Downtown Dublin Specific Plan, by providing funds to build a comprehensive transportation system that will support multiple modes of transportation.

2. Identifying how the fee will be used and the facilities to be funded through the fee

The fee will be used to help fund capital improvement projects that will accommodate future transportation needs in Western Dublin. Table 1 identifies the projects to be funded through the fee.

3. Determining a reasonable relationship between the fee's use and the type of development on which the fee is imposed

As described in this report, different types of development generate traffic with different characteristics. The calculations presented in Table 7 account for these different characteristics by applying different per-unit fee factors to each type of development. These considerations account for the differential impacts on the local transportation system generated by different development types.

4. Determining a reasonable relationship between the need for the public facility and the type of development on which the fee is imposed

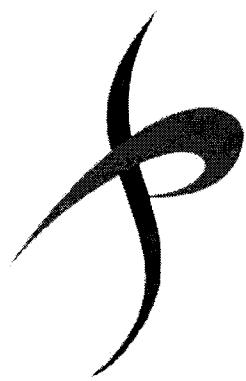
The need for the facilities listed in Table 1 has been established through recent planning studies sponsored by the City over the last several years, as described in Section 2 of this report. Table 4 shows that there are no existing deficiencies on the facilities included in this WDTIF program, indicating that the need for improvements is not caused by existing development.

5. Determining a reasonable relationship between the amount of the fee and the cost of the public facility (or portion of facility) attributable to new development

Section 4 of this report describes the calculations applied to determine the cost of the public facility that is attributable to new development; this process accounts for the effects of existing deficiencies (of which there are none in this program) and the effects of traffic generated from outside the WDTIF area. Thus, a reasonable effort has been made to quantitatively establish the relationship between the fees charged in the WDTIF program and the costs of public improvements attributable to new development within the WDTIF area.

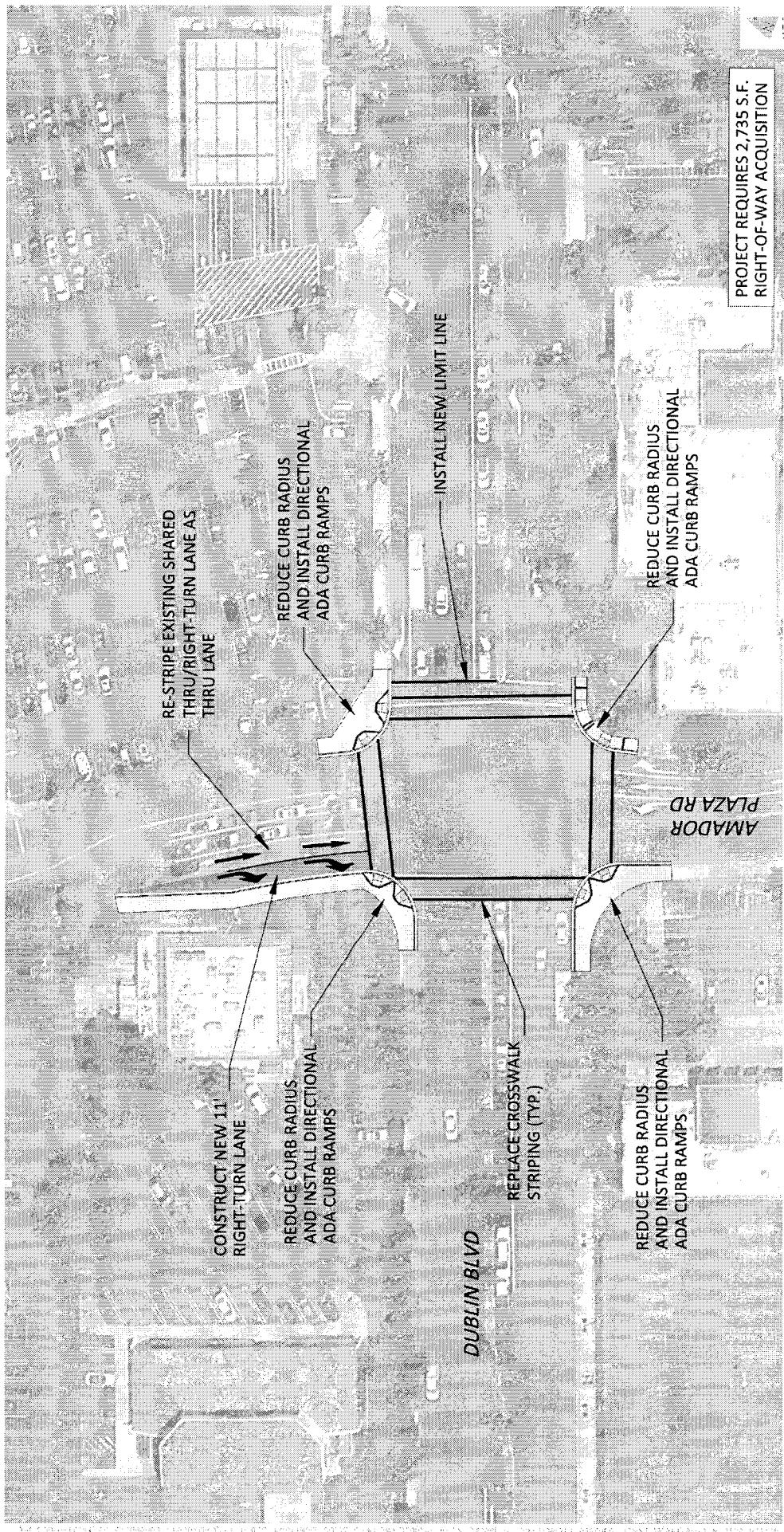


APPENDIX A:
DETAILED INFORMATION ON WDTIF PROJECTS



1. Dublin Boulevard/Amador Plaza Road
Intersection Improvements





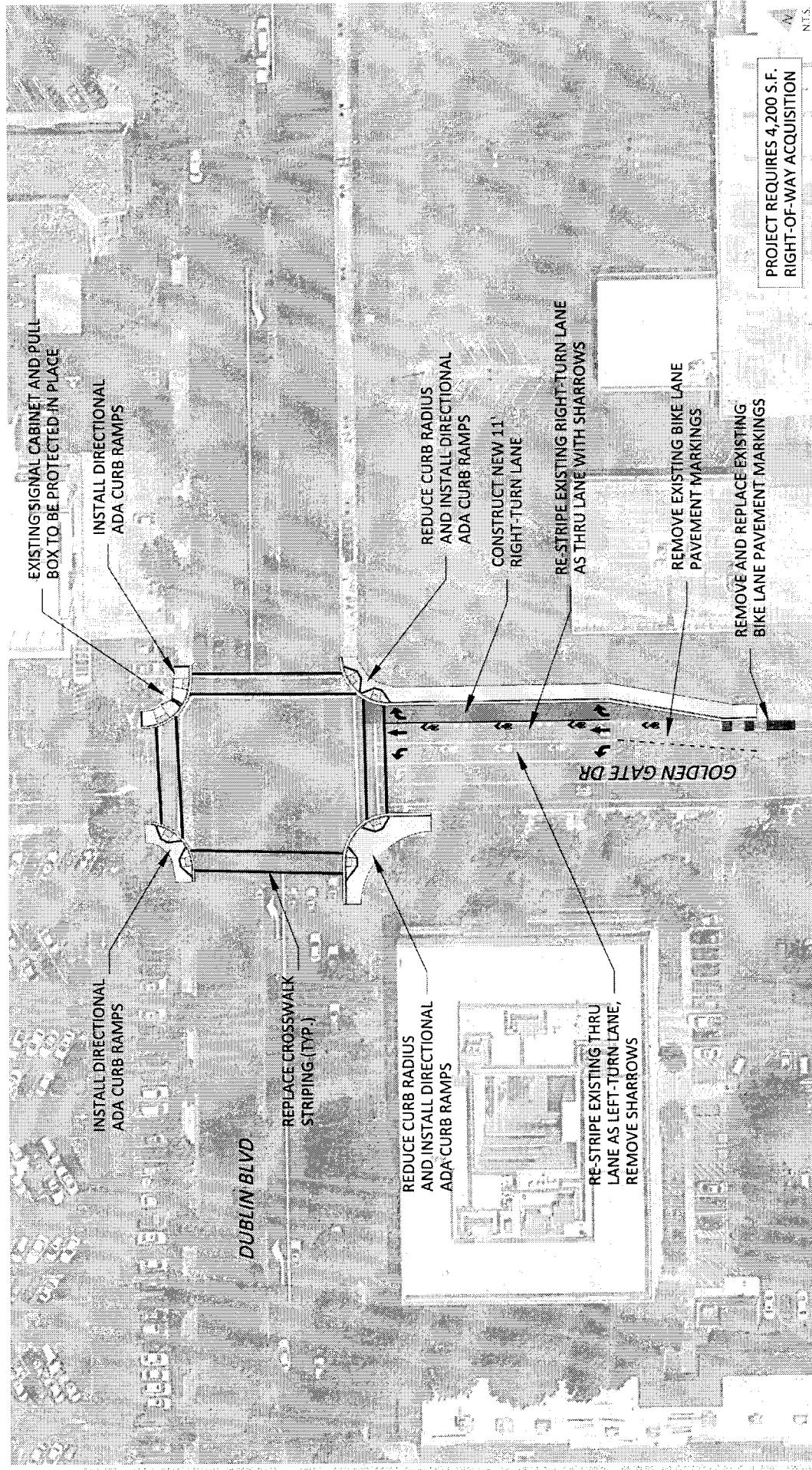
Dublin Blvd at Amador Plaza Rd
Concept Improvements
Dublin, California

Project #1: Dublin Blvd/Amador Plaza Rd Intersection Improvements

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
1 Demolition	SF	3785	\$ 6.00	\$ 22,710.00
2 Grading	CY	420	\$ 35.00	\$ 14,700.00
3 Pavement Section	SF	2735	\$ 8.00	\$ 21,880.00
4 Curb & Gutter	LF	525	\$ 39.25	\$ 20,606.25
5 Sidewalk	SF	3410	\$ 7.38	\$ 25,148.75
6 Sawcutting	LF	525	\$ 4.00	\$ 2,100.00
7 Storm Drain Pipe	LF	380	\$ 221.94	\$ 84,336.25
8 SD Inlets	EA	3	\$ 2,966.67	\$ 8,900.00
9 SD Manholes	EA	0	\$ 5,700.00	\$ -
10 Landscaping	Lump sum			\$ 10,000.00
11 Striping	Lump sum			\$ 12,500.00
12 Lighting	EA	2	\$ 3,279.67	\$ 6,559.33
13 Sewer	LF	0	\$ 45.00	\$ -
14 Fire Hydrants	EA	1	\$ 8,000.00	\$ 8,000.00
15 Water	LF	0	\$ 42.50	\$ -
16 Joint Trench	LF	525	\$ 100.00	\$ 52,500.00
17 Traffic Signal Mods.	EA	1	\$ 283,411.00	\$ 283,411.00
18 Conversion of copper connection to fiber optic connection	LF	750	\$ 30.00	\$ 22,500.00
19 Signing	Lump sum		\$ 2,500.00	\$ 2,500.00
Subtotal				\$ 598,351.58
Right of Way				
20 Land		2735	40 \$	\$ 109,400.00
21 Condemnation Contingency			15% \$	\$ 16,410.00
Subtotal				\$ 125,810.00
Design, CM, Admin			20% \$	\$ 144,832.32
Contingency			10% \$	\$ 72,416.16
Estimated cost for adding curb ramps at each corner (from BPMP)			\$	\$ 126,000.00
GRAND TOTAL				\$ 1,067,410.06

2. Dublin Boulevard/Golden Gate Drive
Intersection Improvements





Dublin Blvd at Golden Gate Dr
Concept Improvements
Dublin, California

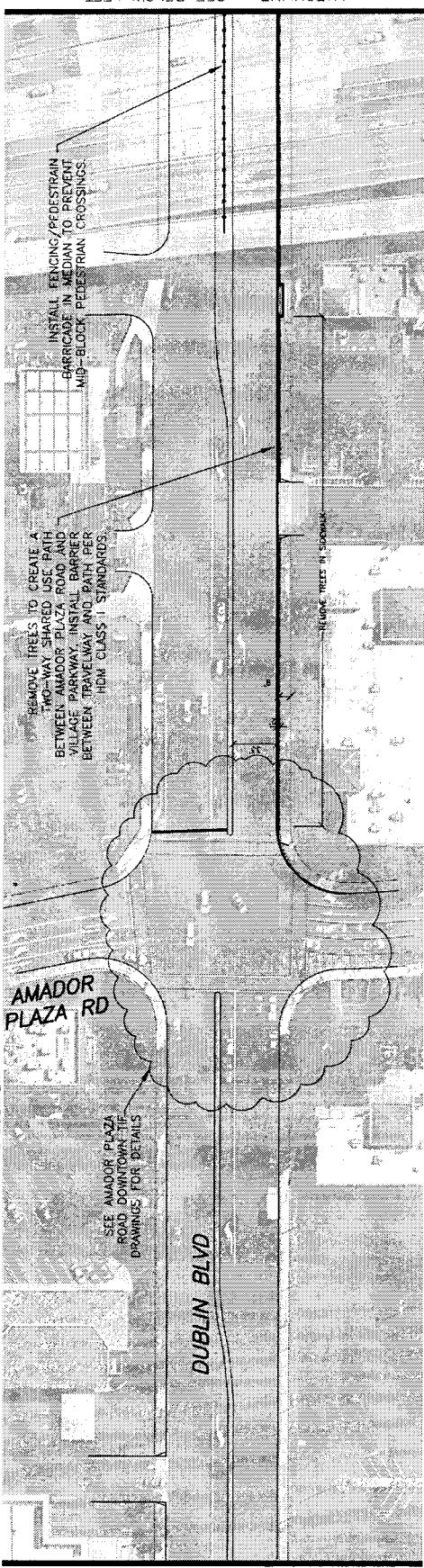
Project #2: Dublin Blvd/Golden Gate Drive Improvements and Widening

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
1 Demolition	SF	4200	\$ 6.00	\$ 25,200.00
2 Grading	CY			\$ 7,000.00
3 Pavement Section	SF	4200	\$ 8.00	\$ 33,600.00
4 Curb & Gutter	LF	320	\$ 39.25	\$ 12,560.00
5 Sidewalk	SF	5060	\$ 7.38	\$ 37,317.50
6 Sawcutting	LF	350	\$ 4.00	\$ 1,400.00
7 Storm Drain Pipe	LF	290	\$ 221.94	\$ 64,361.88
8 SD Inlets	EA	0	\$ 2,966.67	\$ -
9 SD Manholes	EA	0	\$ 5,700.00	\$ -
10 Landscaping	Lump sum			\$ 10,000.00
11 Striping	Lump sum			\$ 5,000.00
12 Lighting	EA	0	\$ -	\$ 30,000.00
13 Sewer	LF	0	\$ -	\$ -
14 Fire Hydrants	EA	1	\$ -	\$ -
15 Water	LF	290	\$ 42.50	\$ 12,325.00
16 Joint Trench	LF	290	\$ 100.00	\$ 29,000.00
17 Traffic Signal (at intersection of St. Patrick Way and Golden Gate D	EA	1	\$ 290,000	\$ 290,000.00
18 Traffic Signal Mods.	EA	1	\$ 100,000	\$ 100,000.00
19 Conversion of copper connection to fiber optic connection	LF	580		\$ -
20 Signing	Lump sum			\$ 1,000.00
Subtotal				\$ 658,764.38
Right of Way				
20 Land		4200	40	\$ 168,000.00
21 Condemnation Contingency			15%	\$ 25,200.00
Subtotal				\$ 193,200.00
Design, CM, Admin			20%	\$ 170,392.88
Contingency			10%	\$ 68,396.44
Estimated cost for adding curb ramps at each corner (from BPMP)				\$ 50,300.00
GRAND TOTAL				\$1,141,053.69

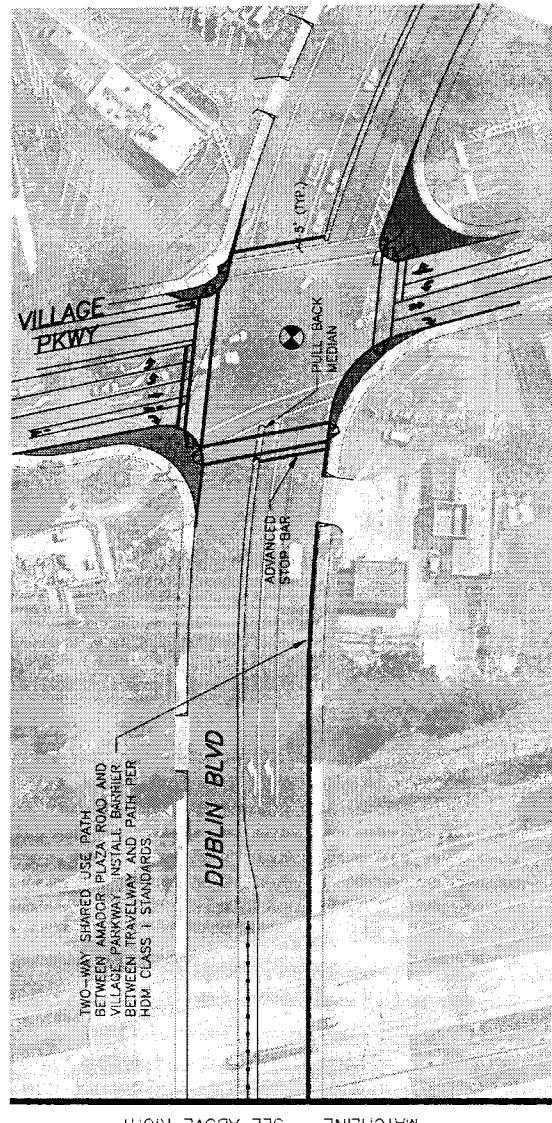
3. Dublin Boulevard Complete Streets Project



SPECIAL NOTES:
1. RELOCATE UTILITIES, SUCH AS FIRE HYDRANTS, AND SIGNS FROM THE SIDEWALK ZONE TO THE STREET, FURNISHING ZONE TO MAXIMIZE USABLE SIDEWALK WIDTH.
2. REMOVE OBSTRUCTIONS SUCH AS HIGHWAY-STYLE SIGN POSTS FROM THE SIDEWALK.



MATCHLINE - SEE ABOVE RIGHT



FEHR & PEERS
100 21st Street • Suite 1000
San Francisco, CA 94108
(415) 362-7100
JUL 05 2015
C:\Users\jordi\Downloads\Coast\Temp\Archibus_8240\Dublin_Bld\CS.dwg

160
80
0
1" = 80'
GRAPHIC SCALE

DUBLIN BOULEVARD COMPLETE STREETS
WESTERN DUBLIN TIF

Fehr & Peers - Unit Cost Estimate Tool

Project: Dublin Blvd Complete Streets

Location: Dublin Boulevard between San Ramon Road and Alamo Canal Trail

Date: 2/8/2012

FEHR & PEERS

Signing and Striping					
ID	Signing	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Install New Sign on New Post	Each	\$ 700.00	6	\$4,200.00
000004	Relocate Freeway Guide Sign and Posts	Each	\$ 700.00	0	\$0.00
000007	Remove & Salvage Existing Sign & Post	Each	\$ 150.00	3	\$450.00

CIVIL					
ID	Paving/Curb	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000002	Roadway Paving (3" AC/ 8" Class II AB)	SF	\$8.00	3000	\$24,000.00
000009	Concrete Curb	LF	\$30.00	300	\$9,000.00
000010	Concrete Curb & Gutter	LF	\$40.00	1200	\$48,000.00
000011	Concrete Driveway	SF	\$15.00	1440	\$21,600.00
000012	Concrete Sidewalk	SF	\$15.00	4,800	\$72,000.00
000015	Curb Ramp	EA	\$6,000.00	4	\$24,000.00
000018	Barrier Type 60F (In Median)	LF	\$250.00	200	\$50,000.00
000019	Path Barrier	LF	\$50.00	1200	\$60,000.00

ID	Utilities	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000019	Relocate Fire Hydrant	EA	\$3,000.00	2	\$6,000.00
000034	Drainage Inlet Relocation with New Pipe	EA	\$15,000.00	2	\$30,000.00

ID	Demo/Removal	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000042	Remove trees	EA	\$1,000.00	8	\$8,000.00
000044	Signal Pole Relocation	EA	\$30,000.00	3	\$90,000.00

ID	Aesthetic/Architectural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000044	Box Tree	EA	\$1,000.00	0	\$0.00
000001	Pedestrian-Scaled LED Lighting	EA	\$ 4,600.00	3	\$13,800.00
000001	Electrical conduit installation	LF	\$ 65.00	300	\$19,500.00

SUBTOTAL	\$480,550.00
10% Traffic Control	\$48,055.00
10% Mobilization	\$48,055.00
TOTAL	\$576,660.00
20% Contingency	\$115,332.00
TOTAL CONSTRUCTION	\$691,992.00
15% Design	\$103,799.00
10% Environmental	\$69,199.00
10% Construction Management	\$69,199.00
TOTAL COST ESTIMATE	\$934,200

Fehr & Peers - Unit Cost Estimate Tool

Project: Dublin Boulevard Complete Streets (Obstruction Removal)
 Location: Dublin Boulevard between San Ramon Road and Amador Plaza Road
 Date: 2/8/2012

FEHR & PEERS

Signing and Striping					
ID	Signing and Striping	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Install New Sign on New Post	Each	\$ 700.00	0	\$0.00
000002	Install New Sign Panel on Existing Post	Each	\$ 500.00		\$0.00
000003	Install New Sign on Signal Mast Arm	Each	\$ 900.00		\$0.00
000004	Relocate Freeway Guide Sign and Posts	Each	\$ 700.00	5	\$3,500.00
000005	Relocate Existing Sign Panel Only	Each	\$ 250.00		\$0.00
000006	Relocate Existing Sign on Signal Mast Arm	Each	\$ 400.00		\$0.00
000007	Remove & Salvage Existing Sign & Post	Each	\$ 150.00		\$0.00
000008	Remove & Salvage Existing Sign Panel Only	Each	\$ 100.00		\$0.00
000009	Remove & Salvage Existing Sign on Signal Mast Arm	Each	\$ 250.00		\$0.00
000015	12" Limit Line/Crosswalk	LF.	\$ 6.60	240	\$ 1,584.00
CIVIL					
ID	Paving/Curb	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000006	Asphalt Concrete Pad	SF	\$8.00	120	\$960.00
000010	Concrete Curb & Gutter	LF	\$40.00	60	\$2,400.00
000011	Concrete Driveway	SF	\$15.00	2880	\$43,200.00
000012	Concrete Sidewalk	SF	\$15.00	390	\$5,850.00
000015	Curb Ramp	EA	\$3,000.00	1	\$3,000.00
ID.	Utilities	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000017	Adjust Water Valve to Grade	EA	\$500.00		\$0.00
000018	Relocate Water Valve	EA	\$3,000.00		\$0.00
000019	Relocate Fire Hydrant	EA	\$3,000.00	4	\$12,000.00
000020	Relocate Irrigation Equipment	EA	\$10,000.00	0	\$0.00
000021	Relocate Manhole along Pipe	EA	\$7,500.00		\$0.00
	Remove Newspaper Rack	EA	\$500.00	1	\$500.00
	New Meter Pedestal and Foundation	EA	\$4,300.00	1	\$4,300.00
000022	Relocate Manhole with new pipe	EA			\$0.00
000023	Adjust Utility Vault to Grade	EA			\$0.00
000024	Relocate Underground Transformer	EA			\$0.00
000025	Relocate Transformer on Concrete Pad	EA			\$0.00
000026	Relocate Utility Vault	EA	\$10,000.00	1	\$10,000.00
000027	Relocate Utility Pull Box	EA	\$2,000.00	0	\$0.00
000028	Relocate Utility Pole with Electrical	EA			\$0.00
000029	Relocate Utility Pole without Electrical	EA			\$0.00
000030	Adjust Gas Valve to Grade	EA	\$2,000.00	0	\$0.00
000031	Relocate Gas Valve	EA	\$5,000.00		\$0.00
000032	Utility Boxes Adjust to Grade	EA	\$2,000.00	0	\$0.00
000033	Drainage Inlet Relocation Along Pipe	EA	\$7,500.00		\$0.00
000034	Drainage Inlet Relocation with New Pipe	EA	\$15,000.00		\$0.00

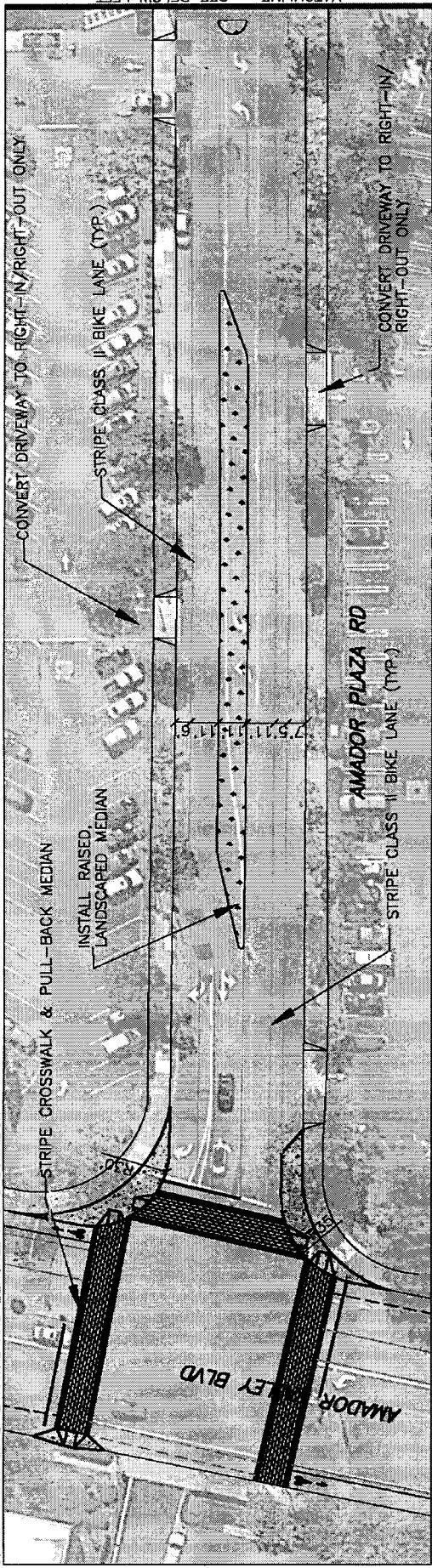
SUBTOTAL	\$87,294.00
10% Traffic Control	\$8,729.00
10% Mobilization	\$8,729.00
TOTAL	\$104,752.00
25% Contingency	\$26,188.00
TOTAL CONSTRUCTION	\$130,940.00
20% Design & Environmental	\$26,188.00
20% Construction Management	\$26,188.00
TOTAL COST ESTIMATE	\$183,300

4. Amador Plaza Road Complete Streets Project



GENERAL NOTES:

1. INSTALL PEDESTRIAN SCALE LIGHTING (BOTH SIDES), REPLACE EXISTING STREET TREES, AND ADD SLURRY SEAL BETWEEN AMADOR VALLEY BOULEVARD & ST. PATRICK WAY
2. REPLACE EXISTING SIDEWALK WITH DECORATIVE PERVIOUS SIDEWALK (BOTH SIDES) BETWEEN AMADOR VALLEY BOULEVARD & DUBLIN BOULEVARD
3. INSTALL BIKE RACKS AND BENCHES ALONG CORRIDOR

**LEGEND**

	PROPOSED IMPROVEMENT
	PLANNED & FUNDED IMPROVEMENT
	IN PROGRESS

FEHR & PEERS

CONCRETE

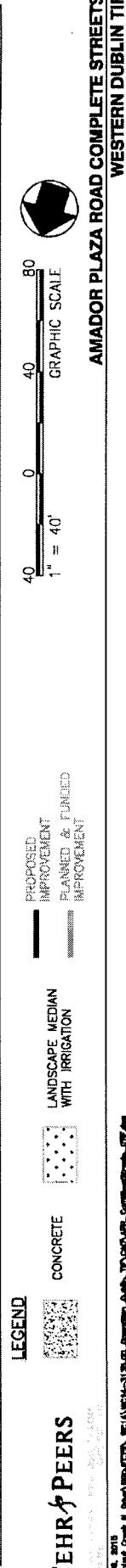
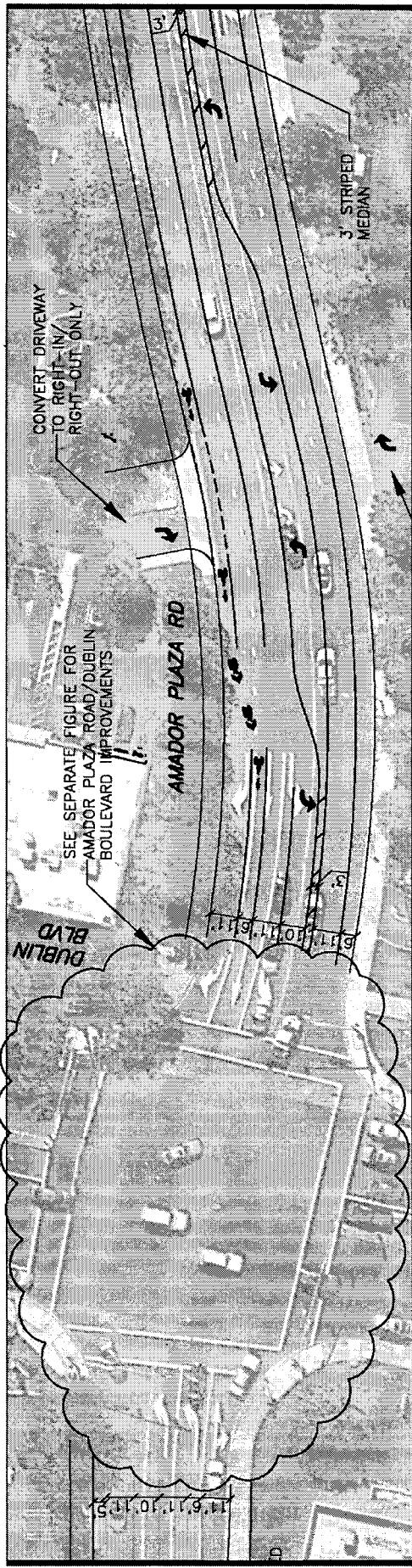
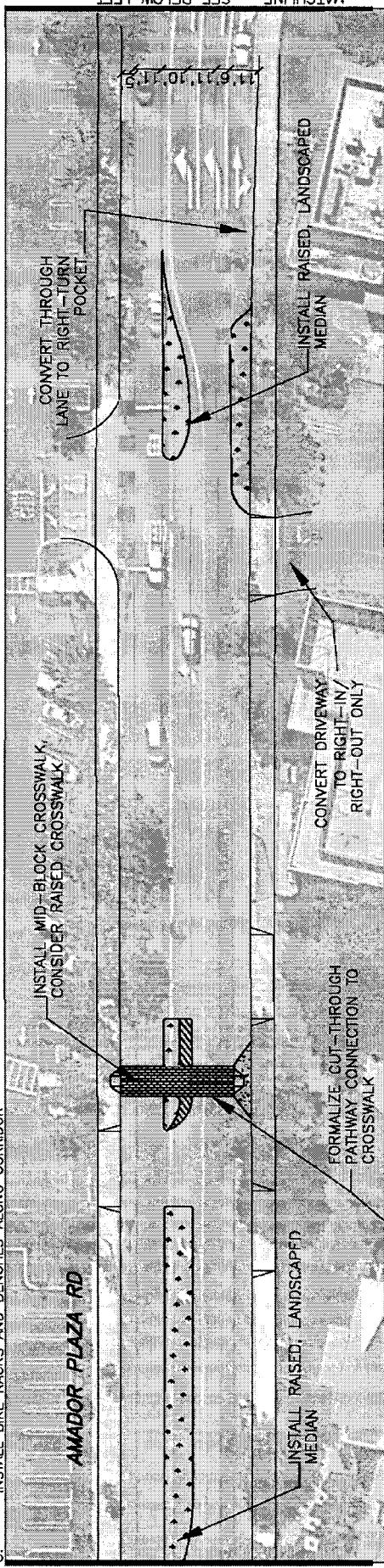
LANDSCAPE MEDIAN WITH IRRIGATION

GRAPHIC SCALE

AMADOR PLAZA ROAD COMPLETE STREETS
WESTERN DUBLIN TIF

GENERAL NOTES:

1. INSTALL PEDESTRIAN SCALE LIGHTING (BOTH SIDES), REPLACE EXISTING STREET TREES, AND ADD SLURRY SEAL BETWEEN AMADOR VALLEY BOULEVARD & ST. PATRICK WAY
2. REPLACE EXISTING SIDEWALK WITH DECORATIVE PERVIOUS SIDEWALK (BOTH SIDES) BETWEEN AMADOR VALLEY BOULEVARD & DUBLIN BOULEVARD
3. INSTALL BIKE RACKS AND BENCHES ALONG CORRIDOR



MATCHLINE - SEE BELOW LEFT

MATCHLINE - SEE BELOW RIGHT

FEHR & PEERS

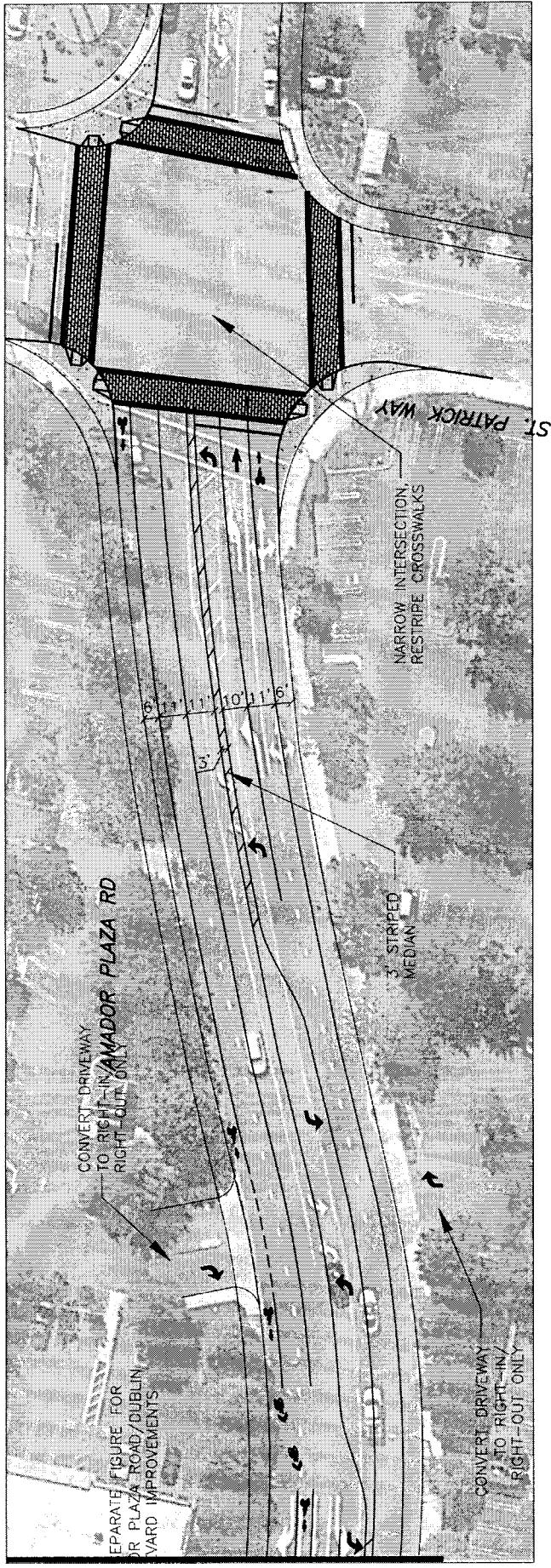
WESTERN DUBLIN TIF

CIR 08, 2015

10/16/2015

GENERAL NOTES:

1. INSTALL PEDESTRIAN SCALE LIGHTING (BOTH SIDES), REPLACE EXISTING STREET TREES, AND ADD SLURRY SEAL BETWEEN AMADOR VALLEY BOULEVARD & ST. PATRICK WAY
2. REPLACE EXISTING SIDEWALK WITH DECORATIVE PERVIOUS SIDEWALK (BOTH SIDES) BETWEEN AMADOR VALLEY BOULEVARD & DUBLIN BOULEVARD
3. INSTALL BIKE RACKS AND BENCHES ALONG CORRIDOR

**LEGEND****FEHR & PEERS**

AMADOR PLAZA ROAD COMPLETE STREETS
WESTERN DUBLIN TIF

Fehr & Peers - Unit Cost Estimate Tool

Project: Amador Plaza Road Complete Street Improvements

Location: Amador Plaza Road between Amador Valley Boulevard and St Patrick Way

Date: 3/2/2013

FEHR & PEERS

Signing and Striping					
ID	Signing	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Install New Sign on New Post	Each	\$ 700.00	35	\$24,500.00
Striping					
ID	Striping	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000010	Detail 9 - 4" Dashed Lane Line	LF.	\$ 1.00	1100	\$ 1,100.00
000011	Bicycle Lane (Thermoplastic)	LF.	\$ 1.50	5100	\$ 7,650.00
000012	Detail 38 - 8" Channelization Line	LF.	\$ 4.80	720	\$ 3,456.00
000013	12" Limit Line/Crosswalk	LF.	\$ 6.60	1465	\$ 9,669.00
000013	Detail 22 - Double Yellow Center Line	LF.	\$ 1.75	850	\$ 1,487.50
000015	Pavement Legends (Thermo)	S.F.	\$ 8.50	270	\$ 2,295.00
000016	Paint Curb	LF.	\$ 2.50	3300	\$ 8,250.00
000018	Preformed Green Thermoplastic Panels	S.F.	\$ 15.00	420	\$ 6,300.00
CIVIL					
ID	Paving/Curb	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Slurry Seal	SF	\$0.33	102500	\$ 33,825.00
000002	Asphalt Patch at New Curb	SF	\$4.00	6812	\$ 27,248.00
000010	Concrete Curb	LF	\$30.00	2534	\$ 76,020.00
000011	Concrete Curb & Gutter	LF	\$40.00	872	\$ 34,880.00
000013	Concrete Sidewalk	SF	\$15.00	3952	\$ 59,280.00
000016	Curb Ramp	EA	\$3,500.00	18	\$ 63,000.00
000018	Decorative Crosswalk	SF	\$20.00	7420	\$ 148,400.00
ID	Demo/Removal	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000038	Remove Concrete Sidewalk/Curb Ramp	SF	\$2.00	31935	\$ 63,870.00
000042	Remove damaged trees	EA	\$1,000.00	20	\$ 20,000.00
000043	Clear and Grub	SF	\$1.00	1000	\$ 1,000.00
ID	Aesthetic/Architectural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000044	Box Tree	EA	\$700.00	116	\$ 81,200.00
000045	Bench	EA	\$1,000.00	4	\$ 4,000.00
000046	Bike Rack	EA	\$1,000.00	4	\$ 4,000.00
000050	Decorative Sidewalks with Pervious Paving	SF	\$28.00	31935	\$ 894,180.00
000054	Planting area	SF	\$8.00	11267	\$ 90,136.00
000055	Project Funding Sign	EA	\$2,000.00	1	\$ 2,000.00
000057	4'x8' Tree Grates	EA	\$3,000.00	116	\$ 348,000.00
	Irrigation System	LS	\$120,000.00	1	\$ 120,000.00
	Downtown Gateway Monument	EA	\$50,000.00	3	\$ 150,000.00
ELECTRICAL					
ID	Signal Modifications	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Signal Modifications	EA	\$75,000.00	3	\$ 225,000.00
000001	Pedestrian-Scaled LED Lighting	EA	\$4,600.00	116	\$ 533,600.00
	Electrical conduit installation	LF	\$65.00	4960	\$ 322,400.00
				SUBTOTAL	\$ 3,366,747.00
				Traffic Control	\$90,000.00
				5% Mobilization	\$168,337.00
				TOTAL	\$3,625,084.00
				20% Contingency	\$ 725,017.00
				TOTAL CONSTRUCTION	\$4,350,101.00
				10% Construction Management	\$435,010.00
				15% Design & Environmental	\$652,515.00
				TOTAL COST ESTIMATE	\$5,437,626.00

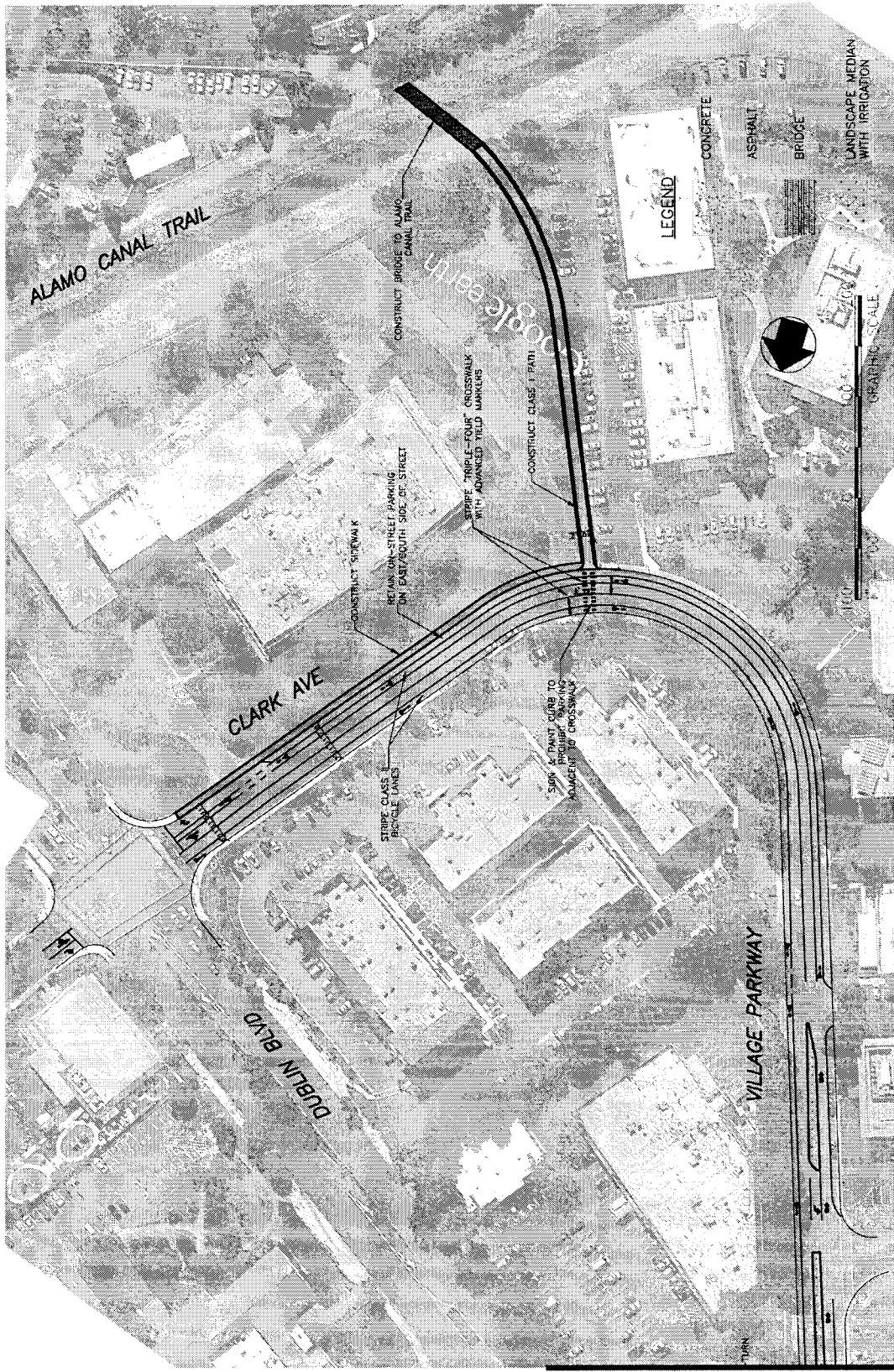
Allowance for project defined separately: intersection improvements at Amador Plaza Rd/Dublin Blvd -\$1,067,400.00

Allowance for initial project phase already funded: bike lanes and two mid-block crossings -\$600,000.00

TOTAL REMAINING COST **\$3,770,226.00**

5. Village Parkway Complete Streets Project





FEHR & PEERS

100 Foothill Avenue Walnut Creek, CA 94560
Scale EOC
APR 25, 2013
W:\\Walnut Creek\\N Drive\\PROJECTS\\NHC\\NHC10-2749.00_City of Dublin\\Active_Transportation_Plan\\CAD\\Village Parkway Concept\\Plan.dwg

VILLAGE PARKWAY CONCEPT DESIGN
FIGURE 6-8

Fehr & Peers - Unit Cost Estimate Tool

Project: Village Parkway Bicycle and Pedestrian Improvements
 Location: Village Parkway/Clark Avenue south of Dublin Boulevard
 Date: 2/8/2012

FEHR & PEERS

Signing and Striping					
ID	Signing	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Install New Sign on New Post	Each	\$ 700.00	10	\$7,000.00
Striping					
ID	Striping	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000010	Detail 9 - 4" Dashed Lane Line	LF.	\$ 0.95	300 \$	285.00
000011	Bicycle Lane Line	LF.	\$ 1.50	3600 \$	5,400.00
000011	Buffered Bicycle Lane	LF.	\$ 6.00	0 \$	-
000012	Detail 38 - 8" Channelization Line	LF.	\$ 4.80	200 \$	960.00
000013	12" Limit Line/Crosswalk	LF.	\$ 6.60	190 \$	1,254.00
000013	Detail 22 - Double Yellow Center Line	LF.	\$ 1.75	1170 \$	2,047.50
000015	Pavement Legends (Thermo)	S.F.	\$ 8.50	408 \$	3,468.00
000016	Paint Curb	LF.	\$ 2.50	240 \$	600.00
000018	Preformed Green Thermoplastic Panels	S.F.	\$ 15.00	112 \$	1,680.00
CIVIL					
ID	Paving/Curb	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Slurry Seal	LS	\$100,000.00	0.25 \$	25,000.00
000002	Asphalt Patch at New Curb	SF	\$4.00	4015 \$	16,060.00
000004	Asphalt Path	SF	\$6.00	4420 \$	26,520.00
000005	Shoulder	SF	\$2.00	2000 \$	4,000.00
000010	Concrete Curb	LF	\$30.00	720 \$	21,600.00
000011	Concrete Curb & Gutter	LF	\$40.00	480 \$	19,200.00
000012	Concrete Driveway	SF	\$15.00	320 \$	4,800.00
000013	Concrete Sidewalk	SF	\$15.00	3325 \$	49,875.00
000016	Curb Ramp	EA	\$3,500.00	1 \$	3,500.00
ID	Demo/Removal	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000035	Remove AC Pavement	SF	\$2.00	4015 \$	8,030.00
000038	Remove Concrete Sidewalk/Curb Ramp	SF	\$2.00	\$	-
000042	Remove trees	EA	\$1,000.00	4 \$	4,000.00
000043	Clear and Grub	SF	\$1.00	6420 \$	6,420.00
ID	Aesthetic/Architectural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000054	Planting area	SF	\$8.00	2975 \$	23,800.00
ID	Structural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000060	Bridge	SF	\$200.00	1300 \$	260,000.00
ELECTRICAL					
ID	Signal Modifications	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Signal Modifications	EA	\$150,000.00	1	\$0.00
				SUBTOTAL	\$495,500.00
				5% Traffic Control	\$24,775.00
				10% Mobilization	\$49,550.00
				5% Construction Management	\$24,775.00
				TOTAL	\$594,600.00
				20% Contingency	\$118,920.00
				TOTAL CONSTRUCTION	\$713,520.00
				15% Design & Environmental	\$107,028.00
				TOTAL COST ESTIMATE	\$820,548.00

Allowance for project already underway to construct
 portion of bike facility between AVB and Dublin

-\$50,000.00

TOTAL REMAINING COST

\$770,548.00

6. Dublin Blvd/San Ramon Road
Intersection Improvements



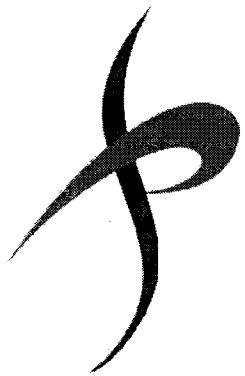
Fehr & Peers - Unit Cost Estimate Tool

Project: Dublin Bikeway Feasibility Analysis Alternative 1 - Class 1 Path
 Location: San Ramon Road/Dublin Boulevard Intersection
 Date: 2/8/2012

FEHR & PEERS

Signing and Striping					
I.D.	Signing	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Install New Sign on New Post	Each	\$ 700.00	2	\$1,400.00
000004	Relocate Existing Sign and Post	Each	\$ 400.00	2	\$800.00
Striping					
I.D.	Striping	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000010	Detail 9 - 4" Dashed Lane Line	L.F.	\$ 0.95	180	\$ 171.00
000015	12" Limit Line/Crosswalk	L.F.	\$ 6.60	1154	\$ 7,616.40
000026	24" Arrow (Paint) @ 42 Sq Ft each	S.F.	\$ 5.00	168	\$ 840.00
000033	Remove Thermoplastic Striping and Markings	S.F.	\$ 5.00	493.5	\$ 2,467.50
Right of Way Acquisition					
I.D.	Acquisition Costs	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000001	Right of Way Acquisition	SF	\$ 35.00	2,163	\$75,705.00
CIVIL					
I.D.	Paving/Curb	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000006	Asphalt Concrete Pad	SF	\$8.00	3000	\$24,000.00
000009	Concrete Curb	LF	\$30.00	300	\$9,000.00
000010	Concrete Curb & Gutter	LF	\$40.00	630	\$25,200.00
000012	Concrete Sidewalk	SF	\$10.00	4032	\$40,320.00
000015	Curb Ramp	EA	\$6,000.00	6	\$36,000.00
I.D.	Demo/Removal	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000035	Remove AC Pavement	SF	\$2.00	3500	\$7,000.00
000037	Remove Concrete Curb and Gutter	LF	\$5.00	300	\$1,500.00
000038	Remove Concrete Sidewalk/Curb Ramp	SF	\$2.00	3292	\$6,584.00
000042	Remove trees	EA	\$1,000.00	2	\$2,000.00
ELECTRICAL					
I.D.	Aesthetic/Architectural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000055	Signal Modification*	L.S.	\$135,000.00	1	\$135,000.00
*Signal modifications include protecting NBR turn and EBR turn; new signal posts; auto and bicycle detection					
SUBTOTAL \$375,604.00 10% Traffic Control \$37,560.00 10% Mobilization \$37,560.00 TOTAL \$440,724.00 25% Contingency \$112,681.00 TOTAL CONSTRUCTION \$563,405.00 20% Design & Environmental \$112,681.00 20% Construction Management \$112,681.00 TOTAL COST ESTIMATE \$788,800					

7. Dublin Boulevard/Village Parkway
Intersection Improvements



Fehr & Peers - Unit Cost Estimate Tool

Project: Dublin Bikeway Feasibility Analysis Alternative 1 - Class 1 Path

Location: Village Parkway/Dublin Boulevard Intersection

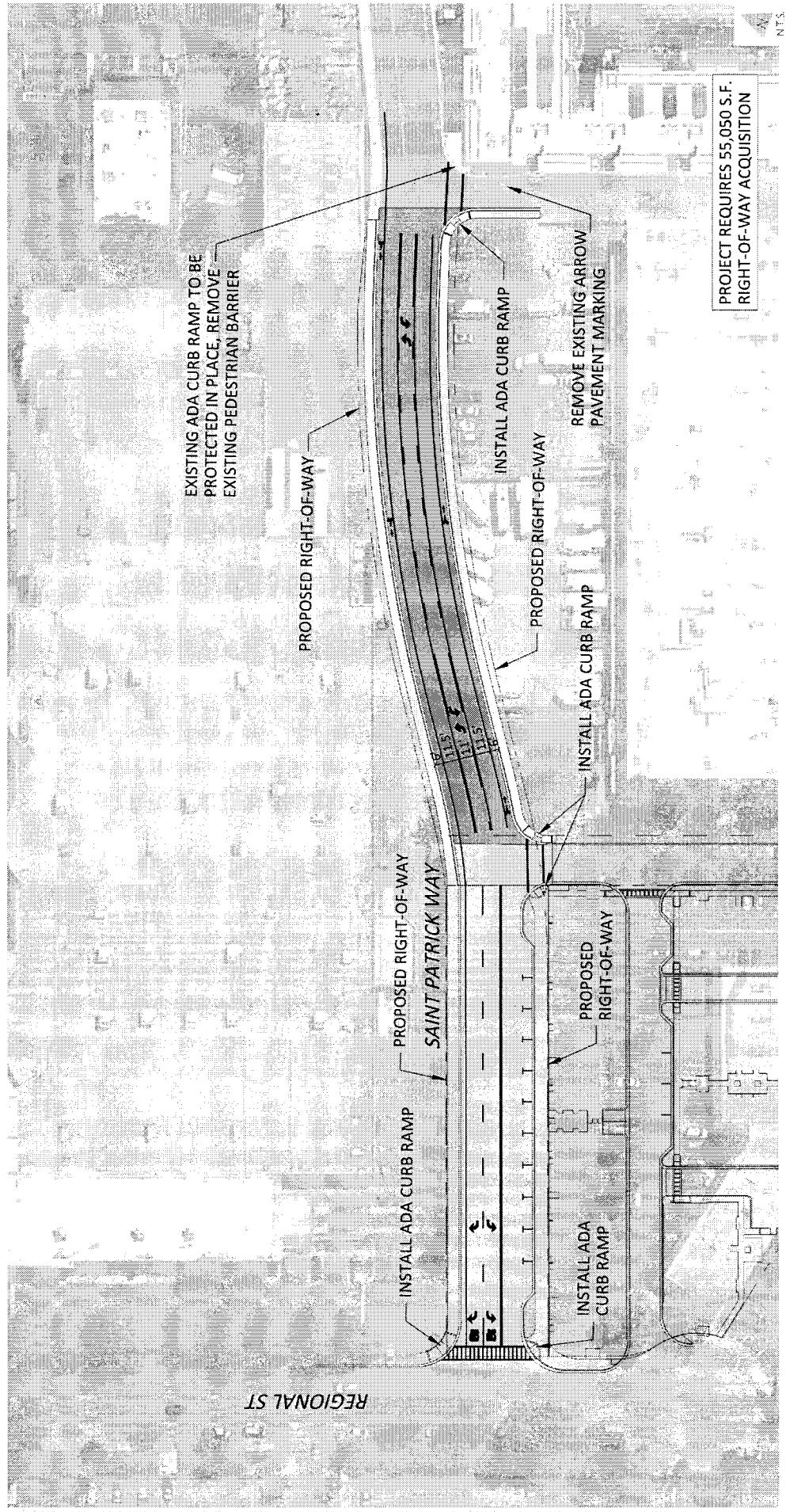
Date: 2/8/2012

FEHR & PEERS

ELECTRICAL					
LD.	Aesthetic/Architectural	Unit of Measure	Unit Cost	Enter Quantity	TOTAL
000054	Video Detection (for Bicyclists and Autos)	L.S.	\$25,000.00	1	\$25,000.00
000055	Signal Modification*	L.S.	\$135,000.00	1	\$135,000.00
<p>*Signal modifications include bike signal and extinguishable no right-turn signs at existing signalized intersections. All additional striping and sidewalk improvement costs are assumed incurred through Village Parkway Improvements</p>					
<p style="text-align: right;">SUBTOTAL \$160,000.00 10% Traffic Control \$16,000.00 10% Mobilization \$16,000.00 TOTAL \$192,000.00 25% Contingency \$48,000.00 TOTAL CONSTRUCTION \$240,000.00 20% Design & Environmental \$48,000.00 20% Construction Management \$48,000.00 TOTAL COST ESTIMATE \$336,000</p>					

8. St. Patrick Way Extension





Saint Patrick Way
Concept Improvements
Dublin, California



Project: Saint Patrick Way
Location: Dublin, CA
Date: 10/22/2015
Project #: WC14-3135.00
By: SD

FEHR & PEERS

Conceptual Cost Estimate					
Item Num	Bid Item	Unit of Measure	Unit Cost	Quantity	TOTAL
000001	Rough grading of right-of-way	SF	\$2.50	30,600	\$76,500
000002	Roadway paving (3" AC/ 8" Class II AB)	SF	\$8.00	20,000	\$160,000
000003	Concrete curb & gutter	LF	\$62.00	1100	\$68,200
000004	Concrete sidewalk	SF	\$15.00	6725	\$100,875
000005	ADA curb ramp	EA	\$4,100.00	2	\$8,200
000006	Erosion control	LS	\$22,000.00	1	\$22,000
000007	Temporary traffic control	LS	\$6,000.00	1	\$6,000
Signing & Striping					
000008	Two-way left-turn lane pavement marking	LF	\$2.40	425	\$1,020
000009	Bike lane pavement marking	LF	\$1.25	1000	\$1,250
000010	12" crosswalk pavement marking	LF	\$6.60	140	\$924
000011	Arrows and legend pavement markings	SF	\$8.50	102	\$867
000012	Install new sign on new post	EA	\$700.00	4	\$2,800
Lighting & Electrical					
000013	12" trench & backfill	LF	\$30.00	450	\$13,500
000014	2" PVC conduit in trench	LF	\$8.00	450	\$3,600
000015	#8 copper conductor	LF	\$2.00	1350	\$2,700
000016	#5 pull box w/ standard cover	EA	\$750.00	5	\$3,750
000017	Type 15 standard w/ 12' LA	EA	\$2,000.00	5	\$10,000
000018	Foundation for Type 15 standard	EA	\$3,000.00	5	\$15,000
Utilities					
000019	Adjust existing utilities	LS	\$150,000.00	1	\$150,000
000020	18" RCP storm drain pipe	LF	\$100.00	450	\$45,000
000021	Storm drain inlets	EA	\$3,500.00	3	\$10,500
Demolition & Removals					
000022	Remove existing pavement marking	SF	\$5.00	15	\$75
000023	Remove trees	EA	\$1,000.00	5	\$5,000
000024	Sawcut pavement	LS	\$8,000.00	1	\$8,000
000025	Demolition, existing pavement and curb	LS	\$75,000.00	1	\$75,000
000026	Remove and salvage existing pole and foundation	EA	\$3,000.00	2	\$6,000
Landscaping					
000027	Street trees	EA	\$1,875.00	28	\$52,500
000028	Landscaping and irrigation	SF	\$12.00	3800	\$45,600
000029	Tree grates	EA	\$1,500.00	28	\$42,000
			SUBTOTAL		\$936,861
			4% BONDS & INSURANCE, MOBILIZATION & DE-MOBILIZATION		\$37,474
			15% CONTINGENCY		\$146,150
			25% SOFT COSTS		\$280,121
			\$1/SF ZONE 7 DRAINAGE FEE		\$27,900
			10% CONSTRUCTION MANAGEMENT & TESTING		\$112,049
			CIVIL ESTIMATE		\$1,540,556
Right-of-Way					
000030	Right-of-Way	SF	\$40.00	55,050	\$2,202,000
			RIGHT-OF-WAY ESTIMATE		\$2,202,000
			TOTAL COST ESTIMATE		\$3,742,556

APPENDIX B:
GROWTH PROJECTIONS





FEHR & PEERS

WDTIF TAZ System

TABLE B-1: RESIDENTIAL AND EMPLOYMENT ESTIMATES FOR WDTIF AREA

TAZ	Households			Employment			Potential Growth (2040 – Existing)
	Existing	2040	Potential Growth (2040 – Existing)	Existing	2040	Potential Growth (2040 – Existing)	
941	152	152	0	0	0	0	0
942	175	175	0	0	0	0	0
943	0	0	0	466	489	23	
944	1	55	54	371	371	0	
945	246	246	0	70	98	28	
946	186	186	0	0	0	0	
947	290	290	0	5	5	0	
948	94	94	0	228	228	0	
949	186	186	0	0	0	0	
950	324	412	88	20	20	0	
951	210	210	0	0	0	0	
952	246	246	0	40	40	0	
953	0	100	100	591	591	0	
954	173	173	0	71	71	0	
955	184	184	0	3	3	0	
956	0	0	0	524	584	60	
957	54	314	260	1,458	1,624	166	
958	0	70	70	439	514	75	
959	0	300	300	540	940	400	
960	309	1,150	841	2,000	2,917	917	
961	0	0	0	420	458	38	
962	0	450	450	279	50	-229	
963	136	136	0	157	157	0	
964	0	70	70	230	230	0	
965	0	0	0	734	734	0	

TABLE B-1: RESIDENTIAL AND EMPLOYMENT ESTIMATES FOR WDTIF AREA

TAZ	Households			Employment		
	Existing	2040	Potential Growth (2040 – Existing)	Existing	2040	Potential Growth (2040 – Existing)
966	0	0	0	2,763	2,763	0
967	0	0	0	299	299	0
968	0	0	0	327	458	131
969	0	0	0	507	507	0
970	175	175	0	98	98	0
971	11	11	0	150	150	0
972	0	100	100	221	221	0
973	166	166	0	0	0	0
974	0	0	0	175	175	0
975	168	168	0	327	327	0
976	226	226	0	156	156	0
977	0	0	0	337	337	0
978	727	727	0	0	0	0
979	483	483	0	0	0	0
980	506	506	0	8	8	0
981	240	240	0	0	0	0
1501	124	124	0	0	0	0
1502	131	131	0	383	681	298
1503	88	88	0	0	0	0
1504	44	44	0	129	129	0
1505	101	101	0	0	0	0
1506	152	152	0	136	136	0
1507	101	101	0	0	0	0
1508	165	165	0	0	0	0
1509	212	212	0	0	0	0

TABLE B-1: RESIDENTIAL AND EMPLOYMENT ESTIMATES FOR WDTIF AREA

TAZ	Households			Employment		
	Existing	2040	Potential Growth (2040 – Existing)	Existing	2040	Potential Growth (2040 – Existing)
1510	186	186	0	0	0	0
1511	90	90	0	0	0	0
1512	184	184	0	3	3	0
1513	173	173	0	71	71	0
1514	235	235	0	81	81	0
1515	268	268	0	0	0	0
1516	0	0	0	299	299	0
1517	174	229	55	0	0	0
1518	233	233	0	0	0	0
1519	725	725	0	0	0	0
1520	166	166	0	37	37	0
1521	171	171	0	0	0	0
1522	246	246	0	40	40	0
1523	210	210	0	47	47	0
1524	217	217	0	0	0	0
TOTAL	10,064	12,452	2,388	15,240	17,147	1,907

Note: Rows shown in orange text are the zones inside the Downtown Dublin Specific Plan area. Totals for the DDSP zones are:

TOTAL	630	2,821	2,191	7,242	8,967	1,725
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APPENDIX C:
LEVEL OF SERVICE CRITERIA

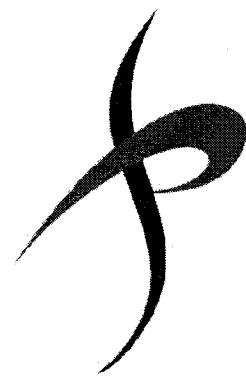


TABLE C-1: SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2010 Highway Capacity Manual.