



Commission on Fire Accreditation International

San Diego Fire-Rescue Department



Standards of Response Coverage

February 2005



San Diego Fire-Rescue Department Standard of Coverage

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Introduction

One of the major issues the fire service has struggled with in the past decade is defining levels of service. It has been considered essential to determine whether a fire agency is prepared to provide a level of service commensurate with its responsibilities, risks, and adopted service level objectives. In the absence of such an analysis by the fire service, the National Fire Protection Association (NFPA) proposed a deployment standard that was successfully adopted as NFPA 1710. This national deployment standard does not, however, recognize local issues, conditions, service demands or community needs. Additionally, very few departments in this country can meet the response time and staffing level outlined in the standard, including San Diego. Hence, many fire service professionals view this deployment model as a goal.

The San Diego Fire-Rescue department, under the leadership of Fire Chief Jeff Bowman, recognized the need to evaluate its performance as a means to improve quality and performance and to ensure community needs were met. Instead of using a one-size-fits-all approach as in NFPA 1710, the decision was made to pursue Fire Service Accreditation. The national Fire Service Accreditation system is designed to evaluate the performance of a fire agency to determine if the programs and services provided are effective in meeting the needs of the community it protects. This system includes a critical analysis of historical data, existing and proposed deployment strategies, distribution and concentration of resources based on time parameters, identification of community risks and expectations, and collection of data on reliability of response. The governing body for the accreditation process is the Commission on Fire Accreditation International (CFAI).

The accreditation process includes three major elements: strategic planning, self-assessment and risk assessment/standard of response coverage. The department began its strategic planning process in March of 2003, completing the process with the development of its first-ever Five-Year Strategic Plan in June of 2004. The self-assessment component was initiated in June of 2003, which included an in-depth analysis to measure all of the department's major programs or services against 301 performance criteria outlined in the CFAI guiding document. This phase of the accreditation project was completed in October of 2004. Another companion document and requirement for agencies which pursue accreditation is the Standard of Response Cover Plan. The Standard of Response Cover is defined as the written policies and procedures that determine the distribution, concentration and reliability of fixed and mobile resources of the department to respond to an "all-risk" environment. This is a critical element of Fire Accreditation as it represents the evaluation and/or creation of standards for response coverage.

This document is provided to serve as the San Diego Fire-Rescue's Standard of Response Coverage Plan. The purpose of this document is to define the level of service based on a comprehensive study of the department's historical performance, community risk factors and expectations, and existing and proposed deployment strategies.



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The overall assessment evaluated the department's ability to provide adequate resources to respond to an "all-risk" environment including fire and non-fire incidents such as emergency medical, hazardous material, technical rescue, aircraft and shipboard rescue, disasters both natural and manmade, and swift water. In order to translate these efforts into terms that the community and elected officials can evaluate, major findings and recommendations were clearly defined and described, measured and benchmarked.

The methodology used was a systems approach to deployment rather than the one-size-fits-all prescriptive formula. An evaluation was conducted to match local needs or risks and expectations with expected outcomes. The data contained in this Standard of Response Coverage Plan should provide the leaders of San Diego with the information necessary to understand and make decisions upon an effective delivery system for an "all-risk" environment.



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Executive Summary

The purpose of this Standard of Response Coverage Plan is to define the appropriate level of service based on a comprehensive study of the department's historical performance, deployment strategies and community risk factors in order to determine the capability of its response system. Based on extensive research and in-depth analysis of the data gathered, the following represents the department's distribution criteria.

- A first responding four-person engine company shall arrive at the scene of an emergency within an average of six minutes or less from the time of page received.
- A unit with advanced life support capability will arrive at emergency medical incidents within eight minutes 90% of the time, from point of dispatch.
- Truck companies will arrive at the scene of an emergency within an average of nine minutes from the time of page received.
- An effective response force will arrive at the scene of an emergency within 12 minutes or less 95% of the time from the time of page received.
- The Hazardous Incident Response Team will arrive at scene within 60 minutes from point of dispatch 90% of the time to the contract provided service area.
- The Aviation Rescue and Firefighting units at the San Diego International Airport will arrive at the mid-point of the runway within three minutes of alarm received.
- The Urban Search and Rescue Task Force will be capable of mobilizing within a four-hour timeframe for an over-the-road response and six hour timeframe for an air response.
- The first-in engine company will place one line in-service at 150 gallons per minute (GPM) and initiate mitigation efforts within one minute of arrival.
- An effective response force for a low risk occupancy will place a water supply in service at a minimum 400 GPM for 30 minutes and include: one attack line in-service with two firefighters at 150 GPM, a second attack line with two firefighters at a minimum of 150 GPM, one ventilation team consisting of two firefighters, one search and rescue team consisting of two firefighters, establish command outside the hazard area with a dedicated position and the capability of flowing 400 GPM without interruption
- An effective response force for a medium risk occupancy will provide in addition to resources for low risk the capability to flow 1,000 GPM without interruption, two ventilation teams, two search and rescue teams, and a rapid intervention crew of four firefighters.
- An effective response force for a high risk occupancy will provide in addition to resources for low and medium, two, 2 ½ inch attack lines in-service, one on the fire floor and one on the floor above, one additional ventilation team, one additional search and rescue team, establish lobby control as well as overall command, and supplement the fire protection systems as needed.



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The analysis also concluded the following findings. Recommendations are provided and were designed to address the gaps in service levels.

Major Findings

1. The City has been unable to keep pace with the growth of San Diego in terms of infrastructure, capital improvement projects, staffing and other critical resources on a citywide basis. The continued erosion of critical needs has resulted in a reduction of service levels that has also affected the Fire-Rescue Department. This risk assessment/standard of response coverage study very clearly highlights significant gaps in coverage; specifically, an inadequate number of fire stations, engines, trucks and staffing. Also lacking are assets necessary to respond effectively to an “all-risk” environment.
2. Very few measurable objectives regarding response coverage exist, nor does a comprehensive plan to improve coverage. Additionally, objectives are not in place to capture qualitative data relative to other performance indicators such as measuring effectiveness at emergency scenes.
3. The department has not been involved in City planning processes. This has led to decisions that impact the department’s ability to minimize risk and losses as well as meet community needs and expectations.
4. Although the department uses a number of effective management information systems, these systems are not networked; nor is there dedicated staff, in most cases, to analyze data, such as response times, compliance with goals and objectives, incident reporting and trends. This impacts the department’s ability to monitor performance and identify trends. While quantitative data is collected, there is a lack of corresponding qualitative reporting to measure effectiveness.

Recommendations

1. The City’s General Plan should be revised to reflect measurable fire service objectives.
2. The department should strive to achieve, through a phased approach, the National Fire Protection Association (NFPA) 1710 Standard, which is the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations by career fire departments.
3. Additional assets should be added to the department to respond to the risks associated with the region and address the gaps in service levels as identified in this study. The department should develop a comprehensive, prioritized list of fire stations, staffing,



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engines, trucks and other apparatus and equipment based on the analysis provided to ensure appropriate service levels citywide.

4. The City's Emergency Operations Center (EOC) and Fire-Rescue's Department Operations Center (DOC) require upgrades to be considered in a full-state-of-readiness and capable of managing a large-scale incident.
5. The department's information systems require dedicated staff and a specific review schedule to analyze performance measures/response standards and associated reports. Performance standards should also be developed that would gather qualitative data to measure effectiveness. Additionally, the various information systems should be networked.
6. The department should be included in the City's planning processes for Capital Improvement Projects to ensure the appropriate review of potential impacts and resource requirements to respond to an "all-risk" environment and meet the needs of the community.

In summary, the risk assessment conducted as a part of this study indicates the existence of significant gaps in delivering effective response coverage citywide. The acquisition of assets and resources will be necessary to address these shortfalls. A comprehensive plan using a phased approach coupled with a secure, on-going funding strategy is recommended to facilitate meeting the service level objectives identified. The plan should include short and long-term goals with clearly defined timelines in order to measure progress. Additionally, the department's information systems should be developed and/or expanded to monitor performance and measure improvements in the system. Addressing the issues disclosed through this national self-evaluation program will be essential if San Diego Fire-Rescue is to meet the needs and expectations of the community and effectively respond to an "all-risk" environment.



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Acronyms / Definitions

ADAM	Apparatus Deployment Analysis Model software program
Adaptive Staffing	Emergency response crew staff the most appropriate unit assigned to station based on call type
ALS	Advanced Life Support
Amb	Ambulance
BC	Battalion Chief
BR	Brush Unit
BLS	Basic Life Support
CAD	Computer Aided Dispatch
Code 3	Authorized emergency vehicles responding with warning lights and sounding a siren
COM	Communications Unit
CR	Crash Rescue Unit for Aircraft Rescue and Firefighting
CU	Chemical Unit
DMS	Duty Medical Support
E	Engine
EDT	Explosive Device Team
Effective Response Force	First Alarm Assignment
First Alarm Assignment	The number of initial response units necessary that will most likely stop the escalation of the emergency.
First In	First arriving emergency response unit
FM	Foam Unit
Fire Problem Utility	Software program in CAD that has pre-identified risk by occupancy type or wildland/urban interface which dispatches the appropriate resource(s) based on type of call.
Flashover	Ignition of combustible surfaces and/or gases in an area heated by convection and/or radiation, resulting in a sudden and intense rise in temperature.
HPD	Harbor Police Department
LA	Light and Air Unit
MAST	Metro Arson Strike Team
MR	Medic Rescue Ambulance
Nature Problems	Chief complaint or reason why the reporting party is calling for emergency assistance
OES	Office of Emergency Services
PD	Police Department
R	Rescue Unit
RIC	Rapid Intervention Crew
R/M	Rural Metro Corporation



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SDMSE	San Diego Medical Services Enterprise
Short Staffing	Emergency response units with less than four person staffing
Staff Notification	Means by which Fire Communications alerts SDFD administrative personnel of significant incidents or important information
Staging	Location at an incident for emergency response units waiting for assignment.
T	Truck
Telestaff Pick List	A list of staff members by rank the department uses to fill vacancies for each shift in Operations utilizing an automated software application program referred to as Telestaff.
Unit Designators	Radio call sign for emergency responders to identify the responder as a unique entity
WT	Water Tender

SECTION ONE

COMMUNITY BASELINES



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Section One – Community Baselines

Community Overview

The purpose of Section One is to provide an overview of the City of San Diego and the San Diego Fire-Rescue Department (SDFD). The SDFD is responsible for protecting the life and property of San Diego area residents and visitors through a variety of services. The City spans approximately 342 square miles with a resident population of 1,292,400. The department includes 45 fire stations, a communication center, apparatus and equipment repair facilities, a training facility, 11 permanent lifeguard stations and 50 seasonal lifeguard towers. According to FY2003 data, the total emergency response call volume was 92,570 and department staffing was 880 uniformed firefighter classifications, 123 lifeguards, 32 fire prevention classifications, 99 positions assigned to Emergency Medical Services, and 119 civilian support personnel. Based on this data, the ratio of firefighters per capita is .69 per 1,000, or one to 1,469 residents, and does not include transient population such as tourists and those that work within the city limits.

From a historical perspective, based on a series of particularly destructive fires through the 1880s, an amendment was made to the City Charter in August of 1889, which created the San Diego Fire Department. Prior to 1889, volunteers handled all fire protection in the City. In 1909, Louis Almgren, who would serve as Fire Chief until his retirement in 1935, began what came to be known as a golden era of expansion and innovation for the San Diego Fire Department. Among his many organizational improvements, Chief Almgren improved working conditions, raised standards of performance and professionalism for firefighters, and established a merit system to facilitate more equitable selection and promotion of personnel. This period also saw significant progress in technological innovation. In 1917, the SDFD became the first fully mechanized major fire department on the West Coast. In addition, in 1919 the SDFD christened the first gasoline-powered fireboat in the world.

During this same era, San Diego Lifeguard Service came into existence. The beginning of the 20th Century saw an influx of people turning to the beaches for their recreational pursuits. Prior to 1918, any water related emergency was handled by heroic volunteer citizens who happened to be in the right place at the right time and who happened to have the skills necessary. However, in 1918, after 13 people drowned at Ocean Beach in a single terrible day, the San Diego Lifeguard Service was created. The City initially appointed three lifeguards and attached the new division to the San Diego Police Department. In the 1920s, Spade Burns was appointed as the first Chief Lifeguard operating out of Police Substation #1, and more stations were added from Ocean Beach to La Jolla in order to broaden lifeguard coverage. During the Great Depression, the City Council attempted to cut lifeguard staffing, but several people drowning prompted full restoration of lifeguard protection.

In response to a growing population, advances in technology, and a diversification of responsibilities, the San Diego Fire Department and the San Diego Lifeguard Service continued to expand the breadth and depth of their respective expertise. As the department grew, it



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expanded into five specialized divisions designated as Operations, Personnel and Training, Support Services, Fire Prevention, and Administrative Services. The Lifeguard Service divided into two major divisions: Oceanfront Operations and the Boating Safety Unit. Eventually, in Fiscal Year 1997, the two major entities, San Diego Fire Department and San Diego Lifeguard Service, merged into one, the San Diego Fire-Rescue Department.

Through the following decades and into the 21st century, firefighters have taken on additional skills and responsibilities in such areas as hazardous materials, industrial accidents, urban search and rescue, and weapons of mass destruction preparedness. San Diego firefighters must be prepared for every imaginable all-risk and fire protection problem from wildland to urban high-rise. Lifeguards specialize in areas including marine fire prevention, coastal cliff rescue, swift water rescue, and SCUBA search and rescue. Firefighters and lifeguards alike are required to be, at a minimum, Emergency Medical Technician (EMT) certified and many firefighters are EMT-Paramedics. In 1979, the Fire Department became a limited 911 first responder service. In 1990, the San Diego Lifeguard Service dispatch center became a full component of the 911 dispatch system as well. In Fiscal Year 1998, SDFD entered into a partnership with Rural Metro of San Diego to provide primary advanced and basic life support ambulance coverage to the City of San Diego. This public-private partnership for emergency medical services was the first of its kind in the country. In 1998, the department's Communications Center was accredited as a Center of Excellence in Emergency Medical Dispatching.

During its history, San Diego Fire-Rescue enhanced administrative functions with the expertise of non-uniformed personnel who oversee budget, payroll, apparatus and equipment acquisitions, facilities maintenance, communications and training centers. Many of these staff members bring a variety of education and work experience to their positions, ranging from specialized training and certifications to post-graduate college degrees and holding management level positions in private industry. They include clerical assistants, senior clerks, word processing operators, payroll specialists, dispatchers, mechanics, motive techs, storekeepers, stock clerks, administrative aides, public information officers, information systems analysts, organizational effectiveness specialists, communication manager, fleet manager and management analysts. A number of non-uniformed staff has spent the majority of their City of San Diego careers with San Diego Fire-Rescue, sharing a common bond, loyalty and commitment to the department's goals.

The department as it stands today is organized as follows:

Operations

Emergency Operations provides essential fire suppression, rescue, emergency medical services as well as other all-risk emergency services.

Lifeguard Services

Lifeguard service provides safety services to persons using the coastal areas and waterways of San Diego including Mission Bay and the Pacific Ocean, through water and cliff rescues, emergency medical aid services, the enforcement of state and local laws, assistance to boaters in distress, and public safety education. This division also provides emergency water rescue to



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inland areas during flooding, via the River Rescue Team, and assistance to underwater divers, via the Dive Team.

Special Operations

Special Operations provides specialized emergency response to incidents requiring unique technical expertise which include: explosives disarmament, fire cause investigation, City and County response to hazardous material incidents, as well as incidents that require the activation of its Special Trauma and Rescue Team, Urban Search and Rescue Team, and members of the Metropolitan Medical Strike Team. This division is also responsible for emergency management or disaster preparedness, grants, and special projects including Strategic Planning, Fire Accreditation, and program development such as career development and firefighter wellness.

Emergency Medical Services and San Diego Medical Service Enterprise

The Emergency Medical Services Division (EMS) provides administrative and technical support, quality assurance, continuous quality improvement and education for San Diego Fire-Rescue's First Responder Paramedic Engine Program. EMS also manages San Diego Medical Services Enterprise, the Limited Liability Company composed of the City of San Diego and Rural/Metro Corporation (R/M), providing quality assurance/improvement and education for the medical transport program. In conjunction with San Diego Fire-Rescue's First Responder Paramedic Engine Program, 24-hour Advanced Life Support ambulance coverage is provided with ambulances staffed with one paramedic and one emergency medical technician.

Training and Education

As the name implies, Education and Training is responsible for educating Fire-Rescue personnel in the safe and efficient performance of assigned duties. Major activities include in-service training, basic fire academy, driver training, supervisor and leadership training, oversight of the Joint Apprenticeship Program, the Wellness Program and management of the San Diego Regional Public Safety Training Institute.

Fiscal and Information Services

Fiscal and Information Services provides analytical, fiscal and clerical support to the San Diego Fire-Rescue Department. The division prepares the annual budget, revenue and expenditure forecasts, as well as statistical reporting centralized word processing and preliminary accounts payable services.

Human Resources

Human Resource is responsible for managing personnel, payroll, labor relations, discipline, and equal employment matters. The division also administers department recruitment and promotions; designs and implements human resources and cultural diversity training and oversees the Critical Incident Stress Debriefing programs. This division also administers random drug and alcohol screening, tuberculosis and respiratory fitness testing, hepatitis B and other infection control programs.



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Fire Prevention

Fire Prevention provides technical services, inspection and code enforcement activities. Tasks include fire code enforcement, such as annual inspections of high-rise occupancies, permit issuance, statistical reporting, and coordination of weed/brush inspections and control of hazardous materials processes.

Fleet/Stores and Facilities/Construction

Support services is responsible for acquiring, maintaining, repairing and overhauling fire apparatus, motive and industrial equipment; providing supply and maintenance support for 45 fire stations and coordinating the construction and improvement of new and existing facilities.

Communications

This division operates the Fire Communications Center and maintains all of the communication system and equipment, operates the Computer Aided Dispatch system and dispatch center, coordinates emergency operations and provides data for analysis of emergency operations. The Information Systems (IS) section supports all of the technology needs for the department. A wide variety of computer-based equipment is utilized throughout all divisions. This support includes maintaining hardware, software, reporting databases and geographic information systems (GIS).

In terms of achievement, it should be noted that the City of San Diego conducts an annual resident satisfaction survey. The primary purpose of this effort is to measure residents' satisfaction with City services as outlined below:

- Attitudes about the quality of life in San Diego;
- Overall satisfaction with the City's performance in providing services;
- Satisfaction with 34 specific City-provided services;
- Utilization of selected City-provided services and facilities;
- Attitudes about safety in the City of San Diego.

The San Diego Fire-Rescue Department received a satisfaction rating of 96% in the 2002 Satisfaction Survey, placing it as the highest rated department in the City. Fire-Rescue also received a satisfaction rating of 93% in the 2003 survey, placing it fourth citywide.

San Diego residents continue to rate the City's fire and emergency services high indicating they are satisfied with each of six primary services: 1) fire emergency services, 93%; 2) 911 services, 85%; 3) emergency medical services, 82%; 4) lifeguard services, 81%; 5) fire prevention programs, 76%; and, 6) beach and water safety education, 73%. These ratings are consistent with the 2002 ratings.



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Three key findings are evident from this research effort:

- The City continues to receive very high marks from residents for the services it provides, with better than nine out of ten residents (94%) indicating they are satisfied with the job the City does. Importantly, this attitude is universal among all population subgroups.
- The City receives highly positive ratings in the vast majority of instances for its efforts in delivering the 34 specific municipal services surveyed.
- The quality of life that San Diego offers continues to be viewed highly with a positive rating of 79 % among residents. Again, this attitude is generally held by all the various socio-demographic subgroups making up the City.

Governance of the City of San Diego

The City of San Diego has had a City Manager form of governance since 1931, as outlined in the City Charter. There have been many revisions to this Charter since then. In 1963, the voters approved increasing the number of Council districts from six to eight. These eight districts are nearly equal in population as practical and used for all elections of Council members, including their recall, and for filling any vacancy. A Council district map is attached as Appendix A1. These districts also try to preserve identifiable communities of interest and are geographically compact or populous contiguous territory. In 1974, the positions of Mayor and City Council were created as full-time posts. San Diego voters also approved changing the election system of Council members from all of the electors of the City to a process wherein City Council members are elected by the residents of the district for which elective office they are a candidate. Only the Mayor and City Attorney continue to be elected on a citywide basis.

The Council is currently comprised of nine Council members, including the Mayor and they serve as the legislative body of the City. Each of the council members and the Mayor has the right to vote upon all issues before it. The Mayor is not granted veto power, but does have a vote as a member of the Council. The Mayor presides at Council meetings, performs duties as prescribed by the City Charter, and is recognized as the official head of the City for all ceremonial purposes. In accordance with the Charter, no person shall serve more than two consecutive four-year terms as Mayor or Council member.

Under this form of government, the Council selects a City Manager in accordance with the City Charter, who serves as the chief administrative officer for the City. The Manager serves for an indefinite term, but may be removed at the pleasure of the Council. The City Manager is responsible to supervise the administration of the affairs of the City; make recommendations to the Council concerning the affairs of the City; keep the Council advised of the financial condition and future needs of the City; to prepare and submit to the Council the annual budget estimate and such reports as may be required, including an annual report of all the departments of the City; ensure the ordinances of the City and the laws of the State are enforced; and perform other duties as prescribed by the City Charter. An organizational chart for the City of San Diego



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is attached as Appendix A2. All other administrative powers conferred by the laws of the State shall be exercised by the City Manager or person designated by him.

It is important to note however, that in the November 2004 election the voters passed Proposition F which amends the City Charter to provide for a strong Mayor form of governance for a five-year trial period commencing on January 1, 2006, and ending December 31, 2010. Voter action would be required to extend or make this change permanent. This measure removes the Mayor from the Council. The eight Council districts would not be affected. The Mayor would have the authority to give direction to all City officers and employees, except those in departments and offices recognized in the Charter as being independent, such as the Council offices, City Attorney, Personnel, Retirement, and the Ethics Commission. The Mayor retains the power to veto those resolutions and ordinances adopted by the Council establishing policy. The veto power would not extend to matters of internal governance of the Council or to the application of existing municipal rules to specific decisions of the Council, such as the issuance of land use permits. The Mayor would be responsible for preparing the annual budget for the Council's consideration and adoption. The Council would appoint an Independent Budget Analyst to review and provide budget information to the Council, independent from the Mayor. It would take the affirmative vote of five Council members to take any action, and five votes to override any mayoral veto.

The Council would establish its own rules, elect a presiding officer, establish committees, and set the legislative agenda for the City, including establishing procedures for docketing matters in open session. The Mayor, City Attorney, and presiding officer of the Council would jointly set the agenda for closed session meetings, and when present, the Mayor would preside over those meetings, but the Mayor would have no right to vote.

The Mayor would appoint the City Manager with Council confirmation. The City Manager would serve at the pleasure of the Mayor. The mayor would appoint the City Auditor and Comptroller, Police Chief, and Fire Chief, subject to Council confirmation. All other managerial department heads formerly under the City Manager would be appointed by the mayor and serve at the pleasure of the Mayor. As under the current Charter, the mayor would appoint all other members of City Boards and Commissions, subject to Council confirmation.

Current Levels of Service

The department has a number of physical and human resources available to deliver services. Engine and truck companies, ambulances for both advanced or basic life support as well as inter-facility transports, and other specialty units provide response for emergency incidents throughout the city from 45 fire stations. When a request for service is received from the 911 system, the Fire Communication Center (FCC) verifies the call location and uses the Computer Aided Dispatch (CAD) system to establish a response. The dispatcher, company officer and/or battalion chief all have the latitude to upgrade or downgrade the response based on dispatch information, pre-planned knowledge, or any additional information that would warrant this



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action. There are seven response categories: Fire, Levels 1 and 2, and Medical, Levels 0-1-2-3-4. The following non-fire incidents are included within these seven categories.

- 1) EMS
- 2) Hazardous Materials
- 3) Technical Rescue
- 4) Aircraft Rescue and Firefighting (ARFF)
- 5) Shipboard Rescue and Firefighting
- 6) Disasters
- 7) Swift water

A Level 1 Fire represents a higher priority than a Level 2. For example, a Level 1 would include a residential fire and a rubbish fire would be a Level 2. Both levels, however, require the first responding engine company to arrive at the scene of an emergency within an average of six minutes from the time of page received from FCC to at-scene.

EMS is provided to the citizens of San Diego through a public/private partnership between the SDFD and Rural/Metro Corporation. This partnership is referred to as the San Diego Medical Services Enterprise (SDMSE) which is a Limited Liability Company under contract with the City of San Diego to provide Advanced Life Support (ALS) and Basic Life Support (BLS). SDFD personnel serve as first responders providing ALS response with one Firefighter/Paramedic and three Firefighter/Emergency Medical Technicians (EMTs). The ALS transport unit may be staffed with either a SDFD or RM Paramedic and EMT.

The emergency medical services response standard is delineated on Table 1.1. A Level 1 medical emergency requires the first responders to arrive at scene within eight minutes 90% of the time.

**TABLE 1.1
EMS RESPONSE LEVEL**

LEVEL	RESOURCE	RESPONSE	DEFINITION
1	ALS –First responder + ALS ambulance	CODE 3: ≤ 8 min+ CODE 3: ≤ 12 min	EMERGENCY (potential risk to life)
2	ALS ambulance	CODE 3: ≤ 12 min	URGENT (risk to short or long term health, but no life-threat)
3	ALS ambulance	NO CODE: ≤ 20 min	NON-URGENT (little immediate health risk)
4	Ambulance (ALS OR BLS)	BEST EFFORT ≤ 30 min	UNSCHEDULED, NONEMERGENCY

In addition to providing response to fire and medical emergencies, the department provides technical rescue. Rescue 4 is a dedicated team that specializes in this area. Rescue 4 is located in downtown San Diego and responds to all areas of the City. There are four personnel assigned



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to Rescue 4, which include a Captain, Engineer, and two Firefighters. There is an additional crew of four personnel assigned to Engine 4 that can respond with Rescue 4 for technical assistance. All of the department's truck companies carry a wide complement of rescue tools which allow for the first arriving unit to stabilize the scene and assess risk prior to the arrival of Rescue 4.

Hazardous Materials response is also provided. The initial response requires the first-in engine company to assess the hazard. Once the hazard has been determined, the Hazardous Materials Incident Response Team (HIRT) responds to stabilize the scene. Twenty-four personnel are permanently assigned to HIRT and located at Station 44. These personnel adaptively staff two hazardous materials response units (HZM 1 and HZM 2) and one environmental response vehicle (ERT). An additional twenty-four members of the HIRT unit are personnel permanently assigned to other fire stations and are used as relief personnel for Station 44, as required. The HIRT Specialty Unit(s) respond to incidents involving potential or known hazardous materials. HIRT also provides hazardous incident response for participating agencies within the County of San Diego on a contract basis through a joint powers agreement (JPA). According to the contract, HIRT is required to respond to incidents in participating agencies jurisdictions within 60 minutes. The JPA includes a pricing structure that recovers all costs associated with the delivery of hazardous materials response.

Aircraft related responses are provided at the San Diego International Airport by the aircraft rescue and firefighting (ARFF) crew stationed on airport property. The San Diego Port Authority has contracted with the City of San Diego to deliver this service which recovers all SDFD associated costs. ARFF crews are required to respond to an incident on the runway within three minutes. If additional resources are needed, engine companies stationed near the airport, Engines 3 and 8, respond for support. These companies are also ARFF trained. The City of San Diego has two additional airports, Montgomery and Brown Fields. Fire Stations 28 and 43, respectively, serve these airports. The first-in engine company crews have awareness level training for responding to ARFF incidents at these airfields. Other off-site companies respond if needed.

In addition, the City of San Diego serves as the Sponsoring Agency for the Urban Search and Rescue Task Force, CA TF-8. This team is a multi-disciplinary tactical unit for search and rescue operations. A total of 210 personnel are divided into 3-70 person units. The Task Force is capable of sustained around-the-clock operations and is self-sufficient for up to 72 hours and certified by the Federal Department of Homeland Security as Weapons of Mass Destruction-capable.

Another service provided by the department is the Metro Arson Strike Team (MAST)/Explosive Device Team (EDT) which is comprised of 20 uniformed firefighter positions and three San Diego Police Department Detectives. This team is responsible for fire cause and origin investigation and determination. Additionally, there are ten uniformed personnel trained and assigned as Explosive Device Technicians. They are responsible for explosive ordnance identification and disposal, as well as post-blast investigation. These teams work closely with



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agents from the Federal Bureau of Alcohol, Tobacco and Firearms (ATF) and the Federal Bureau of Investigation (FBI). Agents from these federal agencies maintain workspace in the MAST office.

Additionally, SDFD provides 18 specially trained paramedics referred to as Special Trauma and Rescue Team (STAR) to support the San Diego Police Department's Special Weapons and Tactics Unit (SWAT). These personnel are available, by request from the San Diego Police Department, to provide advanced life support personnel and equipment for SWAT missions and training. STAR members are also trained and certified to provide advanced life support for the United States Coast Guard during off shore emergency responses. All costs associated with missions and/or training that exceeds four hours in duration is reimbursed to the department.

The County of San Diego is the lead agency for the Metropolitan Medical Strike Team (MMST). SDFD is a participating agency, providing approximately 40% or 60 personnel assigned to the MMST. Participation can be either on or off-duty and is on a voluntary basis. Through a Memorandum of Agreement with the County of San Diego, the SDFD agrees to provide five emergency response units for an immediate need MMST response and would include HZM1, HZM2, EDT, Engine 26, and Engine 9. The primary role of MMST is to provide multi-casualty incident support and mass decontamination resources for the San Diego County region.

The following Table 1.2 provides a complete list of the response types and resources assigned based on alarm levels.

**TABLE 1.2
RESPONSE/RESOURCE LEVEL**

Response Type	Alarms	Resources
Single Engine	Still	1E
Structure Residential	1	3E, 1T, 1BC
	2	3E, 1T, 2BC
	3	3E, 1T, 2BC
	4	3E, 1T, 2BC
Structure Commercial/Apt	1	4E, 2T, 2BC
	2	4E, 2T, 2BC
	3	4E, 2T, 2BC
	4	4E, 2T, 2BC
Structure High rise/Hospital	1	5E, 2T, 1R, 2BC, 1Medic, LA1
	2	4E, 2T, 2BC
	3	4E, 2T, 2BC



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**TABLE 1.2
RESPONSE/RESOURCE LEVEL (cont')**

Response Type	Alarms	Resources
Ring alarm (residential)	Still	1E
Ring alarm (high rise)	N/A	1E, 1T
CO alarm	N/A	1E
Vehicle Fire (single)	Still	1E
Vehicle Fire (Large)	N/A	2E
Vehicle Fire (Tanker)	1	3E, 1T, 1BC, Hazmat1
Fuel Spill (<25 Gal)	N/A	1E
Fuel Spill (>25 Gal)	1	3E, 1T, HazMat, 1BC
Fuel Spill DT<10 gal	N/A	CU1
Fuel Spill DT 10<25 gal	N/A	1E, CU1
Fuel Spill (parking structure)	N/A	1E, CU1 or CU10
Tank Farm	N/A	4E, 2T, FM28, 2BC, R4, LA1, HazMat
Nat. Gas Leak (odor)	N/A	1E
Nat. Gas Leak (blowing)	1	2E, 1T, 1BC
Boat Fire 1 st Alarm (downtown)	1	3E, 1T, R4, 1BC
Vehicle vs. Structure	1	1E, 1T, R4, 1BC, 1Medic
Rescue (elevator)	N/A	1E, 1T
Rescue (vehicle)	1	1E, 1T, R4, 1BC, 1 Medic
Rescue (industrial)	1	1E, 1T, R4, 1BC, 1Medic
Rescue (swift water)	N/A	1E, 1T,
Rescue (misc.)	1	1E, 1T, R4, 1BC, 1Medic
Rescue (cliff)	1	1E, 1T, R4, 1BC, 1 Medic
Medical Aid- Priority 1	N/A	1E, 1ALS
Medical Aid- Priority 2	N/A	1ALS (code response)
Medical Aid- Priority 3	N/A	1ALS (no code response)
Medical Aid- Priority 4	N/A	1BLS
Multi Casualty	1 st Alarm	3E, 1T, 1BC, 3ALS, 1MR,E26
Aircraft / major difficulty	2	R1, R2, R3, 4E, 2T, R4, 1BC
Aircraft crash on field	3	R1, R2, R3, 8E, 4T, R4, 4 ALS, 3BC, LA1, COM1, DMS, 1 MR, E26/E9
Bomb threat on aircraft	4	HPD, B1 Notification, MAST Notification
Aircraft crash – Estuary	3+	R1, R2, R3, CR28, CR43, 8E, 4T, R4, 4ALS, 3BC, LA1, COM1, DMS, 1 MR, E26/E9
Aircraft / minor difficulty	1	1E, 1T, CR28, 1 BC
Aircraft / major difficulty	2	1E, 1T, CR28, R4, 1 BC, 1 Medic
Aircraft crash on field	3	2E, 1T, CR28, R4, 1 BC, 1 Medic
Bomb threat on aircraft	4	1E, 1 BC, MAST, PD



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**TABLE 1.2
RESPONSE/RESOURCE LEVEL (cont')**

Response Type	Alarms	Resources
Aircraft / minor difficulty	1	1E, 1T, CR43, 1 BC
Aircraft / major difficulty	2	1E, 1T, CR43, R4, 1 BC, 1 Medic
Aircraft crash on field	3	2E, 1T, CR43, R4, 1 BC, 1 Medic
Bomb threat on aircraft	4	1E, 1 BC, MAST, PD
Vegetation	Low	3E, 1T, 1BR, 1BC
Vegetation	Medium	4E, 1T, 2BC, 3BR, 1WT, Copter 1
Vegetation	High	5E, 1T, 2BC, 5BR, 2WT, Copter1

Staffing Patterns

The department is staffed with 880 Firefighter classifications as outlined in Table 1.3 below. These figures are based on FY2003 data. All positions from Firefighter through Battalion Chief are also Emergency Medical Technicians (EMTs). In addition, there are 280 firefighters that are trained and function as Paramedics (PMs). Personnel working in the Operations Division are assigned to one of three divisions; A, B, or C, and will normally work a 56-hour work week, consisting of 24-hour work shifts. Personnel assigned to this schedule will work nine, 24-hour shifts each 28 day period. Personnel begin their work shift at 8:00 a.m. and are relieved the following morning at 8:00 a.m. The department maintains a minimum staffing requirement of 250 total positions on duty each shift. See Appendix A3 for further detail. It should be noted that the detail in Appendix A3 is based on FY2004 data, consequently the total staffing figure will differ from staffing referenced elsewhere in this report.

**TABLE 1.3
FIREFIGHTER CLASSIFICATIONS**

Position Classification	Budgeted Positions
Fire Chief	1
Deputy Fire Chief	7
Battalion Chief	23
Fire Captain	218.27
Fire Engineer	213.05
Fire Fighter I	20
Fire fighter II/ (EMT or PM)	397.31
Total Suppression	879.63

As referenced previously, emergency response apparatus are located throughout the City from 45 fire stations. The City has been divided into seven battalion districts. Fire stations and apparatus are strategically located within one of seven battalion districts with a goal of providing the most effective response possible and dividing workload as equally as practical. A detailed list of fire station locations and units assigned is provided as Appendix A4. Also provided are maps which



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identify battalion districts, station locations, and truck company districts as Appendices A5, A6, and A7, respectively.

The department utilizes an adaptive staffing concept wherein personnel depending on the call type will either staff the engine, truck, brush rig, hazmat unit, or crash rescue (ARFF) unit assigned to a particular station. The term “cross-staffing” or “adaptive-staffing” has been utilized within the SDFD to define the condition in which a station is staffed with fewer employees than are required to respond on all units assigned and available within the station. This type of staffing concept has been used by the department since 1998, and was a result of budget cutting measures. In an effort to cut salary costs, a decision was made to staff four stations that house both an engine and truck with four personnel rather than the department’s standard of eight. The concept was that personnel could staff the engine in the event that an incident required an engine response or a truck if it was needed. The personnel could move from the engine to the truck and respond accordingly. While this procedure may have provided some level of assurance that the truck would remain available for most responses, it clearly has failed to meet the expectations of even the most optimistic projections. This concept has been plagued with many challenges. In addition to the obvious reduction in available firefighting capability as station’s staff was cut by 50%, training, maintenance, and dispatching difficulties have proven common. Other specialty units such as light and air, explosive ordnance and water tenders may also require short staffing on the engine or truck company assigned to the station in order to respond on the specialty unit. Daily staffing by unit is outlined below in Table 1.4 and identifies the various types and number of units, as well as those that are adaptively staffed.

In addition to the 880 Firefighter classifications, there are 123 Lifeguard classifications, 32 fire prevention classifications, 99 positions assigned to Emergency Medical Services, and 119 civilian support personnel for a total of 1,254 positions. The civilian support positions provide administrative staff to divisions such as Fire Prevention, Communications, Human Resources, Facilities and Equipment Maintenance, Training and Education, Emergency Medical Services and Administration. Personnel assigned to administrative positions either work 40-hours per week, or a 44/36-hour schedule. While flexible hours are offered, generally speaking staff schedules range from 7:00 a.m. to 6:00 p.m. For a complete listing of positions, see Appendix A8.



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**TABLE 1.4
APPARATUS STAFFING**

Number/ Units	Unit Type	Staffing level	Adaptive Staff	Total On-Duty
45	Engines, ALS	4		184
11	Trucks, BLS	4		44
3	Trucks, BLS		4	
7	Battalion Chief	1		7
1	Heavy Rescue	4		4
11	Brush units		4	
2	Water Tenders		1	
15	ALS Ambulances (Fire)	2		30
10	ALS Ambulances (R/M)	2		20
12	BLS Ambulances	2		24
2	Light & Air		2	
1	Explosive Ordnance		2	
2	Haz Mat		4	8
5	Aircraft Crash Rescue	8		8
6	Arson Investigation	2		2
1	Helicopter	3		3
1	Foam 28		1	
			Total	334

The department also maintains an extensive fleet consisting of emergency response and support vehicles. The primary first-line and reserve emergency response apparatus are listed below in Table 1.5.

**TABLE 1.5
PRIMARY FIRST-LINE AND
RESERVE EMERGENCY RESPONSE APPARATUS**

Number of Units	Unit Type
45	Engines
14	Reserve Engines
14	Trucks
4	Reserve Trucks
3	Light and Air
2	Hazmat Units
1	Environmental Unit (Hazmat)
11	Brush Units
2	Water Tenders
1	Foam Unit
6	Crash Rescue Units (ARFF)



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**TABLE 1.5
PRIMARY FIRST-LINE AND
RESERVE EMERGENCY RESPONSE APPARATUS (cont')**

Number of Units	Unit Type
1	Mobile Communications Unit
1	Office of Emergency Service Engine
1	Heavy Rescue
1	Explosive Ordnance Unit
39	ALS Ambulances
4	Medic/Rescue Units
23	BLS Ambulances

For a detailed fleet inventory, including support vehicles, reference Appendix A9.

SECTION TWO

RISK ASSESSMENT



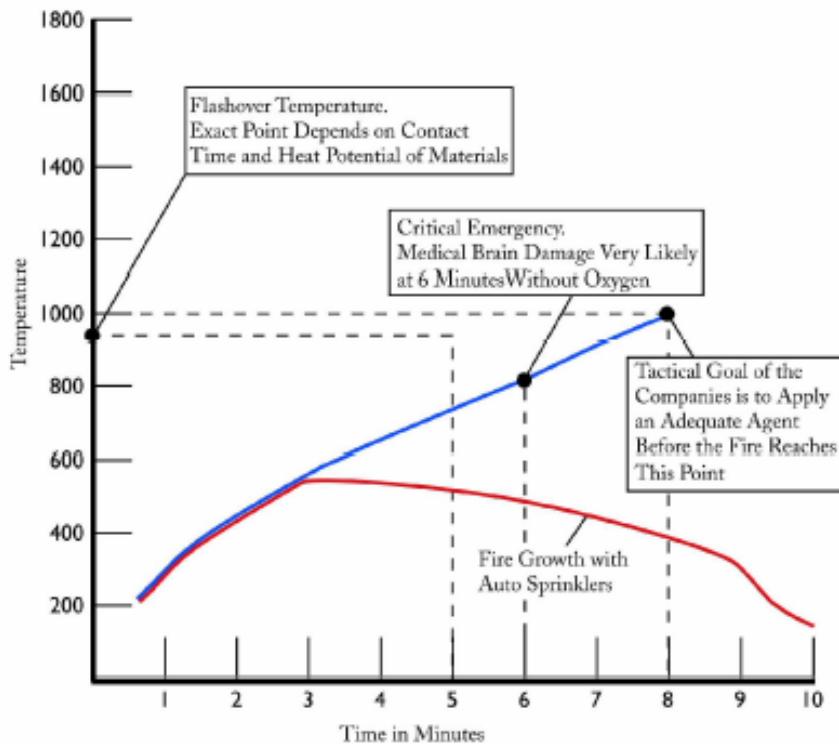
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Section 2 - Risk Assessment

This section is designed to provide a description of the scope, complexity and relationship of the various risk factors within the City of San Diego and the method used to evaluate these risks. The City of San Diego is at risk for a variety of reasons. Geography places the City in an extremely volatile wildland/urban interface area, as well as on an active earthquake fault. A port city, located near one of the busiest international border crossings in the world, San Diego also has miles of coastline which must be protected. The department considered both the structural and non-structural risks in its evaluation. The non-structural risks include emergency medical, hazardous material, technical rescue, swift water, aircraft and shipboard rescue and firefighting, wildland/urban interface, and disasters. Some of the structural risks include: multiple large airports, 152 high rise buildings, military installations, international port, and large public venues such as Petco Ballpark, Qualcomm Stadium, San Diego Convention Center and tourist attractions. In order to determine the extent of various risk factors, the department has analyzed the demographics of area protected or population at risk, both permanent and transient, the area protected by initial attack companies, population and building density per square mile, and the ratios of firefighters per capita by engine district to determine its risks.

Table 2.1 illustrates the need for rapid response to fire and medical responses to mitigate these emergencies.

**TABLE 2.1
TIME/TEMPERATURE CURVE**





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To minimize risk, the department strives to extinguish small fires quickly before they reach flashover potential to minimize risk and to mitigate medical emergencies quickly to reduce cardiac death. Flashover is a significant fire event, and preventing this stage of fire behavior is imperative. Flashover occurs within 2 to 30 minutes depending on the environment and fuel that is burning. Time is a key factor in this prevention effort. Once flashover potential is reached, an exponential increase occurs not only in the rate of combustion, but in the amount of resources necessary to mitigate the fire emergency. Additionally cardiac death, much like flashover, is of a time concern. The brain can only be without oxygen for a short period of time, i.e., four to six minutes. Rapid intervention is necessary to prevent brain death from occurring.

General Requirements

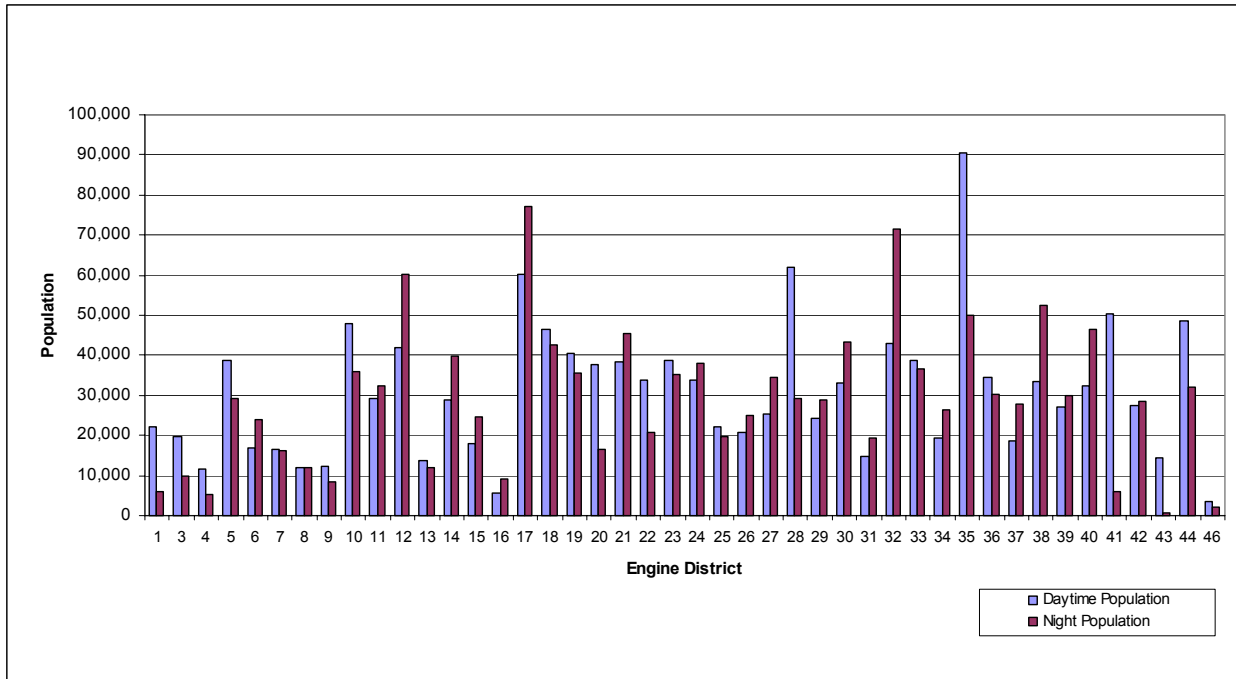
In terms of demographics as referenced earlier, the City of San Diego covers 342 square miles with a resident population of 1,292,400. The population density varies throughout the city and within each battalion and fire station or engine district. The population shift between daytime and nighttime within each engine district can be significant. A major shift in the City's population distribution occurs twice each weekday. In the morning, population in residential areas decreases as population in schools and business districts increase. Each evening, the process reverses. The difference between nighttime and daytime population is significant in some areas of the city and is therefore important when analyzing the risk for the region.

Maps have been included as Appendix B1 and B2 which clearly depict this population shift. The maps illustrate that the daytime population density is heaviest in the North City, Mid-City, and Downtown areas, ranging in population from 25,000 – 70,000. This is due to a heavy concentration of commercial/industrial properties. Table 2.2 below also demonstrates this population shift. Engine 1 located Downtown fluctuates from a daytime population of approximately 22,000 to a nighttime population of 6,000 and Engine 28 in Mid-City has a daytime population of over 60,000 and a nighttime population of less than 30,000. In the North City, Station 35's response district ranges from a daytime population of 70,000 to 44,000 at night. Those districts that show only a slight variation between daytime and nighttime population, such as Engines 5, 13, 18, and 25 have a balanced mix of residential and commercial properties. By contrast, Engines 12, 17, 32, and 38 have heavier concentrations of residential units, resulting in a significantly higher nighttime population.



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**TABLE 2.2
DAYTIME/NIGHTTIME POPULATION**



All regions of the City experience some shift in transient population; however, the most current daytime population studies provided by the San Diego Association of Governments (SANDAG) indicate that the areas of the City that have the greatest numeric daytime population gain are Central San Diego (64,000) and Kearny Mesa (57,100), while the University area has the greatest percentage gain, (50.8%). The area with the most significant population loss, both numerically and proportionally, is Southeast San Diego (-49,000 / -32%). This is illustrated in the following Table 2.3.

**TABLE 2.3
TRANSIENT POPULATION FOR SELECTED REGIONS**

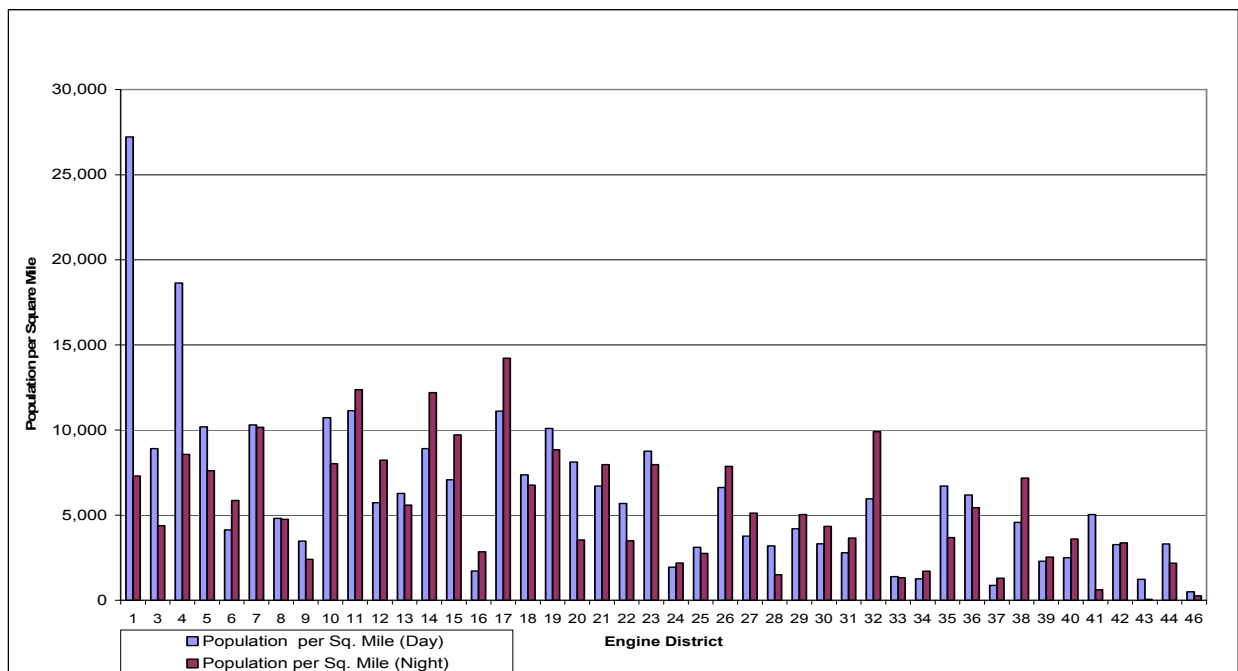
Region	Resident Population	Daytime Population	# Change	% Change
Central San Diego	159,700	223,700	64,000	40.1
Kearny Mesa	140,500	197,600	57,100	40.6%
University	48,600	73,300	24,700	50.8%
Southeast San Diego	151,500	102,500	-49,000	-32.3%



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In addition to the total population figures provided in Table 2.2, data were gathered to identify the density of the population for each engine district as reflected in Table 2.4 below. These data were calculated by dividing the area of each engine first-in district into the population served. The population density of an engine district is important to evaluate as there is a direct correlation between density and other factors such as run volume, values at risk, and financial resources necessary to support coverage needs. In other words, higher population density results in higher run volume for the same response area, thus the possible need for more and/or different types of assets. Based on this premise, Table 2.4 demonstrates that the Downtown Engines 1, 3, 7 and 11, as well as the Mid-City area protected by Engines 5, 14, 17 and 18 would require additional assets. Historical data support this theory as run volume in these areas is high and, as a consequence, the probability that the engine company will be in quarters at time of call is much lower than in other areas with less density.

**TABLE 2.4
POPULATION DENSITY PER SQUARE MILE BY ENGINE DISTRICT**

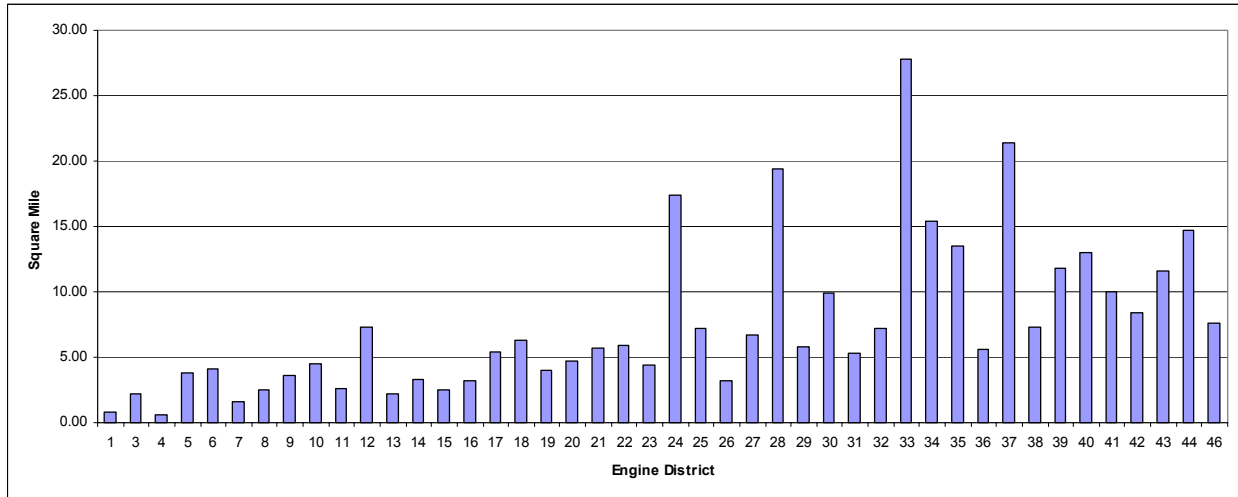


In terms of the areas protected by initial attack companies, the response area can vary between approximately one to twenty-eight square miles. The Commission on Fire Accreditation International (CFAI) has identified that when the area protected by fire companies exceeds nine square miles, extended response times will result. As shown in Table 2.5, Engines 1 and 4 cover one square mile versus Engine 33 which covers 28 square miles. In addition, Engines 24, 28, 34, and 37 exceed a 15 square mile response area. In total, twelve engine districts fall outside the nine square miles identified by CFAI.



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**TABLE 2.5
SQUARE MILE PER ENGINE DISTRICT**



Historically, San Diego Fire-Rescue has operated with a much lower firefighter per capita than other similarly sized metropolitan departments. Listed below is an overall firefighter staffing comparison.

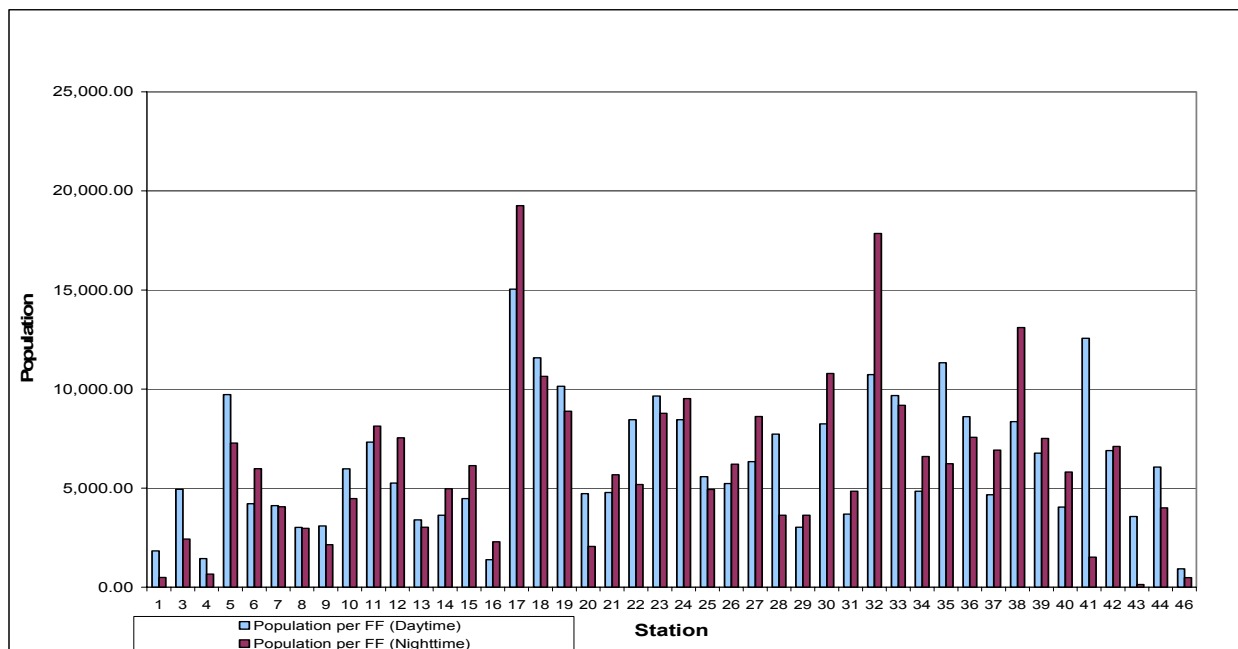
City	Sworn Firefighters	City Population	Population Per Firefighter
San Francisco	1,781	750,000	421
Houston	3,875	1,900,000	490
Seattle	1,040	563,400	542
Denver	910	562,657	618
Austin	1,036	662,967	640
Dallas	1,692	1,188,580	702
Oakland	506	409,000	808
San Antonio	1,449	1,200,000	828
Portland	648	538,180	831
Sacramento	550	458,000	832
Tucson	526	515,437	980
Phoenix	1,398	1,393,381	997
Los Angeles City	3,376	3,800,000	1,126
Los Angeles County	3,404	3,864,305	1,134
San Jose	733	925,000	1,262
San Diego	880	1,292,400	1,469



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Table 2.6 below illustrates the population per firefighter within the City of San Diego by each engine district and includes only on-duty firefighters. Using the daytime population figures, 25 of the 45 Engine districts or 55.6% of the total response force serve a population of 5,000 or more per firefighter. Six Engine districts, 17, 18, 19, 32, 35, and 42 exceed a 10,000 to one ratio. The most dramatic illustration is the nighttime population in Engine districts 17 and 32 which protect 19,264 and 17,858 persons per firefighter, respectively.

**TABLE 2.6
POPULATION PER FIREFIGHTER BY STATION**



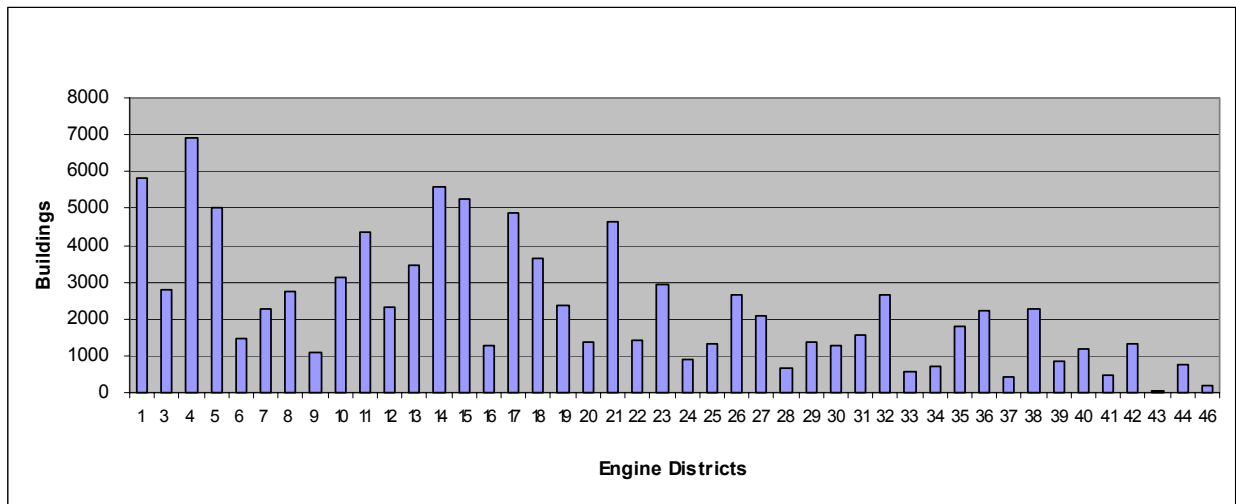
Another risk factor considered was building density. Table 2.7 on the following page identifies the number of building units per square mile within each engine district. All building types such as single family, multi-family, mobile homes and commercial and industrial were included in this dataset. Areas that have dense concentrations of buildings pose a higher risk of life loss, potential loss of economic value to the community and/or significant damage loss to property because of the large, heavily loaded structures and thus require more resources to control fires. As noted in Table 2.7 below, the Downtown Engines 1, 4 and 11, and Mid-City Engines 5, 14, 17, and 18, as well as some of the beach areas such as Engine districts 15 and 21 reflect high building density. These stations were constructed to provide for the rapid deployment of multiple resources in order to control fires. As demonstrated in Table 2.5, the downtown stations cover areas ranging from less than one mile to a maximum of 3.82. In Mid-City, the coverage ranges from 3.26 to 6.29, and the beach front stations referenced protect 2.53 and 5.71 respectively. At that time station locations in these areas provided the concentration levels necessary to meet demand requirements. However, due to years of infill without the addition of stations and firefighters, this is no longer the case. Hence, the dispatch of multiple alarm



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assignments to a working fire in these areas draws down resources in other areas of the City, impacting coverage in those areas. A similar problem can be observed in the North City area which is developing exponentially where the distance between fire station locations far exceeds nine square miles.

**TABLE 2.7
BUILDING DENSITY PER SQUARE MILE**



Method to Describe Risk Values

The response area for each fire station is identified as an engine district. These districts are a collection of the 3,400 demand zones that are used for multiple mapping related purposes and split into four medical demand zones. When a request for service is received as part of the 911 system, the Fire Communication Center (FCC) verifies the call location, and uses the Fire Problem Utility (FPU) in the computer aided dispatch (CAD) system to identify the required resources to send. The CAD system takes into consideration special hazards, routine risks, and isolated risks. Once the call type has been identified, the FPU can determine the correct type of predetermined response to send. For example, a residential structure fire will receive three engines, one truck, police support, and one battalion chief. A high rise structure fire will receive five engines, two trucks, one heavy rescue, two battalion chiefs, one light and air unit, one helicopter and police support. This utility allows the dispatcher to dispatch a predetermined fire alarm assignment quickly for the emergency service request.

These incidents include fire and non-fire risks such as vehicle extrication; emergency medical; hazardous materials; high angle, industrial, trench and confined space rescues; building collapse; shipboard and aircraft rescue; and swift water. See Appendix B3 Fire Problem Utility for complete listing. Incident types are prioritized into one of seven levels as follows: Fire, Levels



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1 and 2, and Medical, Levels 0 through 4. The non-fire risks are categorized within Fire, Levels 1 or 2.

The department has identified risk hazards for each type of occupancy within the City of San Diego. All operations emergency response units are outfitted with mobile data terminals which contain computer aided dispatch premise information for identified occupancies. Each fire company is required to produce a Pre-Fire Plan for risks that pose a high life hazard, high property loss, conflagration hazard, contain hazardous materials or have frequent fire occurrence. Hard copies of Pre-Fire Plan maps for the first-in district are also carried on emergency response apparatus. Risks are divided into the following four classifications defined below:

- Maximum
- High/Special Risks
- Moderate
- Low

Maximum Risk:

High Probability- These structures are most likely to be at fire risk.

High Consequence- Indicates a potential for multiple life and property loss. An area classified as maximum risk should be of substantial size and contain properties presenting a high risk of life loss, loss of economic value to the community, or large loss damage to property in the event of a fire. Such areas would ordinarily be the highest fire flow areas. The structures within them may lack built-in fire protection features. Examples of maximum risk areas include the following:

- Concentrations of high-risk industrial and commercial properties including hazardous materials facilities
- Hospitals/High rises
- Any occupancy over 10,000 square feet without built-in fire protection
- Wildland/Urban Interface (during Santa Ana conditions)

Maximum risks frequently indicate a fire agency's need for multiple alarm capability and impact the assessment of its ability to concentrate adequate resources. Failure to identify these risks often results in the inability to control loss when a fire of this class occurs. Proper risk identification is also fundamental to the assessment of an individual agency's mutual and automatic-aid resources.

High Risk/Special Risk:

Low Probability- These structures are least likely to be at fire risk generally due to built-in fire protection features.

High Consequence- Indicates a potential for multiple life and property loss. A high risk area is defined as one that contains properties presenting a substantial risk of life loss, a severe financial



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impact on the community, or unusual potential damage to property if there is a fire. Examples of such areas include the following:

- Concentrated areas of revenue generating properties or high job loss to the community if business is lost
- Infrastructure facilities such as City, State, and Federal facilities
- Any building with life safety and fire load beyond the reach of pre-connected hose lines (200 feet), e.g. apartments, malls and office complexes
- Elementary, junior high, high schools and colleges with or without built-in fire protection and residential care facilities (R-4)
- Main shopping and business centers, large department stores, shopping malls, and multi-story hotels
- Concentrations of theaters, cinemas, clubs, dance halls and bars
- Buildings over three stories in height with or without built-in fire protection
- Occupancies with occupants that may require assistance such as non-ambulatory or restrained persons, e.g., nursing homes and hospitals, including residential care facilities (R-4)
- Shipboard vessels at least 120' in length, steel or aluminum construction, with watertight compartments and doors

Moderate Risk:

High Probability- These structures are most likely to be at fire risk.

Low Consequence- Indicates the potential for life loss is high. However, multiple life loss potential is a lower consequence. An area is classified as a moderate risk when it contains built-up areas of average size and the risk of life loss or damage to property is usually limited to the occupants. In certain areas such as small apartment complexes, the risk of death or injury may be relatively high. Concentrations of property may vary, but generally will be of limited extent. Examples of moderate risk areas include the following:

- Developments of generally multi-family housing
- Apartments with pre-connected hose line access less than 200 feet
- Industrial or commercial buildings fewer than 10,000 square feet with built-in fire protection not classified as maximum or high hazards

These risks are often the greatest factor in the distribution of fire stations to ensure fair and equitable access to initial attack capability.

Low Risk:

Low Probability- These structures represent a low fire risk.



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Low Consequence- Indicates the potential for life loss is low. Areas may be classified as remote rural risks if they are isolated from any centers of population and contain few buildings.

Examples include the following:

- Single & Two Family Dwellings
- Small Businesses
- Light Industry

The community risk assessment was conducted by utilizing the existing demand zones, CAD's Fire Problem Utility, and evaluating data relative to building and population density, area protected by initial response units, and concentration and distribution of resources as well as staffing levels. An analysis of this data using the risk assessment model described above was used in creating the following matrix. This matrix identifies the probability and consequence of an event occurring, includes all fire risks considered in the assessment, and assumes that the ratio of risks will vary in every community. Each quadrant creates different requirements for commitment of resources, or in other words, the higher the risk, the more resources needed. For example, more resources are required to control fires in large, heavily loaded structures than small buildings with limited contents, or more resources are required for rescue of trapped persons within a high risk building with high occupant load versus a low risk building.

Moderate Risk	Maximum Risk
<p>High Probability – Most likely to be at fire risk.</p> <p>Low Consequence – The potential for life loss is high. However, multiple life loss potential is lower.</p> <p>Multiple Family Dwellings Hotels (Less than three floors) Apartments (Less than three floors) Office Complexes (Less than three floors) Mercantile Businesses of Average Size</p>	<p>High Probability - Most likely to be at fire risk.</p> <p>High Consequence – High risk of life/property loss, and loss of economic value to community.</p> <p>Hospitals & Highrise Repair Garages Aircraft Hangars Medium Industrial High Explosion Buildings High Hazard Semi Conductor Facilities Warehouses with Heavy Fire Load Wildland/Urban Interface</p>



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Low Risk	High Risk/ Special Risk
<p>Low Probability – The potential for fire risk is low.</p> <p>Low Consequence – The potential for life loss is low.</p> <p>Single & Two Family Dwelling Small Business Light Industry</p>	<p>Low Probability – Least likely to be at fire risk, generally, due to built-in fire protection features.</p> <p>High Consequence – Substantial risk to multiple life /property loss, severe financial impact.</p> <p>Schools Movie Theatres Nursing Homes Residential Care Facilities Hotels (Three or more floors) Office Complexes (Three or more floors) Heavy Industry Single Story Shopping Centers/Strip Malls Large Public Venues Military Installations Marine/Shipboard</p>

In terms of the non-structural or non-fire risks, the department strives to be prepared to respond to an “all risk” environment from medical emergencies to acts of terrorism. There are a number of these risks including: emergency medical, hazardous materials, technical rescue, swift water, aircraft and shipboard, wildland, and natural and manmade disasters. The methodology used for the non-structural risks was similar to that used for the structural risk assessment. An analysis was conducted utilizing the existing demand zones, CAD’s Fire Problem Utility, and evaluating data relative to building and population density, area protected by initial response units, and concentration and distribution of resources as well as staffing levels.

However, a separate analysis was conducted for the Wildland/Urban interface areas due to the extreme risk they pose as witnessed in the 2003 Cedar Fire. This hazard risk analysis was conducted using spatial analysis tools and the City’s Geographic Information System (GIS). A GIS is composed of computers, data, people and a process which helps to store, display and analyze data that is tied to a location. For this analysis, NFPA 1144 and the Wildland/Urban Interface Code-Danger Rating System were used as guidelines for assigning risk values. Five data sources were used: roads, vegetation/cover classes, fire hydrant locations, slope severity, and five minute response time data. With GIS a relative risk value could be assigned based on a cumulative dataset that describes the risk derived from the data sources used. The resulting dataset or fire risk severity map, attached as Appendix B4, indicates a relative risk value between 2 and 75 points for all locations in the city. Each risk type was quantified using points; higher



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points translate to higher risk which in turn was used to generate a priority/severity index for the entire City. The map is color coded with the red shading representing a high fire danger and yellow as a low risk. The point allocations for this analysis are identified below.

- | | |
|-----------------------------------|-------------|
| - Road Class and Proximity | 0-20 points |
| - Vegetation/Cover Classification | 0-20 points |
| - Slope Severity | 0-20 points |
| - Fire Hydrant Proximity | 0-5 points |
| - Expected SDFD Response Time | 0-10 points |

This hazard analysis is a cumulative score generated by adding all 5 risk values for all locations in the city. The analysis addresses the potential for rapidly moving and intense fires, and the relative ability of the SDFD to fight the fire based on proximity to resources. Areas of the city which are far from roads and fire hydrants, are brush covered and have a steep slope will show in the analysis with a high value of fire risk. Areas of the city which are adjacent to roads, have no slope, near fire stations, and in an urbanized environment will show up with a relatively low fire risk. For a more detailed analysis, reference Appendix B5.

Many locations within the city are considered an extreme fire hazard as illustrated in the Fire Risk Severity map. Some of these include: San Pasqual, Scripps Ranch, Tierrasanta, Otay Mesa, Del Mar Mesa, Navajo Canyon, Mission Canyon, parts of Mission Valley, University Heights, Kensington, City Heights, Tecolote Canyon, and northern and southern edges of Mt. Soledad.

SECTION THREE

STANDARDS, GOALS AND OBJECTIVES



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Section Three-Standards, Goals and Objectives

The purpose of this section is to describe the level of service or response strategies based upon the risks identified in Section Two.

The City of San Diego has a wide range of fire and non-fire risks. These risks are categorized to ensure that the adequate number and type of resources is provided for each incident. SDFD has developed response plans based upon the type of incident and the reported problem. This response takes the form of alarm assignments. The department has also established stations and units with special training and skills in a variety of disciplines to augment fire responses, as well as non-fire or non-structural related incidents.

A standard of coverage is established with the placement of these fire stations, and the use of automatic vehicle locators (AVL) on each apparatus to fix the location of units that are out of station. Once an incident address is confirmed, the closest appropriate unit is dispatched as determined by the CAD system and confirmed by the dispatcher. The CAD system takes into consideration special hazards, recognizing calls that require a special response such as swift water rescue, aircraft down, hazardous materials, and certain target hazards such as high rise buildings because of the maximum fire risk they present. Once the call type has been identified, CAD's Fire Problem Utility can determine the correct type of response to send.

In addition to the alarm assignments and specialty units dispatched, CAD provides the responding units with the identifier of a pre-fire plan if the occupancy or risk is a target hazard. If the incident location has a pre-fire plan (PFP), the PFP reference number is included with the electronic incident information that is paged to the responding units and electronically displayed on the MDT/MDC. The PFP provides additional information that may allow responding units to have a diagram of a target hazard and additional pertinent information. The Fire Communications Center will also provide any known information of potential risk to responding units. Moreover, in areas of the City that are adjacent to other fire jurisdictions, the department has formal automatic-aid agreements which assist in providing adequate coverage, particularly in the outlining areas. Also, a well established statewide master mutual-aid system is in place which is designed to provide resources to local jurisdictions that have exhausted local assets due to a significant incident.

Generally speaking the department's deployment strategy for fire and non-fire risks is designed to provide the most effective, efficient and reliable service level based on available funding. All fire companies are staffed with emergency medical technicians, and all engine companies have a firefighter/paramedic to manage medical responses. All fire operations personnel are hazardous materials operations level responders and they serve as the hazmat first responder. Fire operation personnel receive technical rescue



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training and the department has rescue related equipment on all truck companies and many engine companies.

Response strategies for each major emergency service area are provided below.

Fire Suppression

The San Diego Fire-Rescue Department's Operations Division is responsible for the day-to-day emergency services of fire suppression, rescue, emergency medical services and other emergency service activities. Operations consists of a 45 fire station network that is divided into seven battalion districts. There are 45 engine companies, 11 staffed truck companies, a heavy rescue unit, four medic rescue advanced life support (ALS) ambulances and fourteen ALS ambulances. The department maintains a staffing level of four fire fighters on each engine, truck and heavy rescue company that includes one captain, one engineer and two firefighters. One of the firefighters on each of the engine companies is a licensed paramedic. One of the eleven trucks, T44, is also staffed with a firefighter/paramedic.

Additionally, ready-reserve fire apparatus and equipment are also available, if necessary. There are fourteen ready-reserve engines and four stripped reserve trucks. A ready-reserve is nearly fully equipped with hose and equipment and can be deployed for service almost immediately. There are five additional reserve engines that are in place as front line when a first line apparatus is placed out-of-service for an extended period of time. The department also has eleven Type III engines that are adaptively-staffed for normal operations, and may be fully staffed during extreme hot, dry and windy days.

The department has established standards of coverage for the first-in engine company to arrive on the scene within a six-minute average for fire responses. Additionally, a response standard exists for truck companies to arrive on scene within an average of nine minutes. The department does not have a formal response standard for an effective response force. Overall, the department currently meets its internal standards of coverage for fire suppression.

Several years ago the Operations Division established a performance standard to confine the fire to the room of origin 85% of the time. At that time the department met this standard. Today however, the department is unable to access this data to measure its performance.

All emergency calls for service are processed through the department's Fire Communication Center (FCC) that is staffed and managed by SDFD personnel. Alarm assignments are categorized based on risk, both fire and non-fire, and are programmed into CAD. Each alarm level has a pre-established number of resources for specified risks. Additional resources such as aviation assets, heavy rescue, light and air, fire



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investigators and call-back staff are automatically dispatched based on the type and magnitude of the incident.

The pre-planned response for fires provides staffing, pump capacity, and hoses and nozzles that are adequately prepared to apply the maximum fire flow. Each Type I engine carries 500 gallons of water, and is equipped with large diameter hose and a pump capacity of 1,500 gallons per minute (GPM). Thus, there is at a minimum 1,500 gallons of water for the immediate extinguishment of incipient fires. For any occupancy type, this initial first alarm response provides 4,500 GPM capacity to meet the fire flow requirements for the initial attack of major fire incidents. In addition, aerial ladder apparatus meet NFPA and American Standards for Mechanical Engineering (ASME) performance test requirements.

The department has established a move-up plan to maintain appropriate response coverage. This pre-planned system of move-ups is intended to maintain balanced coverage throughout the City of San Diego. Pre-planned move-ups lessen the tasks of FCC personnel during times when activity levels are high. This also facilitates a quicker response of companies on subsequent alarms by moving them closer to the original incident. Additionally, the department has a move-up plan in place to cover areas of the City in the event of a large incident, scheduled training or other unplanned coverage problems.

Throughout the State of California, including the County of San Diego and the City of San Diego, the use of mutual and automatic aid is routine. Providing for timely and effective fire protection, SDFD participates in both automatic and mutual aid. The department has automatic aid agreements with all of the fire jurisdictions contiguous to the City so that the closest fire company responds to a report of a fire, regardless of jurisdictional boundaries.

Numerous standard operating procedures exist for dispatching, move-ups, and other communication needs as well as a full array of directives for fireground and emergency operations. This includes a standardized incident command/management system as well as an accountability system.

Technical Rescue

The San Diego Fire-Rescue Department responds with a minimum of one engine, one truck, a heavy rescue unit, one battalion chief and one advanced life support ambulance to each technical rescue. This response criterion is used for most vehicle extrications, as well as other minor entrapments. All engine companies carry basic forcible entry and rescue tools. Approximately 31 of the engine companies carry hydraulic rescue tools. Many of these “rescue engines” are in outlying areas of the city, where it may take other units additional time to arrive on-scene. Consequently, these engine companies are



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equipped to begin basic rescues before the arrival of additional specialized equipment and personnel.

Engine companies along the beach front, where there are typically vertical rescues on the bluff and cliff areas, carry an additional complement of vertical rescue equipment. The engine company first-in to Mission Trails Regional Park, which is an area used by many for hiking trails and mountain biking, has a special litter used for medical ground movement of injured people.

SDFD deploys 14 truck companies (11 with dedicated staff and three adaptively staffed) which contain gasoline powered hydraulic spreaders and cutters, hydraulic rams, rescue air bags, rope, vertical rescue hardware, and basic forcible entry tools. The department has one dedicated rescue unit which is centrally located at Station 4. This unit carries all of the equipment carried on truck companies, as well as more advanced tools such as roto-hammers, cutting torches, and hydraulic rams. The heavy rescue unit also has advanced equipment for responding to various types of rescues including confined space, swift water, rope (vertical and low angle), structural collapse and trench rescue. This heavy rescue unit responds in a task force configuration which includes an engine company and cribbing truck. All personnel in this task force are trained in structural collapse.

Additionally, the department is the sponsoring agency for the Federal Department of Homeland Security/Federal Emergency Management Agency's Urban Search and Rescue Task Force 8 (CA TF-8). This task force can also be utilized for structural collapse rescues. Moreover, the department staffs an engine company and an adaptive truck company in the North City which is comprised of CA TF-8 members who have the ability to bring additional specialized rescue equipment to incidents.

Vehicle Accidents

All rescue traffic accidents receive a response which includes an engine, truck, heavy rescue unit, ambulance and battalion chief. The department also has four medic-rescue ambulances which carry additional heavy rescue equipment that can also be utilized. All SDFD truck companies carry a full compliment of vehicle rescue equipment including: power hydraulic rescue tools, air bags, come-along, jacks, cribbing and other miscellaneous rescue equipment. Many engine companies also carry power hydraulic rescue tools.

Water Rescue

The department has a water alert system to anticipate potential flooding conditions which may require swift water rescues. When this occurs, a water rescue incident is dispatched that includes engine companies, a truck company, a rescue company, two battalion chiefs and the Lifeguard River Rescue Team. The severity of the rescue dictates the quantity of



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assets dispatched. In addition, lifeguard personnel staff the bay and all major beaches within the City.

Vertical Rescue

The San Diego Fire-Rescue Department also provides vertical rescue services. All truck companies and engine companies located near the beach carry a wide variety of vertical rescue equipment. In addition, the heavy rescue unit carries specialized vertical rescue tools. The lifeguards also respond with firefighters to vertical rescues along the beach front.

The department has established a standard of coverage for responding to technical rescue incidents which strives to have a first responder unit at scene within an average of six minutes. The department also has an automatic aid agreement with the Miramar Fire Department, which adaptively staff a heavy rescue unit. This unit will respond to all rescue incidents in the North City area in addition to San Diego's heavy rescue unit which has an extended response time to that region.

The department has additional resources for responses requiring more personnel and/or specialized equipment. The department maintains a stake bed truck stocked with cribbing and shoring materials as well as a swift water rescue trailer. Engine 4, which is stationed with the heavy rescue unit, and Engine 41, staffed with personnel on the Urban Search and Rescue Task Force, have extensive training in vertical, low angle, swift water, and confined space rescue. These units can be added to technical rescue responses requiring additional expertise. The Lifeguard River Rescue Team is utilized in all water-related rescues. The lifeguards are also trained in rope (vertical and low angle) rescue and respond to all rescue incidents on the cliffs and bluffs overlooking the ocean. Better focus on lifeguard skills is needed. The lifeguard service also has a heavy rescue apparatus that can be utilized for technical rescues. This allows for a more expedient response of heavy rescue equipment along San Diego's shoreline.

Hazardous Materials Response

The SDFD Hazardous Incident Response Team is established and operates under the regulatory framework of the California Code of Regulations Title 8, Section 5192, which meets and exceeds the requirements set forth in the overarching regulations found in 29CFR1910.120 – Hazardous Waste Operations and Emergency Response (HAZWOPER). All personnel assigned to HIRT are trained and certified to the level of Hazardous Materials Specialist by the California Specialized Training Institute (CSTI) which includes 280 hours of instruction, and meet the competencies of NFPA-472. There are 48 personnel assigned to HIRT, with approximately 50 additional personnel throughout the department trained and certified by CSTI to the Hazardous Materials Technician level consisting of 160 hours of instruction. All fire personnel are trained and certified by CSTI to the level of First Responder-Operations (FRO).



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Under the direction of the Special Operations Division, HIRT provides emergency response services to assist the incident commander in mitigating threats to life, environment and property from the release of hazardous substances. HIRT has been formally organized since 1982, and has been part of a joint team with San Diego County Department of Environmental Health as the sole service provider countywide under contract continuously since 1986.

The HIRT program has undergone changes over the course of its existence, driven largely by cost considerations. For example, the original contract allowed for dedicated staffing. For the past eleven years, however, the two Hazmat units have been adaptively staffed by personnel assigned to suppression units (one engine company and one truck company). There are service level reductions caused by this configuration. For example, suppression unit(s) are out-of-service whenever a HIRT response occurs, and the response time to a HIRT incident increase if the crew is already committed to another incident.

The Department's HIRT operates two four-person teams citywide and under contract to all 18 cities and the unincorporated areas of San Diego County covering a 4,000 square mile area. The primary response for an incident involving hazardous materials by HIRT consists of four SDFD HIRT personnel and one County of San Diego, Department of Environmental Health Hazardous Materials Technician (HMMD). A secondary response typically consists of four additional SDFD HIRT personnel and one additional County HMMD technician. The department's HIRT resources are not deployed strategically to minimize response time; rather they are co-located in one fire station to facilitate consistency in administration, training and equipment. The response time standard for HIRT is found in the County contract which requires HIRT to arrive on scene within 60 minutes from point of dispatch, 90% of the time. In addition, the requirement for a second, simultaneous request for HIRT must be met within 90 minutes, 90% of the time, unless mitigating circumstances prevent it.

All Hazmat incidents require the response of FRO resources. Minimally, one engine company may be dispatched to investigate an incident and determine, within the scope of its training and equipment, the extent of the hazard and the need for additional resources including HIRT. The initial dispatch of resources beyond this level is determined at the Fire Communications Center based on the information received from the calling party and/or the occupancy type.

Emergency Medical

The San Diego Fire-Rescue Department and San Diego Medical Services Enterprise (SDFD/SDMSE) comprise a partnership that is responsible for providing the primary emergency medical services to the communities of San Diego. SDFD/SDMSE has 45 advanced life support first responder fire companies, one advanced life support truck company, 27 advanced life support transport ambulances, 10 staffed basic life support



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truck companies, one heavy rescue unit, seven battalion chiefs and three EMS supervisors that are available 24-hours a day to respond to medical emergencies. All Level-1 calls (highest priority) receive a minimum of one ALS first responder and one ALS ambulance. Both units are fully equipped and staffed to provide the complete range of paramedic assessment and patient care interventions throughout the entire EMS system in San Diego. All pre-hospital medical responses originate from the San Diego Fire Department Fire Communications Center.

The Fire Communications Center is designed and staffed to comply with the performance criteria outlined in the City of San Diego Paramedic Provider Contract. This contract requires that ALS ambulances respond with a minimum of one paramedic and one EMT and arrive at scene in twelve minutes or less 90% of the time and first responders to respond within eight minutes 90% of the time. The response timeframe begins for ambulances when the incident address is verified and at the point of dispatch for the first responder and ends when the ambulance or first responder physically reaches the incident location.

The department's first responder units are dispatched to calls determined to meet Level 1 criteria which represents approximately 75% of all medical requests for service. All 911 medical calls are screened by emergency medical dispatchers (EMD) into one of four priority categories. The call screening is guided by the Medical Priorities Dispatch System (MPDS) which is a nationally recognized medical triage protocol method and approved by the department's medical director. SDFD currently uses the computerized version of MPDS which is directly tied to CAD. Card sets with identical protocols are also maintained as a back-up. These protocols contain methodical questions based on the nature of the medical emergency as well as dispatch and pre-arrival instructions. Level 1 is the highest priority and receives a minimum of one ALS first responder and one ALS ambulance. For medical incidents, the City of San Diego Paramedic Provider Contract requires that SDFD/SDMSE meet or exceed the standard coverage objective outlined in Table 3.1

**TABLE 3.1
SDFD/SDMSE MEDICAL STANDARD OF COVERAGE**

Response Unit	Established Standard
First Responder ALS Unit on Scene	Arrive 90% of the time within 8 minutes
ALS Ambulance	Arrive 90% of the time within 12 minutes

SDFD/SDMSE has a system status ambulance deployment plan that pre-positions ambulances in strategic locations throughout San Diego. Based on system demands, locations of incidents, traffic patterns, time of day and historical data, ambulance units and first responders are systematically relocated to maintain geographical coverage. This



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dynamic system coverage has provided the most efficient coverage in the 25-year history of San Diego's paramedic service.

The Fire Communications Center is equipped with a computer aided dispatch (CAD) system that uses an automatic vehicle locator (AVL) program to select the closest appropriate emergency vehicle rather than the traditional static fire district selection. This AVL selection ensures that the closest unit to the incident is dispatched rather than the unit statically assigned to that sector of the city. This flexibility allows units to move from one side of their response area to another to facilitate training and inspections while maintaining required and monitored geographical coverage. The CAD also produces reports that document unit locations (ambulance and first responders) when calls are received to further monitor and enhance the system status plan. These reports are available to the EMS Program Manager to ensure the highest level of pre-hospital emergency response and care.

For medical multi-casualty responses, the CAD system is programmed to augment a typical two-unit medical response when a multi-casualty incident is reported. This enhanced level of response can also be increased by dispatch personnel when reporting party (RP) information indicates multiple patients. Additionally, responding medical units have the discretion to add medical and/or rescue units based on response information provided to them during their response or when they arrive at scene. The philosophy embraced by SDFD/SDMSE is respond/dispatch what you believe you may need and then cancel what you don't need. This practice ensures that when seconds count that critical resources are already responding and not unnecessarily delayed by waiting in station to be dispatched.

San Diego County has mutual and automatic aid agreements for fire resources, and every geographical region adjacent to San Diego City participates in medical mutual aid response coverage. This mutual aid provides response coverage when spikes in call volume saturate an area of the City and all SDFD/SDMSE are committed in that sector. Additionally, in the event of a large scale disaster this mutual aid provides SDFD/SDMSE with the ability to significantly increase the amount of units available to handle a major emergency. If the incident is large enough, San Diego has a disaster plan that also includes private sector resources and personnel.

San Diego County Division of Emergency Medical Services (County EMS) is the local Emergency Medical Services Authority (EMSA) and provides the policies and procedures that all San Diego County Paramedic Provider Agencies are required to follow for all levels of medical response. All licensed paramedics, State or Nationally registered are required to maintain County accreditation to ensure familiarity with the specifics of working within San Diego County. All County EMS protocols, ALS and BLS, are reviewed annually by the County Medical Director.



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SDFD/SDMSE EMS protocols are derived from County EMS policies and are maintained on the SDMSE website and are available to every employee every shift. In addition to website availability, all policies are contained within a pocket guide that is updated annually in a user-friendly format. These policies include advanced life support and basic life support treatment policies as well as algorithms to facilitate rapid direction when dealing with life threatening emergencies. Additionally these policies contain all system policies, certification requirements and a discipline matrix for EMS issues.

SDFD/SDMSE has established written procedures for its comprehensive medical waste disposal program, which addresses all aspects of infection control, including prevention, handling, transportation, and education. The manual clearly defines what constitutes potential medical infectious wastes and the manner in which it should be disposed. It also clearly describes the roles and responsibilities for each individual involved in an exposure investigation, including initial notification, medical examination/follow-up, documentation, record keeping and confidentiality requirements. The department has an Infectious Control Officer who is available 24-hours a day to ensure the proper management of an exposure.

The department operations policies overlay the medical protocols to ensure a smooth transition from a medical response, structure fire, traffic accident, HIRT incident, to a large scale incident by all personnel. Every employee has been trained in the Incident Command System to allow him/her to assume an appropriate role under the direction of the Incident Commander. Established medical radio protocols also expand with the needs of the incident to ensure rapid and effective patient assessment, treatment and transport as appropriate.

All SDMSE policies and procedures are kept current and are available to each employee on our SDMSE website or in hard copy form when needed. Each work site has a hard copy of training text books and manuals, EMT textbook, American Heart Association Advanced Cardiac Life Support, PEPP, and EMT skills manuals. All operations employees are required to be current with these resource documents and are tested on the content during regular bi-annual recertification classes.

The SDMSE Education Steering Committee along with EMS staff, reviews subject matter, standards of care and new curriculum to ensure their relevance and appropriateness. The EMS and Training Chiefs, in conjunction with the City's Medical Director, are responsible to ensure adherence to these standards.

Aviation Rescue and Firefighting

The Federal Aviation Administration (FAA) Regulation 139 requires an Aircraft Rescue Firefighting (ARFF) presence where commercial passenger carrier operations are conducted. SDFD provides aviation fire protection and rescue to the San Diego International Airport. This airport is owned and operated by the San Diego County



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Regional Airport Authority (SDCRAA). Under contract between SDCRAA and SDFD, one fully staffed ARFF station is dedicated to air carrier fire protection at the San Diego International Airport. Off-site fire units provide support to the ARFF units, and provide general fire protection, emergency medical and hazardous material services to this airfield.

Brown Field and Montgomery Field are the two general aviation airports located within the City of San Diego. These municipal general aviation airfields meet FAA Regulation 139 requirements for suppression capability; however, neither airfield is required to hold a certification. Brown and Montgomery Fields have on-site airport operations personnel that staff a “Quick Dash” suppression unit. The general aviation airfields are supported by off-site crash rescue and fire units, which also provide general fire protection, emergency medical and hazardous material incident response. Emergency Medical Services at the three airfields is provided by SDFD and SDMSE. The San Diego International Airport has an on-site dedicated advanced life support (ALS) transport unit staffed with two ALS paramedics. Hazardous material incidents are a joint response with SDFD and the County of San Diego’s Department of Health Services, Hazardous Materials Management Division. The SDFD response includes first responders and HIRT.

The ARFF response time and apparatus and equipment objectives at San Diego International Airport are federally mandated by FAA Regulations 139.315; 139.317; 139.319. More specifically, the first ARFF unit must arrive at the mid-point of the runway within three minutes of alarm. The initial unit at the San Diego International Airport is one of the dedicated ARFF units. These ARFF apparatus and equipment are required to meet FAA Index vehicles and includes two, large-gallon crash trucks, and one “quick attack” for command and control purposes.

At Montgomery Field and Brown Fields, the FAA Index is only a target for apparatus and equipment. Montgomery and Brown Fields are general aviation airfields and are not required to hold FAA certification. Equivalent objectives are met through the performance of the airport operations “Quick Dash” unit.

The department has established response plans for on-and off-field emergencies involving aircraft. These alarm assignments are in addition to the requirements for the San Diego International Airport. The FAA tests ARFF response capability during annual inspections. If ARFF units cannot meet the federally mandated response objectives, the airport does not earn re-certification.

Marine/Shipboard Firefighting and Rescue

Marine fire incidents are divided into two distinct types: shipboard and marine fires. The type of vessel determines whether it is a shipboard or a marine fire. To be called a shipboard fire, the vessel must be at least 120’ in length, steel or aluminum construction,



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with watertight compartments and doors. A marine fire is anything but a shipboard fire that is on, above, or adjacent to the waterfront. It may be a boat, wharf, pier, or structure.

Shipboard and marine firefighting in the San Diego area is a regional issue. There is no single agency or entity that is responsible for coordinating marine firefighting resources in the region, and there is no cohesive plan in place to resolve the regional need for shipboard firefighting capable fireboats. Additionally, there are few standards to reference concerning marine firefighting. NFPA 1405 and IFSTA Marine Fire Fighting for Land-Based Firefighters First Edition address marine firefighting in general terms. However, response standards and levels are not established. Standards and practices for marine firefighting for land based firefighters are adapted from standards for interior structural firefighting, petroleum based fires, hazardous material mitigation and confined space standards.

SDFD is responsible for controlling and extinguishing all marine and shipboard fires in Mission Bay, large portions of San Diego Bay, and in the open ocean within three miles of the shoreline of the City. Other agencies in the San Diego area which share firefighting responsibilities for marine fire incidents include the U.S. Coast Guard, San Diego Harbor Police, U.S. Navy, as well as other fire agencies.

The department's initial response criteria for all marine fires are identical to that of a commercial structural fire. This includes four engines, two trucks, two battalion chiefs and police support. Reported boat fires on San Diego's Mission Bay also receive a lifeguard response that includes a vessel with water pumping capabilities and limited firefighting capability. A reported boat or shipboard fire on San Diego Bay includes the same response, but instead of the Lifeguard response, the San Diego Harbor Police respond with a boat that has limited pumping and firefighting capacity. Alarm assignments are programmed into the CAD up to four-alarm levels for both Mission Bay and San Diego Bay. The established response criterion for the first-in engine to arrive at scene is an average of six minutes or less for all fires, including marine related fires.

Emergency deployment objectives for shipboard and marine fires attached to the shore are similar to the accepted SDFD practices at complex structure fires, particularly high rise firefighting. The department has land-based marine and shipboard firefighting equipment and personnel to adequately respond and mitigate marine fires and most shipboard incidents within its area of responsibility when the incident is attached to shore. The department's firefighting resources are supplemented by mutual aid agreements with surrounding land-based fire agencies.

The department has not identified a separate standard of response coverage specifically for marine and shipboard fires not attached to shore. For incidents not attached to land, or for large-scale shipboard fires that are attached to land, fireboats are needed to adequately respond to any vessel or marine fire. Additionally, there is no plan in place or



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dedicated resources available to mitigate or manage the incident. Moreover, there are no reliable public or private resources available in the region.

The San Diego Harbor Police in San Diego Bay, and the Lifeguard Division of SDFD in Mission Bay, respond and mitigate smaller marine fire incidents. The principal firefighting goal of these agencies is to protect exposures. These agencies are not equipped for interior attacks and do not have shipboard firefighting-capable vessels.

Disaster Management

San Diego Municipal Code, Chapter 5, Section 51, established the City Disaster Council and identified the City Manager as the Emergency Services Director with established powers and duties, and the overall responsibility for Emergency Management. In March of 2003, the Office of Emergency Management (OEM) was renamed the Office of Homeland Security (OHS). San Diego Fire-Rescue does not have complete emergency management responsibility for the City. However, the department is responsible for ensuring its personnel are prepared to respond and manage incidents relative to homeland security.

The Homeland Security Program is a strategic framework aligning policy, people and their activities into a comprehensive integrated preparedness program. The program is an all-hazard approach, which emphasizes the management of critical information and limited resources before, during and after a major emergency or disaster. The City's work force and external organizations are involved in preparedness activities at numerous levels and across all disciplines. The recent demands to increase preparedness for terrorism and the current fiscal crisis create additional emphasis on the need to maximize effectiveness and collaboration.

The goals of the program are as follows:

- To improve information management through the implementation of processes and information technologies that will allow the delivery of relevant information so that:
 - City Management makes effective, timely decisions.
 - Elected City Officials are informed of preparations for and response to emergencies.
 - Employees take appropriate actions in response to emergencies.
 - Citizens of the San Diego region are informed as appropriate to be prepared for and respond to emergencies.
- To seek, establish and maintain collaborative relationships and strategic partnerships with preparedness stakeholders including private and public sectors, employee groups, business, military, community groups and legislators.
- To seek funding opportunities and administer the funds to address the priorities established through the comprehensive preparedness program.



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- To search for “best business practices” and integrate them into the City’s Homeland Preparedness Program.
- To support existing initiatives through guidance and ensuring integration to maximize results.

State legislation exists that governs methods for conducting emergency management. This is known as the Standardized Emergency Management System (SEMS). This system facilitates priority setting, interagency cooperation and the efficient flow of resources and information. It is intended to be flexible and adaptable to the needs of all emergency responders in California. Full compliance to SEMS was completed in December of 1995. To accomplish this, the following components were used:

- Incident Command System – A field-level emergency response system based on management by objectives.
- Multi/Inter-agency coordination – Affected agencies working together to coordinate allocations of resources and emergency response activities.
- Mutual Aid – A system for obtaining additional emergency resources from non-affected jurisdictions.
- Operational Area Concept – Each county and its political subdivisions coordinate damage information, resource requests and emergency response.

The Emergency Operations Plan / Major Incident Response Plan (EOP / MIRP) is an executive level strategic plan written and maintained by the Office of Homeland Security. The framework of the plan adheres to the state mandated format as directed by SEMS. The City’s plan mirrors that of San Diego County and the eighteen other cities in the Operational Area. Covered are the four phases of Emergency Management: (1) Mitigation (2) Preparedness (3) Response (4) Recovery. In the event that primary and alternate EOC responders are unavailable, the EOP / MIRP provide a manual to allow others to initiate and sustain emergency operations with limited training. Position checklists designed to focus on initial actions are incorporated into the plan. It is important to note that a distinction is to be made between executive level plans and operational plans. Executive level plans provide the directorship of the City with a general basis for conducting high level operations. Operational plans provide first responders with the necessary detail on response and recovery issues. In the City of San Diego, individual departments have responsibility for operational plans. The sixteen identified disaster agents that pose a potential negative impact on the City were based on historical data and the probability of occurrence.

The EOP/MIRP is supported by sixteen Annexes maintained by the County of San Diego. The Annexes are as follows:



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Annex A	Emergency Management
Annex B	Fire and Rescue Mutual Aid Operations
Annex C	Law Enforcement Mutual Aid Operations
Annex D	Multi-Casualty Operations
Annex E	Public Health Operations
Annex F	Medical Examiner Operations
Annex G	Care and Shelter Operations
Annex H	Environmental Health Operations
Annex I	Communications
Annex J	Construction and Engineering Operations
Annex K	Logistics
Annex L	Emergency Public Information
Annex M	Mental Health Operations
Annex N	Damage Assessment and Recovery
Annex O	Animal Control
Annex P	Terrorism

The City of San Diego also has stand-alone Emergency Operations Guides that address emergency situations at QUALCOMM Stadium and PETCO Park.

The City's Emergency Operation Plan however, needs to be revised as the last update occurred in 1997. Additionally, the Cedar Fire that occurred in 2003 demonstrated that both the City's Emergency Operations Center (EOC) and San Diego Fire-Rescue's Department Operations Center (DOC) lacked the equipment, technology and trained staff to effectively operate these centers. If these emergency management facilities are not properly equipped and staffed, the department and City may not be capable of managing a large-scale incident.

Weapons of Mass Destruction

In an event that requires extensive and critical WMD mitigation and medical attention, the San Diego County Metropolitan Medical Strike Team (MMST) meets national Metropolitan Medical Response System (MMRS) requirements for urban responses to a terrorism event. The team is comprised of San Diego City and County agencies with multi-disciplinary backgrounds. The Metropolitan Medical Strike Team (MMST) has the capability to perform critical needs in a terrorist scenario incorporating multiple technical disciplines to mitigate hazardous materials, initiate specialized law enforcement protection, mitigate explosive devices, and enhance professional medical care and management.

The Federal Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) Urban Search and Rescue (US&R) California Task Force 8 is a resource available countywide and comprised of 70 personnel, three deep, and specialized to work in a major structural collapse event and trained to WMD defensive



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levels. The Task Force is equipped and trained for defensive mitigation of structural collapse in a WMD environment. The DHS/FEMA cooperative agreement clearly defines the WMD training, equipment, and the responsibilities associated with a WMD incident. An additional option for a rapid deployment includes a “Light Task Force” Type III team that consists of 28 members primarily used for search/ reconnaissance and light rescue. The MMST and US&R Task Force are dispatched by utilizing the County Alert Service System (CASS) that can notify all team members simultaneously by mobile phone, pager, and home phone contacts.

Additionally, the department’s Hazardous Incident Response Team and Explosive Device Team (EDT) are staffed, trained, and equipped to handle initial Weapons of Mass Destruction (WMD) incidents. Moreover, the department’s first responders are trained and equipped at an awareness and moderate WMD defensive levels of operation. The WMD response levels are tiered into multiple disciplines. All first responder engine and truck companies have received in-service training in “Terrorism Consequence Management” sponsored by the California Fire Fighter Joint Apprenticeship program involving methodology and WMD operations. All operational personnel on each apparatus are equipped with a WMD A.P.R. (air purifying respirator), for long-term respiratory situations, and three sets of Mark I (chemical nerve antidotes) for self-protection. Radiation detection pagers are also provided for each crew member which are integrated into the breathing apparatus located on all emergency response apparatus.

On every 24-hour shift, seven days a week, there are two Hazmat units staffed with four Hazardous Material Specialists adaptively staffed on an engine and truck company rotating on three divisions. There are a total of 48 HIRT members trained in WMD through the FBI, DHS/Office of Domestic Preparedness and CSTI (California State Training Institute). During a major Hazmat or WMD event, additional personnel can be requested to assist by requesting FCC to send an all call via the pager system to report to the incident with specific instructions.

The Explosive Device Team (EDT) is managed by the Metropolitan Arson Strike Team (MAST) that is comprised of 11 firefighter personnel in a combination of permanent and relief roles responding with one EDT apparatus. Daily staffing includes two members; one member during administrative hours and the other is adaptively staffed on an engine company at Station 1 for each of the three 24-hour shifts, seven days a week. A call-out paging system can be directed to FCC to dispatch off-duty EDT personnel to an emergency response.

SECTION FOUR

CRITICAL TASK ANALYSIS



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Section Four – Critical Task Analysis

The critical task analysis determines what tasks need to be accomplished at the scene of an emergency. The San Diego Fire-Rescue Department examined its current deployment levels to structure fires and EMS calls. To extinguish a structure fire there are many tasks that need to be accomplished in the initial minutes of the incident. There are similar requirements for a medical emergency.

When assigning personnel to complete tasks, firefighter safety is the highest priority. The second consideration is assigning the proper number of personnel so that the critical tasks can be completed. Having a fully staffed fire company consisting of four firefighters to complete these tasks greatly increases effectiveness on the fire ground. To minimize the loss of life and property and account for firefighter safety, the critical tasks need to be completed on all moderate structure fires, as outlined below.

Structure Fire Critical Tasks

When there is confirmation of a working fire, a structure response is upgraded to a “working fire response” that brings an additional engine, truck, one ALS ambulance, and a safety officer. Refer to Table 4.1 for further illustration. The fourth engine is typically used to establish a rescue division and to upgrade from the initial two-person Rapid Intervention Crew (RIC). The following critical tasks need to be completed on all structure fires.

The first-in engine company which consists of four firefighters is responsible for the following initial actions:

- Establish command
- Size-up the situation
- Place one line in-service at 150 gallons per minute (GPM)
- Initiate mitigation efforts within one minute of arrival
- Provide first responder medical aid including cardiac defibrillation (AED)

An effective response force for an incident is sixteen firefighters and one chief officer for a low risk occupancy, responsible for completing the following tasks:

- Place a water supply in service at a minimum 400 GPM for 30 minutes
- Place one line in-service with two firefighters at 150 GPM
- Provide one ventilation team consisting of two firefighters
- Provide one search and rescue team consisting of two firefighters
- Establish command outside the hazard area with a dedicated position
- Comply with the requirements of Two In/Two out (OSHA 1910.134) consisting of two firefighters
- Provide a second attack line with two firefighters and a minimum of 150 GPM
- Establish the capability of flowing 400 GPM without interruption



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An effective response force for an incident in a medium risk occupancy consists of 16 to 20 firefighters and two chief officers with the following capabilities in addition to those listed above:

- Establish the capability to flow 1,000 GPM without interruption
- Provide two ventilation teams
- Provide two search and rescue teams
- Establish a rapid intervention team of four firefighters.

An effective response force for an incident in a high risk occupancy consists of 24 firefighters and two chief officers (four engines, two trucks and two battalion chiefs) with the following capabilities in addition to those listed above:

- Place two, 2 ½ inch attacks lines in-service, one on the fire floor and one on the floor above
- Provide one additional ventilation team
- Provide one additional search and rescue team
- Establish lobby control as well as overall command
- Supplement the fire protection systems as needed

Some of the specific position responsibilities are listed below:

Attack line- A firefighting line staffed with a minimum of two firefighters capable of delivering an effective fire attack with a minimum of 150 GPM.

Back-up Line- This is the same size as the attack line, but can be larger and staffed with a minimum of two firefighters. The back-up line is used to protect the fire attack crew in the event of a flashover or a problem arising with the initial attack crew.

Search and Rescue- A minimum of two firefighters assigned to search the structure for victims. The crew locates and removes any victims while the fire attack and ventilation are being completed.

Ventilation- A minimum of two firefighters assigned to provide vertical and horizontal ventilation. Ventilation is labor-intensive and time consuming. A crew of four can greatly enhance the completion in an effective and timely manner.

Rapid Intervention Crew- A minimum of two firefighters assigned to stage in a ready position near the entry point of the involved structure. Their purpose is to provide search and rescue for lost or injured firefighters inside the structure. If the fire escalates, the RIC crew should be comprised of four firefighters.

Pump operator- This position is responsible for delivering water pressure to the attack lines and the initial primary RIC for the first arriving company.

Water supply- One or more firefighters responsible for providing uninterrupted water supply to the attack engine. This is accomplished by laying a four-inch supply line.

Command- An officer outside the structure and responsible for coordinating the fire operation.



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Safety/Operation- This officer is responsible for making sure that safe firefighting operations are being conducted.

**TABLE 4.1
WORKING FIRST ALARM SINGLE FAMILY STRUCTURE FIRE**

Task	Staffing Level	Units Assigned
Initial Attack Line	2	1 st Engine
Primary Search and Rescue	2	1 st Truck
Ventilation / Ladders, Access	2	1 st Truck
Back-up Hoseline	2	2 nd Engine
Rapid Intervention Crew	4	3 rd Engine
Secondary S&R,	2	2 nd Truck
Utilities, Salvage & Overhaul	2	2 nd Truck
Pump Operator	1	1 st Engine
Water Supply	1	2 nd Engine
Accountability	1	1 st Engine
Contingency (Non assigned unit)	4	4 th Engine (May be requested)
Air/Light Support	1	Light & Air
Command Officer	1	Battalion Chief
Safety (Or other ICS position)	1	Battalion Chief
ALS ambulance	2	Ambulance/Rehab
Total Personnel:	28	

A second alarm doubles first alarm fire resources, plus staff notification is added.

EMS Critical Tasks

Medical emergencies are time-sensitive and require the prompt response of ALS ambulances and paramedic assessment engines. There is a direct correlation between time and the increase in a patient’s morbidity and mortality. In cardiac arrests, blood flow to the brain is essential. Irreversible brain damage will occur in four to six minutes according to the American Heart Association. CPR and defibrillation by firefighters have a direct correlation in decreased mortality.

Standard operating procedures have been developed for Medical, Trauma, and CPR chief complaints. These procedures serve as a guide for the initial scene medical management of a medical aid victim and are identified in Table 4.2. The identified positions should be assigned daily at the discretion of the Captain. The Captain shall be responsible for scene safety and command of the incident. All personnel shall be in appropriate personal protective equipment. All crew members are responsible for the assigned portable radio.



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TABLE 4.2

MEDICAL, TRAUMA, CPR CRITICAL TASKS

MEDICAL CRITICAL TASKS		
Position	Equipment	Responsibilities
A	Medical Box and Defibrillator	1) ABCs and level of consciousness 2) Patient assessment – PQRST – BRIM 3) Advanced life support – intubations, IV, medications 4) Patient information turnover to transport personnel 5) Contact base hospital as needed
B	Airway Bag and Suction Unit	1) Basic airway management – adjuncts, oxygen, administration 2) Vital signs – PRBELLS 3) Monitor and oxygen saturation hook up
C	Spare Oxygen Cylinder	1) Equipment set up, IV set up 2) Assist with vital signs
D	Portable Desk	1) Documentation – Palm Pilot 2) Family member / bystander information
TRAUMA CRITICAL TASKS		
Position	Equipment	Responsibilities
A	Medical Box and Defibrillator	1) ABCs 2) Patient assessment trauma survey / secondary / GCS 3) Advanced life support – intubations, IV, medications 4) Patient information turnover to transport personnel – MIVT 5) Contact base hospital as needed



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**TABLE 4-2
MEDICAL, TRAUMA, CPR CRITICAL TASKS (Continued)**

TRAUMA CRITICAL TASKS		
Position	Equipment	Responsibilities
B	Airway Bag and Suction Unit	1) Basic airway management – adjuncts, oxygen, administration 2) Vital signs – PRBELLS 3) Monitor and oxygen saturation hook up
C	Spare Oxygen Cylinder	1) Cervical spine management and spinal immobilization 2) Splinting 3) Equipment set up, IV set up 4) Assist with vital signs
D	Portable Desk	1) Documentation – Palm Pilot 2) Family member / bystander information
CPR CRITICAL TASKS		
Position	Equipment	Responsibilities
A	Medical Box and Defibrillator	1) Establish unresponsiveness and ABCs 2) Airway control and management 3) Medications and IV 4) Patient information turnover to transport personnel - MIVT 5) Contact base hospital as needed
B	Airway Bag and Suction Unit	1) Ventilation 2) Ongoing airway assessment and management
C	Spare Oxygen Cylinder	1) Compressions 2) Pulse checks
D	Portable Desk	1) Operates AED 2) Documentation – audio and function buttons 3) Equipment set up, IV set up 4) Family member / bystander information

SECTION FIVE

SETTING SERVICE LEVEL OBJECTIVES



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Section Five– Setting Service Level Objectives

This section outlines the department’s distribution and concentration of resources relative to an “all-risk” response. Established service level objectives, as well as an analysis of performance in meeting these objectives are included as is the methodology used for choosing sites for fire stations and workload distribution.

Distribution Criteria

As defined by the Commission on Fire Accreditation International (CFAI), distribution is the locating of geographically-distributed first-due resources for all-risk initial intervention. These station location(s) are needed to assure rapid deployment to minimize and terminate average, routine emergencies.

The various community densities, various topography and occupancy types, changing traffic patterns, multitude of large special events, mix of old and new buildings, roadway networks and the diverse population in the City of San Diego require a variety of types of service levels. These factors also contribute to service requests or varying degrees of workload at all times of the day, week and year. Incident frequency and type of service demands are captured in CAD which provides the data necessary to determine trends. However, funding the allocation of staff to analyze the data and make the appropriate decisions and strategies based on the information provided continues to be a challenge for the department.

The service level objectives for SDFD include:

- A first responding four-person engine company shall arrive at the scene of an emergency within an average of six minutes or less from the time of page received.
- A unit with advanced life support capability will arrive at emergency medical incidents within eight minutes 90% of the time, from point of dispatch.
- Truck companies will arrive at the scene of an emergency within an average of nine minutes from the time of page received.
- An effective response force will arrive at the scene of an emergency within 12 minutes or less 95% of the time from the time of page received.
- The Hazardous Incident Response Team will arrive at scene within 60 minutes from point of dispatch 90% of the time to the contract-provided service area.
- The Aviation Rescue and Firefighting units at the San Diego International Airport will arrive at the mid-point of the runway within three minutes of alarm received.
- The Urban Search and Rescue Task Force will be capable of mobilizing within a four-hour timeframe for an over-the-road response and six-hour timeframe for an air response.
- The first-in engine company will place one line in-service at 150 gallons per minute (GPM) and initiate mitigation efforts within one minute of arrival.
- An effective response force for a low risk occupancy will place a water supply in service at a minimum 400 GPM for 30 minutes and include: one attack line in-service



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with two firefighters at 150 GPM, a second attack line with two firefighters at a minimum of 150 GPM, one ventilation team consisting of two firefighters, one search and rescue team consisting of two firefighters, establish command outside the hazard area with a dedicated position and the capability of flowing 400 GPM without interruption.

- An effective response force for a medium risk occupancy will provide in addition to resources for low risk the capability to flow 1,000 GPM without interruption, two ventilation teams, two search and rescue teams, and a rapid intervention crew of four firefighters.
- An effective response force for a high risk occupancy will provide in addition to resources for low and medium, two, 2 ½ inch attack lines in-service, one on the fire floor and one on the floor above, one additional ventilation team, one additional search and rescue team, establish lobby control as well as overall command, and supplement the fire protection systems as needed.

Prior to this study, the methodology used for developing the distribution and concentration of resources was based primarily on historical data and contractual agreements. Demand zones were created based on an analysis of building types and densities, population densities, geography, wildland/urban interface, fire flow requirements, as well as other risks referenced in Section Two. Once demand zones were established, a predetermined number and type of resources was assigned based on risk, very similar to the methodology used in this study and outlined in Section Two. Because areas that have dense concentrations of buildings and population pose a higher risk of life loss, potential loss of economic value to the community and/or significant damage loss to property and thus require more resources, a concerted effort was made in years past to place a sufficient number of fire stations and firefighters in these areas. These stations were located to provide for the rapid deployment of multiple resources in order to control fires and protect occupants. Over the years, however, the City has been unable to maintain pace with growth, resulting in inadequate coverage in certain parts of the City.

In regard to hazardous materials response and aircraft rescue and firefighting, the response criterion is based on long-standing contractual agreements. The established criterion has been found to be acceptable, served the region well and has remained unchanged from the inception of these contracts.

The medical response time is outlined in the contract between the SDMSE and the City of San Diego. This performance measurement was developed for the request for proposal that was submitted for the contract to provide emergency medical and transportation services for the City of San Diego. The measurement was based on an analysis of historical data and was considered to be achievable.

The response criterion for the US&R Task Force is based on clearly defined requirements identified in the cooperative agreement with the Federal Department of Homeland Security/Federal Emergency Management Agency. The department, as the sponsoring agency, is mandated to comply with all the requirements identified in this agreement.



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Station Siting Criteria

Strategies for selecting sites for fire stations have been consistent with the City's General Plan which states "Fire stations should be located to provide a rapid response time within the urbanized area near major thoroughfares." Since this statement is open to broad interpretations, the department historically attempted to locate stations with quick and easy access to major thoroughfares and within a six minute response average using response nodes developed by the SDFD Response Planning Section. A map of station locations is provided as Appendix A6 for reference. The department uses the Apparatus Deployment Analysis Model (ADAM) to facilitate the locating of fire stations. ADAM is a probability modeling software that can be used to determine potential response times based on specific locations identified. Attached as Appendix D5 is a map which illustrates the distribution of the medical priority response coverage of eight minutes 90% of the time based on ADAM. The blue dots represent the first due resources for all risk interventions. The ADAM software is utilized to facilitate decisions relative to station sites to maintain and/or achieve response goals. Appendix A4 is a complete list of station locations.

The department's Capital Improvement Program sought undeveloped property for potential sites to meet the identified response goal. As property was developed over the years, negotiations occurred between developers and various City departments, including Fire, in an attempt to balance the needs of the City to provide infrastructure and services with the goals of the developer. On occasions the City would trade-off response times if developers installed sprinkler systems in residential communities. While this decision decreased the risk of fire due to sprinkler systems, it resulted in extended response times to other emergencies such as emergency medical calls which represents approximately 80% of the department's total responses.

The department is included in the plan review and environmental impact review process which allows it to analyze the impact of new developments on existing services. Based on this analysis, the department can make recommendations to ensure appropriate service delivery levels are met by identifying additional resources needs and fire station locations. Traffic patterns, response time, topography, water flow, access, and population concentrations are major items in this review. Ultimately however, the availability of property and funding determines station locations to a large degree.

Funding for land, construction of fire stations and subsequent staffing of stations has been a challenge. The City has in some cases used developer impact fees (DIF) to fund the construction of some fire stations which also include the purchase of fire apparatus for the particular area under development. However, DIF is not a viable option for the infill occurring in the core City areas. Discussions are underway regarding alternative funding sources which would provide additional fire stations and staffing required for some of these core areas.

Workload Distribution

The SDFD utilizes a dynamic deployment model when allocating resources to emergencies. Using this model, CAD dispatches the closest available unit(s) to an incident based on automatic vehicle locators (AVL) on emergency response apparatus. If the first-in unit is unavailable or out of its first-



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in district, the next closest unit will be assigned by CAD. Dynamic deployment is utilized for all emergency response services provided. For example, medical dispatching moves ambulances throughout the day to cover high impact areas based on trends in response data.

When a major incident occurs requiring multiple apparatus from one geographical region, FCC will move-up engine companies to maintain coverage as effectively as possible on a citywide basis. A policy is also in place for planned move-ups wherein if a first-in unit is scheduled for In-Service Training or out-of-service for extended periods of time, FCC will move-up engine companies to fill voids in coverage.

In Appendix C1 a workload distribution is provided illustrating the total number of incidents annually by each engine company. Some units have a small emergency response workload such as Engine 16 with 550 calls. Several others though, such as Engines 5, 12, and 17, have higher workloads, with the number of incidents ranging from 3,400 calls to over 5,000 calls per year.

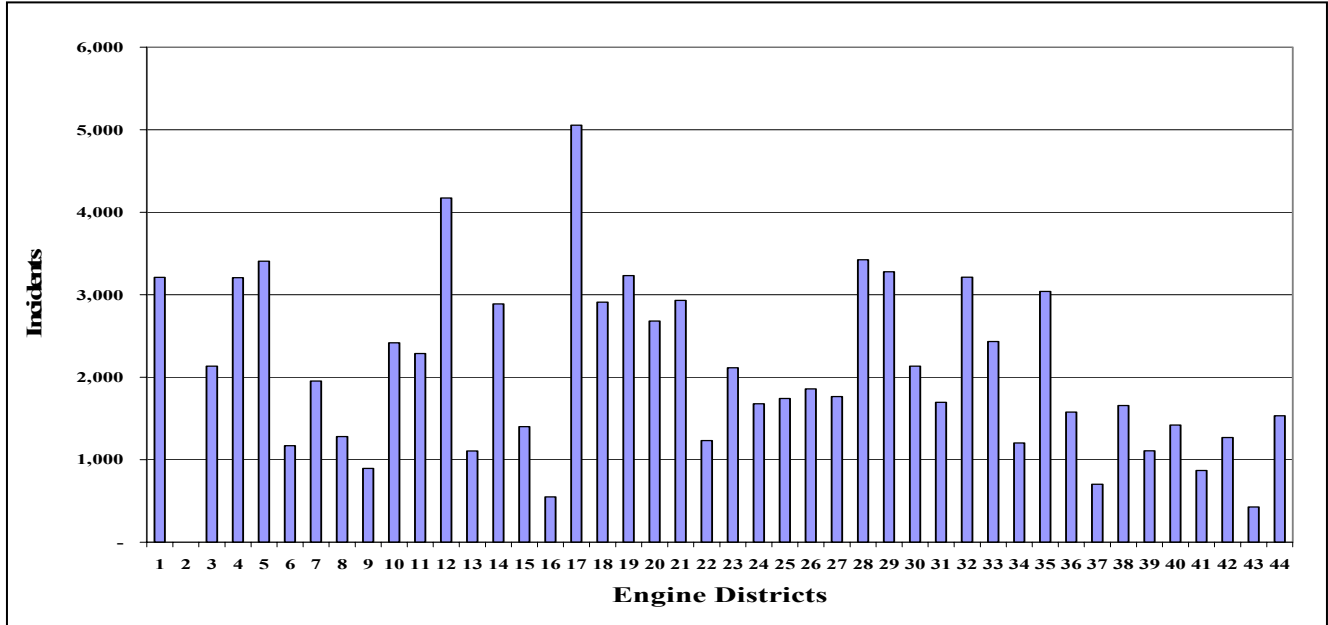
The total fire responses for FY2001, FY2002 and FY2003 are listed in Table 5.1, which indicates a steady call volume. Although the fire calls have decreased from FY2001 to FY2003, the call volume continues to average over 400 fire calls per month. Table 5.2 on the following page illustrates the number of incidents by engine district. As indicated, 29 of the 45 engine districts, or 64% of the total response force, exceed 1,500 calls annually. Ten districts exceed 3,000 and two exceed 4,000 annually.

**TABLE 5.1
MONTHLY FIRE CALL VOLUME**

Fires			
Month	FY01	FY02	FY03
1	495	474	460
2	383	439	333
3	384	440	370
4	426	382	388
5	385	428	431
6	488	432	390
7	547	501	496
8	510	452	465
9	481	433	376
10	433	431	392
11	411	445	399
12	494	473	414
Total	5437	5330	4914

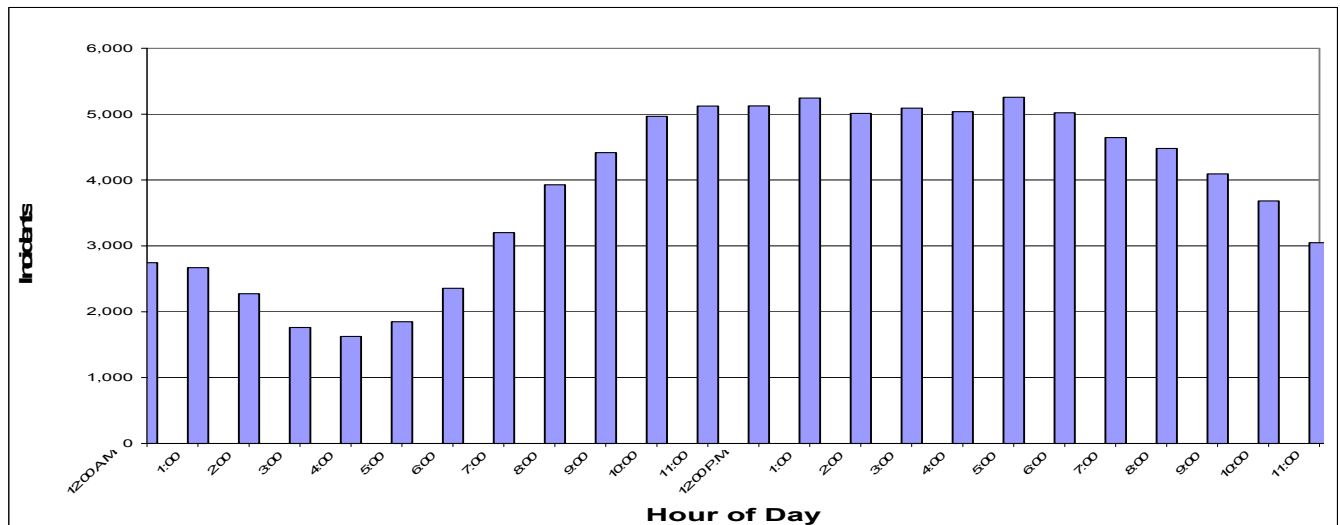


TABLE 5.2
INCIDENTS BY ENGINE DISTRICT



Since over 80% of the total response call volume is medical, the Operation’s Division and SDMSE closely monitor medical calls. These data are used routinely to evaluate ambulance unit hours, workload distribution, and quality assurance. The medical system has both 24-hour and flex-hour ambulances to cover hard to serve areas of the city. The average call volume fluctuates throughout the day as indicated in Table 5.3 which is based on FY 2003 data. An attempt is made to match ambulance unit hours to service demand.

TABLE 5.3
AVERAGE CALL VOLUME





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Utilizing CAD, workload is distributed based on a comprehensive response plan. These response data are compiled by the Response Planning Section and provided to the Operations Division for evaluation against established service level objectives. This evaluation may dictate changes to the response plan. A recent change was made to canyon rim response areas. Anecdotal data indicated delays in responding units to these areas as well as suitability of the type of units. Based on that information, the response plan was revised and will be evaluated in six months to determine if adjustments are necessary. Additionally, the United States Postal Service installed a Biohazard Detection System which is designed to detect biohazards, including anthrax, before the mail leaves the facility. Prior to the installation of this system, the department's response plan included only a single engine and HIRT to this facility. Because of the potential risk to and decontamination of large numbers of people, the response plan was modified to a full first alarm hazardous material response. Another source of response change is initiated by field personnel through personal knowledge of response districts. Requests can be made for an evaluation of a particular target area or risk utilizing CAD or ADAM. For example, an engine company may have a more direct response than the engine company assigned by CAD.

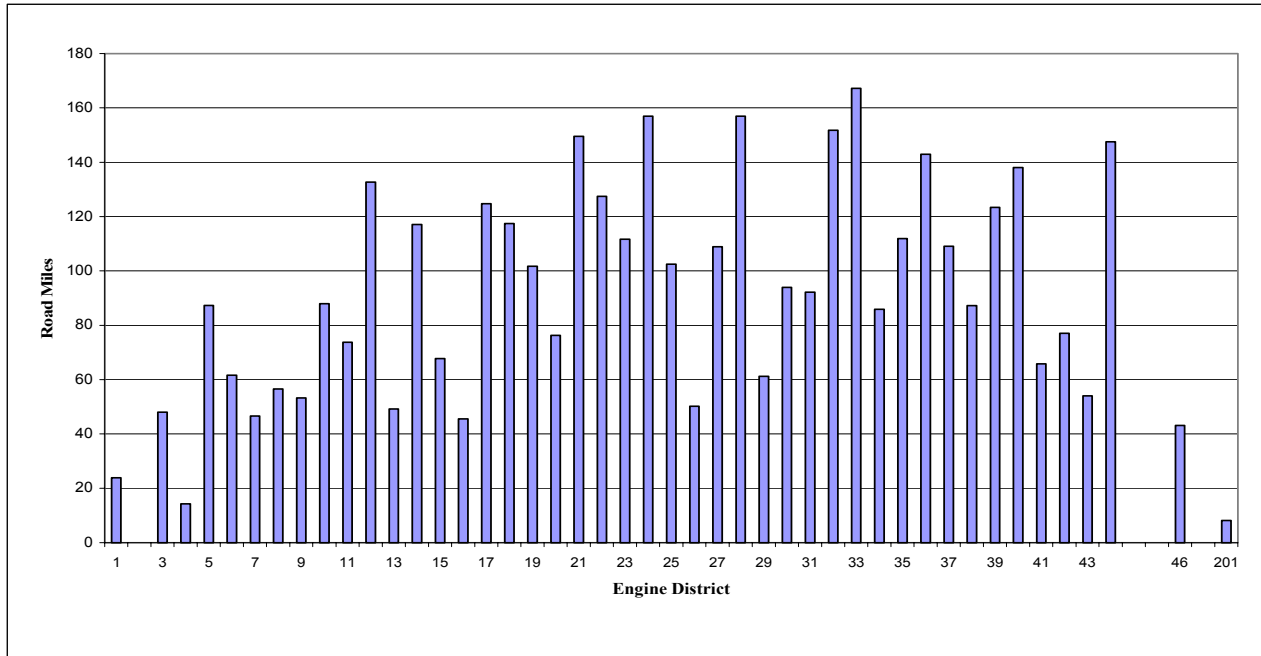
In terms of how population is distributed among stations, the distribution of residential and business occupancies throughout the City shape the concentration of population as discussed in detail in Section Two. The fluctuation of population will drive demands for service. By evaluating CAD data and utilizing the dynamic deployment model, the department is capable of placing assets as effectively as possible based on available funding.

In regard to road miles covered, engine and truck companies, ambulances and other specialty units respond to incidents throughout the City's 342 square miles from 45 fire station locations. The response area for each fire station, identified as an engine district, covers from one to twenty-eight square miles as outlined in the risk assessment. The total number of road miles in the City is 4,073. Like square miles, the road miles in each engine district will also vary. As noted in Table 5.4 on the following page, road miles range from eight in Engine 201 district to over 167 road miles in Engine 33 district. The average road miles covered for all 45 stations are approximately 91. The percentage of road miles covered by each station ranges from .199% for Engine 201 to 4.067% for Engine 33.



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**TABLE 5.4
ROAD MILES PER ENGINE DISTRICT**



Concentration Criterion

Concentration is defined by CFAI as the spacing of multiple resources close enough together so that an initial “effective response force” can be assembled on scene within adopted public policy time frames. An initial effective response force is that which most likely will stop the escalation of the emergency for each risk type. The SDFD has established the number of units required for each type of incident utilizing CAD’s Fire Problem Utility based on risk factors discussed in Section Two. Table 5.5 illustrates the resources identified for a first alarm assignment by incident type which represents the SDFD effective response force.

**TABLE 5.5
RESPONSE TYPE AND RESOURCES**

Response Type (Nature Problem)	Alarms	Resources
Structure Residential	1	3E, 1T, 1BC
Structure Commercial/Apt	1	4E, 2T, 2BC
Structure Highrise/Hosp	1	5E, 2T, 1R, 2BC, 1Amb, LA1
Vehicle Fire (Tanker)	1	3E, 1T, 1BC, Hazmat1
Fuel Spill (>25 Gal)	1	3E, 1T, HazMat, 1BC
Tank Farm	N/A	4E, 2T, FM28, 2BC, R4, LA1, HazMat



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**TABLE 5.5
RESPONSE TYPE AND RESOURCES (cont')**

Response Type (Nature Problem)	Alarms	Resources
Nat. Gas Leak (blowing)	1	2E, 1T, 1BC
Boat Fire 1 st Alarm (downtown)	1	3E, 1T, R4, 1BC
Vehicle vs. Structure	1	1E, 1T, R4, 1BC, 1Medic
Rescue (vehicle)	1	1E, 1T, R4, 1BC, 1 Medic
Rescue (industrial)	1	1E, 1T, R4, 1BC, 1Medic
Rescue (misc.)	1	1E, 1T, R4, 1BC, 1Medic
Rescue (cliff)	1	1E, 1T, R4, 1BC, 1 Medic
Medical Multi Casualty	1 st Alarm	3E, 1T, 1BC, 3ALS, 1MR,E26
Aircraft / major difficulty San Diego International	2	R1, R2, R3, 4E, 2T, R4, 1BC
Aircraft crash on field San Diego International	3	R1, R2, R3, 8E, 4T, R4, 4 ALS, 3BC, LA COM1, DMS, 1 MR, E26/E9
Bomb threat on aircraft San Diego International	4	HPD, B1 Notification, MAST Notification
Vegetation Low	1 st	3E, 1T, 1BR, 1BC
Vegetation Medium	1 st	4E, 1T, 2BC, 3BR, 1WT
Vegetation High	1 st	5E, 1T, 2BC, 5BR, 2WT

Airport Response (Brown Field or Montgomery Field)

Incident	Alert	Resource
Aircraft / major difficulty	2	1E, 1T, CR28 or CR43, R4, 1 BC, 1 Medic
Aircraft crash on field	3	2E, 1T, CR28 or CR43, R4, 1 BC, 1 Medic
Bomb threat on aircraft	4	1E, 1 BC, MAST, PD

The San Diego Fire-Rescue has no formal response time standard for an effective response force; however, historical data indicate that the department performs well at placing an effective response force at scene within 12 minutes 95% of the time. There are a number of hard to serve areas though. Appendix D10 shows several areas that exceed the 12 minute effective response force. Examples include San Pasqual Valley, Mission Valley, Kearny Mesa, University City, Carmel Valley/Sorrento Mesa, Rancho Bernardo, Otay Mesa, South Bay, and Skyline/Paradise Hills. In several of these areas, the department relies on automatic and mutual aid from surrounding jurisdictions such as the City of Escondido, National City, Poway and Rancho Santa Fe.

There are also a number of hard to serve areas that exceed the six minute average response standard for the first-in units as illustrated in the map provided as Appendix D2. This map demonstrates that while the department consistently meets or exceeds this performance measure in the core areas, there are isolated pockets throughout the City that fall outside this goal. Some of these areas include: Mission Valley, Southeast San Diego, La Jolla, University City and South Bay. The North City represents a significant problem in that response times well exceed eight minutes over broad areas.

SECTION SIX

**RELIABILITY
OF
FIRE COMPANIES**



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Section Six – Reliability of Fire Companies

This section provides incident historical performance and an evaluation of the data to determine the reliability of the department's response system. The evaluation included the department's ability to respond to simultaneous calls for service referred to as drawdown, total commitment of resources or exhaustion, policies which deal with these issues, call volume and distribution, as well as an assessment of the department's management information systems to provide analysis of adopted standards. Furthermore, an overall evaluation is included which compares and contrasts the study findings to the community needs and expectations and factors based on "real world" experience of department members.

The department's Fire Communications Center is responsible for normal, day-to-day resource utilization and tracking. Using CAD, dispatchers use a dynamic, system status type of approach to ensure the most consistent response coverage possible. The CAD utilizes a "move-up module" or "MUM" which is integrated into the CAD software. The MUM assists the dispatchers and the system status controllers in keeping the response coverage at optimum levels. The CAD also incorporates an automatic vehicle locator system to assist in dispatching the closest available unit to a request for service.

As a general policy/rule no more than ten to twelve "frontline" fire apparatus (engine and truck companies) are allowed to be "out-of-service" or "delayed" at any one time. The basic reasons for an out-of-service or delayed status for an emergency response vehicle would include, but are not limited to the following:

- Scheduled "In-Service Training" or other training activities which would delay a resource from initiating a response within two to four minutes of its dispatch
- Mechanical issues which prohibit the safe operation of the vehicle
- Fire prevention inspections where the crew will be delayed due to the complexity or physical characteristics of the occupancy
- Community service activities which require the apparatus and/or crew to be unavailable for emergency responses
- As required by a battalion chief level officer or other chief officer
- Meal breaks or extended "off-load" times for ALS transport units

The initial procedure to fill "gaps" in the established response coverage is to "move-up" available units into the areas lacking coverage. In some cases this is a prescheduled task based on established department schedules. In other instances, "move-ups" may be made on a case-by-case basis to fill temporary gaps in the response coverage caused by a variety of situations such as:

- A working fire with extended on-scene times
- Three or more units committed to an incident for an extended period of time
- A response requiring greater than a 1st alarm assignment (3 engines, 1-2 trucks, 1-2 battalion chiefs)



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- Simultaneous incidents occurring in one area of the city

In most cases the "move-ups" are based on a predetermined table in which specific units have been identified as "move-up companies." In the rare instances that the predetermined "move-up companies" are committed, the dispatchers and system status controllers rely on a visual analysis of the CAD mapping software and/or manual maps to determine the appropriate "move-up" resources.

Automatic Aid and Mutual Aid resources can also be used to augment the city's response coverage when several simultaneous incidents are occurring within the city limits. In these cases the Area Fire Coordinator is notified so that office can monitor requests for service throughout the region.

For other than mechanical reasons, as incident activity levels begin to rise, FCC dispatchers and system status controllers will reduce the number of "out-of-service" or "delayed" status resources to compensate for the increase in response volume.

At such times when the available resources are unable to meet the request for service demands, the department will implement its policies and guidelines to address "drawdown" and "resource exhaustion." These policies and guidelines will be summarized in the discussion to follow concerning "drawdown" and "resource exhaustion." At times, resource "drawdown" and "resource exhaustion" may not follow an orderly progression. While attempting to maintain adequate response coverage within the city, the FCC may experience a period of "resource exhaustion" prior to the resource "drawdown" levels and implement personnel recall procedures to staff up additional mobile resources, i.e., ready reserve apparatus. This staffing procedure is outlined in the department's Operations Manual and in some cases may prevent the department from reaching its established "drawdown" levels while maintaining adequate response coverage.

Drawdown

For this discussion, "drawdown" is defined as "the resource level an agency will not go below when asked for mutual aid." Fully utilizing its Automatic Aid agreements with adjoining jurisdictions, where applicable, San Diego Fire-Rescue will generally allow its emergency response resources to "drawdown" to approximately fifty percent (4th Alarm Commercial Structure Fire; sixteen engine companies; (16 of 47), eight truck companies (8 of 11 staffed trucks); and six battalion chiefs (6 of 7); of its total number of available resources before requesting mutual aid from the Area Fire Coordinator. Similarly, when approximately fifty percent of its resources are committed to one or more incidents, the department will no longer fill any mutual aid requests made by the Area Fire Coordinator, the California Department of Forestry, or the United States Forest Service. Factors such as fire activity, local weather, availability of reserve apparatus and personnel availability (Telestaff Pick List) must be evaluated before filling any mutual aid request. In addition, SDFD will generally no longer fill mutual aid requests once they have committed the equivalent of two strike teams to the area and/or region. Generally this would be one Type I and one Type III Strike Team. Depending on



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the location and nature of the incident responsible for the mutual aid request(s), more resources could be authorized to respond to the aid request(s) by the Fire Chief.

The basic philosophy for filling requests for Mutual Aid fire suppression resources from the Area Fire Coordinator is outlined below. For more detailed information, refer to Appendix D1, Resource Request Guidelines.

Mutual Aid requests are for single resources and strike teams. The County of San Diego is divided into zones, and the City of San Diego is the Zone Coordinator for Zone 3. Requests for mutual aid are initiated by the jurisdiction in need of assistance. If the assistance cannot be obtained within the Zone, the request will be forwarded to the Area Fire Coordinator and are first filled by in-county resources. Mutual aid requests are filled by the closest units on an “Immediate Need” or “Planned Need” basis.

Immediate Need (Adjacent Area) strike team units are to be selected and respond directly to the incident Code 3 as if they are a single resource (automatic aid) and not form up or rendezvous. An immediate need Type I strike team request to an adjacent jurisdiction in Zone 3 may receive the closest engines and strike team leader. A Type I or Type III strike team requests for non-adjacent jurisdictions will receive resources based on locale, availability and impact on the ability to maintain service delivery in the cities of San Diego and Poway. Adjacent area is defined as a response into an area with the immediate threat to Zone 3 and/or the following jurisdictions: Bonita, Chula Vista, Coronado, El Cajon, Escondido, Imperial Beach, Lakeside (west side threatening Miramar, Poway or San Diego), La Mesa, Lemon Grove, National City, Ramona (west side threatening Poway or San Diego), Rancho Santa Fe, San Miguel, and Santee.

Immediate Need (Non-Adjacent Areas & Out-of-County) immediate need strike teams assigned to responses in areas within the county, but not adjacent or contiguous to Zone 3 or to an out-of-county response, will be filled from the planned need strike team list. Assigned units going out of the county are to rendezvous and meet up with the strike team leader and other units. Units responding to immediate need strike teams to a non-adjacent jurisdiction in the County of San Diego shall respond directly to the incident and shall not rendezvous.

Planned Need strike teams are requested for a projected future operational period. Assigned units are to rendezvous and meet up with the strike team leader and other units. Planned need strike teams do not normally move or respond Code 3. Battalion chiefs will be selected as planned need strike team leaders from a list of personnel willing to respond on planned need strike teams, or from the strike team list by day of the week if there are no willing participants. This list is maintained by Battalion 5 and kept at FCC. Strike team leaders on planned need responses may utilize the suburban that is set-up for planned need responses.

The procedure for deployment of Strike Teams, and the guidelines used to make the decision whether or not to approve them, once they have been requested is as follows:



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- Strike team requests are made through the Area Fire Coordinator at CDF=s Monte Vista Dispatch Center. The San Diego County Fire Chief=s Association has agreed on the definitions of immediate need and planned need listed above. San Diego Fire-Rescue policy is to treat immediate need strike team requests based on the definitions above. All requests from outside the San Diego Operational Area will be treated as planned need.
- When San Diego City and/or Zone 3 do not have enough engines to fill a full strike team, the available companies can be offered to the Area Fire Coordinator to make-up a mixed zone strike team. There is no requirement for any jurisdiction to unreasonably deplete its own resources in furnishing mutual aid.
- The dispatch of two similar type strike teams (I or III) will affect SDFD. The goal is to maintain at least five (5) brush apparatus in the City so that a Type III strike team will be available for responses within the City. At least three Type I reserve apparatus should be available to support backfill in stations before a Type I strike team is assigned out-of-county.
- Single Resource Requests by the Area Fire Coordinator are generally approved for up to thirty personnel at any given time. These requests are also dependent on factors such as fire activity, local weather, availability of reserve apparatus and personnel.
- In a unique public-private partnership between the San Diego Fire-Rescue Department and Rural Metro of San Diego to provide emergency medial services in the City of San Diego, the San Diego Medical Services Enterprise (SDMSE) can obtain additional advanced life support (ALS) and basic life support (BLS) transport services from other Rural Metro holdings to augment the established SDMSE resources. This coordination can be accomplished quickly, but is generally considered a "planned need" procedure.

Resource Exhaustion

"Resource Exhaustion" can be defined as "the situation that occurs when a system is out of resources for both an initial response and for an area-wide effective response". In the few instances where the department has experienced "resource exhaustion" during periods of high fire activity and/or responses to large all-risk incidents, either in the city or in the surrounding areas, an emergency recall of all sworn personnel has been authorized by the Fire Chief. This recall procedure is currently being revised to better utilize and coordinate the department's human resources and equipment more effectively. Past procedures have included directing off-duty personnel to return to their respective duty stations to check-in and wait for their modified duty assignments, as well as direction to have all available off-duty personnel report to a specific location for assignment as outlined in the department's Operations Manual.

At any given time, the department has enough personnel on the Telestaff Pick List to fill its ready reserve apparatus. This would be one of the first procedures used when the department is close to "resource exhaustion." In most cases, the area's Mutual Aid Coordination System



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(MACS) will be sufficient to fill requests for mutual aid by the City. In the rare occurrence that the area's resources are simultaneously impacted, the Area Fire Coordinator will request regional, state, and/or federal support.

The automatic aid system uses a CAD module that automatically selects the closest, most appropriate unit(s) for dispatch utilizing an automatic vehicle locator (AVL) system which can be found on SDFD emergency response apparatus. Since most automatic aid jurisdictions do not have AVL, for dispatch purposes units are assumed to be in quarters at assigned fire stations. The automatic aid system allows the closest, most appropriate emergency response unit to be dispatched automatically, regardless of the jurisdiction in which the emergency occurs. The dispatch system utilizes a computerized Geographical Information System (GIS) to verify the location of the emergency call. The GIS system allows the dispatch system to match the closest response unit to the emergency and recommend it for dispatch within the automatic aid system boundaries. There are automatic and mutual aid agreements with each of the jurisdictions listed below.

Automatic Aid

Bonita-Sunnyside	CDF	Chula Vista	Coronado
Del Mar	El Cajon	Encinitas	Escondido
Federal Fire	Imperial Beach	La Mesa	Lemon Grove
National City	Poway	Ranch Santa Fe	San Marcos
Miramar Fire	Santee	Solana Beach	San Miguel

Mutual Aid

Alpine	Barona	Borrego Springs	Bostonia
Carlsbad	County of San Diego	Fallbrook	Lakeside
Oceanside	Ramona	Vista	

Historical Performance

As discussed in the risk assessment, the department is faced with challenges which reflect a wide variety of risks associated with the region, such as the wildland/urban interface, earthquake faults, military installations, the border crossing and international port. Additionally, as the seventh largest city in the United States, San Diego could be a potential target for terrorism. Maintaining service levels and performance measures that meet community needs and expectations based on population growth, increased run volume, increased risks, and a historic lack of funding, is equally challenging. All of these factors have led to shortages of necessary resources, ultimately affecting the department's performance. A number of tables follow which provide three years of response workload data.

Table 6.1 illustrates the total call volume and the percentage distribution among fire, medical and "other" incidents for FY2001, 2002, and 2003. There is a broad spectrum of incidents included in the "other" category. Some of these include: assist police department, electrical short, carbon



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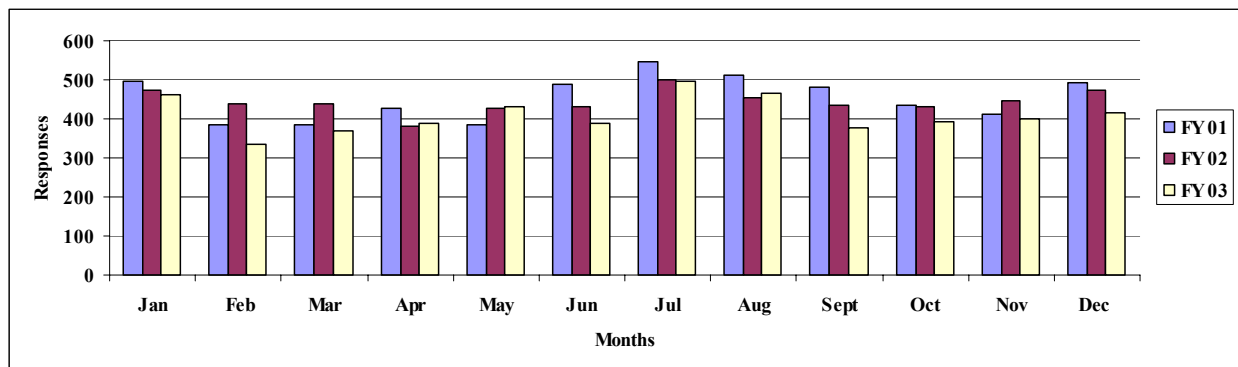
monoxide alarm, fuel spill, juvenile lock-in, noxious odor, smoke check, snake removal, sprinkler system down, unattended food, water removal, and wires down, to name a few.

**Table 6.1
Total / Percentage Incident Volume**

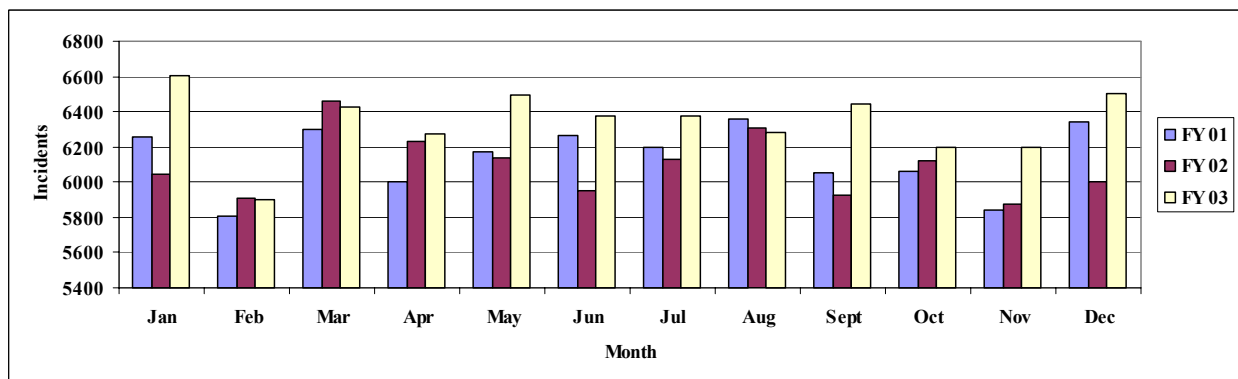
	FY 01		FY 02		FY 03	
Fire	5.98 %	5,437	5.89 %	5,330	5.31 %	4,914
Medical	80.98 %	73,656	80.76 %	73,105	82.10 %	76,069
Other	13.04 %	11,863	13.35 %	12,082	12.59 %	11,587
Total	100.00 %	90,956	100.00 %	90,517	100.00 %	92,570

The following three tables identify the total number of incidents for FY2001, 2002, and 2003, by month of the year and include fire, medical and total calls.

**Table 6.2
Total Fire Incidents/Month of Year**



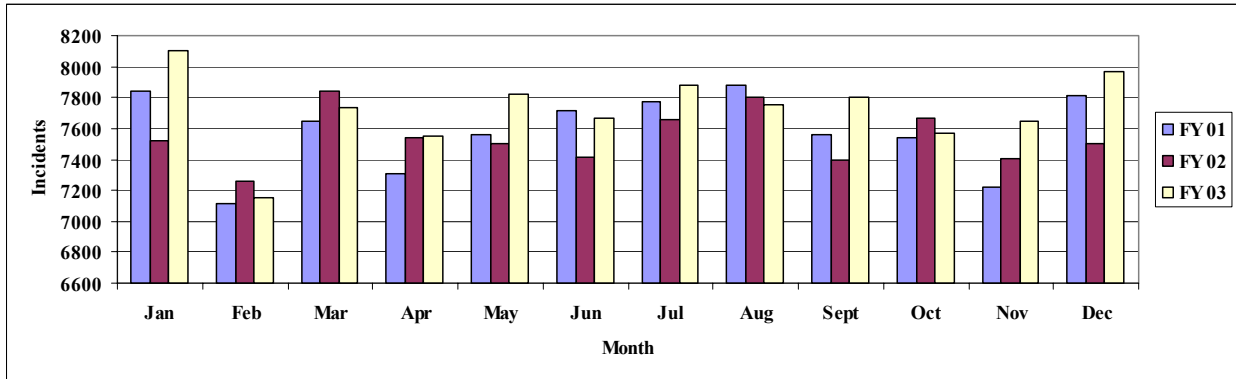
**Table 6.3
Total Medical Incidents/Month of Year**





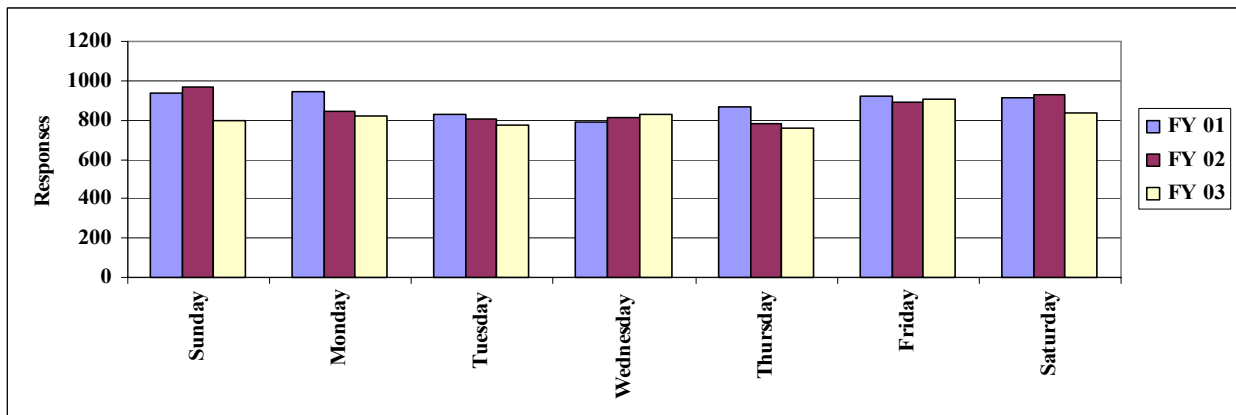
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**Table 6.4
Total Incidents/Month of Year**

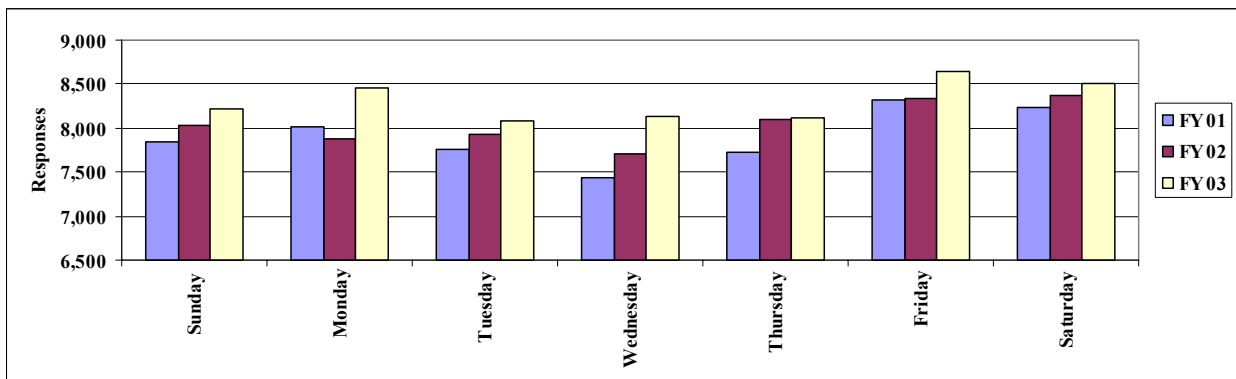


The next three tables provide incident data by day of the week for the same time period and same incident types.

**Table 6.5
Fire Incidents/Day of Week**



**Table 6.6
Medical Incidents/Day of Week**





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**Table 6.7
Total Incidents/Day of Week**

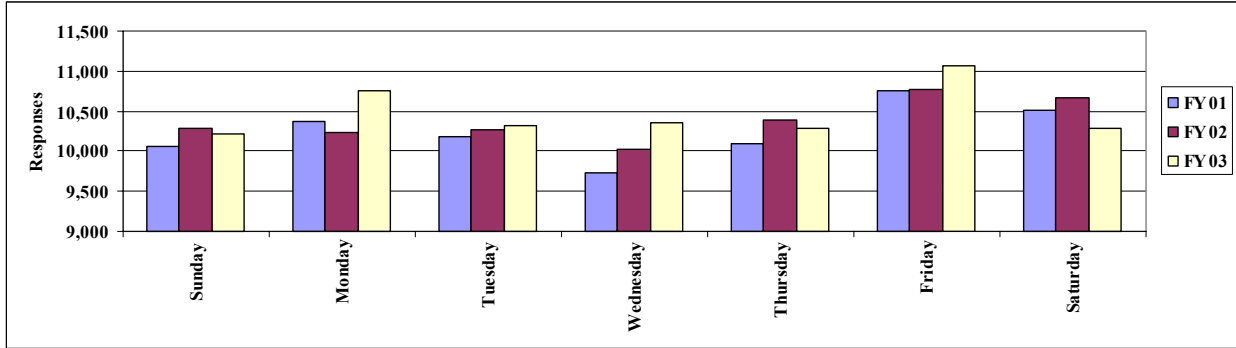
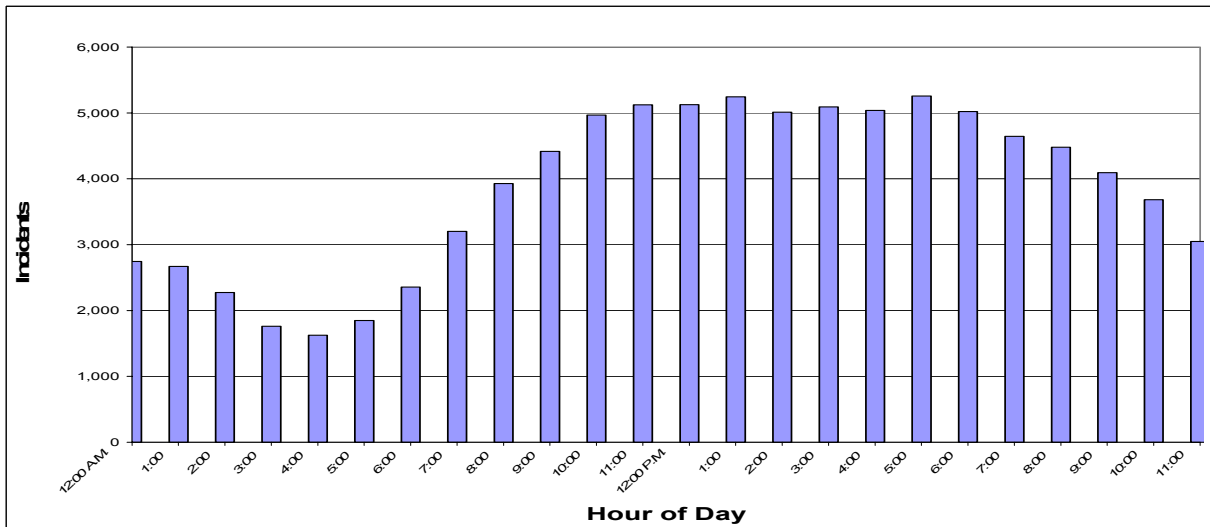


Table 6.8 demonstrates the average call volume for FY2003, by time of day.

**Table 6.8
Average Call Volume/Hour of Day**



This type of data provides the department with information which enables it to analyze trends and develop appropriate strategies as a result. For example, Table 6.3 shows a consistent increase in medical run volume through out the year, significantly so in some cases. The department needs to consider adding additional units. Also, Table 6.2 shows a high run volume during the summer months of July and August. The potential risk posed by the wildland/urban interface areas, coupled with the Santa Ana conditions that generally occur during these months, may prompt the department to consider staffing brush units during these time periods or at a minimum be prepared to activate the mutual aid system. The average call volume by hour of day, Table 6.8, shows a progressive increase in responses from 0700 hours, peaking at 1900 hours and dropping off dramatically at 0400 to 0500 hours. This is useful in identifying peak hours whereby assets can be placed to effectively respond to these expected increases.



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Evaluation of Annual Performance

The department's response standard for fire calls requires the first responding engine to arrive at scene within an average of six minutes from time of page received. A map is provided as Appendix D2 which indicates the department's performance in relation to this response goal. As the map demonstrates, the department consistently meets or exceeds the six minute average in the core city areas. In many of these areas, however, the six minute standard is met less than 50% of the time. Some of these areas include isolated pockets through out the city such as Mission Valley, Southeast San Diego, La Jolla, University City and South Bay areas. The North City represents a significant problem with response times well in excess of eight minutes over broad areas. The department's performance drops if a fractal measure were used rather than an average with the first-in engine company arriving in six minutes or less 64% of the time. The NFPA 1710 standard requires the first-in engine to arrive at scene within five minutes 90% of the time. When comparing the department's response to the NFPA Standard, it falls far short responding in five minutes 46% of the time. This data is provided in Appendix D3, fractal response data for FY2001, 2002 and 2003. Also included as Appendix D4 is the structure fire response cover for a five minute response which is based on ADAM using FY03 data. The red shaded areas show compliance less than 50% of the time which clearly demonstrates the department's inability to meet NFPA 1710.

Since July 1997, when SDFD/SDMSE assumed responsibility for the transport portion of the paramedic services, response time compliance has never fallen below the contract required 90% citywide. Every incident, emergency and non-emergency, has a complete history that can be reviewed for compliance and system enhancement. Response time reports are generated on a daily basis and reviewed by the EMS Program Manager who represents the City Manager's Office as an independent auditor.

A Level 1 medical emergency requires the first responders to arrive at scene within eight minutes 90% of the time. The department's performance relative to Level 1 medical emergencies for FY 2003 is provided below in Table 6.9. A map is provided as Appendix D5 which also illustrates response performance. The green shading on the map depicts engine company responses which comply with the standard. The performance measure is met in the majority of the City. There are areas that fall outside the established goal, most notably North City, Point Loma, Mission Valley and South Bay. The North City in particular has several areas in which the department does not meet its response goal 50% of the time.



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**TABLE 6.9
FIRST RESPONDER MEDICAL INCIDENTS**

Performance task Response Time %	Standard of Coverage Performance Citywide	
	Established Standard	Actual Performance
First Responder Unit on Scene	90% within 8 minutes	90%
ALS Ambulance Unit	90% within 12 minutes	95%

NOTE: Excludes responses outside of the City of San Diego service area.

A contract compliance report is generated monthly which monitors and evaluates the medical system performance, specifically the department's ability to meet its performance measure of eight minutes 90% of the time. For these reporting purposes, the City is divided into four zones. The department consistently complies in all four zones, as well as city-wide. A copy of the contract compliance report is included as Appendix D6. Compliance is also monitored on a community basis. Of the 25 communities evaluated, the department was unable to meet this goal in 13, or 52%. These areas include: Carmel Valley/Sorrento Hills, Mission Valley, Penasquitos East, Rancho Bernardo, Sabre Springs, Serra Mesa/Kearney Mesa, Skyline/Paradise Hills, and University City. All of these communities are located where fire station concentration is low. Furthermore, the department does not comply with the NFPA 1710 Standard relative to EMS First Responder which requires the first-in engine to arrive within five minutes 90% of the time. According to the data contained in Appendix D3, the department responded within five minutes 59% of the time. A map illustrating the medical five minute response coverage to comply with NFPA is provided as Appendix D7.

Another service area for which the department has established a standard of coverage is technical rescue in which the first-in unit should arrive at scene within an average of six minutes. Technical rescues include cliff rescue, elevator rescue, industrial rescue, industrial/machinery accident, miscellaneous rescue, trench/ cave-in rescue, vehicle rescue, vehicle versus structure and water rescue. The incidents are coded into these classifications based upon the initial or upgraded response. In FY2003, the SDFD responded to a total of 691 rescues within six minutes or less 75% of the time. In addition, the heavy rescue unit responded citywide within ten minutes or less 50% of the time.

A response standard for truck companies requires arrival at scene within an average of nine minutes. The department meets the citywide average, however, based on fractal reporting the first-in truck arrived at scene in nine minutes or less 64% of the time. The primary reason for delayed response is the size of truck districts. Truck companies cover an average of over 23 square miles per district. As Table 6.10 points out, some districts range from 50 to 60 square



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miles. Moreover, 12 of the total 14 trucks exceed nine square miles which is identified by CFAI as resulting in delayed response times. A map is provided as Appendix D8 which indicates the structure fire response coverage for a nine minute response based on ADAM using FY2003 data. Some of these areas include North City, Mission Valley, Lake Murray, Del Cerro, Clairemont, La Jolla, Del Mar Heights, Paradise Hills and the South Bay. Of significant concern are those areas that meet the nine minute response standard less than 50% of the time. These include Mission Valley, Lake Murray/Del Cerro, La Jolla, Clairemont, Paradise Hills and broad areas in the North City area.

**TABLE 6.10
TRUCK DISTRICT SQUIRE MILEAGE TABLE**

TRUCK DISTRICT	SQUARE MILES
1	6.01
5	7.75
10	21.02
12	20.64
14	14.09
20	18.01
21	12.61
28	48.41
29	19.98
35	22.10
40	58.96
41	29.01
43	11.41
44	38.84

The department has also established response plans for on-and off-field emergencies involving aircraft. At the San Diego International Airport, the San Diego County Regional Airport Authority conducts monthly response evaluations and apparatus timed runs to determine how well the SDFD is meeting the standard of coverage goals for aviation incidents. The FAA also tests ARFF response capability during annual inspections. If ARFF units cannot meet the federally mandated response objectives, the airport does not earn re-certification. Table 6.11 on the following page illustrates performance relative to this response standard. As indicated in the table, this standard of coverage objective has been met in all cases where FAA inspectors have staged alerts for certification purposes



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**TABLE 6.11
RESPONSE STANDARD PERFORMANCE**

Aircraft Rescue and Firefighting				
Performance Task	Standard of Coverage Performance		Initiate to At Scene Time in Minutes	
	Established Standard	% Meeting Time Standard	Average Response Time	Number of Drills
First Unit on Scene	100% within 3 minutes	100%	2:34 minutes	*36

*Based on unannounced time drills; Actual time-stamped response data are not available via CAD

The response time standard for HIRT is found in the County contract which requires HIRT to arrive on scene within 60 minutes from point of dispatch, 90% of the time. In addition, the requirement for a second, simultaneous request for HIRT must be met within 90 minutes, 90% of the time, unless mitigating circumstances prevent it. The department has historically met all contract requirements, including this response standard.

The Urban Search and Rescue Task Force is required to mobilize within four hours from notification for over-the-road responses and six hours for air responses. The Task Force conducts an annual mobilization drill to exercise its ability to meet these requirements. To date, the Task Force has continued to meet all the requirements stipulated in the cooperative agreement with the Federal DHS/FEMA.

As referenced previously, the department does not have a formal performance measure for an effective response force, but according to data collected, places an effective response force at scene within 12 minutes 95% of the time. Yet it falls significantly short of the NFPA 1710 standard of nine minutes 90% of the time, responding within nine minutes 70% of the time. Table 6.12 on the next page uses FY2003 incident response data for 559 fires where an effective response force responded, and provides the cumulative percentage of those responses to arrive on scene during a stated minute group. Utilizing this data, an effective response force would take approximately 12 minutes to respond to a fire 95% of the time. Of the 559 fires which required an effective response force, 59 calls were in excess of 12 minutes. While reasons vary for calls that fall outside the desired goal, the most common explanation is due to unit unavailability; or one of the initial first alarm units is unavailable due to either a prior response or other issue that affected its ability to respond, such as In-Service Training.



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**TABLE 6.12
EFFECTIVE RESPONSE FORCE**

Minute Group i.e.(4 = 4 Min or less to at scene)	Cumulative Percent of Response in Minute Group
4 Minute	1.47%
5 Minute	7.33%
6 Minute	19.65%
7 Minute	37.24%
8 Minute	51.91%
9 Minute	70.38%
10 Minute	80.94%
11 Minute	90.32%
12 Minute	94.72%
13 Minute	95.89%
14 Minute	97.07%
15 Minute	97.95%
16 Minute	98.53%
17 Minute	98.83%
18 Minute	99.12%
21 Minute	99.41%
23 Minute	99.71%
24 Minute	100.00%

A detailed table has been provided as Appendix D9 which lists response time for an effective response force based on type of call. Additionally, a map is also provided as Appendix D10 which depicts response cover for a 12 minute effective response force based on CAD analyst.

When analyzing the figures for the 12 minute effective response force in Table 6.12 above with the effective response force map, Appendix D10, it is important to note that both the incident performance data and the incident distribution data need to be taken into consideration. In FY2003, the majority of the structure fire incidents occurred in the central core of the city where fire stations are located in closer proximity to each other. It is much more likely that an effective fire force could be assembled on scene in 12 minutes in the central core than in the outlying areas of the City. In FY2003, fewer structure fire incidents occurred in the areas outside of the center city (i.e. North and South) as evidenced in the map attached as Appendix D11 and entitled "Structure Fire Incidents Based on CAD Analyst FY03 Data." The yellow areas indicate one to three incidents and the light green areas indicate four to seven incidents. The fire stations in these areas are farther apart; therefore, the full effective fire force is less likely to meet the 12 minute criteria because driving time is much greater.

The combination of these two factors account for the red-shaded areas in Appendix D7 and entitled "12 Min Effective Fire Force Based on CAD Analyst FY03 Data." The overall 12 minute effective response force responses within the City of San Diego for structure fire



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incidents was met 95% of the time. However, it can be deduced that the criteria in the red areas are met less than 50% of the time should a structure fire occur because there are a fewer number of incidents counted and more widespread territory to be covered by fewer response units.

A number of factors have been discussed in this study that contributes to the department's inability to meet NFPA 1710 including an insufficient number of fire stations, firefighters, engines and trucks. Unit unavailability can also adversely affect response reliability. When a unit is either committed to a response or out-of-service for one reason or another, a unit from an adjoining district must respond from a farther distance to the request for service in an uncovered response area. Appendix D12 entitled FY03 Unit Unavailability by Station demonstrates the number of times a neighboring district responds to a call for service outside its district and the percentage of responses that occur outside the first-in engine district. Engine and truck companies in response areas with an above average population density, and resultant higher call volumes, are shown to experience higher unavailability rates than those in the less dense areas of the city. Response units covering the downtown and mid-town areas such as Engines 1, 201, 3, 5, 8 and 11, are good examples of this condition. Demographics can also play an important factor in unit unavailability and/or a lack of consistent response coverage. Engine districts such as 17 and 19 are examples of high density residential areas with above average run volumes, while Engines 18 and 28 are examples of high density residential to high density commercial area interfaces. In these areas, as the call volumes increase, unit unavailability increases proportionately. Unit reliability decreases as unit unavailability increases and consequently, a unit from another area must be dispatched to cover the resultant gap in the response coverage. This condition in the response coverage then results in increased response times based on the additional miles traveled to reach the incident.

The previous discussion used response data to highlight unit reliability as it is affected by unit unavailability due to an increase in call volume. As mentioned, increased call volume can result in gaps in an area's response coverage when a unit is unavailable or when a subsequently assigned unit has a longer travel distance to reach a service area. This condition in the response coverage can also result in a unit becoming unavailable due to prolonged maintenance issues that stem from increased travel distances. Over the years, the department's apparatus replacement program has not been funded consistently which has directly impacted its ability to maintain a sufficient number of fully equipped reserve apparatus to replace and augment an aging fleet of response vehicles. This has ultimately resulted in out-of-service times of up to two hours or more in high volume call areas, due to a routine maintenance issue, when a fully equipped reserve apparatus could have been placed into service, as a backfill unit, in less than twenty minutes. Since the Cedar Fire, however, this situation has improved as 11 of the 14 ready reserve apparatus have been fully equipped.

Staffing shortages have also affected unit reliability and can occur for a variety of reasons. City budget cuts, over many years, have resulted in compromises to the policies and procedures that once governed personnel leave practices. These compromises have led to problems backfilling stations during the summer months, as well as during some holiday periods throughout the year. At times, the process of filling vacant positions, due to approved leave, special assignment,



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and/or sick leave has resulted in delays of up to six or more hours to complete the daily constant staffing requirements. This is no more evident than during periods of high fire activity in the city, county, and the region. Mutual aid requests for strike teams can lead to staffing shortages, which in turn, can result in the need for the mandatory assignments of off-duty personnel. This condition can result in a unit or units being placed into service with fewer than four personnel each. This condition then results in the department's need to operate emergency response resources while directly failing to meet the intent of NFPA 1710.

Maintenance of Effort

The department has a data analysis unit that collects data from the CAD system and generates daily and monthly reports for EMS contract compliance purposes. The CAD data are stored on a server and available for analysis as needed. Analysis is performed using Crystal Reports, Microsoft Access, Deccan's CAD Analyst and ADAM Software. This information is captured on the Fire Incident Management System (FIMS), as documented by the officer on the first responding engine company.

The department also maintains a sophisticated array of reporting technologies. These provide both production and ad hoc reports in several forms to members of the department and SDMSSE staff, City staff and the public. There are several components of the source data as follows:

- Computer Aided Dispatch System Records. These data are collected as part of the dispatching and status keeping functions related to an incident. These data provide time stamps on unit responses, type of response, location, etc. Such information is invaluable in assessing performance in arriving on-scene in a timely fashion.
- Incident Report Records. Pursuant to California Health & Safety Code section 13110.5, the department collects data on incidents based on a national standard that has been adopted by the State of California. The current standard is NFIRS 5.0. These reports are created by the first arriving unit and reviewed using a combination of automated routines and human intervention. NFIRS is a web-based reporting system that provides information for several users. Some features include: collects information on a full range of fire department activity, modular-based for fires, casualties, EMS, hazardous materials/WMD, addresses formatting to allow computerized queries matching GIS proposes, fire losses for property and contents, and ability to capture information for special studies, especially WMD related incidents.
- Patient Records. These records are created by paramedic staff for all patients treated. These are required to be filed with the County of San Diego's Public Health Department. However, they also serve as a source of information to SDFD about patient and treatment trends.

The above data sources and reporting technologies allow the department to assess its success in meeting established goals and objectives, identifying trends and deficiencies, and documenting progress. The daily reports allow for quick identification of potential problem areas. Additionally, annual reports are used for the development of performance measures for the



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budget process. More specifically, weekly reports are generated which identify units whose chute times are greater than two minutes, response times greater than seven minutes and medic unit response times that are greater than 15 minutes. A shortfall in the data collection by officers in the field is accuracy since it is not reviewed and no quality assurance or quality improvement program is in place. Furthermore, while the department captures the data referenced above, there is no designated person assigned to evaluate or review fire reports.

Additionally, Geographic Information System (GIS) technologies are available for response planning and development of standards of coverage models. Another technology includes the Apparatus Deployment Analysis Module (ADAM) which is a modeling tool that utilizes the CAD Analyst incidents as well as road network routing to estimate time-distance relationships. This software does not assume that the apparatus is always in station when estimating engine workloads and accountability. ADAM provides two analysis models: incident performance and coverage performance. Incident performance weighs each response zone performance with its workload. Coverage performance weighs each response zone performance with its square miles. Personnel assigned to the response planning section use these technologies to produce custom and ad hoc reports, formulate response models and maps upon request. This tool also develops models on potential fire station locations, and can forecast the ability to respond based on streets, topography, traffic patterns and population.

SDFD/SDMSE has a fully integrated electronic patient care record system that was developed in cooperation with San Diego County EMS, EMS Staff and the City's Medical Director. Department paramedics and EMTs are trained and required to document every patient contact into the electronic patient care data base. This program is utilized by First Responders, Ambulance Crews, Bike Teams, BLS Crews and Special Event Teams. The data from this process not only supplies patient documentation, billing information, frequently used forms (AMA's, Billing Forms) and guidance during specialized procedure documentation, it also provides data on the individual paramedic completing the information.

Electronic documentation interfaces with SDFD CAD to integrate response information and crew names. This merged record system provides complete incident data, patient history, assessments, chief complaints, treatments rendered, paramedic or EMT rendering the treatment and protocol reminders. Every data point can be calculated to identify trends by crew member, patient demographics, time of day or day of the week, first responder or transport team member. These segments of data are used by our Quality Assurance Manager to assess team member competency and identify training needs.

SDFD/SDMSE has a strategic plan with key program indicators that are assessed on a weekly basis and formally reviewed monthly. These indicators not only monitor and ensure response compliance, but also address chute times, scene times, transport times and incidents that fall outside of established timeframes, i.e. 10 minutes maximum scene time for a trauma patient being transported to a regional trauma center. Another example of a key indicator is the monitoring of compliance with advanced airway management and respective documentation,



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which has been embraced countywide and has significantly decreased the complication rate, thus improving patient care and outcome.

SDFD/SDMSE has over 500,000 responses in a data base that compares response information against transport data and patient outcome. This information has provided the Medical Director with the data necessary to refine dispatch guidelines. These data are analyzed by the Dispatch Review Committee to identify trends by call takers, types of chief complaints and patient demographics. The Medical Director can accurately predict the number of responses necessary in a given category which would dictate a critical patient. This information is used to ensure that the right resources are sent to the right incident and, conversely, that unnecessary resources are not dispatched. With limited response resources, this scientific approach maximizes available response teams so that they are sent when and where they are needed.

SDMSE staff evaluates and analyzes response data for ambulances which facilitates the placement of units in the field during peak periods and coverage for difficult to serve areas. The outcome of this data review results in a continuing quality assurance/quality improvement program.

SDFD/SDMSE maintains a current electronic data base of standing orders, protocols and patient care standards that are used by every employee. Additionally, all patients encountered whether on a single patient incident or large multi-patient emergency are documented within the electronic patient record system. These policies and procedures have been validated and meet and or exceed every requirement of San Diego County EMS and San Diego City Paramedic Provider contracts to ensure the department meets the expected level of response. San Diego County EMS audits SDFD/SDMSE based on these requirements and every audit has substantiated that the department met or exceeded every requirement.

All SDMSE policies and procedures are kept current and are available to each employee on our SDMSE website or in hard copy form when needed. Each work site has a hard copy of training text books and manuals, EMT textbook, American Heart Association Advanced Cardiac Life Support, PEPP, and EMT skills manuals. All operations employees are required to be current with these resource documents, and are tested on the content during regular bi-annual recertification classes.

SDFD also captures response information relating to technical rescues in the CAD system through entries from the first arriving company in the records management (SUNPRO, NFIRS 5.0) system. Each emergency response unit is given an incident number which is unique to that individual response. Incident information included within the SUNPRO system includes: incident type, actions taken, mutual aid (if applicable), units assigned, address, dollar loss, casualties or injuries, and response time for each unit. This information is available to evaluate the technical rescue program. However, although the system allows SDFD to analyze response times, it does not provide a mechanism to gather qualitative data in order to determine its effectiveness or inefficiencies. Further, the department has an incident critique policy, but it is not always followed.



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In addition, aircraft rescue and firefighting units at the San Diego International Airport utilize NFIRS reports using SUNPRO to document incidents and maintains daily activity and operational status reports that document in-service training, drill subjects taught, the number and types of alarms, personnel data and equipment education data. Furthermore, response reviews and apparatus timed runs also provide information to analyze the ARFF program.

NFIRS using SUNPRO software is also used to document shipboard and marine firefighting. This data is merged with CAD from which reports can be generated to provide information for analysis of marine and shipboard fire incidents. Unfortunately, the number of shipboard fires is statistically insignificant. This minimizes the ability to effectively evaluate trends.

The Metro Arson Strike Team (MAST) uses two information systems to collect and report data on fires and explosions. SUNPRO is the main data collection system used to gather incident information and report it to NFIRS. MAST investigators also make entries to the SUNPRO system, and have authority within the system to add and correct information entered by engine and truck company officers.

MAST also files criminal case reports within the Automated Regional Justice Information System, or ARJIS. The Crime Analysis section of the San Diego Police Department regularly prepares analysis of trends, incident frequency or common incident occurrences for use by MAST. The Information Systems section of San Diego Fire/Rescue also provides analysis of the same items for fires of all types, not just criminal occurrences. All case files for MAST are retained in a secured area. Requests for information regarding “accidental” type incidents are handled at the MAST office after forms indicating nature of request and relationship of requestor are on file. Requests for information regarding criminal cases handled by MAST are referred to the Records Division of the San Diego Police Department. In any case, juvenile data is redacted from released reports, and report contents are only released in accordance with the California Government Code.

Reports from MAST investigators are due on the following day for Arson fires, and within six days if an “accidental” origin and cause. A clerical assistant is assigned to the office to handle transcription of dictated reports, which are completed in a timely manner. All reports are reviewed by the MAST Sergeant as well as an uninvolved MAST Fire Captain for accuracy and completeness. A concern exists that unless a company officer advises MAST about certain activities or repeat occurrences, the investigation unit may not be aware of series-type criminal activity in a timely manner.

Information regarding Hazmat incidents is captured through two independent databases. One is a stand-alone database which is completed by HIRT after each incident. The other database is the department-wide incident report system, SUNPRO, which is completed by the first responder engine company. For the purpose of incident management, HIRT completes a site safety plan form. This form is for field use and is not archived following termination of the incident.



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First responders carry a multiple-copy form to assist them with the management of an emergency medical incident involving hazardous materials contamination. The appropriate copy of the form is forwarded to the receiving hospital with the patient(s).

Exposure reporting is accomplished through the department's occupational injury/illness reporting forms. Additionally, each fire station's company daily journal(s) is completed by each company officer and utilized as a repository for incident information that can be cross-referenced with the other department reporting methods. These records are retained for 50 years.

The information documented by the above means is extensive and allows for the formal and informal analysis of the hazardous materials program. There is, however, no linkage between the HIRT stand-alone database, department-wide incident reporting system, and the occupational injury/illness reporting system so any analysis involving more than one system would require the manual review of independent data sets.

The City of San Diego Office of Homeland Security purchased a City-wide software solution for incident management. The name of the product is "E Team." It enables first response departments to dramatically improve the capability to prepare for, respond to and recover from daily incidents, unplanned disasters and major events. It provides a tool to coordinate security, access documents and communicate in real time to manage resources from any computer with an internet connection. The server for the system is located in redundant off-site locations owned and operated by the vendor. There is connectivity in the Fire-Rescue Department Operations Center (DOC), the Police DOC, the Water DOC and the Metropolitan Waste Water DOC. The County of San Diego Office of Emergency Services also purchased the system enabling the interface between the City and the Operational Area. System features include:

- Incident Reporting & Tracking - tracks incidents of all types, large and small, planned and unplanned. Users can view general information on all incidents in text or map format, or can drill down to incident-specific details. Information can be sorted and prioritized by incident status, type, location, responsible agency and more.
- Resource Management tools - promotes the most effective use of resources by allowing users to track, deploy and geo-locate all important assets.
- Critical Infrastructure Reporting - gives responders and managers immediate access to key information such as the status, location and operational details of hospitals, shelters, utilities, facilities and other important infrastructure.
- Situation Reporting - allows agencies and jurisdictions to provide a comprehensive assessment of the overall situation. This is ideally suited to the needs of executive level managers, elected officials and the media. Reports include response objectives and concerns, agency status and other critical situational information at a glance.
- Action Planning - tools promote better preparedness and coordination by enabling users to define and assign tasks and subtasks, request actions, track progress and communicate issues of concern.
- Tip Reporting - efficiently organizes, prioritizes and tracks leads, tips and other similar information.



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- Intelligence Reports - enable users to understand and monitor the activities of terrorist groups, gangs or other suspects.
- Personnel_Management - is facilitated with E Team's profiling tools that identify, store and track staff by skill sets. This utility can also be used to create duty logs and staff assignment schedules.
- Alert Notification - sends widespread news announcements or situational updates to system users in the form of a broadcast message.
- Real Time Messaging - enables users to send private or broadcast messages, or set up meetings with multiple users.

The Office of Homeland Security monitors and evaluates incident management software programs and changes in technology. Recommendations are made to the Executive Leadership Committee as necessary.

Overall Evaluation

A significant amount of data were gathered and analyzed to conduct this risk assessment/standard of coverage study. The initial step was to provide a general description of the department and city including a historical background and a description of current service levels such as the number of companies, station locations, staffing levels and staffing patterns as well as current goals and objectives. From that point, a risk assessment was conducted which provided a description of the scope, complexity and relationship of the various risk factors associated with the region and a method used to evaluate those risks. The department considered both the fire and non-fire risks. In addition, general demographics of the area protected was identified such as population, both permanent and transient, area protected by first-in units, population density, population per firefighter and building density. Based on the risks assessed, a description of the level of service or the department's response strategy was provided for each major service area. Following this assessment, a critical task analysis was conducted for fire and medical emergencies which included staffing levels and initial actions on the fireground for the first-in unit and full first alarm assignment for low, medium and high risk occupancies. The next step was to outline the department's distribution and concentration of resources, and a description of measurable service level objectives the department had in place. The final phase was an analysis of the historical incident data to measure performance to determine the reliability of the department's response system.

After analyzing all of this data, it became evident that the department had significant gaps in service and exceeded nationally accepted standards in a number of areas. These include square miles covered per station, response times for first-in units and an effective response force, incidents per engine district and population per firefighter. Building density was also found to be excessively high in a number of areas in the City, particularly the downtown and mid-city areas.

In order to evaluate all of the data so reasonable conclusions and recommendations could be made, a matrix was developed that identified primarily four risk factors in which the department exceeded national standards. These included: 1) engine districts with more than 1,500 run



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volume, 2) engine districts that exceed nine square miles, 3) fire response times exceed the department's six minute average, and 4) population per firefighter exceeded 820. This population to firefighter figure was developed based on the mean of a firefighter ratio to population survey of 11 comparable cities discussed in Section Two. Because building density was such a significant factor as well as population growth projections, these were also considered in the overall evaluation. After reviewing the matrix based on the factors referenced above, several areas of the City were highlighted as having shortfalls in service levels.

Station 35 exceeded the values in all of the four factors. A number of stations exceeded the values in three of the factors. These included Stations 5, 14, 23, 24, 28, 30, 32 and 41. Station 24 and 28 exceeded square miles covered, response times and incidents over 1,500. Stations 23, 32 and 41, all exceeded response times and population per firefighter or high population density. In addition Stations 23 and 32 responded to more than 1,500 incidents, and Station 41 exceeded square miles covered. Stations 5 and 14 responded to more than 1,500 incidents, demonstrated a high population to firefighter ratio or high density and also had two of the highest building densities in the City. And Station 30 exceeded square miles, number of incidents and population per firefighter.

Additionally, there were several stations that exceeded two of the four factors which included Stations 11, 17, 18, 19, 25, 33, 40, 43 and 44. Stations 33, 40, 43 and 44, all exceeded square miles coverage which also affected the ability to meet response time standards. Station 25 responded to more than 1,500 incidents and exceeded response standards. Stations 11, 17, and 18 experienced a high run volume and population to firefighter ratio.

Incident volume and population densities for the Downtown or Centre City Engines 1, 201, 4, 7 and 11, are a significant issue. Additional stations are planned for East Village and the Harbor area of the port. An expansion of Station 4 is also being considered. This should provide opportunities to address today's issues as well as provide some facility space to accommodate future growth.

For the Mid-City Engines 5, 14, 17 and 18, population per firefighter and incident volume are also a concern. Current plans are to rebuild stations 5 and 17. This will provide facility space to add an additional engine company to split the call volume for Engine 17, the busiest engine company in the City with 3,869 calls in FY 2004. Station 5 should also house a staffed truck company on completion of the rebuild. The area known as North Park/South Park is a challenging area to reach with the current units and should be considered with future growth. An additional station near 30th and Upas would also help cover the Park area.

Emerald Hills and the Home Avenue area between stations 11, 12, and 19 indicate a coverage gap that is substantiated by the population density and incident volume of these companies. Additional stations should be considered in this vicinity.

Any additional growth in the Clairemont Mesa, Kearny Mesa, Serra Mesa areas, will quickly exceed the capacity of Engines 27 and 28 to meet the needs of these communities. Population



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density is already high in this area and these engine districts are just at the accepted capacity level for incident volume. Another factor is the size of Engine 28's district as it is currently covering 19 square miles. A priority for this community would be an additional station in the Serra Mesa area to divide up Engine 28's district. Coverage should be re-evaluated once Station 2 is added in the Mission Valley area.

The Mira Mesa and Sorrento Valley areas are a challenge for Engines 38 and 41. The population density, as well as the traffic congestion, makes this a difficult to serve area. Future considerations should be an additional station mid-way between these two stations.

The University City/Governor Drive area is challenged with population density and incident volume. Engine 35 is currently expected to cover 14 square miles, including the University of California at San Diego and is responding to over 2,000 calls annually. A station should be considered for the southern portion of the University City area due to actual incident occurrence and inability to meet response times.

Engine 32's area is one of the greatest impacted by population density and incident volume. Future plans to build a new station in Paradise Hills and Skyline should alleviate the capacity issues in this area. Consideration should be given to retaining the existing station along with the two new stations.

South Bay's Engine 30 currently covers 10 square miles and is handling over 1,700 incidents annually. Any additional growth in this area cannot be absorbed by this engine company. An additional station is planned for the Otay Mesa area to cover the gap between Stations 6, 29 and 30.

Rancho Bernardo's Engine 33 is expected to cover 28 square miles and is currently handling over 1,700 incidents annually. Per the nine square mile standard, two additional stations or engines would be required to cover this section of the City of San Diego. The San Pasqual area that includes the Wild Animal Park is a particular challenge.

Del Mar Heights Engine 24 is currently covering 18 square miles, but an additional station is planned for the Pacific Highlands area in FY 2006, Station 47. This action should reduce the size of the engine district to an acceptable level. Because of access routes, Torrey Hills is an area which is hard to serve. This should be evaluated once Station 47 is built and the access routes are completely built-out.

Penasquitos Engine 40 is covering 13 square miles and not at capacity for the engine company. With the added growth anticipated in this area another fire station will be built in the Black Mountain Ranch area.

Scripps Ranch Engine 37 is covering over 21 square miles and has capacity to handle additional run volume. Response times will be a challenge into the Sycamore Canyon area and should be an area for a future station depending on expected growth.



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Growth projections should also be considered for selecting sites for future fire stations. These projections indicate that a significant number of building units will be constructed and will affect service levels in the following communities: Downtown, Hillcrest, North Park, Normal Heights, Mission Valley, Carmel Valley, Black Mountain Ranch, Pacific Highlands Ranch, Otay Mesa, Otay-Mesa Nestor, Mira Mesa, City Heights, Rancho Penasquitos, University City, Center City, City Heights, College Area, Eastern Area, Greater Golden Hill, Linda Vista, Miramar MCAS, Miramar Ranch North, Pacific Beach, Sabre Springs, San Ysidro, Southeastern San Diego, Torrey Highlands, Torrey Hills, and Uptown. Appendix D13 provides the City of San Diego Planning Area Forecast for 2030.

It should also be noted there is a potential that Miramar and MCRD will be placed on the Base Realignment and Closure list. If this occurs, the region will lose three current stations and one planned for construction. The loss of these stations should be factored into the need for placing additional fire stations to cover the gap in coverage.

As fire stations are phased-in, funding must also be appropriated for firefighters, fire engines and equipment. Additional battalion chiefs will also be required to provide the appropriate level of oversight and accountability for the additional personnel and other assets. According to the data in this study, other resources are needed as well. It is clear additional trucks are necessary. There are a number of large areas throughout the City in which truck companies meet the nine minute response standard less than 50%. Some of these include Mission Valley, Lake Murray, Del Cerro, Rancho Penasquitos, Clairemont, La Jolla, Bay Park, Paradise Hills, South Bay and the North City.

Additionally, based on the severity of the wildland/urban interface areas, consideration should be given to additional Type III apparatus. The department also lacks the ability to provide adequate coverage to marine/shipboard rescue and firefighting. The purchase of a fire boat would fill this gap in service. Further, despite meeting the contract requirements in the hazardous materials response contract, funding a dedicated HIRT would increase unit reliability, thus improving coverage and/or response to “all-risk” events.

Upon review of the department’s information network to evaluate its performance, it was apparent that a number of effective systems were available. However, these systems lacked, in most cases, a dedicated person responsible for analysis, and/or someone to hold staff accountable to those standards. Nor was there a required schedule for review and systems were not networked. Dedicated staff would enhance the quality of information and should increase performance levels based on increased accountability.

Lastly, the City’s Emergency Operations Center and Fire-Rescue’s Operations Center both are in need of upgrades before they could be considered in a full state-of-readiness to manage a large-scale incident. The City’s Major Incident Response Plans are also out-of-date and should be revised if they are expected to be useful.

SECTION SEVEN

POLICY RECOMMENDATIONS

Section Seven – Policy Recommendations

The San Diego Fire-Rescue Department recommends the adoption of a short and long-range plan with specific action items to address shortfalls in service levels as identified in this study. These plans should be incorporated into the department's existing Five-Year Strategic Plan. A short and long-term funding strategy should also be developed. These plans should include a clearly defined scope of work and timeline to measure progress. Each year the department should make measurable strides toward meeting the service levels outlined below.

Recommended Actions

1. The City's General Plan should be revised to reflect measurable fire service level objectives more accurately in order to meet community needs and expectations.
2. Ultimately the department should strive to achieve the National Fire Protection Association (NFPA) 1710 standard, which is the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments and considered the national standard. It is further recommended that a phased approach be developed as delineated below.

The initial phase should, at a minimum, maintain the current response times as identified below and calculated from receipt of page to unit at scene as is the current practice:

- The first-in engine company for fire suppression will respond within six minutes or less 64% of the time.
- The first-in truck company will respond in nine minutes or less 64% of the time.
- An effective response force will respond in nine minutes or less 70% of the time.
- The first-in engine company or higher level capability for emergency medical will respond within eight minutes or less 90% of the time.

The next phase should identify a fractal response standard that would provide a service level to the community that is closer to the national standard. The recommended response standards are as follows:

- The first-in engine company for fire suppression will respond within six minutes 80% of the time.
- The first-in truck company will respond in nine minutes or less 80% of the time.
- An effective response force will respond within nine minutes 80% of the time.
- A first-in engine company or higher level capability for emergency medical will respond within six minutes 80% of the time.

The final phase would provide a level of service consistent with the national standard, NFPA 1710, as follows:

- The first-in engine company for fire suppression will respond within five minutes or less 90% of the time.
- An effective response force will respond within nine minutes or less 90% of the time.

- The first-in truck will arrive within nine minutes or less 90% of the time.
- A first responder or higher level capability will arrive at emergency medical incidents within five minutes or less 90% of the time.

Response times should continue to be calculated for the first responders from receipt of page to unit at scene.

3. This study highlighted a number of issues and identified a number of resources required to respond to the risks associated with the area and to meet service level expectations. In order to attain the response standards referenced above, the following resources are recommended.

Fire stations- The department has a plan in place for the addition of several new stations. However, the data contained in this report indicate a need for more stations than those currently planned. Based on the risk factors used in the analysis, significant gaps in coverage were identified in a number of geographic areas. The department needs to establish priorities for station locations in response to this information. Plans, including timelines and funding strategies, should be developed for land acquisition and station construction.

Firefighters- Staffing requirements for new fire stations should be identified. These requirements should include equipment and apparatus. Consideration should also be given to the number and types of units assigned to each station. Additionally, battalion chiefs should be added to ensure the appropriate level of oversight and accountability to established performance measures is maintained. Moreover, it is apparent that unit unavailability has a significant impact on the department's ability to provide effective response coverage. Consequently, additional firefighters should be considered to serve in a relief capacity to backfill for In-Service Training or other out-of-service issues, thus improving the reliability of the department's response system.

Trucks- An immediate need exists for additional trucks. As referenced in this report, truck companies cover an average of 23 square miles, with some districts ranging from 50 to 60 square miles. Also, there are broad areas throughout the City where the department does not meet its established response standard 50% of the time, and in many of these areas the run volumes are in excess of 1,500. Of primary concern are the Mission Valley, Del Cerro, Lake Murray, Tierrasanta and the North City areas. Other areas with poor coverage include Clairemont and La Jolla. The South Bay is also impacted, as is Paradise Hills. The department should prioritize the placement of additional trucks based on the risk factors analyzed in this section.

Brush rigs- Due to the severity of the wildland/urban interface areas, the department should consider adding Type III apparatus. Further study is necessary to identify the appropriate number, type and location.

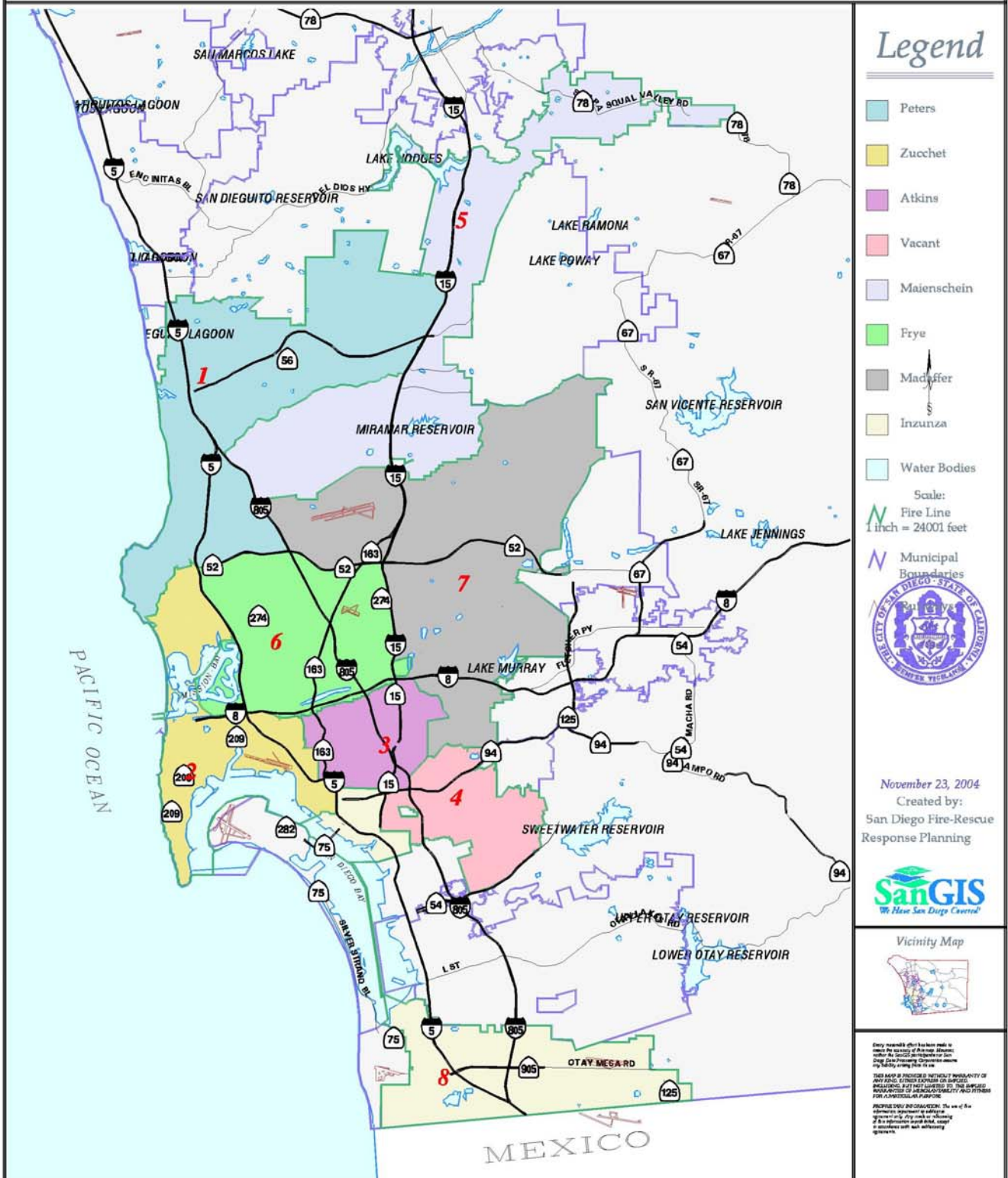
Fire Boat- The department is ill-equipped to respond to marine/shipboard rescues and/or fires on-or-off-shore. A fire boat should be added to the fleet to fill this gap. Traditional firefighting capabilities in earthquake-prone areas often need to be supplemented by fire boat operations.

Dedicated Hazardous Incident Response Team- Dedicated HIRT would not only improve service levels but also increase the department's capability to respond with the right type and quantity of assets to a WMD or "all risk" event. This action would also require funding for additional equipment, technology, etc.

4. The City's Emergency Operations Center and Fire-Rescue's Department Operations Center require upgrades in order to bring both centers to a full state-of-readiness for the management of a large-scale event. The City's Major Incident Response Plans are also out-of-date and should be revised if they are expected to be useful.
5. The department's Information Systems require dedicated staff to analyze performance measures/response standards and associated reports. This will go a long way toward ensuring accountability and ultimately increase performance levels. This dedicated staff could potentially work with operations personnel to develop additional performance measures that would gather qualitative data as well. For example, an objective which measures the department's ability to confine the fire to the room of origin would measure effectiveness on the fire ground. Additionally, a specific review schedule should also be established and maintained on an on-going basis. Moreover, the various systems currently used by the department should be networked to be more effective.
6. Based on future population growth, the department should be included in the City's planning processes for Capital Improvement Projects to ensure that fire safety needs are addressed, from station construction through staffing and apparatus/equipment acquisition. Such comprehensive planning will enable the department to effectively and efficiently meet service level expectations citywide. Consideration should be given to a plans officer that would work in conjunction with other City Departments such as Transportation and Development Services to review environmental impact reports for service delivery issues.

Appendix A1

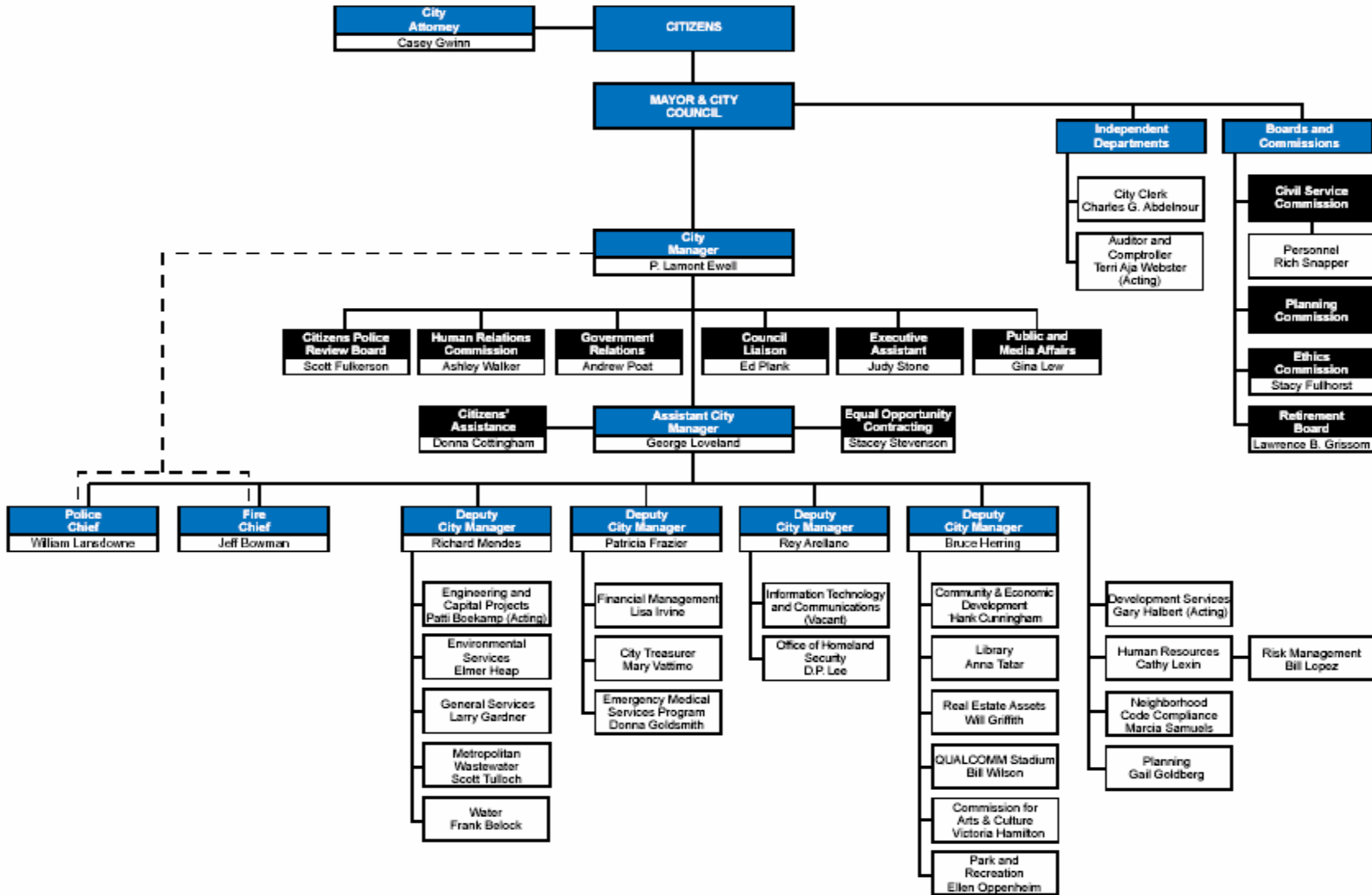
San Diego Council Districts



Appendix A2



City Organizational Structure



Appendix A3 Daily Staffing Requirement

San Diego Fire-Rescue

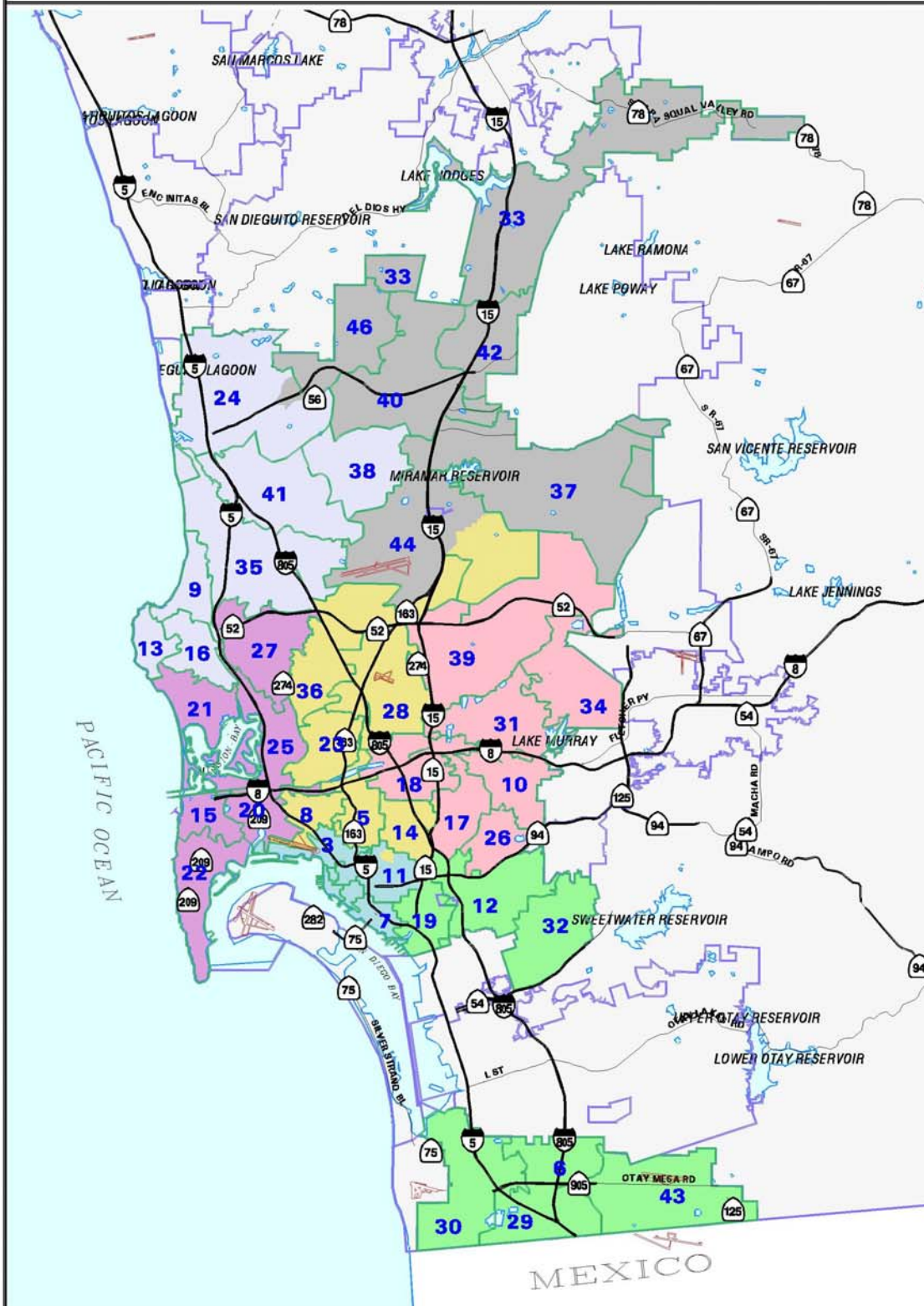
FY 2004 Uniformed Positions Staffing Budget

Units	#	Unit Staffing by Classification					Positions Required by Classification					
		Units	B. C.	Captain	Engineer	Fire Fighter	Shifts	B.C.	Captain	Engineer	Fire Fighter	Total
Emergency Services (minimum staffing):												
Engines	45		1.00	1.00	2.00	3	0.00	135.00	135.00	270.00	540.00	
Trucks	11		1.00	1.00	2.00	3	0.00	33.00	33.00	66.00	132.00	
Rescue/Medic	4		1.00		1.00	3	0.00	12.00	0.00	12.00	24.00	
Airport	1		1.00	3.00	4.00	3	0.00	3.00	9.00	12.00	24.00	
Heavy Rescue	1		1.00	1.00	2.00	3	0.00	3.00	3.00	6.00	12.00	
Battalion Management (3 positions for seventh battalion unbudgeted)	6	1.00				3	18.00	0.00	0.00	0.00	18.00	
		Total Minimum Staffing						18.00	186.00	180.00	366.00	750.00
		Minimum Staffing Per Shift						6.00	62.00	60.00	122.00	250.00
Relief Positions (budgeted):												
		Total Other Positions Budgeted						0.00	18.10	29.39	49.94	97.43
		Less: D Division						0.00	6.00	6.00	12.00	24.00
		Net Relief Positions						0.00	12.10	23.39	37.94	73.43
		Net Relief Positions Per Shift						0.00	4.03	7.80	12.65	24.48
		Total Budgeted Emergency Services Staffing						18.00	204.10	209.39	415.94	847.43
Support Operations (budgeted):												
Human Resources	1	1.00				1	1.00	0.00	0.00	0.00	1.00	
Apparatus/Equip. Repair	1		1.00		1.00	1	0.00	1.00	0.00	1.00	2.00	
Facilities	1				1.00	1	0.00	0.00	0.00	1.00	1.00	
Training	1		5.00	0.50		1	0.00	5.00	0.50	0.00	5.50	
Special Operations	1		2.00			1	0.00	2.00	0.00	0.00	2.00	
MAST	1		3.00	4.00		1	0.00	3.00	4.00	0.00	7.00	
EMS Operations	1		3.00			1	0.00	3.00	0.00	0.00	3.00	
		Total Budgeted Support Operations Staffing						1.00	14.00	4.50	2.00	21.50
		Total FY 2004 Budgeted Uniformed Positions						19.00	218.10	213.89	417.94	868.93

APPENDIX A4 Station Locations

Station	Unit(s)	Address	Region
1	B1, E1, T1, E201, EDT, LA1, MAST	1222 First Ave	Downtown
2		Planning and Development	Mission Valley
3	3	725 W. Kalmia	Mid town
4	4, R4	404 Eighth Ave.	Downtown S/o Market
5	5, T5, U5, B2	3902 Ninth Ave.	Hillcrest
6	6	693 Twining Ave	Otay Mesa
7	7	944 Crosby St.	Logan Heights
8	8	3974 Goldfinch St.	Mission Hills
9	9, MR9	7870 Ardath Ln.	La Jolla
10	10, T10, B4, U10, BR10	4605 62nd St.	State College11
11	11, M60	945 25th St.	Golden Hills
12	12, T12, U12, B6,	4964 Imperial Ave	S.E. San Diego
13	13	809 Nautilus St.	La Jolla
14	14, T14, BR14	4011 32 nd . St	North park
15	15	4711 Voltair St.	Ocean Beach
16	16	2110 Via Casa Alta	La Jolla
17	17	4206 Chamone Ave.	East San Diego
18	18 M69 OES307	4676 Felton St	Kensinton
19	19	3434 Ocean View Blvd	SE San Diego
20	20, T20, U20 M20	3305 Kemper St	Loma Portal
21	21, T21, M21	750 Grand Ave.	Pacific Beach
22	22	1055 Catalina Blvd.	Point Loma
23	23	2190 Cmstock	Linda Vista
24	24, BR24, M24	13077 Hartfield	Del Mar Heights
25	25, B3	1972 Chicago St	Bay Park
26	26, M26	2850 54 th St	Chollas View
27	27	5064 Clairemont Dr	Clairemont W
28	28, T28 WT 28, R28, FM28	3880 Kearny Villa Rd	Kearny Mesa
29	29, T29, BR29, U29, M29	179 W San Ysidro Bl	San Ysidro
30	30, M30	2265 Coronado Ave	Nester / S San Diego
31	31, M31	6002 Camino Rico	Del Cero / Grantville
32	32, M32	484 Briarwood Rd.	Paradise Hills
33	33, BR33, MR33	16966 Bernardo Ctr. Dr.	Rancho Bernardo
34	34 BR34	6565 Cowles Mtn Bl	San Carlos
35	35, T35, BR35, U35, B5	4285 Eastgate Mall Rd	University City
36	36, M36	58565 Chateau Dr	Clairemont E
37	37, BR37	11640 Spring Canyon Rd.	Miramar Ranch North
38	38, BR38, M38	8441 New Salem St.	Mira Mesa
39	39, M39	4949 La Cuenta Dr.	Tierrasanta
40	40, T40, BR40, WT40, LA40, U40, M40	13393 Salmon River Rd.	Ranch Penadquitos
41	41, T41	4914 Carroll Canyon Rd.	Sorrento Valley
42	42	12110 World Trade Dr.	Carmel Mountain ranch
43	43, CR43, BR43 T43	1590 La Media	Otay Mesa
44	44, T44, HM1, HM2, M44, ERT, B7	10011 Black Mountain Rd	Mira Mesa
46	46	Open	Santaluz

SDFD Battalion Districts



Legend

- Battalion 1
- Battalion 2
- Battalion 3
- Battalion 4
- Battalion 5
- Battalion 6
- Battalion 7
- Water Bodies
- 1 inch = 24001 feet
- Engine
- Boundaries
- Scale:
- Municipal Boundaries
- Runways



November 19, 2004
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 San Diego Fire-Rescue
 Response Planning



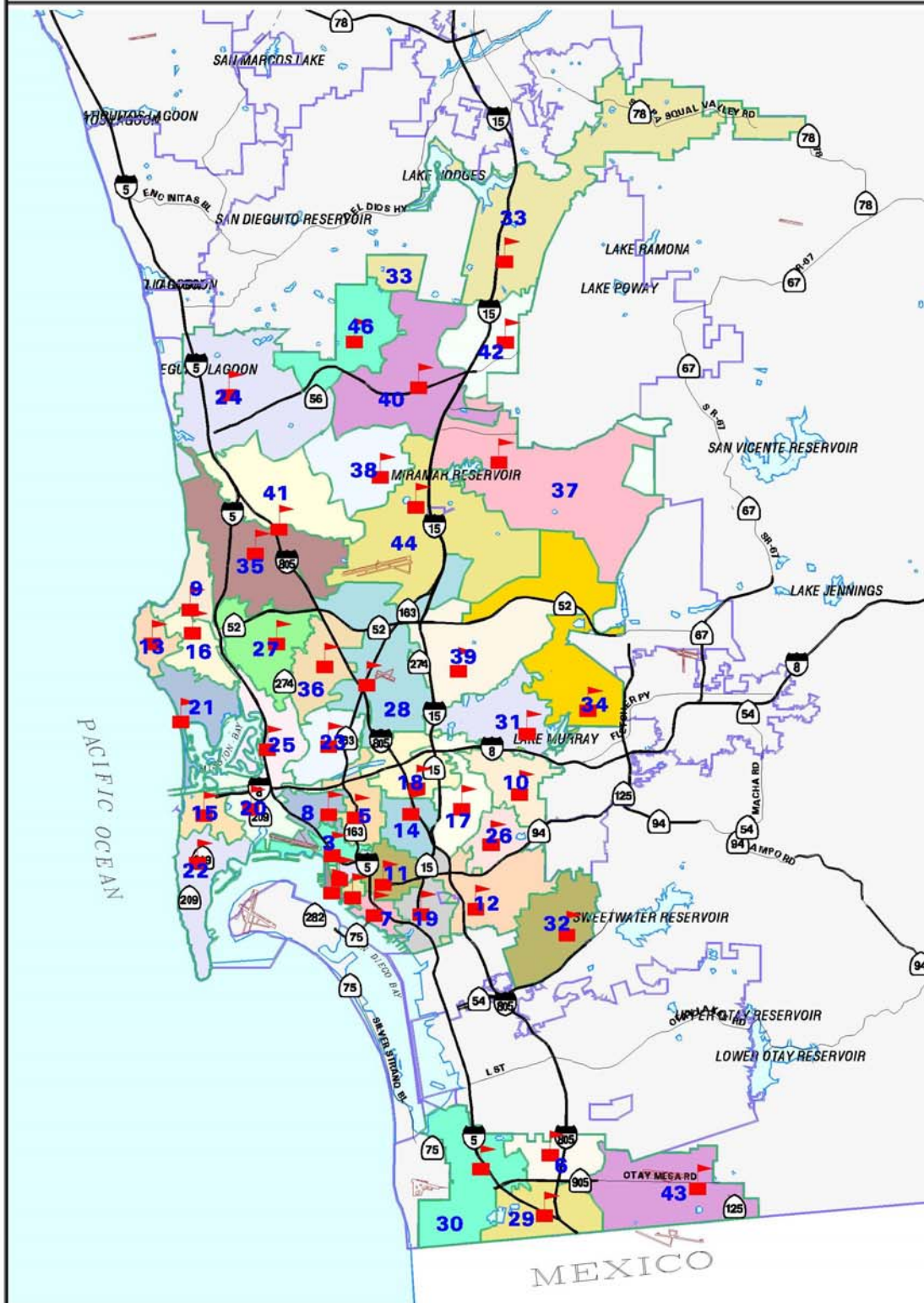
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Appendix A6

SDFD Station Locations



Legend

- Water Bodies
- Engine Boundaries
- Municipal Boundaries
- Runways
- Resource Locations



Scale:
1 inch = 24001 feet



November 19, 2004
Created by:
San Diego Fire-Rescue
Response Planning

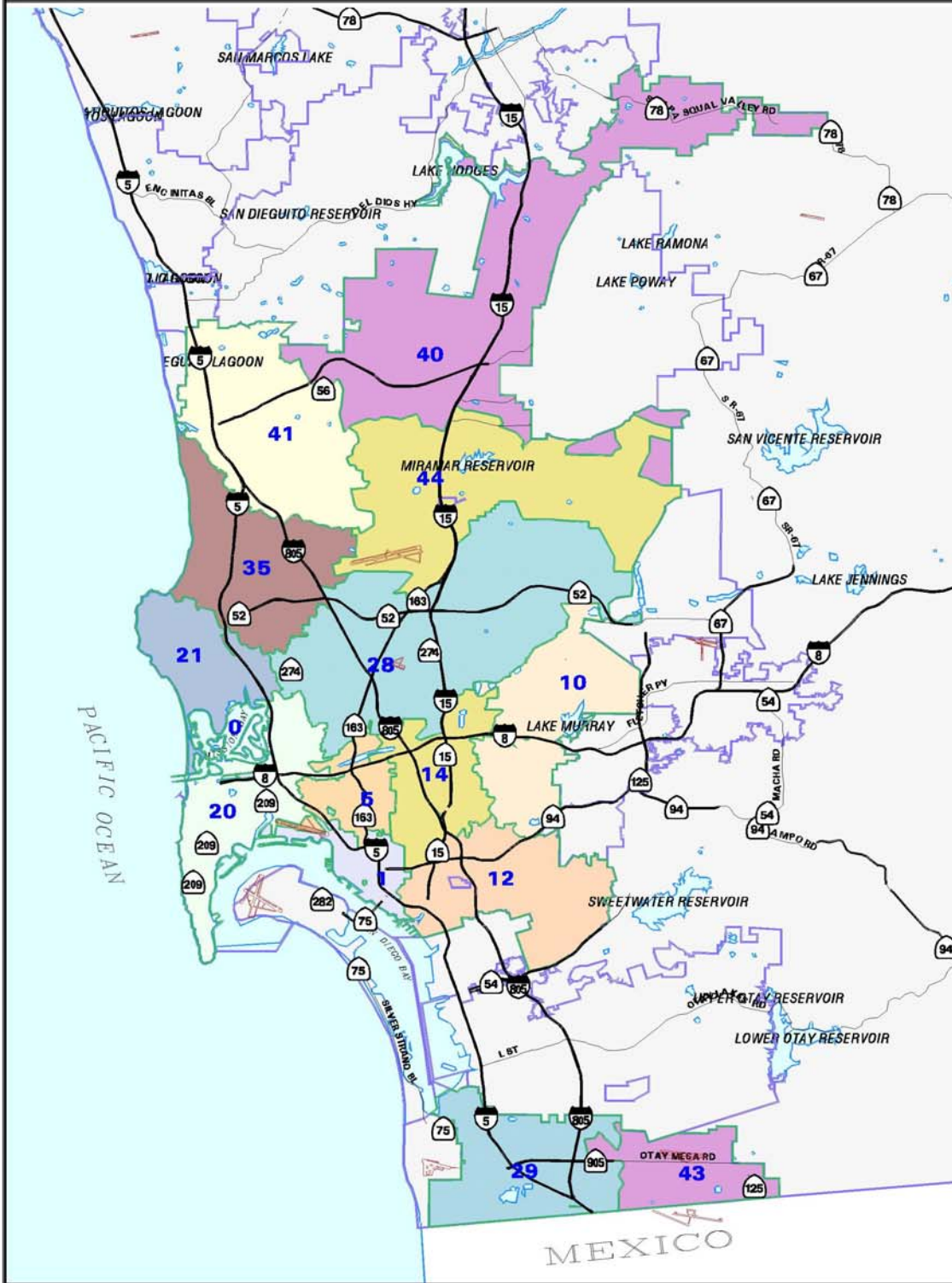


Vicinity Map



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SDFD Truck Districts



Legend

- Water Bodies
- Truck Boundaries
- Municipal Boundaries
- Runways



Scale:
1 inch = 24001 feet



November 19, 2004
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San Diego Fire-Rescue
Response Planning



Vicinity Map



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Appendix A8
Position Classification Listing FY 2003

<u>Position Title</u>	<u>Number of Positions</u>
Account Clerk	1.00
Administrative Aide I	1.00
Senior Management Analyst	1.00
Administrative Aide II	4.00
Assistant Fire Marshal	2.00
Assistant Engineer-Mechanical	1.00
Associate Management Analyst	4.00
Fleet Parts Buyer	1.00
Information Systems Analyst II	5.00
Code Compliance Officer	1.00
Document Input Clerk-Terminal	2.00
Equipment Repair Supervisor	1.00
Equipment Mechanic	17.10
Equipment Service Writer	1.00
Sr. Motive Service Technician	1.00
Motive Service Technician	2.00
Fire Battalion Chief	23.00
Fire Captain	218.27
Fire Engineer	213.05
Fire Fighter I	20.00
Fire Fighter II	397.31
Fire Dispatcher	32.21
Fire Prevention Inspector II	22.58
Fire Prevention Supervisor	6.50
Fire Dispatcher Supervisor	4.00
Intermediate Stenographer	3.00
Clerical Assistant II	14.50
Marine Safety Lieutenant	5.00
Lifeguard I	28.54
Lifeguard Sergeant	13.95
Lifeguard II	59.85
Construction Estimator	3.00
Lifeguard III	15.00
Payroll Specialist II	4.00
Word Processing Operator	4.00
Executive Secretary	1.22

**Appendix A8
Position Classification Listing FY 2003**

Senior Clerk/Typist	3.00
Stock Clerk	1.00
Storekeeper I	1.00
Storekeeper II	1.00
Information Systems Analyst IV	1.00
Assistant City Manager	.22
Fire Chief	1.00
Assistant To Fire Chief	2.00
Deputy Fire Chief	7.00
Lifeguard Chief	1.00

**EMERGENCY MEDICAL SERVICES FUND
Emergency Medical Services Fund**

<u>Position Title</u>	<u>Number of Positions</u>
Administrative Aide II	1.00
Fire Battalion Chief	0.50
Fire Captain	1.75
Fire Engineer	1.00
Fire Fighter II	43.90
Paramedic II	16.20
Emergency Medical Technician	36.00
Senior Clerk/Typist	1.00
Emergency Medical Tech	0.00
Field Training Pay	0.00
Overtime Budgeted	0.00
Paramedic Pay	0.00
Paramedic Recert Bonus	0.00
Paramedic Specialty Pay	<u>0.00</u>
Total	101.35

FIRE-RESCUE DEPARTMENT
TOTAL 1,253.65

Appendix A8 Position Classification Listing FY 2003

Uniformed/Non-Uniformed Summary for Source: (FMIS)

<u>Classifications</u>	<u>Number of Positions</u>	
Uniformed Classifications		
Fire		
Fire Chief	1.00	
Deputy Fire Chief	7.00	
Fire Battalion Chief	23.00	
Fire Captain	218.27	
Fire Engineer	213.05	Total
Fire Fighter I	20.00	<u>Fire Fighters</u>
Fire Fighter II	397.31	879.63
Assistant Fire Marshal	2.00	
Code Compliance Officer	1.00	
Fire Prevention Inspector II	22.58	
Fire Prevention Supervisor	<u>6.50</u>	
Total Fire	911.71	
 Lifeguards		
Lifeguard Chief	1.00	
Lifeguard I	28.54	
Lifeguard II	59.85	
Lifeguard III	15.00	
Lifeguard Sergeant	13.95	
Marine Safety Lieutenant	<u>5.00</u>	
Total Lifeguards	123.34	
 Emergency Medical Services		
Emergency Medical Technician	36.00	
Fire Battalion Chief	0.50	
Fire Captain	1.75	
Fire Engineer	1.00	
Fire Fighter II	43.90	
Paramedic II	<u>16.20</u>	
Total EMS	99.35	
Total Fire	1,134.40	
Non-Uniformed Classifications	119.25	
Total Fire-Rescue Safety Positions	1,253.65	

Appendix A9 Fleet Inventory

Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
19	F01388	1985	KENWORTH	L7004064	A8C3CP11	A
20	F01389	1985	KENWORTH	L7004065	A8C3CP11	A
21	F01390	1985	KENWORTH	L7004066	A8C3CP11	A
22	F01391	1985	KENWORTH	L7004067	A8C3CP11	A
23	F01392	1985	KENWORTH	L7004068	A8C3CP11	A
24	F01394	1985	KENWORTH	L7004070	A8C3CP11	A
25	F01395	1985	KENWORTH	L7004071	A8C3CP11	A
26	F01396	1985	KENWORTH	L7004072	A8C3CP11	A
27	F01398	1985	KENWORTH	L7004074	A8C3CP11	A
28	F01399	1985	KENWORTH	L7004075	A8C3CP11	A
29	F01500	1985	KENWORTH	L7004076	A8C3CP11	A
30	F01501	1985	KENWORTH	L7004077	A8C3CP11	A
31	F01502	1985	KENWORTH	L7004078	A8C3CP11	A
39	F01512	1988	PIERCE	LANCE	A8C3CP11	A
40	F01513	1988	PIERCE	LANCE	A8C3CP11	A
41	F01514	1990	PIERCE	ARROW	A8C3CP11	A
42	F01515	1990	PIERCE	ARROW	A8C3CP11	A
43	F01516	1990	PIERCE	ARROW	A8C3CP11	A
49	F01522	1990	PIERCE	ARROW	A8C3CP11	A
50	F01523	1990	PIERCE	ARROW	A8C3CP11	A
51	F01524	1990	PIERCE	ARROW	A8C3CP11	A
55	F01528	1990	PIERCE	ARROW	A8C3CP11	A
56	F01529	1990	PIERCE	ARROW	A8C3CP11	A
57	F01530	1990	PIERCE	ARROW	A8C3CP11	A
58	F01531	1990	PIERCE	ARROW	A8C3CP11	A
59	F01532	1990	PIERCE	ARROW	A8C3CP11	A
60	F01533	1990	PIERCE	ARROW	A8C3CP11	A
62	F01535	1994	QUALITY/SPART	GLADIATOR	A8C3CP11	A
63	F01536	1994	QUALITY/SPART	GLADIATOR	A8C3CP11	A
64	F01537	1994	QUALITY/SPART	GLADIATOR	A8C3CP11	A
66	F01539	1995	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
67	F01540	1995	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
68	F01541	1995	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
69	F01542	1995	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
70	F01543	1995	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
75	F01549	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
76	F01550	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
77	F01551	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
78	F01552	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status

						code ID
79	F01553	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
80	F01554	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
81	F01555	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
82	F01556	1996	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
92	F01567	1997	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
93	F01568	1997	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
94	F01569	1997	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
95	F01570	1997	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
96	F01571	1997	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
101	F01576	1999	SAULSBURY/SPART	GLADIATOR	A8C3CP11	A
105	F01580	2002	PIERCE	DASH	A8C3CP11	A
106	F01581	2002	PIERCE	DASH	A8C3CP11	A
107	F01582	2002	PIERCE	DASH	A8C3CP11	A
108	F01583	2002	PIERCE	DASH	A8C3CP11	A
109	F01584	2002	PIERCE	DASH	A8C3CP11	A
110	F01585	2002	PIERCE	DASH	A8C3CP11	A
111	F01586	2002	PIERCE	DASH	A8C3CP11	A
112	F01587	2002	PIERCE	DASH	A8C3CP11	A
113	F01588	2002	PIERCE	DASH	A8C3CP11	A
114	F01589	2002	PIERCE	DASH	A8C3CP11	A
115	F01590	2002	PIERCE	DASH	A8C3CP11	A
116	F01591	2002	PIERCE	DASH	A8C3CP11	A
117	F01592	2003	PIERCE	DASH	A8C3CP11	A
254	F0OES304	2002	WESTATES/HME	SFO4DOORTILT CAB	A8C3CP11	A
36	F01507	1985	INT	S1900-54	P7C3BO11	A
37	F01508	1985	INTERNATIONAL	S1954	P7C3BO11	A
1	F01192	1958	PIRSCH	80-B	Z8C3CP11	A
47	F01520	1993	PIERCE/SNORKEL	E7446ARR	B8C3DR23	A
38	F01511	1986	SPARTAN/LTI	MZ100	C8C3DS23	A
44	F01517	1989	SPARTAN/LTI	ST2000	C8C3DS23	A
52	F01525	1989	LTI	ST2000	C8C3DS23	A
53	F01526	1989	SPARTAN/LTI	ST2000	C8C3DS23	A
102	F01577	2002	PIERCE	DASH	D8C3DQ65	A
6	F01362	1980	SEAGRAVES	WR50765	D8C3DS23	A
7	F01363	1980	SEAGRAVES	WR50765	D8C3DS23	A
8	F01364	1980	SEAGRAVES	WR50765	D8C3DS23	A
14	F01379	1984	PIERREVILLE	PFT1328	D8C3DS23	A
71	F01544	1996	SAULS/LTI/SPART	AH 75	D8C3DS23	A
72	F01545	1996	SAULS/LTI/SPART	AH 75	D8C3DS23	A
90	F01565	1997	SAULS/LTI/SPART	AH 75	D8C3DS23	A
91	F01566	1997	SAULS/LTI/SPART	AH 75	D8C3DS23	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
103	F01578	2002	PIERCE	DASH	D8C3DS23	A

104	F01579	2002	PIERCE	DASH	D8C3DS23	A
48	F01521	1992	SPARTAN/LTI	AS-90	E8C3DS61	A
65	F01538	1994	SPARTAN/LTI	AS-90	E8C3DS61	A
9	F01367	1978	I.H.	TRANSTAR F4370	G8C1BP23	A
10	F01368	1978	I.H.	TRANSTAR F4370	G8C1BP23	A
2	F01355	1978	CLARK	LN9000	H8C5BP11	A
3	F01356	1978	CLARK	LN9000	H8C5BP11	A
4	F01357	1978	SUTPHEN	LN9000	H8C5BP11	A
5	F01358	1978	SUTPHEN	LN9000	H8C5BP11	A
11	F01369	1978	I.H.	TRANSTAR	H8C5BP11	A
12	F01370	1980	I.H.	TRANSTAR	H8C5BP11	A
13	F01371	1980	I.H.	1850	H8C5BP11	A
32	F01503	1985	I.H.	1850	H8C5BP11	A
33	F01504	1985	I.H.	1850	H8C5BP11	A
99	F01574	1998	FREIGHTLINER	FL106	H8C5BP11	A
100	F01575	2001	INTERNATIONAL	4800"4X4	H8C5BP11	A
16	F01382	1975	FORD	L9000	I8C2BP11	A
34	F01505	1985	OSHKOSH	P19	I8C2BP11	A
35	F01506	1985	OSHKOSH	P19	I8C2BP11	A
46	F01519	1992	PIERCE	LANCE	I8C2BP11	A
17	F01385	1983	CL2105	VAN	J6C3BO11	A
18	F01386	1984	INTERNATIONAL	2574	K8C4BP11	A
83	F01557	1996	SAULSBURY/SPART	GLADIATOR	K8C4BP11	A
252	F02073	2004	WELLS CARGO	EW1622W	L2H3EL10	A
167	F01887	1992	CALLEN CAMPER	705675	L4H1EQ10	A
182	F02003	1999	SPI	SPI	L4H1EQ10	A
86	F01561	1971	TRAILCO	7843	L8H1EQ80	A
87	F01562	1966	LOAD CRAFT	MB671382	L8H1EQ80	A
185	F02006	1999	HYSTER	12 TON	M3D2BL7A	A
186	F02007	1999	HYSTER	?	M3D2BL7A	A
73	F01546	1987	CHEVROLET	S10	N1A1AB11	A
120	F01695	1987	NISSAN	P/U	N1A1AD11	A
121	F01696	1987	NISSAN	P/U	N1A1AD11	A
123	F01698	1988	DODGE	RAM100	N1A1AD11	A
45	F01518	1989	CHEVROLET	C2500	N2A2AD11	A
54	F01527	1990	FORD	F-250	N2A2AD11	A
125	F01814	1988	CHEVROLET	2500	N2A2AD11	A
126	F01815	1988	CHEVROLET	2500	N2A2AD11	A
223	F02044	2002	FORD	F150	N2A2AD11	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
241	F02062	2003	FORD	F150	N2A2AD11	A
251	F02072	2004	CHEVROLET	2500	N2A2AD12	A
180	F02001	1997	CHEVROLET	3500	N3A3AD11	A
61	F01534	1978	DODGE	D300	N3C3AD11	A

165	F01885	1991	FORD	F450 SUPERDUTY	N3C3AD11	A
205	F02026	2000	FORD	F250	N3C3AD11	A
206	F02027	2000	FORD	F250	N3C3AD11	A
207	F02028	2000	FORD	F250	N3C3AD11	A
236	F02057	2002	FORD	F350	N3C3AD11	A
237	F02058	2002	FORD	F450	N3C3AD11	A
238	F02059	2002	FORD	F450	N3C3AD11	A
239	F02060	2002	FORD	F450	N3C3AD11	A
253	F0ATF	1992	FORD	F450N SUPERDUTY	N3C3AD11	A
15	F01381	1983	FORD	F700	P7C3BO11	A
89	F01564	1988	UTILITY TOOL BO	GEN TRAILER MNT	Q3C1BI90	A
127	F01817	1989	FORD	ESCORTLX	R1A2AA1A	A
133	F01826	1989	FORD	ESCORTLX	R1A2AA1A	A
134	F01827	1989	FORD	ESCORTLX	R1A2AA1A	A
135	F01832	1989	FORD	ESCORTLX	R1A2AA1A	A
136	F01834	1989	FORD	ESCORTLX	R1A2AA1A	A
137	F01835	1989	FORD	ESCORTLX	R1A2AA1A	A
138	F01843	1989	FORD	ESCORTLX	R1A2AA1A	A
139	F01849	1989	FORD	ESCORTLX	R1A2AA1A	A
140	F01852	1990	FORD	ESCORT	R1A2AA1A	A
141	F01853	1990	FORD	ESCORT	R1A2AA1A	A
142	F01855	1990	FORD	ESCORT	R1A2AA1A	A
228	F02049	2002	FORD	FOCUS	R1A2AA1A	A
158	F01877	1991	CHEVROLET	BERETTA	R1A2AB11	A
195	F02016	2000	FORD	CONTOUR	R1A2AB1A	A
196	F02017	2000	FORD	CONTOUR	R1A2AB1A	A
197	F02018	2000	FORD	CONTOUR	R1A2AB1A	A
198	F02019	2000	FORD	CONTOUR	R1A2AB1A	A
199	F02020	2000	FORD	CONTOUR	R1A2AB1A	A
200	F02021	2000	FORD	CONTOUR	R1A2AB1A	A
229	F02050	2002	FORD	FOCUS	R1A2AB1A	A
230	F02051	2002	FORD	FOCUS	R1A2AB1A	A
231	F02052	2002	FORD	FOCUS	R1A2AB1A	A
232	F02053	2002	FORD	FOCUS	R1A2AB1A	A
233	F02054	2001	FORD	FOCUS	R1A2AB1A	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
243	F02064	2003	FORD	FOCUS	R1A2AB1A	A
244	F02065	2003	FORD	FOCUS	R1A2AB1A	A
245	F02066	2003	FORD	FOCUS	R1A2AB1A	A
246	F02067	2003	FORD	FOCUS	R1A2AB1A	A
168	F01888	1994	FORD	TAURUS	R1A2AC1A	A
169	F01889	1994	FORD	TAURUS	R1A2AC1A	A
170	F01890	1994	FORD	TAURUS	R1A2AC1A	A

219	F02040	2000	FORD	TAURUS	R1A2AC1A	A
220	F02041	2001	FORD	TAURUS	R1A2AC1A	A
221	F02042	2001	FORD	TAURUS	R1A2AC1A	A
222	F02043	2000	FORD	TAURUS	R1A2AC1A	A
225	F02046	2002	FORD	TAURUS	R1A2AC1A	A
226	F02047	2002	FORD	TAURUS	R1A2AC1A	A
227	F02048	2002	FORD	TAURUS	R1A2AC1A	A
234	F02055	2002	FORD	TAURUS	R1A2AC1A	A
147	F01864	1991	FORD	CROWN VICTOR IA	R1A2AD11	A
148	F01866	1991	CHEVROLET	CAPRICE	R1A2AD11	A
149	F01867	1991	CHEVROLET	CAPRICE	R1A2AD11	A
150	F01868	1991	CHEVROLET	CAPRICE	R1A2AD11	A
151	F01869	1991	CHEVROLET	CAPRICE	R1A2AD11	A
152	F01870	1991	CHEVROLET	CAPRICE	R1A2AD11	A
153	F01872	1991	CHEVROLET	CAPRICE	R1A2AD11	A
154	F01873	1991	CHEVROLET	CAPRICE	R1A2AD11	A
155	F01874	1991	CHEVROLET	CAPRICE	R1A2AD11	A
156	F01875	1991	CHEVROLET	CAPRICE	R1A2AD11	A
157	F01876	1991	CHEVROLET	CAPRICE	R1A2AD11	A
172	F01892	1996	FORD	CROWN VICTOR IA	R1A2AD11	A
173	F01893	1994	FORD	CROWN VICTOR IA	R1A2AD11	A
174	F01895	1996	FORD	CROWN VICTOR IA	R1A2AD11	A
175	F01896	1996	FORD	CROWN VICTOR IA	R1A2AD11	A
181	F02002	1997	FORD	CROWN VICTORIA	R1A2AD11	A
183	F02004	1997	FORD	CROWN VICTORIA	R1A2AD11	A
184	F02005	1997	FORD	CROWN VICTORIA	R1A2AD11	A
187	F02008	2000	FORD	CROWN VICTORIA	R1A2AD11	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
188	F02009	2000	FORD	CROWN VICTORIA	R1A2AD11	A
189	F02010	2000	FORD	CROWN VICTORIA	R1A2AD11	A
190	F02011	2000	FORD	CROWN VICTORIA	R1A2AD11	A
191	F02012	2000	FORD	CROWN VICTORIA	R1A2AD11	A
192	F02013	2000	FORD	CROWN VICTORIA	R1A2AD11	A
215	F02036	2000	FORD	CROWN VICTORIA	R1A2AD11	A

216	F02037	2000	FORD	CROWN VICTORIA	R1A2AD11	A
217	F02038	2000	FORD	CROWN VICTORIA	R1A2AD11	A
218	F02039	2001	FORD	CROWN VICTORIA	R1A2AD11	A
209	F02030	2000	FORD	EXPLORER	S1A3AC11	A
242	F02063	1998	FORD	EXPEDITION	S1A3AC11	A
249	F02070	2001	FORD	EXPLORER	S1A3AC11	A
224	F02045	2002	FORD	EXPLORER	S1A3AC12	A
250	F02071	1999	FORD	EXPLORER	S1A3AC12	A
202	F02023	2000	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
203	F02024	2000	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
204	F02025	2000	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
211	F02032	2001	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
212	F02033	2001	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
213	F02034	2001	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
214	F02035	2001	CHEVROLET	SUBURBAN 2500	S2A4AD11	A
247	F02068	2003	CHEVROLET	TAHOE	S2A4AD11	A
248	F02069	2003	CHEVROLET	TAHOE	S2A4AD11	A
85	F01560	1994	FORD	BRONCO	S2C4AD11	A
128	F01819	1989	CHEVROLET	SUBURBAN	S2C4AD11	A
129	F01820	1989	CHEVROLET	SUBURBAN	S2C4AD11	A
130	F01822	1989	CHEVROLET	SUBURBAN	S2C4AD11	A
131	F01823	1989	CHEVROLET	SUBURBAN	S2C4AD11	A
132	F01824	1989	CHEVROLET	SUBURBAN	S2C4AD11	A
143	F01859	1990	CHEVROLET	SUBURBAN	S2C4AD11	A
Row	Equipment ID	Model year	Manufacturer ID	Model ID	Maintenance class	Life cycle status code ID
162	F01882	1991	CHEVROLET	SUBURBAN	S2C4AD11	A
163	F01883	1991	CHEVROLET	SUBURBAN	S2C4AD11	A
164	F01884	1991	CHEVROLET	SUBURBAN	S2C4AD11	A
171	F01891	1997	CHEVROLET	SUBURBAN 2500	S2C4AD11	A
160	F01880	1991	DODGE	CARAVAN	T1A2AB11	A
145	F01862	1990	FORD	E250	T2A3AD11	A
176	F01897	1997	FORD	E350	T2B3AD11	A
201	F02022	2000	FORD	E250	T2B3AD11	A
118	F01663	1982	FORD	E350	T2C3AD11	A
161	F01881	1991	DODGE	B350 VAN	T2C3AD11	A
177	F01898	1989	FORD	E350	T2C3AD11	A
178	F01899	1993	FORD	E350	T2C3AD11	A

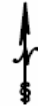
119	F01692	1987	DODGE	RAM 250	T3A4AD11	A
124	F01813	1988	CHEVROLET	10	T3A4AD11	A
144	F01861	1991	FORD	E350	T3A4AD11	A
146	F01863	1990	FORD	E250	T3A4AD11	A
159	F01879	1991	CHEVROLET	VAN 20	T3A4AD11	A
235	F02056	2002	FORD	E350	T3A4AD11	A
240	F02061	2002	FORD	E450	T3D4AD11	A
122	F01697	1987	ELITE	33FT	U5A2AP11	A
88	F01563	1982	INTERNATIONAL	S1754	W4C1BF11	A
97	F01572	1985	INTERNATIONAL	S1600	W4C1BF11	A
166	F01886	1991	FORD	F600	W4C1BF11	A
74	F01547	1987	INTERNATIONAL	1753	X6C2BP11	A
84	F01558	1987	INTERNATIONAL	F2275	X6C2BP11	A
208	F02029	1991	DODGE	D250	Y2A1AD11	A
210	F02031	2000	FORD	F150	Y2A1AD11	A
98	F01573	1999	CALLEN TRAILER	?	A8C3CP12	A
179	F02000	1997	TRAILER SCOTTY	SCOTTY	A8C3CP12	A
193	F02014	1999	?	?	A8C3CP12	A
194	F02015	2000	CLARK	CGP251199	A8C3CP12	A

Appendix B1

City of San Diego Fire-Rescue 2003 Daytime Population by Engine Districts

Legend

- Freeway
- Airport Runway
- Lake
- Engine District**
- DAYTIME_PO**
- 0 - 5000
- 5001 - 9999
- 10000 - 25000
- 25001 - 45000
- 45001 - 69630



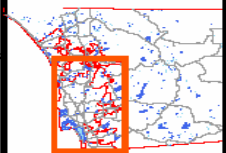
Scale:
1 inch equals 22,796 feet



July 29, 2004
Created by:
San Diego Fire-Rescue
Response Planning



Vicinity Map

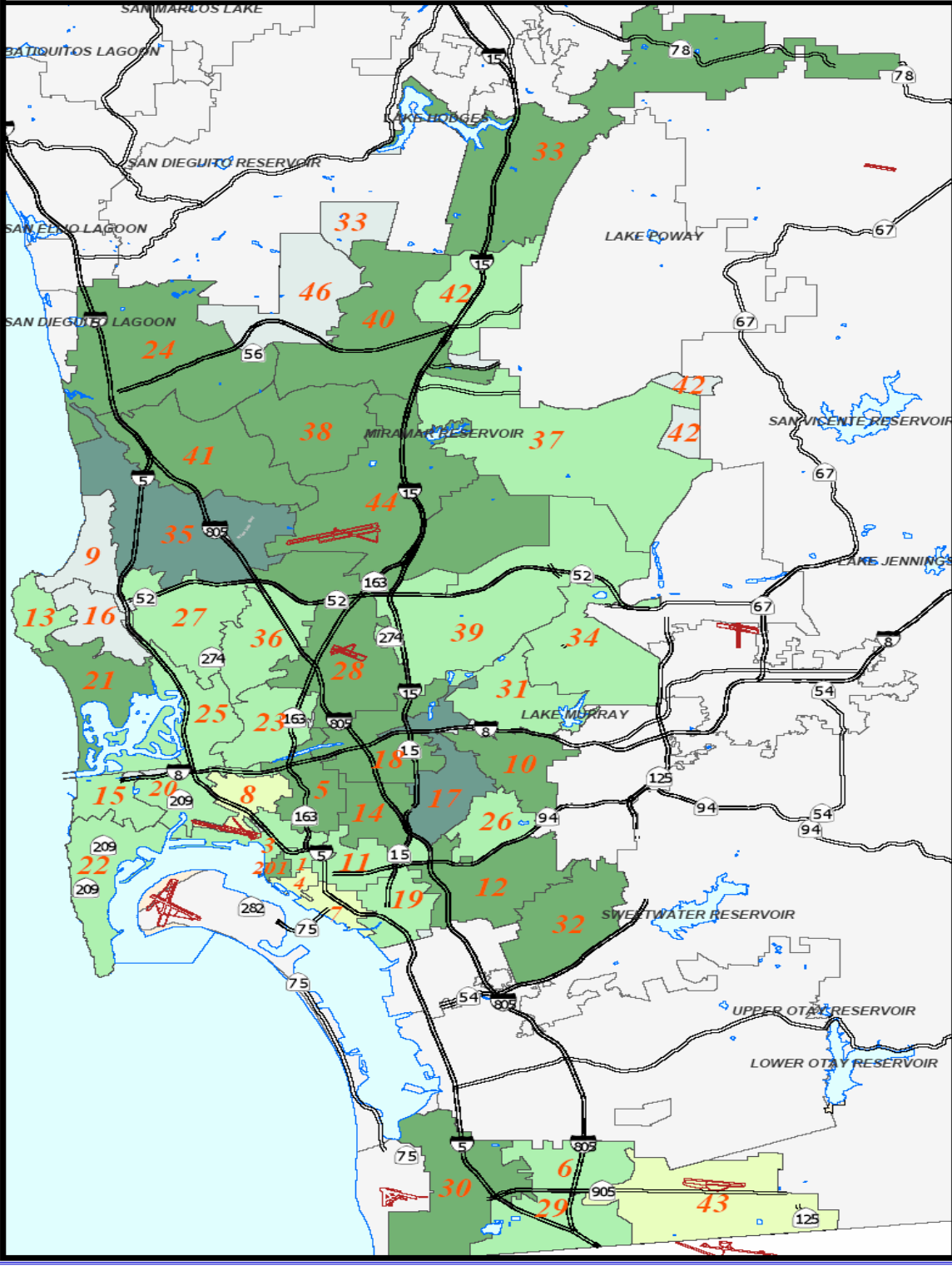


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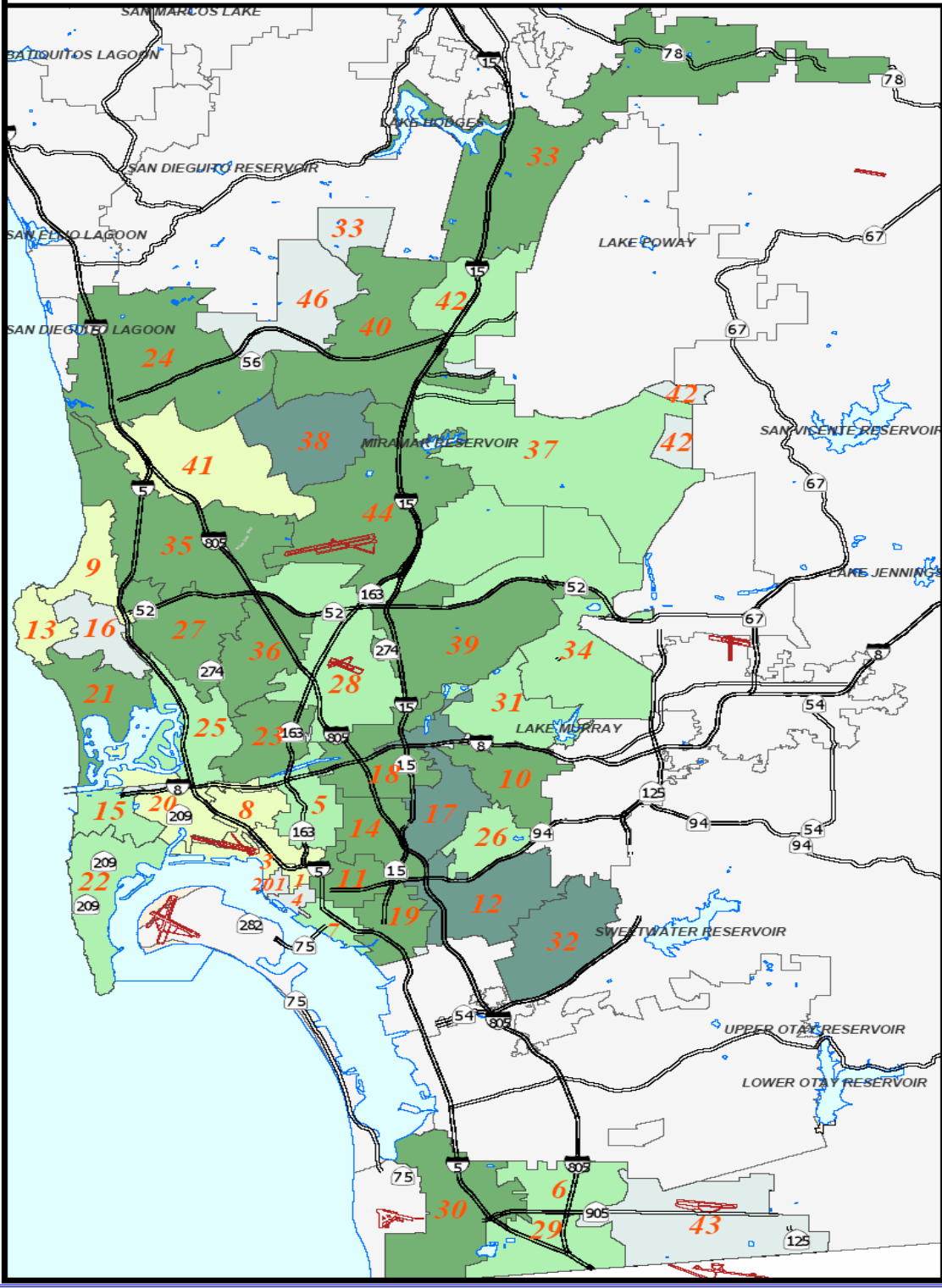
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Appendix B2

City of San Diego Fire-Rescue 2003 Nighttime Population by Engine Districts



Legend

- Freeway
- Airport Runway
- Lake
- Engine District**
- POP2003**
- 0 - 5000
- 5001 - 9999
- 10000 - 25000
- 25001 - 45000
- 45001 - 65630



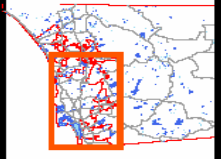
Scale:
1 inch equals 22,796 feet



August 5, 2004
Created by:
San Diego Fire-Rescue
Response Planning



Vicinity Map



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Appendix B3 Fire Problem Utility

<u>Problem_Description</u>	<u>Priority_Description</u>	<u>Code</u>	<u>Incident_Type_Description</u>	<u>ProQA_Enabled</u>	<u>ProQA_ID</u>
Abdominal Pain/Problems (L1)	Level 1 Medical	ABD1	Medical Aid 1	TRUE	1
Abdominal Pain/Problems (L2)	Level 2 Medical	ABD2	Medical Aid 3	TRUE	1
Abdominal Pain/Problems (L3)	Level 3 Medical	ABD3	Medical Aid 3	TRUE	1
Abdominal Pain/Problems (L4)	Level 4 Medical	ABD4	Medical Aid 3	TRUE	1
Advised Incident	Advised Incident	ADV	Advised Incident (misc.)	FALSE	0
AID - BRUSH UNIT	Level 1 Fire	AIDB	Mutual Aid Out of City Request	FALSE	0
AID - COPTR	Level 1 Fire	AIDH	Mutual Aid Out of City Request	FALSE	0
AID - ENGINE	Level 1 Fire	AIDE	Mutual Aid Out of City Request	FALSE	0
AID - ENGINE & TRUCK	Level 1 Fire	AE&T	Pump Truck	FALSE	0
AID - HAZMAT	Level 1 Fire	AHZMT	Mutual Aid Out of City Request	FALSE	0
AID - LIGHT AND AIR	Level 1 Fire	AIDL	Mutual Aid Out of City Request	FALSE	0
AID - MEDIC	Level 2 Fire	AIDM	Mutual Aid Out of City Request	FALSE	0
AID - MEDICAL OTAY MESA	Level 2 Fire	AOTY	MEDICAL AID OTAY MESA	FALSE	0
AID - RESCUE UNIT	Level 1 Fire	AIDR	Mutual Aid Out of City Request	FALSE	0
AID - TRUCK	Level 1 Fire	AIDT	Mutual Aid Out of City Request	FALSE	0
AID - WATER TENDER	Level 1 Fire	AWT	Mutual Aid Out of City Request	FALSE	0
Aircraft Emergency Landing	Level 1 Fire	AEL	Aircraft Emergency Landing	FALSE	0
Alert 1	Level 1 Fire	A1	Alert 1	FALSE	0
Alert 2 - Brown/Mont	Level 1 Fire	A2	Alert 2 Brn/Mont	FALSE	0
Alert 2 Lindbergh	Level 1 Fire	A2L	Alert 2 lindbergh	FALSE	0
Alert 3 Brown/Mont	Level 1 Fire	A3BN	Alert 3 Brn/Mont	FALSE	0
Alert 3 Lindbergh	Level 1 Fire	A3L	Alert 3 Lingbergh	FALSE	0
Alert 4A Lindbergh	Level 1 Fire	A4AL	Alert 4A Lindbergh	FALSE	0
Alert 4B Lindbergh	Level 1 Fire	A4BL	Alert 4B Lindbergh	FALSE	0
Alert 4H Lindbergh	Level 1 Fire	A4HL	Alert 4H Lindbergh	FALSE	0
Alert 5	Level 1 Fire	A5	Alert 5	FALSE	0
Alert 5 Reduced	Level 1 Fire	A5R	Alert 5 Reduced	FALSE	0
Alert 5 Wildland	Level 1 Fire	A5WL	Alert 5 Wildland	FALSE	0
Allergy/Hives/Med Rx/Stng (L1)	Level 1 Medical	ALL1	Medical Aid 1	TRUE	2
Allergy/Hives/Med Rx/Stng (L2)	Level 2 Medical	ALL2	Medical Aid 3	TRUE	2
Allergy/Hives/Med Rx/Stng (L3)	Level 3 Medical	ALL3	Medical Aid 3	TRUE	2
Allergy/Hives/Med Rx/Stng (L4)	Level 4 Medical	ALL4	Medical Aid 3	TRUE	2
Animal Bites/ Attacks (L1)	Level 1 Medical	ANI1	Medical Aid 1	TRUE	3
Animal Bites/ Attacks (L2)	Level 2 Medical	ANI2	Medical Aid 3	TRUE	3
Animal Bites/ Attacks (L3)	Level 3 Medical	ANI3	Medical Aid 3	TRUE	3
Animal Bites/ Attacks (L4)	Level 4 Medical	ANI4	Medical Aid 3	TRUE	3

Appendix B3 Fire Problem Utility

<u>Problem_Description</u>	<u>Priority_Description</u>	<u>Code</u>	<u>Incident_Type_Description</u>	<u>ProQA_Enabled</u>	<u>ProQA_ID</u>
Assault/Rape (L1)	Level 1 Medical	ASS1	Medical Aid 1	TRUE	4
Assault/Rape (L2)	Level 2 Medical	ASS2	Medical Aid 3	TRUE	4
Assault/Rape (L3)	Level 3 Medical	ASS3	Medical Aid 3	TRUE	4
Assault/Rape (L4)	Level 4 Medical	ASS4	Medical Aid 3	TRUE	4
Assist PD	Level 2 Fire	APD	Single Engine Response	FALSE	0
Assist PD - BioHazard	Level 2 Fire	APDW	Single Engine Response	FALSE	0
Assist PD - Ladder Bldg	Level 2 Fire	APDL	Single Engine Response	FALSE	0
Assist PD - Lift Patient	Level 2 Fire	APDP	Truck <10 /Engine	FALSE	0
Back Pain (Non Traumatic) (L1)	Level 1 Medical	BAC1	Medical Aid 1	TRUE	5
Back Pain (Non Traumatic) (L2)	Level 2 Medical	BAC2	Medical Aid 3	TRUE	5
Back Pain (Non Traumatic) (L3)	Level 3 Medical	BAC3	Medical Aid 3	TRUE	5
Back Pain (Non Traumatic) (L4)	Level 4 Medical	BAC4	Medical Aid 3	TRUE	5
Barbeque	Advised Incident	BBQ	Advised Incident (misc.)	FALSE	0
Blasting	Advised Incident	BLAST	Advised Incident (misc.)	FALSE	0
Boat Fire	Level 1 Fire	BOAT	Boat Fire	FALSE	0
Boat Fire 1st Alm	Level 1 Fire	BOAT1	Boat Fire 1st Alm	FALSE	0
Breathing Problems (L1)	Level 1 Medical	BRE1	Medical Aid 1	TRUE	6
Breathing Problems (L2)	Level 2 Medical	BRE2	Medical Aid 3	TRUE	6
Breathing Problems (L3)	Level 3 Medical	BRE3	Medical Aid 3	TRUE	6
Breathing Problems (L4)	Level 4 Medical	BRE4	Medical Aid 3	TRUE	6
Burn (controlled)	Advised Incident	BURN	Advised Incident (misc.)	FALSE	0
Burns / Explosion (L1)	Level 1 Medical	BUR1	Medical Aid 1	TRUE	7
Burns / Explosion (L2)	Level 2 Medical	BUR2	Medical Aid 3	TRUE	7
Burns / Explosion (L3)	Level 3 Medical	BUR3	Medical Aid 3	TRUE	7
Burns / Explosion (L4)	Level 4 Medical	BUR4	Medical Aid 3	TRUE	7
C O / Inhalation/ Haz Mat (L1)	Level 1 Medical	CO1	Medical Aid 1	TRUE	8
C O / Inhalation/ Haz Mat (L2)	Level 2 Medical	CO2	Medical Aid 3	TRUE	8
C O / Inhalation/ Haz Mat (L3)	Level 3 Medical	CO3	Medical Aid 3	TRUE	8
C O / Inhalation/ Haz Mat (L4)	Level 4 Medical	CO4	Medical Aid 3	TRUE	8
CAD Test	Level 2 Fire	CAD	CAD Test	FALSE	0
Canyon Area	Level 1 Fire	CAAR	Canyon Area	FALSE	0
Carbon Monoxide Alarm	Level 2 Fire	COA	Single Engine Response	FALSE	0
Cardiac / Respiratory Arrest	Level 1 Medical	CAR	Cardiac Arrest	TRUE	9
Chest Pain (L1)	Level 1 Medical	CP1	Medical Aid 1	TRUE	10
Chest Pain (L2)	Level 2 Medical	CP2	Medical Aid 3	TRUE	10
Chest Pain (L3)	Level 3 Medical	CP3	Medical Aid 3	TRUE	10

Appendix B3 Fire Problem Utility

<u>Problem_Description</u>	<u>Priority_Description</u>	<u>Code</u>	<u>Incident_Type_Description</u>	<u>ProQA_Enabled</u>	<u>ProQA_ID</u>
Chest Pain (L4)	Level 4 Medical	CP4	Medical Aid 3	TRUE	10
Choking (L1)	Level 1 Medical	CHO1	Medical Aid 1	TRUE	11
Choking (L2)	Level 2 Medical	CHO2	Medical Aid 3	TRUE	11
Choking (L3)	Level 3 Medical	CHO3	Medical Aid 3	TRUE	11
Choking (L4)	Level 4 Medical	CHO4	Medical Aid 3	TRUE	11
Cliff Rescue	Level 1 Fire	CR	Rescue	FALSE	0
Convulsions / Seizures (L1)	Level 1 Medical	CON1	Medical Aid 1	TRUE	12
Convulsions / Seizures (L2)	Level 2 Medical	CON2	Medical Aid 3	TRUE	12
Convulsions / Seizures (L3)	Level 3 Medical	CON3	Medical Aid 3	TRUE	12
Convulsions / Seizures (L4)	Level 4 Medical	CON4	Medical Aid 3	TRUE	12
CSA Medical Aid	Level 1 Medical	CSA	Medical Aid 1	TRUE	0
CSA17 Move-Up	Advised Incident	CSAMU	CSA17 ReportingTest	FALSE	0
Diabetic Problems (L1)	Level 1 Medical	DIA1	Medical Aid 1	TRUE	13
Diabetic Problems (L2)	Level 2 Medical	DIA2	Medical Aid 3	TRUE	13
Diabetic Problems (L3)	Level 3 Medical	DIA3	Medical Aid 3	TRUE	13
Diabetic Problems (L4)	Level 4 Medical	DIA4	Medical Aid 3	TRUE	13
Drill	Advised Incident	DRILL	Advised Incident (misc.)	FALSE	0
Drowning/Diving Accident (L1)	Level 1 Medical	DRO1	Medical Aid 1	TRUE	14
Drowning/Diving Accident (L2)	Level 2 Medical	DRO2	Medical Aid 3	TRUE	14
Drowning/Diving Accident (L3)	Level 3 Medical	DRO3	Medical Aid 3	TRUE	14
Drowning/Diving Accident (L4)	Level 4 Medical	DRO4	Medical Aid 3	TRUE	14
EDT/XRAY	Level 2 Fire	EDT	EDT/XRAY	FALSE	0
Electrical Short	Level 2 Fire	ES	Single Engine Response	FALSE	0
Electrocution (L1)	Level 1 Medical	ELE1	Medical Aid 1	TRUE	15
Electrocution (L2)	Level 2 Medical	ELE2	Medical Aid 3	TRUE	15
Electrocution (L3)	Level 3 Medical	ELE3	Medical Aid 3	TRUE	15
Electrocution (L4)	Level 4 Medical	ELE4	Medical Aid 3	TRUE	15
Elevator Rescue	Level 2 Fire	ER	Pump Truck	FALSE	0
Event Transport	Level 3 Medical	ET	Medical Aid 3	FALSE	0
Eye Problems / Injuries (L1)	Level 1 Medical	EYE1	Medical Aid 1	TRUE	16
Eye Problems / Injuries (L2)	Level 2 Medical	EYE2	Medical Aid 3	TRUE	16
Eye Problems / Injuries (L3)	Level 3 Medical	EYE3	Medical Aid 3	TRUE	16
Eye Problems / Injuries (L4)	Level 4 Medical	EYE4	Medical Aid 3	TRUE	16
Falls / Back Inj (Trauma) (L1)	Level 1 Medical	FAL1	Medical Aid 1	TRUE	17
Falls / Back Inj (Trauma) (L2)	Level 2 Medical	FAL2	Medical Aid 3	TRUE	17
Falls / Back Inj (Trauma) (L3)	Level 3 Medical	FAL3	Medical Aid 3	TRUE	17

Appendix B3 Fire Problem Utility

<u>Problem_Description</u>	<u>Priority_Description</u>	<u>Code</u>	<u>Incident_Type_Description</u>	<u>ProQA_Enabled</u>	<u>ProQA_ID</u>
Falls / Back Inj (Trauma) (L4)	Level 4 Medical	FAL4	Medical Aid 3	TRUE	17
Fence	Level 2 Fire	F	Single Engine Response	FALSE	0
Fire System Service	Advised Incident	FSS	Advised Incident (misc.)	FALSE	0
Fuel Spill	Level 1 Fire	FS	Fuel Spill	FALSE	0
Fuel Spill 1st Alarm	Level 1 Fire	FS1	Fuel Spill First Alarm	FALSE	0
HazMat	Level 1 Fire	HM	Hazmat	FALSE	0
HazMat 1st Alarm	Level 1 Fire	HM1	HazMat 1st Alarm	FALSE	0
HazMat Single Engine	Level 2 Fire	HZ1E	Single Engine Response	FALSE	0
Headache (L1)	Level 1 Medical	HEAD1	Medical Aid 1	TRUE	18
Headache (L2)	Level 2 Medical	HEAD2	Medical Aid 3	TRUE	18
Headache (L3)	Level 3 Medical	HEAD3	Medical Aid 3	TRUE	18
Headache (L4)	Level 4 Medical	HEAD4	Medical Aid 3	TRUE	18
Heart Problems (L1)	Level 1 Medical	HRT1	Medical Aid 1	TRUE	19
Heart Problems (L2)	Level 2 Medical	HRT2	Medical Aid 3	TRUE	19
Heart Problems (L3)	Level 3 Medical	HRT3	Medical Aid 3	TRUE	19
Heart Problems (L4)	Level 4 Medical	HRT4	Medical Aid 3	TRUE	19
Heat / Cold Exposure (L1)	Level 1 Medical	HEAT1	Medical Aid 1	TRUE	20
Heat / Cold Exposure (L2)	Level 2 Medical	HEAT2	Medical Aid 3	TRUE	20
Heat / Cold Exposure (L3)	Level 3 Medical	HEAT3	Medical Aid 3	TRUE	20
Heat / Cold Exposure (L4)	Level 4 Medical	HEAT4	Medical Aid 3	TRUE	20
Hemorrhage / Lacerations (L1)	Level 1 Medical	HEMO1	Medical Aid 1	TRUE	21
Hemorrhage / Lacerations (L2)	Level 2 Medical	HEMO2	Medical Aid 3	TRUE	21
Hemorrhage / Lacerations (L3)	Level 3 Medical	HEMO3	Medical Aid 3	TRUE	21
Hemorrhage / Lacerations (L4)	Level 4 Medical	HEMO4	Medical Aid 3	TRUE	21
Industrial Rescue	Level 1 Fire	IR	Rescue	FALSE	0
Industrial/Machinery Acc (L1)	Level 1 Medical	IND1	Medical Aid 1	TRUE	22
Industrial/Machinery Acc (L2)	Level 2 Medical	IND2	Medical Aid 3	TRUE	22
Industrial/Machinery Acc (L3)	Level 3 Medical	IND3	Medical Aid 3	TRUE	22
Industrial/Machinery Acc (L4)	Level 4 Medical	IND4	Medical Aid 3	TRUE	22
Investigate	Level 2 Fire	INV	Single Engine Response	FALSE	0
Lindbergh Field Estuary	Level 1 Fire	LNES	LINDBERGH FIELD ESTUARY	FALSE	0
Lock in/out	Level 2 Fire	LOCK	Pump Truck	FALSE	0
Medical Aid	Level 0 Medical	MA	Medical Aid 3	TRUE	32
Medical Aid Otay Mesa	Level 2 Fire	OTAY	MEDICAL AID OTAY MESA	TRUE	0
Medical Alert Alarm	Level 2 Fire	MAA	Single Engine Response	FALSE	0
Medical Multi Casualty	Level 1 Fire	MMC	Medical Multi-casualty	FALSE	0

Appendix B3 Fire Problem Utility

Problem_Description	_Priority_Description	Code	_Incident_Type_Description	ProQA_Enabled	ProQA_ID
Miscellaneous Rescue	Level 1 Fire	MR	Rescue	FALSE	0
Mutual Aid	Level 2 Fire	MUTA	Mutual Aid Out of City Request	FALSE	0
Natural Gas Leak Lg Diam/Fire	Level 1 Fire	LEAK1	Structure Residential	FALSE	0
Natural Gas Leak/Odor	Level 2 Fire	LEAK	Single Engine Response	FALSE	0
No Water	Advised Incident	NOWA	Advised Incident (misc.)	FALSE	0
Noxious Odor	Level 2 Fire	NOX	Single Engine Response	FALSE	0
OD/Ingestion/Poisonings (L1)	Level 1 Medical	OD1	Medical Aid 1	TRUE	23
OD/Ingestion/Poisonings (L2)	Level 2 Medical	OD2	Medical Aid 3	TRUE	23
OD/Ingestion/Poisonings (L3)	PD RESPONSE ONLY	OD3	Medical Aid 3	TRUE	23
OD/Ingestion/Poisonings (L4)	Level 4 Medical	OD4	Medical Aid 3	TRUE	23
Odor of Chemical	Level 2 Fire	ODC	Single Engine Response	FALSE	0
Odor of Smoke	Level 2 Fire	ODS	Single Engine Response	FALSE	0
Oven Fire	Level 1 Fire	STOV	Pump Truck	FALSE	0
Pig Roast	Advised Incident	PIG	Advised Incident (misc.)	FALSE	0
Poway Medical Aid	Poway Medical	POW	Medical Aid Poway	TRUE	0
Preg/Birth/Miscarriage (L1)	Level 1 Medical	PREG1	Medical Aid 1	TRUE	24
Preg/Birth/Miscarriage (L2)	Level 2 Medical	PREG2	Medical Aid 3	TRUE	24
Preg/Birth/Miscarriage (L3)	Level 3 Medical	PREG3	Medical Aid 3	TRUE	24
Preg/Birth/Miscarriage (L4)	Level 4 Medical	PREG4	Medical Aid 3	TRUE	24
Psych / Suicide Attempt (L1)	Level 1 Medical	PSY1	Medical Aid 1	TRUE	25
Psych / Suicide Attempt (L2)	Level 2 Medical	PSY2	Medical Aid 3	TRUE	25
Psych / Suicide Attempt (L3)	Level 3 Medical	PSY3	Medical Aid 3	TRUE	25
Psych / Suicide Attempt (L4)	Level 4 Medical	PSY4	Medical Aid 3	TRUE	25
Psych / Suicide Attempt (PD)	PD RESPONSE ONLY	PSYP	SEND PD ONLY	TRUE	25
Rape	Level 1 Medical	RAP	Medical Aid 1	TRUE	4
Rescue Trench Cave-In	Level 1 Fire	CRT	Rescue Trench Cave-In	FALSE	0
Ringing Alarm	Level 2 Fire	RA	Single Engine Response	FALSE	0
Ringing Alarm Highrise	Level 2 Fire	RAH	Pump Truck	FALSE	0
RockNRoll	Advised Incident	RNR	Advised Incident (misc.)	FALSE	0
Rubbish Fire	Level 2 Fire	RUB	Single Engine Response	FALSE	0
Shed/Outbuilding	Level 2 Fire	SHED	Pump Truck	FALSE	0
Sick Person (Specific Dx)(L1)	Level 1 Medical	SICK1	Medical Aid 1	TRUE	26
Sick Person (Specific Dx)(L2)	Level 2 Medical	SICK2	Medical Aid 3	TRUE	26
Sick Person (Specific Dx)(L3)	Level 3 Medical	SICK3	Medical Aid 3	TRUE	26
Sick Person (Specific Dx)(L4)	Level 4 Medical	SICK4	Medical Aid 3	TRUE	26
Smoke Check	Level 2 Fire	SC	Single Engine Response	FALSE	0

Appendix B3 Fire Problem Utility

<u>Problem_Description</u>	<u>Priority_Description</u>	<u>Code</u>	<u>Incident_Type_Description</u>	<u>ProQA_Enabled</u>	<u>ProQA_ID</u>
SNAKE REMOVAL	Level 1 Fire	SR	Single Engine Response	FALSE	0
Special Response Team	Level 2 Fire	SRT	Special Response Team	FALSE	0
Special Service	Level 2 Fire	SS	Single Engine Response	FALSE	0
Special Service CPTR1	Level 2 Fire	SSCPT1	Special Service CPTR1	FALSE	0
Sprinkler System Down	Advised Incident	SPR	Advised Incident (misc.)	FALSE	0
Stabbing/Gunshot (L1)	Level 1 Medical	STAB1	Medical Aid 1	TRUE	27
Stabbing/Gunshot (L2)	Level 2 Medical	STAB2	Medical Aid 3	TRUE	27
Stabbing/Gunshot (L3)	Level 3 Medical	STAB3	Medical Aid 3	TRUE	27
Stabbing/Gunshot (L4)	Level 4 Medical	STAB4	Medical Aid 3	TRUE	27
Still alarm	Level 2 Fire	SA	Single Engine Response	FALSE	0
Street Closure	Advised Incident	STCL	Advised Incident (misc.)	FALSE	0
Street Scene	Advised Incident	STSC	Advised Incident (misc.)	TRUE	30
Strike Team OES	Level 1 Fire	STO	Strike Team OES	FALSE	0
Strike Team Task Force	Level 1 Fire	STTF	Strike Team Task Force	FALSE	0
Strike Team Type 1	Level 1 Fire	ST1	Strike Team Type 1	FALSE	0
Strike Team Type 3	Level 1 Fire	ST3	Strike Team Type 3	FALSE	0
Stroke (Cva) (L1)	Level 1 Medical	CVA1	Medical Aid 1	TRUE	28
Stroke (Cva) (L2)	Level 2 Medical	CVA2	Medical Aid 3	TRUE	28
Stroke (Cva) (L3)	Level 3 Medical	CVA3	Medical Aid 3	TRUE	28
Stroke (Cva) (L4)	Level 4 Medical	CVA4	Medical Aid 3	TRUE	28
Structure Fire - Comm / Apt	Level 1 Fire	STR	Structure Commercial	FALSE	0
Structure Highrise/Hospital	Level 1 Fire	STRH	Structure Highrise/Hospital	FALSE	0
Structure Residential	Level 1 Fire	STRES	Structure Residential	FALSE	0
Swift Water Rescue 1	Level 1 Fire	SWR1	Pump Truck	FALSE	0
Swift Water Rescue 2	Level 1 Fire	SWR2	Rescue	FALSE	0
Swift Water Rescue 3	Level 1 Fire	SWR3	Swiftwater Rescue 3	FALSE	0
Test Call Fire	Level 2 Fire	TESTF	CAD Test	FALSE	0
Traffic Accident (L1)	Level 1 Medical	TRAF1	Medical Aid 1	TRUE	29
Traffic Accident (L2)	Level 2 Medical	TRAF2	Medical Aid 3	TRUE	29
Traffic Accident (L3)	Level 3 Medical	TRAF3	Medical Aid 3	TRUE	29
Traffic Accident (L4)	Level 4 Medical	TRAF4	Medical Aid 3	TRUE	29
Transformer	Level 2 Fire	TRANS	Single Engine Response	FALSE	0
Traumatic Injuries, Spec (L1)	Level 1 Medical	TRAU1	Medical Aid 1	TRUE	30
Traumatic Injuries, Spec (L2)	Level 2 Medical	TRAU2	Medical Aid 3	TRUE	30
Traumatic Injuries, Spec (L3)	Level 3 Medical	TRAU3	Medical Aid 3	TRUE	30
Traumatic Injuries, Spec (L4)	Level 4 Medical	TRAU4	Medical Aid 3	TRUE	30

Appendix B3 Fire Problem Utility

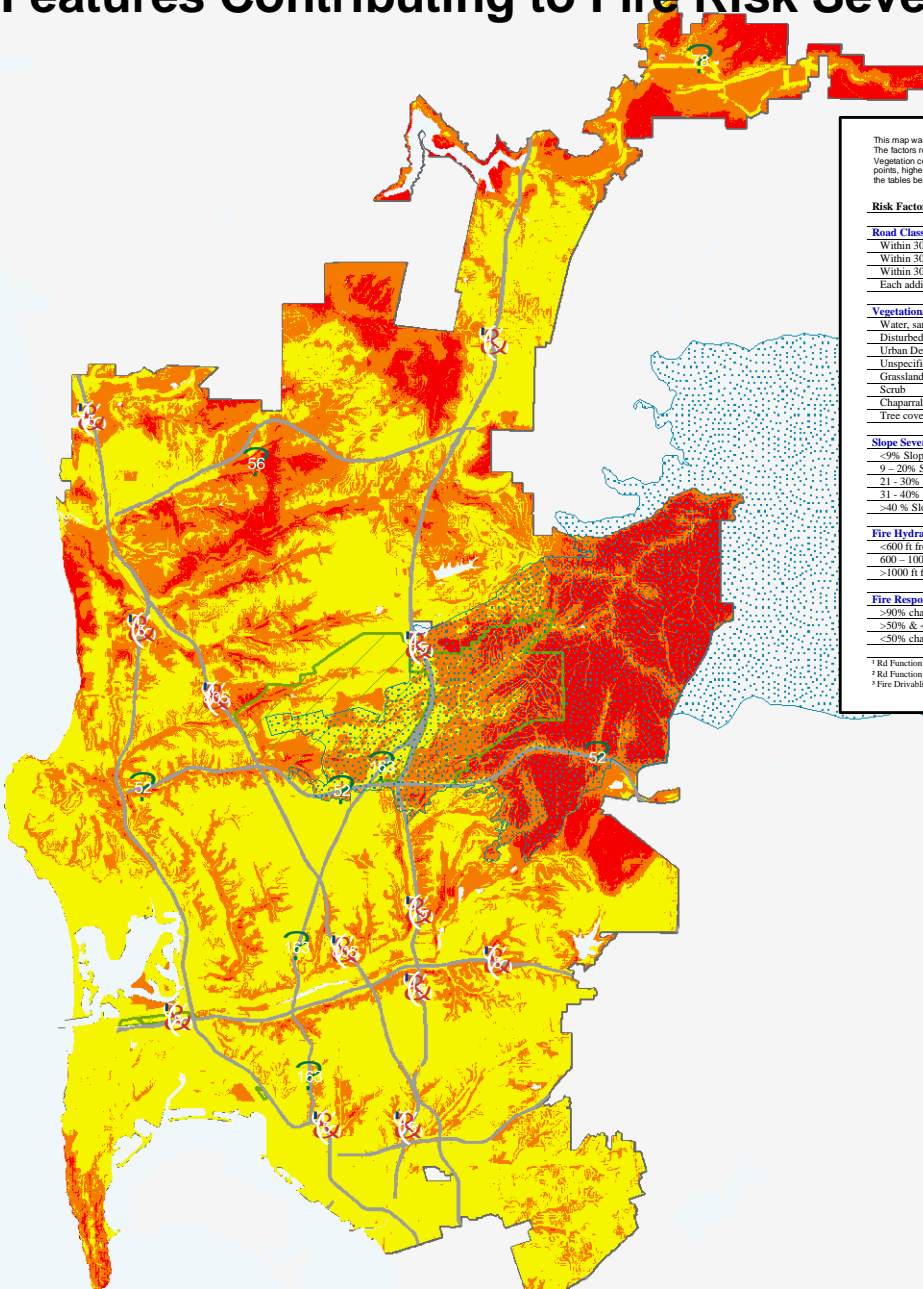
Problem_Description	Priority_Description	Code	Incident_Type_Description	ProQA_Enabled	ProQA_ID
Tree	Level 2 Fire	T	Single Engine Response	FALSE	0
Turned Call	Level 3 Medical	TC	Turned Call	FALSE	0
Unattended Food lock out/in	Level 2 Fire	UF	Single Engine Response	FALSE	0
Unc/Fainting (Non Trauma)(L1)	Level 1 Medical	UNC1	Medical Aid 1	TRUE	31
Unc/Fainting (Non Trauma)(L2)	Level 2 Medical	UNC2	Medical Aid 3	TRUE	31
Unc/Fainting (Non Trauma)(L3)	Level 3 Medical	UNC3	Medical Aid 3	TRUE	31
Unc/Fainting (Non Trauma)(L4)	Level 4 Medical	UNC4	Medical Aid 3	TRUE	31
Unknown Problem (Man Down)(L1)	Level 1 Medical	UNK1	Medical Aid 1	TRUE	32
Unknown Problem (Man Down)(L2)	Level 2 Medical	UNK2	Medical Aid 3	TRUE	32
Unknown Problem (Man Down)(L3)	Level 3 Medical	UNK3	Medical Aid 3	TRUE	32
Unknown Problem (Man Down)(L4)	Level 4 Medical	UNK4	Medical Aid 3	TRUE	32
Unknown Problem (Man Down)(P)	PD RESPONSE ONLY	UNKP	Medical Aid 3	TRUE	32
Vegetation Fire	Level 1 Fire	GRASS	TwoEngines	FALSE	0
Vegetation Fire High	Level 1 Fire	CBH	Canyon Bottom/Wildland High	FALSE	0
Vegetation Fire Low	Level 1 Fire	CBL	Canyon Bottom/Wildland Low	FALSE	0
Vegetation Fire Medium	Level 1 Fire	CBM	Canyon Bottom/Wildland Med	FALSE	0
Vehicle Fire	Level 2 Fire	V	Single Engine Response	FALSE	0
Vehicle Fire 1st Alarm	Level 1 Fire	V1	Structure Commercial	FALSE	0
Vehicle Fire Freeway	Level 1 Fire	VFF	TwoEngines	FALSE	0
Vehicle Fire Tanker	Level 1 Fire	VFT	Vehicle Fire Tanker	FALSE	0
Vehicle Rescue	Level 1 Fire	VR	Rescue	FALSE	0
Vehicle vs Structure	Level 1 Fire	VS	Rescue	FALSE	0
Water Removal/Flooding	Level 2 Fire	H20RM	Pump Truck	FALSE	0
Water Rescue	Level 1 Fire	WR	Rescue	FALSE	0
Wildland High	Level 1 Fire	WLH	Canyon Bottom/Wildland High	FALSE	0
Wildland Low	Level 1 Fire	WLL	Canyon Bottom/Wildland Low	FALSE	0
Wildland Medium	Level 1 Fire	WLM	Canyon Bottom/Wildland Med	FALSE	0
Wires down	Level 2 Fire	WD	Single Engine Response	FALSE	0
yGT CCT Sharp SCMG	Sharp Non-Scheduled	SMGC	General Transport - Sharp	FALSE	0
yGT CCT Sharp SRS	Sharp Non-Scheduled	SRSC	General Transport	FALSE	0
yGT Critical Care	Non-Scheduled Transfer	CC	General Transport	FALSE	0
yGT Critical Care Sharp	Sharp Non-Scheduled	CCS	Critical Care - Sharp	FALSE	0
yGT Critical Care Urgent	Non-Scheduled Transfer	CCU	General Transport	FALSE	0
yGT Critical Care Urgent Sharp	Sharp Urgent	CCUS	Critical Care Urgent - Sharp	FALSE	0
yGT Discharge to SNF	Non-Scheduled Transfer	DTS	General Transport	FALSE	0
yGT Discharged Patient Trans	Non-Scheduled Transfer	RH	General Transport	FALSE	0

Appendix B3
Fire Problem Utility

_Problem_Description	_Priority_Description	Code	_Incident_Type_Description	ProQA_Enabled	ProQA_ID
yGT Follow up Appt	Non-Scheduled Transfer	FUA	General Transport	FALSE	0
yGT General Transport	Non-Scheduled Transfer	GT	General Transport	FALSE	0
yGT General Transport Sharp	Sharp Non-Scheduled	GTS	General Transport - Sharp	FALSE	0
yGT Gurney	Non-Scheduled Transfer	GUR	General Transport	FALSE	0
yGT Post Surg Eval	Non-Scheduled Transfer	PSE	General Transport	FALSE	0
yGT Sharp SCMG	Sharp Non-Scheduled	SCMG	General Transport - Sharp	FALSE	0
yGT Sharp SRS	Sharp Non-Scheduled	SRS	General Transport - Sharp	FALSE	0
yGT Wheelchair	Non-Scheduled Transfer	WC	General Transport	FALSE	0
yGT Wheelchair Sharp	Sharp Non-Scheduled	WCS	Wheelchair - Sharp	FALSE	0
yGT Wheelchair Sharp SCMG	Sharp Non-Scheduled	WSMG	Wheelchair - Sharp	FALSE	0
yGT Wheelchair Sharp SRS	Sharp Non-Scheduled	WSRS	Wheelchair - Sharp	FALSE	0

Features Contributing to Fire Risk Severity, San Diego, CA

Rev 2.2



This map was created to display the results of a spatial analysis of fire-related hazards in the City of San Diego. The factors represented here include: proximity to fire hydrants, 5 min Response areas as generated by the Fire Dept, Vegetation cover mapped in 1995, slope severity, and Road type and proximity. Each risk type was quantified using points, higher points translate to higher risk. The point allocations used for this version of the analysis are included in the tables below.

Risk Factor	Point Allocation
Road Class and Proximity	
Within 300 ft from an unobstructed rd ¹	0
Within 300 ft from a limited access rd ²	2
Within 300 ft from an obstructed rd ³	4
Each additional 300ft from rd add:	+4 (max +16)
Vegetation/Cover Classification	
Water, sand	0
Disturbed	2
Urban Developed	3
Unspecified Riparian, Cropland, wetland	5
Grassland	10
Scrub	15
Chaparral	17
Tree cover	20
Slope Severity	
<9% Slope	2
9 - 20% Slope	8
21 - 30% Slope	14
31 - 40% Slope	16
>40 % Slope	20
Fire Hydrant Proximity	
<600 ft from Hydrant	0
600 - 1000 ft from Hydrant	2
>1000 ft from Hydrant	5
Fire Response Time	
>90% chance that Fire Response within 5 mins	0
>50% & <90% chance that Fire Response within 5 mins	5
<50% chance that Fire Response within 5 mins	10

¹ Rd Function code = 1,2,3,4,5,6,C,F,L,S,R
² Rd Function code = 7,M
³ Fire Drivability Code = N, and Rd Function Code = A,P,U

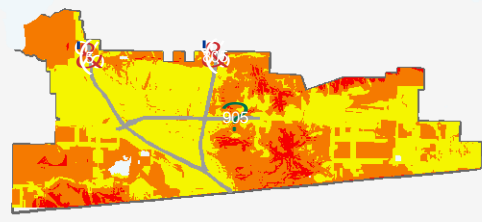
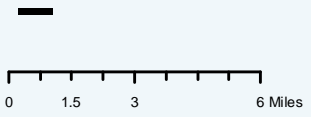
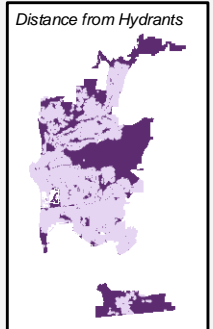
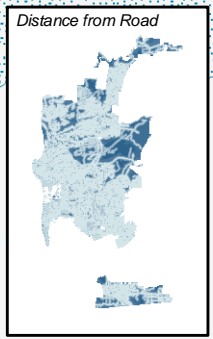


Legend

Risk Assessment

Value

- 50 - 75 - High
- 25 - 50 - Moderate
- 2 - 25 - Low
- 5 Min Response missing
- 2003 Cedar Fire Boundaries



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Appendix B5

Fire Risk Hazard Analysis



Prepared by Sean Bohac
GIS Managers Office
11/10/04

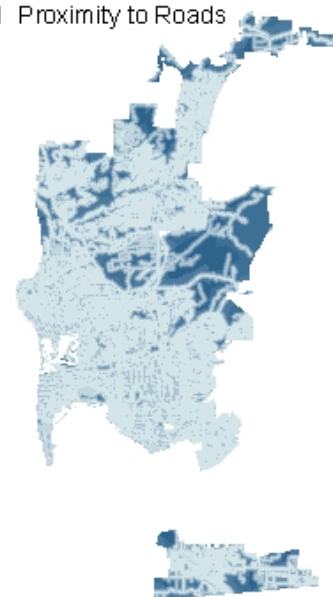


Following the Cedar Fire in 2003, the Fire Dept began working with the GIS Manager's Office to evaluate the relative environmental fire risks within the City of San Diego using spatial analysis tools and the City's Geographic Information System (GIS). A GIS is composed of computers, data, people and a process that can help store, display and analyze data that is tied to a location. The city's GIS contains data including water pipe locations, airport runways, rivers and streams, building footprints for city facilities, and over three hundred other data types. In the following analysis, we have focused on five data sources: roads, mapped vegetation/ cover classes, fire hydrant locations, slope severity, and "5 min response time" data. Each of these data sources or a derivative thereof, has an impact on fire hazard in the City of San Diego.

Using software-based GIS tools such as ESRI's ArcMAP with Spatial Analyst extension, it is a relatively easy process to assign relative risk value to features described by data and then create a cumulative data set that describes the risk across the city, derived from the data sources used. The difficulty with this kind of analysis is assigning appropriate risk values to the identified sources. In this analysis we consulted expert city staff, and used the NFPA 1144 and the 2003 International Urban-Wildland Interface Code (IUWIC), as guidelines for assigning our risk values. The resulting dataset or 'map' indicates a relative risk value between 2 and 75 points for all locations in the city. 2-20 points are allocated for steepness of slope, 0-20 points for vegetation/ cover class, 0-20 points for proximity to roads, 0-5 points for proximity to fire hydrants, and 0-10 points for expected Fire Department response time. See Table 1 for more information on the risk point allocations in tabular format.

Using the roads data set, a GIS technician can develop a dataset that describes the distance from any road for every location in the city. The further a given spot is from a road, the more difficult it will be for engine companies or other non-airborne units to respond, furthermore fire hoses can generally reach 300 ft, so any distance beyond 300 ft requires more work to layout the hose to fight fire. In our analysis we assigned risk value associated to road proximity of "0" if within 300 ft of an unimpeded road, and increased risk value with every 300 ft from any road. We also added a small amount of risk points for locations within 300 ft of

Fig. 1 Proximity to Roads



roads that have been designated limited access routes by the fire department. In Fig. 1 (above), darker blue indicates locations farther from roads; light blue indicates areas that are close to roads.

The vegetation dataset for the City of San Diego was mapped out in 1995 and accurately describes the land cover, divided into several hundred categories that include various tree, shrub and grass dominated classes as well as urban developed regions, wetlands and disturbed bare areas. Each of these regions can be rated for fire hazard based on what we know about the flammability and burn characteristics of the vegetation or lack thereof. In our analysis we used the IUWIC, NFPA 1144, and the risk levels used in a similar analysis done for the City of Santa Barbara. In this analysis, tree cover dominated regions are ranked the most hazardous, then chaparral and shrub cover, then grasslands, wetlands. Sand and water are considered no risk, urbanized areas are considered very low relative risk. In Fig. 2, dark green areas are high risk; light green shades represent low vegetation/cover fire risk. This protocol has been reviewed by biologists in the City Planning Department.

The distance from a fire hydrant impacts the ability of a crew to fight fire. In our analysis, we slightly adjusted values from the NFPA 1144 and IUWIC, to assign higher risk for regions that are more than 600 ft from a known fire hydrant, and yet higher risk for regions more than 1000 ft from a known fire hydrant.

It is widely accepted that higher slopes equal higher fire danger. We can derive a slope dataset from a digital elevation model that divides the city up into slope classifications that match the slope classes in the NFPA 1144 and assign fire risk values to each slope class. Slope severity was the second of three datasets

Fig. 2 Vegetation Cover

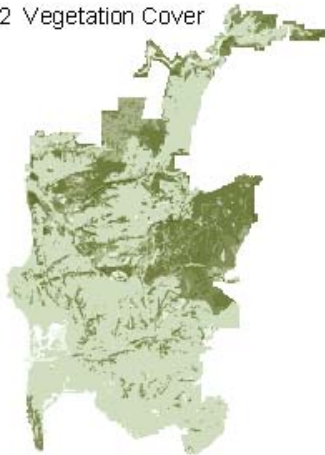
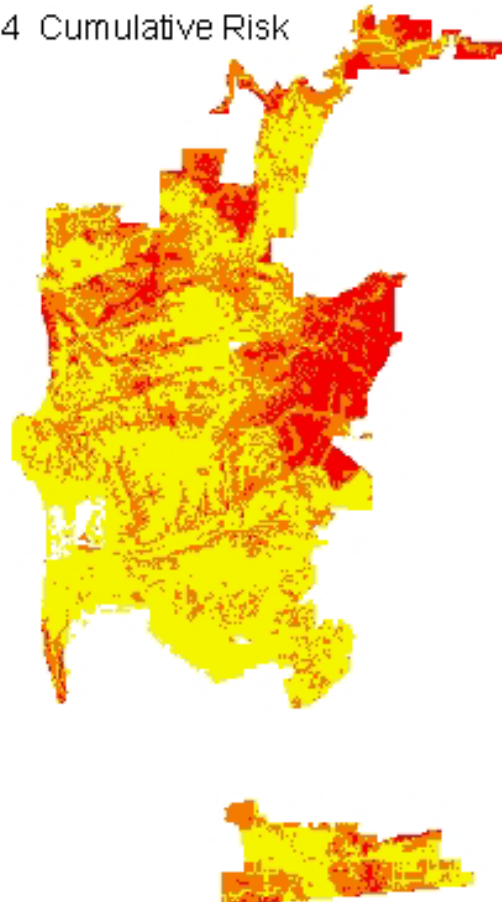


Fig. 3 Slope Severity



Fig. 4 Cumulative Risk



that were used by the City of Santa Barbara Fire Hazard Assessment. In Fig. 3 (lower left), the higher slope areas are represented by darker red, lower slope areas are light pink.

The final data source we used was generated by the Fire Rescue Team. It categorizes most areas of the city and is based on likelihood that fire response would be provided within 5 minutes. Areas that are more likely to receive fire response within 5 minutes are rated lowest fire risk; least likely areas to receive response within 5 minutes are allocated the highest risk points.

Described simply, this hazard analysis is a cumulative 'score' generated by adding all 5 risk values for all locations within the city. Technically, the analysis is a 'raster calculation' that uses map algebra to sum the assigned risk values identified in this analysis for the City of San Diego. The analysis speaks to both the potential for rapidly moving and intense fires, and the relative ability of SDFD to fight the fire based on proximity to resources. Areas of the city that are far from roads and fire hydrants, are brushy and have high slope will show up in the analysis with a high value of fire risk (see red areas in Fig. 4). Areas of the city that have no slope, are adjacent to roads, near fire departments, and are urbanized will show up with relatively low fire risk (see yellow areas in Fig. 4).

The strength of the analysis is anecdotally verified by reviewing the extents of the 2003 Cedar Fire. In Fig. 5 we have superimposed the Cedar Fire Boundaries in the City of San Diego, over the Cumulative Hazard Map. A great majority of the burned areas are categorized as Medium and High risk. Further, in many cases, the fire extinguished when traveling from an area of Medium risk to an area of Low risk.

After a quick look at the Hazard Analysis Map, it appears that many parts of San Pasqual, Scripps Ranch, Tierra Santa, Otay Mesa and Del Mar Mesa have extreme fire hazard. However, many of the highest risk areas fall inside the City's Open Space Reserves. These areas are so designated for their brushy steep areas, and cause an incorrect initial reaction to the map image because these areas are also by definition areas with no residential population. The Fire Department's primary responsibility is to protect the lives of residents, and if we look at the hazard assessment within 300 ft of roads, we get a more appropriate view of risk to lives in the City of San Diego. Areas of residential structures that were given a high

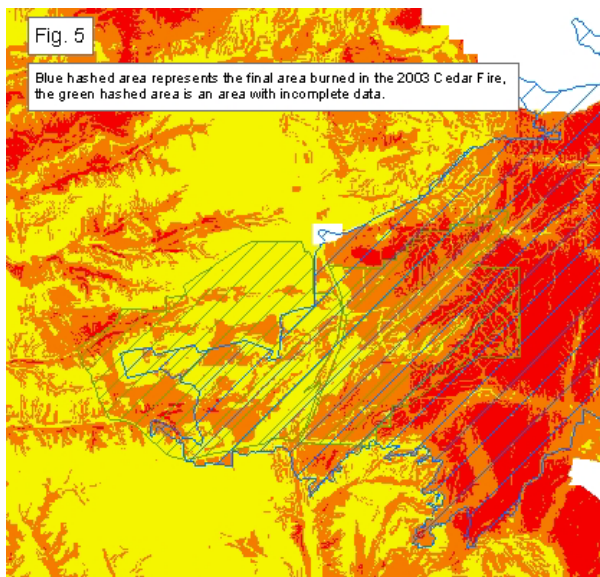
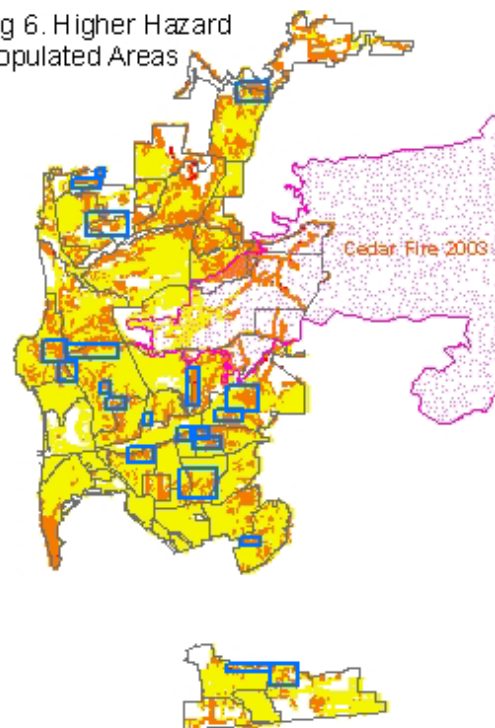


Fig 6. Higher Hazard Populated Areas



hazard assessment include; areas near Navajo Canyon and southern parts of Rho Mission Canyon, segments of Southern Tierrasanta that face I-15, north-facing Mission Valley Hillsides in Uptown, University Heights, Kensington and City Heights, the Southern end of Murray Canyon in Serra Mesa, several edges of Tecolote Canyon, Northeastern Pacific Beach facing I-5, the Northern and Southern edges of Mt Soledad Open Space, Northern Facing edges of Marian Bear O/S Park, residential edges of Del Mar Mesa, Mesa Edges in Pacific Highlands Ranch and Fairbanks Country Club, northern edges of Rancho Bernardo, the area south of the West end of Paradise Valley Road, residential areas bordering Otay Mesa Open Space and the Northern edge of Nestor, and finally in many of the finger canyons within a mile of the intersection of I-805 and I-15 (See blue rectangles in Fig. 6, above).

Future iterations of this analysis would be strengthened by the use of an updated vegetation dataset or reliable raster dataset that could delineate flammable biomass, and a current building footprint data set that could help us pinpoint areas of the city near structures. Other benefits of a GIS based analysis such as this include the ability to attribute parcels with fire risk.

Aknowledgements:

SanGIS for data resources

Eddie Villavicencio for facilitation of the fire hazard point allocation process

Table 1
Point Allocation for Risk Assessment

Risk Factor	Point Allocation
Road Class and Proximity	0 - 20 pts
Within 300 ft from an unhindered rd ¹	0
Within 300 ft from a limited access rd ²	2
Within 300 ft from an obstructed rd ³	4
Each additional 300ft from rd add:	+4 (max +16)
Vegetation/Cover Classification	0 - 20 pts
Water, sand	0
Disturbed	2
Urban Developed	3
Unspecified Riparian, Cropland, wetland	5
Grassland	10
Scrub	15
Chaparral	17
Tree cover	20
Slope Severity	0 - 20 pts
<9% Slope	2
9 - 20% Slope	8
21 - 30% Slope	14
31 - 40% Slope	16
>40 % Slope	20
Fire Hydrant Proximity	0 - 5 pts
<600 ft from Hydrant	0
600 – 1000 ft from Hydrant	2
>1000 ft from Hydrant	5
Fire Response Time	0 - 10 pts
>90% chance that Fire Response within 5 mins	0
>50% & <90% chance that Fire Response within 5 mins	5
<50% chance that Fire Response within 5 mins	10
¹ Rd Function code = 1,2,3,4,5,6,C,F,L,S,R	
² Rd Function code = 7,M	
³ Fire Drivability Code = N, and Rd Function Code = A,P,U	

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
Able	12	7	5	0	8.5	8.58	5.55	\$8,001.00	\$1.00	\$8,002.00
ADM1	5	5	0	0	9.76	10.31		\$300,400.00	\$150,000.00	\$450,400.00
AOPS1	4	1	3	0	4.09	5.77	0.98	\$0.00	\$0.00	\$0.00
AOPS2	2	0	2	0	1.67	19.82		\$0.00	\$0.00	\$0.00
AT1	1	0	1	0	0.62	19.55		\$0.00	\$0.00	\$0.00
AT3	1	0	0	1	0.57	19.43	19.43			
AT5	1	0	0	1	0.72	15.42	15.42			
ATS31	4	0	3	1	3.04	15.87	14.52	\$0.00	\$0.00	\$0.00
ATS32	19	0	18	1	16.59	17.53	17.53	\$0.00	\$0.00	\$0.00
ATS33	1	0	0	1	0.91	0.1	0.1			
ATS34	3	0	3	0	1.9	17.07	17.07	\$0.00	\$0.00	\$0.00
ATS36	5	0	5	0	3.2	13.04	16.28	\$0.00	\$0.00	\$0.00
ATS41	4	0	4	0	3.2	19.02	19.02	\$0.00	\$0.00	\$0.00
B 01	215	102	44	69	111.13	6.4	6.19	\$4,697,966.00	\$371,772.00	\$5,069,738.00
B 02	264	122	65	77	158.08	7.7	7.46	\$5,367,313.00	\$1,274,645.00	\$6,641,958.00
B 03	175	93	39	43	106.16	9.38	8.89	\$2,163,032.00	\$1,210,622.00	\$3,373,654.00
B 04	200	117	36	47	98.72	7.27	6.89	\$2,421,517.00	\$546,856.00	\$2,968,373.00
B 05	162	66	33	63	101.08	8.6	8.49	\$5,147,303.00	\$747,219.00	\$5,894,522.00
B 06	310	168	81	61	155.54	6.98	6.92	\$2,814,640.00	\$1,030,072.00	\$3,844,712.00
B 07	131	66	34	31	109.75	8.97	8.73	\$5,206,230.00	\$425,901.00	\$5,632,131.00
B 30	2	2	0	0	2.27	11.79		\$400.00	\$0.00	\$400.00
B 33	4	2	1	1	2.55	1.87	0.49	\$200,000.00	\$100,000.00	\$300,000.00
B 34	3	2	0	1	2.21	5.16	0.12	\$250,000.00	\$251,041.00	\$501,041.00
BLS 10	123	0	123	0	109.78	14.25	14.21	\$0.00	\$0.00	\$0.00
BLS 14	234	0	234	0	207.25	14.59	14.64	\$0.00	\$0.00	\$0.00
BLS 15	170	0	169	1	158.4	14.8	14.85	\$0.00	\$0.00	\$0.00
BLS 16	118	0	118	0	117.48	14.94	14.94	\$0.00	\$0.00	\$0.00
BLS 17	104	0	104	0	109.96	15.75	15.75	\$0.00	\$0.00	\$0.00
BLS 22	63	0	62	1	62.54	13.91	13.89	\$0.00	\$0.00	\$0.00
BLS 23	45	0	45	0	47.31	15.85	16.2	\$0.00	\$0.00	\$0.00
BLS 25	110	0	110	0	103.43	14.17	14.19	\$0.00	\$0.00	\$0.00
BLS 27	39	0	38	1	42.03	14.71	14.71	\$0.00	\$0.00	\$0.00
BLS 34	433	0	433	0	421.43	14.49	14.5	\$0.00	\$0.00	\$0.00
BLS 43	148	0	148	0	160.06	14.49	14.56	\$0.00	\$0.00	\$0.00
BLS 45	112	0	110	2	108.61	13.32	13.32	\$0.00	\$0.00	\$0.00
BLS 46	29	0	29	0	28.67	14.24	14.24	\$0.00	\$0.00	\$0.00

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
BLS 47	95	0	95	0	101.92	14.13	14.13	\$0.00	\$0.00	\$0.00
BLS 48	52	0	52	0	48.41	14.13	14.13	\$0.00	\$0.00	\$0.00
BLS 49	7	0	7	0	7.55	18.87	18.87			
BR 10	2	2	0	0	4.39	19.41	19.28	\$0.00	\$0.00	\$0.00
BR 18	2	2	0	0	2.32	22.23		\$0.00	\$0.00	\$0.00
BR 24	5	2	0	3	4.65	14.07	14.07	\$0.00	\$0.00	\$0.00
BR 29	5	3	1	1	5.2	21.63	21.63	\$0.00	\$0.00	\$0.00
BR 33	5	2	2	1	6.69	12.83	12.17	\$0.00	\$0.00	\$0.00
BR 34	3	2	0	1	6.69	12.81	12.81	\$0.00	\$0.00	\$0.00
BR 37	2	1	0	1	2.29	19.82		\$0.00	\$0.00	\$0.00
BR 38	4	2	0	2	13.72	15.4	13.32	\$1.00	\$0.00	\$1.00
BR 40	8	2	2	4	6.73	15.51	15.93	\$0.00	\$0.00	\$0.00
BR 43	5	2	3	0	7.05	14.18	11.61	\$0.00	\$0.00	\$0.00
Bt1	21	0	3	18	8.22	2.89	2.14	\$0.00	\$0.00	\$0.00
Bt2	21	0	2	19	6.75	3.97	3.56	\$0.00	\$0.00	\$0.00
Bt3	6	0	2	4	1.56	1.24	1.24	\$0.00	\$0.00	\$0.00
Bt4	14	0	0	14	7.7	1.38	1.51			
C4	1	0	0	1	0	0.18	0.18	\$0.00	\$0.00	\$0.00
C9	4	0	4	0	0.05	0	0			
Cad2	1	0	0	1	0.03	1.02				
CAD5	1	0	0	1	0.02	0.73	0.73			
Cad6	4	0	1	3	0.08	0.68	0.46			
CAD8	5	0	0	5	0.73	8.01	8.01			
CCN5	1	0	1	0	0.62	0.07		\$0.00	\$0.00	\$0.00
CCN7	2	0	2	0	1.54	0.12	0.12	\$0.00	\$0.00	\$0.00
CDN	1	1	0	0	0.01	0.28	0.28	\$0.00	\$200,000.00	\$200,000.00
CPTR1	13	8	2	3	15.97	14.73	8.26	\$0.00	\$0.00	\$0.00
Cr28	5	0	0	5	1.72	6.78	6.16	\$0.00	\$0.00	\$0.00
Cr43	6	1	0	5	3	12.39	11.98	\$175,000.00	\$0.00	\$175,000.00
CU1	18	3	0	15	10.57	11.45	11.96	\$11,500.00	\$0.00	\$11,500.00
CU10	2	0	0	2	0.89	8.76	8.76	\$0.00	\$0.00	\$0.00
Dep 11	1	1	0	0	0.92	17.05		\$250,000.00	\$250,000.00	\$500,000.00
Dep 3	3	3	0	0	4.97	15.46		\$200,400.00	\$100,000.00	\$300,400.00
Dep 5	3	3	0	0	4.73	17.04		\$3,020,010.00	\$5,000.00	\$3,025,010.00
Dep 6	2	2	0	0	4.46	20.65		\$3,000,400.00	\$0.00	\$3,000,400.00
DEP 8	4	4	0	0	3.16	17.33		\$0.00	\$0.00	\$0.00

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
Dep 9	3	3	0	0	7.36	16.5		\$0.00	\$0.00	\$0.00
DIV1	2	1	1	0	0.42	0.31	0.53	\$100,000.00	\$10,000.00	\$110,000.00
DIV2	6	6	0	0	5.03	8.79		\$3,151,510.00	\$43,000.00	\$3,194,510.00
Eng. 01	2,226.00	116	1,780.00	330	704.54	4.42	4.35	\$1,488,860.00	\$333,675.00	\$1,822,535.00
Eng. 03	1,396.00	89	1,072.00	235	521.44	5.16	5.05	\$1,041,010.00	\$374,690.00	\$1,415,700.00
Eng. 04	2,307.00	119	1,934.00	254	684.38	3.88	3.81	\$518,929.00	\$162,101.00	\$681,030.00
Eng. 05	2,473.00	146	1,986.00	341	825.13	4.69	4.61	\$1,794,512.00	\$646,038.00	\$2,440,550.00
Eng. 06	1,115.00	114	871	130	446.67	5.31	5.17	\$759,600.00	\$360,627.00	\$1,120,227.00
Eng. 07	1,804.00	164	1,477.00	163	636.2	4.09	3.98	\$2,094,346.00	\$755,077.00	\$2,849,423.00
Eng. 08	6	0	3	3	1.95	6.66	6.66	\$0.00	\$0.00	\$0.00
Eng. 09	893	83	568	242	363.66	5.85	5.7	\$1,072,633.00	\$399,107.00	\$1,471,740.00
Eng. 10	1,906.00	165	1,454.00	287	696.63	5.03	4.93	\$1,554,567.00	\$304,568.00	\$1,859,135.00
Eng. 11	1,827.00	167	1,471.00	189	580.14	4.09	4.01	\$1,905,731.00	\$514,189.00	\$2,419,920.00
Eng. 12	3,213.00	303	2,627.00	283	1,135.44	5.03	4.95	\$2,141,454.00	\$677,031.00	\$2,818,485.00
Eng. 13	952	61	689	202	375.84	5.19	5.03	\$921,973.00	\$384,156.00	\$1,306,129.00
Eng. 14	2,813.00	260	2,249.00	304	953.5	4.86	4.76	\$4,885,648.00	\$685,349.00	\$5,570,997.00
Eng. 15	1,205.00	97	937	171	427.38	4.64	4.53	\$1,106,788.00	\$499,629.00	\$1,606,417.00
Eng. 16	449	46	302	101	225.66	6.64	6.42	\$1,170,503.00	\$438,405.00	\$1,608,908.00
Eng. 17	3,619.00	358	2,886.00	375	1,117.96	3.8	3.74	\$2,072,522.00	\$733,601.00	\$2,806,123.00
Eng. 18	2,405.00	258	1,810.00	337	817.45	4.8	4.67	\$5,226,217.00	\$556,519.00	\$5,782,736.00
Eng. 19	2,456.00	258	1,952.00	246	862.93	4.65	4.55	\$2,693,430.00	\$851,448.00	\$3,544,878.00
Eng. 20	1,792.00	114	1,413.00	265	669.39	5.42	5.31	\$1,296,412.00	\$671,852.00	\$1,968,264.00
Eng. 21	2,115.00	165	1,629.00	321	633.62	4.8	4.73	\$1,223,891.00	\$472,639.00	\$1,696,530.00
Eng. 22	959	38	768	153	371.18	5.12	5.07	\$687,672.00	\$325,900.00	\$1,013,572.00
Eng. 23	1,693.00	119	1,314.00	260	680.04	5.82	5.72	\$3,828,247.00	\$192,177.00	\$4,020,424.00
Eng. 24	1,264.00	57	903	304	521.7	6.46	6.44	\$1,169,512.00	\$131,921.00	\$1,301,433.00
Eng. 25	1,355.00	126	1,029.00	200	532.05	6.06	5.95	\$1,078,298.00	\$406,544.00	\$1,484,842.00
Eng. 26	1,814.00	248	1,340.00	226	694.15	4.85	4.68	\$2,470,220.00	\$719,882.00	\$3,190,102.00
Eng. 27	1,550.00	125	1,183.00	242	602.51	5.7	5.56	\$4,096,166.00	\$606,932.00	\$4,703,098.00
Eng. 28	2,251.00	159	1,590.00	502	839.14	6.03	5.96	\$16,750,864.00	\$237,182.00	\$16,988,046.00
Eng. 29	2,268.00	132	1,981.00	155	821.05	4.95	4.93	\$629,173.00	\$327,467.00	\$956,640.00
Eng. 30	1,646.00	144	1,378.00	124	633.36	4.86	4.8	\$564,706.00	\$335,066.00	\$899,772.00
Eng. 31	1,312.00	101	1,022.00	189	493.32	5.42	5.31	\$1,458,596.00	\$471,288.00	\$1,929,884.00
Eng. 32	2,373.00	187	1,968.00	218	862.19	5.54	5.53	\$791,871.00	\$444,139.00	\$1,236,010.00
Eng. 33	1,709.00	74	1,412.00	223	725.44	5.9	5.88	\$1,568,032.00	\$238,641.00	\$1,806,673.00
Eng. 34	976	53	804	119	453.37	5.36	5.35	\$766,185.00	\$231,903.00	\$998,088.00

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
Eng. 35	2,164.00	124	1,424.00	616	843.44	6.29	6.2	\$1,557,077.00	\$684,029.00	\$2,241,106.00
Eng. 36	1,524.00	135	1,178.00	211	583.5	5.64	5.43	\$4,045,157.00	\$430,663.00	\$4,475,820.00
Eng. 37	519	40	370	109	206.9	6.28	6.19	\$201,825.00	\$46,606.00	\$248,431.00
Eng. 38	1,294.00	91	1,045.00	158	452.25	5.12	5.02	\$720,568.00	\$475,815.00	\$1,196,383.00
Eng. 39	1,031.00	119	720	192	399.15	5.94	5.88	\$7,282,091.00	\$69,228.00	\$7,351,319.00
Eng. 40	1,118.00	86	815	217	455.49	6.46	6.36	\$1,083,345.00	\$242,952.00	\$1,326,297.00
Eng. 41	810	71	409	330	337.32	7.02	6.86	\$1,210,483.00	\$510,105.00	\$1,720,588.00
Eng. 42	1,079.00	64	842	173	439.75	5.95	5.88	\$1,082,466.00	\$268,411.00	\$1,350,877.00
Eng. 43	354	36	235	83	203.89	7.31	7.29	\$282,852.00	\$279,521.00	\$562,373.00
Eng. 44	1,287.00	100	953	234	522.46	6.19	6.02	\$4,126,372.00	\$537,899.00	\$4,664,271.00
Eng. 49	1,825.00	94	1,419.00	312	611.09	4.16	4.09	\$3,585,022.00	\$282,954.00	\$3,867,976.00
Eng. 8	1,231.00	110	890	231	465.11	5.08	4.91	\$1,048,745.00	\$415,103.00	\$1,463,848.00
ERT1	50	0	0	50	46	12.98	13.44	\$0.00	\$0.00	\$0.00
FCC	36	2	18	16	7.2	1.62	1.62	\$35,000.00	\$0.00	\$35,000.00
HELO1	4	0	4	0	2.92	18.21	19.48	\$0.00	\$0.00	\$0.00
Hpd	3	0	0	3	1.08	5.96	5.96	\$0.00	\$0.00	\$0.00
Hzm 1	84	2	8	74	90.73	13.93	14.45	\$2,000.00	\$4,000.00	\$6,000.00
Hzm 2	8	0	0	8	10.42	10.92	10.92	\$0.00	\$0.00	\$0.00
INFOB	8	5	3	0	8.04	12.37	22.48	\$975,000.00	\$65,000.00	\$1,040,000.00
INFOC	1	1	0	0	0.67	18.57		\$180,000.00	\$0.00	\$180,000.00
Inv 60	11	10	0	1	22.43	14.41	20.32	\$3,595,000.00	\$230,000.00	\$3,825,000.00
Inv 61	8	6	0	2	10.13	7.27	11.45	\$60,000.00	\$17,000.00	\$77,000.00
Inv 62	2	1	0	1	7.93	7.76	0.53	\$10,000.00	\$500.00	\$10,500.00
Inv 66	11	6	0	5	15.12	12.38	10.47	\$50,500.00	\$15,200.00	\$65,700.00
Inv 67	144	88	0	56	187.67	15.76	13.78	\$3,165,751.00	\$1,156,280.00	\$4,322,031.00
Inv 68	19	13	0	6	31.98	9.94	12	\$324,350.00	\$84,500.00	\$408,850.00
Inv 69	193	165	0	28	290.19	14.23	10.63	\$15,334,971.00	\$1,189,886.00	\$16,524,857.00
Inv 70	5	4	0	1	16.39	9.29	18.37	\$6,090,000.00	\$50,000.00	\$6,140,000.00
Inv 72	1	1	0	0	2.06	15.9		\$60,000.00	\$15,000.00	\$75,000.00
Inv 74	1	1	0	0	4.28	0.52		\$500.00	\$250.00	\$750.00
Inv 76	1	1	0	0	2.21	0.1		\$80,000.00	\$75,000.00	\$155,000.00
INV 77	2	2	0	0	3.89	0.29		\$8,000.00	\$0.00	\$8,000.00
LA 01	37	34	0	3	46.89	17.45	4.65	\$5,671,000.00	\$766,580.00	\$6,437,580.00
LG	78	1	72	5	46.67	3.35	3.12	\$0.00	\$0.00	\$0.00
Lg1	59	0	59	0	35.46	3.42	3.42	\$0.00	\$0.00	\$0.00
M 09	517	0	514	3	467.74	8.4	8.43	\$0.00	\$0.00	\$0.00

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
M 12	3,734.00	17	3,677.00	40	3,161.59	7.26	7.24	\$348,000.00	\$152,700.00	\$500,700.00
M 132	2,660.00	15	2,616.00	29	2,385.43	7.53	7.51	\$389,500.00	\$118,500.00	\$508,000.00
M 139	1,155.00	13	1,133.00	9	969.63	7.89	7.89	\$140,300.00	\$3,400.00	\$143,700.00
M 20	3,624.00	10	3,510.00	104	3,071.17	7.83	7.86	\$213,032.00	\$95,200.00	\$308,232.00
M 21	3,177.00	10	3,091.00	76	2,663.09	7.72	7.72	\$581,501.00	\$210,450.00	\$791,951.00
M 24	431	0	421	10	395.34	7.59	7.55	\$0.00	\$0.00	\$0.00
M 26	3,665.00	25	3,597.00	43	3,031.30	7.33	7.36	\$1,107,001.00	\$215,251.00	\$1,322,252.00
M 29	2,772.00	6	2,728.00	38	2,432.15	6.64	6.64	\$264,200.00	\$220,200.00	\$484,400.00
M 30	1,056.00	3	1,042.00	11	928.27	6.89	6.89	\$71,000.00	\$28,000.00	\$99,000.00
M 31	2,924.00	5	2,893.00	26	2,535.69	7.43	7.42	\$520,500.00	\$130,000.00	\$650,500.00
M 33	1,004.00	2	997	5	905.36	7.03	7.01	\$152,000.00	\$100,001.00	\$252,001.00
M 36	3,351.00	7	3,310.00	34	2,874.66	8.07	8.04	\$3,350,500.00	\$62,501.00	\$3,413,001.00
M 37	2	0	2	0	2.18	10.86	10.86	\$0.00	\$0.00	\$0.00
M 38	1,679.00	3	1,640.00	36	1,497.60	6.88	6.85	\$62,500.00	\$0.00	\$62,500.00
M 39	273	3	260	10	143.06	6.24	6.07	\$3,000,800.00	\$100.00	\$3,000,900.00
M 40	1,722.00	5	1,704.00	13	1,633.20	8.7	8.69	\$45,600.00	\$15,200.00	\$60,800.00
M 41	1,695.00	6	1,670.00	19	1,479.15	9.39	9.39	\$71,500.00	\$100.00	\$71,600.00
M 44	1,972.00	7	1,886.00	79	1,796.40	7.86	7.82	\$417,500.00	\$314,000.00	\$731,500.00
M 60	4,630.00	10	4,560.00	60	3,901.86	6.97	6.97	\$617,301.00	\$38,001.00	\$655,302.00
M 61	4,863.00	15	4,776.00	72	3,902.04	6.53	6.53	\$499,750.00	\$169,001.00	\$668,751.00
M 62	3,951.00	15	3,884.00	52	3,423.98	7.59	7.61	\$586,246.00	\$170,118.00	\$756,364.00
M 63	598	1	570	27	414.67	2.43	2.44	\$100,000.00	\$50,000.00	\$150,000.00
M 64	1,894.00	4	1,864.00	26	1,740.17	7.54	7.55	\$301,500.00	\$114,000.00	\$415,500.00
M 65	1,446.00	4	1,419.00	23	1,261.14	7.18	7.21	\$110,000.00	\$23,200.00	\$133,200.00
M 66	1,929.00	4	1,875.00	50	1,605.02	7.28	7.29	\$82,000.00	\$20,300.00	\$102,300.00
M 67	888	6	872	10	735.14	7.18	7.17	\$50,001.00	\$21,000.00	\$71,001.00
M 68	2,063.00	6	2,023.00	34	1,738.22	6.77	6.79	\$20,550.00	\$600.00	\$21,150.00
M 69	4,756.00	10	4,697.00	49	3,919.30	7.19	7.17	\$416,950.00	\$105,100.00	\$522,050.00
M 70	1,260.00	4	1,247.00	9	1,108.58	7.3	7.32	\$81,000.00	\$19,000.00	\$100,000.00
M 71	15	0	3	12	9.68	3.16	2.16			
M 72	6	0	5	1	4.12	0.54	0.54	\$0.00	\$0.00	\$0.00
M 73	3	0	3	0	1.82	1.89	1.89	\$0.00	\$0.00	\$0.00
M 75	9	0	8	1	8.04	9.47	9.47	\$0.00	\$0.00	\$0.00
M 82	1	0	0	1	6.86	3.85	3.85			
M 83	1	0	0	1	0.39	0	0			
M 84	1	0	0	1	0.8	0.13	0.13			

Appendix C1 Workload Distribution

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
MC1	2	2	0	0	4.16	11.76		\$200,000.00	\$100,000.00	\$300,000.00
MR 09	1,887.00	10	1,859.00	18	1,735.74	8.43	8.45	\$3,375,011.00	\$150,201.00	\$3,525,212.00
MR 24	768	4	742	22	651.87	7.18	7.14	\$302,010.00	\$125,000.00	\$427,010.00
MR 30	1,346.00	7	1,327.00	12	1,201.67	7	7	\$212,000.00	\$115,350.00	\$327,350.00
MR 33	948	4	937	7	852.28	6.98	6.99	\$609,000.00	\$78,033.00	\$687,033.00
Ms1	4	3	1	0	7.47	7.87	0.82	\$200,400.00	\$100,000.00	\$300,400.00
Ms2	4	2	2	0	5.48	11.39	0.35	\$500,000.00	\$0.00	\$500,000.00
MS71	64	0	62	2	38.94	4.87	4.61	\$0.00	\$0.00	\$0.00
MS72	8	2	5	1	10.48	8.48	8.14	\$0.00	\$0.00	\$0.00
MS75	6	0	6	0	4.95	5.34	4.48	\$0.00	\$0.00	\$0.00
OS1	7	4	3	0	3.76	6.09	0.52	\$652,500.00	\$35,200.00	\$687,700.00
Pd	63	11	35	17	45.93	5.84	5.99	\$176,050.00	\$60,000.00	\$236,050.00
Pd1	1	0	1	0	0.18	0.65	0.65	\$0.00	\$0.00	\$0.00
R 1	28	2	2	24	15.46	4.87	2.55	\$10.00	\$0.00	\$10.00
R 2	27	2	2	23	13.1	5.38	5.58	\$10.00	\$0.00	\$10.00
R 3	27	3	2	22	14.78	5.43	3.74	\$1,010.00	\$0.00	\$1,010.00
R 4	330	68	207	55	151.14	7.11	4.9	\$4,060,338.00	\$828,096.00	\$4,888,434.00
REDX	2	2	0	0	1.54	18.52		\$10,000.00	\$5,000.00	\$15,000.00
Sdge	40	13	4	23	27.12	12.59	10.34	\$683,000.00	\$400,000.00	\$1,083,000.00
SEU 4	1	0	0	1	0.72	0.08	0.08			
SEU 5	2	0	1	1	1.25	0.07	0			
SEU 6	1	0	0	1	0.35	0.17	0.17			
So	1	0	1	0	0.51	14.13	14.13	\$0.00	\$0.00	\$0.00
SOP3	1	1	0	0	1.38	10.7		\$200,000.00	\$60,000.00	\$260,000.00
SRT	2	0	1	1	31.59	11.5	11.5	\$0.00	\$0.00	\$0.00
SRTBC	1	0	0	1	1.06	0.13		\$0.00	\$0.00	\$0.00
T 01	571	136	173	262	212.27	6.01	5.28	\$5,425,377.00	\$818,553.00	\$6,243,930.00
T 05	76	30	13	33	33.43	8.44	7.19	\$3,181,765.00	\$50,625.00	\$3,232,390.00
T 10	385	110	202	73	159.15	6.44	6.02	\$1,948,975.00	\$529,666.00	\$2,478,641.00
T 12	727	212	412	103	308.03	5.77	5.46	\$2,651,505.00	\$1,239,500.00	\$3,891,005.00
T 14	662	224	330	108	283.11	6.31	5.71	\$9,497,073.00	\$1,217,001.00	\$10,714,074.00
T 20	376	104	183	89	160.44	7.37	6.75	\$2,075,904.00	\$1,127,321.00	\$3,203,225.00
T 21	328	78	193	57	133.4	6	5.76	\$1,369,552.00	\$553,904.00	\$1,923,456.00
T 28	427	91	230	106	182.44	7.74	7.42	\$10,555,394.00	\$389,053.00	\$10,944,447.00
T 29	391	69	293	29	179.92	5.41	5.21	\$356,673.00	\$324,785.00	\$681,458.00
T 35	449	73	217	159	190.23	7.41	7.13	\$4,696,101.00	\$739,866.00	\$5,435,967.00

**Appendix C1
Workload Distribution**

FY 2003 Statistical Report by Unit										
Unit	Total Incidents	Fires	Medical/Rescue	Other	Active Time (Hrs)	Avg Response Time (Min)	Average First In Response Time (Min)	Property Loss	Contents Loss	Total Fire Dollar Loss
T 40	188	42	109	37	98.89	8.47	8.23	\$1,195,842.00	\$344,386.00	\$1,540,228.00
T 41	25	6	6	13	13.22	11.95	11.37	\$213,000.00	\$60,000.00	\$273,000.00
T 43	2	0	1	1	2.93	9.98	9.98	\$0.00	\$0.00	\$0.00
T 44	183	52	104	27	96.09	7.9	6.37	\$4,913,201.00	\$701,147.00	\$5,614,348.00
Tr2	2	2	0	0	2.47	16.48		\$200,400.00	\$100,000.00	\$300,400.00
Tr6	1	1	0	0	1.5	1.15		\$200,000.00	\$100,000.00	\$300,000.00
U 10	1	1	0	0	1.12	10.13		\$0.00	\$3,000.00	\$3,000.00
U 35	2	0	2	0	0.88	14.6	14.6	\$0.00	\$0.00	\$0.00
U 4	2	0	1	1	1.63	9.02	0.17	\$0.00	\$0.00	\$0.00
U 40	3	0	3	0	1.47	4.89	4.89	\$0.00	\$0.00	\$0.00
Uscg	1	0	0	1	0.88	0.12		\$0.00	\$0.00	\$0.00
Wt 28	10	9	0	1	14.87	19.73	20.68	\$476,500.00	\$0.00	\$476,500.00
Wt 40	4	2	0	2	3.96	12.59		\$0.00	\$0.00	\$0.00
Xr 10	35	0	0	35	17.11	11.18	11.5	\$0.00	\$0.00	\$0.00
Xr 4	11	0	0	11	13.96	13.48	10.29	\$0.00	\$0.00	\$0.00
Xr 5	6	0	0	6	4.54	12.17	6.96	\$0.00	\$0.00	\$0.00
Xr 6	9	0	0	9	12.61	10.46	6.74	\$0.00	\$0.00	\$0.00
Xr 7	2	0	0	2	2.08	19.72	22.9	\$0.00	\$0.00	\$0.00
Xr 8	3	0	0	3	1.14	11.86	11.86	\$0.00	\$0.00	\$0.00
Xr 9	4	0	0	4	0.02	0.16	0.16	\$0.00	\$0.00	\$0.00

Appendix D1

San Diego Fire-Rescue Department

Resource Request Guidelines

for

Duty Chiefs, Fire Communications and Staffing Desk

August 17, 2004

(Updated each May prior to fire season)

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PHILOSOPHY

Automatic Aid requests are initiated to fill out alarm assignment in a contiguous jurisdiction. Unit selection is based upon the closest unit. If San Diego Fire-Rescue Department (SDFD) is not able to fill automatic aid requests, the Fire Communications Center (FCC) will advise the requesting fire department.

Mutual Aid requests are for single resources and strike teams. Requests for mutual aid are initiated by the jurisdiction in need of assistance. If the assistance cannot be obtained within the Zone, the request will be forwarded to the Area Fire Coordinator and are first filled by in-county resources. Mutual aid requests are filled either by close units “Immediate Need” or “Planned Need.” The county is divided in zones and the City of San Diego is the Zone Coordinator for Zone 3.

Immediate Need (Adjacent Area) Strike team units are to be selected and respond directly to the incident Code 3 as if they are a single resource (automatic aid) and not form up or rendezvous. An immediate need type I strike team request to an adjacent jurisdiction of Zone 3 may receive the closest engines and strike team leader. Type I or Type III strike team request for non-adjacent jurisdictions will receive resources based on locality, availability and impact on the ability to maintain service delivery in the cities of San Diego and Poway. Adjacent area is defined as a response into an area with the immediate threat to Zone 3 and/or the following jurisdictions: Bonita, Chula Vista, Coronado, El Cajon, Escondido, Imperial Beach, Lakeside (west side threatening Miramar, Poway or San Diego), La Mesa, Lemon Grove, National City, Ramona (west side threatening Poway or San Diego), Rancho Santa Fe, San Miguel, Santee.

Immediate Need (Non-Adjacent Areas & Out-of-County) Immediate need strike teams assigned to responses in areas within the county, but not adjacent or contiguous to Zone 3 or to an out-of-county response will be filled from the Planned Need Strike Team list. Assigned units going out of the county are to rendezvous and meet up with the strike team leader and other units. Units responding to immediate need strike teams to a non-adjacent jurisdiction in the County of San Diego shall respond directly to the incident and shall not rendezvous.

Planned Need Strike Teams are requested for a projected future operational period. Assigned units are to rendezvous and meet up with the strike team leader and other units. Planned need strike teams do not normally move or respond Code 3. Battalion Chiefs will be selected as planned need strike team leaders from a list of personnel willing to respond on planned need strike teams or from the Strike Team List by day of the week if there are no willing participants. This list is maintained by Battalion 5 and kept at FCC. Strike team leaders on planned need responses may utilize the suburban that is set-up for planned need responses.

DEPLOYMENT

Factors such as fire activity, local weather, availability of reserve apparatus and personnel availability (Telestaff Pick List) must be evaluated before filling any mutual aid request from the Area Fire Coordinator, CDF or USFS.

STRIKE TEAMS

Strike Team requests are made through the Area Fire Coordinator at CDF=s Monte Vista Dispatch Center. The San Diego County Fire Chief=s Association has agreed on the definitions of Immediate Need and Planned Need listed above. San Diego Fire-Rescue policy is to treat Immediate Need Strike Team requests based on the definitions above. All requests from outside the San Diego Operational Area will be treated as Planned Need.

Response:

Strike Teams will respond directly to the incident independently or rendezvous, travel and report into staging as a unit for an assignment, depending upon the request need.

Authorization:

Fire Communications is authorized to send one Type I and one Type III Strike Team from Zone 3 without pre-approval by the Operations Deputy Chief (Duty Chief¹), provided there are at least three ready reserve apparatus² available to backfill the Engine Companies for City needs. One Poway unit can be automatically assigned to a strike team, either immediate or planned. The Poway Duty Chief shall be notified before and must authorize the use of additional Poway resources being considered for strike team assignment. Miramar will commit one Type I or III engine for a strike team and may commit a second engine (Type I or III) for fire within the City of San Diego. Federal Fire Department may commit two engines, either Type I and/or Type III for strike team assignment and will consider a third engine for local responses.

Whenever a Strike Team is sent out-of-zone, FCC will immediately notify the Operations Deputy Chief. The Operations Deputy Chief will either notify the Operations Assistant Chief or request the FCC to make the notification. The Poway Duty Chief shall be notified for any use of Poway units assigned to strike teams, task force or single resource request.

Any additional out-of-zone strike teams will require approval by the Operations Deputy Chief. The Operations Deputy Chief will confer with the Operations Assistant Chief (if available) before a third Strike Team is sent Out-of-Zone. The information to be considered by the Operations Deputy and Assistant Chiefs includes the:

- § Magnitude of the fire (acres/fire conditions - wind, speed of fire, type of fuel)
- § Hazards to structures (threatened/burning)
- § Number and Type of strike teams already dispatched
- § Number of Fire Stations uncovered

¹ The Duty Chief has the duty from 1600-0700 (Monday-Friday) and/or 0700-0700 (Saturday, Sunday or holiday) per the Duty Watch Schedule.

² The need to maintain three ready reserves applies only to out-of-county strike team deployments.

- § Number of Type III engines available
- § Number of non-staffed, ready reserve and stripped reserve. Type I Engines available
- § Personnel available for backfill
- § Status of resource availability in the Operational Area and Region
- § Ability to provide fire and medical service within the City limits.

FCC should be prepared to provide the Operations Deputy Chief the information listed above when discussing allocation of department resources such as requesting approval for additional Strike Teams or updating fire situation status.

Composition:

Zone 3 strike teams will generally be mixed agency strike teams but may be completely made up of San Diego units depending on the circumstances described above under Authorization. The first Type I and Type III strike teams being sent out of Zone 3 will normally be a mix of Zone 3 units (normally, 2 San Diego Engines, 1 Poway Engine, 1 Miramar Engine and 1 Federal Engine with a San Diego Battalion Chief or a Poway Division Chief as the Strike Team Leader and an aide designated as the AStrike Team Leader Trainee.” Strike team unit selections should be from the strike team selection guide (Attachments):

- § Utilize the OES apparatus as part of an in-county Type I strike team
- § Open crew cab apparatus are not to be deployed on planned need or out-of-county strike teams.

When San Diego City and/or Zone 3 do not have enough engines to fill a full strike team, the available companies can be offered to the Area Fire Coordinator to make-up a mixed zone strike team. There is no requirement for any jurisdiction to unreasonably deplete its own resources in furnishing mutual aid.”

The dispatch of two similar type strike teams (I or III) will affect SDFD. The goal is to maintain at least five (5) brush apparatus in the City so that a Type III strike team will be available for responses within the City. At least three Type I reserve apparatus should be available to support backfill in stations before a Type I strike team is assigned out-of-county.

Strike Team Leader Vehicles:

Strike team leaders will utilize a front line Suburban for in-county immediate need responses. Strike team leaders on planned need and out-of-county responses may utilize a Suburban that is set up for planned need responses.

Personnel List:

The strike team leader is responsible to maintain a list of personnel assigned to the strike team and to communicate this list to FCC as soon as reasonably possible and if there are changes. He/she is also responsible to make sure all personnel are properly logged on the MDT/MDC (if so equipped) prior to leaving San Diego.

Duration:

In-county strike team deployments may be up to 7 days, while out-of-county deployments

may be up to 14 days. Durations may be extended with approval of the Operations Assistant Chief. The 14 days begin at the time and date the strike team checks in at the incident and does not include travel to and from the incident.

SINGLE RESOURCES

A total of thirty (30) overhead or single resource personnel are allowed to respond outside of the City at any given time. Approval will be dependent on availability of personnel and activity in the City. Once approved and the assignment is accepted by the employee, FCC will notify the Area Fire Coordinator to fill the request.

Response Vehicles:

Department vehicles will not be provided for single resource requests with the exception of straight day employees assigned a vehicle and personnel assigned as agency representatives. Agency representatives may take a fire department vehicle to the incident.

Authorization & Composition:

Up to thirty (30) SDFD personnel may be deployed in addition to strike team resources. Requests for single resources will be made through and documented³ by the FCC. The FCC will contact the Operations Deputy Chief for approval, prior to filling positions or as trainees. Members of a Fire Management Team may be deployed even if it exceeds the approved maximum. Poway, Federal and Miramar are not included in this number. For SDFD, the thirty (30) firefighters will be distributed by the following rates:

(4) Battalion Chiefs (9) Captains (9) Engineers (8) Firefighters (4) Firefighter/Paramedics

A maximum has been established for each rate. Additional requests may be filled with the Operations Assistant Chief=s approval based on personnel availability and fire activity. **Only four FF/PM=s will be allowed to fill Overhead or Management Team positions.**

Fire Management Teams:

SDFD personnel are being selected for fire management teams and are qualifying for positions either as “qualified” in the position or as a “trainee.” FCC has a roster of personnel who have been selected to fill fire management teams and/or are eligible to be requested by CDF or USFS as a single resource. This manual will be maintained and updated by the Single Resource/Overhead Committee or their designee.

Overhead Positions:

There are numerous SDFD personnel who are eligible to be utilized as a single resource

³All requests for resources to respond outside of the city limits or Zone 3 are to be made by the Area Fire Coordinator and will be documented on a MACS 240 form with the mandatory Order Number and Request Numbers.

request for Overhead and Line positions or are dedicated to fire management teams. Many of these same people are qualified to fill multiple positions or are working as trainees to certify for additional positions.

When a request for single resources is received for Interagency Incident Management Teams (IIMT) overhead positions, the following procedures will be followed by FCC:

- § Initiate a MACS 420
- § Obtain from the requesting agency:
 - < Request number
 - < P Number (Tracking Number)
 - < Agency making the request
 - < Person making the request
 - < Person requested (USFS IIMT only)

All personnel paged or otherwise notified, must contact FCC within 30 minutes or FCC will move to the next name on the list or notify the requesting agency that the requested personnel has not responded. Unless a person is a member of a U.S. Forest Service overhead team, all requests for resources will be for the position only. Requests will be filled from a roster of names for each position in rotational order.

Duration:

Team management positions and single resource requests will be out 14 days versus 21 days from previous years. SDFD personnel may be extended another 7-14 days with department approval by the Operations Assistant or Deputy Chief. The 14 days begin at the time and date the employee checks in at the incident and does not include travel to or from the incident.

Agency Representatives:

San Diego Division or Battalion Chiefs may be assigned to incidents as an Agency Representative for either Zone 3 or the Operational Area (County). The Operations Deputy Chief must authorize the deployment of an Agency Representative with the following considerations:

- § If two or more strike teams with all San Diego City units are dispatched, a San Diego City Division or Battalion Chief may be sent (The Division Chiefs or the Duty Chief during non-work hours will be contacted by FCC to assist with coordinating the selection of the agency representative).
- § If two or more strike teams are mixed with Zone 3 units, a Zone 3 Chief Officer may be sent.
- § If two or more strike teams from different Zones within the County are sent, the Area Fire Coordinator may request a Chief Officer from one of the Zones within the County based on the published rotational schedule.
- § A separate order number will be requested prior to approving an agency representative trainee.
- § Agency Representatives may take a “trainee.”

§ Agency Representatives may take a fire department vehicle to the incident.

NOTIFICATION OF FAMILIES/SIGNIFICANT OTHERS

If strike teams or/on-duty single resources will be gone out of the city for more than eight (8) hours, families and/or significant others shall be notified of a person=s assignment and situation.

Procedure:

1. Fire Communications shall notify the Operations Deputy Chief of the estimated length of time the personnel will be gone.
2. Fire Communications shall notify the Battalion Chief in whose area the personnel are assigned. The Battalion Chief shall ensure the families or significant others of the personnel.
3. If the Department has units out of the City on strike teams, FCC at the direction of the Operations Deputy Chief shall contact an on-duty Battalion Chief to make notifications of families. If an on-duty Battalion Chief is assigned as a single resource, their family or significant other shall be notified by another on-duty Battalion Chief as directed by the Operations Deputy Chief.

BACKFILL

DETERMINATION

Inquiries to the Area Fire Coordinator should be kept to a minimum as their incident activities are high. If possible, the responding strike team leader should make every attempt possible to contact San Diego=s FCC with their best estimate of the strike team=s commitment to the incident. Prior to contacting the Area fire Coordinator the FCC should make a reasonable attempt to contact the strike team leader.

After attempting to contact the responding or at scene strike team leader, FCC is to request a strike team=s or individual unit=s estimated release time through the Area Fire Coordinator after two hours have elapsed from the initial dispatch and advise the Operations Deputy Chief of the estimated release time. If the fire occurs during “red flag days,” and/or when air resources are not available (such as when fire season is closed and/or wildland resources are limited) consider backfilling stations immediately. Backfilling is a slow, time consuming process (requires at least two hours from initiation). Once the Operation Deputy determines the need to backfill, they will notify Battalion 1 of the need and the prioritized sequence of units to be back filled. Battalion 1 will advise the on-duty staffing captain of the directive and proceed to the Staffing Desk to oversee the backfill process.

Strike Teams: If a strike team will be out for greater than 8 hours or for the remainder of the shift, the Operations Deputy Chief will inform FCC and the Staffing Desk which units are to be backfilled and in what priority order.

Battalion Chiefs & Agency Representatives: Battalion Chiefs can be immediately backfilled with Staff Battalion Chiefs, depending on the need for coverage in the City. If the responding Battalion Chief will be gone for the remainder of the shift and/or more than 8 hours, the Staffing Desk will select a Battalion Chief.

Single Resources: Single resources will be backfilled per the Transfer Policy Manual (i.e. if expected to be out for more than 8 hours).

CONSIDERATIONS

Vacancies due to planned need strike teams, agency representative and single resources should be filled immediately. During “Red Flag Warning” periods, vacancies should receive high considerations to be back-filled. Type I Strike Teams require recalling personnel and locating an apparatus. The Repair Facility will attempt to maintain three ready reserve apparatus for backfilling of strike team units in fire stations.

If the staffing procedures and mandatory callback does not provide sufficient staffing to backfill for a strike team, the Operations Deputy Chief will confer with Battalion Chiefs to close engines or trucks provided ALS services are maintained. Staffing may not be replaced until the on-coming shift reports.

Type III Strike Teams are easiest to backfill because recall personnel can be assigned to the station to staff the Type I apparatus remaining in the station.

The Operations Deputy Chief should determine through FCC⁴ what ready and stripped reserve or non-staffed apparatus are available for backfill; how many stations are vacant; or in the case of a Type III Team, how many brush rigs remain available in the City. Ready reserve engines do not have advanced life support (ALS) equipment. FCC should notify Duty Medical Support staff to assemble ALS equipment and distribute the equipment to the appropriate locations.

If a Strike Team is deployed during In-Service Training, there should be consideration to cancel IST.

STAFFING OF BRUSH APPARATUS DURING HIGH HAZARD

If weather conditions are predicted to be high hazard, the following guidelines should be considered for the staffing of brush apparatus after ensuring brush apparatus availability:

1. Five Type III brush apparatus should be staffed during consecutive days (2 or more) of

⁴Daily by 1630, the Service Writer will update the ready reserve and reserve apparatus list, including their location, to FCC. Battalion Chiefs and Captains will notify the Service Writer (normal working hours) or FCC (after hours) of apparatus changes.

high wildland conditions (high, dry heat). This staffing should be implemented on the night before the second and continuous days of this weather pattern. It is suggested to staff BR24, BR34, BR37, BR40 and BR43.

2. During “Red Flag Warning” conditions (high, dry heat and wind), all SDFD brush apparatus should be staffed.
3. The normal staffing time periods for both conditions are from 0800 hours until 1800 hours, but these times could be adjusted if necessary.
4. In the event of significant resource depletion in San Diego County and based on adverse fire weather conditions, consideration may be given to 24 hour staffing of Type 3 engines.

RELIEF of PERSONNEL

DETERMINATION

Strike teams, single resources and agency representatives may be deployed for up to 14 days for out-of-county (with 2 travel days on each end) or for 7 days for in-county deployments. The time period may be extended with the approval of the Operations Assistant or Deputy Chief. Strike team leaders shall call FCC at least once every 24-hour period to provide a status of the crews and their work assignments. The following process should be used to provide relief for personnel on strike teams.

CONSIDERATIONS

When the 7 or 14 day time period approaches, consideration should be given to the need for relief of personnel. If the fire is expected to extend five or more days beyond the seven or 14-day period, relief should be made. Relief may not be necessary if the fire does not extend beyond this time period.

Once the decision is made to provide relief, the relief crews should be identified. On-duty personnel will be used to minimize the need and potential delay of overtime personnel. Individual personnel changes will be managed by the responsible on-duty Battalion Chief and communicated to the strike team leader. Strike team leaders and battalion chiefs must ensure that relief personnel have the necessary apparatus certifications prior to leaving the City.

Contact shall be made with the strike team leader and the agency representative (or IC if the strike team leader and agency representative are unavailable) at the fire to coordinate the relief process. Some important points to address include:

It is imperative that staff work closely with the strike team leader(s) and agency representative. The strike team leader or the agency representative should provide the following **two days prior to replacement**:

- § Incident base location and phone number

- § OES Agency Representative phone number
- § Current strike team roster including name, rank, and permanent duty assignment
- § Estimated duration of the strike team deployment
- § The operational period the strike team is working i.e. days, nights or twenty-four 24 hour shifts
- § Time and location for personnel exchange
- § The best travel route to the Incident Base
- § All exchanges shall take place at the Incident Base
- § The relieved strike team leader shall ensure all ICS 214's and OES F-42's are up to date
- § Exact date and time for relief to be determined with all the above information provided
- § Provide list of personnel on relief strike team and personnel being relieved
- § Confirm strike team being relieved will have had appropriate sleep time
- § Confirm that Staffing Desk, FCC, Operations Deputy Chief, Operations Assistant Chief and Fire Chief have all the above information.

Do not start the relief process until all details have been agreed upon by the OES Agency Representative, Operational Area Agency Representative, Strike Team Leader, Duty Deputy Chief and Operations Deputy Chief.

Any changes in the relief process must be approved by the Operations Deputy Chief and/or Operations Assistant Chief.

DEMOBILIZATION

THE DUTY STATUS AND COMPENSATION OF PERSONNEL RETURNING FROM STRIKE TEAM, AGENCY REPRESENTATIVE, OR ICS POSITION ASSIGNMENTS IDENTIFIED BELOW HAS BEEN ESTABLISHED BY LABOR RELATIONS.

Division Duty Day

1. Personnel may elect to stay on duty for the remainder of the shift. If personnel are receiving premium pay, they will continue to receive that pay until normal shift change of the oncoming crew (0800 hours).

If personnel elect to stay on-duty, and they have been gone at least 48 hours, they can take up to 4 hours off to rehabilitate themselves. After this 4-hour period, these personnel must return to work and finish out the remainder of the shift.

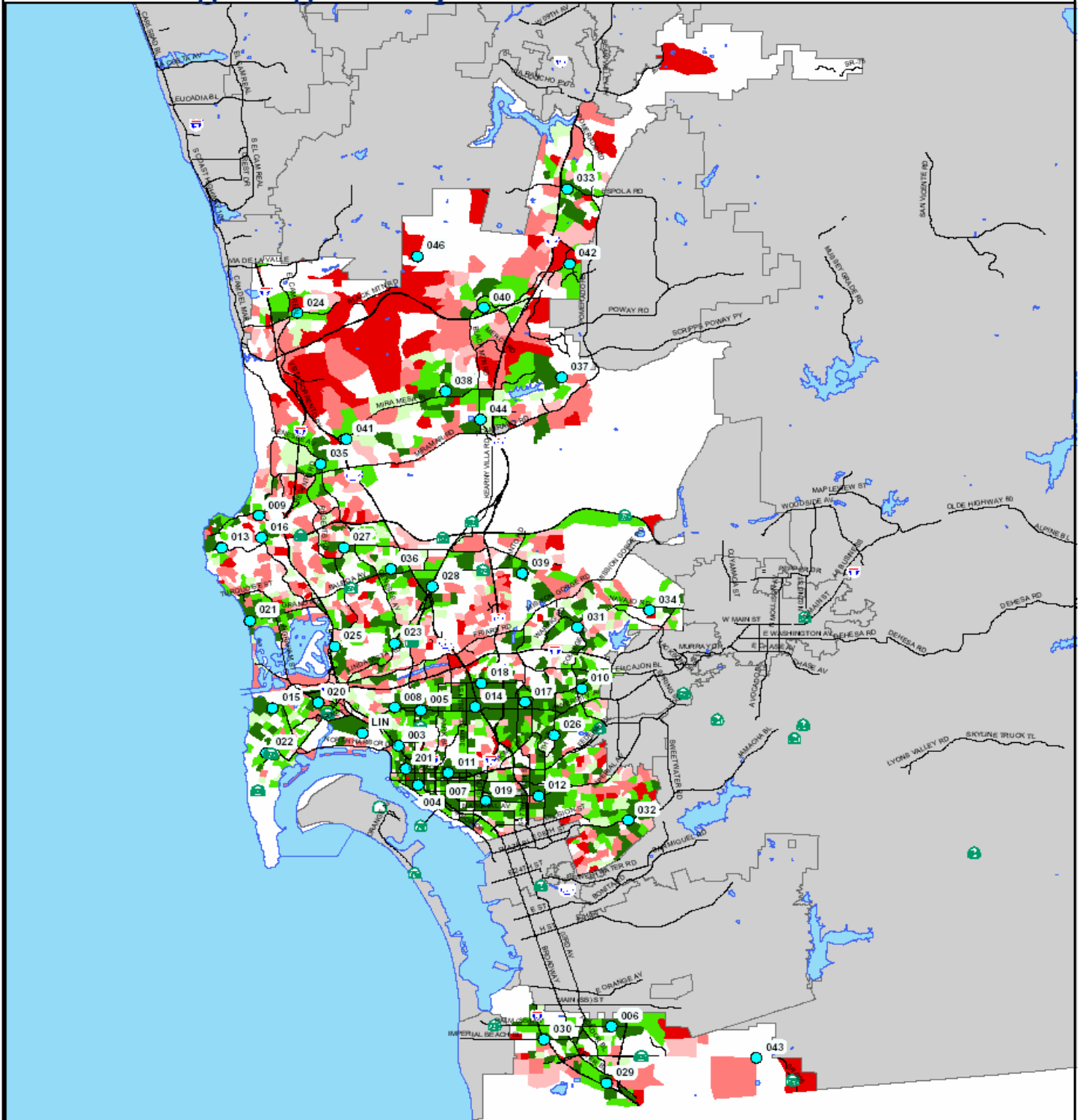
2. Personnel may elect to go off-duty for the remainder of the shift. If personnel are receiving premium pay, they will continue to receive that pay up to the time of the return to the work site (fire station). Personnel will be charged annual leave at straight-time pay for the remainder of the shift.

Division Off-Duty Day

If personnel are receiving premium pay, they will continue receiving that pay until they return to the work site. At that time, they are considered to be off-duty and will not be compensated for the remainder of that shift unless they have a letter from the paying agency incident indicating reimbursement will be made beyond that time period.

Appendix D2

San Diego Fire-Rescue Structure Fire Average Engine Response Time Based on FY03 Data



Legend

- Fire Stations
- Avg Time 1st Eng Page to On Scene**
- Under 4:30
- 4:30 - 5:30
- 5:31 - 6:30
- 6:31 - 8:30
- Over 8:30
- Municipal Boundary

1 inch equals 4.4 miles

Vicinity Map

Created by:
San Diego Fire-Rescue
Communication's Response Planning

SanGIS
San Diego Geographic Information Systems

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Appendix D3 Fractal Response Data

FY 01 RESPONSE TIME (Dispatch to staged or At-scene) for first arriving Engine/Truck

FY 01	0 to 1 Min	1 to 2 Min	2 to 3 Min	3 to 4 Min	4 to 5 Min	5 to 6 Min	6 to 7 Min	7 to 8 Min	8 to 9 Min	9 to 10 Min	10 to 11 Min	11 to 12 Min	12 to 13 Min	13 to 14 Min	14 to 15 Min	15 Min and up
Fire	2.00%	3.32%	8.88%	23.54%	43.02%	62.14%	76.01%	84.95%	90.52%	93.74%	95.78%	97.23%	97.76%	98.50%	98.71%	100.0%
Medical	2.20%	5.05%	15.04%	35.42%	58.07%	75.79%	86.54%	92.51%	95.55%	97.08%	97.95%	98.45%	98.75%	98.98%	99.15%	100.0%
Other	1.93%	3.42%	7.10%	18.75%	35.98%	53.62%	68.45%	79.94%	87.22%	91.44%	94.40%	96.13%	97.18%	97.90%	98.45%	100.0%
Total Calls	2.15%	4.67%	13.38%	32.03%	53.64%	71.47%	83.06%	90.08%	93.94%	95.99%	97.26%	98.02%	98.44%	98.79%	99.01%	100.0%

FY 02 RESPONSE TIME (Dispatch to staged or At-scene) for first arriving Engine/Truck

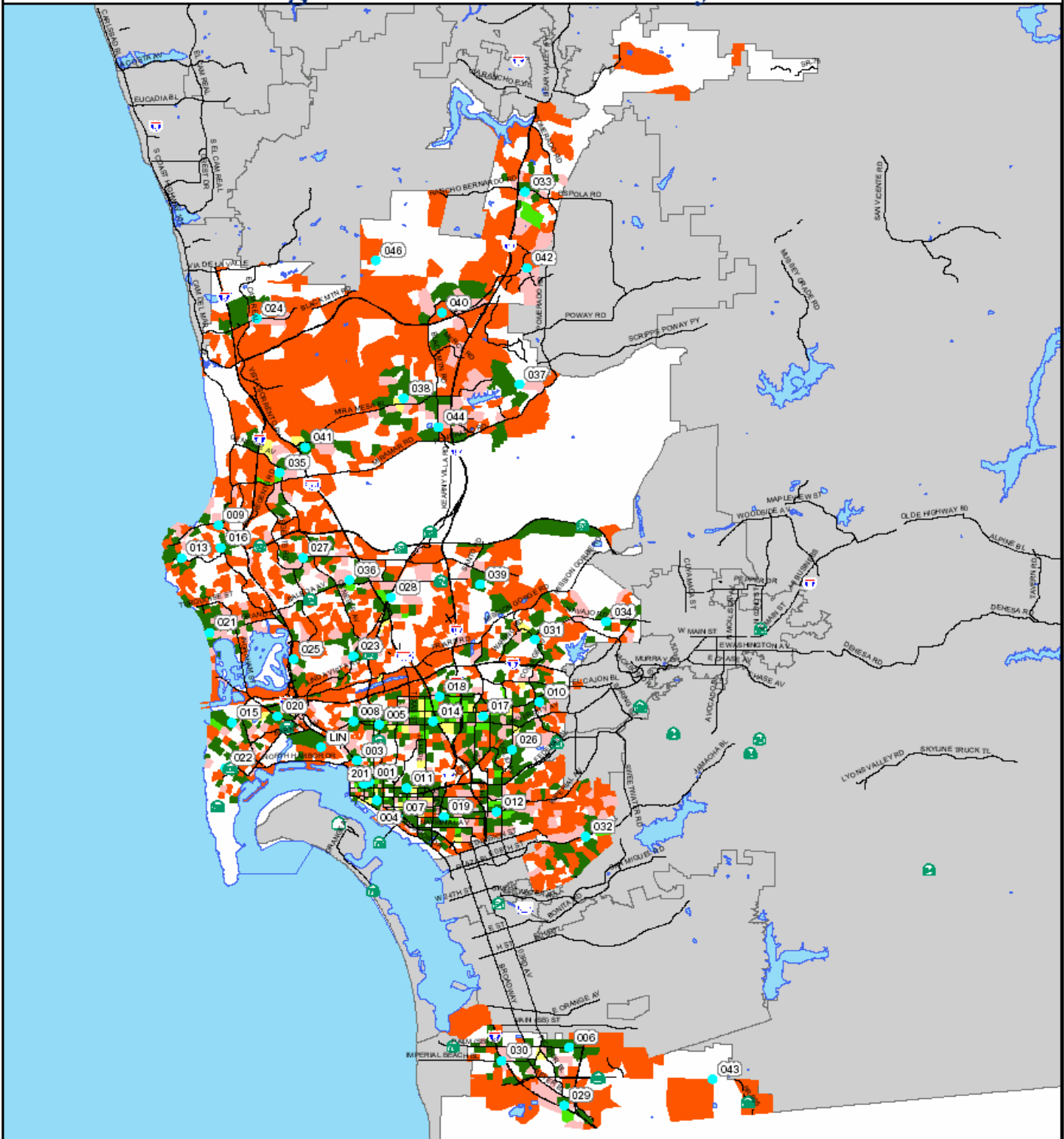
FY 02	0 to 1 Min	1 to 2 Min	2 to 3 Min	3 to 4 Min	4 to 5 Min	5 to 6 Min	6 to 7 Min	7 to 8 Min	8 to 9 Min	9 to 10 Min	10 to 11 Min	11 to 12 Min	12 to 13 Min	13 to 14 Min	14 to 15 Min	15 Min and up
Fire	1.77%	3.25%	9.19%	24.41%	43.92%	62.34%	75.79%	85.11%	90.57%	93.73%	95.42%	96.73%	97.70%	98.03%	98.34%	100.0%
Medical	2.33%	5.11%	14.71%	34.81%	57.55%	75.25%	86.35%	92.40%	95.41%	96.90%	97.72%	98.28%	98.63%	98.87%	99.10%	100.0%
Other	1.85%	3.20%	6.98%	18.05%	36.11%	54.52%	69.60%	80.72%	87.61%	91.68%	94.31%	96.22%	97.43%	98.13%	98.59%	100.0%
Total Calls	2.22%	4.69%	13.16%	31.58%	53.39%	71.25%	83.11%	90.14%	93.90%	95.90%	97.05%	97.86%	98.38%	98.70%	98.96%	100.0%

Appendix D3 Fractal Response Data

FY 03 RESPONSE TIME (Dispatch to staged or At-scene) for first arriving Engine/Truck

FY 03	0 to 1 Min	1 to 2 Min	2 to 3 Min	3 to 4 Min	4 to 5 Min	5 to 6 Min	6 to 7 Min	7 to 8 Min	8 to 9 Min	9 to 10 Min	10 to 11 Min	11 to 12 Min	12 to 13 Min	13 to 14 Min	14 to 15 Min	15 Min and up
Fire	1.28%	2.98%	10.37%	25.85%	46.13%	64.38%	77.29%	85.12%	90.03%	93.23%	95.26%	96.61%	97.37%	98.03%	98.26%	100.0%
Medical	1.74%	4.54%	15.51%	36.46%	59.17%	76.43%	86.89%	92.62%	95.56%	96.96%	97.78%	98.28%	98.61%	98.89%	99.10%	100.0%
Other	1.47%	2.69%	7.47%	19.89%	38.29%	56.99%	71.56%	81.79%	88.21%	92.20%	94.60%	96.25%	97.20%	97.98%	98.48%	100.0%
Total Calls	1.67%	4.17%	14.05%	33.43%	55.38%	72.91%	84.11%	90.60%	94.15%	96.04%	97.16%	97.88%	98.33%	98.70%	98.95%	100.0%

San Diego Fire-Rescue Structure Fire Response Cover 5 Min Engine based on CAD Analyst FY03 Data



Legend

- Precipitation
- 1st Engine Page to On Scene
- ENGIN.PC**
- Over 90%
- 80% To 90%
- 70% To 80%
- 50% To 70%
- Under 50%
- Not Analyzed

1 inch equals 4.5 miles

Vicinity Map

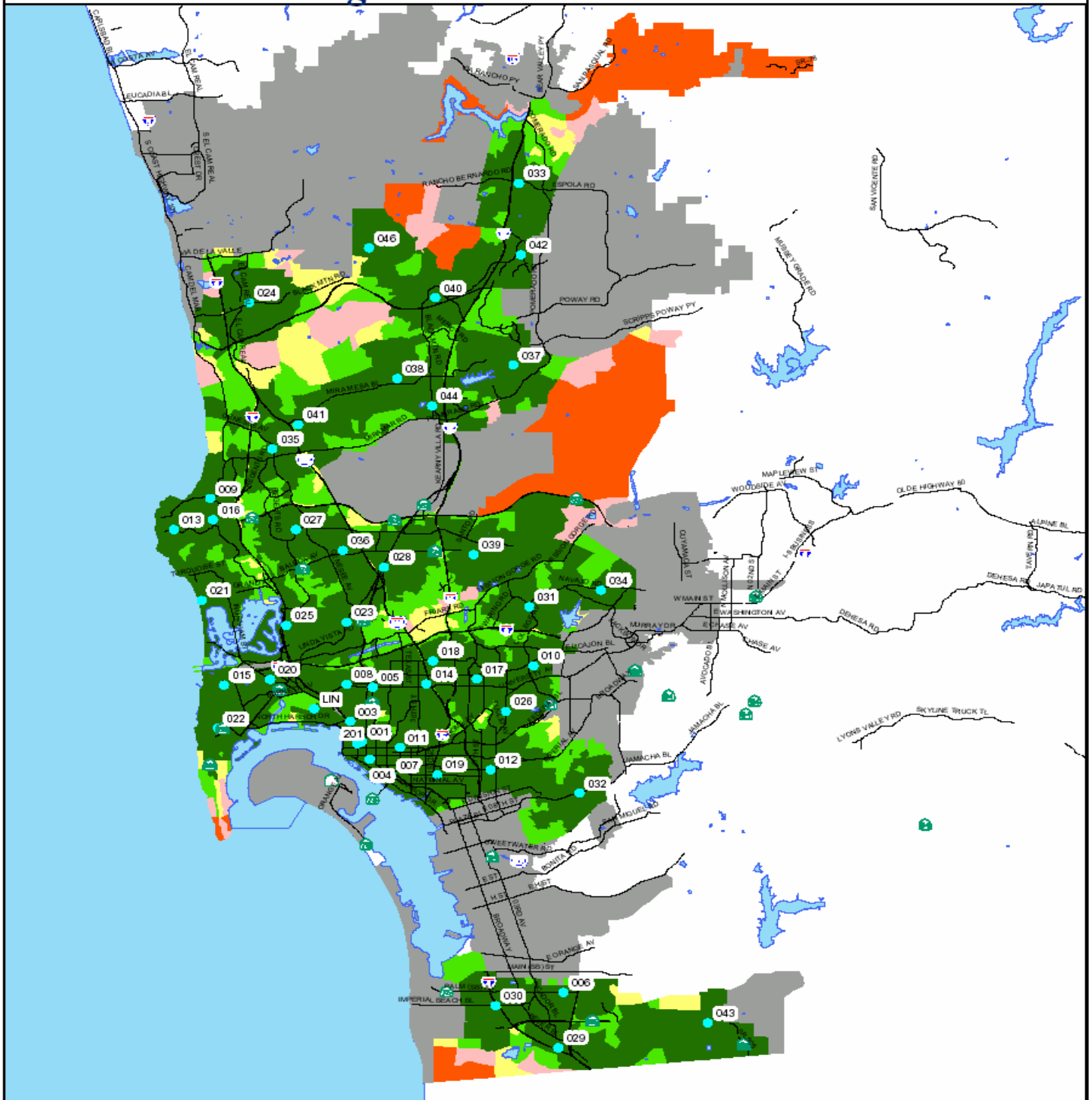
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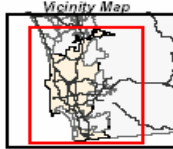
Appendix D5

San Diego Fire-Rescue Medical Priority Response Cover 8 Min Engine Based on ADAM FY03 Data



Legend
● Fire Stations
CP: 8MIN/8
CP: 8MIN/8
■ Over 90%
■ 80% To 90%
■ 70% To 80%
■ 50% To 70%
■ Under 50%
■ Not Analyzed

1 inch equals 4.6 miles




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 1st Date: 8/20/04
 2nd Date: 8/20/04 ADAM Doc# 0031-0034/04/04

Appendix D6

City of San Diego

Emergency Medical Services Compliance Report

Period: September, 2002

8-Minute Compliance (First Responders - Engine)

Citywide Standard: 90%

Area	8-min.	Citywide
Total volume	4,461	
Compliance	92.6%	

12-Minute Compliance (Code Response - ALS Ambulance)

Citywide Standard: 90% Zone Standard: 90%

Area	12-min. Citywide	Medical Contact Zone			
		1	2	3	4
Total volume	5,013	447	1,455	1,484	1,627
*NATS	20	3	7	0	10
Adjusted Volume	4,993	444	1,448	1,484	1,617
Gross exceptions	424	43	115	115	150
Exempted	176	18	46	48	64
Adjusted exceptions	248	25	69	67	86
Compliance	95.0%	94.4%	95.2%	95.5%	94.7%

Appendix D6

15-Minute Compliance (No-Code Response - ALS Ambulance)

Citywide Standard: 90% Zone Standard: 90%

Area	15-min. Citywide	Medical Contract Zones			
		1	2	3	4
Total Volume	919	71	304	284	260
*NATS	4	0	1	0	3
Adjusted volume	915	71	303	284	257
Gross exceptions	117	4	37	38	38
Exempted	26	1	8	9	8
Adjusted exceptions	91	3	29	29	30
Compliance	90.1%	95.8%	90.4%	89.8%	88.3%

25-Minute Level 4 Non-Emergency Calls Compliance (No-Code Response - BLS Ambulance)

Citywide Standard: 90% Zone Standard: 90%

Area	25-min. Citywide	Medical Contract Zones			
		1	2	3	4
Total Volume	154	4	51	60	39
*NATS	2	0	0	0	2
Adjusted volume	152	4	51	60	37
Gross exceptions	12	1	4	3	4
Exempted	2	0	0	0	2
Adjusted exceptions	10	1	4	3	2
Compliance	93.4%	75.0%	92.2%	95.0%	94.6%

Zone 1 had 4 calls this month

A total of 318 Level 4 Dispatches occurred for month of September 2002

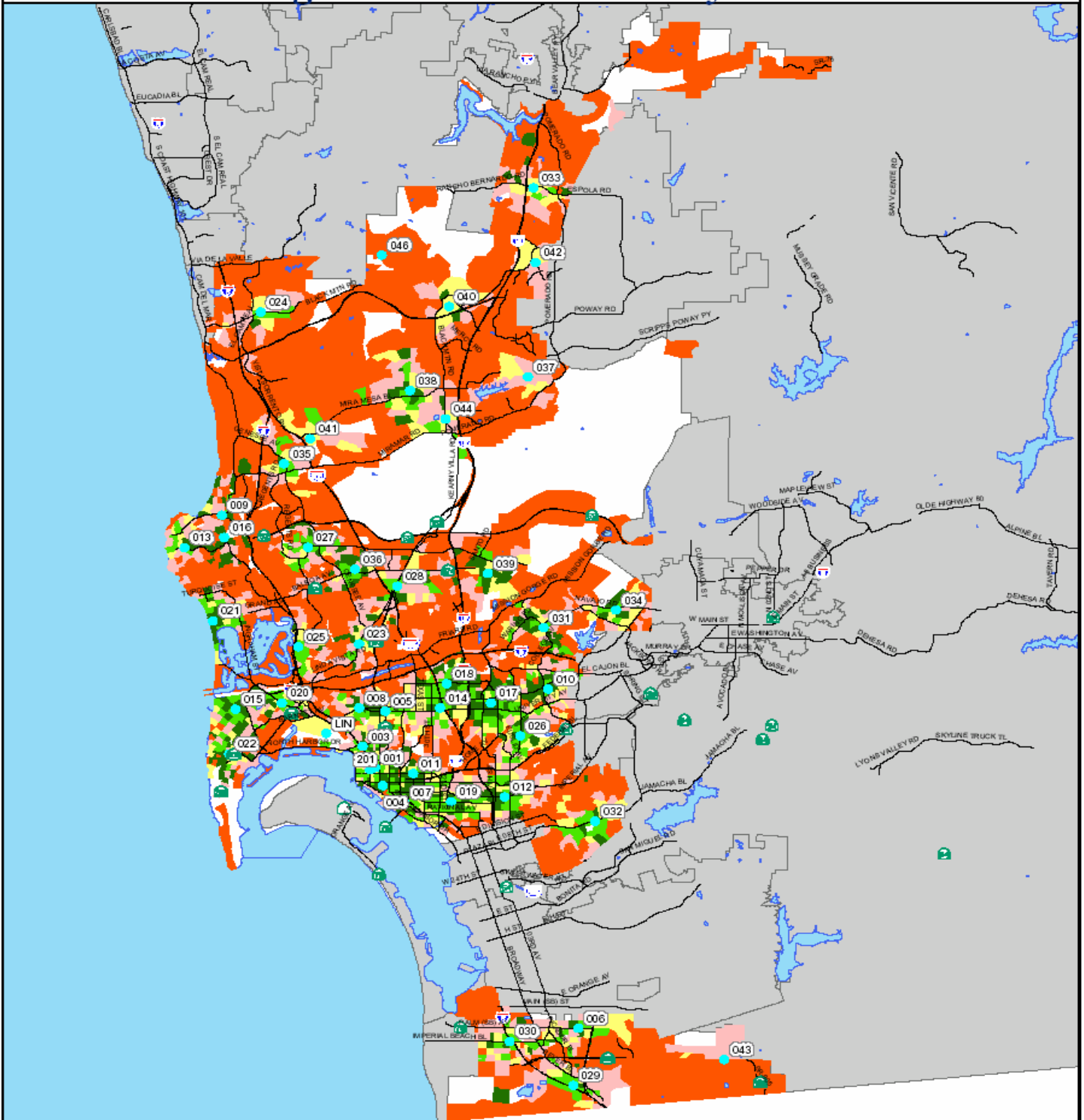
154 calls were responded to by BLS ambulance crews, representing 48.4%%
 164 calls were responded to by ALS ambulance crews, representing 51.6%

* No at scene time recorded

Appendix D6
CITY OF SAN DIEGO
FIRST PARAMEDIC AT SCENE
AUGUST 2002

COMMUNITY	NUMBER OF RUNS	8.0 MINUTES OR LESS	8.01 TO 9.0 MINUTES	9.01 TO 10.0 MINUTES	10.1 TO 11.0 MINUTES	11.1 TO 12.0 MINUTES
Barrio Logan/South San Diego						
Carmel Valley/Sorrento Hills						
Centre City/Balboa Park						
City Heights/Kensington						
Clairemont Mesa						
College/Eastern Area						
Golden Hills						
La Jolla						
Linda Vista						
Midway/Old San Diego						
Mira Mesa						
Mission Valley						
Navajo						
North Park						
Pacific Beach/Mission Beach						
Penasquitos East						
Peninsula/Ocean Beach						
Rancho Bernardo						
Sabre Springs						
Scripps Ranch/Miramar Ranch						
Serra Mesa/Kearny Mesa						
Skyline/Paradise Hills						
South Bay						
Tierrasanta						
University						

San Diego Fire-Rescue Medical Priority Response Cover 5 Min Engine based on CAD Analyst FY03 Data



Legend

- FireStation
- 1st Engine Page to On Scene
- Over 90%
- 80% To 90%
- 70% To 80%
- 60% To 70%
- Under 50%
- Not Analyzed

1 inch equals 4.5 miles



Vicinity Map

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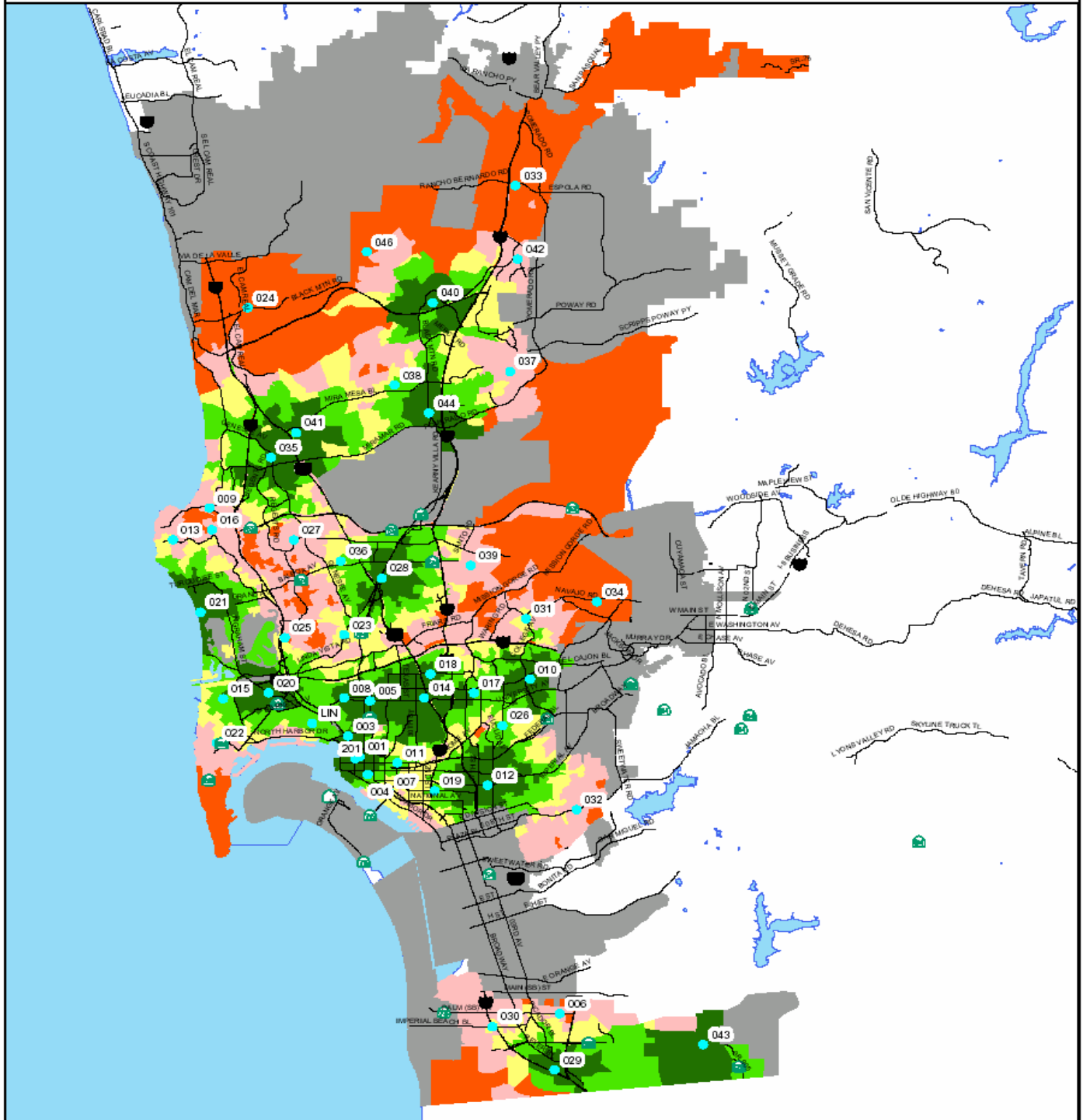



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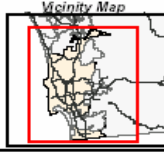
Appendix D8

San Diego Fire-Rescue Structure Fire Response Cover 9 Min Truck Based on ADAM FY03 Data



Legend
 ● Fire Stations
 1st-Truck Page to On Scene
TRUCKMIN
 Over 90%
 80% To 90%
 70% To 80%
 50% To 70%
 Under 50%
 Not Analyzed

1 inch equals 4.6 miles



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Appendix D9 Effective Response Times Based on Call Type

Appendix C3 Effective Response Force on All FY 03 Fires where First Alarm Assignment or Greater Went Staged or At Scene				
Problem	Minute Group (9 = 9 Min or less)	Count	Cumulative Count	Cumulative Percent
Boat Fire 1st Alm	8	2	2	50.00%
Boat Fire 1st Alm	9	1	3	75.00%
Boat Fire 1st Alm	11	1	4	100.00%
		4		
Canyon Area	11	1	1	12.50%
Canyon Area	13	2	3	37.50%
Canyon Area	14	1	4	50.00%
Canyon Area	15	1	5	62.50%
Canyon Area	16	1	6	75.00%
Canyon Area	17	1	7	87.50%
Canyon Area	18	1	8	100.00%
		8		
Canyon Rim (Top)	13	1	1	50.00%
Canyon Rim (Top)	22	1	2	100.00%
		2		
Grass Fire 1st Alarm	12	1	1	25.00%
Grass Fire 1st Alarm	13	2	3	75.00%
Grass Fire 1st Alarm	25	1	4	100.00%
		4		
Structure Fire - Comm / Apt	4	5	5	1.47%
Structure Fire - Comm / Apt	5	20	25	7.33%
Structure Fire - Comm / Apt	6	42	67	19.65%
Structure Fire - Comm / Apt	7	60	127	37.24%
Structure Fire - Comm / Apt	8	50	177	51.91%
Structure Fire - Comm / Apt	9	63	240	70.38%
Structure Fire - Comm / Apt	10	36	276	80.94%
Structure Fire - Comm / Apt	11	32	308	90.32%
Structure Fire - Comm / Apt	12	15	323	94.72%
Structure Fire - Comm / Apt	13	4	327	95.89%
Structure Fire - Comm / Apt	14	4	331	97.07%
Structure Fire - Comm / Apt	15	3	334	97.95%
Structure Fire - Comm / Apt	16	2	336	98.53%
Structure Fire - Comm / Apt	17	1	337	98.83%
Structure Fire - Comm / Apt	18	1	338	99.12%
Structure Fire - Comm / Apt	21	1	339	99.41%
Structure Fire - Comm / Apt	23	1	340	99.71%
Structure Fire - Comm / Apt	24	1	341	100.00%
		341		
Structure Highrise/Hospital	5	5	5	18.52%
Structure Highrise/Hospital	6	7	12	44.44%
Structure Highrise/Hospital	8	1	13	48.15%
Structure Highrise/Hospital	9	5	18	66.67%
Structure Highrise/Hospital	10	3	21	77.78%
Structure Highrise/Hospital	11	2	23	85.19%
Structure Highrise/Hospital	12	3	26	96.30%
Structure Highrise/Hospital	13	1	27	100.00%
		27		

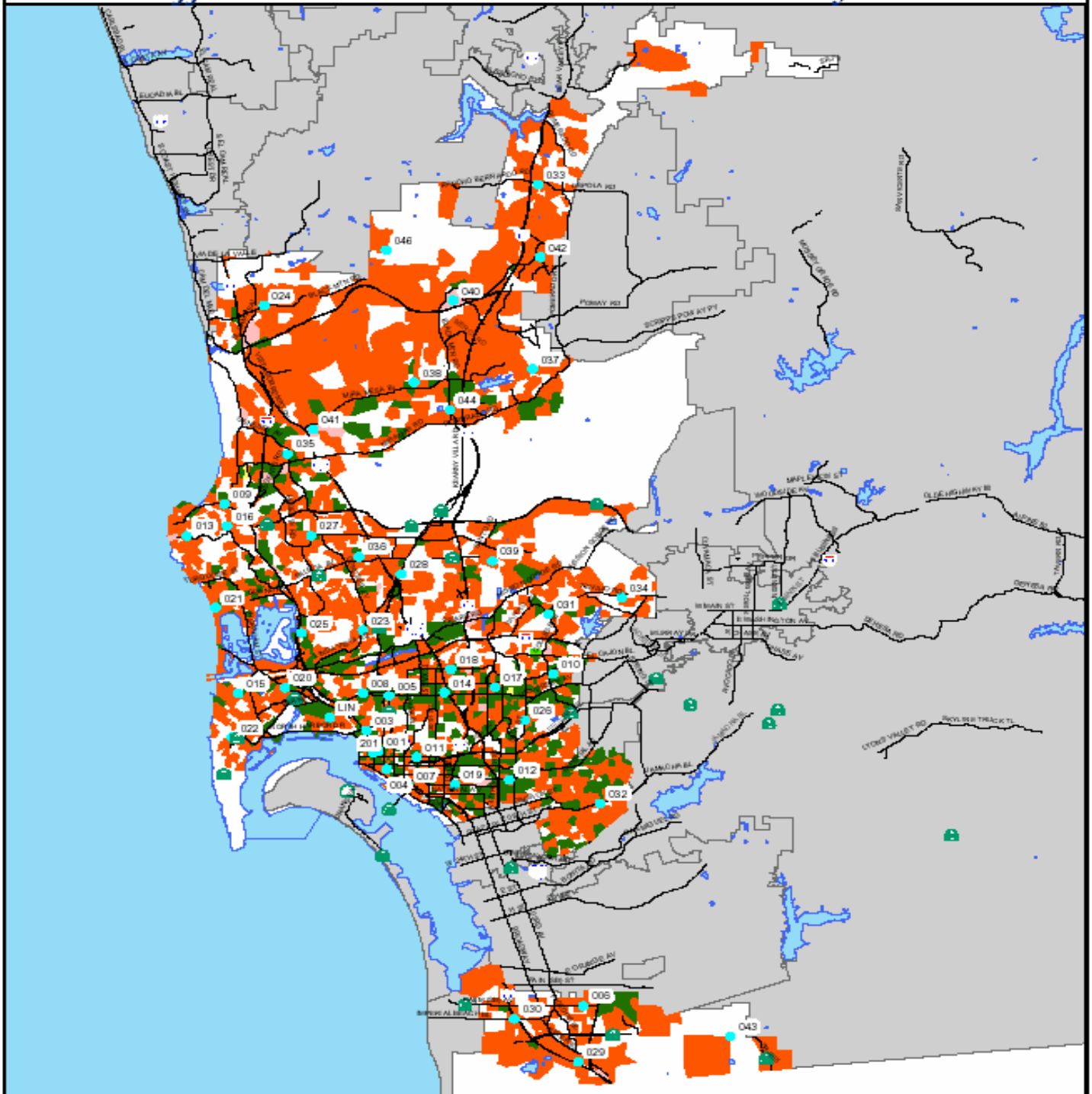
Appendix D9

Effective Response Times Based on Call Type

Appendix C3 Effective Response Force on All FY 03 Fires where First Alarm Assignment or Greater Went Staged or At Scene				
Problem	Minute Group (9 = 9 Min or less)	Count	Cumulative Count	Cumulative Percent
Structure Residential	5	8	8	4.73%
Structure Residential	6	14	22	13.02%
Structure Residential	7	27	49	28.99%
Structure Residential	8	22	71	42.01%
Structure Residential	9	25	96	56.80%
Structure Residential	10	14	110	65.09%
Structure Residential	11	23	133	78.70%
Structure Residential	12	9	142	84.02%
Structure Residential	13	10	152	89.94%
Structure Residential	14	5	157	92.90%
Structure Residential	15	2	159	94.08%
Structure Residential	16	3	162	95.86%
Structure Residential	17	1	163	96.45%
Structure Residential	18	1	164	97.04%
Structure Residential	19	2	166	98.22%
Structure Residential	22	1	167	98.82%
Structure Residential	23	1	168	99.41%
Structure Residential	24	1	169	100.00%
		169		
Vehicle Fire 1st Alarm	5	1	1	25.00%
Vehicle Fire 1st Alarm	7	1	2	50.00%
Vehicle Fire 1st Alarm	8	1	3	75.00%
Vehicle Fire 1st Alarm	11	1	4	100.00%
		4		

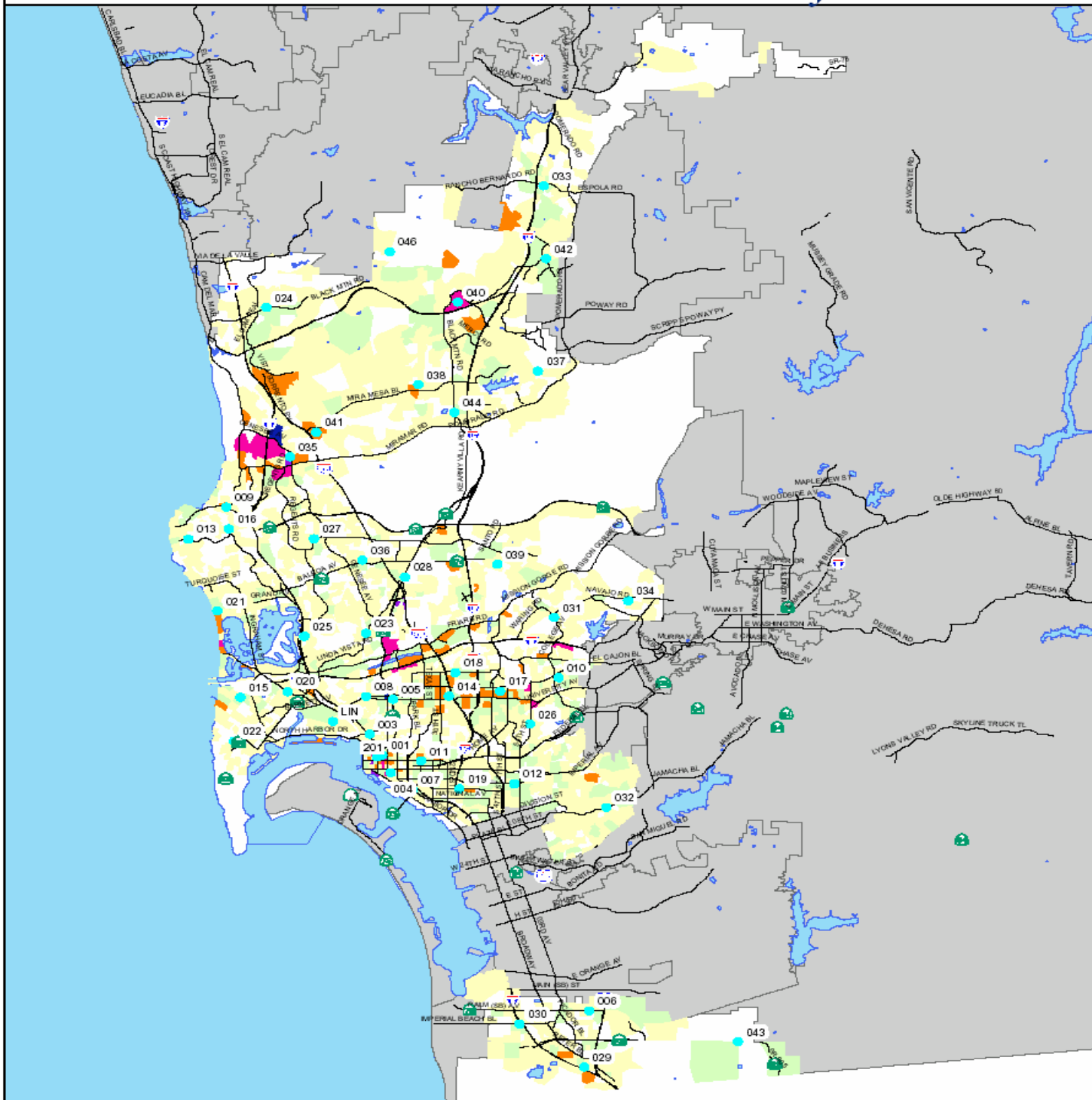
Appendix D10

San Diego Fire-Rescue Structure Fire Response Cover 12 Min Effective Fire Force based on CAD Analyst FY03 Data



<p>Legend</p> <ul style="list-style-type: none"> ● residential 12 Min Effective Fire Force 0-1000 1001-2000 2001-3000 3001-4000 4001-5000 5001-6000 unlabeled 	<p>1 inch equals 4.5 miles</p> 	<p>Vicinity Map</p> 	 <p>Created by: San Diego Fire-Rescue Communication's Response Planning</p>		<p><small>THIS REPORT PRODUCED BY THE UNIVERSITY OF SAN DIEGO, IS PART OF THE RESPONSE OR ANALYSIS INCLUDING BUT NOT LIMITED TO: RESPONSE ANALYSIS, OPERATIONAL MANAGEMENT, AND PREVENTION FOR A PARTICULAR PURPOSE. Copyright SanGIS. All Rights Reserved.</small></p> <p><small>This product only for the use of members from the SDFRS. Request Member's Status which City of San Diego will be reproduced without the prior permission of SDFRS.</small></p> <p><small>This product only for the use of members which fire response unit with permission of SanGIS. Thanks Barbara Wiley.</small></p> <p><small>File Date: 03/20 A:\GIS_5\Map\LEGEND\LEGEND.PDF\103032003.mxd</small></p>
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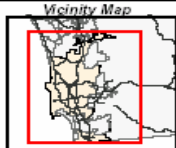
San Diego Fire-Rescue Structure Fire Incidents based on CAD Analyst FY03 Data



Legend

- Fire Stations
- Structure Fire Incidents**
- 1 - 3
- 4 - 7
- 8 - 13
- 14 - 23
- 24 - 36
- 37 - 67

1 inch equals 4.5 miles




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Appendix D12
FY 03 Unit unavailability By Station

Dist	Home Unit	Non-Home Unit	Total	Percent Non-Home Unit
01	1,410	729	2,139	34.08%
03	1037	339	1,376	24.64%
04	1812	441	2,253	19.57%
05	1946	672	2,618	25.67%
06	805	140	945	14.81%
07	1178	339	1,517	22.35%
08	766	229	995	23.02%
09	611	126	737	17.10%
10	1542	224	1,766	12.68%
11	1375	373	1,748	21.34%
12	2606	430	3,036	14.16%
13	781	123	904	13.61%
14	1779	311	2,090	14.88%
15	979	125	1,104	11.32%
16	352	76	428	17.76%
17	3021	935	3,956	23.63%
18	1657	623	2,280	27.32%
19	1987	574	2,561	22.41%
20	1526	302	1,828	16.52%
21	1949	133	2,082	6.39%
22	839	109	948	11.50%
23	1373	313	1,686	18.56%
24	1196	246	1,442	17.06%
25	1099	245	1,344	18.23%
26	1185	272	1,457	18.67%
27	1194	261	1,455	17.94%
28	1908	593	2,501	23.71%
29	2095	194	2,289	8.48%
30	1450	254	1,704	14.91%
31	1034	321	1,355	23.69%
32	2236	274	2,510	10.92%
33	1639	365	2,004	18.21%
34	895	140	1,035	13.53%
35	1928	354	2,282	15.51%
36	1103	173	1,276	13.56%
37	445	105	550	19.09%
38	1093	183	1,276	14.34%
39	793	90	883	10.19%
40	980	152	1,132	13.43%
41	549	191	740	25.81%
42	868	165	1,033	15.97%
43	312	51	363	14.05%
44	914	204	1,118	18.25%
201	1199	465	1,664	27.94%

Appendix D13

