CITY OF TRACY

CITYWIDE STORM DRAINAGE MASTER PLAN






Impact Fee Analysis

(For New Impact Fee Program Areas)

November 2013

Stantec

CITY OF TRACY
CITYWIDE STORM DRAINAGE MASTER PLAN

IMPACT FEE ANALYSIS FOR NEW IMPACT FEE PROGRAM AREAS

NOVEMBER 2013

184010207

Executive Summary

This impact fee analysis report has been prepared for new impact fee program areas that have been identified in the Citywide Storm Drainage Master Plan. It addresses program storm drainage infrastructure requirements to serve the majority of potential new development areas in the City's Sphere of Influence and establishes storm drainage impact fees to fund the program storm drainage infrastructure and outfall fees to utilize existing storm drainage outfall facilities.

The City already has several existing storm drainage impact fee program areas and these existing impact fee programs are not affected by this impact fee analysis for new impact fee program areas, with the exception of the South MacArthur Sub-Basin.

Existing and new storm drainage impact fee program areas are shown on Figure 8-1 from the Citywide Storm Drainage Master Plan. A copy of Figure 8-1 is provided in Section 1.0 of this report.

New fee program areas evaluated in this impact fee analysis include:

- Keenan
- Westside Residential
- NW WSO Sub-Basin
- Larch Clover
- East Side Industrial
- Chrisman & East UR1
- South MacArthur Sub-Basin
- Mountain House Watershed
- Lammers Watershed
- Kagehiro
- West Larch Clover

Figures depicting these impact fee program areas and the program storm drainage infrastructure needed to serve them are provided in Section 5.0 of this report. Opinions of probable cost for program storm drainage infrastructure are provided in Section 6.0.

Storm drainage impact fees to fund program storm drainage infrastructure, plus outfall fees to utilize existing storm drainage outfalls are provided in Section 7.0.

Table of Contents

LIST OF FIGURES (FOLLOWS THE PAGE)

LIST OF TABLES

APPENDIX

1.0 Introduction

This impact fee analysis report has been prepared for new impact fee program areas that have been identified in the Citywide Storm Drainage Master Plan. It addresses program storm drainage infrastructure requirements for serving the majority of potential new development areas in the City's Sphere of Influence and establishes storm drainage impact fees to fund the program storm drainage infrastructure and outfall fees to utilize existing storm drainage outfall facilities serving the Westside Channel Watershed and the Eastside Channel Watershed.

The City already has several existing storm drainage impact fee program areas and these existing impact fee programs are not affected by this impact fee analysis for new impact fee program areas, with the exception of the South MacArthur Sub-Basin.

Existing and new storm drainage impact fee program areas are shown on Figure 8-1 from the Citywide Storm Drainage Master Plan that follows this page.

New fee program areas evaluated in this impact fee analysis include:

- Keenan
- Westside Residential
- NW WSO Sub-Basin
- Larch Clover
- East Side Industrial
- Chrisman & East UR1
- South MacArthur Sub-Basin
- Mountain House Watershed
- Lammers Watershed
- Kagehiro
- West Larch Clover

Legend

- Existing Storm Drain
- Proposed Storm Drain
- Existing Detention
- Proposed Detention
- Pipe Change
- Overchutes
- Culverts
- Proposed Culverts
- Outfalls
- Existing Pump Stations
- Existing Pump Station To Be Upgraded
- Proposed Pump Stations
- Drain Inlet to Delta Mendota Canal
- Subbasins
- Sphere of Influence
- Existing Channel
- Proposed Channel Parkway
- Proposed Greenbelt Parkway
- Proposed Open Channel
- 100-yr Floodplain
- Areas with Existing Fee Programs or Fee Studies
- New or Revised Fee Program Areas
- Existing Fee Program Area Within a Larger Fee Program Area

Note: Infill Properties - There is an existing impact fee program that was established by the City for "infill" properties. For additional information please refer to the technical report entitled Storm Drainage Analysis – Infill Properties, Final Technical Report, August 2011, by Storm Water Consulting, Inc. and Stantec.

N

Bethany Rd
Middle Rd
Grant Line Rd
Von Sosten Rd
Eleventh St
Arbor Ave
Pescadero Ave
Grant Line Rd
Clover Rd
Larch Rd
Lowell Ave
Byron Rd
Valpico Rd
Schulte Rd
Linne Rd
Tracy Blvd
Lammers Rd
Naglee Rd
Corral Hollow Rd
Holly Dr
Chrisman Rd
East St
Third St
Sixth St
Alder Ave
Bird Rd
Mountain House Pkwy
Byron Rd
Hansen Rd

OLD RIVER
WICKLUND OUTFALL
NBID Tailwater Ditch
WSID MAIN DRAIN
UNION PACIFIC RAILROAD
TOM PAINE SLOUGH
SUGARCUT OUTFALL
WSID SUB MAIN DRAIN
WSID LOWER MAIN CANAL
WSID UPPER MAIN CANAL
DELTA MENDOTA CANAL
CALIFORNIA AQUEDUCT
I-580

MOUNTAIN HOUSE
GATEWAY
CORDES RANCH
LAMMERS
WEST SIDE INDUSTRIAL
TRACY HILLS
CATELLUS
BERG/BYRON
BRIGHT
WEST LARCH CLOVER
LARCH CLOVER
NW WSO SUB-BASIN
I-205 EXPANSION
"Plan C"
PRESIDIO SUB-BASIN
WESTSIDE RESIDENTIAL
KAGEHIRO
KEENAN
ELLIS PROGRAM SUB-BASIN
SOUTH LINNE
SOUTH MAC ARTHUR SUB-BASIN
DOWNTOWN SPECIFIC PLAN
EAST SIDE INDUSTRIAL
NORTHEAST INDUSTRIAL AREA
CHRISMAN & EASTUR1
ROCHA
SOUTH ISP SUB-BASIN
EXISTING GRAVEL PIT (TERMINAL DRAINAGE FOR TRACY HILLS)

OFF1 OFF2 OFF3 OFF4 OFF5

DETENTION BASIN DATA

Detention Basin	Status	Surface Area (acres)	100-Year Peak Volume (acre-feet)	Type of Outlet	100-Year Peak Inflow (cfs)	100-Year Peak Outflow (cfs)
DET 1A	Proposed	5.1	8	Pump	33	2.0
DET 4[1]	Phase 1	30	131	Gravity	198	25.0
DET 12	Proposed	2	4	Gravity	37	8.0
DET 13	Proposed	2	4	Gravity	36	8.0
DET 14	Proposed	7	16	Pump	68	1.0
DET 15	Proposed	6	13	Pump	41	1.0
DET 16[2]	Proposed	14	34	Pump	69	1.0
DET NEI	Proposed	31	198	Pump	480	10.0
DET ROCHA	Proposed	5	11	Gravity	31	1.0
DET LC	Proposed	15	36	Pump	83	1.0
DET 2A	Existing	10	74	Gravity	137	5.0
DET 2B[3]	Proposed	4.2	30	Pump	67	5.0
DET SL	Proposed	8	17	Gravity	43	1.0
DET 3A	Proposed	20	36	Gravity	53	3.0
DET 3B	Proposed	9.5	25	Gravity	51	1.0
DET LOWELL	Proposed	3.5	14	Gravity	84	33.4
DET 5	Existing	20	45	Gravity	319	197
DET 10/11	Existing	80	486	Pump	599	10.0
DET CP	Existing	6	14	Gravity	48	9.0
DET V	Proposed	1.5	2	Pump	13	2.0
DET LW1	Proposed	35	90	Gravity	158	3.0
DET LW2	Proposed	11	27	Gravity	60	2.0
DET LW3	Proposed	48	87	Gravity	124	4.0
DET LW4	Existing	4	11	Pump	25	0.5
DET LW5	Proposed	3	7	Pump	18	0.5
DET LW6	Proposed	21	101	Gravity	218	4.0
DET LW7	Proposed	4	10	Gravity	27	0.5
DET LW8	Proposed	13	34	Gravity	91	1.5
DET LW9a	Proposed	25	89	Gravity	202	10.0
DET LW9b	Proposed	7	18	Gravity	52	1.0
DET LW10a/10b[4]	Proposed	9	20	Gravity	67	1.0
DET LW11	Proposed	12	30	Gravity	61	2.5
DET LW12	Proposed	6	13	Pump	44	0.5
DET MHW2	Existing	10	68	Gravity	200	7.0
DET MHW3a/3b/3c	Proposed	10	37	Gravity and Pump	144	5.0

[1] Phase 1 (Existing) DET 4 is approximately 8 acres in area with storage of 13 acre-feet
[2] Discharge to be held until DET NEI is sufficiently drained to accept inflow
[3] Portion of DET 2B is existing City retention pond; 0.9 acres and 6 acre-feet of storage
[4] Discharge is to a proposed greenbelt parkway and DET LW10a/10b outflows will also enter DET LW9a to the north

Client/Project
CITY OF TRACY
STORM DRAINAGE MASTER PLAN

FIGURE 8-1

Title
STORM DRAINAGE IMPACT FEE PROGRAM AREAS

November 2012, Revised by Supplement: November 2013
184010207
SCALE = 1":1500'

Stantec
TRACY

2.0 Existing City Facilities and Levels of Service

Existing City storm drainage facilities include open channels, channel parkways, underground storm drains, detention and retention basins, and pumping facilities. The following is a description of their general levels of service:

- Open channels, channel parkways and detention basins are intended to have a 100-year 24-hour return period storm design capacity under built out conditions for land development in conformance with the City's General Plan. Pumping facilities serving detention basins are sized to provide the desired function and attenuation during a 100-year 24-hour return period storm.
- Underground storm drains are intended to have either a 10-year or a 100-year 24-hour return period storm capacity depending upon their location, function and contributing watershed. Generally, the 100-year capacity standard is applied to trunk line storm drains serving new development areas, and the 10-year capacity standard is applied to lateral storm drains or storm drains serving internal areas of individual development projects.
- Some of the City's older, historical storm drains have a capacity that is limited to a 10-year 24-hour return period storm capacity or lower.
- Retention ponds are utilized as a temporary measure to control storm runoff until such time as sufficient downstream facilities are constructed to accommodate the desired flows. These temporary retention ponds are required to have a capacity equivalent to the runoff volume generated from 2 times a 10-year 48-hour storm per the City's Engineering Design and Construction Standards (City Standards).

The previous Storm Drainage Master Plan prepared for the City's Sphere of Influence was completed in 1994 and supported the above levels of service. The City's recently completed Citywide Storm Drainage Master Plan reaffirms the above levels of service.

3.0 Required Level of Service for New Impact Fee Program Areas

Program storm drainage infrastructure identified in this impact fee analysis to serve new impact fee program areas has been sized based on the following levels of service:

- Detention basins: 100-year 24-hour storm.
- Detention basin pump stations (when needed): provide the desired function and attenuation during the 100-year 24-hour storm.
- Open channels, channel parkways, and greenbelt parkways: 100-year 24-hour storm.
- Underground storm drains: 100-year 24-hour storm.

These levels of service are consistent with the Citywide Storm Drainage Master Plan.

Underground storm drains that are considered lateral facilities or will serve new individual development areas are considered to be onsite facilities and shall have design capacities that are consistent with City Standards. These onsite facilities are not included in this impact fee analysis.

4.0 Impact Fee Program Areas

4.1 EXISTING IMPACT FEE PROGRAM AREAS

There are several impact fee program areas that have been analyzed and established by the City in recent years in conjunction with new development. These impact fee program areas have been established for individual properties or groupings of properties that have a common outfall and hydrologic context within the Eastside Channel Watershed, the Westside Channel Watershed and/or the Lammers Watershed. These impact fee program areas include the following:

- Plan "C"
- South ISP Sub-Basin
- South MacArthur Sub-Basin
- Downtown Specific Plan
- Northeast Industrial Area
- Tracy Gateway
- Presidio Sub-Basin
- Infill Properties
- Ellis Program Sub-Basin

These impact fee program areas are depicted on Figure 8-1 in Section 1.0 of this impact fee analysis and are described in Section 1.2.2 of the Citywide Storm Drainage Master Plan. In all cases, technical studies have been performed to determine storm drainage infrastructure requirements and impact fees and reimbursements.

The South MacArthur Sub-Basin is being reanalyzed as part of this impact fee study to address its remaining infrastructure requirements and to include the incorporation of the Rocha future service area into its facility plan and impact fee program area.

4.2 PROPOSED AND REVISED IMPACT FEE PROGRAM AREAS

The new or revised storm drainage impact fee program areas that are addressed in this impact fee analysis will cover the substantial majority of the remaining properties to be developed in the Sphere of Influence for which impact fee programs do not exist. They are:

- *Keenan* – The Keenan future service area is located on the south side of Valpico Road on the east side of Corral Hollow Road. It is substantially undeveloped, and new development is proposed to consist of residential land uses of varying densities.

- *Westside Residential* – This new impact fee program area will include the portions of the Westside Residential future service area that are located within Sub-basins W50, W80, and W81 of the Westside Channel Watershed per the Citywide Storm Drainage Master Plan. The participating properties are located east of Lammers Road and near the future alignment of Schulte Road. These properties are substantially undeveloped, with the exception of the development of Phase I of the Southgate subdivision at the east edge of Sub-basin W50 on the south side of Schulte Road. New development is proposed to consist of residential land uses of varying densities.

- *NW WSO Sub-Basin* – The NW WSO Sub-basin includes the Filios future service area, the I-205 Expansion future service area and the northeast portion of the Catellus future service area that resides north of Byron Road, all centered about Lammers Road or the alignment of Lammers Road. These properties are substantially undeveloped, and new development is proposed to consist of a mix of industrial, office, and retail land uses.

- *Larch Clover* – This new impact fee program area consists of the larger portion of the overall Larch Clover future service area and resides between Corral Hollow Road and Tracy Blvd. It is currently developed as large residential parcels, with some commercial land use and a community center. The area is proposed to be redeveloped and will consist of retail/commercial land uses.

- *East Side Industrial* – These properties include the East Side Industrial future service area properties and the I-205 Specific Plan M1/M2 parcels extending along the north side of I-205 east of MacArthur Drive and on the south side of I-205 east of Paradise Road. These properties are substantially undeveloped, and new development is proposed to consist of industrial land uses and a minimal amount of retail land uses.

- *Chrisman & East UR1* – This new impact fee program area will consist of the Chrisman Road future service area, the eastern portions of the UR1 future service area, and existing industrial developments, all within Sub-basins E53, E54, and E55 (per the Citywide Storm Drainage Master Plan) and centered about Chrisman Road south of the Northeast Industrial Area. Undeveloped areas include the south 2/3 of Sub-basin E53 and the majority of Sub-basin E55. New development is proposed to include residential land uses of varying densities and office and retail/commercial land uses.

- *South MacArthur Sub-Basin* – This is a revised impact fee program area that was previously established as an impact fee program area extending between 11th Street and Linne Road between MacArthur Drive and Chrisman Road. Phase 1 storm drainage infrastructure has been constructed within this sub-basin to serve the existing Eastlake, Elissagaray, and Lourence Ranch residential development projects. This impact fee program area includes the majority of the UR1 future service area and is being modified to incorporate the Rocha future service area (Sub-basin E14 per the Citywide Storm Drainage Master Plan) located on the west side of MacArthur Drive south of Schulte

Road. New development is proposed to include a variety of residential land uses, plus a limited amount of retail/commercial land use.

- *Mountain House Watershed* – This new impact fee program area consists of the westernmost portion of the Cordes Ranch future service area located on the west side of Mountain House Parkway within the Mountain House Watershed. It is substantially undeveloped, and new development is proposed to consist of a mix of industrial, office, and retail land uses.

- *Lammers Watershed* – This new impact fee program area includes the portions of the Lammers Watershed within the City's Sphere of Influence, including the larger portion of the Catellus future service area residing south of Byron Road, the Bright future service area, the Gateway future service area, the portions of the Westside Residential future service area residing in Sub-basins L21 and L21A along Lammers Road per the Citywide Storm Drainage Master Plan, the larger portion of the Cordes Ranch future service area east of Mountain House Parkway, the West Side Industrial future service area, and existing and future industrial developments located south of Schulte Road and east of Mountain House Parkway. New development will include a mix of residential, industrial, office, and retail land uses.

- *Kagehiro* – This new impact fee program area consists of the Kagehiro future service area located on the east side of Corral Hollow Road north of Valpico Road. It is substantially undeveloped, and new development is proposed to consist of low density residential land uses.

- *West Larch Clover* – This new impact fee program area consists of the portions of the overall Larch Clover future service area that reside west of Corral Hollow Road, north of Tracy Mall. It is currently substantially undeveloped, and new development is proposed to consist of very low density residential land uses and retail land uses.

5.0 Program Storm Drainage Infrastructure

5.1 KEENAN

The program storm drainage facilities proposed to serve the Keenan future service area are:

- A 36" SD extending east along Valpico Road from the north boundary of the Keenan future service area to the City's existing Westside Channel at Sycamore Parkway. Keenan future service area runoff is proposed to discharge directly to the Westside Channel.

Program storm drainage infrastructure is depicted on Figure 5-1.

The Keenan future service area will use existing storm drainage outfall facilities that serve the City's Westside Channel Watershed.

5.2 WESTSIDE RESIDENTIAL

The program storm drainage facilities proposed to serve the Westside Residential properties that reside within the Westside Channel Watershed are:

- A 30" SD extending east from the Souchek property (Sub-basin W80), north along the west boundary of Sub-basin W50, east along the future extension of Schulte Road, and north from future Schulte Road to discharge to a future detention basin (DET 3B).
- DET 3B, proposed to be located at the northeast corner of Sub-basin W50 that will serve to store and attenuate storm runoff generated by this impact fee program area. DET 3B is proposed to have a storage capacity of 25 acre-feet and occupy a 9.5-acre site. DET 3B will discharge to existing storm drains to the north that drain to the City's existing DET 5 (Plasencia Field).

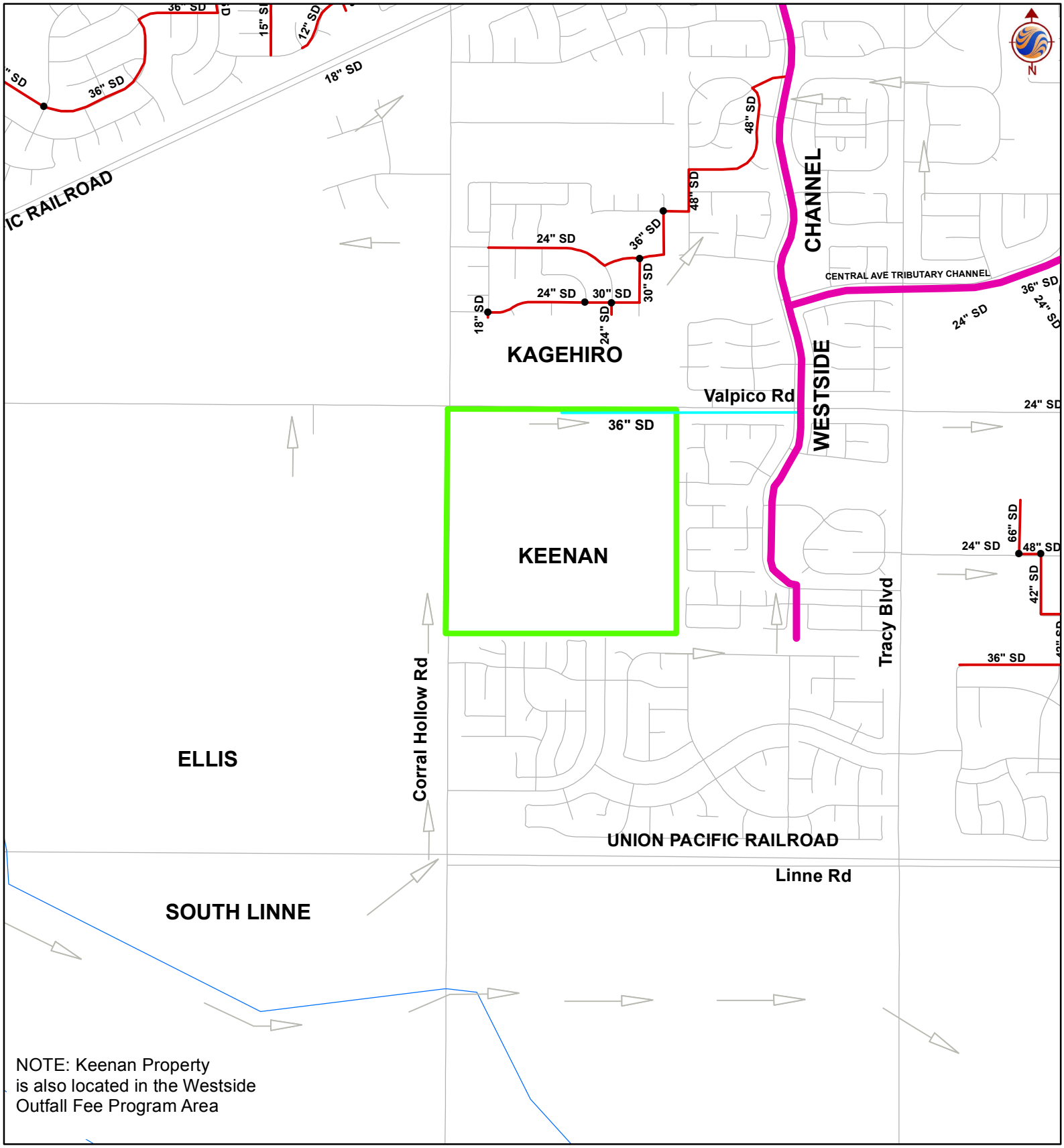
Program storm drainage infrastructure is depicted on Figure 5-2.

The Westside Residential impact fee program area will use existing storm drainage outfall facilities that serve the City's Westside Channel Watershed.

5.3 NW WSO SUB-BASIN

The program storm drainage facilities proposed to serve the NW WSO Sub-Basin are:

- A greenbelt parkway extending north through the north half of the I-205 Expansion future service area, discharging to an existing City 12' x 4' concrete box culvert that discharges to existing DET 10/11.



Legend

- Fee Area Boundary
- Existing Storm Drain
- Program Storm Drain
- Existing Channel

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-1_keenan.mxd

Client/Project

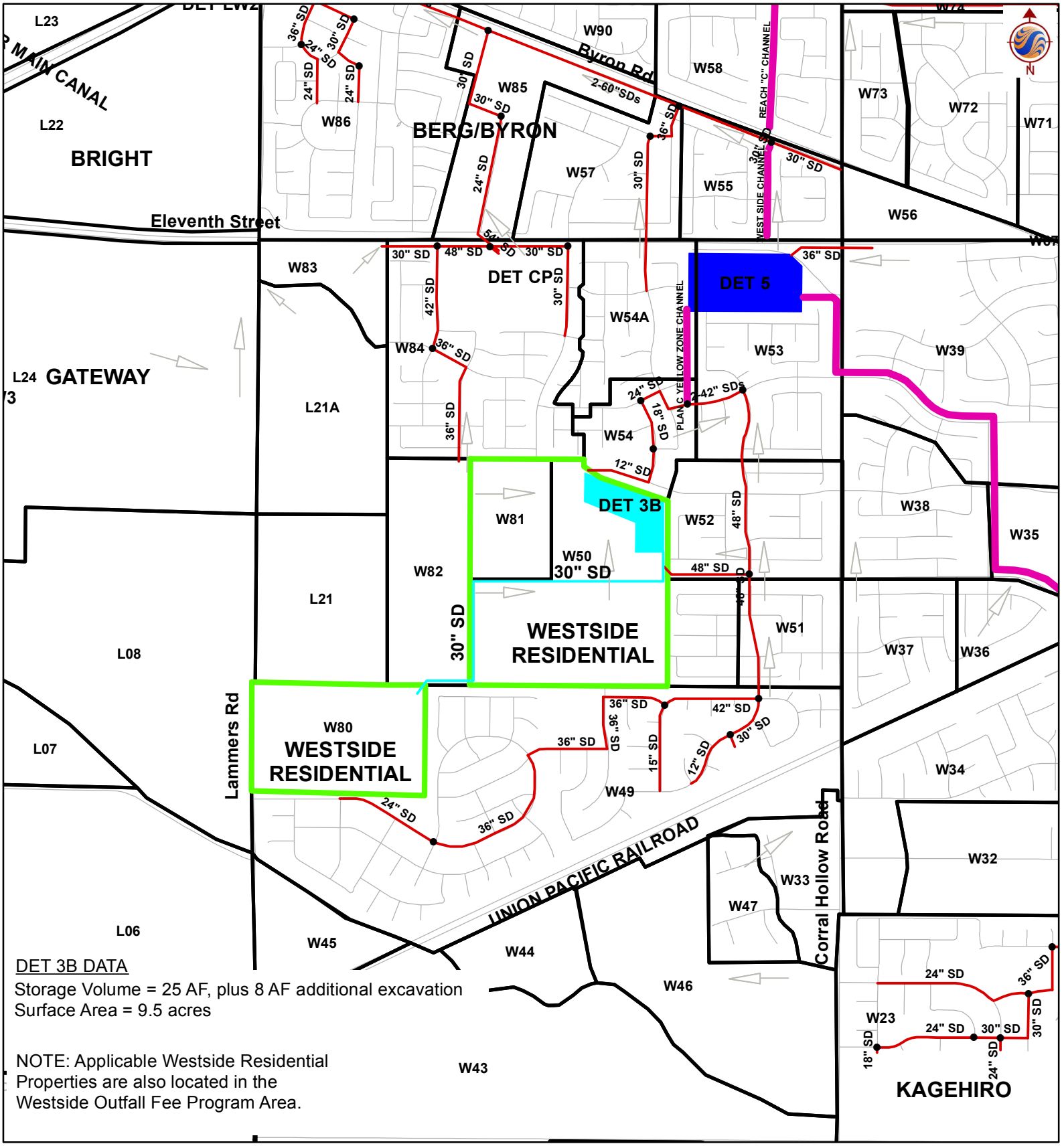
CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-1

Title

Proposed Program Infrastructure Keenan Property

NOVEMBER 2012
184010207
SCALE = 1":1500'



Legend

- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Program Storm Drain
- Existing Detention Basin
- Program Detention Basin
- Subbasin Boundary

Client/Project
CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-2

Title
Proposed Program Infrastructure Westside Residential Properties Within Westside Channel Watershed

NOVEMBER 2012
184010207
SCALE = 1":1500'

V:\1840\active\184010207\gis\mxd\impact_fees\5-2_westside_residential.mxd

The Filios future service area and northeast portion of the Catellus future service area will also discharge directly into City storm drainage facilities.

Program storm drainage infrastructure is depicted on Figure 5-3.

The NW WSO impact fee program area will use existing storm drainage outfall facilities that serve the City's Westside Channel Watershed.

5.4 LARCH CLOVER

The program storm drainage facilities proposed to serve the Larch Clover impact fee program area are:

- DET LC, a proposed detention basin to be located in the proposed City passive recreation property to the north of this program area (south of the proposed Holly Sugar Sports Park). This detention basin is proposed to store and attenuate storm runoff generated under a fully redeveloped condition for this impact fee program area and will have a storage capacity of 36 acre-feet with a surface area to be determined as a part of the future design of the passive recreation area.
- A storm drainage pump station with a capacity of 1 cfs and a 12" SDFM to drain DET LC. The 12" SDFM will extend east from DET LC within the passive recreation area to Tracy Blvd., then extend south along Tracy Blvd. to Larch Road where it will connect with an existing City 66" SD that extends east along Larch Road and transitions to a 72" SD that discharges to the City's existing Eastside Channel.
- A short segment of greenbelt parkway to provide for discharge of Larch Clover runoff to DET LC.

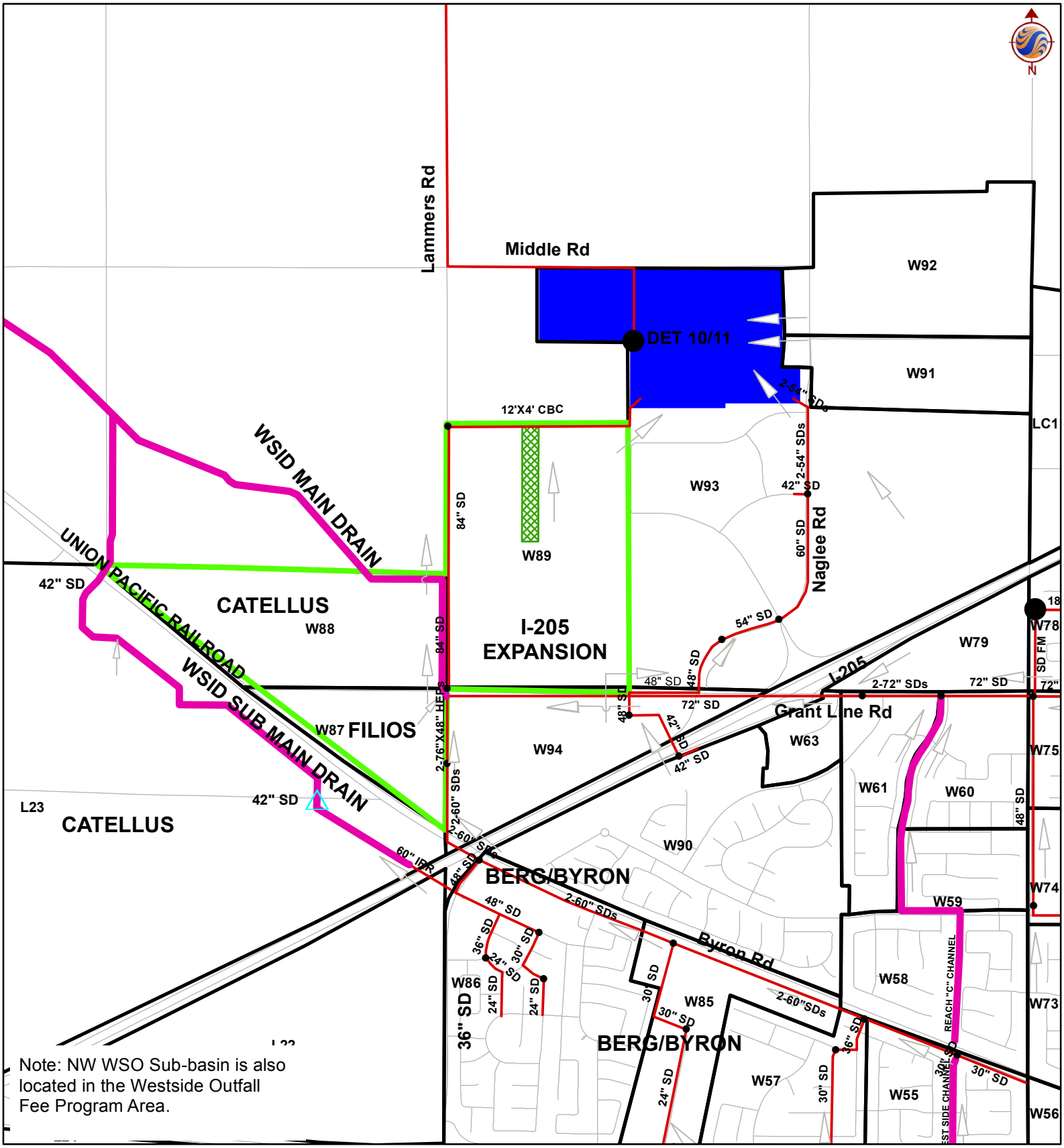
Program storm drainage infrastructure is depicted on Figure 5-4.

The Larch Clover impact fee program area will use existing storm drainage outfall facilities that serve the City's Eastside Channel Watershed.

5.5 EAST SIDE INDUSTRIAL

The program storm drainage facilities proposed to serve the East Side Industrial impact fee program area (which includes I-205 Specific Plan's M1 and M2 parcels) are:

- Detention basins and greenbelt parkways serving future development within the East Side Industrial future service area. These detention basins (DET 14, 15, and 16) will have restricted outflows of 1 cfs to facilitate their discharge to future Northeast Industrial Area (NEI) constructed storm drainage facilities. Sub-basins E66 and E67 will discharge to the future NEI constructed 36" SD outfall along Arbor Avenue to the west. Sub-basin 65 will discharge to DET NEI, but will need to delay discharge until DET NEI is sufficiently drained to accommodate additional inflow.



Legend

- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Existing Pump Stations
- Program Greenbelt Parkway
- Existing Detention Basin

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-3

Title

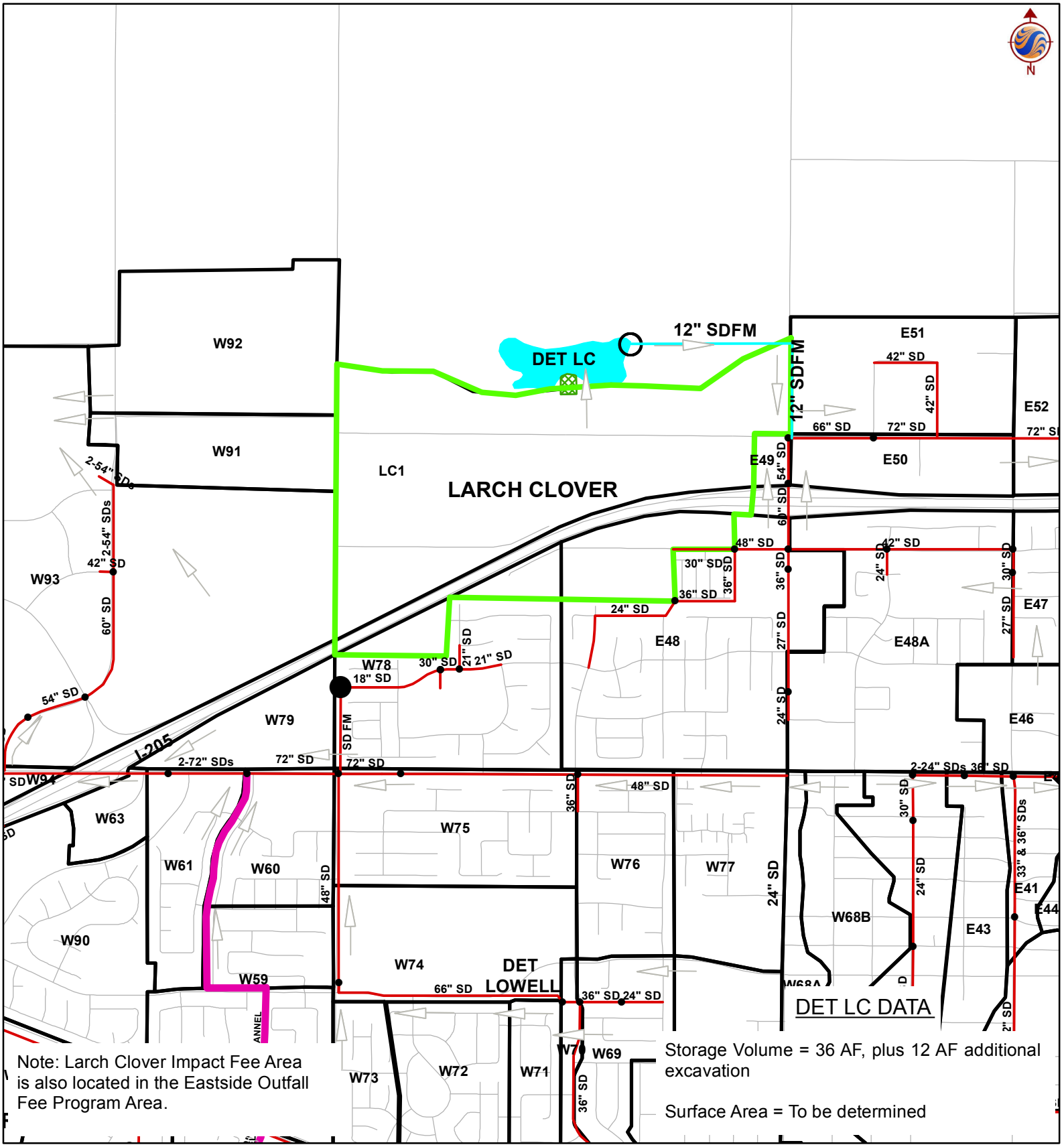
Proposed Program Infrastructure NW WSO Sub-basin

NOVEMBER 2012
184010207
SCALE = 1":1500'

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-3_nw_wso.mxd



Legend

- Program Storm Drain
- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Existing Pump Stations
- Program Pump Stations

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-4_larch_clover.mxd

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-4

Title

Proposed Program Infrastructure Larch Clover Impact Fee Area (Excluding West Larch Clover)

NOVEMBER 2012
184010207
SCALE = 1":1500'

- The storage volume capacities of DET's 14, 15, and 16 will be 16 acre-feet, 13 acre-feet, and 34 acre-feet, respectively. The estimated site areas required for DET's 14, 15, and 16 are 7, 6, and 14 acres, respectively.
- Pump stations and 12" SDFM discharge pipes to drain DET's 14, 15, and 16 and discharge to future NEI constructed storm drainage facilities.
- Detention basin (DET 13) serving future development of the M1 and M2 Parcels, east of MacArthur Drive. DET 13 will require a storage capacity of 4 acre-feet and will discharge to the future NEI constructed 36" SD outfall along Arbor Avenue. The assumed site area required for DET 13 is 2 acres.

Program storm drainage infrastructure is depicted on Figure 5-5.

The East Side Industrial impact fee program area will use existing storm drainage outfall facilities that serve the City's Eastside Channel Watershed.

5.6 CHRISMAN & EAST UR1

The program storm drainage facilities proposed to serve the Chrisman & East UR1 impact fee program area are:

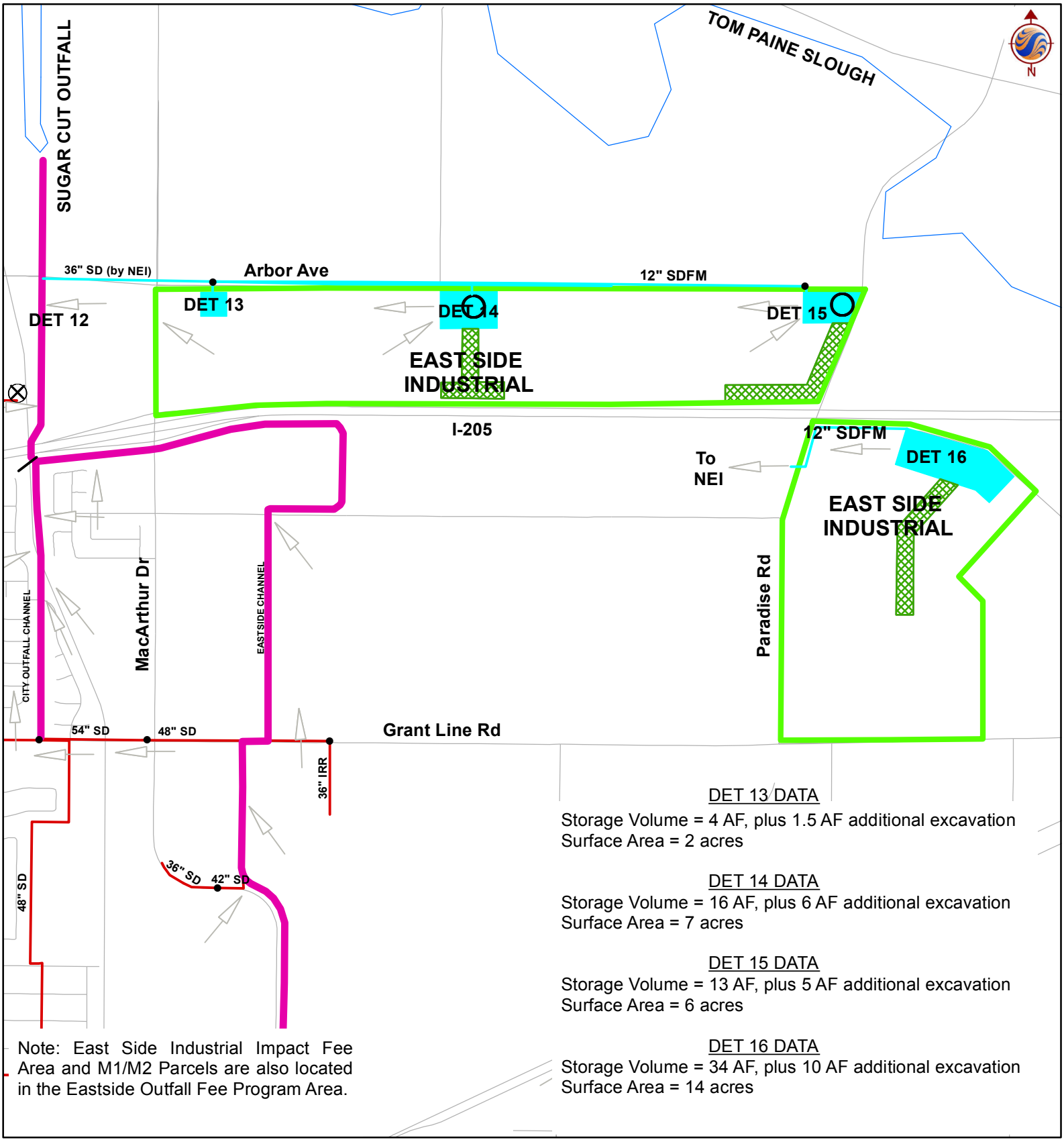
- A 36" SD extending north along Chrisman Road from a location about ¼ mile south of Eleventh Street to Brichetto Road (south of the Union Pacific Railroad), a 48" SD extending northeast along Brichetto Road about 1/3 mile, and a 60" SD extending an additional ¼ mile along Brichetto Road. The 60" SD would then turn north and cross underneath the Union Pacific Railroad tracks and through a portion of NEI to Grant Line Road, connecting with a future 66" SD that will be funded by NEI impact fees.

Program storm drainage infrastructure is depicted on Figure 5-6.

The Chrisman & East UR1 impact fee program area will use existing storm drainage outfall facilities that serve the City's Eastside Channel Watershed.

5.7 SOUTH MACARTHUR SUB-BASIN

The South MacArthur Sub-Basin is an existing impact fee program area that was utilized to fund the construction of storm drainage infrastructure serving the development of the Ellisagaray Ranch, Lourence Ranch, and Eastlake residential subdivisions. As a part of the development of these subdivisions, an initial phase of overall program storm drainage infrastructure for this sub-basin was constructed. The impact fee program area is being revised to fund program storm drainage facilities that are required to serve the remaining undeveloped properties in the sub-basin. The South MacArthur Sub-basin has also been expanded to incorporate the Rocha property located on the west side of MacArthur Drive, south of Schulte Road.



DET 13 DATA

Storage Volume = 4 AF, plus 1.5 AF additional excavation
Surface Area = 2 acres

DET 14 DATA

Storage Volume = 16 AF, plus 6 AF additional excavation
Surface Area = 7 acres

DET 15 DATA

Storage Volume = 13 AF, plus 5 AF additional excavation
Surface Area = 6 acres

DET 16 DATA

Storage Volume = 34 AF, plus 10 AF additional excavation
Surface Area = 14 acres

Note: East Side Industrial Impact Fee Area and M1/M2 Parcels are also located in the Eastside Outfall Fee Program Area.

Legend

- Program Storm Drain
- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Program Greenbelt Parkway
- Program Detention Basin
- Program Pump Station

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\east_side_industrial.mxd

Client/Project

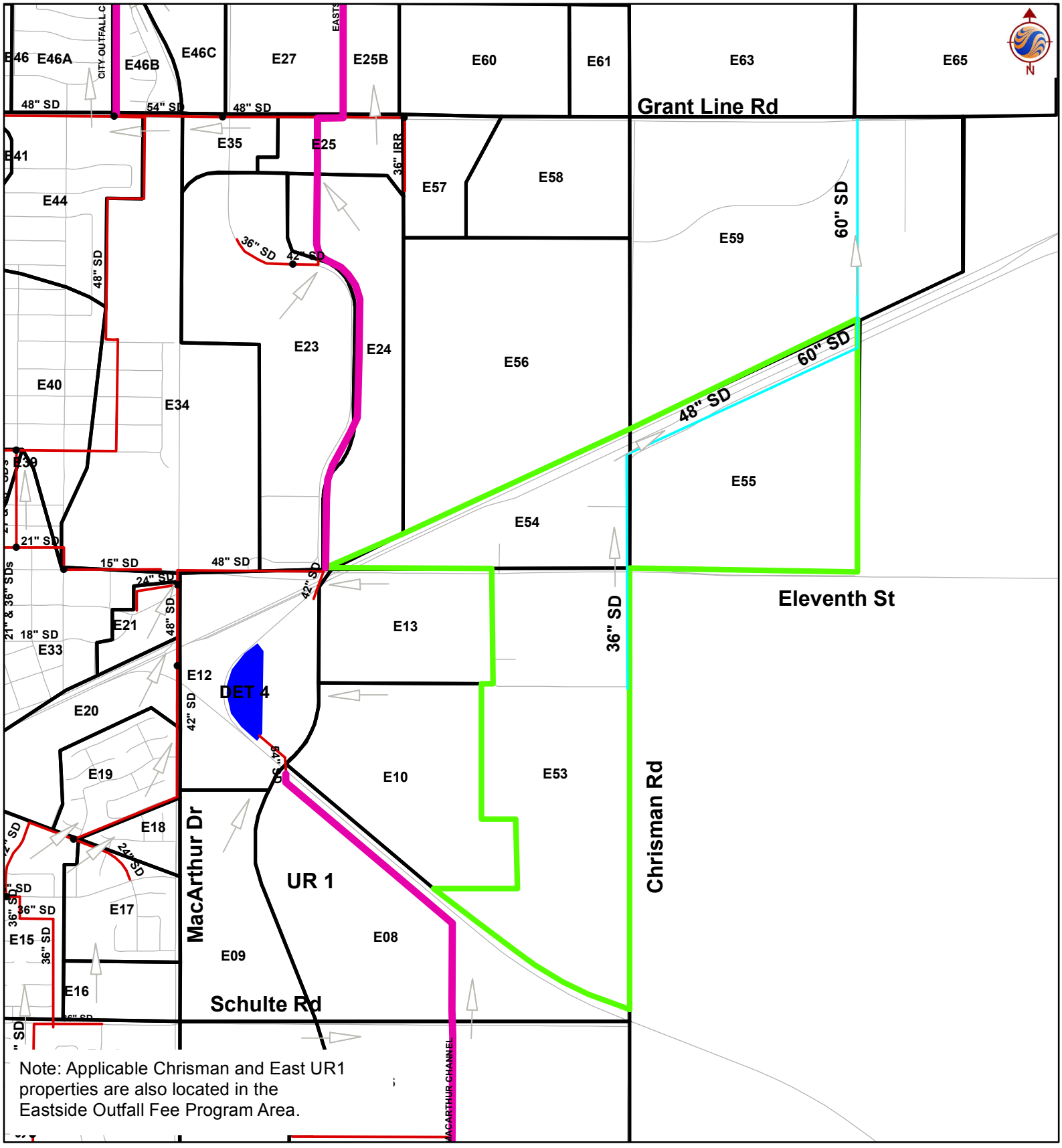
CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-5

Title

Proposed Program Infrastructure East Side Industrial Impact Fee Area Including M1/M2 Parcels

NOVEMBER 2012
184010207
SCALE = 1":1500'



Note: Applicable Chrisman and East UR1 properties are also located in the Eastside Outfall Fee Program Area.

Legend

- Program Storm Drain
- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Existing Detention
- Subbasin Boundary

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-6_chrisman.mxd

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-6

Title

Proposed Program Infrastructure Chrisman and East UR1

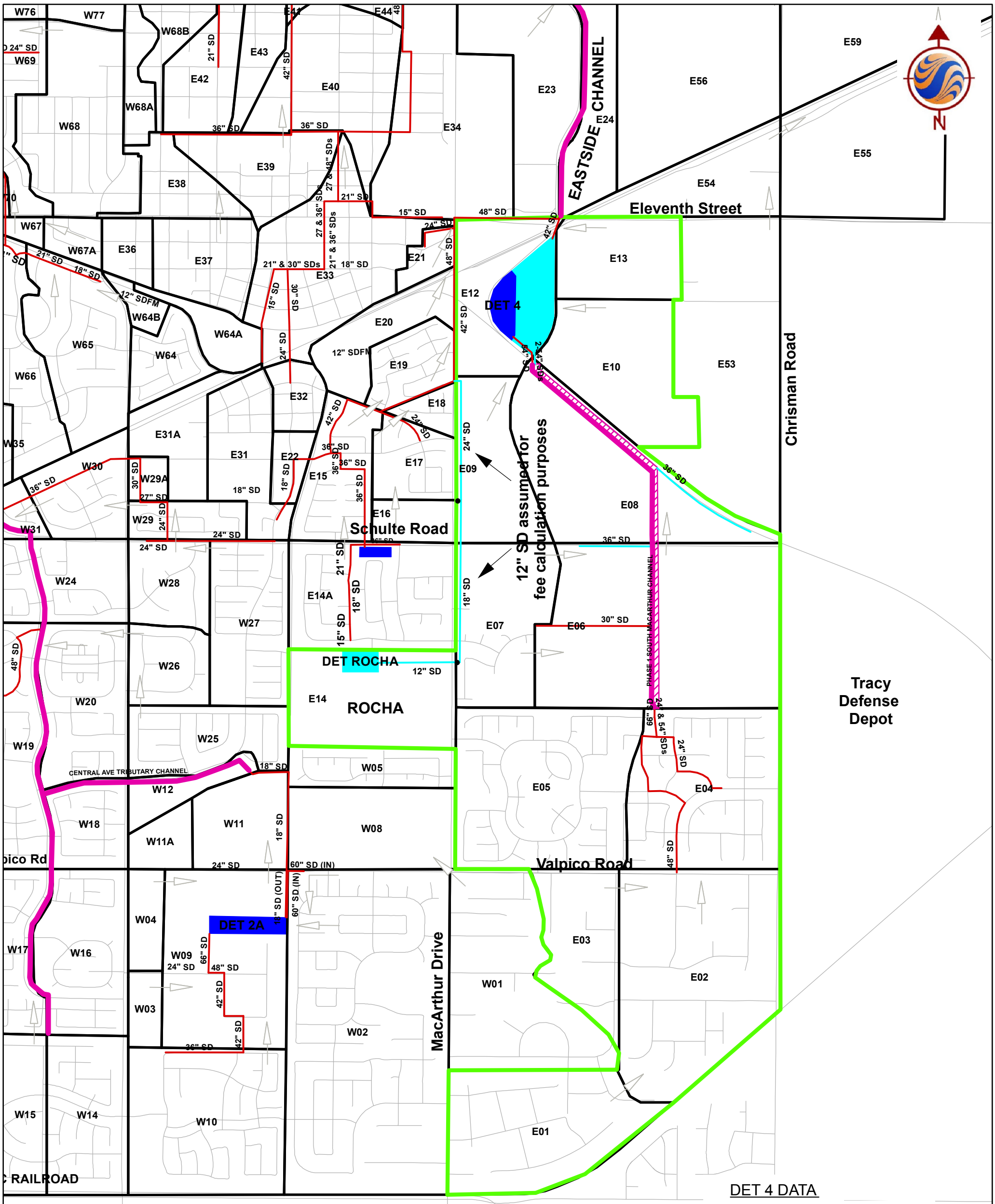
NOVEMBER 2012
184010207
SCALE = 1":1500'

The program storm drainage facilities proposed to serve new development in the South MacArthur Sub-basin per this updated impact fee analysis are:

- Expansion of existing DET 4 to increase its storage capacity from 13 acre-feet to 131 acre-feet. The site area for DET 4 will be expanded from 8 acres to 30 acres.
- Enlargement and enhancement of the existing South MacArthur "Phase 1" open channel extending upstream to the south from DET 4 to Ellisagaray Ranch to a Channel Parkway as defined in the Citywide Storm Drainage Master Plan. Right-of-way for this Channel Parkway was previously acquired as a part of construction of the "Phase 1" open channel.
- DET ROCHA, a detention basin to be located on the north boundary of the Rocha property west of MacArthur Drive. DET ROCHA will have a storage capacity of 11 acre-feet and an assumed site area of 5 acres.
- A 12" SD extending east from DET ROCHA (to accommodate an outflow discharge of 1 cfs) to MacArthur Drive and extending north along MacArthur Drive to discharge to discharge to an existing 42" SD at Leamon Street, roughly ½ mile north of Schulte Road. The 12" SD along MacArthur Drive is an assumed pipe diameter that is only being applied for impact fee calculation purposes. It will actually increase in size to a 24" SD as it accepts future street drainage that is not a part of the storm drainage impact fee program.
- A 36" SD extending east along Schulte Road and discharging to the new Channel Parkway.
- A 36" SD extending northwesterly along the California Northern Railroad track from a location north of Schulte Road and west of Chrisman Road, discharging to the new Channel Parkway.
- Two 54" SD crossings of the California Northern Railroad track (added to an existing 54" SD) to provide capacity for Channel Parkway flows to be delivered to expanded DET 4.

Program storm drainage infrastructure is depicted on Figure 5-7.

The South MacArthur Sub-basin impact fee program area will use existing storm drainage outfall facilities that serve the City's Eastside Channel Watershed.



DET 4 DATA

Storage Volume = 118AF remaining for buildout, plus 60 AF additional excavation

Surface Area = 22 acres needed for buildout

DET ROCHA DATA

Storage Volume = 11 AF, plus 4 AF additional excavation

Surface Area = 5 acres

Note: South MacArthur Sub-Basin properties are also located in the Eastside Outfall Fee Program Area.

Legend

- Fee Area Boundary
- Existing Channel
- Existing Storm Drain
- Program Storm Drain
- Program Channel Parkway
- Program Detention Basin
- Existing Detention Basin
- Subbasin Boundary

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-7_south_macarthur.mxd

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-7

Title

Proposed Program Infrastructure South MacArthur Sub-Basin, plus Rocha Property

NOVEMBER 2012
184010207
SCALE = 1":1500'

5.8 MOUNTAIN HOUSE WATERSHED

The program storm drainage facilities proposed to serve the Mountain House Watershed impact fee program area are:

- DET's MHW 3a, 3b and 3c to be located on the south side of I-205 west of Mountain House Parkway. The combined storage capacity of these detention basins is 37 acre-feet, with an assumed site area requirement of 10 acres.
- A pump station serving DET MHW 3a with a capacity of 3 cfs and an 18" SDFM to facilitate pump discharge to Patterson Run (an existing drainage channel passing through this impact fee program area).

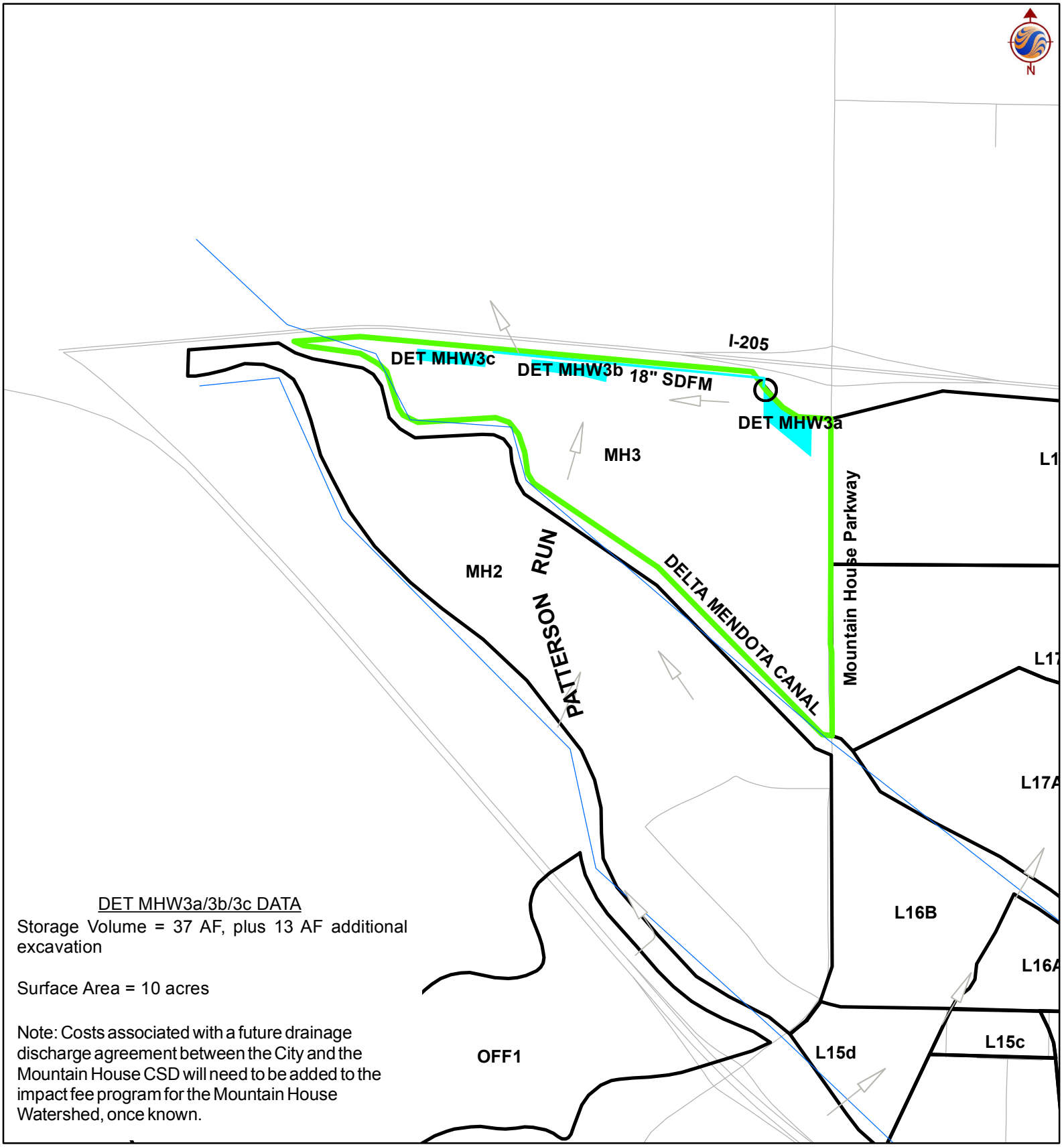
Program storm drainage infrastructure is depicted on Figure 5-8.

The Mountain House impact fee program area will discharge to existing and proposed storm drainage outfall facilities operated and maintained by the Mountain House CSD. New development will be required to provide the City with documentation and facilitate an agreement between the Mountain House CSD and the City that states that the Mountain House CSD will accept future runoff discharges as proposed within their downstream storm drainage facilities. The costs associated with securing this agreement and with the terms of this agreement are not currently known, but will be borne by new development within the Mountain House Watershed. The impact fees applicable to the Mountain House Watershed may require revision to incorporate the costs associated with this agreement.

5.9 LAMMERS WATERSHED

The program storm drainage facilities proposed to serve new development in the Lammers Watershed impact fee program area are:

- An integrated network of proposed detention basins serving new development areas (DET's LW1, LW2, LW3, LW5, LW6, LW9a, LW9b, LW10a/10/b, LW11, and LW12). These detention basins, their surface areas, and storage volume requirements are shown on the Detention Basin Data table on Figure 5-9.
- SD's and SDFM's ranging between 12" and 36" in diameter to convey attenuated attenuated (metered) releases from future detention basins for discharge to the WSID Sub-Main Drain (a 60"SD) at Lammers Road, south of Byron Road.
- Interflow gates to be installed at the connection point of the above storm drain system to the WSID Sub-Main Drain.
- A 42" SD crossing of Von Sosten Road at the WSID Sub-Main Drain.
- Greenbelt parkways extending along an existing wetland between existing Schulte Road and future Capital Parks Drive in the west portion of the Lammers Watershed, around



DET MHW3a/3b/3c DATA

Storage Volume = 37 AF, plus 13 AF additional excavation

Surface Area = 10 acres

Note: Costs associated with a future drainage discharge agreement between the City and the Mountain House CSD will need to be added to the impact fee program for the Mountain House Watershed, once known.

Legend

- Program Storm Drain
- Fee Area Boundary
- Subbasin Boundary
- Program Detention Basin
- Program Pump Station

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-8_mountain_house.mxd

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-8

Title

Proposed Program Infrastructure Mountain House Watershed Fee Area

NOVEMBER 2012
184010207
SCALE = 1":1500'

the southeast corner of the Cordes Ranch future service area, and within the Catellus future service area.

There are two (2) proposed detention basins (DET LW7 and DET LW8) that will serve selected new development areas within the Cordes Ranch future service area that have been categorized by the City as “non-program” facilities due to their size, configuration, and location within the Lammers Watershed. These will be considered to be “onsite” storm drainage facilities that will be constructed by applicable development projects.

Program storm drainage infrastructure proposed to serve the Lammers Watershed is depicted on Figure 5-9.

5.10 KAGEHIRO

There is no program storm drainage infrastructure required for development of the Kagehiro future service area. Onsite storm drains may discharge directly to existing storm drain stubs within the existing residential subdivision to the north.

The Kagehiro future service area and downstream storm drains are depicted on Figure 5-10.

The Kagehiro future service area will use existing storm drainage outfall facilities that serve the City’s Westside Channel Watershed.

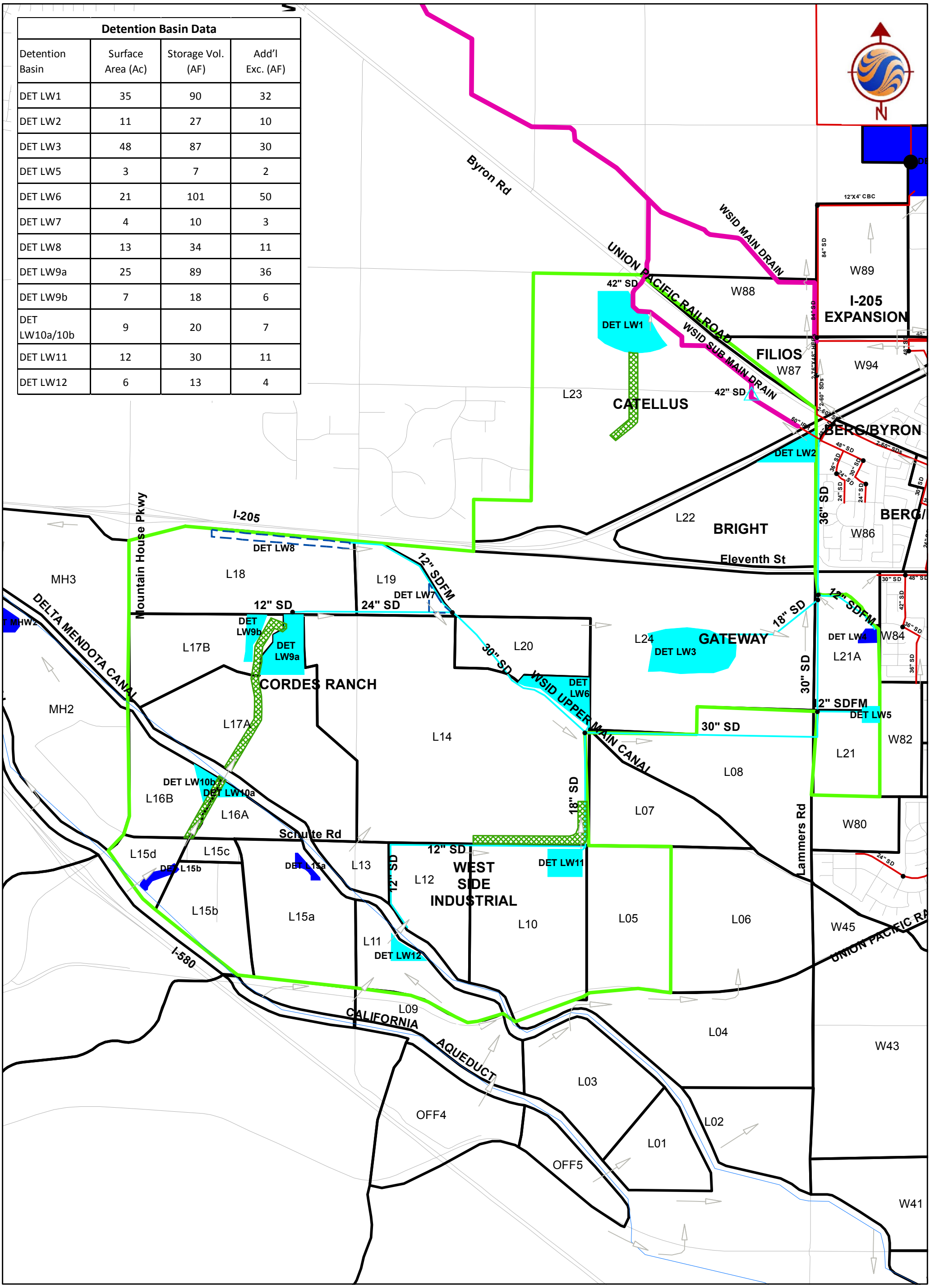
5.11 WEST LARCH CLOVER

There is no program storm drainage infrastructure required for development of the West Larch Clover future service area. Onsite storm drains may discharge directly to existing DET 10/11 on the west side of Naglee Road.

The West Larch Clover future service area and surrounding storm drainage features are shown on Figure 5-11.

The West Larch Clover future service area will use existing storm drainage outfall facilities that serve the City’s Westside Channel Watershed.

Detention Basin Data			
Detention Basin	Surface Area (Ac)	Storage Vol. (AF)	Add'l Exc. (AF)
DET LW1	35	90	32
DET LW2	11	27	10
DET LW3	48	87	30
DET LW5	3	7	2
DET LW6	21	101	50
DET LW7	4	10	3
DET LW8	13	34	11
DET LW9a	25	89	36
DET LW9b	7	18	6
DET LW10a/10b	9	20	7
DET LW11	12	30	11
DET LW12	6	13	4



Legend

- Fee Area Boundary
- Canals
- Existing Channel
- Existing Storm Drain
- Program Storm Drain
- Program Greenbelt Parkway
- Program Cross-Drainage Culvert
- Program Detention Basin
- Non-Program Detention Basin
- Existing Detention Basin
- Subbasin Boundary

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-9_lammers.mxd

Client/Project

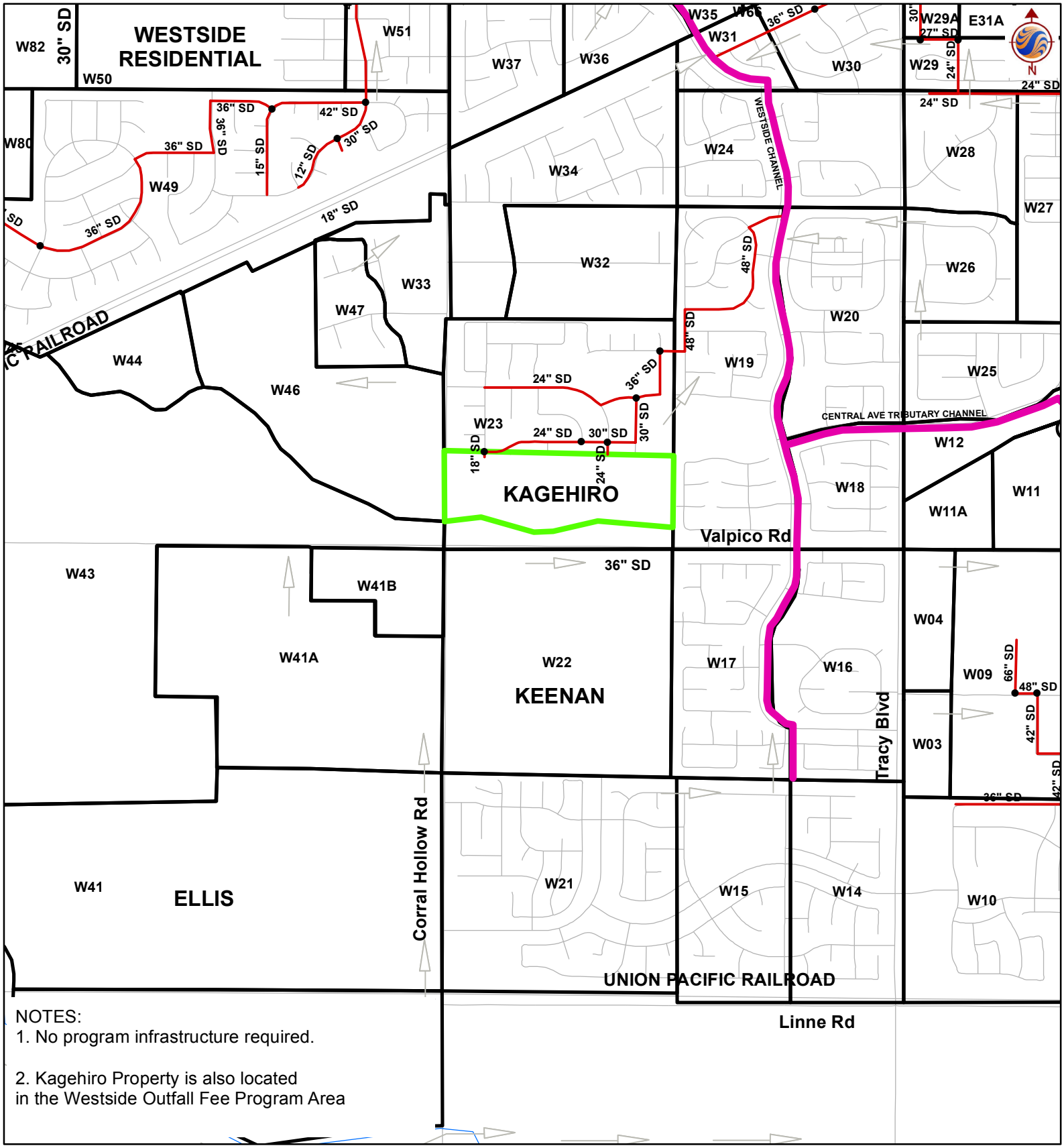
CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-9

Title

Proposed Program Infrastructure Lammers Watershed Fee Area

November 2012, Revised: November 2013
184010207
SCALE = 1":2000'



NOTES:
1. No program infrastructure required.

2. Kagehiro Property is also located in the Westside Outfall Fee Program Area

Legend

- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Subbasin Boundary

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-10_kagehiro.mxd

Client/Project

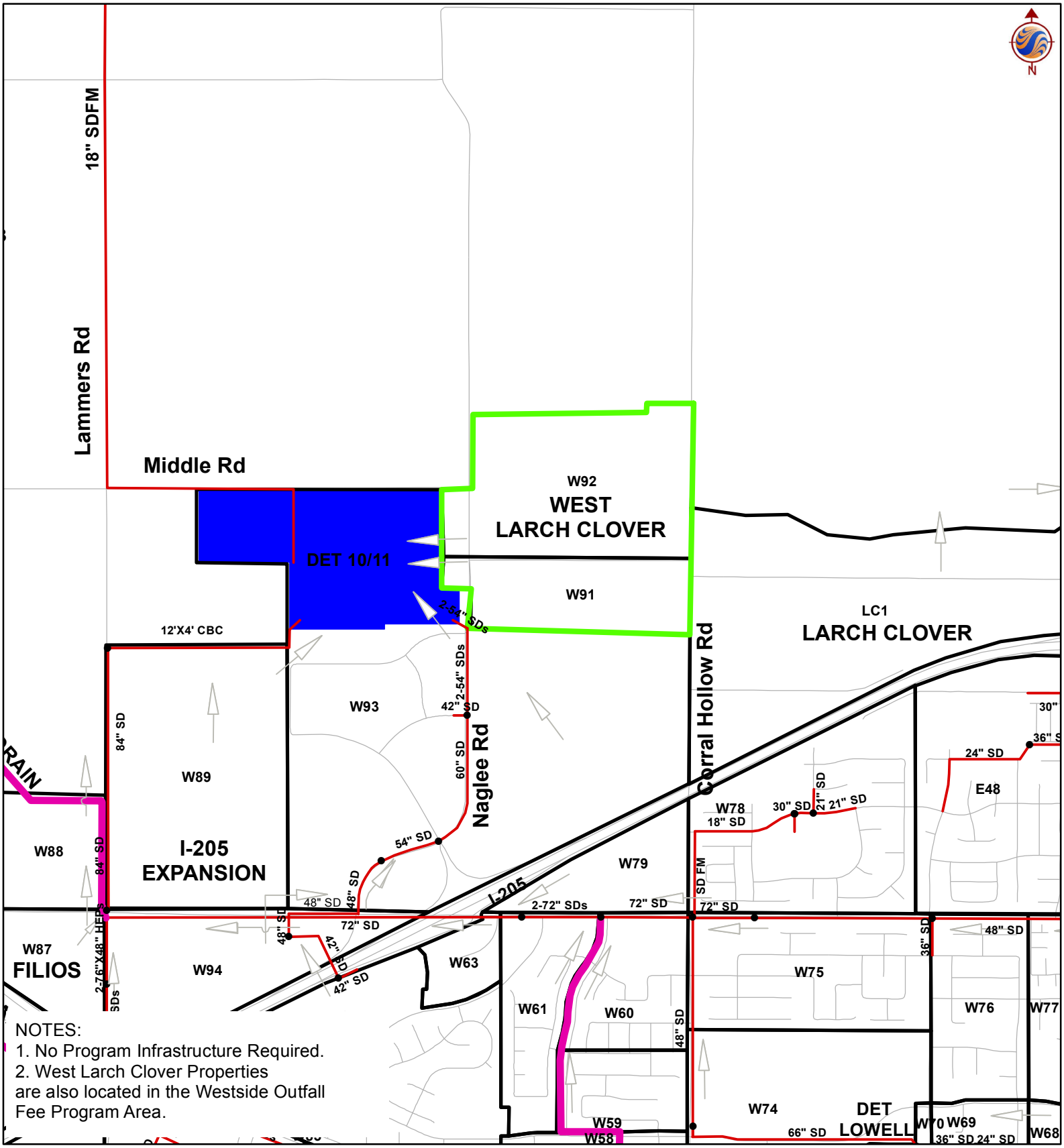
CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-10

Title

Proposed Program Infrastructure Kagehiro Property

NOVEMBER 2012
184010207
SCALE = 1":1500'



Legend

- Fee Area Boundary
- Existing Storm Drain
- Existing Channel
- Existing Detention Basin
- Subbasin Boundary

Stantec

TRACY

V:\1840\active\184010207\gis\mxd\impact_fees\5-11_west_larch_clover.mxd

Client/Project

CITY OF TRACY SDMP
STORM DRAINAGE IMPACT FEE STUDY

FIGURE 5-11

Title

Proposed Program Infrastructure West Larch Clover Properties

NOVEMBER 2012
184010207
SCALE = 1":1500'

6.0 Opinions of Probable Cost

6.1 GENERAL

This section presents opinions of probable cost and the methodology used to generate them for the program storm drainage infrastructure that will serve the new impact fee program areas.

6.2 COST ESTIMATION METHODOLOGY

6.2.1 Basis of Cost Estimating

The basis for the opinions of probable cost comes from a number of sources, including bid results from similar projects, previous studies, and industry standardized cost data that is considered applicable to the date that this impact fee analysis was completed. They should be reviewed annually and adjusted as needed for future construction time frames.

6.2.2 Cost Estimating Accuracy

The project costs are considered “order of magnitude” estimates that are relevant for initial budgeting and funding purposes. Final project costs will be dependent on a number of factors at the time of bidding, including actual scope of work, labor and material costs, number of competing projects, allotted construction schedule, and time of year, among other things. Order of magnitude estimates are appropriate for master planning level work, but it is important to note that they have been made without the benefit of detailed project specifications and design drawings.

6.2.3 Unit Cost Estimates

The unit costs for storm drainage infrastructure elements represent installation costs under what would be considered “typical” site conditions and project schedules.

In many cases, it has been assumed that new underground storm drains will be constructed within the right-of-way (ROW) for public streets, and for these instances ROW or easement acquisition costs have not been included in the opinions of probable cost. However, certain infrastructure elements (such as detention basins, open channel and greenbelt parkway corridors, and some underground storm drain alignments) that do not correspond with any roadway alignments shown on the Roadway & Transportation Master Plan include ROW or easement purchases when considered applicable.

The City has provided the following unit costs for land acquisitions to be utilized in the preparation of this impact fee analysis:

- Drainage ROW Unit Cost = $150,000/acre
- Drainage Easement Unit Cost = $50,000/acre

Table 6-1 and Table 6-2 show generic cost data for large diameter pipe and pump stations (based on pumping capacity) that have been used in the various cost estimates.

Table 6-1. Unit Cost Data for Pipes

Pipe Diameter (inches)	Cost per Linear Foot ($/ft)
12	$75
18	$100
24	$150
30	$200
36	$300
42	$350
48	$400
54	$450
60	$550
66	$650

Table 6-2. Unit Cost Data for Pump Stations	
Max Flow Rate (cfs)	**Cost ($)**
0-3	$350,000
5	$670,000
10	$940,000

6.2.4 Soft Cost Mark-Ups

Soft cost mark-ups incorporated into the preparation of the opinions of probable cost account for costs and functions that support the actual construction process and for contingencies. The actual costs for each item in the following four main categories of soft cost mark-ups will vary according to many individual project factors (i.e., complexity of the project, existing site conditions, etc.), but, in general, they are supported historically as appropriate mark-up estimates for master planning purposes (standardized as a percentage relative to the estimated construction cost) and are included in the total estimated cost for program storm drainage infrastructure.

General Contingency – Due to the fact that there are many unknowns related to a given project at the master planning level (i.e., site conditions, unforeseen constraints, details of design alternatives, construction schedule uncertainty, etc.), a 15 percent construction contingency is added to the construction cost estimate.

Design & Planning – These services typically include management of consultant agreements, preliminary site investigations, feasibility studies, plans and specifications, surveying and staking, and geotechnical reports. The cost of this work is estimated to be 10 percent of the estimated construction cost.

Construction Management – This primarily covers management of the construction contract, sampling and testing of materials, and site inspections during construction. This work is estimated to be 10 percent of the estimated construction cost.

Program Administration – Among other things, this category includes management and administrative costs, environmental review, permits, regulatory compliance, financing expenses, and legal review. This work is estimated to be 5 percent of the estimated construction cost.

Table 6-3 shows an example of the mark-ups used in generating the cost estimates provided herein.

Table 6-3. Opinion of Probable Cost Example	
Construction	$100,000
General Contingency (15%)	$ 15,000
Design & Planning (10%)	$ 10,000
Construction Management (10%)	$ 10,000
Program Administration (5%)	$ 5,000
Total Estimated Cost	$140,000

6.3 ESTIMATED PROGRAM INFRASTRUCTURE COSTS FOR APPLICABLE IMPACT FEE PROGRAM AREAS

The following tables provide opinions of probable cost for program storm drainage infrastructure for the following applicable impact fee program areas:

Keenan (Table 6-4)

Westside Residential (Table 6-5)

NW WSO Sub-Basin (Table 6-6)

Larch Clover (Table 6-7)

East Side Industrial (Table 6-8)

Chrisman & East UR1 (Table 6-9)

South MacArthur Sub-Basin (Table 6-10)

Mountain House Watershed (Table 6-11)

Lammers Watershed (Table 6-12)

The Kagehiro and West Larch Clover future service areas do not require program storm drainage infrastructure that will require funding via impact fees, but will need to pay an outfall fee to utilize existing outfall facilities.

Since it is likely that construction of the recommended facilities will be spread out over a number of years as development warrants and as funding becomes available, it is expected that the cost of program infrastructure will increase over the years. Therefore, it is important that the costs estimates be updated annually to allow the funding mechanisms to be adjusted to account for the increased costs.

Table 6-4

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Keenan

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
KEENAN				
Construction of Storm Drains				
36" SD (Outfall to Westside Channel)	2,800	LF	$ 300	$ 840,000
Other Items				
Dewatering	1	LS	$ 25,000	$ 25,000
Subtotal of Construction				**$ 865,000**
Design & Planning @ 10% of Construction Subtotal				**$ 86,500**
Construction Management @ 10% of Construction Subtotal				**$ 86,500**
General Contingency @ 15% of Construction Subtotal				**$ 129,750**
Program Administration @ 5% of Construction Subtotal				**$ 43,250**
Land Acquisition				
NONE				
Subtotal of Land Acquisition				**$ -**
TOTAL ESTIMATED COST				**$ 1,211,000**

Table 6-5

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Westside Residential Properties Within Westside Channel Watershed

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
WESTSIDE RESIDENTIAL				
Construction of Major Facilities				
DET 3B (25 AF, plus 8 AF add'l excavation)	33	AF	$ 10,000	$ 330,000
Construction of Storm Drains				
30" SD	4,400	LF	$ 200	$ 880,000
Other Items				
Dewatering	1	LS	$ 150,000	$ 150,000
Subtotal of Construction				**$ 1,360,000**
Design & Planning @ 10% of Construction Subtotal				**$ 136,000**
Construction Management @ 10% of Construction Subtotal				**$ 136,000**
General Contingency @ 15% of Construction Subtotal				**$ 204,000**
Program Administration @ 5% of Construction Subtotal				**$ 68,000**
Land Acquisition				
DET 3B	9.5	AC	$ 150,000	$ 1,425,000
30" SD Easement	1.0	AC	$ 50,000	$ 50,000
Subtotal of Land Acquisition				**$ 1,475,000**
TOTAL ESTIMATED COST				**$ 3,379,000**

Table 6-6

Opinion of Probable Cost for Program Storm Drainage Infrastructure

NW WSO Sub-Basin

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
NW WSO SUB-BASIN				
Construction of Major Facilities				
Greenbelt Parkway	1,350	LF	$ 340	$ 459,000
Other Items				
Dewatering	1	LS	$ 25,000	$ 25,000
Subtotal of Construction				**$ 484,000**
Design & Planning @ 10% of Construction Subtotal				**$ 48,400**
Construction Management @ 10% of Construction Subtotal				**$ 48,400**
General Contingency @ 15% of Construction Subtotal				**$ 72,600**
Program Administration @ 5% of Construction Subtotal				**$ 24,200**
Land Acquisition				
Greenbelt Parkway	6.2	AC	$ 150,000	$ 930,000
Subtotal of Land Acquisition				**$ 930,000**
TOTAL ESTIMATED COST				**$ 1,607,600**

Table 6-7

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Larch Clover (Excluding West Larch Clover)

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
LARCH CLOVER				
Construction of Major Facilities				
DET LC (36 AF, plus 12 AF add'l excavation)	48	AF	$ 10,000	$ 480,000
DET LC Pump Station (1.0 cfs capacity)	1	LS	$ 350,000	$ 350,000
Greenbelt Parkway	250	LF	$ 340	$ 85,000
Construction of Storm Drains				
12" SDFM	3,000	LF	$ 75	$ 225,000
Other Items				
Dewatering	1	LS	$ 200,000	$ 200,000
Subtotal of Construction				**$ 1,340,000**
Design & Planning @ 10% of Construction Subtotal				**$ 134,000**
Construction Management @ 10% of Construction Subtotal				**$ 134,000**
General Contingency @ 15% of Construction Subtotal				**$ 201,000**
Program Administration @ 5% of Construction Subtotal				**$ 67,000**
Land Acquisition				
NONE				
Subtotal of Land Acquisition				**$ -**
TOTAL ESTIMATED COST				**$ 1,876,000**

Table 6-8

Opinion of Probable Cost for Program Storm Drainage Infrastructure

East Side Industrial (Including M1/M2 Parcels)

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
EAST SIDE INDUSTRIAL				
Construction of Major Facilities				
DET 13 (4 AF, plus 1.5 AF add'l excavation)	5.5	AF	$ 10,000	$ 55,000
DET 14 (16 AF, plus 6 AF add'l excavation)	22	AF	$ 10,000	$ 220,000
DET 15 (13 AF, plus 5 AF add'l excavation)	18	AF	$ 10,000	$ 180,000
DET 16 (34 AF, plus 10 AF add'l excavation)	44	AF	$ 10,000	$ 440,000
DET 14 Pump Station (1.0 cfs capacity)	1	LS	$ 350,000	$ 350,000
DET 15 Pump Station (1.0 cfs capacity)	1	LS	$ 350,000	$ 350,000
DET 16 Pump Station (1.0 cfs capacity)	1	LS	$ 350,000	$ 350,000
Greenbelt Parkway	5,000	LF	$ 340	$ 1,700,000
Construction of Storm Drains				
12" SDFM	8,600	LF	$ 75	$ 645,000
Other Items				
Dewatering	1	LS	$ 2,500,000	$ 2,500,000
Subtotal of Construction				**$ 6,790,000**
Design & Planning @ 10% of Construction Subtotal				**$ 679,000**
Construction Management @ 10% of Construction Subtotal				**$ 679,000**
General Contingency @ 15% of Construction Subtotal				**$ 1,018,500**
Program Administration @ 5% of Construction Subtotal				**$ 339,500**
Land Acquisition				
DET 13	2.0	AC	$ 150,000	$ 300,000
DET 14	7.0	AC	$ 150,000	$ 1,050,000
DET 15	6.0	AC	$ 150,000	$ 900,000
DET 16	14.0	AC	$ 150,000	$ 2,100,000
Greenbelt Parkway	23.0	AC	$ 150,000	$ 3,450,000
12" SDFM Easement	0.5	AC	$ 50,000	$ 25,000
Subtotal of Land Acquisition				**$ 7,825,000**
TOTAL ESTIMATED COST				**$ 17,331,000**

Table 6-9

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Chrisman and East UR1

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
CHRISMAN AND EAST UR1				
Construction of Storm Drains				
36" SD	2,800	LF	$ 300	$ 840,000
48" SD	1,900	LF	$ 400	$ 760,000
60" SD	3,500	LF	$ 550	$ 1,925,000
60" SD (Bore & Jack)	200	LF	$ 900	$ 180,000
Other Items				
Dewatering	1	LS	$ 100,000	$ 100,000
UPTC Crossing Agreement	1	EA	$ 5,000	$ 5,000
Subtotal of Construction				**$ 3,810,000**
Design & Planning @ 10% of Construction Subtotal				**$ 381,000**
Construction Management @ 10% of Construction Subtotal				**$ 381,000**
General Contingency @ 15% of Construction Subtotal				**$ 571,500**
Program Administration @ 5% of Construction Subtotal				**$ 190,500**
Land Acquisition				
NONE				
Subtotal of Land Acquisition				**$ -**
TOTAL ESTIMATED COST				**$ 5,334,000**

Table 6-10

Opinion of Probable Cost for Program Storm Drainage Infrastructure

South MacArthur Sub-Basin, plus Rocha Property

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
SOUTH MACARTHUR SUB-BASIN				
Construction of Major Facilities				
DET 4 (118 AF remaining for buildout, plus 60 AF add'l exc.)	178	AF	$ 10,000	$ 1,780,000
DET ROCHA (11 AF, plus 4 AF add'l excavation)	15	AF	$ 10,000	$ 150,000
Channel Parkway	6,500	LF	$ 300	$ 1,950,000
Construction of Storm Drains				
12" SD	5,800	LF	$ 75	$ 435,000
36" SD	3,050	LF	$ 300	$ 915,000
54" SD (Bore & Jack)	200	LF	$ 850	$ 170,000
Other Items				
Dewatering	1	LS	$ 300,000	$ 300,000
UPTC Crossing Agreement	1	EA	$ 5,000	$ 5,000
Subtotal of Construction				**$ 5,705,000**
Design & Planning @ 10% of Construction Subtotal				**$ 570,500**
Construction Management @ 10% of Construction Subtotal				**$ 570,500**
General Contingency @ 15% of Construction Subtotal				**$ 855,750**
Program Administration @ 5% of Construction Subtotal				**$ 285,250**
Land Acquisition				
DET 4 (remaining acres needed for buildout)	22.0	AC	$ 150,000	$ 3,300,000
DET ROCHA	5.0	AC	$ 150,000	$ 750,000
36" SD Easement	0.8	AC	$ 50,000	$ 40,000
Subtotal of Land Acquisition				**$ 4,090,000**
TOTAL ESTIMATED COST				**$ 12,077,000**

Table 6-11

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Mountain House Watershed

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
MOUNTAIN HOUSE WATERSHED				
Construction of Major Facilities				
DET MHW3a/3b/3c (37 AF, plus 13 AF add'l excavation)	50	AF	$ 10,000	$ 500,000
DET MHW 3a Pump Station (3.0 cfs capacity)	1	LS	$ 350,000	$ 350,000
Construction of Storm Drains				
18" SDFM	3,300	LF	$ 100	$ 330,000
Other Items				
Dewatering	1	LS	$ 150,000	$ 150,000
Mountain House Discharge Agreement	1	LS	TBD	TBD
Subtotal of Construction				**$ 1,330,000**
Design & Planning @ 10% of Construction Subtotal				**$ 133,000**
Construction Management @ 10% of Construction Subtotal				**$ 133,000**
General Contingency @ 15% of Construction Subtotal				**$ 199,500**
Program Administration @ 5% of Construction Subtotal				**$ 66,500**
Land Acquisition				
DET MHW3a/3b/3c	10.0	AC	$ 150,000	$ 1,500,000
18" SDFM Easement	1.5	AC	$ 50,000	$ 75,000
Subtotal of Land Acquisition				**$ 1,575,000**
TOTAL ESTIMATED COST				**$ 3,437,000**

Note: TBD = To Be Determined and Added to Costs at a Later Date

Table 6-12

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Lammers Watershed

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
LAMMERS WATERSHED				
Construction of Major Facilities				
DET LW1 (90 AF, plus 32 AF add'l excavation)	122	AF	$ 10,000	$ 1,220,000
DET LW2 (27 AF, plus 10 AF add'l excavation)	37	AF	$ 10,000	$ 370,000
DET LW3 (87AF, plus 30 AF add'l excavation)	117	AF	$ 10,000	$ 1,170,000
DET LW5 (7 AF, plus 2 AF add'l excavation)	9	AF	$ 10,000	$ 90,000
DET LW6 (101 AF, plus 50 AF add'l excavation)	151	AF	$ 10,000	$ 1,510,000
DET LW7 (Non-Program)				
DET LW8 (Non-Program)				
DET LW9a (89 AF, plus 36 AF add'l excavation)	125	AF	$ 10,000	$ 1,250,000
DET LW9b (18 AF, plus 6 AF add'l excavation)	24	AF	$ 10,000	$ 240,000
DET LW10a/10b (20 AF, plus 7 AF add'l excavation)	27	AF	$ 10,000	$ 270,000
DET LW11 (30 AF, plus 11 AF add'l excavation)	41	AF	$ 10,000	$ 410,000
DET LW12 (13 AF, plus 4 AF add'l excavation)	17	AF	$ 10,000	$ 170,000
DET LW4 Pump Station (0.5 cfs capacity)	1	LS	$ 350,000	$ 350,000
DET LW5 Pump Station (0.5 cfs capacity)	1	LS	$ 350,000	$ 350,000
DET LW12 Pump Station (0.5 cfs capacity)	1	LS	$ 350,000	$ 350,000
Greenbelt Parkway	11,200	LF	$ 340	$ 3,808,000
Construction of Storm Drains				
12" SD & SDFM	13,350	LF	$ 75	$ 1,001,250
18" SD	5,200	LF	$ 100	$ 520,000
24" SD	3,650	LF	$ 150	$ 547,500
30" SD	12,550	LF	$ 200	$ 2,510,000
36" SD	3,700	LF	$ 300	$ 1,110,000
42" SD (Von Sosten Road, WSID Sub-Main Drain)	180	LF	$ 350	$ 63,000
Other Items				
Dewatering	1	LS	$ 3,700,000	$ 3,700,000
WSID Crossing Agreement	1	EA	$ 5,000	$ 5,000
Interflow Gates at WSID Connection (Lammers Road)	1	LS	$ 25,000	$ 25,000
WSID Discharge Agreement (First 30 Years)	1	EA	$ 2,040,000	$ 2,040,000
Subtotal of Construction				**$ 23,079,750**
Design & Planning @ 10% of Construction Subtotal				**$ 2,307,975**
Construction Management @ 10% of Construction Subtotal				**$ 2,307,975**
General Contingency @ 15% of Construction Subtotal				**$ 3,461,963**
Program Administration @ 5% of Construction Subtotal				**$ 1,153,988**

Table 6-12

Opinion of Probable Cost for Program Storm Drainage Infrastructure

Lammers Watershed

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
Land Acquisition				
DET LW1	35.0	AC	$ 150,000	$ 5,250,000
DET LW2	11.0	AC	$ 150,000	$ 1,650,000
DET LW3	48.0	AC	$ 150,000	$ 7,200,000
DET LW5	3.0	AC	$ 150,000	$ 450,000
DET LW6	21.0	AC	$ 150,000	$ 3,150,000
DET LW7 (Non-Program)				
DET LW8 (Non-Program)				
DET LW9a	25.0	AC	$ 150,000	$ 3,750,000
DET LW9b	7.0	AC	$ 150,000	$ 1,050,000
DET LW10a/10b	9.0	AC	$ 150,000	$ 1,350,000
DET LW11	12.0	AC	$ 150,000	$ 1,800,000
DET LW12	6.0	AC	$ 150,000	$ 900,000
Greenbelt Parkway	51.4	AC	$ 150,000	$ 7,710,000
12" SD & SDFM Easement	3.5	AC	$ 50,000	$ 175,000
18" SD	2.5	AC	$ 50,000	$ 125,000
30" SD Easement	4.3	AC	$ 50,000	$ 215,000
Subtotal of Land Acquisition				**$ 34,775,000**
TOTAL ESTIMATED COST				**$ 67,086,650**

7.0 Storm Drainage Fees and AB 1600 Findings

7.1 OVERVIEW

In determining program storm drainage *impact fees*, percent impervious cover formed the basis for allocating funding responsibility to different land uses proposed with future development within each new impact fee program area evaluated. Application of percent impervious values to the impact fee analysis provides for a consistent approach that may be applied to new development and a variety of land uses.

In determining the *outfall fees* that are required for new development to utilize excess capacity in existing downstream storm drainage outfalls, runoff volume formed the basis for assessing the total outfall fee responsibility. Once the total level of outfall fee responsibility was determined for each new fee program area on a runoff volume basis (excluding the Mountain House Watershed and the Lammers Watershed that are not using existing City outfalls), percent impervious was then used to allocate the total fee responsibility among the different land use categories, consistent with the approach used in the impact fee analysis.

7.2 IMPACT FEES

New development within each new impact fee program area will fund the program storm drainage infrastructure listed on the Preliminary Opinions of Probable Cost for the facilities (Tables 6-4 through 6-12). This is excepted for the Kagehiro and West Larch Clover future service areas for which no program storm drainage infrastructure is required.

The following steps were utilized in calculating impact fees:

1. The gross acreages for each proposed land use category were determined.
2. Gross areas for each proposed land use category within a given impact fee program area were divided by the total gross area of undeveloped land within the impact fee program area to yield a proportional land use area percentage.
3. In order to establish an equitable fee structure, the land use area percentages were then weighted according to their runoff production rates using their assigned percent impervious values. The percent impervious approach assigns a lesser funding requirement on a per acre basis to a lower runoff producing land use (such as Residential – Low Density) than the requirement that will be applied to a greater runoff producing land use (such as Industrial). Impervious cover values applicable to each land use are depicted in the right hand column of Table 7-1. The percent impervious values used in the analysis were the values established under the assumption that new development would utilize onsite storm water control measures as prescribed per the City's Manual of Stormwater Quality Control Standards for New Development and Redevelopment (SWQC Manual).

4. The weighted product of proportional land use percentages and percent impervious yielded proportional funding factors that were converted to proportional funding responsibility percentages. The total fee responsibility for each land use category was then determined by multiplying the proportional funding responsibility percentages by the total program storm drainage infrastructure cost for the impact fee program area.
5. The gross acreages for each land use category were multiplied by 85% to create a net acreage approximation that would account for land allocated to streets, parks, detention basins, etc.
6. The total funding responsibility for each land use category was then divided by the net acreage for the land use category to yield a funding responsibility value (or impact fee value) for the land use category on a per acre basis.
7. For residential land uses, impact fees per acre were converted to fees per dwelling unit using unit counts provided by the City for planning areas.

Table 7-1: Land Use Impervious Cover Values

Land Use Designation	% Impervious *(Existing and Infill Development)**	% Impervious *(New Development)***
Residential - Very Low Density	10	6
Residential - Low Density	25	16
Residential - Medium Density	35	22
Residential - High Density	65	41
Commercial/Retail	90	57
Office	90	57
Industrial	90	57
Downtown	90	57
Village Center	90	57
Public Facilities	60	38
Park	10	6
Open Space	3	2

* Provisions from City's *Manual of Stormwater Quality Control Standards for New Development and Redevelopment* **NOT applied**

** Provisions from City's Manual of Stormwater Quality Control Standards for New Development and Redevelopment **applied**

Storm drainage impact fees to be applied to the different land use categories within each new impact fee program area evaluated are derived and presented in the described manner on Table 7-2.

7.3 OUTFALL FEES

The majority of new impact fee program areas evaluated in this impact fee analysis will discharge storm runoff to existing downstream outfall facilities in the Eastside Channel Watershed or the Westside Channel Watershed. Properties within the Lammers Watershed will discharge storm runoff to new program storm drainage infrastructure that will be funded by impact fees. The Mountain House Watershed fee program area will discharge to Patterson Run that drains into facilities owned and operated by the Mountain House CSD, and the cost of acquiring an agreement between the Mountain House CSD and the City and meeting the terms of said agreement will be incorporated into the impact fee program for the Mountain House Watershed, once known.

The following separate outfall fees are being established as a part of this analysis:

- Eastside Outfall Fee – Attributable to new fee program areas that discharge to existing facilities that are part of the Eastside Outfall system which consists of open channel and channel parkway improvements and crossings extending from Eleventh Street to the Sugar Cut Outfall. Proposed upgrades also included are concrete lining of the bottom of the downstream Eastside Channel on the south side of I-205 between the confluence with the City Outfall Channel and east of MacArthur Drive and concrete lining of the sides and bottom of the Eastside Channel between east of MacArthur Drive and Pescadero Avenue to provide additional channel capacity to accommodate additional runoff produced by new development.
- Westside Outfall Fee – Attributable to new fee program areas that discharge to existing facilities that are part of the Westside Outfall system, which includes existing storm drains, channel parkways, and detention basin improvements extending from existing DET 5 (Plasencia Field) downstream to DET 10/11 west of Tracy Mall, plus the WSID Main Drain.

Calculation of the Outfall Fees included the following steps:

1. *Runoff Volume Calculation* – The HEC-HMS models for the 100-year 24-hour storm were used to determine applicable runoff volumes. Said volumes were extracted from the Citywide Storm Drainage Master Plan for the following:
    a. New development (including redevelopment and developed properties projected to be retrofitted to utilize outfall facilities) anticipated for the sum of new impact fee program areas within the Eastside Channel Watershed and for the sum of new impact fee program areas within the Westside Channel Watershed.
    b. Total runoff volume for the Eastside Channel Watershed and the Westside Channel Watershed at points of outfall under built out watershed conditions.

2. *Cost Estimates for Facilities to be Utilized* – Cost estimates were obtained or derived for components of Eastside Outfall and the Westside Outfall. The estimated cost for components of the Eastside Outfall and the Westside Outfall are $9,668,197 and $23,826,088, respectively, as shown in the Appendix.

3. *Total Cost Obligation* – The proportion of the new development runoff volume for new impact fee program areas to the total runoff volume for the watershed in which the program areas reside (Eastside or Westside Channel Watersheds) was derived and multiplied by the estimated cost of the applicable outfall facilities. These calculations yielded a total cost obligation for the composite of new impact fee program areas within these watersheds.

4. *Outfall Fees* – Outfall fees were spread across weighted land use areas and categories for new development in the Eastside Channel Watershed and the Westside Channel Watershed in the same manner as utilized for the impact fee analysis to derive outfall fees per acre for non-residential land uses and outfall fees per dwelling unit for residential land uses.

Storm drainage outfall fees to be applied to the different land use categories within each watershed are derived and presented in the described manner on Table 7-3.

7.4 FINDINGS WITH RESPECT TO THE MITIGATION FEE ACT (AB 1600)

This section provides the nexus findings for establishing development impact fees for storm drainage pursuant to the *Mitigation Fee Act*, California Government Code sections 66000, et seq., AB 1600.

Description of assumptions and design criteria regarding existing level of service, including a description of the existing public facilities and the existing users

Existing condition storm drainage facilities within the City include open channels, channel parkways, underground storm drains, pumping facilities, and detention and retention basins. Existing condition levels of service are a) 100-year 24-hour return period design capacity for open channels, channel parkways, pumping facilities, and detention basins, b) 2 times the 10-year 48-hour return period storm runoff volume for temporary retention ponds, and c) either a 10-year or a 100-year 24-hour return period design capacity for underground storm drains, depending upon whether or not they are an integral part of the City's drainage infrastructure or are considered to be lateral facilities. Some of the City's older, historical storm drainage facilities have a capacity that is equal to or less than a 10-year 24-hour return period level of service and may eventually require upgrading via a source of funding other than the impact fees and outfall fees addressed herein.

Description of assumptions regarding the type of development planned for impact fee program areas

The future development planned for the new impact fee program areas includes a broad mix of land uses in conformance with the City's General Plan and supplemental land use assumptions provided by the City for applicable areas having Urban Reserve designations.

Description of the impacts that new development will have on the level of service to existing City residents

New development planned for the new impact fee program areas will significantly increase runoff rates and volumes resulting from storm events when compared with existing agricultural, vacant, and lower density land use conditions due to the construction of more efficient storm drainage conveyance elements and the increase in impervious ground cover. These runoff increases will require the construction of new storm drainage facilities and flow attenuating BMPs to serve the new development and retain adequate capacity in downstream facilities.

New development runoff will not be hydraulically connected with the City's older, historical storm drains and will have no impact on their level of service.

Description of the facilities required for the new development to meet the City's design criteria and level of service standards

New storm drainage facilities that will be needed to serve new development within the new impact fee program areas will include underground storm drains, greenbelt parkways, channel parkways, detention basins, and pumping facilities. The "program" storm drains are considered to be integral components of the storm drainage infrastructure. All new "program" storm drainage facilities will have a 100-year 24-hour return period storm capacity, consistent with City policy. Also, the existing downstream storm drainage facilities will retain their capacity to accommodate the 100-year 24-hour return period storm discharge after new development and completion of the "program" storm drainage infrastructure improvements.

Description of how new development will benefit from the new storm drainage facilities

The new storm drainage facilities will benefit new development by providing proper control and conveyance of runoff generated by the 100-year 24-hour return period storm.

Pursuant to Government Code section 66005(a), an estimate of the total cost for providing the required public facilities necessary to support the buildout condition for proposed new development areas

Tables 6-4 through 6-12 provide opinions of probable cost for constructing the necessary program storm drainage improvements to serve the new impact fee program areas. These are considered to be reasonable order of magnitude estimates of costs that will be incurred to construct the required improvements, and have been corroborated with actual bids and experiences on prior storm drainage improvement projects. The cost estimates assume full improvements for program storm drainage facilities as well as provisions for design and planning, construction management, land acquisition, general contingency, and program administration. The costs do not account for or include the following elements:

- Storm drainage facilities that are internally needed to serve individual developments (onsite facilities).
- Lateral storm drainage facilities that are components of street drainage, but are not considered an integral component of the City's storm drainage infrastructure.
- Temporary retention ponds.

Description of the basis, or bases, upon which the total estimated cost of providing the required storm drainage facilities will be allocated.

The total estimated cost of providing the required storm drainage facilities to serve new development within the new impact fee program areas will be allocated to new development based on a proportional fair share analysis that utilizes a "percent impervious" approach as described in this report. The outfall fees required for new development to utilize existing downstream storm drainage outfall facilities in the Eastside Channel Watershed and the Westside Channel Watershed have been based on a "proportional runoff volume" assessment, and then allocated to applicable land uses utilizing the "percent impervious" approach.

The storm drainage impact fees to fund new program storm drainage infrastructure to serve the new impact fee program areas are derived and represented on Table 7-2. The outfall fees for new development to utilize excess capacity for runoff conveyance and storage in existing downstream storm drainage outfall facilities in the Eastside Channel Watershed and Westside Channel Watershed are derived and represented on Table 7-3.

Findings with Respect to the Mitigation Fee Act

This sub-section provides findings which comply with the requirements of California Government Code Section 66000, et seq. The capital improvements to be funded by storm drainage impact fees and the fees required to utilize excess capacity in existing downstream facilities are required to mitigate the storm drainage impacts of new development within the new

impact fee program areas, consistent with the land use and storm drainage policies set forth by the City. The storm drainage fees are not being imposed to improve or correct deficiencies in existing condition service levels. The impact fees and outfall fees are based on a storm drainage and fair-share cost analysis which: 1) determines capital improvements required to mitigate the storm drainage impacts of the buildout of new development within the new impact fee program areas, 2) determines the fair share cost for new development to utilize excess capacity in existing downstream storm drainage facilities, and 3) equitably distributes the costs of the improvements to the new development areas that cause the impacts, per the provisions of the *Mitigation Fee Act*.

The *Mitigation Fee Act* requires mitigation fee programs incorporate the following basic requirements and information relating to reasonable relationship:

- *Identification of the purpose of the fee.*
- *Identification of how the fee will be used.*
- *Determination of how there is a reasonable relationship between the fee's use and the type of development projects on which the fee is imposed.*
- *Determination of how there is a reasonable relationship between the need for the public storm drainage facilities and the type of development projects on which the fee is imposed.*
- *Determination of how there is a reasonable relationship between the amount of the fee and the cost of the public storm drainage facilities (or portion of facilities) attributable to new development.*

The following findings address these requirements on reasonable relationship:

1. Identify the purpose of the fee. The purpose of the fee is to provide a source of funding to be used to construct storm drainage facilities to serve new development within the new impact fee program areas and for new development to utilize excess capacity in existing downstream storm drainage facilities.
2. Identify how the fee will be used. The impact fees and drainage fees will be used to construct the needed program storm drainage facilities, including underground storm drains, detention basins, greenbelt parkways, channel parkways, and appurtenant improvements and to utilize excess capacity in existing downstream outfall facilities.
3. Determine how there is a reasonable relationship between the fee's use and the type of development projects on which the fee is imposed. New development proposed within the new impact fee program areas will generate additional runoff during storm events. The quantities and rates of runoff generated from new development exceed the amounts of runoff generated under existing land uses and create a need for the utilization of program and downstream storm drainage facilities. The establishment of fees to fund storm drainage improvements required to serve and mitigate the impacts of new development and utilize excess capacity in existing downstream facilities is directly related to the type of new

development anticipated based on relative rates and volumes of runoff production created by new development.

4. Determine how there is a reasonable relationship between the need for the public storm drainage facilities and the type of development on which the fee is imposed. Hydrologic and hydraulic technical evaluations have been performed to determine quantities and rates of runoff that will be generated by new development within the new impact fee program areas. Based on these evaluations, relevant storm drainage infrastructure improvements have been recommended to serve said new development and proportional fair share responsibilities to utilize excess capacity in existing downstream facilities have been derived.

5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public storm drainage facilities (or portion of the facilities) attributable to new development. Estimated costs of storm drainage infrastructure improvements that are needed to serve new development have been prepared and are presented in this report. These are considered to be reasonable order of magnitude estimates of costs that will be incurred to construct the required improvements, and have been corroborated with actual bids and experiences on prior storm drainage improvement projects and other storm drainage planning documents. The impact fees and outfall fees allocate a proportionally fair share amount of the estimated storm drainage infrastructure costs and benefits to the various proposed land uses associated with new development.

Table 7-2
City of Tracy
Storm Drainage Impact Fees (for New Impact Fee Program Areas)

Impact Fee Program Area	Total Infrastructure Cost	Land Use Category	Gross Acreage by Land Use Category	Proportional Land Use Area Within Impact Fee Program Area	Percent Impervious	Proportional Funding Factor (Land Use % times % Impervious)	Proportional Funding Responsibility (Funding Factor % of Total)	Total Fee Responsibility	Net Acreage by Land Use Category (Gross Acreage X 85%)	Impact Fee (Per Acre)	Residential Dwelling Units	Impact Fee (Per Dwelling Unit)
Keenan	$ 1,211,000	Residential - Low Density	70	53.85%	16%	0.0862	40.5%	$ 490,887	59.5	$ 8,250	305	$ 1,609
		Residential - Med. Density	43	33.08%	22%	0.0728	34.2%	$ 414,624	36.55	$ 11,344	387	$ 1,071
		Residential - High Density	17	13.08%	41%	0.0536	25.2%	$ 305,489	14.45	$ 21,141	319	$ 958
			130	100.00%		0.2125	100.0%	$ 1,211,000	110.5			
Westside Residential	$ 3,379,000	Residential - Low Density	62	41.89%	16%	0.0670	32.3%	$ 1,090,426	52.7	$ 20,691	270	$ 4,039
		Residential - Med. Density	76	51.35%	22%	0.1130	54.4%	$ 1,837,895	64.6	$ 28,450	684	$ 2,687
		Residential - High Density	10	6.76%	41%	0.0277	13.3%	$ 450,680	8.5	$ 53,021	188	$ 2,397
			148	100.00%		0.2077	100.0%	$ 3,379,000	125.8			
NW WSO Sub-basin	$ 1,607,600	Industrial	80	25.81%	57%	0.1471	25.8%	$ 414,865	68	$ 6,101	N/A	N/A
		Office	14	4.52%	57%	0.0257	4.5%	$ 72,601	11.9	$ 6,101	N/A	N/A
		Retail	216	69.68%	57%	0.3972	69.7%	$ 1,120,134	183.6	$ 6,101	N/A	N/A
			310	100.00%		0.5700	100.0%	$ 1,607,600	263.5			
Larch Clover	$ 1,876,000	Retail	339	100.00%	57%	0.5700	100.0%	$ 1,876,000	288.15	$ 6,510	N/A	N/A
								$ 1,876,000	288.15			
East Side Industrial	$ 17,331,000	Industrial	444	98.89%	57%	0.5637	98.9%	$ 17,138,004	377.4	$ 45,411	N/A	N/A
		Retail	5	1.11%	57%	0.0063	1.1%	$ 192,996	4.25	$ 45,411	N/A	N/A
			449	100.00%		0.5700	100.0%	$ 17,331,000	381.65			
Chrisman & East UR-1	$ 5,334,000	Residential - Very Low Density	69	19.22%	6%	0.0115	2.9%	$ 155,185	58.65	$ 2,646	104	$ 1,492
		Residential - Low Density	54	15.04%	16%	0.0241	6.1%	$ 323,863	45.9	$ 7,056	235	$ 1,378
		Residential - Med. Density	12	3.34%	22%	0.0074	1.9%	$ 98,958	10.2	$ 9,702	108	$ 916
		Residential - High Density	5	1.39%	41%	0.0057	1.4%	$ 76,843	4.25	$ 18,081	94	$ 817
		Industrial	106	29.53%	57%	0.1683	42.5%	$ 2,264,795	90.1	$ 25,136	N/A	N/A
		Office	100	27.86%	57%	0.1588	40.1%	$ 2,136,599	85	$ 25,136	N/A	N/A
		Retail	13	3.62%	57%	0.0206	5.2%	$ 277,758	11.05	$ 25,136	N/A	N/A
			359	100.00%		0.3964	100.0%	$ 5,334,000	305.15			

Table 7-2
City of Tracy
Storm Drainage Impact Fees (for New Impact Fee Program Areas)

Impact Fee Program Area	Total Infrastructure Cost	Land Use Category	Gross Acreage by Land Use Category	Proportional Land Use Area Within Impact Fee Program Area	Percent Impervious	Proportional Funding Factor (Land Use % times % Impervious)	Proportional Funding Responsibility (Funding Factor % of Total)	Total Fee Responsibility	Net Acreage by Land Use Category (Gross Acreage X 85%)	Impact Fee (Per Acre)	Residential Dwelling Units	Impact Fee (Per Dwelling Unit)
South MacArthur Sub-basin, plus Rocha	$ 12,077,000	Residential - Very Low Density	311	42.54%	6%	0.0255	18.0%	$ 2,169,187	264.35	$ 8,206	466	$ 4,655
		Residential - Low Density	314	42.95%	16%	0.0687	48.4%	$ 5,840,297	266.9	$ 21,882	1366	$ 4,275
		Residential - Med. Density	53	7.25%	22%	0.0160	11.2%	$ 1,355,451	45.05	$ 30,088	477	$ 2,842
		Residential- High Density	43	5.88%	41%	0.0241	17.0%	$ 2,049,451	36.55	$ 56,073	806	$ 2,543
		Retail	10	1.37%	57%	0.0078	5.5%	$ 662,613	8.5	$ 77,955	N/A	N/A
			731	100.00%		0.1421	100.0%	$ 12,077,000	621.35			
Mountain House Watershed	$ 3,437,000	Industrial	221	86.33%	57%	0.4921	86.3%	$ 2,967,098	187.85	$ 15,795	N/A	N/A
		Office	22	8.59%	57%	0.0490	8.6%	$ 295,367	18.7	$ 15,795	N/A	N/A
		Retail	13	5.08%	57%	0.0289	5.1%	$ 174,535	11.05	$ 15,795	N/A	N/A
			256	100.00%		0.5700	100.0%	$ 3,437,000	217.6			
Lammers Watershed	$ 67,086,650	Residential - Very Low Density	40	1.18%	6%	0.0007	0.1%	$ 85,243	34	$ 2,507	60	$ 1,421
		Residential - Low Density	28	0.82%	16%	0.0013	0.2%	$ 159,120	23.8	$ 6,686	122	$ 1,304
		Residential - Med. Density	28	0.82%	22%	0.0018	0.3%	$ 218,789	23.8	$ 9,193	252	$ 868
		Residential - High Density	54	1.59%	41%	0.0065	1.2%	$ 786,363	45.9	$ 17,132	1012	$ 777
		Industrial	2287	67.23%	57%	0.3832	69.0%	$ 46,300,593	1943.95	$ 23,818	N/A	N/A
		Office	702	20.63%	57%	0.1176	21.2%	$ 14,212,075	596.7	$ 23,818	N/A	N/A
		Retail	263	7.73%	57%	0.0441	7.9%	$ 5,324,467	223.55	$ 23,818	N/A	N/A
			3402	100.00%		0.5552	100.0%	$ 67,086,650	2891.7	$ 23,200		

Table 7-3
City of Tracy
Storm Drainage Outfall Fees (for New Impact Fee Program Areas)

Watershed	Constituents	Total Constituent Outfall Cost Obligation (see notes)	Constituent Land Use Categories Category	Total Gross Acreage by Land Use Category	Proportional Land Use Area	Percent Impervious	Proportional Funding Factor (Land Use % times % Impervious)	Proportional Funding Responsibility (Funding Factor % of Total)	Total Fee Responsibility	Net Acreage by Land Use Category (Gross Acreage X 85%)	Impact Fee (Per Acre)	Residential Dwelling Units	Impact Fee (Per Dwelling Unit)
Eastside Channel Watershed	Larch Clover, East Side Industrial, Chrisman & East UR-1, and South MacArthur Sub-basin	$ 3,676,638	Residential - Very Low Density	380	20.23%	6%	0.0121	3.3%	$ 120,554	323	$ 373	570	$ 211
			Residential - Low Density	368	19.60%	16%	0.0314	8.5%	$ 311,326	312.8	$ 995	1601	$ 194
			Residential - Med. Density	65	3.46%	22%	0.0076	2.1%	$ 75,611	55.25	$ 1,369	585	$ 129
			Residential - High Density	48	2.56%	41%	0.0105	2.8%	$ 104,057	40.8	$ 2,550	900	$ 116
			Industrial	550	29.29%	57%	0.1669	45.1%	$ 1,657,620	467.5	$ 3,546	N/A	N/A
			Office	100	5.32%	57%	0.0304	8.2%	$ 301,385	85	$ 3,546	N/A	N/A
			Retail	367	19.54%	57%	0.1114	30.1%	$ 1,106,085	311.95	$ 3,546	N/A	N/A
				1878	100.00%		0.3703	100.0%	$ 3,676,638	1596.3			
Westside Channel Watershed	Keenan, Westside Residential (in Westside Channel Watershed), NW WSO Sub-basin, Kagehiro, and West Larch Clover	$ 4,280,619	Residential - Very Low Density	106	13.35%	6%	0.0080	2.3%	$ 97,524	90.1	$ 1,082	159	$ 613
			Residential - Low Density	179	22.54%	16%	0.0361	10.3%	$ 439,164	152.15	$ 2,886	825	$ 532
			Residential - Med. Density	119	14.99%	22%	0.0330	9.4%	$ 401,442	101.15	$ 3,969	1071	$ 375
			Residential- High Density	27	3.40%	41%	0.0139	4.0%	$ 169,747	22.95	$ 7,396	507	$ 335
			Industrial	80	10.08%	57%	0.0574	16.3%	$ 699,227	68	$ 10,283	N/A	N/A
			Office	14	1.76%	57%	0.0101	2.9%	$ 122,365	11.9	$ 10,283	N/A	N/A
			Retail	269	33.88%	57%	0.1931	54.9%	$ 2,351,151	228.65	$ 10,283	N/A	N/A
				794	100.00%		0.3516	100.0%	$ 4,280,619	674.9			

Notes:

1. Watershed Outfall Cost Obligation = Constituent Runoff Volume (acre feet) divided by Watershed Runoff Volume (acre feet) times Outfall System Cost.
2. Eastside Channel Watershed Constituent Outfall Cost Obligation = 243 acre-feet/639 acre-feet X $9,668,197 = $3,676,638
3. Westside Channel Watershed Constituent Outfall Cost Obligation = 106 acre-feet/590 acre-feet X $23,826,088 = $4,280,619

APPENDIX

OPINIONS OF PROBABLE COST

Westside Outfall
Eastside Outfall

TABLE A1
Opinion of Probable Cost for Drainage Infrastructure
WESTSIDE OUTFALL

Item	Quantity	Unit	Unit Cost	Total Cost
DET 5 to Old River (Total Cost)	1	LS	17,653,617	17,653,617
Less Proportional Construction Staking	1	LS	(20,000)	(20,000)
Less Proportional Chain Link Fence	1	LS	(20,000)	(20,000)
Less Proportional Earthwork for Channels	1	LS	(120,000)	(120,000)
Less Proportional Bike Path	1	LS	(125,000)	(125,000)
Less Proportional Cast in Place CBC	1	LS	(122,120)	(122,120)
Less 36" Concrete Storm Drain Pipe	1	LS	(274,498)	(274,498)
Less Proportional 42" Concrete SD Pipe	1	LS	(40,000)	(40,000)
Less Allan Block Walls	1	LS	(183,680)	(183,680)
Less Concrete Channel Linings	1	LS	(24,450)	(24,450)
Less Grouted Rock Riprap	1	LS	(194,740)	(194,740)
Less Irrigation Junction Box & Grate	1	LS	(7,800)	(7,800)
Less Trash Rack @ GLR	1	LS	(3,500)	(3,500)
Less Proportional Landscape Planting	1	LS	(380,000)	(380,000)
Less Proportional Irrigation/Maintenance	1	LS	(400,000)	(400,000)
Less Proportional Channel Furniture	1	LS	(35,000)	(35,000)
Less CO3 (Reimbursed by Chevron)	1	LS	(1,500,000)	(1,500,000)
Less CO5 (Utilities, Byron)	1	LS	(794,097)	(794,097)
Less CO11 (Lammers/Byron Traffic)	1	LS	(57,703)	(57,703)
Less CO13 & CO14 (Fill Dirt @ Future Parks)	1	LS	(49,500)	(49,500)
"Add Back" DET 5 Cost Elements	1	LS	331,391	331,391
Subtotal Construction				13,632,920
Design & Planning @10%				1,363,292
Program/Construction Management @ 10%				1,363,292
Land Acquisition				
C1(60) Channel	1.5	AC	60,000	90,000
Dobler (30' Wide R/W)	1	AC	125,000	125,000
Kuimelis/Robertson (30' Wide R/W)	2	AC	125,000	250,000
DET 11	55	AC	45,000	2,475,000
Program Implementation @ 5%				681,646
Contingency @ 15%				2,044,938
Amendment to Drainage Agreemt w/ WSID - 20 Years				1,800,000
TOTAL ESTIMATED COST				**23,826,088**

Note: Actual bid costs and original estimated unit costs provide basis for this estimate.

Table A2

Opinion of Probable Cost for Drainage Infrastructure

EASTSIDE OUTFALL

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
EASTSIDE CHANNEL WATERSHED				
Construction of Major Facilities				
Eastside Channel Construction Cost (11th St. to Sugar Cut)	1	LS	$ 4,162,355	$ 4,162,355
Concrete Lining Eastside Channel (bottom, only)	2,750	LF	$ 140	$ 385,000
Concrete Lining Eastside Channel (bottom and sides)	2,650	LF	$ 890	$ 2,358,500
Subtotal of Construction				**$ 6,905,855**
Design & Planning @ 10% of Construction Subtotal				**$ 690,586**
Construction Management @ 10% of Construction Subtotal				**$ 690,586**
General Contingency @ 15% of Construction Subtotal				**$ 1,035,878**
Program Administration @ 5% of Construction Subtotal				**$ 345,293**
TOTAL ESTIMATED COST				**$ 9,668,197**






Stantec Consulting Services Inc.

3875 Atherton Road
Rocklin, CA 95765
Tel: (916) 773-8100
Fax: (916) 773-8448