

Final Report

Citywide Public Safety Master Plan City of Tracy, California

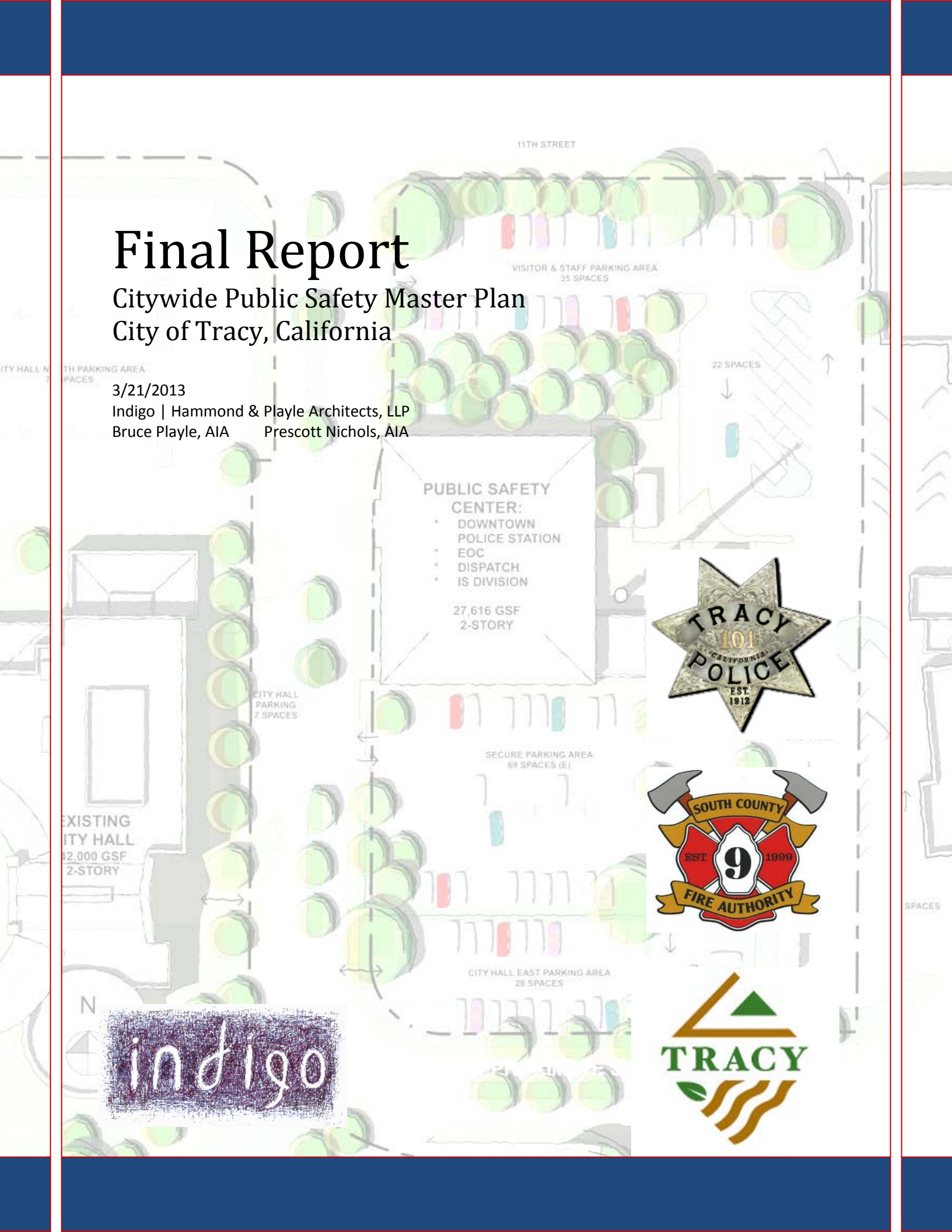
3/21/2013

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PUBLIC SAFETY CENTER:

- DOWNTOWN POLICE STATION
- EOC
- DISPATCH
- IS DIVISION

27,616 GSF
2-STORY





ACKNOWLEDGEMENTS

The Citywide Public Safety Master Plan is a City of Tracy document. It has been prepared by INDIGO | Hammond & Playle Architects, LLP, in coordination with City leaders, staff and consultants listed here.

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EXECUTIVE SUMMARY

The City of Tracy initiated this Citywide Public Safety Master Plan (CPSMP) to portray a clear statement of community objectives for public safety, establish a vision of the future, and include strategies to achieve that vision. The CPSMP promotes a future land use pattern that is consistent with the community's long-range goals.

The information and concepts presented in the CPSMP are used to guide local decisions regarding public uses of land and the provision of public safety facilities and services. The Plan is long-range in its view and is intended to guide development in the City through build-out.

This CPSMP includes evaluation of current conditions; space standards and functional flow; staff and space need projections; alternative facility plans; and comparative cost estimations.

This CPSMP is intended to be used as a guideline document for the identification of public safety

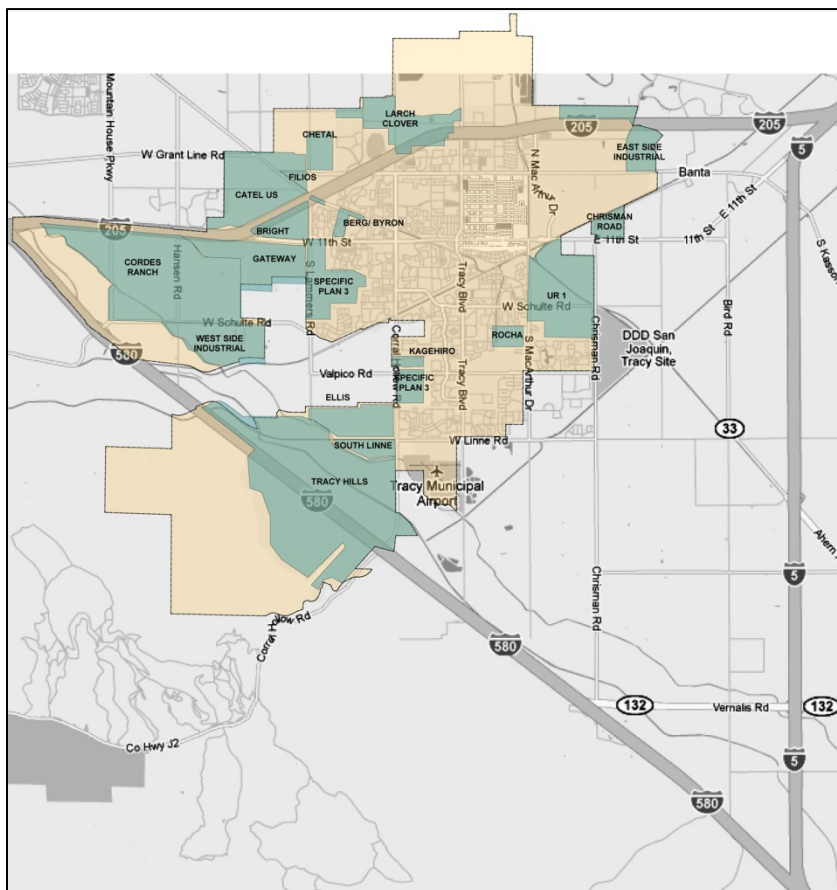


Figure 1 - Sphere of Influence Map

facilities needed to serve future land development projects under the build-out condition for the City's Sphere of Influence. This CPSMP is also a guideline document for the identification of public safety upgrades needed to adapt existing spaces to new or expanded uses. Finally, this CPSMP serves as a reference document for existing public safety facilities and their functional characteristics. Modifications and refinement to the public safety master plan represented herein may be considered by the City during the Specific Plan and development review process for new development. Any significant modifications to the elements of this CPSMP should

be approved by the City and will require that a formal "Supplement" be adopted by the City Council. The study area for this CPSMP is the City's 42 square mile Sphere of Influence area (see Figure 1).

The combination of existing and proposed public safety facilities meet the needs to serve the City's Sphere of Influence area under *ultimate build-out* land use conditions (per the City's General Plan, as supplemented by additional land use assumptions provided by City staff).

Findings

- At build-out, Tracy will have 54,500 new residents and 147,200 new workers.
- New residents and workers will occupy approximately 38,797 new public safety facilities equivalent dwelling units (EDUs).
- At build-out, Tracy will need approximately 88,000 square feet of new public safety building space to serve new development plus an additional 1,000 square feet to serve existing unmet need.

Master Plan

After concurrently developing several alternatives, a Master Plan was identified. Estimated cost is approximately \$62M.

Fire Stations Citywide - This plan adds four new fire stations citywide, bringing total fire station facilities to 80,221 square feet through build-out. The existing downtown fire administration building will receive an upgrade along with a 5,185 square foot addition to provide it with apparatus and dormitory space to serve Tracy's downtown core. The four added stations are to be sited within the following new development areas: Gateway, Tracy Hills, Chetal, and Ellis.

Public Safety Center at Civic Center - Due to lack of space on its existing 2.0 acre site, the Police Department will be moving much of their operation offsite to a new Police Department Service Center, leaving Dispatch, Emergency Operations Center, Evidence Storage, and a Downtown Police Station to occupy 25,497 square feet of the existing building which will then operate as a Public Safety Center. (See Figure 2.) The remaining space in the existing building will house the Finance Department's IS division, which currently occupies part of the Support Services Building west of City Hall.

Police Department Service Center - A new 40,990 square foot service center (site TBD) will provide the City with comprehensive police services through build-out. Sited on at least 4-6 acres along the 11th Street corridor, the facility will improve response to existing and new development areas on the southwest side of the City.

Police & Fire Departments Training Facility at Existing Firing Range - The existing 2,296 square foot police firing range site at the south end of town will receive upgrades and 13,294 square feet of additional space as it grows into a 4.8 acre joint fire and police training facility through build-out.

Radio Communications Tower - A new 180-ft radio communications tower and equipment building is included, consistent with the San Joaquin County Radio Master Plan which establishes a county-wide public safety digital simulcast infrastructure to serve as the building block for interoperability. This

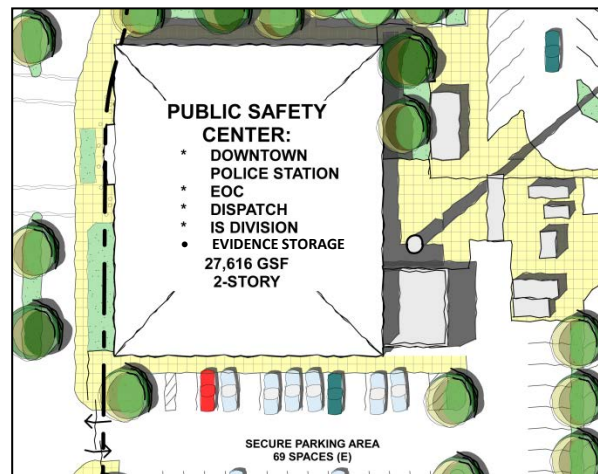


Figure 2 - New Public Safety Center

infrastructure will allow all public safety agencies to have emergency communications in disaster situations, and daily tactical operations. Location of the tower is to be determined.

Facility Allocations

Costs attributable to new development were initially estimated in August 2010 at \$54.2 million prior to full development of all plan options. With completion of the Master Plan, the final cost is \$62 million. The projected fee allocations for \$62 million in new development are as follows:

- Low-density residential - \$1,353 per unit
- Medium-density residential - \$1,107 per unit
- High-density residential - \$902 per unit
- Office – \$683 per 1,000 square feet
- Retail - \$410 per 1,000 square feet
- Industrial - \$137 per 1,000 square feet.

Sustainability

The City of Tracy is participating in the California Department of Conservation’s Emerald Cities Program. The Emerald Cities Program is intended to help local communities become more sustainable through, among other areas, conservation, energy efficiency, improved air quality, protection of agricultural and open-space lands, motor vehicle and fuel use reduction, smart growth, sustainable land use and development principles, and economic development. As part of the Emerald Cities Program, the City has established a citywide *Sustainability Action Plan* (2011), which includes the design of a comprehensive action plan in the areas of land use, urban form, water, sewage, storm drain, transportation, solid waste and recycling, economics, agriculture/ food access, and public health.



The CPSMP incorporates sustainability practices in the following ways:

- Identified new additions and new buildings minimize east –west orientation and take advantage of north-south orientation to promote climate-adapted energy-efficient design.
- Existing infrastructure is identified for upgrade and repurposing where feasible, reducing construction waste and use of non-renewable materials.
- Provides facility guidelines which help implement greenhouse gas (GHG) emissions reduction goals outlined in the citywide *Sustainability Action Plan* (2011).

Extended Survivability

A principal outcome of this CPSMP is to provide the City of Tracy with public facilities which not only survive disaster events, but remain operational for service delivery long after the onset of the event. The proposed public safety facilities will be designed to support the delivery of emergency services during post-disaster scenarios, even during protracted events beyond the capacity of onsite emergency power generation where present.

Extended survivability is a concept developed and put into practice by INDIGO Architects. It defines the natural ability of a building to maintain critical life-support conditions for its occupants at the same time

improving the quality of the indoor workplace, increasing worker efficiency, and reducing absenteeism. First and foremost, buildings are protected from obvious threats such as flooding, earthquake or power grid outage. Natural lighting and ventilation help ensure that the building can be used when power supply for mechanical systems is compromised. Even during a protracted power outage, should fuel for the emergency generator be completely consumed, rooftop photovoltaics can provide power for mission-critical systems on an ongoing basis.

Extended survivability design principles are highly sustainable and inherently energy efficient. When adopted early on, they simplify the work of LEED certification and compliance with other high-performance building guidelines such as the newly enacted CalGreen building code. Key extended survivability and sustainability features of the CPSMP include:

- Photovoltaic power for critical needs
- Isolated and protected critical utilities
- Structures designed to “immediate-occupancy” level
- Seismic dampening to improve survivability at same cost
- Energy-efficient design to reduce utility bills, extend survivability
- Use of natural light, ventilation to improve workplace quality, extend survivability
- Design consistent with LEED and CalGreen, making compliance easier.

METHODOLOGY

Beginning April 2010, the master plan team led by INDIGO coordinated with City of Tracy personnel and its separate consultants to prepare an interim and now final report for a Citywide Public Safety Master Plan (CPSMP) which assesses current and future public safety building needs. Included in the CPSMP are Police Department and Fire Department facilities. Problems, opportunities, and community assets were identified.

The consultant worked with a Facilities Committee formed by the City composed of leadership from the Fire Department, the Police Department, the City Engineer, and other City staff. Periodic meetings with this committee have been attended by this consultant, and at the invitation of the City, developers attended preliminary draft presentations in June 2010 and October 2011.

The CPSMP establishes division-by-division programmatic needs, basing projections on standards of service and the staffing of other cities that are geographically and demographically similar to the community at build-out. This comparison approach substantiates the space required for City operations by making adjustments on the basis of statistical procedures to

enhance predictive accuracy. The CPSMP is based on projections in the City's General Plan and detail in the Sphere of Influence as provided by the City. The CPSMP takes full advantage of several pre-existing studies and development land use types which have been provided by the City. See Figure 3 for current City organization.

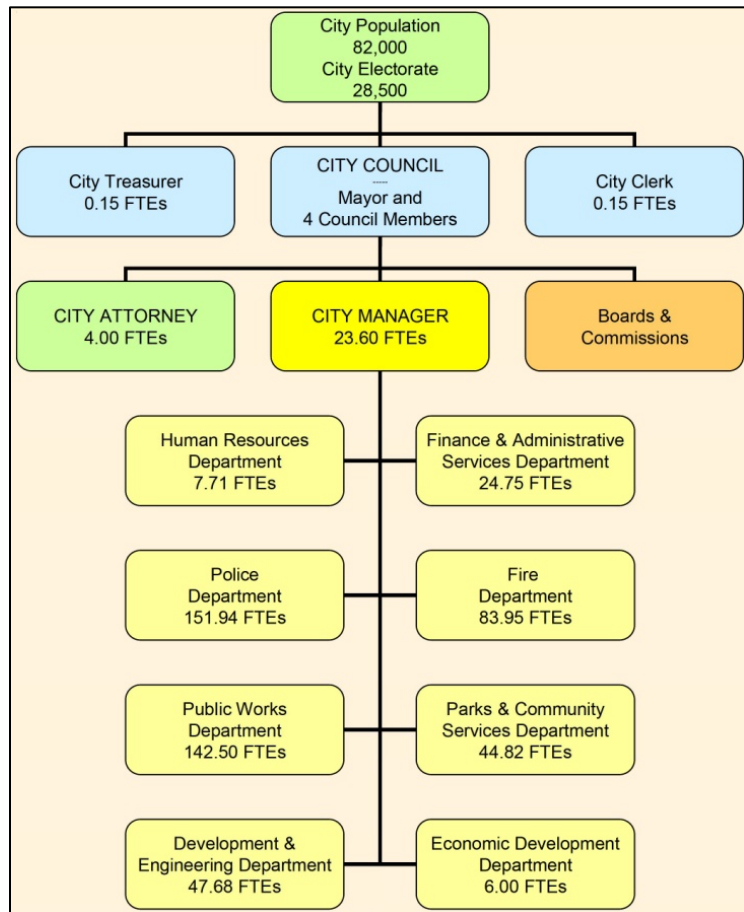


Figure 3 - City Organizational Chart

The scope of this report is subdivided into the following sections:

- EVALUATION OF CURRENT CONDITIONS
- SPACE STANDARDS AND FUNCTIONAL FLOW
- STAFF AND SPACE NEED PROJECTIONS
- ALTERNATIVE FACILITY PLANS
- MASTER PLAN
- COST
- FUNDING OPTIONS
- DESIGN GUIDELINES



Figure 4 – Existing Fire Department Administration Site



Figure 5 - Existing Police Department Site

EVALUATION OF CURRENT CONDITIONS

Existing Staff Levels and Space Utilization

Generally, the City of Tracy's 217 FTE of public safety staff are located in facilities of 83,504 square feet in area. The facilities are organized in an efficient manner, although space deficiencies in both Police and Fire Departments and the use of a former fire station for Fire Department headquarters have resulted in some adjacency problems in existing facilities:

- Volunteers occupy the reception area originally intended for the Investigations Division of the Police Department, eliminating the reception function and requiring circulation past workstations to access the division.
- Equipment has been moved from Police Administration's copy equipment room to the lobby area immediately outside administration.
- The original location of the Police Department's evidence storage in the core of the first floor does not facilitate the storage of large items. Expansion has been provided in containers outside the building, making it necessary to circulate outside the building with some evidence.
- While the EOC is well located relative to the Police Communications Center, there are concerns regarding its size and telecom support.
- Fire inspectors have been located in former crew quarters in the Fire Administration Building in an area poorly configured for the use and are detached from other administrative functions by a mechanical room.

Figure 6 shows current staffing and space allocations organized by City departments and Figure 3 (p. 5) shows current City Organizational Chart.

Departments	FY 10/11 Budget-listed Staff (FTE)	FY 10/11 Space Need (SF)
Police		39,130
Sworn	96.94	
Civilian	40.80	
Police Subtotal	137.74	39,130
Fire		
Certified Firefighters/ Fire Stations	74.45	43,187
Civilian/ Administration	5.00	5,790
Fire Subtotal	79.45	48,977
Public Safety Total	217.19	88,107

Figure 6 - Summary of Existing Public Safety Staffing & Space

Evaluation of Existing Facilities

A very general assessment of existing facilities conditions was conducted, based on tours of the facilities, approximate age of the facilities, and review of photos. Detailed assessments of existing conditions, including roofing conditions, mechanical and electrical systems conditions, hazardous materials present, complete accessibility code compliance, etc., was not included in the scope of this study.

The three condition types identified are “good,” “fair,” and “poor,” as described below. These assessments indicate the physical condition of the facilities and are not intended to rate programmatic functionality of the uses within. See Figure 7 for a tabular list of all public safety within the scope of this study and an assessment of their condition.

Good Condition:

- The facility is in good or excellent condition;
- The facility has benefitted from ongoing maintenance;
- The facility’s key systems may be worn but utility is not impaired;
- Key building systems, such as roof, windows, mechanical, electrical, etc., are estimated to have an average minimum of 10-20 years of life remaining;
- Relatively few accessibility compliance issues are present.

Fair Condition:

- The facility is in fair condition;
- The facility has received intermittent maintenance;
- The facility’s key systems may be soiled or shopworn, rusted, deteriorated or damaged, with utility slightly impaired;
- Renovation or repair is expected in the near future;
- Key building systems, such as roof, windows, mechanical, electrical, etc., are estimated to have an average minimum of 5-15 years of life remaining;
- Accessibility compliance issues are present.

Poor Condition:

- The facility is in poor condition;
- The facility has received little or no maintenance;
- The facility’s key systems may be badly broken, soiled, mildewed, deteriorated or damaged with utility seriously impaired;
- Prompt renovation or repair is needed;
- Serious accessibility compliance issues may be present.

EXISTING PUBLIC SAFETY FACILITIES				
KEY	BUILDING	ADDRESS	SIZE	CONDITION
1	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	Good
91	Fire Station 91	1701 West 11th Street	7,401 sf	Good
92	Fire Station 92	22484 South 7th St.	1,841 sf	Fair
93	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	Fair
94	Fire Station 94	16502 West Schulte Rd	5,552 sf	Fair
96	Fire Station 96	301 West Grantline Rd	3,336 sf	Fair
97	Fire Station 97	595 West Central Av.	3,009 sf	Fair
98	Fire Station 98	911 Tradition St.	8,500 sf	Fair
FIRE DEPARTMENT SUBTOTAL			45,432 sf	
6	Police Department	1000 Civic Center Dr.	27,616 sf	Good
	Misc. Temporary Storage	PD Site & Boyd Srvc	7,113 sf	Poor
POLICE DEPARTMENT SUBTOTAL			34,729 sf	
7	Training Facility	6649 S Tracy Blvd	2,296 sf	Poor
JOINT TRAINING SUBTOTAL			2,296 sf	
TOTAL PUBLIC SAFETY FACILITIES			82,457 sf	

Figure 7 - Existing Public Safety Assessment

The preceding photographic site plans assist location of the buildings studied:

- For Police Department, see Figure 5 (p. 6).
- For Fire Administration, see Figure 4 (p.6).

See Appendix E for selected photographs of existing facilities, including photographic site plans of facilities outside of the Civic Center and Boyd Service Center. See Appendix F, Master Plan Options, for maps keyed to the legend above.



SPACE STANDARDS AND FUNCTIONAL FLOW

Recommendations for Operational Efficiency

Space deficiencies in both Police and Fire Departments and the use of a former fire station for Fire Department headquarters have resulted in the adjacency problems in existing facilities already discussed. Some solutions include:

- Volunteers should be located with good public access and convenient to the Support Division lieutenant.
- The original location of the Police Administration's copy equipment provided the appropriate operational relationship.
- A permanent collocated evidence processing and storage facility is required.
- An expanded EOC is needed.
- If fire inspectors are involved in plan review associated with new construction, the possibility of locating them with DES should be considered.

Both the Police and Fire Departments have had in-depth analyses and recommendations for operational improvements published in separate reports recently. A large proportion of these recommendations have been implemented. Correcting the adjacency issues described in the previous section will provide additional operational improvements. It should be emphasized that the storage of evidence in containers and a walk-in cooler outside the Police Department Building is not only inefficient, but poses a threat to chain-of-custody requirements for evidence, and undermines a critical aspect of the Police Department's core mission.

It also bears acknowledging here that Fire Department response times do not meet goals for some areas served by the Joint Fire Authority. This has been examined along with recommendations provided in other studies. Relationships between fire stations are largely locational as relates to response times. This subject has been adequately studied in the Kirchoff report.

Figure 8 (p. 12) shows the ideal relationships between departments within the Police Department.

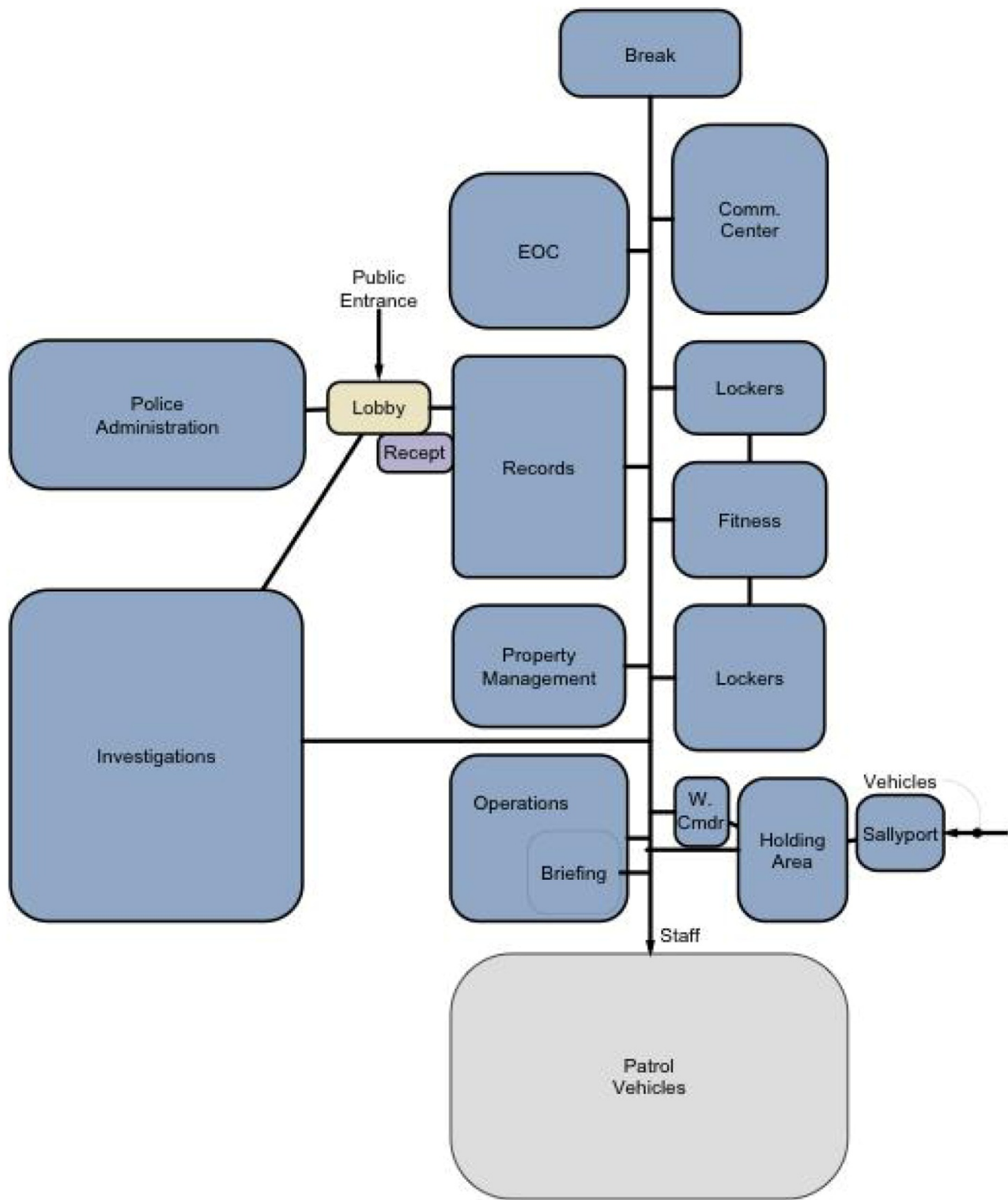


Figure 8 – Police Department Relationship Diagram

Space & Facility Standards

Space standards were informed by a combination of existing space and normal and customary space for similar functions in other jurisdictions. The Police Department building is a relatively new facility. While it has a number of deficiencies, the basic quality and space allocation of the facility as built is a good indicator of the size and quality of spaces the city intended for the employees of the Police Department. Most of the Police Department’s space deficiencies relate to increased demand since completion of the building, so space standards are based on the original intent where it is clear from the original drawings. The space projections described in a section below provide adjustments for functions that expanded, displacing other functions.

Similarly, the relatively recent renovation of the Fire Administration Building provides a good indication of the intended provision for the administrative and office functions. The real growth issue for the Fire Department is the placement of new stations to cover growth areas of the city. Fire Station #91 is the department’s most recent facility, representing the operational characteristics it wants for future stations. It is unnecessary to provide a line item breakdown of spaces for the purposes of this master plan, so the gross building area of Fire Station #91 is used as the model for each needed fire station. Figure 9 shows space standards for the CPSMP.

Position	Net Sq. Ft.	Comment
Police Department		
Chief of Police	300	Existing
Captain	190	Existing
Lieutenant	190	Existing
Executive Assistant	160	Existing
Sergeant	105	Existing
Typical Enclosed Office	100	Existing
Typical Open Workstation	64	
Detective	24	
Copy/Supply Enclosed	100	
Copy/Supply Open Office	64	
Coffee Counter	20	
Fire Department		
Fire Chief	320	Existing
Division Chief	220	Existing
Fire Captain	120	
Typical Open Workstation	64	
Fire Station	7,401 (gsf)	

Figure 9 - Public Safety Space Standards



STAFF AND SPACE NEED PROJECTIONS

Staff projections provide an intermediate step in the development of an organization’s space needs. There are a number of methods for projecting staffing at build out. The method used here is to project staffing based on the staffing of seven other cities that are geographically and demographically similar to the community at build-out.

Growth Factors & Staff Projection Table

The staff levels of the seven cities, and current and required staff at build-out for the City of Tracy are shown in Figure 10. As would be expected, increases in city staff generally correspond to increases in population, ranging from a low of 1.00 Sworn & 0.56 Certified/ 1,000 Pop. in Fairfield to a high of 1.43 Sworn & 0.87 Certified/ 1,000 Pop. in Modesto. The most closely matched cities have a range of 62,000 to 207,000 residents. (See notes regarding Fire Department service levels at bottom of next page.)

City	General Pop.	Police				Fire			
		Sworn Officers	Sworn/ 1,000 Pop.	Civilian	Civilian / 1,000 Pop.	Certified Fire-fighters	Certified/ 1,000 Pop.	Civilian	Civilian / 1,000 Pop.
Tracy									
FY 10/11	81,548	96.94	1.19	40.8	0.50	74.45	0.91	5	0.06
Build-	137,212	163.28	1.19	57.6	0.42	122.5	0.89	6.9	0.05
Fairfield	102,814	103	1.00	48.5	0.47	58	0.56	8	0.08
Hayward	147,385	203.3	1.38	79.7	0.54	110	0.75	24.4	0.17
Livermore	79,302	82	1.03	57.4	0.72				
Manteca	62,810	71	1.13	26.4	0.42	36.3	0.58	3	0.05
Modesto	207,613	297.7	1.43	98.7	0.48	180.6	0.87	2	0.01
Vacaville	91,791	109	1.19	72.3	0.79	79	0.86	7.7	0.08
Vallejo	120,790	148	1.23	57.6	0.48	98	0.81	6	0.05

Figure 10 - Population and Staffing

The City of Tracy’s police staffing in the FY 10/11 budget is just below the middle of the range of comparison cities. Two approaches were compared for projecting Police Department sworn officers.

The first approach assumes services within the existing city limits remain the same and two new patrols would be added for expansion areas of the city. Two new police storefronts staffed by a neighborhood resource officer (sworn) and a community service officer (civilian) would also be added to serve the expanded area of the city. There would be no relief factor used for these four positions. A 5.5 relief factor (to maintain the patrol presence through sick days, vacations, training, etc.) was assumed for the two additional patrols, adding 11 sworn positions. An additional sergeant would be required to supervise the added officers. This results in a total sworn staffing of 110.9 for a ratio of 0.92 per 1,000 residents.

The second approach was to project sworn officers based on their ratio to 1,000 population in the FY 10/11 budget. The 96.94 approved positions provides a staffing ratio of 1.19 per 1,000. The city would require 163 sworn officers to maintain FY 10/11 service levels at build-out.

The ratio of officers to 1,000 population was the basis used for projecting sworn officers. The first approach is missing two important aspects of service. It fails to factor in the usual increased patrol activity on second and third watches. It also fails to account for the additional detectives that would be required for investigations. In lieu of a more detailed analysis of these considerations, the FY 10/11 staffing ratio used for the second approach was considered the most representative of the community's likely needs.

Civilian staffing of both Police and Fire Departments was determined with departments covered by the Public Facilities Master Plan. A line of best fit was calculated using population and staffing data for Tracy and seven comparable cities:

$$\text{Staff} = 0.00331 \times \text{Population} + 67.3$$

This formula was used to calculate total staffing at build-out (not including sworn officers or certified firefighters). Staffing was broken down into fixed and variable positions. Using FY 10/11 as a base, the variable positions were increased uniformly such that total fixed and variable staffing equaled the number of staff projected by the formula.

Staffing for firefighters was based on the number of fire stations needed to serve the community at build-out. The South County Fire Authority Standards of Response Coverage Report Review by Kirchhoff & Associates dated January, 2008 was examined for applicability to the proposed city build-out. It was evident that all city's proposed expansion areas were taken into account in the review's recommendations, so assumptions regarding fire stations for the Public Safety Master Plan are consistent with those recommendations.

The Kirchhoff review recommends five new fire stations for the entire fire authority. The average staffing of each existing station (not including the ladder company at Fire Station #91) is 3 fire captains, 3 fire engineers, 3 firefighters, and 0.3 fire reserves. This results in a negligible drop in the ratio of certified firefighters from 0.91 to 0.89 per 1,000 population. Inspection of the Kirchhoff study and staffing patterns consistent with that seem to validate that the same level of service is provided at build-out as currently exists.

A table with FY 10/11 and build-out staffing for public safety agencies is provided in Appendix A.

Space Projection Tables

Space projections were developed on a line item basis using the staffing projections, reviews of existing space and plans, and spaces that are normal and customary for public safety. Appendix B provides the spaces needed under the proposed FY 10/11 budget and at build-out. Subtotals of net space are provided for each department with estimates of “departmental” space, effectively equivalent to lease space in a commercial building with allowances for internal circulation, columns, etc. Gross building area is provided by use of an efficiency factor that provides allowances for exterior building walls, vertical circulation elements, primary circulation, public toilets, and mechanical rooms. The efficiency factor varies from 75% to 90% depending on type of facility. See Figure 11.

Department	Existing	FY 10/11 Need	FY 10/11 Unmet Need	Build-Out Need	Δ Future Need
Police					
Headquarters – Consolidated	25,497	26,555	1,058	66,487	40,990
Boyd Service Center Storage	7,113	7,113	0	0	0
Police Subtotal	32,610	33,668	1,058	66,487	40,990
Fire					
Administration	9,646	5,790	0	7,430	0
Fire Stations	35,786	43,187	0	72,791	37,005
Fire Subtotal	45,432	48,997	0	80,221	37,005
Public Safety Training	2,296	2,296	0	15,590	13,294
Public Safety Total	80,338	84,961	1,058	162,298	91,289
Note: Police excludes Animal Shelter, leased substations, and storage containers					

Figure 11 - Summary of Space Needs, including Unmet Space Needs

Impact fees cannot charge for the future correction of current unmet needs. The following space projections demonstrate that unmet needs have been excluded from the final impact fees.

The Police Department shows existing space only slightly below the FY 10/11 need even though a number of deficiencies were observed. Existing space includes 7,113 square feet of storage at the Boyd Service Center for property and evidence storage. Space assigned to the Police Department at the Boyd Services Center does not provide a viable resource to correct inadequacies in space for detectives, volunteers, administration, and temporary holding at the Police Department’s main building.

The Police Department has a number of current needs that do not show up in such a tabular form, but since they are unmet needs, do not change the outcome relative to impact fees. For example, the type and location of property storage space is wholly inadequate, and the availability of space at the Boyd facility obscures this. Yet, since it is an unmet need for different space, it does not show up in this table and does not get attributed to future needs. Similarly, the needs for locker room space, increased

holding capacity, crime prevention office space, and support space for administration that is currently displaced into hallways do not show up in the future need.

Fire administration also shows more existing space than the FY 10/11 need. Fire administration does have some vacant offices, but the remodeled station used for the department’s administrative offices also has old crew quarters that are not effectively utilized.

All future fire stations are shown as build-out needs so as not to confuse any new fire stations as unmet needs. Our understanding is that the relocation of existing stations is a current need, and additional stations are required to meet future increases in demand. Similarly, any public safety training facilities that do not currently exist are shown as build-out needs. The need for training facilities is as much a strategic question of whether to use in-house or regional resources as it is a calculation of current demand compared to space available.

A related issue is the distribution of future fire stations to the needs of the incorporated and unincorporated areas. Based on Indigo’s proposed locations for future fire stations A through E, the service areas for these fire stations were mapped relative to existing stations, and areas within each service area calculated separately for incorporated city, developed unincorporated, and rural.

Using information on annual service calls per square mile for urban and rural areas from the first fire requirements study, the following formula was used to determine the percentage of each new fire station that will serve within the city limits at build-out:

$$\text{Percent} = \frac{(A_{\text{city}} \times 188.32)}{((A_{\text{city}} \times 188.32) + (A_{\text{devunincorp}} \times 188.32) + (A_{\text{rural}} \times 9.78))}$$

Figure 12 shows the areas (in square feet) and percentages attributable to city needs for each planned fire station. The fact that square feet rather than square miles is used is mathematically sound as long as the same units are being used throughout the calculation.

Station	City Area	Developed Unincorporated	Undeveloped Rural	Percent City
A	62332842	33807249	17059381	64.2%
B	48455293	39006014	33859477	54.3%
C	77347515	0	276763853	84.3%
D	42150616	47925878	321582963	39.5%
E	69802330	32674598	118236036	64.3%

Figure 12 - Allocation of Proposed Fire Stations

Figure 13 tabulates program site area assumptions were used in this report:

	Police Service Ctr requires 4-6 Acres	New Fire Station requires 1 Acre
Building	Assumes 1-story footprint: 0.9 acres	Assumes 2-story footprint: 0.2 acres
Paving & Drives	2.1 acres	0.4 acres
Landscape Area	Aka, 50% Effic. Factor: 2.1 acres	Aka, 50% Effic. Factor: 0.4 acres
Total	5.2 acres or, generally, 4-6 acres	1.0 acre

Figure 13 - Site Area Assumptions

ALTERNATIVE FACILITY PLANS STUDIED

Initially, three options were developed to house City staff and operations through build-out of the City's Sphere of Influence. Preliminary facility site plans were prepared. Remodel opportunities at existing facilities were evaluated, where appropriate, as a cost effective alternative to new construction. Operational efficiencies were evaluated. Use of existing facilities is maximized to reduce the size and cost of any new facilities.

The Sphere of Influence map in Figure 1 (p. 1) shows the proposed development areas at City build-out. These developments will place increased demands on City services, requiring capital improvements. In particular, program space projections indicate a need for 65,500 additional square feet of public safety by build-out. See also Appendix F.

Public Safety – Option 1

The main idea of this plan is to keep remaining public safety facilities, police in particular, consolidated at the Civic Center (Figure 14, p.21). The existing police headquarters building receives a new 2-story 18,300 square foot expansion to house service growth and consolidate property management functions. Secure parking is to be expanded (Figure 17, p.24). Removal of existing non-police uses on the site is required. The existing fire headquarters building receives a 4,300 square foot engine bay expansion, and associated renovations to existing space, to re-open as a downtown core fire station. This restoration of Station 1 relieves Station 28 from having to relocate per Kirchhoff recommendation #28. Station 1 will continue to house administrative functions in the renovated historic portion of the building. See Figure 16 (p.23).

Four 7,400 square foot fire stations will be constructed near these developments as directed by the *South County Fire Authority Standards of Response Coverage Report Review* (Kirchhoff, 2008). In particular, station "B" is located per Kirchhoff recommendation #31; station "C" per #33; station "D" per #30; and station "E" per #32. A 16,000 square foot joint police & fire training facility is proposed for the existing police firing range site. Figure 15 (p.22) shows reactivation of a fire station at the existing fire headquarters building.

Option 1 Conclusion: With the exceptions of the fire facilities proposal and the joint training facilities proposal, this option was ultimately rejected for police phasing, site acquisition, site constraints, and site congestion reasons. Phasing: Police would have had to relocate during the 2-story 18,300 square foot expansion. Acquisition: Site expansion requires retaking adjacent land owned by the City but currently used by the County. Constraints: Even with the acquisition of neighboring land, police operations require ample parking and site storage – neither of which this site provides. A 4-6 acre site is required, whereas the existing site is only 2 acres, 2.6 acres with acquisition of adjacent land. Congestion: Providing full-scale police services at the Civic Center through build-out would place an increased burden on similarly expanding non-police-related services and the citizens accessing them.

Public Safety – Option 2

The main idea of this plan is to distribute branch public safety facilities to alleviate impact at the Civic Center (Figure 18, p.25). The existing police headquarters building receives a new 1-story 10,000 square foot expansion to house temporary holding expansion and consolidate property management functions (Figure 19, p.26). Other police expansion growth is accommodated by the new substation. Secure

parking is to be expanded (Figure 17, p. 24, sim.). Removal of existing non-police uses (e.g., City Hall parking) on the site is required. As with Option 1, the existing fire headquarters building receives a 4,300 square foot engine bay expansion, and associated renovations to existing space, to re-open as a downtown core fire station.

The Overall Map (Figure 18, p.25) shows a new “branch” public safety facility being constructed adjacent to the proposed development areas at City build-out. An 8,000 square foot branch police substation would be constructed near the Ellis, South Linne, and Tracy Hills developments. As with Option 1, a 16,000 square foot joint police & fire training facility is proposed for the existing police firing range site; and the Core Map shows reactivation of a fire station at the existing fire headquarters building.

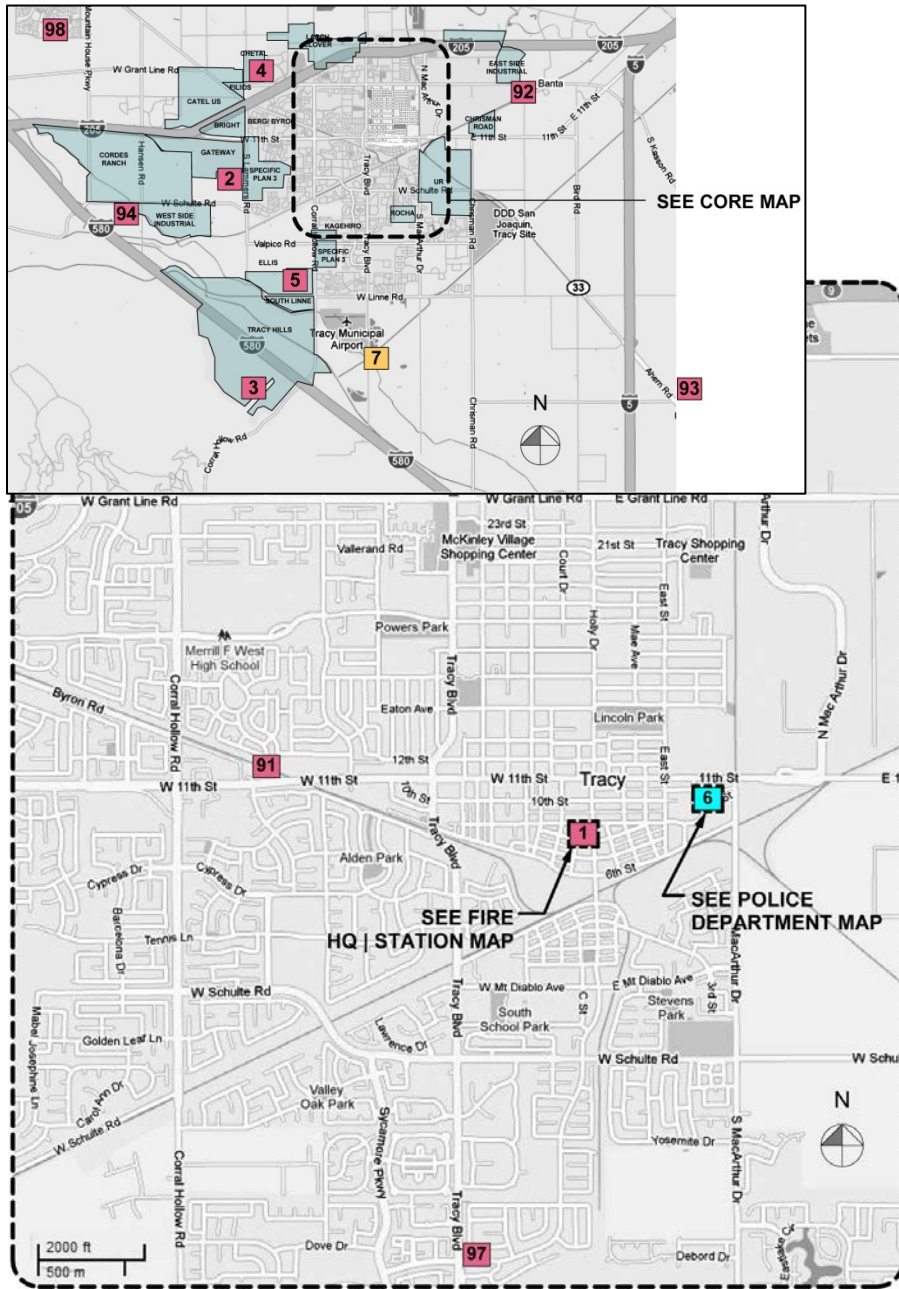
Option 2 Conclusion: With the exceptions of the fire and training facilities, and the proposed Police Department Substation, this option was ultimately rejected for police phasing, site acquisition, site constraints, and site congestion reasons. Phasing and operations: Police would have had to relocate during the 1-story 10,000 square foot expansion, and dividing the department without a full substation is not desirable. Acquisition: Site expansion requires retaking adjacent land owned by the City but currently used by the County. Constraints: Even with the acquisition of neighboring land, police operations require ample parking and site storage – neither of which this site provides. A 4-6 acre site is required, whereas the existing site is only 2 acres, 2.6 acres with acquisition of adjacent land. Congestion: Providing full-scale police services at the Civic Center through build-out would place an increased burden on similarly expanding non-police-related services and the citizens accessing them.

Public Safety – Option 3

The main idea of this plan is to repurpose the existing Police Headquarters building to house a new and expanded Citywide Emergency Operations Center and a relocated and expanded Information Services Department, including the departmental data center. Removal of existing non-police uses on the site is optional. Key PD divisions involving IT infrastructure, such as Dispatch and Records would remain in this building. A Police “Storefront” presence would remain in the building as well. Under a separate study, Animal Shelter staff are a PD division that might relocate to this facility. All current fiber optic, radio, and other data infrastructure would remain or be upgraded. See Figure 21 (p.28).

A new 45,900 square foot Police Department Headquarters building on a 4-6 acre site would be constructed elsewhere within the City core (Figure 20, p.27). This building would house all police administration and operations functions not listed above, including an expanded booking facility, evidence processing and storage facility, and staff lockers and gym. As with Option 1, the existing fire headquarters building receives a 4,300 square foot engine bay expansion, and associated renovations to existing space, to re-open as a downtown core fire station.

Option 3 Conclusion: With some adjustment to the sizing of the new Police Department Service Center – now 40,990 square feet - combined with the addition of Option 2’s Police Department Substation, this option was modified to become the Master Plan. Of the options, it best provides the contiguous space for proper police department operations, takes advantage of the existing infrastructure for a public safety center, including EOC, and efficiently provides all Fire Department needs for community coverage and Fire Administration.



PUBLIC SAFETY - OPTION 1								
KEY	DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BLD-OUT
1	FD	Admin Operations	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
2	FD	Operations	Fire Station "B"	TBD (Gateway Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
3	FD	Operations	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
4	FD	Operations	Fire Station "D"	TBD (Chetal Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
5	FD	Operations	Fire Station "E"	TBD (Ellis Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0% 0 sf	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0% 0 sf	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0% 0 sf	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0% 0 sf	0 sf	5,552 sf
96	FD	Operations	Fire Station 96	301 West Grantline Rd	3,336 sf	0% 0 sf	0 sf	3,336 sf
97	FD	Operations	Fire Station 97	595 West Central Av.	3,009 sf	0% 0 sf	0 sf	3,009 sf
98	FD	Operations	Fire Station 98	911 Tradition St.	8,500 sf	0% 0 sf	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT					45,432 sf	8% 3,858 sf	33,904 sf	79,336 sf
6	PD	Headquarters	Police Department	1000 Civic Center Dr.	27,616 sf	33% 9,113 sf	18,294 sf	45,910 sf
	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Srvc Ctr	7,113 sf	0% 0 sf	0 sf	0 sf
SUBTOTAL POLICE DEPARTMENT					34,729 sf	26% 9,113 sf	18,294 sf	45,910 sf
7	PD FD	Operations	Training Facility	6649 S Tracy Blvd	2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS					2,296 sf	33% 758 sf	13,294 sf	15,590 sf
TOTAL PUBLIC SAFETY					82,457 sf	17% 13,729 sf	65,492 sf	140,836 sf

Figure 14 - Option 1, Overall Map, Core Map & Legend



FIRE HEADQUARTERS FIRE STATION						
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT	
1	Fire Headquarters Fire Station	9,646 sf	40% 3,858 sf	5,185 sf	14,831 sf	
	TOTAL BUILDING AREA	9,646 sf	40% 3,858 sf	5,185 sf	14,831 sf	
	TOTAL SITE AREA	25,474 sf		0 sf	25,474 sf	

Figure 15 - Option 1, Fire Administration | Fire Station Map & Legend

Note: The Fire Headquarters | Fire Station Option is typical of all three public safety facility plan options.



POLICE HEADQUARTERS - OPTION 1						
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT	
6	Police Headquarters	27,616 sf	33% 9,113 sf	18,294 sf	45,910 sf	
TOTAL BUILDING AREA		27,616 sf	33% 9,113 sf	18,294 sf	45,910 sf	
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf	

Figure 16 - Option 1, Police Headquarters Map & Legend

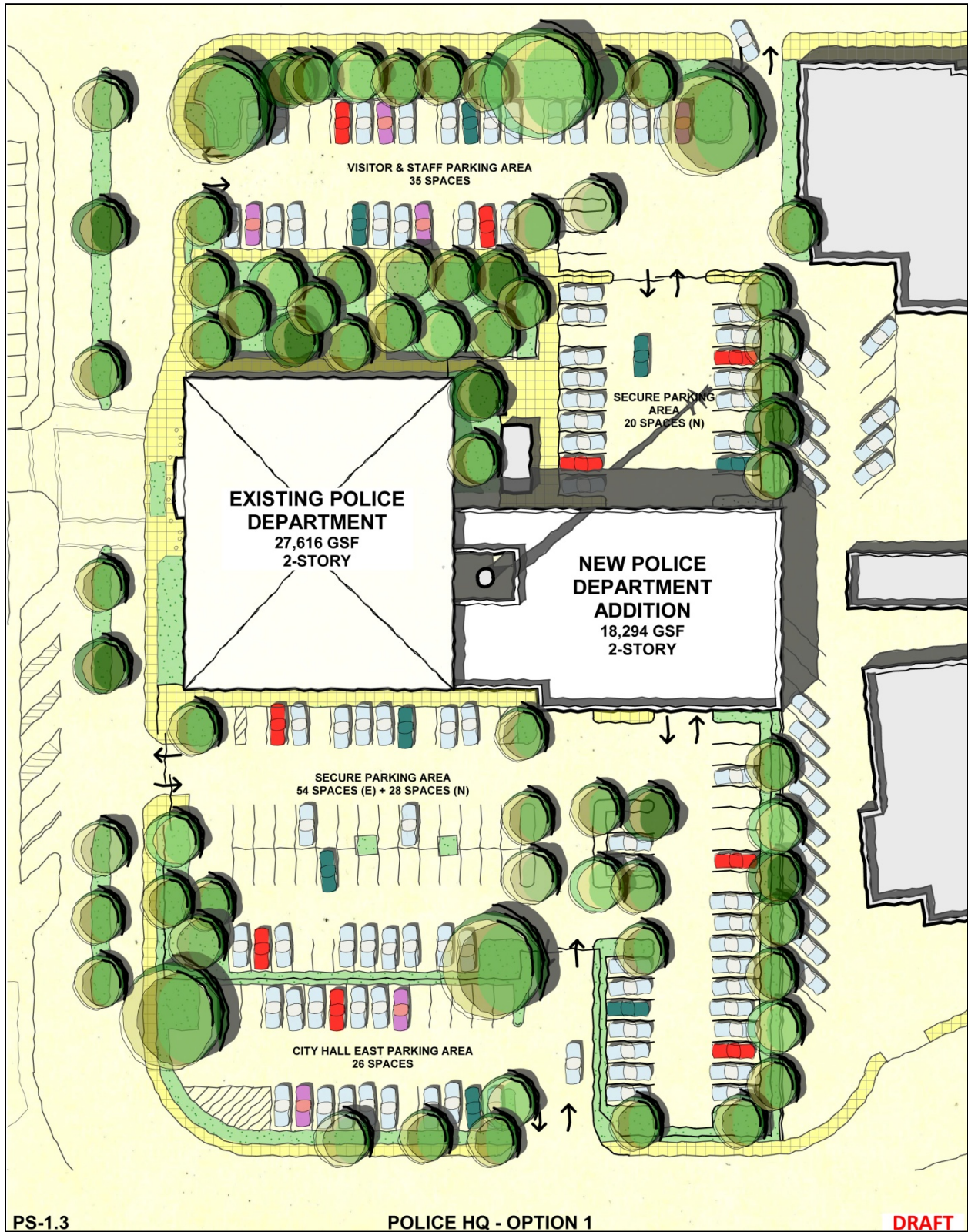
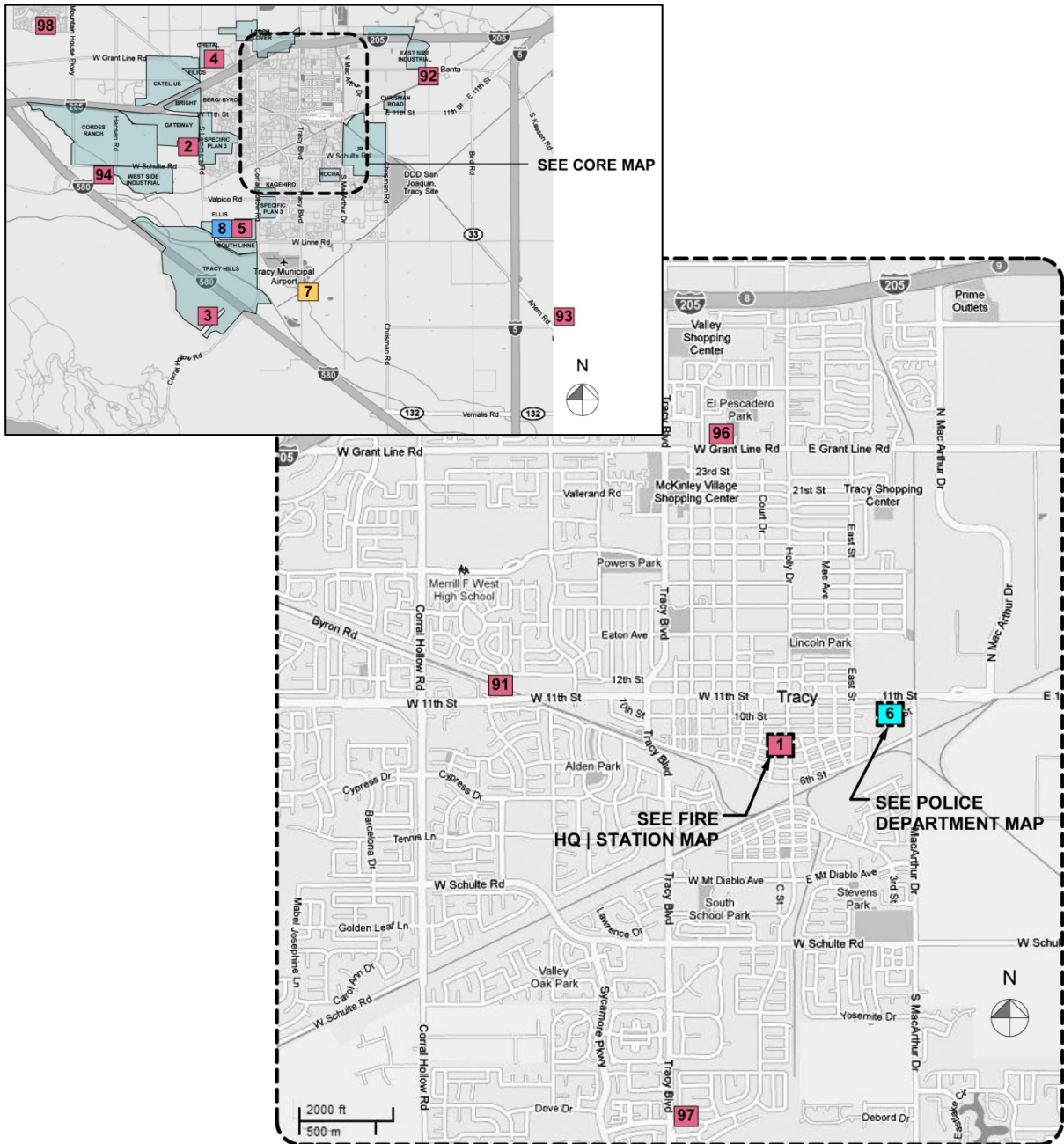


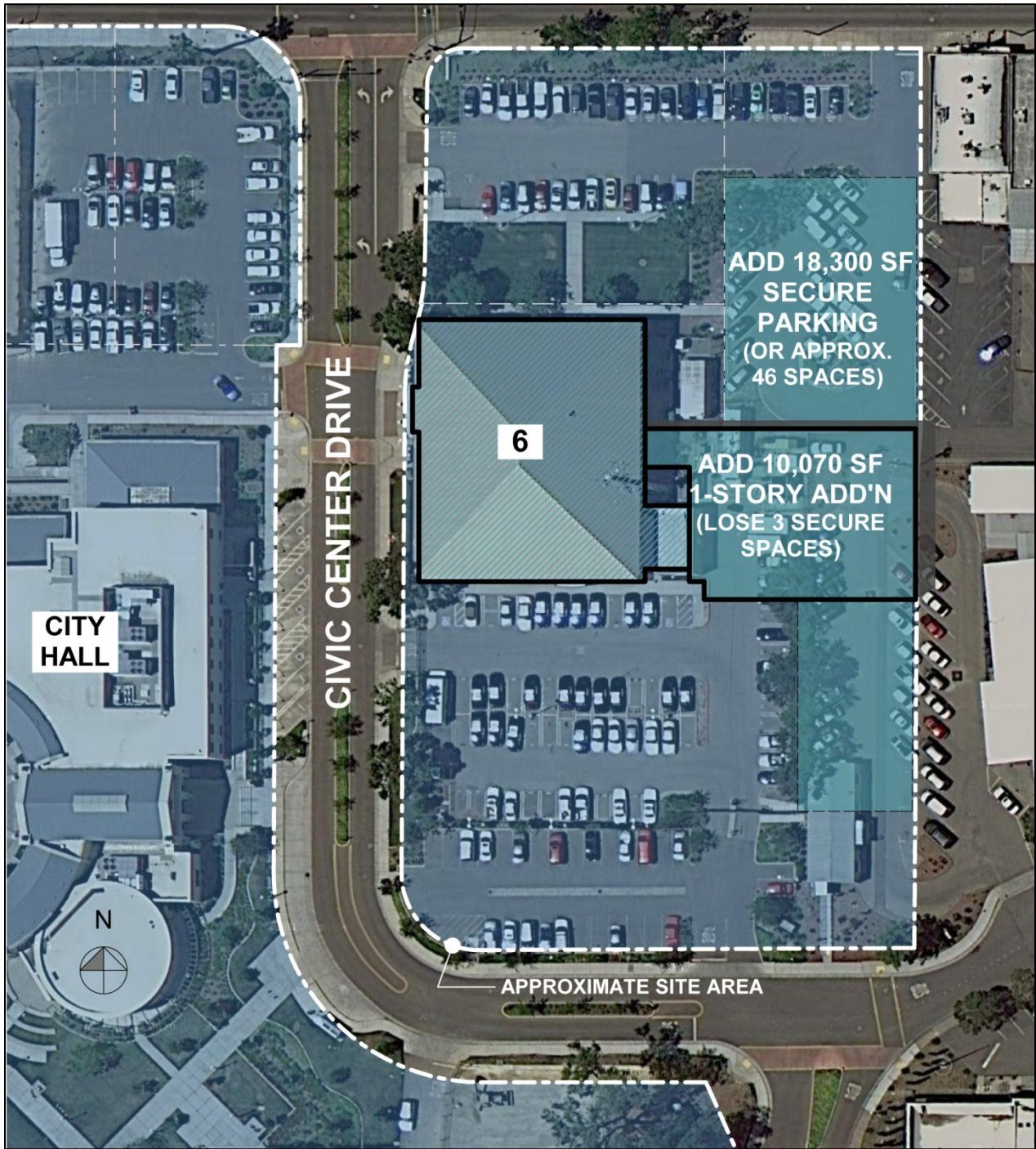
Figure 17 - Sketch Showing PD Addition & Parking



PUBLIC SAFETY - OPTION 2								
KEY	DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BLD-OUT
1	FD	Admin Operations	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
2	FD	Operations	Fire Station "B"	TBD (Gateway Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
3	FD	Operations	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
4	FD	Operations	Fire Station "D"	TBD (Chetal Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
5	FD	Operations	Fire Station "E"	TBD (Ellis Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0% 0 sf	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0% 0 sf	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0% 0 sf	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0% 0 sf	0 sf	5,552 sf
96	FD	Operations	Fire Station 96	301 West Grantline Rd	3,336 sf	0% 0 sf	0 sf	3,336 sf
97	FD	Operations	Fire Station 97	595 West Central Av.	3,009 sf	0% 0 sf	0 sf	3,009 sf
98	FD	Operations	Fire Station 98	911 Tradition St.	8,500 sf	0% 0 sf	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT					45,432 sf	8% 3,858 sf	33,904 sf	79,336 sf
6	PD	Headquarters	Police Department	1000 Civic Center Dr.	27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
8	PD	Headquarters	Police Department Substation	TBD (Ellis Area)	0 sf	0% 0 sf	8,224 sf	8,224 sf
	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Srvc Ctr	7,113 sf	0% 0 sf	0 sf	0 sf
SUBTOTAL POLICE DEPARTMENT					34,729 sf	12% 4,142 sf	18,294 sf	45,910 sf
7	PD FD	Operations	Training Facility	6649 S Tracy Blvd	2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS					2,296 sf	33% 758 sf	13,294 sf	15,590 sf
TOTAL PUBLIC SAFETY					82,457 sf	11% 8,758 sf	65,492 sf	140,836 sf

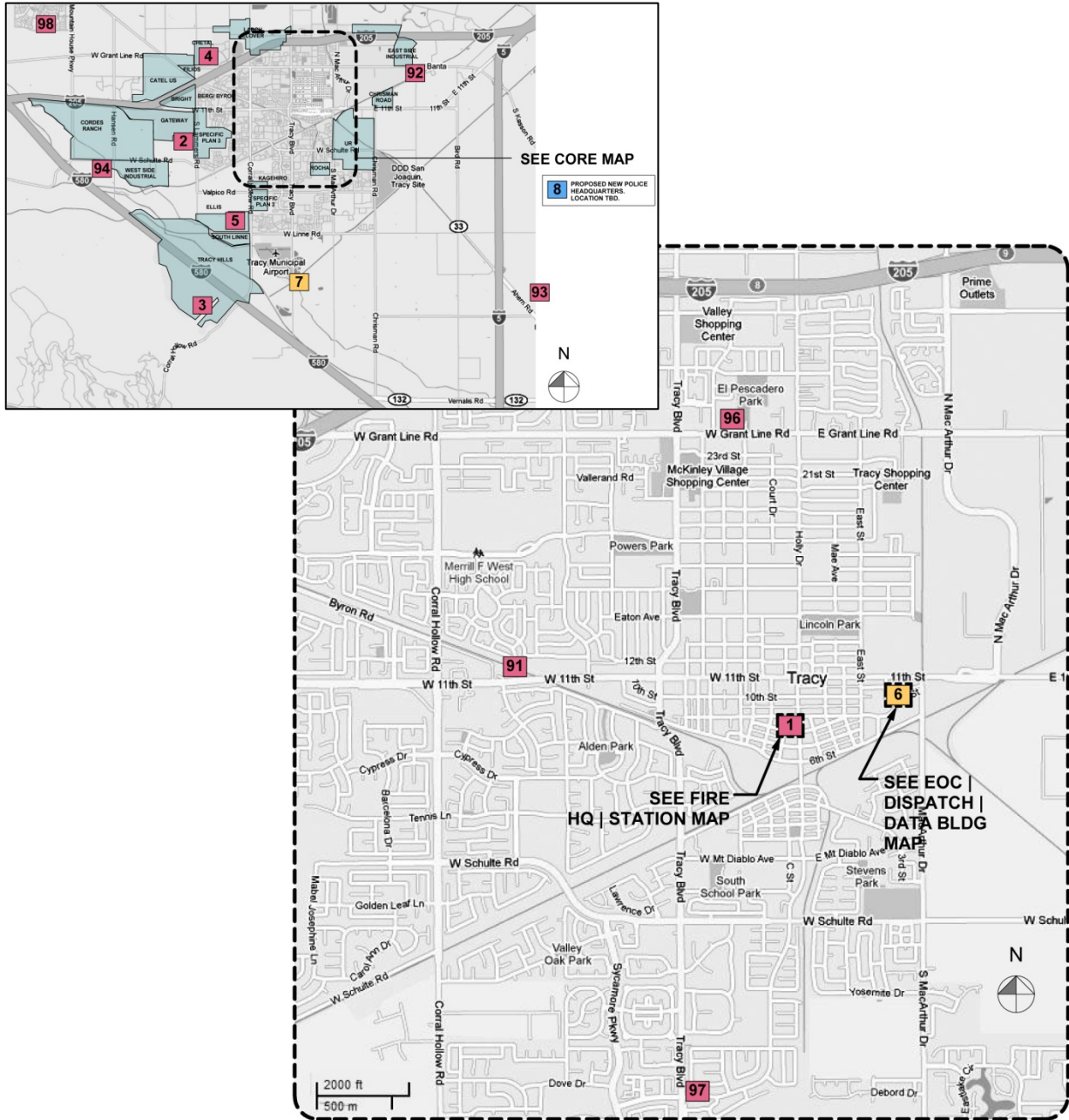
Figure 18 - Option 2, Overall Map, Core Map & Legend





POLICE HEADQUARTERS - OPTION 2					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
6	Police Headquarters	27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
TOTAL BUILDING AREA		27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf

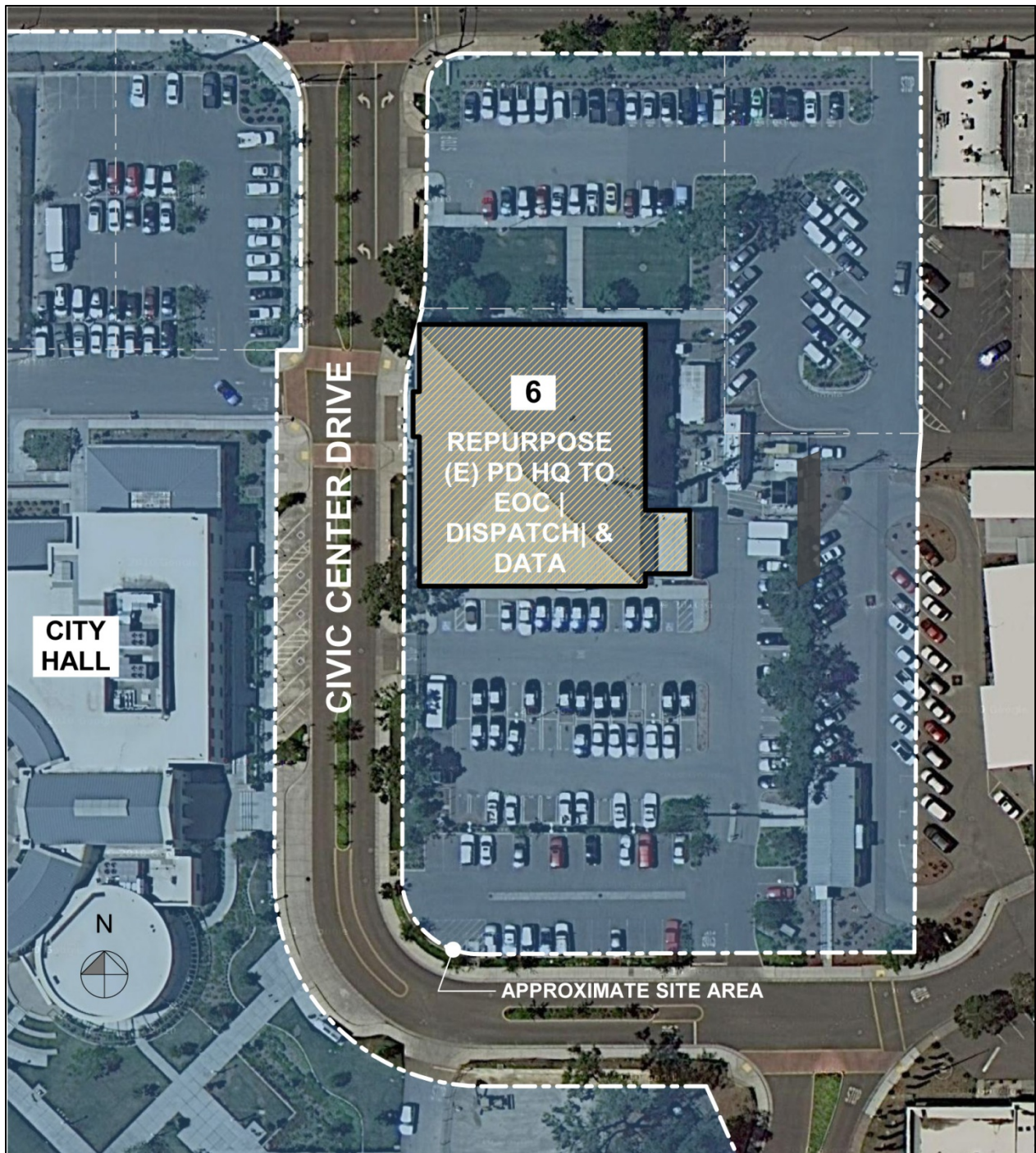
Figure 19 - Option 2, Police Headquarters Map & Legend



PUBLIC SAFETY - OPTION 3								
KEY	DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BLD-OUT
1	FD	Admin Operations	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
2	FD	Operations	Fire Station "B"	TBD (Gateway Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
3	FD	Operations	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
4	FD	Operations	Fire Station "D"	TBD (Chetal Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
5	FD	Operations	Fire Station "E"	TBD (Ellis Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0% 0 sf	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0% 0 sf	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0% 0 sf	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0% 0 sf	0 sf	5,552 sf
96	FD	Operations	Fire Station 96	301 West Grantline Rd	3,336 sf	0% 0 sf	0 sf	3,336 sf
97	FD	Operations	Fire Station 97	595 West Central Av.	3,009 sf	0% 0 sf	0 sf	3,009 sf
98	FD	Operations	Fire Station 98	911 Tradition St.	8,500 sf	0% 0 sf	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT					45,432 sf	8% 3,858 sf	33,904 sf	79,336 sf
8	PD	Headquarters	Police Department	TBD	0 sf	0% 0 sf	45,910 sf	45,910 sf
	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Srvc Ctr	7,113 sf	0% 0 sf	0 sf	0 sf
SUBTOTAL POLICE DEPARTMENT					7,113 sf	0% 0 sf	45,910 sf	45,910 sf
6	PD FD	Operations	EOC Dispatch Data Bldg	1000 Civic Center Dr.	27,616 sf	25% 6,814 sf	0 sf	27,616 sf
7	PD FD	Operations	Training Facility	6649 S Tracy Blvd	2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS					29,912 sf	25% 7,572 sf	13,294 sf	43,206 sf
TOTAL PUBLIC SAFETY					82,457 sf	14% 11,430 sf	93,108 sf	168,452 sf

Figure 20 - Option 3, Overall Map, Core Map & Legend





JOINT EOC DISPATCH IS BLDG - OPTION 3						
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT	
6	PD EOC Dispatch Data	12,773 sf	15% 1,916 sf	0 sf	12,773 sf	
	FD EOC Dispatch Data	12,773 sf	33% 4,215 sf	0 sf	12,773 sf	
	IS Data Facility	2,070 sf	33% 683 sf	0 sf	2,070 sf	
TOTAL BUILDING AREA		27,616 sf	25% 6,814 sf	0 sf	27,616 sf	
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf	

Figure 21 - Option 3, Joint EOC | Dispatch IS Bldg Map & Legend

MASTER PLAN

Option 3 is used as the basis of development of the Master Plan. Estimated cost is approximately \$62 million. It best provides the additional space required for police operations at the new PDSC, keeping a downtown police presence, and provides a substation to best serve areas of new development. See also Appendix G.

Fire Stations Citywide

This plan adds four new fire stations, a total of 29,604 additional square feet, and a 5,185 square foot addition to the 45,432 square feet of existing fire station facilities citywide, bringing total fire station facilities to 80,221 square feet through build-out. The existing downtown fire administration building will receive a 3,858 square foot upgrade along with the addition, to provide it with apparatus and dormitory space to serve Tracy's downtown core. The four added stations are to be sited within the following new development areas: Gateway, Tracy Hills, Chetal, and Ellis. See Figure 22 (p. 31).

Public Safety Center at Civic Center

Due to lack of space on its existing site, the Police Department will be moving much of their operation offsite to a new Police Service Center, leaving Dispatch, Emergency Operations Center (EOC) and a Downtown Police Station at the existing building which will then operate as a 25,497 square foot Public Safety Center on the existing 2.0 acre site. The 2,119 square feet remaining in the existing 27,616 square foot building will house the Finance Department's IS division, which currently occupies part of the Support Services Building west of City Hall and is covered under the concurrent Citywide Public Facilities Master Plan study. See Figure 23 (p.32). Public Safety functions at this facility will be allocated as follows:

- Dispatch - 1,220 square feet
- Downtown Police Station - 1,330 square feet
- Police Evidence Storage - 8,960 square feet
- EOC - 2,960 square feet

Police Department Service Center

The new 40,990 square foot service center (site TBD) will provide the City with comprehensive police services through build-out. Sited on 4-6 acres along the 11th Street corridor, the facility will improve response to existing and new development. The facility will serve as a new Police Department headquarters, including functions such as administration, investigations, patrol, armory, and holding.

Police & Fire Departments Training Facility at Existing Firing Range

The existing 2,296 square foot police firing range site at the south end of town will receive a 758 square foot upgrade and 13,294 square feet of additional space as it grows into a 4.8 acre joint fire and police training facility through build-out.

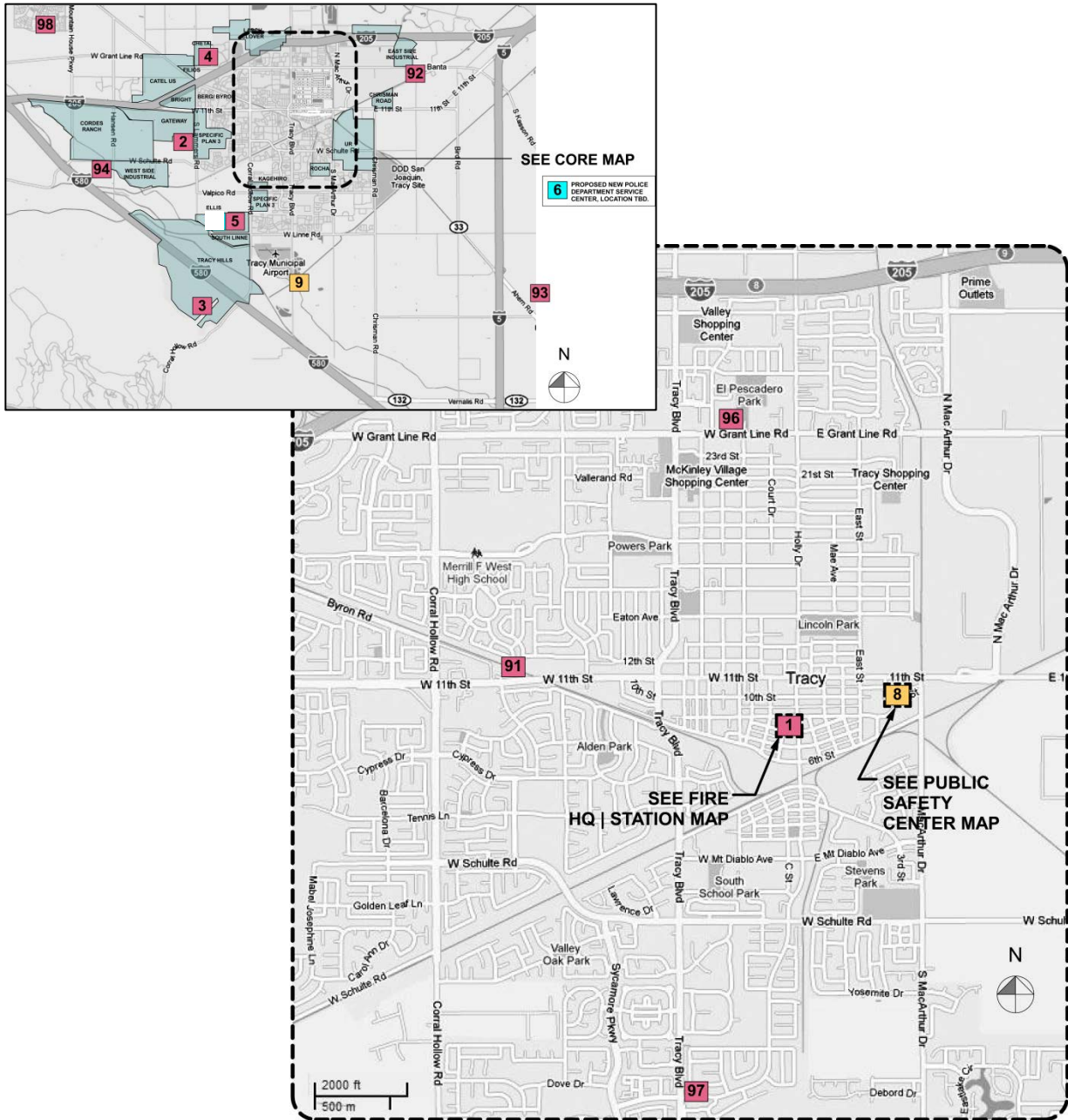
Radio Communications Tower

The City of Tracy has adopted the San Joaquin County Radio Master Plan, which establishes a county-wide public safety digital simulcast infrastructure to serve as the building block for interoperability. This

infrastructure will allow all public safety agencies to have emergency communications in disaster situations, and support daily tactical operations. Any future development of sites for towers will have to comply with the Master Plan to allow for additional communication and data transport capabilities of multiple sites and will need to communicate with the already existing communications system to provide interoperability.

Whereas the tower's location is the subject of current study, it will likely not be ultimately located until Cordes Ranch and Tracy Hills are developed. Currently, the radio coverage study maps do not indicate any major radio coverage issues in these areas. However, as the topography of the area changes with the addition of buildings and increase of population to the area so will the radio coverage. It is anticipated, that without the tower, critical contact between field units and the communications center will be impacted.

The purpose of the tower is to expand and improve the radio communications capabilities for public safety. Engineering studies to define the coverage and performance will need to be completed to identify the exact location of the site of a tower and the equipment requirements. Initial study indicates that at minimum, a 180-ft tower, built as a three leg structural steel self-supported radio communications tower with a 30-ft x 10-ft equipment communications shelter with utility connections, fencing, and a 70-ft x 35-ft foundation pad would meet the standards established in the San Joaquin County Radio Master Plan.



PUBLIC SAFETY FACILITIES						
KEY	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BLD-OUT
1	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,858 sf	5,185 sf	14,831 sf
2	Fire Station "B"	TBD (Gateway Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
3	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
4	Fire Station "D"	TBD (Chetal Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
5	Fire Station "E"	TBD (Ellis Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
91	Fire Station 91	1701 West 11th Street	7,401 sf	0% 0 sf	0 sf	7,401 sf
92	Fire Station 92	22484 South 7th St.	1,841 sf	0% 0 sf	0 sf	1,841 sf
93	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0% 0 sf	0 sf	6,147 sf
94	Fire Station 94	16502 West Schulte Rd	5,552 sf	0% 0 sf	0 sf	5,552 sf
96	Fire Station 96	301 West Grantline Rd	3,336 sf	0% 0 sf	0 sf	3,336 sf
97	Fire Station 97	595 West Central Av.	3,009 sf	0% 0 sf	0 sf	3,009 sf
98	Fire Station 98	911 Tradition St.	8,500 sf	0% 0 sf	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT			45,432 sf	8% 3,858 sf	34,789 sf	80,221 sf
6	Police Department Service Center	TBD	0 sf	0% 0 sf	40,990 sf	40,990 sf
SUBTOTAL POLICE DEPARTMENT			0 sf	0% 0 sf	40,990 sf	40,990 sf
8	Public Safety Center + EOC	1000 Civic Center Dr.	25,497 sf	24% 18,310 sf	0 sf	25,497 sf
9	Training Facility	6649 S Tracy Blvd	2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS			27,793 sf	69% 19,068 sf	13,294 sf	41,087 sf
TOTAL PUBLIC SAFETY			73,225 sf	31% 22,926 sf	89,073 sf	162,298 sf

Figure 22 – Master Plan, Overall Map, Core Map & Legend





PUBLIC SAFETY CENTER - DOWNTON PD EOC DISPATCH						
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT	
8	PD Allocation	12,749 sf	15% 1,910 sf	0 sf	12,749 sf	
	Fire Allocation	12,749 sf	33% 4,205 sf	0 sf	12,749 sf	
TOTAL BUILDING AREA		25,497 sf	24% 6,116 sf	0 sf	25,497 sf	
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf	

Figure 23 – Master Plan, Joint EOC | Dispatch IS Bldg Map & Legend

COST

Estimate Summary

The Public Safety Master Plan carries a total project development cost of approximately \$62 million as shown on Figure 24. Included are estimated construction costs (\$38.2 million), indirect costs (\$15.3 million), vehicles and furnishings, fixtures, and equipment (FF&E, \$6.9 million), and land acquisition (\$1.7 million). See Appendix D.

KEY	PLACE NAME	Program Area at Buildout	Construction Subtotal	Total Construction + Indirect	FF&E & Vehicles	Land Acquisition	Total Project Cost	Total Cost Attributable to New Dev
1	Fire Headquarters Station "A"	14,831 sf	\$2,086,381	\$2,920,934	\$972,000	\$0	\$3,893,000	\$3,893,000
2	Fire Station "B"	7,401 sf	\$2,600,250	\$3,640,350	\$972,000	\$150,000	\$4,763,000	\$4,763,000
3	Fire Station "C"	7,401 sf	\$2,600,250	\$3,640,350	\$972,000	\$150,000	\$4,763,000	\$4,763,000
4	Fire Station "D"	7,401 sf	\$2,600,250	\$3,640,350	\$972,000	\$150,000	\$4,763,000	\$4,763,000
5	Fire Station "E"	7,401 sf	\$2,600,250	\$3,640,350	\$972,000	\$150,000	\$4,763,000	\$4,763,000
91	Fire Station 91	7,401 sf	\$0	\$0	\$0	\$0	\$0	\$0
92	Fire Station 92	1,841 sf	\$0	\$0	\$0	\$0	\$0	\$0
93	Fire Station 93	6,147 sf	\$0	\$0	\$0	\$0	\$0	\$0
94	Fire Station 94	5,552 sf	\$0	\$0	\$0	\$0	\$0	\$0
96	Fire Station 96	3,336 sf	\$0	\$0	\$0	\$0	\$0	\$0
97	Fire Station 97	3,009 sf	\$0	\$0	\$0	\$0	\$0	\$0
98	Fire Station 98	8,500 sf	\$0	\$0	\$0	\$0	\$0	\$0
		80,221 sf	\$12,487,381	\$17,482,334	\$4,860,000	\$600,000	\$22,945,000	\$22,945,000
6	Police Department Service Center	40,990 sf	\$13,947,000	\$19,525,800	\$1,906,000	\$450,000	\$21,882,000	\$21,317,200
	SUBTOTAL POLICE DEPARTMENT	40,990 sf	\$13,947,000	\$19,525,800	\$1,906,000	\$450,000	\$21,882,000	\$21,317,200
8	Public Safety Center + EOC	25,497 sf	\$4,619,750	\$6,467,650	\$46,000	\$0	\$6,514,000	\$6,514,000
9	Training Facility	15,590 sf	\$2,959,100	\$4,142,740	\$50,000	\$100,000	\$4,293,000	\$4,293,000
	Training Site Elements	0 sf	\$2,380,000	\$3,332,000	\$0	\$280,000	\$3,612,000	\$3,612,000
RCT	Radio Communications Tower	0 sf	\$1,782,990	\$2,496,186	\$0	\$300,000	\$2,797,000	\$2,797,000
	SUBTOTAL JOINT POLICE/ FIRE/ EOC	41,087 sf	\$11,741,840	\$16,438,576	\$96,000	\$680,000	\$17,216,000	\$17,216,000
	SUBTOTAL PUBLIC FACILITIES	162,298 sf	\$38,176,221	\$53,447,000	\$6,862,000	\$1,730,000	\$62,043,000	\$61,479,000

Figure 24 - Public Safety Master Plan Cost Estimate Summary

Radio Communications Tower

The cost of the radio communications tower and appurtenances has been estimated at \$2.8 million. This project includes but is not limited to an estimated 180-ft communications tower, a 30-ft x 10-ft equipment communications shelter with utility connections, fencing, and a 70-ft x 35-ft foundation pad, microwave antennae, Conv/ Simulcast system, 2 sites, 2 channels with 6 trunking capable consoles, and T1 backhaul.

Facility Allocations

This is an analysis of the public safety impact fees necessary to cover the costs of the proposed new public safety buildings in the City of Tracy. This analysis is based on facilities needs and resulting building program and cost estimates in this report. The purpose of this fee analysis is to identify public safety facility improvement needs to support buildout of the Tracy General Plan, to segregate costs attributable to current deficiencies for existing development versus costs for facility expansion and upgrade requirements associated with new development, and to then provide an estimate of the impact fee burdens that would be placed on different categories of new development in accordance with their relative contribution to demand for the new or upgraded facilities, in order to fund the capital facilities program. Finally, a comparison is provided between the estimated fee burdens and the existing City of Tracy citywide fee program. This analysis can serve as the basis to prepare an updated impact fee program.

Impact Fees

Public safety facility costs attributable to new development were initially estimated in August 2010 at \$54.2 million prior to full development of all plan options. With completion of the Master Plan, the final cost is \$62 million. The projected fee allocations to new development within the City of Tracy for facilities expansions and improvements are as follows:

- Low-density residential - \$1,353 per unit
- Medium-density residential - \$1,107 per unit
- High-density residential - \$902 per unit
- Office – \$683 per 1,000 square feet
- Retail - \$410 per 1,000 square feet
- Industrial - \$137 per 1,000 square feet.

The methodology to establish these cost allocations is explained below.

Anticipated New Development

As part of the facilities master planning process, the City of Tracy created a series of land use assumptions for existing service areas as well as future service areas within the Tracy Sphere of Influence. Throughout all of the service areas, the City anticipates approximately 15,000 new single-family residential units, 4,300 multifamily units, 3, 999 acres of industrial, 812 acres of office, and 1,379 acres of retail development. Appendix C provides additional detail on the service areas where this development will occur.

New Facilities Needs

The City of Tracy will need additional public safety facilities to serve the new residents and workers brought into Tracy by the anticipated new development. Jay Farbstein Associates (JFA) projected the new facilities needs of the City of Tracy using assumptions about existing and new development in Tracy, and based on service standards for comparable communities. JFA estimates a need for a total of around 89,000 square feet of new public safety space. Public safety facilities include buildings for the fire department, police department, public safety training, and public safety training site elements.

Facility Type	New Building Construction (Square Feet)	Amount Attributable to Existing Unmet Need (Sq. Ft.)	Percent Attributable to Existing Unmet Need (Sq. Ft.)	Amount Attributable to New Development (Sq. Ft.)	Percent Attributable to New Development (Sq. Ft.)
Fire HQ - Fire Station "A"	5,185	0	0.0%	5,185	100.0%
Fire Station "B"	7,401	0	0.0%	7,401	100.0%
Fire Station "C"	7,401	0	0.0%	7,401	100.0%
Fire Station "D"	7,401	0	0.0%	7,401	100.0%
Fire Station "E"	7,401	0	0.0%	7,401	100.0%
Fire Station 91	0	0	n.a.	0	n.a.
Fire Station 92	0	0	n.a.	0	n.a.
Fire Station 93	0	0	n.a.	0	n.a.
Fire Station 94	0	0	n.a.	0	n.a.
Fire Station 95	0	0	n.a.	0	n.a.
Fire Station 96	0	0	n.a.	0	n.a.
Fire Station 97	0	0	n.a.	0	n.a.
Fire Station 98	0	0	n.a.	0	n.a.
Police Department Service Center	40,990	1,058	2.6%	39,932	97.4%
Public Safety Center + EOC	0	0	n.a.	0	n.a.
Radio Communication Tower	0	0	n.a.	0	n.a.
Training Facility	13,294	0	0.0%	13,294	100.0%
Training Site Elements	0	0	n.a.	0	n.a.
Public Safety Total	89,073	1,058	1.2%	88,015	98.8%

Source: INDIGO/Hammond & Playle Architects, 2013.

Figure 25 – Public Safety Building Cost Allocation to New Development

Existing Unmet Need and Need Attributable to New Development

As indicated in Figure 25, the future need for additional space for public safety is almost entirely attributable to new development, according to JFA’s analysis. Thus, public safety needs attributable to new development amount to just slightly less than the full 89,000 square feet of new building space needed.

Allocation of Needs Between City and Unincorporated Portions of Fire District

Appendix C, Page 3, uses the basic information on annual service calls per square mile for the urban and rural areas within the South County Fire District, from the study titled, Standards of Response Coverage, South County Fire Authority. For each of the new fire stations, A through E, the table shows the square footage of land covered by each station and then the portions of the service that lie in the unincorporated area and within the City of Tracy, weighted by the historic volume of calls for service per square foot of service area. The calculations indicate that approximately 39 percent of the future Fire District service demand served by these stations will be attributable to the unincorporated area, and 61 percent will be attributable to development within the City of Tracy.

Building Costs

The space needs attributable to new development calculated in Appendix C, Page 1, and the calculations of the portion of demand attributable to development within the City of Tracy shown in Appendix C, are applied to the total costs for public safety and public facilities in Appendix C, Page 3. As mentioned previously, the total costs for public safety are estimated at approximately \$62 million. After controlling for the percentage of the new fire station facilities improvements attributable to unmet need and the unincorporated area, about \$53.1 million of this \$62 million total cost needs to be paid by development in the City of Tracy. Then, after deducting for the cost of facilities that are necessary to address existing facility deficiencies, which are attributed to existing development within the City, new development within the City is responsible to pay \$52.5 million in costs. These figures are shown below, in Figure 26.

Facility Type	Total Costs	Costs in City Coverage Area (a)	Costs Attributable to New Development (b)
Fire (a)	\$22,945,000	\$13,956,381	\$13,956,381
Police Department Service Center	\$21,882,000	\$21,882,000	\$21,317,200
Public Safety Center + EOC	\$6,514,000	\$6,514,000	\$6,514,000
Radio Communication Tower	\$2,797,000	\$2,797,000	\$2,797,000
Training Facility	\$4,293,000	\$4,293,000	\$4,293,000
Training Site Elements	\$3,612,000	\$3,612,000	\$3,612,000
Total Public Safety	\$62,043,000	\$53,054,381	\$52,489,581

Notes:
 (a) Applies the percentage attributable to City coverage for fire services from Appendix C. Difference between this column and total is fire facility costs attributable to development outside the City service area.
 (b) Based on analysis conducted by Indigo/Hammond & Playle Architects. See Figure 24.

Sources: Indigo/Hammond & Playle Architects, 2013; Public Building Fee Update, 2007; BAE, 2013.

Figure 26 - Public Safety Building Cost Allocations to City Coverage Area



Anticipated New Equivalent Dwelling Units

Appendix C, Page 2, outlines the projected number of residents living in single-family and multifamily homes¹, and the number of office, retail, and industrial workers within the Tracy Sphere of Influence General Plan service areas. About 45,000 new residents will live in single-family homes, and an additional 9,400 new residents in multifamily homes, for a total of 54,500 new residents. Per City direction, the service demand for each worker is discounted to be equal to 0.5 residents for the public safety calculations. The discount factor reflects the fact that employees typically generate less service demand than residents because they are present in the community for a limited portion of the day and nighttime hours in a week. Therefore, after taking into consideration the “persons per dwelling unit” compared to “square feet per worker,” anticipated new residential and non-residential development will bring a total of about 38,800 new equivalent dwelling units (EDUs) to Tracy.

Preliminary Public Safety Cost Allocations

Dividing the initial \$52.5 million cost attributable to new development in the City of Tracy by the approximately 38,800 new Public Safety EDUs, yielded an average cost per EDU of \$1,353. Applying the EDU adjustment factors based on the number of resident equivalents that each land use generates relative to a single-family home yielded the fee allocations presented at the beginning of this chapter.

These calculations indicate that an updated impact fee sufficient to collect funds to offset new public safety facility costs attributable to new development in the City of Tracy would be approximately 40 percent greater than the City’s current Public Safety fee component, which is \$968 per single-family unit, or EDU.

¹ Low-density residential and medium-density residential units are assumed to be single-family and high-density units are assumed to be multifamily.

FUNDING OPTIONS

The City of Tracy may consider a number of funding options to pay for the proposed public safety facilities. Following is an overview of options that may be available to the City, arranged according to whether costs are attributable to existing development or to new development.

Funding for Costs Attributable to Existing Development

The primary restriction on funding for the costs of facilities that are attributable to existing development is that these costs cannot be included in the calculation of impact fees that will be charged to new development. Following are a number of options that the City could consider:

- **Existing Public Safety Facilities Impact Fee Fund Balance** – Funds previously collected from developments that have been completed (i.e., now part of the base of existing development) but not yet expended are likely to be the first source of funding to pay for existing development’s share of required facilities. The City will need to confirm that funds are eligible to be spent on the improvements included in this Master Plan.
- **Funds Collected as Part of Development Agreements** – To the extent that the City has or will collect revenues from prior or future development agreements to help fund public benefits in general, or specific public safety improvements, the City may have the ability to utilize some of these funds to pay for existing development’s share of costs, depending on the specific terms of individual development agreements. Similarly, if existing or future development agreements call for developers to provide in-kind contributions towards public safety improvements, this may result in “credits” towards the share of costs attributable to existing development.
- **Grants from Other Governmental or Charitable Sources** – To the extent that the City can gain access to grant funds from programs for which improvements included as part of this Master Plan would be permissible uses of funds, such grant funds could help to pay for existing development’s share of the improvements. This may include sources such as Community Development Block Grants from the U.S. Department of Housing and Urban Development and public safety grants from agencies such as the U.S. Department of Homeland Security, and the Federal Emergency Management Agency. Some local, regional, or national charitable organizations may also offer grant funding opportunities from time to time.
- **Parcel Taxes, Assessment Districts and Other Funding Mechanisms Requiring Voter Approval** – If other funding mechanisms discussed above do not provide sufficient funding to cover existing development’s share of costs for public safety improvements, the City could pursue voter approval to establish a new funding source that could involve new parcel taxes, special taxes, special assessments, or other mechanisms. The City would need to hold an election to allow the affected voters to decide if they wish to tax themselves in order to raise the necessary funds. New development areas that will pay impact fees or development agreements and other areas that have already contributed their fair share of costs through prior payment of impact fees or through development agreements could be exempted from paying the new levies. Other mechanisms, such as a local sales tax add-on might also be pursued; however, a local jurisdiction typically must obtain special state enabling legislation prior to submitting the proposal to the

local voters.

- **Infrastructure Financing District** – An infrastructure financing district (IFD) is a mechanism authorized by State law that allows a local jurisdiction to dedicate a portion of the increase in property tax revenues in a specific area to fund certain types of public improvements. IFDs have been seldom used due to their limited ability to generate substantial tax increment (particularly in areas that are mostly developed and subject to Proposition 13’s limitations in annual increases in property tax assessments) and the requirement for voter approval. With the abolition of Redevelopment Tax Increment Financing in California, various legislators have discussed modifications to IFD law and/or new funding mechanisms which might provide more attractive and robust financing mechanisms that may assist the City of Tracy in the future.
- **Bond Proceeds** – If the City has an ongoing source of annual revenues that it can dedicate to debt service payments, the City can issue different types of bonds in order to obtain funds to pay for “up front” costs and then repay the bonds over time. General Obligation bonds, which are backed by the City’s full faith and credit, require voter approval. Other types of bonds, such as Mello-Roos Community Facility District bonds, or certificates of participation (COPS), which involve more limited security for repayments to bondholders may not require voter approval but have different legal requirements.
- **General Fund Allocations** – After other possible funding sources have been exhausted, the City Council will have the discretion to allocate General Fund monies to help pay for existing development’s share of required new facilities, to fill remaining funding gaps.

Funding for Costs Attributable to New Development

Other than existing impact fee fund balances, new development may also contribute its fair share of costs through any of the other funding mechanisms that have previously been mentioned. However, the most typical mechanisms to fund new development’s share are:

- Development Impact Fees
- Mello-Roos Community Facilities Districts
- Special Assessment Districts
- Development Agreements (including provision of in-kind improvements, such as construction of new facilities, or provision of sites for new public facilities)

When mechanisms other than development impact fees are used to pay for only a portion of new development’s share of costs, credits can be given to reduce the amount of development impact fees that would otherwise be paid. In addition, sometimes developers provide more than their fair share of public improvements and agree to be repaid over time by impact fees that are paid by subsequent developers who benefit from the improvements.

In addition, to development impact fees and the mechanisms listed above, private transaction fees are another mechanism that is being utilized more frequently in California and other states to collect funds

from new development. A private transaction fee uses a private sale of real estate to trigger a contractual requirement that funds be paid for a certain purpose. For example, a private transaction fee could stipulate that a certain dollar amount be paid into a fund to pay for public safety improvements every time a home or commercial property is sold, within a specific area. If utilized in place of development impact fees, the City should be aware that private transaction fees may defer the ability to fund new public facilities, since impact fees are typically paid before homes are constructed, while private transaction fees might not be collected until homes are completed and sold to homebuyers.



DESIGN GUIDELINES

In order to assure consistency with existing City guidelines, a review of relevant existing guidelines is shown here, supplemented with additional recommendations relevant to the CPSMP.

General Plan Land Use Guidelines

The City's General Plan Land Use Element includes goals, objectives, policies and actions for all public facilities and specified private improvements:

- Establish a clearly defined urban form and city structure.
- Comprehensively plan for new development in the City's Sphere of Influence.
- Ensure that the public facilities such as schools, parks, and other community facilities are accessible and distributed evenly and efficiently throughout the City.
- Promote efficient residential development patterns and orderly expansion of residential areas to maximize the use of existing public services and infrastructure.
- Encourage development near transit stations including the multi-modal station in Downtown, and the Altamont Commuter Express (ACE) station or stations.
- Expand the City's cultural and arts facilities.
- Locate services and amenities within walking distance of neighborhoods.
- Target new uses for the Downtown to reinforce its role as the heart of the City.
- Establish the Downtown as the governmental and cultural focus for the City and the region.
- Ensure land use patterns that minimize conflicts between transportation corridors and neighboring uses.

See "*City of Tracy General Plan*" (2006).

Civil Engineering and Construction Guidelines

The City has previously commissioned a study that includes minimum standards for the design, construction, maintenance, repair, and alteration of all public facilities and specified private improvements:

- Roadways.
- Storm Drainage.
- Wastewater Facilities.
- Water Facilities.

See "*City of Tracy Engineering Design & Construction Standards*" (2008).

Streetscape Design Guidelines

Guidelines ensuring that the installed landscape enjoys a long lifespan, is aesthetically pleasing, with minimal maintenance and watering requirements. Tracy's Downtown has a compact, grid street system and serves as the historical heart of the City. There are numerous historical buildings that enhance the City's identity, walkable main streets with a diverse mix of uses, and a small town urban fabric. The City has previously commissioned a study that includes:

- Sound Wall Design.
- Planting Design.
- Irrigation Design.
- Side Streetscapes, Medians and Intersections.

See “*City of Tracy Streetscape Design Guidelines: A Guideline for Improvements and Renovations to New and Existing Streetscapes*” (2006).

General Plan Community Character Urban Design Principles

The City’s General Plan Community Character Element includes urban design principles for all public facilities and specified private improvements:

- Human-scale Design.
- Focal Points.
- Edges.
- Visual Landmarks and Entryways.
- Building Siting to Hold Corners.
- Pedestrian Orientation.

See “*City of Tracy General Plan*” (2006).

Urban Design Guidelines²

- Parcel Geometries
 - City buildings shall, with some exceptions, be oriented parallel to the existing public streets.
 - Civic Center buildings south of 10th Street shall remain oriented 45 degrees to the other parcels in order to align with the existing diagonal walkways.
- Build-to Lines
 - To create clearly defined public spaces, the City shall impose build-to lines.
 - The goal is to have a minimum of 80% of each building conform to a typical build-to line.
- Pedestrian Plazas, Arcades and Entries
 - Buildings shall be designed to enhance the definition and the quality of the plazas they face.
 - Major pedestrian entries of civic buildings shall be from boulevards or major plazas.
 - Entries shall be easy to find and inviting and shall be protected from the elements by covered arcades.
 - Arcades shall be provided to unify civic buildings co-located on the same site and not separated by a vehicular way.
- Landmark Buildings
 - All landmark buildings will have prominent roof forms developed from a three tiered hierarchy: major, secondary, and minor.
 - Major landmarks shall be the tallest, rising significantly above the nearest roofs.
 - The major landmarks are to be the most recognizable from afar and have the most memorable forms.
 - The secondary landmarks shall be visibly distinct when seen from the vantage of the nearest public street or easement. These landmarks should not compete with the major landmarks.
 - The minor landmarks are special buildings that should be architecturally distinct from, be easier to find, and be more inviting than the other non-landmark buildings.
 - All other buildings shall have flat roofs with natural colored roof ballast.

² Adapted from *Civic Center Urban Design Guidelines*, Group 4, 1999
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CITYWIDE PUBLIC SAFETY MASTER PLAN



Architectural Design Guidelines³

These guidelines have been developed to maintain a high quality appearance and to assure compatibility and harmony of all buildings. The guidelines are not intended to limit creative design or individuality. These guidelines shall apply unless an exceptional quality of design, materials, and contribution to the common character and public spaces can be demonstrated.

The architecture of Tracy's public buildings should promote a civic identity appropriate to the importance of the site. Each building should be reflective of the following:

- Be of enduring quality.
- Demonstrate design excellence.
- Unacceptable styles or themes
 - Overtly historical.
 - Mission or Spanish revival.
 - Residential scale or imagery.
 - Commercial or retail imagery.
 - Corporate or office building style or imagery.
- Required Building Features
 - Arcades.
 - Varied building forms.
 - Pedestrian scaled elements
 - Articulated building "bases" at a pedestrian scale. Building bases should, at appropriate locations, be suitable as places to sit.
 - Rhythm of windows and wall scaled to the walking pace of a pedestrian.
 - Interesting elements and details to look at.
 - Places to gather.
 - Garden walls and trellises.
 - Prominent roofs
 - Visible from major boulevards and promenades.
 - Material shall be metal, concrete, or concrete tile of a neutral shade.
 - Articulated from the building mass.
 - Flat roofs are not acceptable for landmark buildings.
- Materials and Finishes
 - Stone, brick or concrete masonry
 - Cast-in-place or precast concrete
 - Cement Plaster
 - Metal, concrete, or clay tile (flat profile) roofing for landmark buildings
 - Parapet bordered, ballasted, membranes for flat roofs.
- Color Strategy
 - Bright and sunny
 - Light colors predominate
 - Neutral shades on roofs and special wall surfaces
 - Complimentary colors on accent features

³ Adapted from *Civic Center Urban Design Guidelines*, Group 4, 1999
FINAL REPORT
CITYWIDE PUBLIC SAFETY MASTER PLAN

Sustainability Measures

The City's Sustainability Action Plan includes measures to achieve sustainability targets as applicable for all public facilities and specified private improvements:

- Green Building Ordinance
- Energy Efficiency in Site Planning and Design
- Energy Efficient Products
- Energy Efficient Retrofits for City Street Lights
- Solar Panel Installations on Municipal Facilities
- Energy Efficiency Settings for City Desktop Computers
- Reduced Parking Requirements
- Support for Bicycling
- Support for Transit
- Smart Growth, Urban Design and Planning
- Parking Cash-Out Programs for Employees
- Increased Use of Low Carbon Fueled Vehicles
- High-Density Infill Projects
- Non-Toxic Building Materials
- Green Building Training for City Staff
- Emerald Tracy Website
- San Joaquin Council of Governments Sustainable Communities Strategy

See "City of Tracy *Sustainability Action Plan*" (2011).

This study augments the above already published measures with the following regional-appropriate measures to achieve sustainability, including extending the survivability of facilities. These are recommended as design guidelines for the public facilities to be built resulting from this master plan.

Extended Survivability – Facilities built under the CPSMP should be designed with extended survivability built-in. The recent earthquake & tsunami in Japan is yet another example of what happens in disasters when structures are not able to survive and remain in service. This was probably a 300-year event, but the probability of such events is often misunderstood and misused. This event could easily have happened today, here in California. While an ocean tsunami is not possible in Tracy, the area is certainly earthquake-prone. The USGS database shows that there is a 98.035% chance of a major earthquake within 50 kilometers of Tracy – well within the lifetime of Tracy's public buildings and representing a serious threat to the delivery of public services when they are needed most.

This may be the City of Tracy's highest duty and responsibility - to serve the public during times of critical emergency. (See Figure 27.)



Figure 27 - Earthquake, Chile

To do so, the City must have facilities that have survived any predicted event and remain functional and can support emergency service delivery. Most planning and building design standards for earthquakes are based on the ability of a structure to withstand only a 100-year event. The earthquake and tsunami in Japan, Hurricane Katrina, and other major events demonstrate the need for facilities to remain useable post disaster for extended periods without electric power and other services. Designing for this is called the “*extended survivability*” design process.

Extended Survivability Defined - “*Extended Survivability*” is the ability of a facility to remain useable even when disaster has stricken and electric and other utilities are down for extended periods. As an urban planning and architectural design concept, it defines how a district or building is able to continue to operate even during a protracted outage of utility services such as electric power, natural gas, water and sewerage. As applied in California, it defines the ability to survive the maximum anticipated earthquake, forest fire, flood or other natural disaster, and to endure the prolonged power and other outages that may follow. At present, public safety facilities need only to comply with minimum building code requirements and provide for emergency power generation for a limited period of time, up to 72 hours. Largely unaddressed, however, is the long term functionality of the post-disaster facility. Examples of earthquake-resistant design are shown in Figure 28, Figure 29, Figure 30, and Figure 31.



Figure 28 – Viscous Damper Retrofit, Kent WA

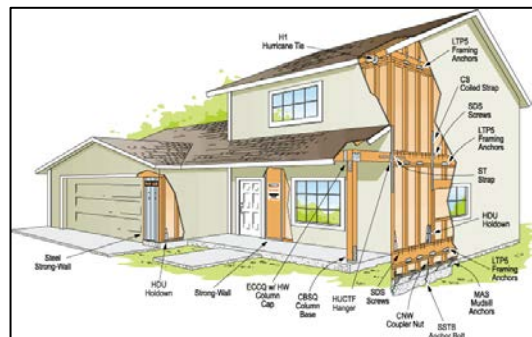


Figure 29 – Code-Prescribed Earthquake-Resistance

This is where extended survivability comes in. This is especially critical for Police and Fire essential services buildings which need to function after a disaster. Advances in earthquake engineering, energy conservation, and design with climate and onsite energy production have made this possible to achieve. However, it requires the adoption of a new architectural and engineering design paradigm. A major component of this paradigm is the use of sustainable and passive design with climate-adapted techniques.

Passive planning and design principles utilize the forces of nature to help ensure continued building functionality. Structural design techniques such as using “shock absorbers” in the frame to soften the blow of earthquake forces, allow the building to respond with minimal impact to structure and contents. (See Figure 34, p.47) Use of natural lighting from skylights and windows allows daytime building use without electric power for lighting.

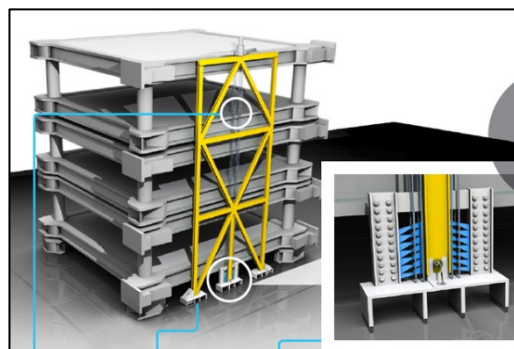


Figure 30 – Steel Fuse Technology, Stanford & Northeastern Universities

Natural ventilation and operable windows help ensure that the building can be used even when power or fuel supply for mechanical systems is compromised. Heating and cooling load avoidance strategies, passive solar design principles, and use of thermal mass to reduce indoor temperature fluctuation are all effective techniques. The reduced demand on emergency power generation resulting from the above listed strategies greatly extends the period of time when the building can remain operational. Finally, small photovoltaic electric systems can then maintain computer and critical communications functionality.

Benefits & Relation To Sustainability - The three main benefits of extended survivability in buildings are: 1) *extended emergency operations* are provided long after onset of an emergency, 2) *workplace quality* is dramatically improved and 3) *energy-efficiency* is improved substantially reducing energy costs and making LEED certification easier.

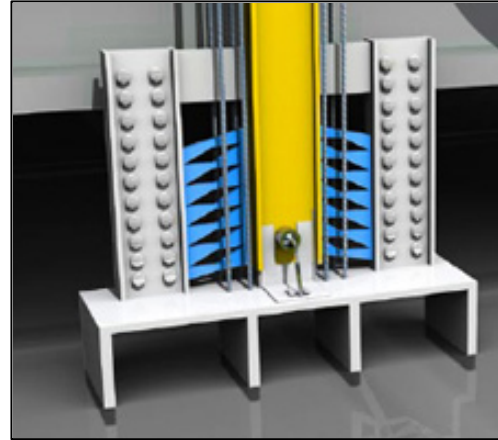


Figure 31 – Steel fuses (in blue) contort to absorb seismic energy; they can be replaced, restoring to pre-earthquake conditions.

Extended Emergency Operations - The first benefit is that services remain available in a post-emergency scenario and allow for continuous, operations long after the onset of an emergency event such as earthquake, flood, fire, etc. Services required for functionality, building envelope integrity, safety provisions, water and energy availability and the presence of light and air are all provided in a cascading arrangement depending on the extent and duration of emergency. (See Figure 32.)

OPERATION		NORMAL MODE	EMERGENCY MODE	EXTENDED SURVIVABILITY MODE
		normally available (N)	<72 hr. post-event (E)	>72 hr. post-event (ES)
FUNCTION	All functions fully operational	X		
	Most functions are operational	X	X	
	Critical functions are operational	X	X	X
ENVELOPE	Envelope is intact and fully functional	X		
	Envelope, if damaged, can be immediately occupied	X	X	
	Envelope, if damaged, operates in manual mode	X	X	X
	Envelope admits natural light and air for occupancy	X	X	X
SAFETY	Structure resists all normal and lateral loads	X		
	Structure may be damaged but is safe to occupy	X	X	
	Structure and utilities may be damaged but safe to occupy	X	X	X
WATER	Water systems are fully available	X		
	Water supplied by City pressure or e-generator pumps	X	X	
	Water provided only by storage or solar pumps	X	X	X
ENERGY	Normal heating and cooling is available	X		
	Heating and cooling powered by e-generator	X	X	
	Passive heating and cooling, thermal mass	X	X	X
	Photovoltaic with battery backup	X	X	X
LIGHT & AIR	Mechanical ventilation fully available	X		
	Electric lighting fully available	X		
	Electric lighting available assist from e-generator	X	X	
	Natural ventilation with power assist from e-generator	X	X	
	Natural lighting available with battery night lighting	X	X	X
	Natural ventilation available	X	X	X

Figure 32 - Table of Extended Emergency Operations

Normal (N) Mode operations provide for full serviceability. Emergency (E) Mode operation takes effect during the first 72 hours of an emergency and provides most services normally available, thanks in large part to the presence of emergency power generation with proper fuel supply. (See Figure 33.) Extended Survivability (ES) Mode provides for continued serviceability during protracted emergencies when the grid may be down for long periods of time, beyond the 72-hour duration fuel supply and when refueling may not be an option due to the nature of the emergency, for example in a major earthquake. In this mode of operation, unlimited and ongoing operations of critical systems are possible.



Figure 33 – Emergency Generator with Shear Lugs Added to Seismic Skid Mount

The traditional code-based design approach does not design with extended survivability in mind. Design to code-only assures life safety for typical structures so people can get out, but does not limit damage to the degree that the building can remain in use. After an earthquake, for example, buildings still standing must often undergo major rehabilitation or be completely replaced due to the prohibitive cost of repair. Extended survivability design protocol includes the use of high performance engineering methodologies instead of prescriptive code-based design techniques. (See Figure 34.)



Figure 34 - Earthquake Protected Police Building with Seismic Dampers & Daylighting, Vacaville, CA

Workplace Quality Improved - The second benefit of designing for extended survivability is that a much higher quality workplace environment results from the use of natural lighting and ventilation. Daylight provides building users with superior visual acuity, a sense of psychological well being, and dramatic energy savings. Extensive research has shown that naturally lit buildings which control the use of daylight for the benefit of the occupants improve worker satisfaction and productivity as well as reduce absenteeism. This is due to the superior quality of natural light, exposure to the diurnal cycle and the provision of exterior views which are all part of a daylighting strategy. Just as we bring daylight and air inside the building envelope, we understand the importance of bringing people to the outside of buildings. Shelter, good solar orientation, courtyards and covered walkways provide outdoor spaces which can be used year-round.

Energy-efficiency, LEED and Sustainability - The third benefit is that the planned absence of energy to run the building causes the designer to consider the climate of a region in its design, which in turn makes a building inherently more energy-efficient. Designing for the specifics of climate is the most powerful way to reduce energy consumption. By designing with natural systems instead of trying to override them, low-cost or even no-cost energy reduction gains are made. In simple terms, passive solar, thermal mass storage, natural lighting and ventilation and other low-cost sensible techniques are employed to reduce reliance on energy-intensive mechanized solutions.

Developing a strong, simple extended survivability rationale results in elegant building designs that harness natural forces with the latest in technology and, in the process, make buildings more easily certifiable in high-performance building programs such as LEED. The path to LEED, zero net-energy buildings and carbon neutrality becomes easier to follow under the extended survivability framework, helping Tracy meet those goals, as well as creating highly energy-efficient public facilities which are better, more productive work environments.

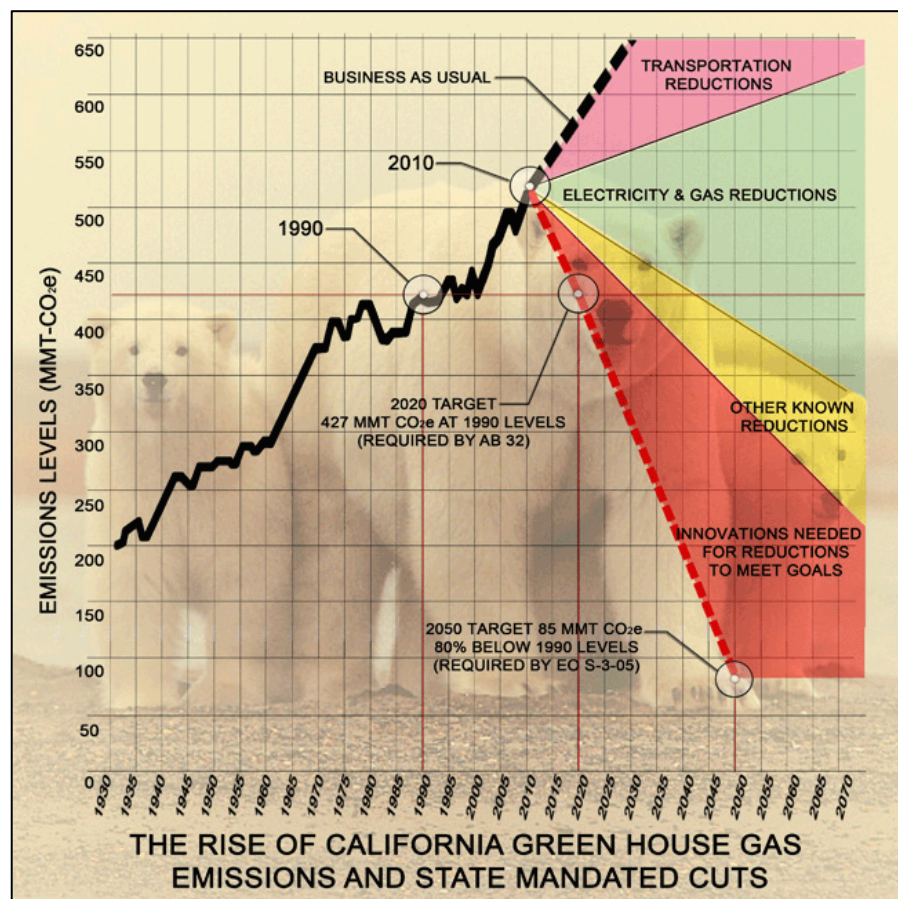


Figure 35 - Green House Gas Mandate

Green House Gas Reduction - Extended survivability and energy efficiency measures directly mitigate greenhouse gas (GHG) emissions, facilitating City of Tracy compliance with AB 32 and EO S-3-05. The GHG target from Tracy's Sustainability Action Plan is a 15 percent reduction in per capita emissions from the 2006 baseline of 11.6 metric tons of carbon dioxide equivalent. This target is adopted as a facility design guideline for the public facilities resulting from this CPSMP.

Green house gases (GHG) trap heat in the atmosphere, causing the earth to warm. The scientific consensus on climate change is that the fossil fuel driven increase in CO2 emissions has caused a rapid increase in global average temperatures over the past one hundred years; this is particularly evident over the last five decades.

In response, California has enacted climate change legislation, most notably AB 32, which establishes climate change emissions reduction targets for the state. AB 32 requires GHG emissions to be reduced to 1990 levels by 2020 and EO S-3-05 would see emissions drop to preindustrial levels by 2050. General Plan update CEQA approvals offer the path to AB 32 compliance for Cities, with the State Attorney General providing ultimate oversight and enforcement.

Local governments have a unique ability to effect GHG mitigation by adopting Climate Action Plans (CAPs). When successfully amended to the General Plan, City and county CAPs provide a roadmap to reduce not only direct operational GHG emissions, but also influence the GHG footprints of citizens, industries, and businesses within their jurisdiction. Through visibility and purchasing power, local governments can set an example for households and businesses in their GHG-reduction practices. Nearly every local, county and state agency in California is acting to mitigate GHG emissions. (See Figure 35 and Figure 35)

Net Zero-Energy Buildings (ZEB) Definition - Net zero-energy buildings (ZEB), including their site, consume zero net energy and emit zero net carbon annually. The result is net zero energy costs, when averaged over a year, for the City.

Simplified ZEB Protocol - Designing for the specifics of climate is the most powerful way to reduce energy consumption and achieve zero-net energy buildings. By designing with natural systems instead of trying to override them, low-cost or even no-cost energy reduction gains are made. In simple terms, passive solar, thermal mass storage, natural lighting and ventilation and other low-cost sensible techniques are first employed. Once the basic building envelope has been optimized for the particular Central Valley climate zone for Tracy, efficient mechanical and electrical systems are used that support all facility uses such as lobbies, office, and training space. Total yearly energy demand is then calculated and converted to photovoltaic capacity in kW to offset this demand. (See Figure 36, p.50.)

ZEB and Life Cycle Cost - Choices at every stage - from standards and specifications to design and construction - are made based on efficacy of function, energy-efficiency, durability and cost. Cost is not only first cost but life cycle cost including maintenance, operations, recycling and replacement cost. Since total envelope and process loads are reduced to minimum, there is a corresponding reduction in the offset cost to achieve zero-net energy since less on-site renewable energy (e.g. photovoltaics) is required. This means less cost to installed KW capacity.



Figure 36 - Net Zero-Energy Transportation Center, Vacaville, Ca.

Facility Design Recommendations – A menu of key extended survivability and sustainability features, where appropriate, recommended for the buildings included in the CPSMP, includes:

- **Photovoltaic power for critical needs** – Consider small-scale rooftop photovoltaics array to power critical emergency circuits, IT, radio, etc. Could be rooftop mounted or site racks.
- **Isolate and protect critical utilities** – Evaluate each building system for criticality including but not limited to radio, telecommunications, power, sanitary sewer, potable water, etc. Identify feasible measures which can be cost-effectively taken to harden against flooding, earthquake or other threat to be determined.
- **Design structures to “immediate-occupancy” level** – The new Police Department Service Center and Fire Stations will be designed to the highest structural level, that of immediate occupancy, which means that the structural frame and all building services will be available after a seismic event.
- **Use seismic dampening to improve survivability at same cost** – Consider use of viscous fluid dampers (VFD) or other structural dampening techniques to increase the resilience of the building frame under earthquake loads, improving survivability during and serviceability after an earthquake.
- **Use energy-efficient design to extend survivability and reduce utility bills** – A variety of measures such as east-west building orientation, use of thermal mass, high-efficiency mechanical strategies, etc. will reduce energy consumption and extend the duration in which emergency power can be provided.
- **Use natural light and ventilation to improve workplace quality and extend survivability** – Use of natural lighting and ventilation provides for a high-quality workplace day-in and day-out, but also

means that the building can be passively operated and inhabited when emergency power has been exhausted.

- **Make full use of daylighting** – Make full use of windows for daylight, use skylights at roof so that most of building can be naturally lit for use in emergency. Daylighting means that primary work spaces are provided with natural light from skylights and/ or high windows with light shelves, with the electric lighting system controlled by light sensors which automatically turn them off when there is sufficient natural light. 30% - 50% of the energy used by most buildings in the U.S. goes into lighting, a large share of that can be saved by a daylighting system.
- **Add window shading** – Use overhangs, solar screens and other devices to permit view out, yet reduce summer heat load, reduce air conditioning demand and extend duration of emergency generator power due to reduced rate of fuel consumption. Saves on utility bill, too.
- **Provide super-insulation** – Maximum insulation values are utilized. Wall insulation of up to R-40 is encouraged, twice the usual thermal resistance of a wall. Roof insulation values between R-30 and R-40 are desired. Consider alternative building technologies like using California’s Central Valley’s own straw bale as insulation for buildings which provides up to R-40 walls.
- **Increase thermal mass** – Heat storage capacity is maximized through the use of high specific heat and heat capacity materials such as concrete, masonry and even interior wallboard assemblies. Novel use of materials to increase thermal mass should be considered such as straw bale covered concrete exterior walls, concrete floor and concrete roof to name a few. The large heat storage capacity of these surfaces will moderate temperature swings in the building and reduce the demand for heating and cooling. The resulting “thermal flywheel” effect can be amplified through use of nighttime ventilation strategies to help “carry” the building through hot summer days with less mechanical cooling required.
- **Nighttime ventilation** – During the summer, when the night air is cool, buildings can be ventilated with outside air to cool the heavy mass of interior and exterior walls. A cool slab and heavy mass walls will help keep the building cool for much of the day. Thus, demand for mechanical refrigeration cooling can be greatly reduced in Tracy’s hot climate.
- **Reflective cool roof** – Where re-roofing is required, use “cool roof” products. Roofs should be cool roof designs which reduce roof surface temperatures, reduce heat transmission into the building and reduce “heat island” effect.
- **Use natural ventilation** – Natural ventilation or mixed-ventilation delivery of outside air could be provided. Naturally ventilated air will flow from low vents to high vents.
- **High-efficiency mechanical systems** – Use high-efficiency mechanical systems which will reduce utility bills at same time as extending duration of emergency generator power due to reduced rate of fuel consumption. Consider water-based systems in order to avoid the inherently less-efficient heat transfer provided by air-based systems.
- **Raise sites for minimum 100-year flood protection** – Public facility sites should be raised minimum 1’ above base flood elevation (BFE) to protect against projected 100-year flood events. Consider berming to further protect against flooding.
- **Design two-story buildings** – This provides a second level retreat in case of severe flooding, helping ensure delivery of public services during emergencies. Also saves land. The resulting compact building design allows multiple departments to share one elevator, resulting in a resource-efficient and energy-efficient design.

- **Place critical functions on second floor** – In order to provide an area of retreat in case of flooding which exceeds the 100-year projection, place critical functions on second floor where flood water will not reach. Critical functions include the Emergency Operations Center (EOC), Dispatch/ Communications, other.
- **Elevate emergency generator and fuel supply** – Raise emergency power generator and its 72-hour fuel supply to be able to withstand any flooding risk, also includes transfer switch and emergency power panels. Space below to be used for storage and hardened against flooding.

Projected staffing for public safety agencies are shown in the table below. It should be emphasized that staffing projections are an intermediate step to determine needed facilities, and are not a basis for budgeting future positions.

	FY 10/11	Build Out	Comment
Police Department			
Police Administration			
Chief of Police	1.0	1.0	Sworn
Deputy Chief	0.0	1.0	Sworn
Captain	1.0	0.7	Sworn
Lieutenant	0.0	0.7	Sworn
Sergeant	0.0	4.2	Sworn
Public Information Officer	0.0	1.8	Sworn
Executive Assistant	1.6	1.8	Civilian
Administrative Assistant	0.0	0.9	Civilian
Field Operations			
Captain	1.0	0.7	Sworn
Lieutenant	4.0	5.6	Sworn
Administrative Assistant	0.8	1.0	Civilian
Community Service Officer	2.4	3.7	Civilian
Field Patrol Unit			
A-Team Patrol			
Sergeant	3.0	3.6	Sworn
Corporal	0.0	5.6	Sworn
Officer	20.1	21.3	Sworn
Community Services Officer	0.8	0.0	Civilian
B-Team Patrol			
Sergeant	3.0	3.6	Sworn
Corporal	0.0	5.6	Sworn
Officer	20.1	21.3	Sworn
Community Services Officer	0.8	0.0	Civilian
C-Directed Patrol Team			
Sergeant	1.0	1.8	Sworn
Officer	4.8	11.4	Sworn
Civic Center Substation			
A-Patrol			
Sergeant	0.0	2.0	Sworn
Officer	0.0	2.7	Sworn
B-Patrol			
Sergeant	0.0	2.0	Sworn
Officer	0.0	2.7	Sworn
Community Services Officer	0.0	0.9	Civilian
Administrative Assistant	0.0	0.8	Civilian
Traffic & Parking			
Lieutenant	0.0	0.7	Sworn
Sergeant	1.0	1.8	Sworn
Officer	3.5	4.2	Sworn
Parking Enforcement	0.0	1.8	Civilian
Parking Enforcement Intern	0.8	0.0	Civilian

(table continued on following page)



	FY 10/11	Build Out	Comment
Police Department Staffing (continued)			
Community Preservation Unit			
School Resource Officer	2.9	6.6	Sworn
Neighborhood Resource Officer	1.9	6.6	Sworn
Crime Prevention Specialist	0.8	1.8	Civilian
Animal Services Supervisor	1.0	1.0	Civilian
Animal Services Officer	3.3	3.6	Civilian
Youth Services Unit			
Lieutenant	0.0	0.7	Sworn
Sergeant	0.0	0.6	Sworn
Officers	0.0	4.2	Sworn
Support Operations Administration			
Support Ops Manager	1.0	1.0	Civilian
Executive Assistant	0.8	0.9	Civilian
Records Unit			
Records Supervisor	1.0	1.8	Civilian
Police Record Assistants	4.9	9.2	Civilian
Communications			
Communications Supervisor	1.0	1.0	Civilian
Lead Dispatchers	0.0	2.8	Civilian
Dispatchers	10.0	15.6	Civilian
Crime Analyst	0.8	1.8	Civilian
Special Operations Division			
Captain	1.0	0.7	Sworn
Lieutenant	1.0	0.7	Sworn
General Investigations Unit			
Sergeant	1.0	1.8	Sworn
Administrative Assistant II	0.8	0.9	Civilian
Detective	7.6	17.4	Sworn
Gang & Narcotics			
Sergeant	1.0	1.8	Sworn
Officer	7.6	13.7	Sworn
Forensic Services Unit			
Crime Scene Supervisor	1.0	1.0	Civilian
Crime Scene Technician	3.3	3.6	Civilian
Professional Standards Unit			
Sergeant	0.0	0.7	Sworn
Professional Standards Officer	0.5	1.8	Sworn
Subtotal Sworn Officers	88.0	163.3	
Subtotal Civilians	36.9	56.9	
Police Department Total	124.9	220.2	

	FY 10/11	Build Out	Comment
Fire Department			
Fire Chief	1.00	1.0	Certified
Division Chief	3.00	3.0	Certified
Administrative Unit			
Executive Assistant	1.00	1.0	Civilian
Administrative Assistant II	1.00	1.0	Civilian
Fire Prevention Division			
Fire Inspectors	2.00	3.2	Civilian
DES Allocation	0.30	0.5	Civilian
Fire Operations Division			
Battalion Chief	0.00	3.0	Certified
Administrative Assistant II	0.00	0.6	Civilian
Fire Captain	24.00	39.0	Certified
Fire Engineer	24.00	39.0	Certified
Firefighter	21.00	39.0	Certified
Fire Reserve	1.94	3.5	Certified
Fire Training Division			
Fire Captain	0.00	1.0	Certified
Administrative Assistant II	0.00	0.6	Civilian
Subtotal Certified Firefighters	74.94	128.50	
Subtotal Civilian	4.30	6.90	
Fire Department Total	79.24	134.80	

Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Police Department						
Police Department Service Center						
Administration						
Chief of Police	300	1	300	1	300	
Deputy Chief	200	0	0	1	200	
Captain	160	1	160	1	160	
Lieutenant	160	0	0	1	160	
Sergeant	105	0	0	5	525	
Public Information Officer	100	0	0	2	200	
Executive Assistant	120	2	240	2	240	
Administrative Assistant	64	0	0	1	64	
Reception/Waiting	225	1	225	1	225	
Conference Room	230	1	230	1	230	
File Room	85	1	85	1	85	
Coffee Counter	20	1	20	1	20	
Supply	30	1	30	1	30	
Subtotal, Net Area			1,290	2,439		
Departmental Area (add 30%)			1,680	3,170		
Field Operations						
Watch Commander's Office	140	1	140	1	140	Shared by lieutenants
Captain	160	1	160	1	160	
A and B Team Patrols						
Sergeants	150	1	150	1	150	Shared office for 2
Corporals	150	1	150	1	150	Shared office for 2
C-Directed Patrol Team						
Sergeants	150	1	150	1	150	Shared office for 2
C-Directed Patrol Ready Room	240	1	240	1	240	
Administrative Assistant II	64	1	64	0	0	
Community Service Officer	190	1	190	1	190	Shared office for 3
Conference Room	100	1	100	1	100	4-5 occupants
Report Area	24	4	96	6	144	
Briefing Room	300	1	300	1	300	
Armory	100	1	100	1	100	
SWAT Armory	100	1	100	1	100	
Patrol War Bag Storage	—	0	10	1	20	Shelves with access zone
Files	—	0	140	1	240	
Equipment Room	—	0	110	1	200	
Mail Boxes	—	1	80	1	120	
Subtotal, Net Area			2,280	2,504		
Departmental Area (add 30%)			2,960	3,260		



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Traffic & Parking Enforcement						
Lieutenant	160	0	0	1	160	
Sergeant	120	1	120	2	240	
Officer Workstations	64	4	256	5	320	
Parking Enforcement	48	0	0	2	96	
Parking Enforcement Intern	48	1	48	0	0	
Equipment Room	80	1	80	1	80	
Subtotal, Net Area			504		896	
Departmental Area (add 30%)			660		1,160	
Community Preservation Unit						
School Resource Officer (SRO)	64	3	192	7	448	
Neighborhood Resource Officer	64	2	128	7	448	
Crime Prevention Specialist	96	1	96	2	192	
Crime Prevention Volunteers	48	3	144	5	240	
Counter	50	1	50	1	50	
Animal Services Supervisor	120	1	120	1	120	
Animal Services Officer	48	4	192	4	192	
Subtotal, Net Area			922		1,690	
Departmental Area (add 30%)			1,200		2,200	
Youth Services Unit						
Lieutenant	160	0	0	1	160	
Sergeant	120	0	0	1	120	
Officer	64	0	0	5	320	
Subtotal, Net Area			0		600	
Departmental Area (add 30%)			0		780	
Total Field Operations Net			3,706		5,690	
Departmental			4,820		7,400	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Support Operations Administration						
Support Ops Manager	190	1	190	1	190	
Executive Assistant	120	1	120	1	120	
Records Unit						
Records Supervisor	120	1	120	1	120	Shared between shifts
Police Record Assistants	64	6	384	6	384	Shared between shifts
Service Counter	50	1	50	1	50	
Fingerprint Livescan	25	1	25	1	25	
File Area	—	1	150	1	220	High density storage
Work Room	220	1	220	1	220	
Document Scanning	100	1	100	1	100	
Storage	100	1	100	1	100	
Coffee Counter	20	1	20	1	20	
Crime Analyst	100	1	100	2	200	
Conference Room	150	1	150	1	150	
Mail Room	100	1	100	1	100	
Mail Boxes	20	1	20	1	20	Alcove outside mail room
Shipping & Receiving	120	1	120	1	120	
Subtotal, Net Area			1,969		2,139	
Departmental Area (add 30%)			2,560		2,780	
Special Operations Division						
Captain	160	1	160	1	160	
Lieutenant	160	1	160	1	160	
General Investigations Unit						
Sergeant	120	1	120	2	240	
Administrative Assistant II	64	1	64	1	64	
Detective	24	8	192	18	432	
Gang & Narcotics						
Sergeant	120	1	120	2	240	
Officer	24	8	192	14	336	
Property Receiving & Staging						
Work Area	100	1	100	1	100	
Lockers	60	1	60	1	60	
Professional Standards Unit						
Sergeant	120	0	0	1	120	
Professional Standards Officer	64	1	64	2	128	
Shared Spaces						
Equipment Room	50	1	50	1	50	
Reception Counter	50	1	50	1	50	
Interview Room	50	3	150	4	200	
Conference Room	250	1	250	1	250	
Copy/Supply	80	1	80	1	80	with plotter
Subtotal, Net Area			1,812		2,670	
Departmental Area (add 30%)			2,360		3,470	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Temporary Holding Facility						
Vehicular Sallyport	430	1	430	1	430	
Pedestrian Sallyport	50	1	50	1	50	
Prebooking	100	1	100	1	100	
Identification	100	1	100	1	100	
Shower	50	1	50	1	50	
Property	100	1	100	1	100	
Holding Cell	60	5	300	8	480	
ADA Holding Cell	60	1	60	1	60	
Interview Room	80	1	80	1	80	
Subtotal, Net Area			1,270		1,450	
Departmental Area (add 30%)			1,650		1,890	
Ancillary Areas						
Lobby	1,000	1	1,000	1	1,000	
Probation Office	100	1	100	1	100	
Community/Conference Room	250	1	250	1	250	
Live Scan	80	1	80	1	80	
Interview Room	80	1	80	1	80	
Break Room	120	1	120	1	120	
Staff Lactation Room	80	1	80	1	80	
Fitness Room	860	1	860	1	860	
Men's Lockers	22	55	1,183	163	3,505	62% with shower & toilet
Women's Lockers	22	33	710	62	1,333	38% with shower & toilet
DOC	980	1	980	1	980	Former EOC
DOC Conference	325	1	325	1	325	
DOC Table & Chair Storage	145	1	145	1	145	
Computer Room	400	1	400	1	400	
Subtotal, Net Area			6,312		9,258	
Departmental Area (add 30%)			8,210		12,030	
Summary for Police Department Service Center						
Net Area			16,359		23,646	
Departmental Area			21,280		30,740	
Gross Area (75% efficiency)			28,370		40,990	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Police Department						
Police Functions at Civic Center						
Communications						
Communications Supervisor	160	1	160	1	160	spare console in office
Communications Operator	64	6	384	6	384	
Lockers	—	1	42	1	63	
Storage	100	1	100	1	100	
Break Room	100	1	100	1	100	
Toilet	50	1	50	1	50	
Equipment Room	80	1	80	1	80	
Subtotal, Net Area			916		937	
Departmental Area (add 30%)			1,190		1,220	
Property Management						
Crime Scene Tech Supervisor	120	1	120	1	120	All forms of prop storage
Crime Scene Technician	64	4	256	4	256	
Receiving & Processing Area	260	1	260	1	260	
Evidence Viewing	100	1	100	1	100	
Laboratory	90	4	360	4	360	
Computer Forensics	320	1	320	1	320	
Chemical Storage	100	1	100	1	100	
Equipment Storage	100	1	100	1	100	
Waste Area	80	1	80	1	80	
Property Room	—	1	3,600	1	5,200	
Subtotal, Net Area			5,296		6,896	
Departmental Area (add 30%)			6,880		8,960	
Civic Center Substation						
Reception	80	0	0	1	80	
Public Counter	50	0	0	1	50	
Sergeant	120	0	0	1	120	
Administrative Assistant	64	0	0	1	64	
Community Services Officer	64	0	0	1	64	
Work Area	90	0	0	1	90	
Interview Room	80	0	0	1	80	
Men's Lockers	210	0	0	1	210	
Women's Lockers	160	0	0	1	160	
Armory/Equipment	60	0	0	1	60	
File//Copy Area	45	0	0	1	45	
Subtotal, Net Area			0		1,023	
Departmental Area (add 30%)			0		1,330	
Police Total Net Area			22,571		32,502	
Police Total Departmental Area			29,350		42,250	
Police Total Gross Area			39,130		56,340	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Police Department						
Police Department Vehicles						
Administration		3		7		
Patrol						
Sedan		33		52		
Light Pickup		4		5		
Traffic						
Sedan		1		1		
Motorcycles		5		7		
Parking (Light Pickup)		1		2		
Volunteers						
Sedan		3		5		
Light Pickup		1		2		
Animal Shelter						Not in this scope
Detectives						
Sedan		6		11		
SUV		1		2		
Youth Services		0		2		
Community Preservation		4		9		
Property Management						
SUV		2		2		
E250		1		1		
Communications (generator)		1		1		
SWAT						
F700		1		1		
Econoline		1		1		
Command Post (Mobile Command Center)		1		1		
Police Vehicles Total		69		112		
Emergency Operations Center						
EOC	1,000	0	0	1	1,000	
Conference	240	0	0	2	480	
Table & Chair Storage	150	0	0	1	150	
Intermediate Distribution Frame	80	0	0	1	80	
Subtotal, Net Area			0		1,710	
Departmental Area (add 30%)			0		2,220	
EOC Total Gross Area			0		2,960	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Fire Department						
Administration						
Fire Chief	320	1	320	1	320	
Division Chief	220	3	660	3	660	
Executive Assistant	100	1	100	1	100	
Administrative Assistant II	64	1	64	1	64	
Fire Prevention						
Fire Inspectors	64	2	128	4	256	
DES Allocation	64	1	64	1	64	
Layout	32	1	32	1	32	
Fire Operations (Administrative)						
Battalion Chief	190	0	0	3	570	
Administrative Assistant II	64	0	0	1	64	
Fire Training Division						
Fire Captain	120	0	0	1	120	
Administrative Assistant II	64	0	0	1	64	
Shared Spaces						
Reception	100	1	100	1	100	
Conference Room	530	1	530	1	530	
Training Room	740	1	740	1	740	Becomes DOC in future
Copy Room	80	1	80	1	80	
Break Room	100	1	100	1	100	
Storage	20	1	20	1	20	
Equipment Storage	400	1	400	1	400	
Subtotal, Net Area			3,338		4,284	
Departmental Area (add 30%)			4,340		5,570	
Fire Admin Total Gross Area			5,790		7,430	
Operations						
Existing Fire Stations	—	7	35,786	7	35,786	
Future Fire Stations	7,401	0	0	5	37,005	
Subtotal, Gross Area			35,786		72,791	
Fire Department Gross Total			41,576		80,221	



Function/Department	Unit S.F.	FY 10/11		Build-Out		Comments
		No. Units	Net Area	No. Units	Net Area	
Public Safety Training						
Administrative						
Training Office	120	0	0	2	240	
Clerk	64	0	0	1	64	
Visiting Instructor	64	0	0	1	64	
Reception/Waiting	100	0	0	1	100	
Copy/Workroom	200	0	0	1	200	
Supplies Storage	100	0	0	2	200	
Instructional Areas						
Classroom	1,085	0	0	1	1,085	
Arrest & Control Activity Area	3,100	0	0	1	3,100	
Tactical Firearms Simulator	970	0	0	1	970	
Furniture Storage	150	0	0	1	150	
Supplies Storage	150	0	0	1	150	
Break Area	450	0	0	1	450	
Weight Room	900	0	0	1	900	
Men's Shower	818	0	0	1	818	
Women's Shower	502	0	0	1	502	
Subtotal, Net Area			0		8,993	
Departmental Area (add 30%)			0		11,690	
Training Total Gross Area			0		15,590	
Site Elements						
Drill /Burn Tower	9,000	0	0	1	9,000	
Drill/Burn Tower Apron	—	0	0	1	49,700	
Misc Training Apron	—	0	0	1	14,000	
Firearms Training Range	1,378	1	1,378	1	1,378	
Storage Building	800	0	0	1	800	Pre-Engineered Bldg.
Site Vehicular Circulation	—	—	345	—	18,720	
Subtotal Training Site Elements			1,723		93,598	

Vehicles

Administration (SUVs)	4	4	
Fire Prevention (Light Pickups)	2	4	
Fire Training Division (SUV)	0	1	
Fire Operations			
Mid Size Pickup	2	3	
Heavy Duty Pickup	1	2	
Engine	9	14	Ownership of new engines proportionate to each new station's service to city.
Ladder	1	1	
Water Tender	1	2	Additional tender used primarily for unincorporated areas.
Hazmat	1	1	
Fire Vehicles Total		21	32



Appendix C, Page 1: Fire Department Coverage, City and Unincorporated Area			
Stations	Total Service Area (Sq. Ft.)	Unincorporated Area Coverage	City Coverage (a)
A	113,199,472	35.8%	64.2%
B	121,320,784	45.7%	54.3%
C	354,111,368	15.7%	84.3%
D	411,659,457	60.5%	39.5%
E	220,712,954	35.7%	64.3%
Total	1,221,004,035	39.2%	60.8%

Notes:

(a) The equation used to calculate the city coverage is from *Standards of Response Coverage, South County Fire Authority* and utilizes information on annual service calls per square mile for urban and rural areas. The equation is as follows:

$$\frac{\text{City Area} * 188.32}{((\text{City Area} * 188.32) + (\text{Developed Area Unincorp. Area} * 188.32) + (\text{Rural Area} * 9.78))}$$

Sources: *Standards of Response Coverage, South County Fire Authority, 2007*; *Draft Tracy Public Facility and Safety Master Plans, August 2010*; BAE, 2010.



Appendix C, Page 2: Projected New Equivalent Dwelling Units Through Buildout						
Land Use Type	Number of Units/Bldg. Sq. Ft. (a)	Density (b)	Resident/ Worker Projections	Resident Equivalents for Employees	Equivalent Dwelling Units (EDUs) (c)	EDU Factor
Residential						
Low-Density	7,555	3.30	24,930		7,555	1.00 per unit
Medium-Density	7,457	2.70	20,134	45,064	6,101	0.82 per unit
High-Density	4,270	2.20	9,393		2,846	0.67 per unit
Subtotal Residents			<u>54,457</u>		<u>16,502</u>	
Commercial						
Office	15,912,904	300	53,043	26,522 (d)	8,037	0.505 per 1,000 square feet
Retail	18,015,545	500	36,031	18,016 (d)	5,459	0.303 per 1,000 square feet
Industrial	87,106,932	1,500	58,071	29,036 (d)	8,799	0.101 per 1,000 square feet
Subtotal Commercial Employees			<u>147,145</u>	<u>73,574</u>	<u>22,295</u>	
TOTAL EQUIVALENT DWELLING UNITS					38,797	

Notes:
 (a) See Appendix A for additional detail.
 (b) Density is "persons per dwelling unit" or "square feet per worker".
 (c) Equivalent Dwelling Unit is equal to 3.3 residents or resident equivalents.
 (d) Consistent with past City practice for impact fee purposes, worker service population is weighted at 0.5 reflecting the differential demand for public safety services created by employees versus by residents.

Sources: City of Tracy, BAE, 2013.



PUBLIC SAFETY MASTER PLAN - COST

KEY	PLACE NAME	Program Area (sf)			Site Development Cost			Building Cost ¹			Subtotal ¹
		Existing	Upgrade	New	Buildout	Site Area	Cost/ ac	Subtotal	Bldg. Area	Cost/ sf ¹	
1	Fire Headquarters Station "A"	9,646 sf	3,858 sf	5,185 sf	14,831 sf	1 ac	\$475,000	\$277,781	9,043 sf	\$200	\$1,808,600
2	Fire Station "B"	0 sf	0 sf	7,401 sf	7,401 sf	1 ac	\$750,000	\$750,000	7,401 sf	\$250	\$1,850,250
3	Fire Station "C"	0 sf	0 sf	7,401 sf	7,401 sf	1 ac	\$750,000	\$750,000	7,401 sf	\$250	\$1,850,250
4	Fire Station "D"	0 sf	0 sf	7,401 sf	7,401 sf	1 ac	\$750,000	\$750,000	7,401 sf	\$250	\$1,850,250
5	Fire Station "E"	0 sf	0 sf	7,401 sf	7,401 sf	1 ac	\$750,000	\$750,000	7,401 sf	\$250	\$1,850,250
91	Fire Station 91	7,401 sf	0 sf	0 sf	7,401 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
92	Fire Station 92	1,841 sf	0 sf	0 sf	1,841 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
93	Fire Station 93	6,147 sf	0 sf	0 sf	6,147 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
94	Fire Station 94	5,552 sf	0 sf	0 sf	5,552 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
96	Fire Station 96	3,336 sf	0 sf	0 sf	3,336 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
97	Fire Station 97	3,009 sf	0 sf	0 sf	3,009 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
98	Fire Station 98	8,500 sf	0 sf	0 sf	8,500 sf	0 ac	\$0	\$0	0 sf	\$0	\$0
6	Police Department Service Center	45,432 sf	3,858 sf	34,789 sf	80,221 sf	5 ac	\$714,923	\$3,277,781	38,647 sf	\$238	\$9,209,600
	SUBTOTAL POLICE DEPARTMENT	0 sf	0 sf	40,990 sf	40,990 sf	3 ac	\$550,000	\$1,650,000	40,990 sf	\$300	\$12,297,000
8	Public Safety Center + EOC	25,497 sf	18,310 sf	0 sf	25,497 sf	2 ac	\$250,000	\$500,000	18,310 sf	\$225	\$4,119,750
9	Training Facility	2,296 sf	758 sf	13,294 sf	15,990 sf	2 ac	\$250,000	\$500,000	14,052 sf	\$175	\$2,459,100
	Training Site Elements	0 sf	0 sf	0 sf	0 sf	3 ac	\$850,000	\$2,380,000	0 sf	\$0	\$0
RCT	Radio Communications Tower	0 sf	0 sf	0 sf	0 sf	2 ac	\$891,495	\$1,782,990	0 sf	\$0	\$0
	SUBTOTAL JOINT POLICE/ FIRE/ EOC	27,793 sf	19,068 sf	13,294 sf	41,087 sf	9 ac	\$586,703	\$5,162,990	32,362 sf	\$203	\$6,578,850
	SUBTOTAL PUBLIC FACILITIES	73,225 sf	22,926 sf	89,073 sf	162,298 sf	16 ac	\$615,862	\$10,090,771	111,999 sf	\$251	\$28,085,450

(continued)

KEY	PLACE NAME	Design & Planning	Construction Management	General Contingency	Program Admin.	Total Construction + Indirect	FF&E & Vehicles	Land Acquisition		Total Project Cost ¹	Total Cost Attributable to New Dev ³
								Qty.	Cost/ ac		
1	Fire Headquarters Station "A"	\$208,638	\$208,638	\$312,957	\$104,319	\$2,920,934	\$972,000	0 ac	\$0	\$3,893,000	\$3,893,000
2	Fire Station "B"	\$260,025	\$260,025	\$390,038	\$130,013	\$3,640,350	\$972,000	1 ac	\$150,000	\$4,763,000	\$4,763,000
3	Fire Station "C"	\$260,025	\$260,025	\$390,038	\$130,013	\$3,640,350	\$972,000	1 ac	\$150,000	\$4,763,000	\$4,763,000
4	Fire Station "D"	\$260,025	\$260,025	\$390,038	\$130,013	\$3,640,350	\$972,000	1 ac	\$150,000	\$4,763,000	\$4,763,000
5	Fire Station "E"	\$260,025	\$260,025	\$390,038	\$130,013	\$3,640,350	\$972,000	1 ac	\$150,000	\$4,763,000	\$4,763,000
91	Fire Station 91	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
92	Fire Station 92	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
93	Fire Station 93	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
94	Fire Station 94	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
96	Fire Station 96	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
97	Fire Station 97	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
98	Fire Station 98	\$0	\$0	\$0	\$0	\$0	\$0	0 ac	\$0	\$0	\$0
6	Police Department Service Center	\$1,248,738	\$1,248,738	\$1,873,107	\$624,369	\$17,482,334	\$4,860,000	4 ac	\$150,000	\$600,000	\$22,945,000
	SUBTOTAL POLICE DEPARTMENT	\$1,394,700	\$1,394,700	\$2,092,050	\$697,350	\$19,525,800	\$1,906,000	3 ac	\$150,000	\$450,000	\$21,882,000
8	Public Safety Center + EOC	\$461,975	\$461,975	\$692,963	\$230,988	\$6,467,650	\$46,000	0 ac	\$0	\$0	\$6,514,000
9	Training Facility	\$295,910	\$295,910	\$443,865	\$147,955	\$4,142,740	\$50,000	1 ac	\$100,000	\$100,000	\$4,293,000
	Training Site Elements	\$238,000	\$238,000	\$357,000	\$119,000	\$3,332,000	\$0	3 ac	\$100,000	\$300,000	\$3,612,000
RCT	Radio Communications Tower	\$178,299	\$178,299	\$267,449	\$89,150	\$2,496,186	\$0	2 ac	\$150,000	\$300,000	\$2,797,000
	SUBTOTAL JOINT POLICE/ FIRE/ EOC	\$1,174,184	\$1,174,184	\$1,761,276	\$587,092	\$16,438,576	\$96,000	6 ac	\$117,241	\$680,000	\$17,216,000
	TOTAL PUBLIC FACILITIES (rounded)	\$3,818,000	\$3,818,000	\$5,727,000	\$1,909,000	\$53,447,000	\$6,862,000	13 ac	\$135,156	\$1,730,000	\$61,479,000

Notes:
 1) Figures shown are in 2010 dollars and exclude any and all escalation to bid date.
 2) Cost includes necessary renovations to existing building(s) to regularize spaces and circulation.
 3) All costs in this column are attributable to new development.





PD - EXTERIOR



PD - EXTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - EXTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



PD - INTERIOR



FD - EXTERIOR



FD - EXTERIOR



FD - INTERIOR



FD - INTERIOR



FD - INTERIOR



FD - INTERIOR



FD - INTERIOR



FD - INTERIOR



FD - EXTERIOR



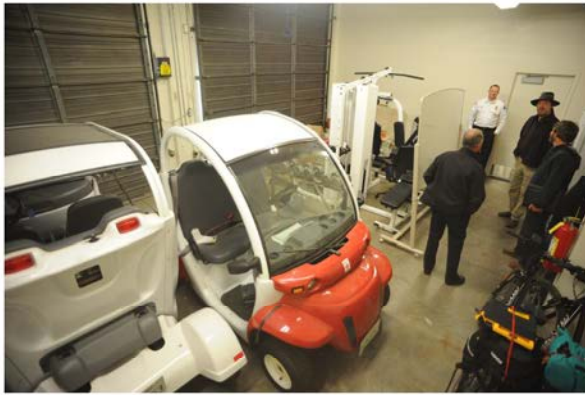
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FD - INTERIOR



FD - INTERIOR



FD - INTERIOR



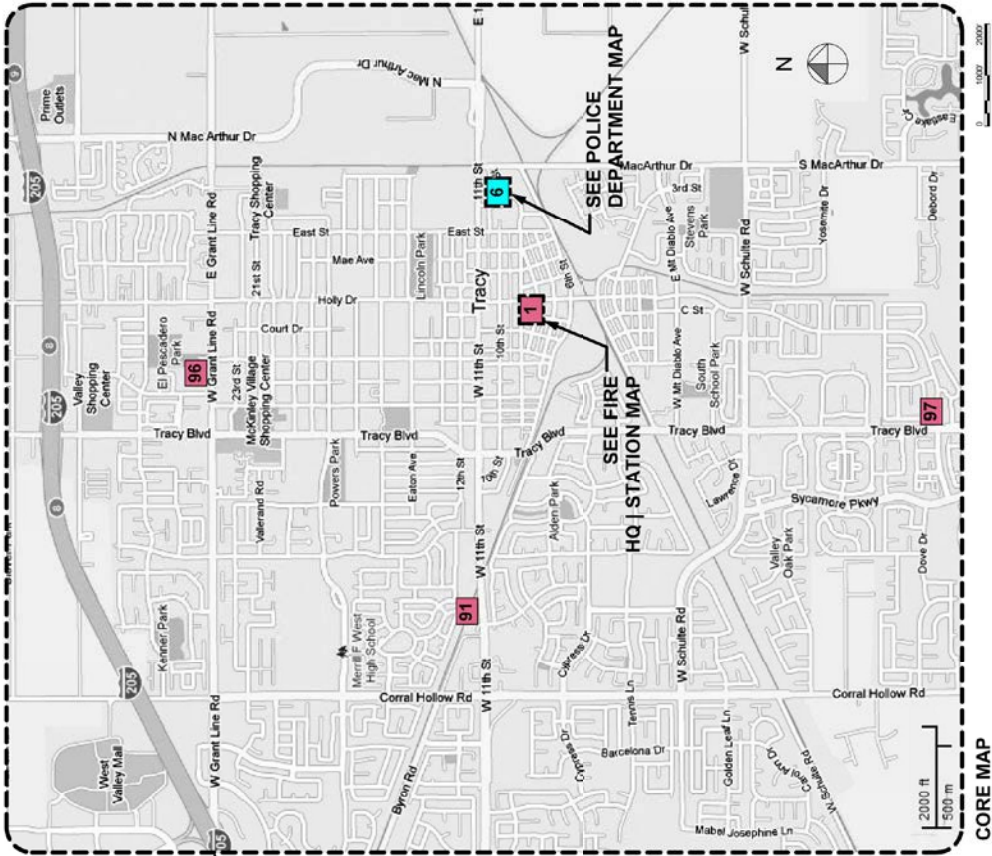
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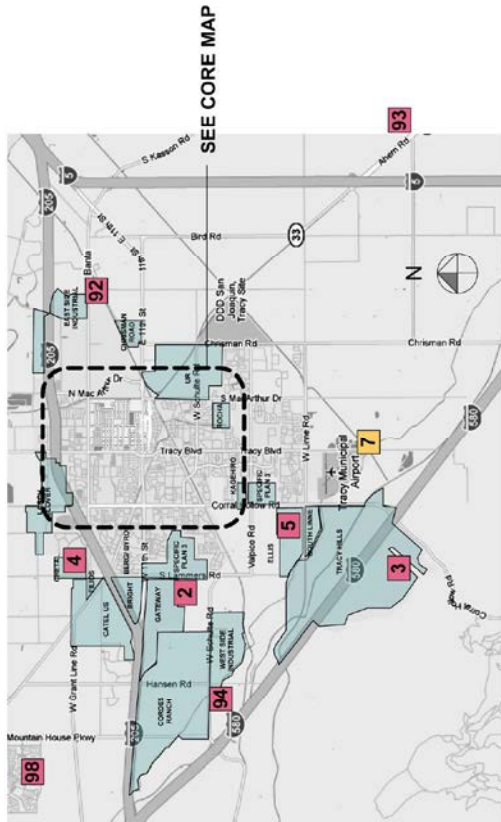
FD - INTERIOR



FD - INTERIOR



CORE MAP



OVERALL MAP

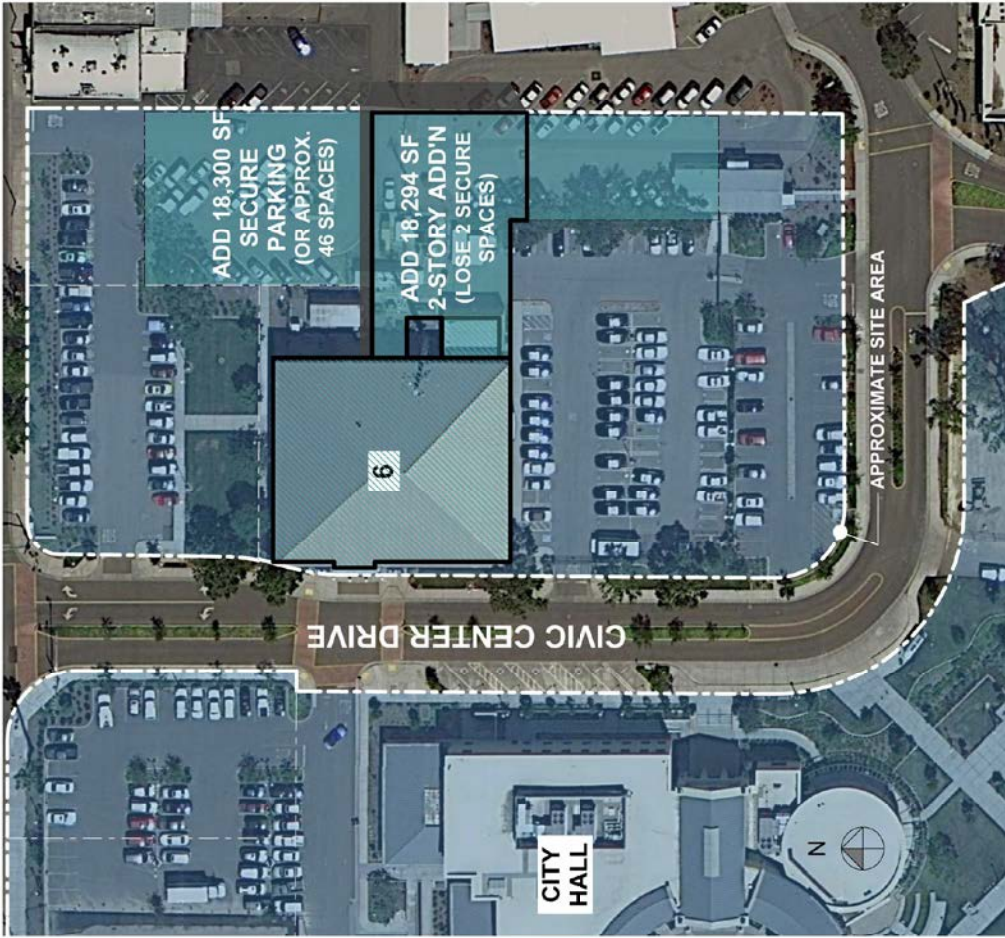
PUBLIC SAFETY - OPTION 1

KEY	DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UNEMPLOYED	ADD	BID-OUT
1	FD	Admin Operations	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	46%	3,858 sf	15,946 sf
2	FD	Operations	Fire Station "B"	TBD (Gateway Area)	0 sf	0%	7,401 sf	7,401 sf
3	FD	Operations	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0%	7,401 sf	7,401 sf
4	FD	Operations	Fire Station "D"	TBD (Chenal Area)	0 sf	0%	7,401 sf	7,401 sf
5	FD	Operations	Fire Station "E"	TBD (Ellis Area)	0 sf	0%	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0%	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0%	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durbaum Ferry Rd	6,147 sf	0%	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0%	0 sf	5,552 sf
96	FD	Operations	Fire Station 96	301 West Granite Rd	3,235 sf	0%	0 sf	3,236 sf
97	FD	Operations	Fire Station 97	595 West Central Av.	3,003 sf	0%	0 sf	3,009 sf
98	FD	Operations	Fire Station 98	9111 Tradition St.	8,500 sf	0%	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT					45,432 sf	0%	33,904 sf	79,336 sf
6	PD	Headquarters	Police Department	1000 Civic Center Dr.	27,616 sf	33%	9,113 sf	18,294 sf
	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Svc Ctr	7,113 sf	0%	0 sf	0 sf
SUBTOTAL POLICE DEPARTMENT					34,729 sf	26%	9,113 sf	18,294 sf
7	PD FD	Operations	Training Facility	6649 S Tracy Blvd	2,295 sf	33%	768 sf	13,294 sf
SUBTOTAL JONT POLICE & FIRE DEPARTMENTS					2,295 sf	33%	768 sf	13,294 sf
TOTAL PUBLIC SAFETY					82,457 sf	17%	13,729 sf	65,492 sf

LEGEND

PUBLIC SAFETY OPTION 1 - OVERALL





POLICE HEADQUARTERS

POLICE HEADQUARTERS - OPTION 1					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
6	Police Headquarters	27,616 sf	33% 9,113 sf	18,294 sf	45,910 sf
TOTAL BUILDING AREA		27,616 sf	33% 9,113 sf	18,294 sf	45,910 sf
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf

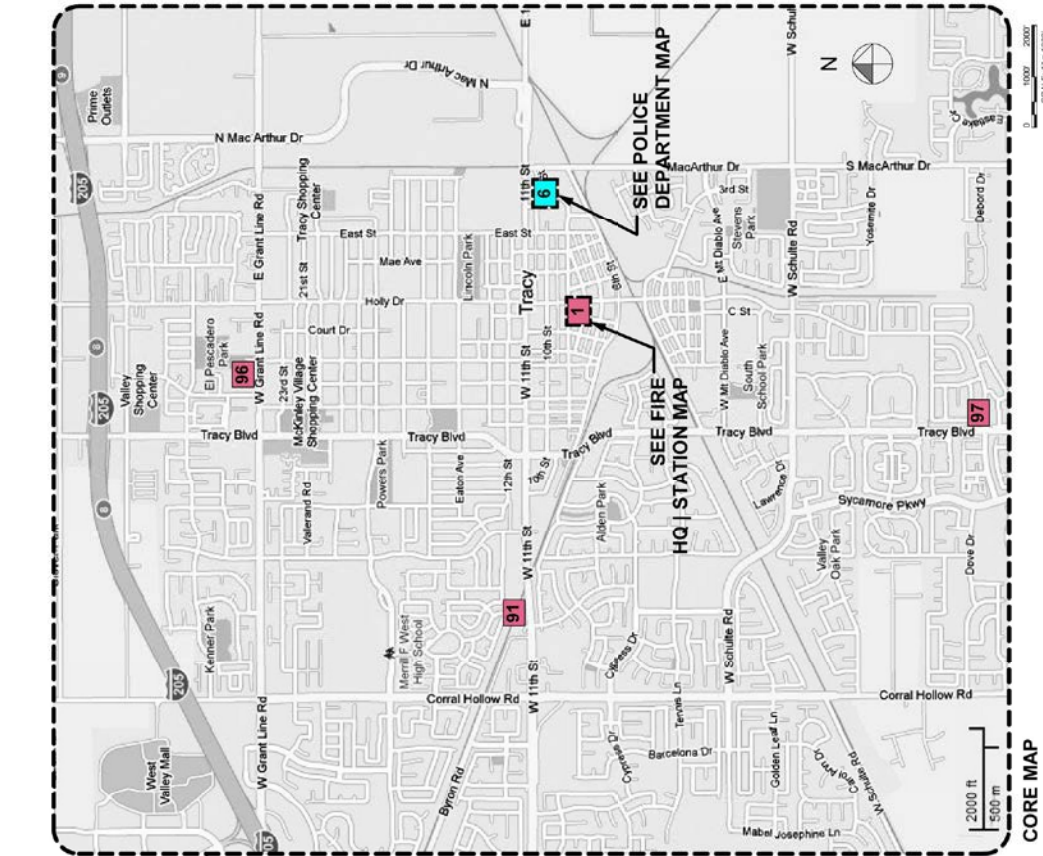
FIRE HEADQUARTERS FIRE STATION - OPTION 1					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
1	Fire Headquarters Fire Station	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
TOTAL BUILDING AREA		9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
TOTAL SITE AREA		25,474 sf		0 sf	25,474 sf



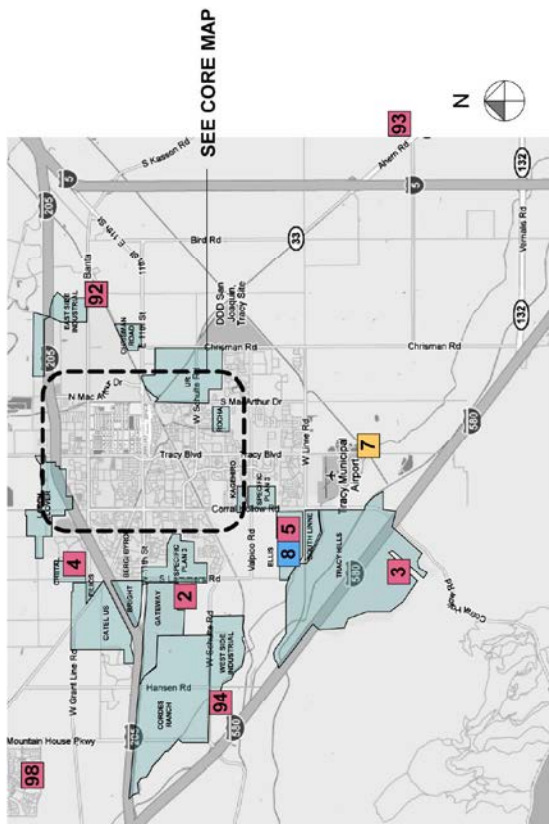
FIRE ADMINISTRATION

PUBLIC SAFETY OPTION 1 - DETAIL





CORE MAP



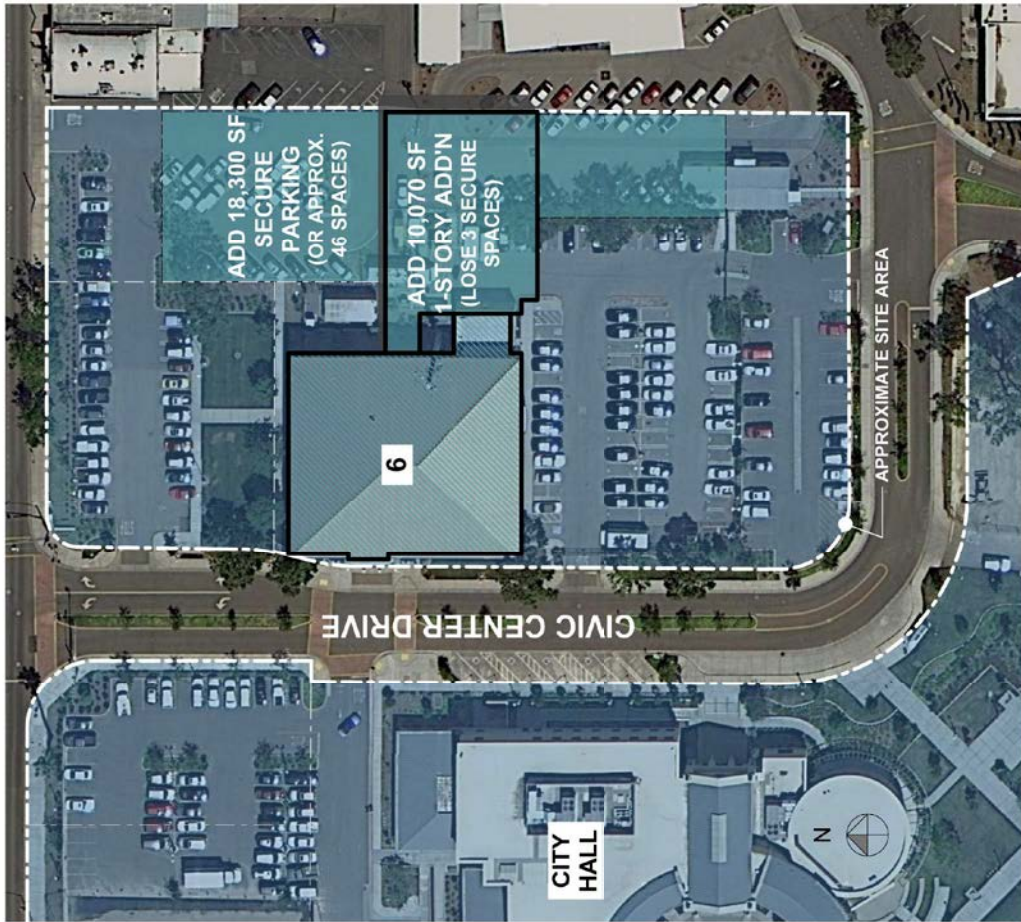
OVERALL MAP

PUBLIC SAFETY - OPTION 2								
KEY	DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BID-OUT
1	FD	Admin Operations	Fire Headquarters Station 'A'	835 Central Avenue	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
2	FD	Operations	Fire Station 'B'	TBD (Gateway Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
3	FD	Operations	Fire Station 'C'	TBD (Tracy Hills Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
4	FD	Operations	Fire Station 'D'	TBD (Chetel Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
5	FD	Operations	Fire Station 'E'	TBD (Ellis Area)	0 sf	0% 0 sf	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0% 0 sf	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0% 0 sf	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0% 0 sf	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0% 0 sf	0 sf	5,552 sf
95	FD	Operations	Fire Station 95	301 West Grantline Rd	3,336 sf	0% 0 sf	0 sf	3,336 sf
96	FD	Operations	Fire Station 96	595 West Central Av.	3,009 sf	0% 0 sf	0 sf	3,009 sf
97	FD	Operations	Fire Station 97	911 Tradition St.	8,500 sf	0% 0 sf	0 sf	8,500 sf
98	FD	Operations	Fire Station 98	1000 Civic Center Dr.	45,432 sf	8% 3,808 sf	33,904 sf	79,336 sf
6	PD	Headquarters	Police Department	1000 Civic Center Dr.	27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
8	PD	Headquarters	Police Department Substation	TBD (Ellis Area)	0 sf	0% 0 sf	8,224 sf	8,224 sf
9	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Src Cir	7,113 sf	0% 0 sf	0 sf	0 sf
7	PD/ID	Operations	Training Facility	6649 S Tracy Blvd	34,729 sf	22% 4,242 sf	18,398 sf	45,919 sf
SUBTOTAL FIRE DEPARTMENT					2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL POLICE DEPARTMENT					2,296 sf	33% 758 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS					82,457 sf	11% 8,786 sf	65,492 sf	140,836 sf
TOTAL PUBLIC SAFETY								

LEGEND

PUBLIC SAFETY OPTION 2 - OVERALL





POLICE HEADQUARTERS

PUBLIC SAFETY OPTION 2 - DETAIL

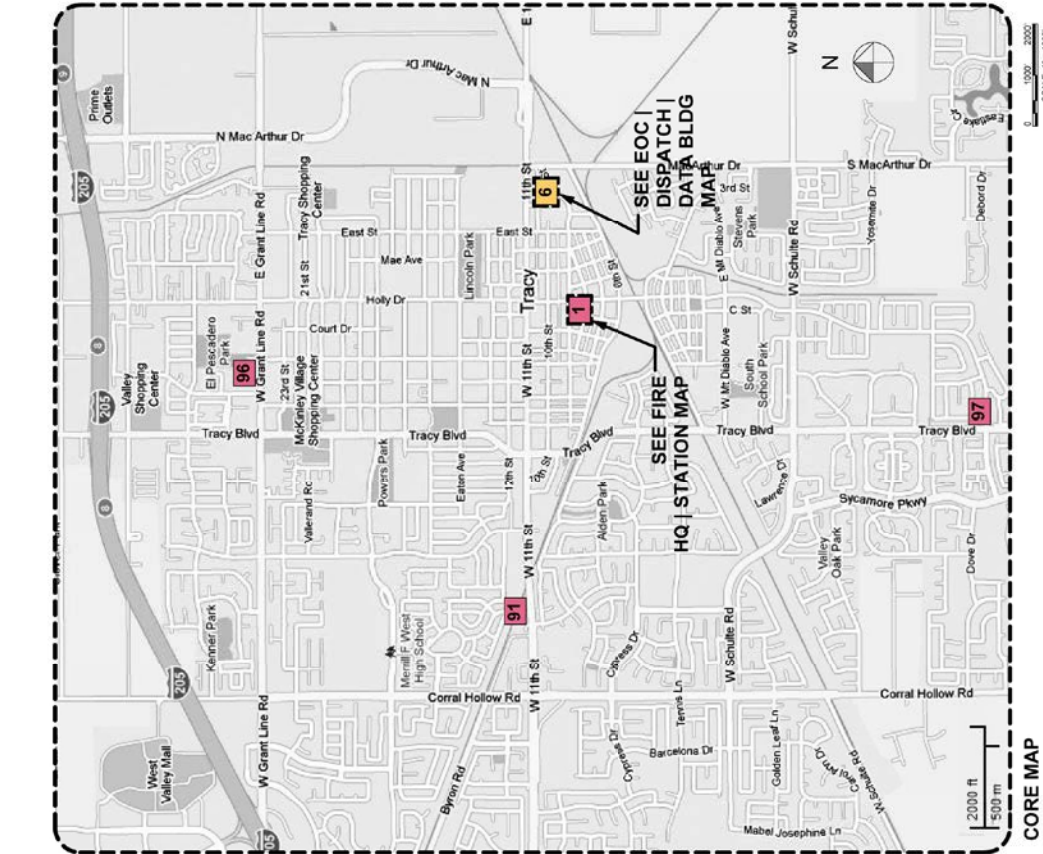
POLICE HEADQUARTERS - OPTION 2					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
6	Police Headquarters	27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
TOTAL BUILDING AREA		27,616 sf	15% 4,142 sf	10,070 sf	37,686 sf
TOTAL SITE AREA		115,299 sf		0 sf	115,299 sf

FIRE HEADQUARTERS FIRE STATION - OPTION 2					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
1	Fire Headquarters Fire Station	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
TOTAL BUILDING AREA		9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
TOTAL SITE AREA		25,474 sf		0 sf	25,474 sf

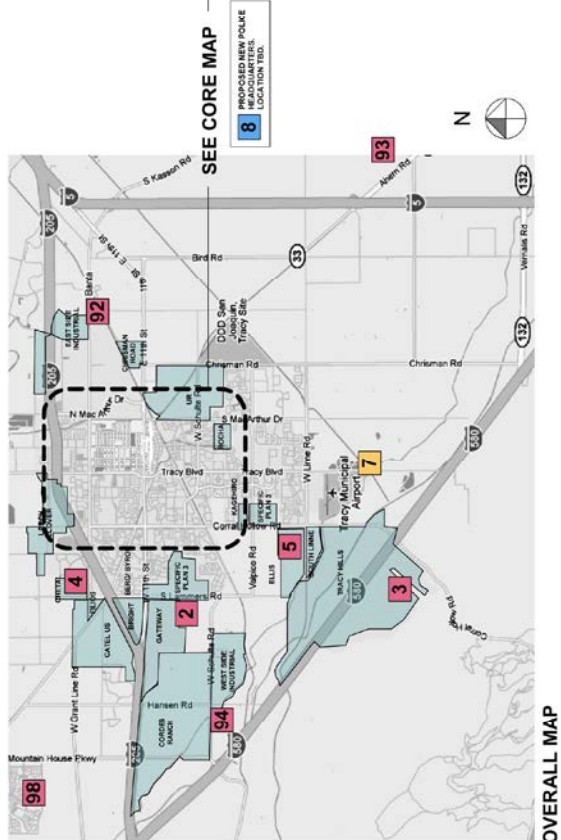


FIRE ADMINISTRATION





CORE MAP



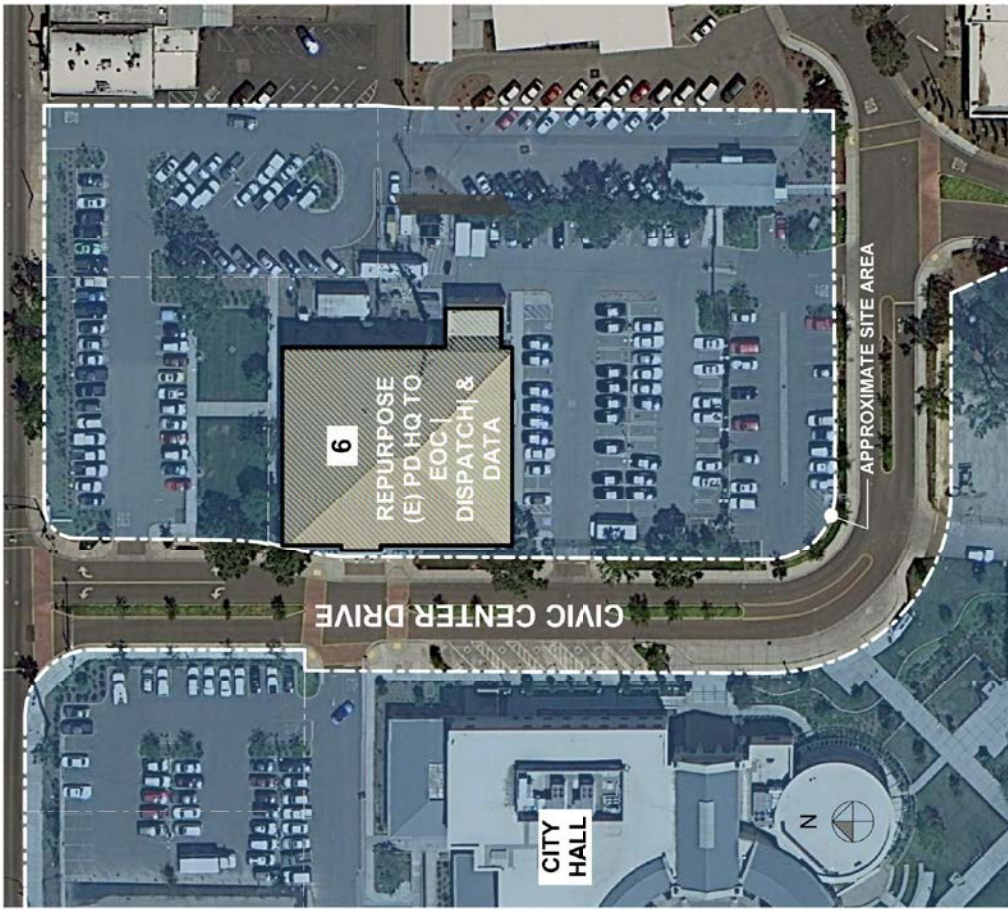
OVERALL MAP

PUBLIC SAFETY - OPTION 3								
KEY DEPT	DIVISION	PLACE NAME	ADDRESS	(E)	UPGRADE	ADD	BLD-OUT	
1	FD	Admin Operations	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
2	FD	Operations	Fire Station "B"	TBD (Gateway Area)	0 sf	0 sf	7,401 sf	7,401 sf
3	FD	Operations	Fire Station "C"	TBD (Tracy Hills Area)	0 sf	0 sf	7,401 sf	7,401 sf
4	FD	Operations	Fire Station "D"	TBD (Chehal Area)	0 sf	0 sf	7,401 sf	7,401 sf
5	FD	Operations	Fire Station "E"	TBD (Ellis Area)	0 sf	0 sf	7,401 sf	7,401 sf
91	FD	Operations	Fire Station 91	1701 West 11th Street	7,401 sf	0 sf	0 sf	7,401 sf
92	FD	Operations	Fire Station 92	22484 South 7th St.	1,841 sf	0 sf	0 sf	1,841 sf
93	FD	Operations	Fire Station 93	1400 Durham Ferry Rd	6,147 sf	0 sf	0 sf	6,147 sf
94	FD	Operations	Fire Station 94	16502 West Schulte Rd	5,552 sf	0 sf	0 sf	5,552 sf
96	FD	Operations	Fire Station 96	301 West Grantline Rd	3,336 sf	0 sf	0 sf	3,336 sf
97	FD	Operations	Fire Station 97	595 West Central Av.	3,009 sf	0 sf	0 sf	3,009 sf
98	FD	Operations	Fire Station 98	911 Tradition St.	8,500 sf	0 sf	0 sf	8,500 sf
SUBTOTAL FIRE DEPARTMENT				45,432 sf	0%	3,858 sf	33,904 sf	79,336 sf
8	PD	Headquarters	Police Department	TBD	0 sf	0 sf	45,910 sf	45,910 sf
8	PD	Operations	Misc. Temporary Storage	PD Site & Boyd Svc Ctr	7,113 sf	0 sf	0 sf	0 sf
SUBTOTAL POLICE DEPARTMENT				7,113 sf	0%	0 sf	45,910 sf	45,910 sf
6	PD FD	Operations	EOC Dispatch Data Bldg	1000 Civic Center Dr.	27,616 sf	25% 6,814 sf	0 sf	27,616 sf
7	PD FD	Operations	Training Facility	6649 S Tracy Blvd	2,296 sf	33% 798 sf	13,294 sf	15,590 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS				29,912 sf	23%	7,612 sf	13,294 sf	43,205 sf
TOTAL PUBLIC SAFETY				82,457 sf	14%	11,470 sf	93,108 sf	158,452 sf

LEGEND

PUBLIC SAFETY OPTION 3 - OVERALL





EOC | DISPATCH | DATA

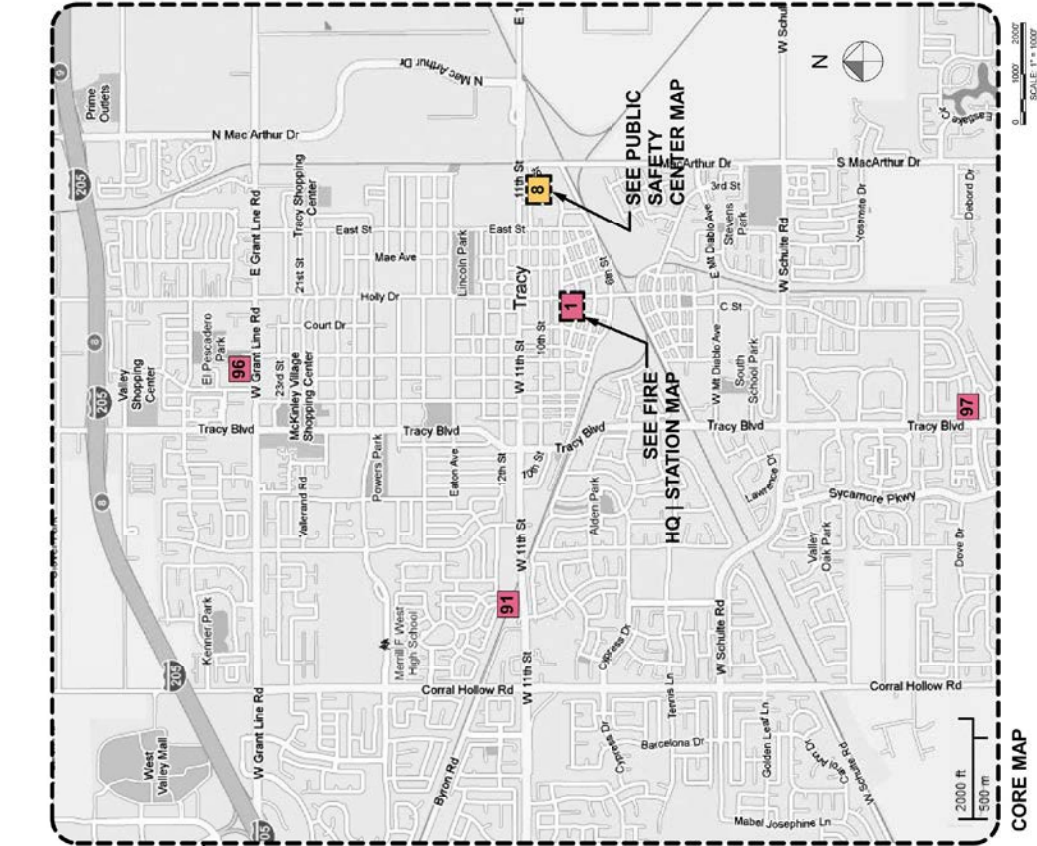
PUBLIC SAFETY OPTION 3 - DETAIL

JOINT EOC DISPATCH IS BLDG - OPTION 3					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
6	PD EOC Dispatch Data	12,773 sf	15% 1,916 sf	0 sf	12,773 sf
	FD EOC Dispatch Data	12,773 sf	33% 4,215 sf	0 sf	12,773 sf
	IS Data Facility	2,070 sf	33% 683 sf	0 sf	2,070 sf
	TOTAL BUILDING AREA	27,616 sf	25% 6,814 sf	0 sf	27,616 sf
	TOTAL SITE AREA	115,299 sf		0 sf	115,299 sf

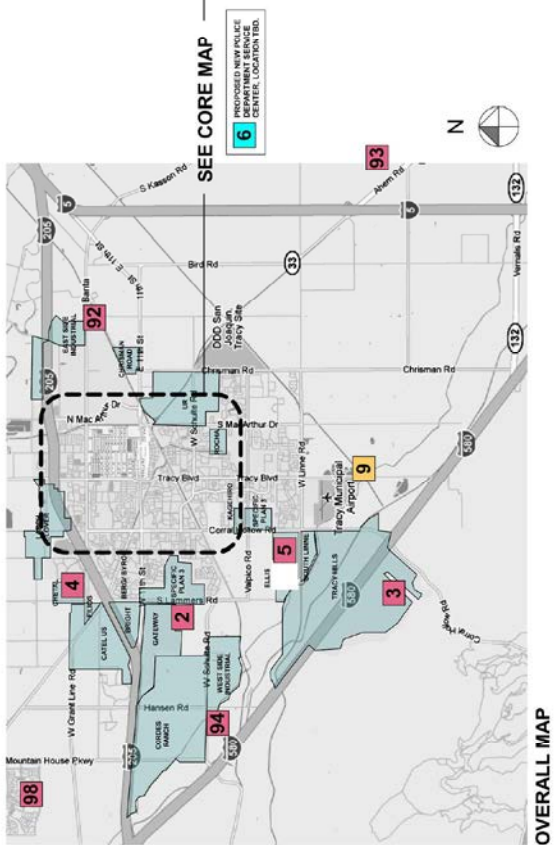
FIRE HEADQUARTERS FIRE STATION - OPTION 3					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
1	Fire Headquarters Fire Station	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
	TOTAL BUILDING AREA	9,646 sf	40% 3,858 sf	4,300 sf	13,946 sf
	TOTAL SITE AREA	25,474 sf		0 sf	25,474 sf



FIRE ADMINISTRATION | FIRE STATION "A"



CORE MAP



OVERALL MAP

PUBLIC SAFETY FACILITIES					
KEY	PLACE NAME	ADDRESS	(E)	UPGRADE	BLD-OUT
1	Fire Headquarters Station "A"	835 Central Avenue	9,646 sf	40% 3,268 sf	5,185 sf
2	Fire Station "B"	18D Gateway Area	0 sf	0%	7,401 sf
3	Fire Station "C"	18D Tracy Hills Area	0 sf	0%	7,401 sf
4	Fire Station "D"	18D (Central Area)	0 sf	0%	7,401 sf
5	Fire Station "E"	18D (Ellis Area)	0 sf	0%	7,401 sf
91	Fire Station 91	1700 West 11th Street	7,401 sf	0%	0 sf
92	Fire Station 92	22884 South 7th St.	1,841 sf	0%	0 sf
93	Fire Station 93	2400 Durham Ferry Rd	6,147 sf	0%	6,147 sf
94	Fire Station 94	16502 West Schulte Rd	5,552 sf	0%	0 sf
96	Fire Station 96	301 West Grantline Rd	3,336 sf	0%	3,336 sf
97	Fire Station 97	595 West Central Av.	3,009 sf	0%	0 sf
98	Fire Station 98	911 Tradition St.	8,500 sf	0%	8,500 sf
SUBTOTAL FIRE DEPARTMENT			45,432 sf	8% 3,658 sf	34,789 sf
6	Police Department Services Center	18D	0 sf	0%	40,990 sf
SUBTOTAL POLICE DEPARTMENT			0 sf	0%	40,990 sf
8	Public Safety Center + EOC	1000 Civic Center Dr.	25,497 sf	20% 18,310 sf	0 sf
9	Training Facility	6649 S Tracy Blvd	2,796 sf	33% 754 sf	13,294 sf
SUBTOTAL JOINT POLICE & FIRE DEPARTMENTS			27,793 sf	69% 13,064 sf	13,294 sf
TOTAL PUBLIC SAFETY			73,225 sf	31% 22,028 sf	89,073 sf

LEGEND

PS-1 PUBLIC SAFETY MASTER PLAN - OVERALL

CITY OF TRACY PUBLIC FACILITIES AND PUBLIC SAFETY MASTER PLAN



HAMMOND + PLAYLE ARCHITECTS, LLP





PUBLIC SAFETY CENTER

PUBLIC SAFETY CENTER - DOWNTOWN PD EOC DISPATCH					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
8	PD Allocation	12,749 sf	15% 1,910 sf	0 sf	12,749 sf
	Fire Allocation	12,749 sf	33% 4,205 sf	0 sf	12,749 sf
	TOTAL BUILDING AREA	25,497 sf	24% 6,116 sf	0 sf	25,497 sf
	TOTAL SITE AREA	115,299 sf		0 sf	115,299 sf

FIRE HEADQUARTERS FIRE STATION					
BLDG	USE	(E)	UPGRADE	ADD	BLD-OUT
1	Fire Headquarters Fire Station	9,646 sf	40% 3,858 sf	5,185 sf	14,831 sf
	TOTAL BUILDING AREA	9,646 sf	40% 3,858 sf	5,185 sf	14,831 sf
	TOTAL SITE AREA	25,474 sf		0 sf	25,474 sf



FIRE ADMINISTRATION | FIRE STATION "A"

PS-2 PUBLIC SAFETY MASTER PLAN - DETAIL

CITY OF TRACY PUBLIC FACILITIES AND PUBLIC SAFETY MASTER PLAN



HAMMOND + PLAYLE ARCHITECTS, LLP

