

CITYGATE ASSOCIATES, LLC

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MANAGEMENT CONSULTANTS ■



FIRE SERVICES DEPLOYMENT STUDY

CITY OF SAN BERNARDINO, CA

***VOLUME 1 OF 3 –
EXECUTIVE SUMMARY***

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FIRE & EMERGENCY SERVICES

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VOLUME 1—EXECUTIVE SUMMARY

The City of San Bernardino (City) retained Citygate Associates, LLC to review four issues about the City’s Fire Department, all of which revolve around a comprehensive Standards of Response Cover (SOC) Planning analysis (fire crew deployment study). The primary SOC analysis reviews the adequacy of the existing deployment system from the current fire station locations and the impacts, if any, from the City’s mutual aid partners.

In addition, Citygate’s work investigates three other related issues, which can only be addressed after the baseline or “as is” deployment workload situation is understood using the SOC study results. These additional issues are:

1. If the current fiscal crisis requires the City to consider closing fire stations to help balance its budget, can any be closed? If so, where, with what impacts?
2. Should the City continue to provide fire department-based paramedics on firefighting units to support the County-managed private ambulance contract?
3. What are the high-level options for the City to consider for contracting out or merging fire services with another agency?
 - While this study is not a fire services Request for Proposal (RFP) or analysis of bids received, the City requested advice based on Citygate’s experience on the possible forms of shared fire services and related issues to consider.

To address all of these issues, Citygate’s work is presented across three main volumes, including: this Executive Summary (**Volume 1**) that summarizes the most important findings and recommendations; an in-depth Technical Report (**Volume 2**) that first analyzes deployment and then assesses the three related issues above; and a Map Atlas (**Volume 3**) that contains supporting analysis geographic maps.

1.1 POLICY CHOICES FRAMEWORK

As the Mayor and Common Council understand, there are no mandatory federal or state regulations directing the level of fire service response times and outcomes. The body of regulations on the fire service provides that *if fire services are provided at all, they must be done so with the safety of the firefighters and citizens in mind.*

1.2 CITYGATE’S OVERALL OPINIONS ON THE STATE OF THE CITY’S FIRE SERVICES

While historically the City has made significant investments in its fire services, the recession-induced fiscal crisis has already lowered the Department’s daily staffing. In addition, several factors have dramatically increased the emergency medical services incident demand on the

Department. Citygate finds that the challenge of providing fire services in San Bernardino is similar to that found in many urban communities: providing an adequate level of fire services within the context of limited fiscal resources, competing needs, changing and aging populations, plus uncertainty surrounding the exact timing of fiscal recovery following the recession.

In brief, Citygate finds the Fire Department is under severe stress. This stress exists as a result of line and headquarters staffing reductions, combined with escalating—and by now, high—firefighting and emergency medical incident workloads. This level of stress cannot continue forever; people and equipment will eventually wear down.

Given the City’s high emergency medical incident volume, along with frequent structure fires, any deployment reduction will *seriously* lengthen response times further. At times, this will create undesirable incident outcomes. The City is **not** over-deployed to serve its diverse geography and risks.

Given the high volume of emergency medical incidents, the policy question becomes, “At what cost can the Fire Department respond to every call for assistance as if it is a life and death emergency?” In doing so, the Department is wearing itself and its equipment out. More importantly, while responding to emergency medical incidents, the Fire Department is not available for an appropriate level of fire suppression, given the City’s risks, which unfortunately is an all-too-necessary service in San Bernardino.

It would be too easy to suggest that the City stop responding to medical incidents as they are 87% of the service requests. One would think the City could then reduce the number of fire stations. But fire departments are intended to exist at a stand-by capacity, allowing them to suppress fires and stop conflagrations from occurring. In this way, fire departments are similar to property or life insurance; people hope they never have to use it, but when they do, they need it quickly. As stated in the deployment analysis section of this study, fire attack is about the speed (time) and weight (staffing quantity) of deployment, and speed comes from neighborhood-based units.

The policy headache for San Bernardino is how to safely and humanely lower the quantity of Fire Department EMS responses while preserving the first mission of a fire department—keeping the community safe from fire. Other communities have gone through, or are going through, what San Bernardino is currently experiencing as far as the rate of building fires in abandoned or poorly maintained buildings. The results are worse when fire services are reduced to the point where the speed and weight of the suppression effort cannot keep up. More and more serious fires occur, and economic potential and growth stalls because the community is not perceived as being safe from fire.

Such a scenario is playing out today in the City of Detroit.¹ It played out to tragic results in the South Bronx section of New York City in the late seventies.² San Bernardino is at a tipping point, in Citygate's opinion. In our analysis of the City's Fire Department paramedic program in Section 6, Citygate recommends the City, County EMS Agency, and ambulance contractor work to *immediately* lower the EMS incident rate on the fire units to include only the more critical incidents. This would stabilize eroded response times and strengthen efforts in fire suppression, fire prevention, and arson investigations in abandoned buildings. The City cannot let a culture grow in which fires are tolerated and believed to be of no harm to the community.

There are significant changes ahead for the provision of EMS care under Federal Health Care Reform. There is new economic pressure to divert patients from unnecessary emergency room visits. Other agencies in California and other states are testing Community Paramedicine alternative delivery programs and new partnerships with ambulance providers and health care centers. Some believe new EMS revenues will emerge and will help pay for field providers to provide pre- and post-discharge care.

In Citygate's opinion, now is not the time to exit the provision of firefighter/paramedic care. Doing so would throw away the sunk cost of the training already provided to paramedics and produce a net savings of only approximately \$547,875 per year (after EMS fees are also stopped), which, by itself, will not close the City's budget gap. Citygate believes that the City should take the steps recommended in our paramedic program review section of this study to be agile in leveraging its paramedic investment as new opportunities emerge.

Regarding contract or merger of fire service options, based on Citygate's experience, there are just as many happy as unhappy agencies in California in regional fire service partnerships. We have observed that the fiscal stress caused by the recession, combined with increases in retirement and health costs for employees, has significantly increased the stress and request for separation (divorce) studies. Large agencies have equally complicated policy, labor relations, and cost issues to manage. It can be very difficult for some smaller contracting agencies to afford the cost structure dictated by a large regional fire service provider. However, the regional agencies are also trapped, as they cannot easily, if at all, offer one agency a cost reduction if it is not also offered to others they contract with. Thus, with some agencies having an inability to pay, yet still wanting to receive similar regional services, the dialog between all of the agencies can be very contentious.

Even cities joining fire districts under annexation that only provide property taxes to the regional fire provider complain that, in some cases, based on their local assessed valuation, they pay more

¹ Guillen, Joe. (2013, June 16). *Fire Department: Response time, IT needs cited in report*. Retrieved from <http://www.freep.com/article/20130616/NEWS01/306160069/detroit-financial-crisis-ems-fire-department>

² Flood, Joe. (2010). *The Fires: How a Computer Formula, Big Ideas, and the Best of Intentions Burned Down New York City—and Determined the Future of Cities*. New York, NY: Riverhead Books, The Penguin Group.

property tax revenue than they receive from the regional fire department in locally-sited fire crews. Thus, they feel they are subsidizing the region's firefighting efforts.

Given these issues, there is not one best fire service partnership approach for the City of San Bernardino to consider. The Mayor and Common Council would be well advised to first consider the coming decades, and ask themselves how much control of fire service they would like, at what level of effort they would like it, and at what quality and cost *after they exit bankruptcy and realize an economic recovery*. Firefighters as employees are not easily shifted between employers due to benefit and labor law issues. While the fiscal crisis is very painful at the moment, what will the City be like in 10, 20, or 30 years?

Throughout this report, Citygate makes observations, key findings, and, where appropriate, specific action item recommendations. Overall, there are 21 key findings and 10 specific action item recommendations. Citygate's findings and recommendations across the four requested key study themes are presented as four challenges in their entirety below:

1.3 CHALLENGE #1 – BASE FIELD OPERATIONS DEPLOYMENT (FIRE STATIONS)

Fire department deployment, simply stated, is about the speed and weight of the attack. Speed calls for first-due, all-risk intervention units (engines, trucks and/or rescue ambulances) strategically located across a department. These units are tasked with controlling moderate emergencies, preventing the incident from escalating to second alarm or greater size. Larger incidents unnecessarily deplete department resources, as do multiple requests for service. Weight is about multiple-unit response for serious emergencies such as a room and contents structure fire, a multiple-patient incident, a vehicle accident with extrication required, or a heavy rescue incident. In these situations, enough firefighters must be assembled within a reasonable time frame to safely control the emergency.

In **Volume 2** of this study, Citygate's analysis of prior response statistics and geographic mapping reveals that most of the City has adequate fire station coverage, except a few hard-to-serve outer edges. The maps provided in **Volume 3** and the corresponding text explanation beginning in **Volume 2** describes in detail the City's current deployment system performance.

For effective outcomes on serious medical emergencies, and to keep serious, but still-emerging fires small, best practices recommend that the first-due fire unit should arrive within 7 minutes of fire dispatch alerting the fire unit, 90% of the time. In the City, given its geography, the current fire station system is challenged to provide this level of service across a variety of population density and risk types. Citygate recommends a 5-minute travel time measure to space out fire stations acknowledging the City's diverse road network, open space areas, and topography. Thus, a complete *total response time goal is comprised of:*

1 minute dispatch processing + 2 minutes crew turnout + 5 minutes driving time = 8 minutes

Citygate recommends the following fire incident outcomes for San Bernardino:

- ◆ Provide equitable response times to all similar risk neighborhoods
- ◆ Provide for depth of response when multiple incidents occur
- ◆ Provide for a concentration of response forces in the core for high-risk areas.

If San Bernardino wants to provide the three outcomes above, the City needs at least twelve fire stations across its geography.

Even with twelve fire stations, the Department struggles to arrive by a preferred total response time of 8 minutes for emergency medical incidents due to the high volume of emergency medical and simultaneous incidents:

Table 1—Call to Arrival Performance – Department Wide for Fire & EMS Incidents

Year	Time to 90%
Overall	09:50
2012	10:07
2013	09:36

The Call to Arrival performance goal is missed in each station area:

Table 2—Call to Arrival Performance – Station Area for 90% of Fire & EMS Incidents

Station	Overall	2012	2013
221	08:59	09:23	08:38
222	08:54	09:07	08:41
223	09:25	09:37	09:18
224	09:16	09:33	09:04
225	09:42	09:28	09:55
226	10:16	10:45	09:52
227	09:28	09:17	09:38
228	10:05	10:34	09:29
229	09:55	09:57	09:55
230	09:46	10:06	09:33
231	10:28	10:45	10:21
232	10:56	10:46	10:58

San Bernardino, in the near term, should adopt performance measure policies from which to set forth service expectations and, on an annual basis, monitor Fire Department performance as part of its annual budget considerations.

Citygate's deployment findings and recommendations are listed below. For reference purposes, the finding and recommendation numbers refer to the sequential numbers as these are presented in the Technical Report volume.

Finding #1: The General Plan, the annual budget, and the response time policy adopted in 2000 by the Mayor and Common Council lack response goals tied to specific outcomes by type of emergency. This is not congruent with best practices for emergency response time tracking. Updated deployment measures are needed that include specialty response measures for all-risk emergency responses that includes the beginning time measure from the point of fire dispatch receiving the 9-1-1 phone call, and a goal statement tied to risks and outcome expectations. The deployment measure should have a second measurement statement to define multiple-unit response coverage for serious emergencies. Making these deployment goal changes will meet the best practice recommendations of the Commission on Fire Accreditation International.

Finding #2: The Department has a standard response dispatching plan that considers the risk of different types of emergencies and pre-plans the response. Each type of call for service receives the combination of engine companies, truck companies, ambulances, and command officers customarily needed to handle that type of incident based on fire department experience.

Finding #3: Apparatus staffing at 3 firefighters per engine and ladder truck is light for a city with San Bernardino's risks and emergency incident volumes. Thus, it is not in alignment with delivering an effective force to keep fires below the greater alarm and/or conflagration point while also providing high levels of emergency medical response.

Finding #4: Using the current twelve fire station locations, not all of the urban density developed areas are within 4 minutes travel time of a fire station. Given actual incident workloads, this is a significant issue in the core of the City between Stations 221, 222, 224, 226 and north of 226.

Finding #5: The coverage of the Effective Response Force (First Alarm) to serious fires is only adequate in the core of the City and, as such, is inadequate in outer City areas with commercial buildings and/or high wildland fire risks.

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- Finding #6:** Improving ladder truck coverage to the outer areas of the City would require the addition of two ladder trucks or the use of Quints (engine and aerial ladder combined apparatus) instead of engines in Stations 225 and 228.
- Finding #7:** The Fire Department must insist and follow-up on the requirement that all incidents are reported, fully and accurately in the NFIRS 5 reporting system.
- Finding #8:** The City's time of day, day of week, and month of year calls for service demands are very consistent. This means the City needs to operate a fairly consistent 24/7/365 response system. Peak activity units would only be cost-effective when high call volumes can be reasonably predicted in the core areas.
- Finding #9:** The review of Unit Hour Utilization (UHU) shows a very high workload on all of the central City area fire stations from early morning to midnight. This level of workload is cause for serious concern, as it not only impacts response time, but crew rest, apparatus costs, and training time.
- Finding #10:** The high incident demand that exists in the core areas of the City, and the resultant high UHU percentages for a large number of units, are further driven by the effect of many simultaneous incidents in the core station areas.
- Finding #11:** Compared to the Citygate benchmark of 7 minutes Total Response Time, San Bernardino's actual performance to 90% of the Fire and EMS incidents is 9:36 minutes/seconds to Fire and EMS incidents.
- Finding #12:** Call processing and crew turnout times are too long to 90% of the Fire and EMS incidents. Management focus is needed to bring them into alignment with best practice goals. Doing so could save up to 1:42 minutes/seconds. This would lower citywide performance from 9:36 to 7:18 minutes/seconds without adding any field resources.
- Finding #13:** Long travel times for the City's fire units are due to high incident volumes, high simultaneous incident rates, and some fire stations not being well placed to serve the central City area.
- Finding #14:** Reducing travel times in the short-term during the fiscal crisis, while continuing to respond to all medical incident requests, will require additional funds for peak hour units in the central City area. These additional units would absorb some of the simultaneous incidents and would leave other units available within their assigned areas.

Finding #15: If funds became available, at least two peak-hour (part-time) 2-firefighter EMS squads in Stations 226 and 222 would significantly lower the workload on all of the central City and nearby fire engines.

Finding #16: As the GIS analysis shows, the City has a large center area with high incident volumes in-between some fire stations. Other fire stations are too close together. Once an economic recovery can be realized, the City can study several older fire stations for relocation using the more advanced GIS tools that were used in this study to identify more optimal station locations.

Recommendation #1: **Adopt Updated Deployment Measures:** The City should adopt updated performance measures for the major types of emergencies to direct fire crew planning and to monitor the operation of the Department. The measures should take into account a realistic company turnout time of 2 minutes and be designed to deliver outcomes that will save patients medically salvageable upon arrival, and to keep small, but serious, fires from becoming greater alarm fires. Citygate recommends these measures be:

1.1 Distribution of Fire Stations: To treat medical patients and control small fires, the first-due unit should arrive within 8 minutes, 90% of the time from the receipt of the 9-1-1 call in the fire dispatch center. This equates to 1-minute dispatch time, 2 minutes company turnout time, and 5 minutes drive time in the most populated areas.

1.2 Multiple-Unit Effective Response Force for Serious Emergencies: To confine fires near the room of origin, to stop wildland fires to under three acres when noticed promptly, and to treat up to five medical patients at once, a multiple-unit response of at least 20 personnel should arrive within 11 minutes from the time of 9-1-1 call receipt in fire dispatch, 90% of the time. This equates to 1-minute dispatch time, 2 minutes company turnout time, and 8 minutes drive time spacing for multiple units in the most populated areas.

1.3 Hazardous Materials Response: Provide hazardous materials response designed to protect the community from the hazards associated with uncontrolled release of hazardous and toxic materials. The fundamental mission of the Fire Department response is to minimize or halt the release of a hazardous substance so it has minimal impact on the community. This is done by achieving a travel time in urban to suburban areas for

the first company capable of investigating a HazMat release at the operations level within 5 minutes travel time, or less than 90% of the time. After size-up and scene evaluation is completed, a determination will be made whether to request additional resources from the City's multi-agency hazardous materials response partnership.

- 1.4** Technical Rescue: Respond to technical rescue emergencies as efficiently and effectively as possible with enough trained personnel to facilitate a successful rescue. Achieve a travel time for the first company in urban to suburban areas for size-up of the rescue within 5 minutes travel time or less 90% of the time. Assemble additional resources for technical rescue capable of initiating a rescue within a total response time of 11 minutes, 90% of the time. Safely complete rescue/extrication to ensure delivery of patient to a definitive care facility.

Recommendation #2: The Department needs to conduct a study to determine which fire stations should not be maintained for another 25-50 years. Then, based on the number of stations that require total replacement, the Department needs to adjust replacement fire station spacing such that response time overlap between stations is minimized as much as possible. Further, stations should not be sited close to City edges so that station response times cover areas substantially outside the City.

1.4 CHALLENGE #2 – REDUCING FIRE STATIONS DUE TO ECONOMIC STRESS

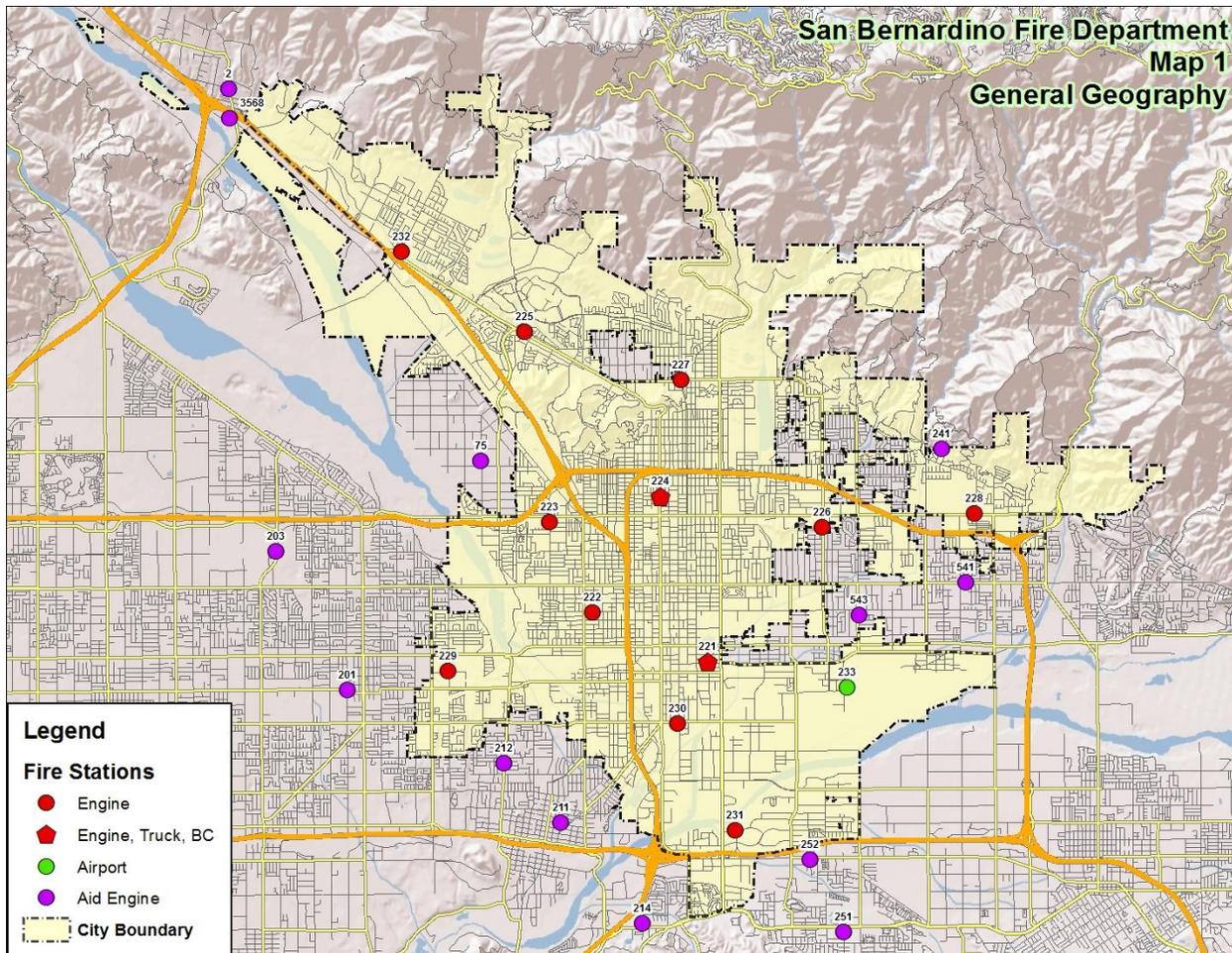
Reducing fire department units will have three types of consequences. First, as fewer units are available there will be longer travel times to incidents. First-due unit arrivals will be delayed in the reduction areas. Second, and equally important, complex incidents requiring multiple units will take longer for all the needed units to arrive to effectively control building and wildland fires. Thus, the ability to mitigate serious incidents to a First Alarm level will be reduced or eliminated. Third, most stations only have one response unit—an engine company (pumper) with a crew of three. Reductions in force thus cannot be done to all stations at once, as only one to three stations can even be considered at all for closure. When a few stations are closed, an inequity of response time capacity is created between neighborhoods where, at the same taxation level, some neighborhoods have better access to a nearby fire unit than do other neighborhoods near the closed stations.

Citygate's analysis has considered multiple factors regarding where the City can make the least painful reductions, should this be necessary due to the current fiscal crisis. However, the City has such a high emergency medical incident volume, along with frequent structure fires, that any

reduction in deployment of the response force will reduce response times and, occasionally, incident outcomes. The City is not over-deployed for fire companies to serve its diverse geography and risks.

If reductions have to occur, Citygate makes the following finding and recommendations. An overview map of the fire station locations is provided below, since the recommendations specifically reference station numbers.

Map #1 – General Geography



Finding #17: The City has such a high emergency medical incident volume, along with frequent structure fires, that any reduction in deployment of the response force will reduce response times and, at times, incident outcomes. The City is not over-deployed for fire companies to serve its diverse geography and risks.

Recommendation #3: The station closures in this analysis should only be implemented in combination with an aggressive re-structuring and lowering of Fire Department responses to non-life-threatening emergency medical

services (EMS) incidents as studied elsewhere in Citygate’s overall deployment analysis of the City.

Recommendation #4: Given the fiscal emergency, the City could choose to close Engines 223 and 231 and negotiate the impacts on the surrounding mutual aid partner fire departments.

Recommendation #5: Given that Stations 228 and 232 were not considered for long-term closure, they should be considered for immediate move-up to the core of the City when a high rate of simultaneous medical or sustained on-scene operations at multi-unit firefighting incidents occurs in the central City fire station areas. This move-up would trade coverage for a few hours from low workload areas to the highest workload areas in the City, thus shoring up response times where it is needed the most.

Recommendation #6: Additionally, the two ladder trucks in the core stations of 221 and 224 support the core workload. If fiscal pressures only required the savings of approximately 1.5 stations, and if both Stations 223 and 231 were closed, some of the savings should be used to open a 2-person paramedic squad and place it at Station 226, the busiest in the City.

1.5 CHALLENGE #3 – CITY FIRE DEPARTMENT PARAMEDIC PROGRAM OPTIONS

As the City continues to evaluate the pressures placed on it by the high occurrence of emergency medical service demands, based on our analysis, Citygate offers these findings and recommendations to guide the City’s policy choices:

Finding #18: The quantity of EMS incidents and the practice of immediately sending a fire unit to every 9-1-1 medical call, regardless of severity, are significantly lowering the City’s firefighting ability, risking its firefighters unnecessarily and increasing its expenses for personnel and equipment.

Recommendation #7: The City should work with the County and its ambulance contractor, AMR, to re-implement medical priority dispatch and immediately lower the Fire Department EMS response to serious health emergencies, rescue, entrapment, etc.

Recommendation #8: Due to the modest savings and sunk costs in the training of firefighter/paramedics, the City should not consider dropping its paramedic program until all of the effects of Federal Health Care restructuring are well understood in the EMS arena.

Recommendation #9: The City should immediately send a letter to the County EMS Agency as required by California Health and Safety Section 1797.201 requesting changes to the Fire Department’s response to non-life threatening medical problems. This request should be to implement medical priority dispatching with 60 days. Further, the letter should state that, absent a new partnership with the County and AMR to divert and absorb the non-emergency medical patients, the City will hold a public hearing per Section 1797.201 and unilaterally consider lowering its paramedic first response program.

1.6 CHALLENGE #4 – CONTRACT OR MERGER OF FIRE SERVICE OPTIONS

Contracting or merging of fire services is not easy given the regulatory and legal complexities. If it were, there would be hundreds fewer fire departments in the State. Given our analysis of the issues at present in San Bernardino, and our experience with fire department mergers, Citygate offers the following findings and recommendation to assist the City in evaluating the policy choices for the provision of fire services:

Finding #19: Due to the current fiscal crisis and legal proceedings, CAL FIRE will not respond to a contract for service request. Even if it responded, resolving the issues and determining if the cost is beneficial to the City could take upwards of 1-2 years. In effect, this option does not offer any short-term financial savings to the City in the near term.

Finding #20: During the period of this study, Citygate and City Hall staff were not able to identify any other local government partners interested in shared fire services via a JPA. As such, this option will not assist the City in the near term with its costs of fire services.

Finding #21: While the County can offer annexation into its Fire District, the negotiation of costs, revenues and employment impacts, along with the LAFCO approval process, could easily take two years. As such, this option does not provide any immediate cost reduction relief in the current fiscal crisis.

Recommendation #10: Given the issues of contracting for services or annexation into the County of San Bernardino Fire District, the Mayor and Common Council must choose a path for staff to proceed that can answer, at a fine level, the amount of local control and thus costs, that the City wants to manage for fire services as these costs are currently approximately 26% of the City’s General Fund budget.