MENLO PARK FIRE PROTECTION DISTRICT

STAFF REPORT

MEETING DATE: **March 5, 2019**
TO: **Joint Meeting of the City of Menlo Park and the Menlo Park Fire Protection District**
PREPARED BY: **Harold Schapelhouman, Fire Chief**

ITEM: EMERGENCY RESPONSE STANDARDS, TIMES, METHODOLOGIES AND PRIMARY EMERGENCY ROUTES FOR THE MENLO PARK FIRE PROTECTION DISTRICT

BACKGROUND – THE FIRE DISTRICT:

The Menlo Park Fire Protection District was formed in 1916 and provides essential fire and emergency services to the communities within the District's boundaries and customers, which include the Town of Atherton, Cities of East Palo Alto and Menlo Park, Unincorporated Areas of San Mateo County and in contract to the SLAC National Accelerator and Laboratories, operated by the Department of Energy (DOE).

The entire Fire District covers 28.98 Square miles in areas that include:

- 4 square miles of marshland
- 8 square miles of Bay sea
- 16.6 square miles of land
- 0.92 square miles of contract land area leased by DOE from the Stanford Lands

The City of Menlo Park encompasses 18 square miles of land, marsh and sea

- ***8 square miles of sea***
- ***6 Square miles of land***
- ***4 Square miles of marsh***

According to the archives of former Menlo Park City Manager John Johnson, who served from 1952 to 1964, the 1950's were a special time of growth for the City. After Belle Haven was annexed to the City in 1948, word came to the City of Menlo Park that Redwood City, with its growing port, was going to annex and take all of the Bay frontage up to the Dumbarton Bridge. So the City made plans and coordinated with Ideal Cement and Leslie Salt people behind the scenes and eventually annexing all of the frontage marsh and sea area to the exact middle of the San Francisco Bay.

That's why there is a Menlo Park City limit sign mid-span on the Dumbarton Bridge and the end of Cooley Landing in East Palo Alto is actually in Menlo Park.

The Town of Atherton encompasses 5 square miles of land area and the City of East Palo Alto encompasses 2.6 square miles of land area.

The unincorporated County areas of land encompass 2.46 square miles

- Sequoia Tract – 0.51
- North Fair Oaks – 1.2
- West Menlo Park – 0.5
- Menlo Oaks – 0.25

The Stanford Linear Accelerator (SLAC) National Accelerator and Laboratories encompasses 0.92 square miles of area.

Fire Stations locations and significance:

Fire Station 1:
Located at 300 Middlefield Road in the City of Menlo Park
The Station was opened in 1955
The Station is 64 years old
In 2017, the Fire District purchased vacant land from Saint Patrick's Seminary needed for future expansion
It is facilities priority #2 – Which will have a multi-phased approach
It is a training, testing, meeting and supply facility
It is the home of Engine 1, Truck 1 and Battalion 1
It provides Automatic Aid to the City of Palo Alto (Fire Only) and San Mateo County Fire Agencies

Primary Response Area (See the Map):
34% of Station 1's response area is in Atherton
54% of Station 1's response area is in Menlo Park
3% of Station 1's response area is in East Palo Alto
9% of Station 1's response area is in Menlo Oaks (County)

Fire Station 2:
Located at 2290 University Avenue in the City of East Palo Alto
The Station was completely rebuilt, modernized, expanded and re-opened in 2016
The Station is 3 years old
The Fire District purchased two additional residential properties behind the original Station for expansion
The Station is also used as a meeting facility, fueling facility and radio communications hub
The Station is the home of Engine 2 and Truck 2 (Future Home of Heavy Rescue 2)
It provides Automatic Aid for the Cities of Palo Alto (Fire Only) and Fremont (Dumbarton Bridge and approaches) along with San Mateo County Fire Agencies

Primary Response Area (See the Map):
30% of Station 2's response area is in Menlo Park
70% of Station 2's response area is in East Palo Alto

Fire Station 3:
Located at 32 Almendral Avenue in the Town of Atherton
The Station was completely rebuilt, modernized (not expanded) and opened in 1998
The Station is 21 years old
In 2017, the Fire District purchased residential property behind and next door to the current Station for future expansion
The Station is the home of Engine 3
It provides Automatic Aid to other San Mateo County Fire Agencies

Primary Response Area (See the Map):
79% of Station 3's response area is in Atherton.
9% of Station 3's response area is in North Fair Oaks (County)
11% of Station 3's response area is in Sequoia Tract (County)

Fire Station 4:
Located at 3322 Alameda de las Pulgas Avenue in the Unincorporated Area of San Mateo County (Fire Station 4)
The Station opened in 1949
The Station is 70 years old
In 2018, the Fire District purchased additional residential property behind the Station for future expansion
It is Fire District #1 facilities priority and we are currently in the scoping and design phase for a new facility
The Station is the home of Engine 4, cross staffed Patrol 4, our primary out of County Wild Fire Response Station and a fueling facility. It is the future home of Truck 4.
It provides Automatic Aid for the City of Palo Alto (Fire Only) and to other San Mateo County Fire Agencies

Primary Response Area (See the Map):
37% of Station 4's response area is in Atherton
44% of Station 4's response area is in Menlo Park
5% of Station 4's response area is in Sequoia Tract (County)
13% of Station 4's response area is in West Menlo Park (County)
1% of Station 4's response area is in Stanford Lands (County)

Fire Station 5:
Located at 4101 Fairoaks Avenue in the Unincorporated Area of San Mateo County (North Fairoaks)
The Station was completely rebuilt, modernized (Not expanded) and opened in 1998
The Station is 21 years old

A new potential Fire Station location is under review but not currently a high priority
It is the home of Engine 5
It provides Automatic Aid to other San Mateo County Fire Agencies

Primary Response Area (See the Map):
27% of Station 5's response area is in Atherton
26% of Station 5's response area is in Menlo Park
47% of Station 5's response area is in North Fair Oaks (County)

Fire Station 6:
Located at 700 Oak Grove Avenue in the City of Menlo Park
The Station was completely rebuilt, modernized, expanded and re-opened in 2018
The Station is 1 year old
The District purchased one additional residential property behind the original Station which was used to support the expansion
The Station is the home of Engine 6 and historical fire apparatus, archives, Carriage House and a fueling facility
The Station provides Automatic Aid for the City of Palo Alto and other San Mateo County Fire Agencies
The Grand Opening is being planned for spring/summer 2019

Primary Response Area (See the Map):
28% of Station 6's response area is in Atherton.
71% of Station 6's response area is in Menlo Park

Fire Station 77:
Located at 1467 Chilco Street in the City of Menlo Park
The Station was completely rebuilt, modernized (Not expanded) and opened in 1998
The Station is 21 years old
The Fire District renewed the land lease with the City of Menlo Park for 55 years in 2018
In 2018, the Fire District purchased one additional residential property next to the Station for expansion
The Station is a facilities priority – It was designed for 4 personnel and one dedicated response unit
The Station supports fleet services, training, testing, meeting, fueling and rail response capability
The Station is the home of Engine 77, Rescue Squad 77, Air Boat 77, local and State Water Rescue Operations equipment
It provides Automatic Aid to the City of Fremont (Dumbarton Bridge and the approaches) the San Francisco Bay and other San Mateo County Fire Agencies

Primary Response Area (See the Map):
100% of Station 77's response area is in the City of Menlo Park

Modern Fire Apparatus and Equipment
The Fire District has at least one three person Fire Engine assigned to each of its seven Fire Stations. The Fire District uses what is known as a "Type 1 (Heavy) Fire Engine". This type of

municipal fire engine has a combination pump that can provide firefighters with up to 1500 gallons of water per minute during a fire. With its 650 gallons of water on board, it can quickly knock down small fires or pump up to six large hose lines for hours at a time. It is a highly versatile and adaptable mobile water pumping and distribution system.

The powerful Detroit Diesel DD3 motors are compliant with 2017 Greenhouse Gas requirements and standards. This power train produces up to 505 horsepower, which is more than enough for the 21 ton fire engines with all of their emergency equipment and crew of three first responders.

Modern Fire Apparatus can be quite large because they are typically used as multi-service platforms to fight fires, respond to medical emergencies, hazardous conditions, vehicle extrication and stabilization, technical rescues and general service calls.

The standard municipal Fire Engine can weigh as much as 43,000 pounds, is 9 feet 6 inches wide, mirror to mirror, stands 10 – 11 feet high and is 30 – 32 feet in length.

The fully enclosed occupant crew cab now commonly accounts for over a third of the length of the fire engine and is designed and reinforced to protect the fire crew from not only a collision, but can also be used as a place of refuge during a wildfire.

With its modern and extra heavy duty suspension, our newer Engines more easily navigate through traffic or absorbs the shock of local traffic control devices like speed lumps, humps, or bumps located in the Fire District. Modern Fire Apparatus are specifically designed and built with crew safety and protection in mind.

As of January 4, 2019, the Fire District now operates two Aerial Ladder Truck Companies staffed by four personnel each. The standard municipal Ladder Truck with a heavy duty 107 foot aerial ladder can weigh as much as 76,000 pounds, are up to 10 feet wide, mirror to mirror, and stand 11 feet or more high and are 47 – 59 feet in length.

Besides its main aerial ladder, the Trucks carry a large compliment of ground ladders, emergency medical and triage equipment, technical rescue equipment used and needed for auto and machinery extrication, high and low angle rope rescues, heavy rescue equipment used for structural collapse and hazardous material operations involving limiting entry, isolation of toxic substances and decontamination.

Two years ago, after 24 years, the Fire District brought back the use of a much smaller two person Rescue Squad that uses a standard heavy duty truck frame with a four person cab. It has a limited but effective equipment cache stored in a utility style box with a small pump and roll firefighting capability.

The District cross staffs a variety of water rescue boats mostly all located at Fire Station 77, which has direct access to the bay. These platforms include an Airboat, Inflatable V-Hulled River Boat (IRB), two Power Water Craft (PWC) and various other inflatable and rigid hull small boats.

Response Priorities for the Fire District, its First Responders and the communities we serve:

Emergency Response time's effect critical human outcomes associated with life safety, rescue, survivability and property loss at fires and emergency medical incidents, especially on stroke, cardiac and trauma patients related to appropriate care. The Fire District operates 10 Advanced Life Support (ALS) Paramedic First Response Units and has 55 Paramedic Firefighters out of 100 front line personnel.

Many Counties in California, have time based performance thresholds and agreements for ambulance transport and first response and some use fines to promote compliance. Emergency Trauma Centers and Hospitals are essential to patient outcomes. Some support the use of Helicopters, but most use ground based transport units that rely on clear and passable roadways to first reach patients and then transport them to the Hospital. Many Trauma Centers and Hospitals are near major roadways to facilitate and promote and support vehicle usage.

Most jurisdictions use a tiered response – If a medical incident occurs, a law enforcement unit responds to investigate, evaluate the scene, and protect other first responders and/or the public, the officers medical training and equipment is minimal. Simultaneously, a Fire Paramedic response on a Fire Engine occurs from a Fire Station and is typically followed by the transport ambulance.

Response Times are critical – The industry standard for most municipal Fire Agencies use a 7 minute response time. From call handling (1 minute), to turnout time (2 minutes) to 4 – 5 minutes for response 90% of the time because minutes matter and seconds count.

In 2018, the Fire District responded to 8743 emergency incidents, and achieved a 95.59% compliance rate by arriving on-scene within 7 minutes. For emergencies involving multiple first response units, 94.67% of the time, all units arrived on-scene within 11 minutes.

The Fire District has no authority over roadway changes and the installation and type of traffic control measures that could affect response times and/or damage Fire Equipment. The Fire District has developed acceptable standards for these control devices and constantly seeks to work with other constituent agencies to limit, prohibit, revise and properly select these devices. In addition, Traffic pre-emption devices are installed on all emergency apparatus but are not helpful for grid locked traffic.

Almost every document I have found or read does not address these basic public safety considerations and priorities which are needed to balance transportation decisions and methodologies also needed and intended to protect the public and used for the common good.

There are three general outcomes based upon time:

- Provide equitable response times to all similar risk neighborhoods
- Provide for the depth of response when multiple incidents occur (size of the effective force)

- Provide for a concentration of response forces in the core, for high risk venues and based upon historical response data.

In summary, in order to save life, property and protect the environment, emergency response routes and times are critical to the operations and service to the whole community by the Fire District.

Critical Emergency Response Routes:

In order to support emergency response times, the Fire Board in 2011 accepted the Fire Chiefs recommendation to designate primary emergency response routes in order to limit, control or stop changes to specific roadways that would negatively affect emergency response times and our ability to support automatic and mutual aid agreements with other communities.

42 of these roadways are in, or pass through the City of Menlo Park. 14 of these roadways are designated as "critical" meaning that they directly impact emergency services to other communities, transportation to hospitals and trauma centers, cross freeways, bridges and/or railroad tracks. Five are designated as "significant" because they cover the response area of multiple Fire Stations and 23 are "important" to Fire First Response, specific to the City of Menlo Park and our residents and customers.

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1. **Alameda De Las Pulgas – *San Mateo County, City of Menlo Park and Town of Atherton***
   Between Foothill Expressway and Woodside Road
   District 4 and 3
   (Critical Emergency Response Route to Palo Alto, Woodside and Redwood City)

2. **Alpine Road – *City of Menlo Park and San Mateo County***
   Between Highway 280 and Sand Hill Road
   District 4
   (Critical Emergency Response Route to Interstate 280 Palo Alto and Portola Valley)

3. **Bayfront Expressway – *State Highway***
   Between Marsh and the *Dumbarton Bridge*
   District 77 and 2
   (Crosses the Alameda County Line – To Fremont)

4. **Chilco Street – *City of Menlo Park***
   Between Bayfront Expressway and Newbridge Street
   District 77 (Station 77)
   (Future Rail Crossing – on Border of Belle Haven and M2)

5. **El Camino Real – *State Highway***
   Between Districts limits and District limits
   District 6 and 3
   (Crosses the Santa Clara County Line – To Palo Alto and Redwood City)

6. **Glenwood Avenue –** ***City of Menlo Park and Town of Atherton***
   Between El Camino Real and Middlefield Road
   District 6 and 1
   (Critical Railroad Crossing)

7. **Highway 101 –** ***Bayshore Freeway***
   Between District Limits - San Francisquito Creek and Marsh Road
   District 5, 77, 2 and 1
   (Crosses the Santa Clara County Line – To Palo Alto and Redwood City)

8. **Marsh Road –** ***City of Atherton, San Mateo County and Menlo Park***
   Between Middlefield Road and Bayfront Expressway
   District 5 and 77 (Crosses over Highway 101)

9. **Middlefield Road –** ***San Mateo County, City of Menlo Park and the Town of Atherton***
   Between Districts limits and District limits
   District 1 and 5 (Fire Station 1)
   (Crosses the Santa Clara County Line –To Palo Alto and Redwood City)

10. **Oak Grove Avenue –** ***City of Menlo Park and Town of Atherton***
    Between University Drive and Green Oaks Drive
    District 6 and 1 (Fire Station 6)
    (Critical Railroad Crossing)

11. **O'Keefe Street –** ***City of Menlo Park***
    Between Willow and Menalto Avenue
    District 1
    (Critical Emergency Response Route into East Palo Alto)

12. **Ravenswood Avenue – City of Menlo Park**
    Between Middlefield Road and El Camino Real
    District 1 and 6 (Railroad Crossing)
    (Critical Railroad Crossing)

13. **Sandhill Road –** ***City of Menlo Park***
    Between Highway 280 and Santa Cruz Avenue
    District 4
    (Critical Emergency Response Route to Interstate 280, Portola Valley and Woodside)

14. **Willow Road –** ***City of Menlo Park***
    Between Alma Street and Bayfront Expressway
    District 1 and 77
    (Crosses Highway 101 - Critical Emergency Response Route – Alternative University Avenue)

Significant Emergency Response Routes:

15. Bay Road – ***City of Menlo Park and San Mateo County***
Between Marsh Road and Willow Road
District 5 and 1

16. Newbridge Street – ***City of Menlo Park***
Between Chilco Street and Bay Road
District 77

17. O'Brien Drive – ***City of Menlo Park and East Palo Alto***
Between Willow Road and University Avenue
District 77 and 2

18. Santa Cruz Avenue ***City of Menlo Park***
Between Alameda De Las Pulgas and Merrill Street
District 4 and 6

19. Valparaiso Avenue – ***City of Menlo Park and Atherton***
Between Hallmark Circle and El Camino Real
District 4 and 6

Important Emergency Response Routes:

20. Avy Avenue – City of Menlo Park
Between Altschule Avenue and Orange Avenue
District 4

21. Bohannon Drive – City of Menlo Park
Between Marsh Road and Scott Drive
District 5

22. Coleman Avenue – City of Menlo Park and San Mateo County
Between Ringwood Avenue and Willow Road
District 1

23. Constitution Drive – City of Menlo Park
Between Marsh Road and Chilco Street
District 77

24. Cotton Street – City of Menlo Park
Between Valparaiso Avenue and Middle Avenue
District 4

25. Gilbert Avenue – City of Menlo Park
Between Santa Monica Avenue and Menalto Avenue
District 1

26. Hamilton Avenue – City of Menlo Park
Between Pierce Road and Hamilton Court
District 77

27. Laurel Street – City of Menlo Park
Between Ravenswood and Waverly Street
District 1

28. Linfield Drive – City of Menlo Park
Between Middlefield Road and Waverly Street
District 1

29. Menalto Avenue – City of Menlo Park
Between Woodland Avenue and O'Keefe Street
District 1

30. Middle Avenue – City of Menlo Park
Between Olive Street and El Camino Real
District 1

31. Monte Rosa Drive – City of Menlo Park
Between Sand Hill Road and Altschule Avenue
District 4

32. North Lemon Avenue – City of Menlo Park
Between Valparaiso Avenue and Santa Cruz Avenue
District 4

33. Oakdell Drive – City of Menlo Park
Between Santa Cruz Avenue and Olive Street
District 4

34. Olive Street – City of Menlo Park
Between Santa Cruz Avenue and Bay Laurel Drive
District 4

35. Pierce Road – City of Menlo Park
Between Alpine Avenue and Willow Road
District 77

36. Ringwood Avenue – City of Menlo Park
Between Middlefield Road and Van Buren Road
District 1

37. Santa Monica Avenue – City of Menlo Park
Between Middlefield Road and Coleman Drive

District 1

38. Scott Drive – City of Menlo Park
Between Marsh Road and Bohannon Drive
District 5

39. Sharon Park Drive – City of Menlo Park
Between the access road to Sand Hill Circle and Sand Hill Road
District 4

40. Sharon Road – City of Menlo Park
Between Sharon Park Drive and Alameda De Las Pulgas
District 4

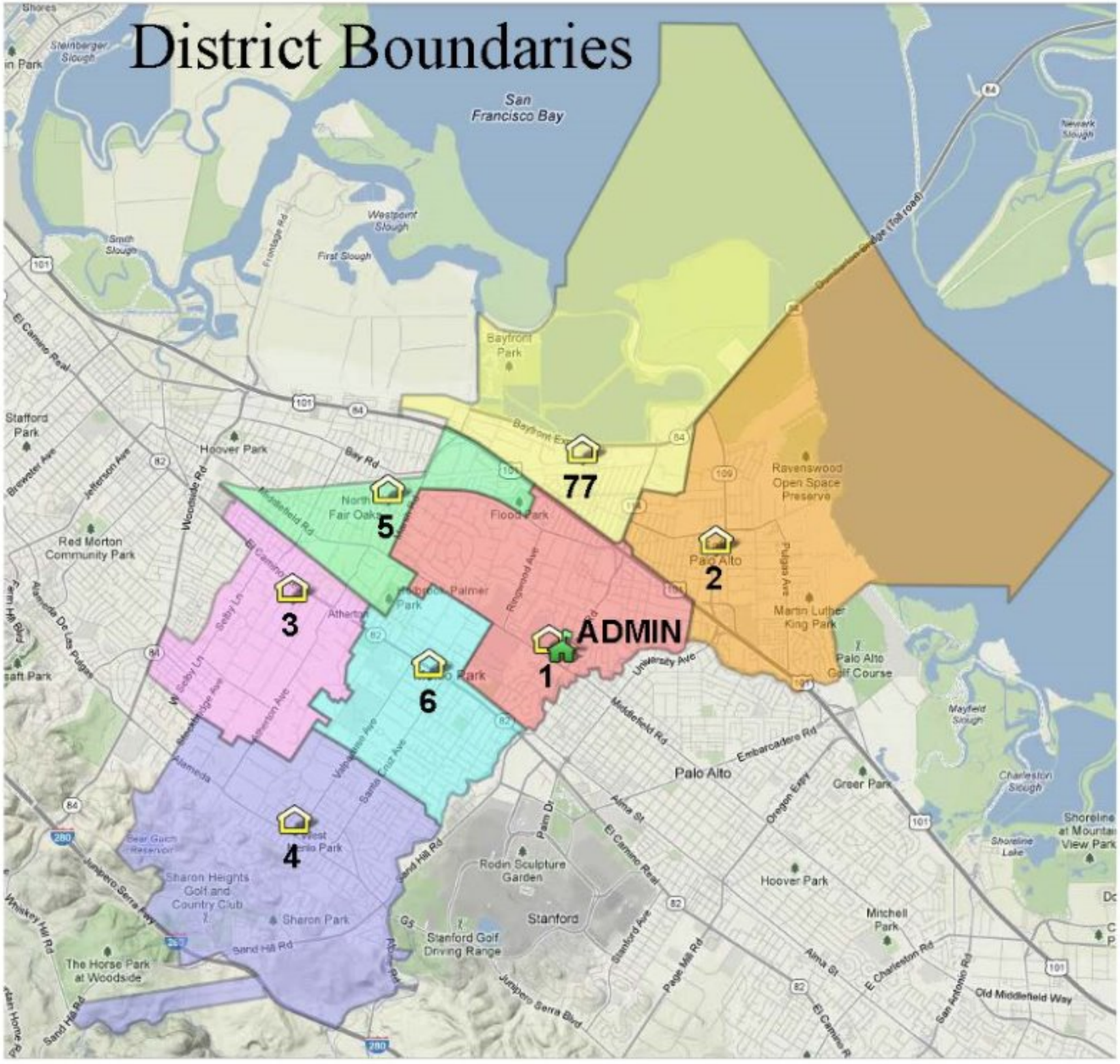
41. University Drive – City of Menlo Park
Between Valparaiso Avenue and Creek Drive
District 6

42. Waverly Street – City of Menlo Park
Between Laurel Street and Linfield Drive
District 1

ATTACHMENTS:

A. Fire Station Response Areas
B. City of Menlo Park – Fire Station Response Coverage
C. Primary Response Routes and Traffic Control Devices

ATTACHMENT A



Administration and Fire Prevention Office
170 Middlefield Road
Menlo Park, CA 94025

Station 1
300 Middlefield Road
Menlo Park, CA 94025

Station 2
2290 University Avenue
East Palo Alto, CA 94303

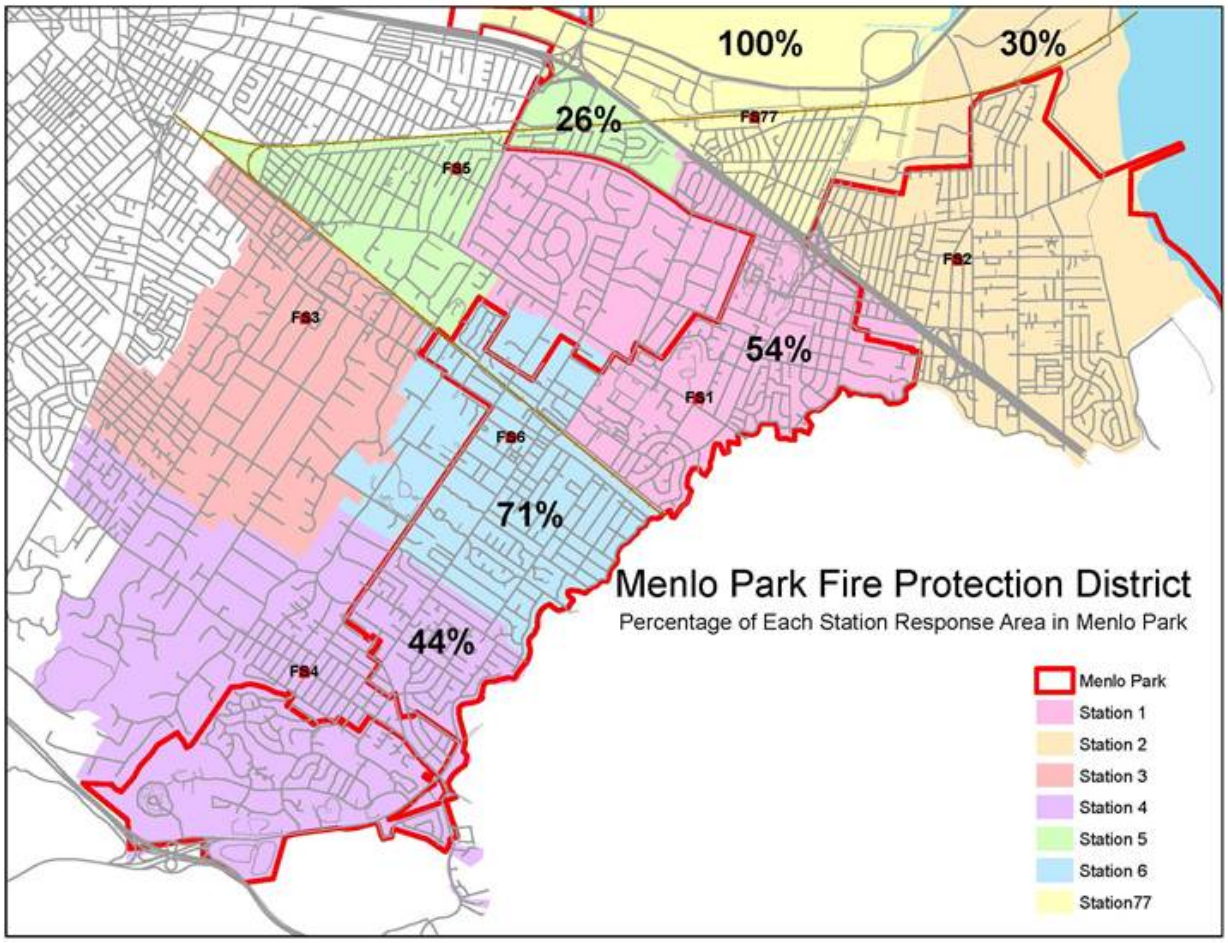
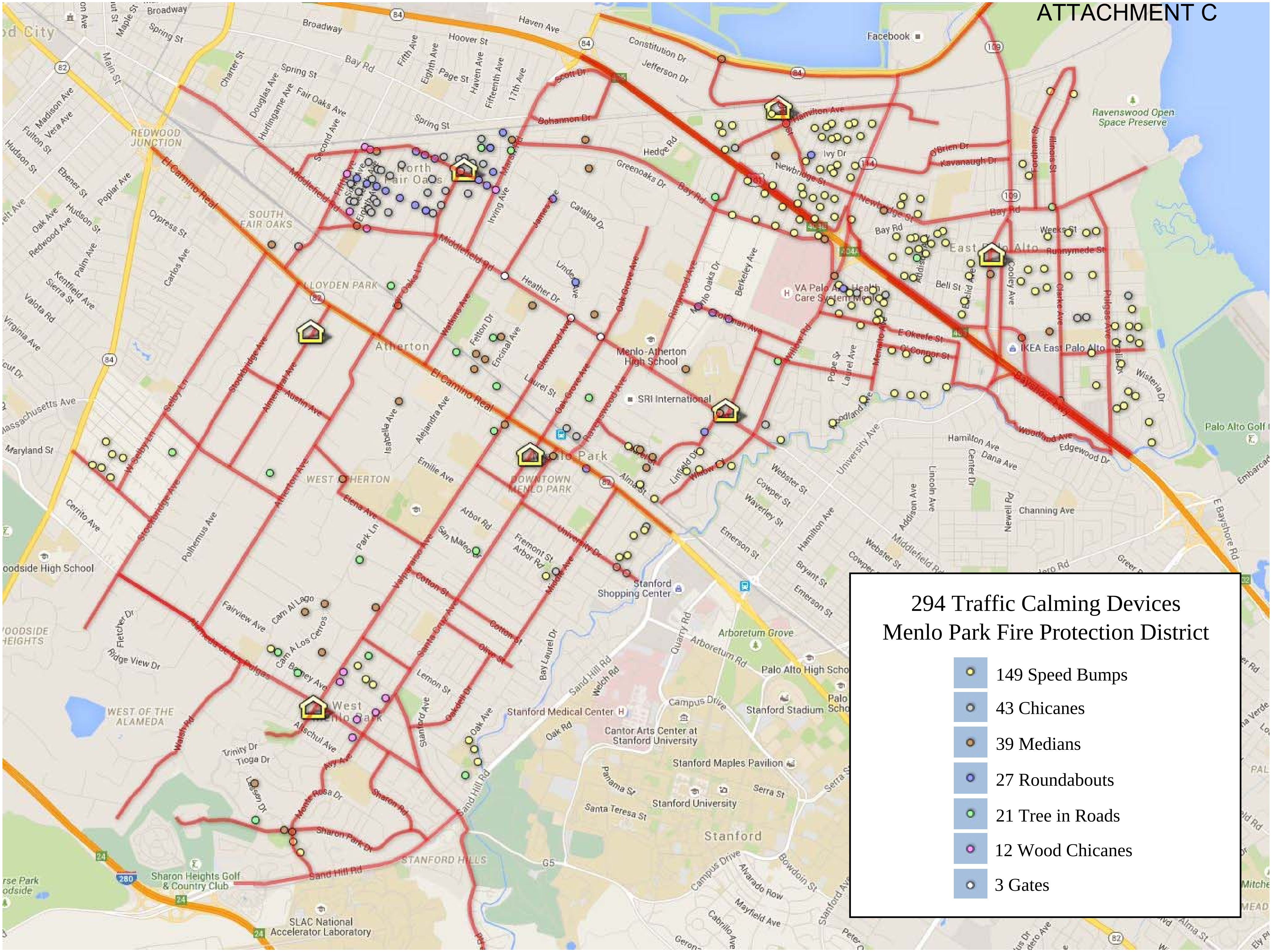
Station 3
32 Almendral Avenue
Atherton, CA 94027

Station 4
3322 Alameda De Las Pulgas
Menlo Park, CA 94025

Station 5
4101 Fairoaks Avenue
Menlo Park, CA 94025

Station 6
700 Oak Grove Avenue
Menlo Park, CA 94025

Station 77
1467 Chilco Avenue
Menlo Park, CA 94025


100%
30%
26%
FS77
FS5
FS2
FS3
54%
FS1
FS6
71%
44%
FS4
Menlo Park Fire Protection District
Percentage of Each Station Response Area in Menlo Park
Menlo Park
Station 1
Station 2
Station 3
Station 4
Station 5
Station 6
Station77

ATTACHMENT C