Audit of the Fire Department

CITY OF HOBOKEN, NEW JERSEY

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April 27, 2011

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Matrix Consulting Group was retained by the City of Hoboken to conduct an Audit of the Fire Department. The primary factors in the scope of services include the following:

- Evaluation of emergency service delivery Citywide.
- Assess overall management of the Department, including the use of proactive management tools such as incident command, pre-fire planning, incident critiques and other factors.
- Evaluate personnel management issues, including recruitment, selection, training, health and safety programs, performance evaluation and other factors.
- Review overall staffing and staffing on individual units in the system.
- Assess location of fire stations and resource deployment to ensure continued service delivery responsiveness. This is particularly challenging in Hoboken with its small size but high levels of density.
- Compare current programs and services to regional and national trends and standards of service.
- Evaluate other support services found within the Fire Department.

In order to conduct this study, the Matrix Consulting Group project team engaged in the following activities:

- Interviewed senior executive staff to understand financial, operational and other issues facing the City.
- Interviewed Department management, including the Fire Chief and Command Staff.
- Conducted small group interviews with line personnel within the Fire Department.
- Collected detailed data describing operations, workload, deployment, scheduling, use of leave, apparatus, station location, etc.

- Developed a descriptive profile of the Fire Department describing current operations, service levels, staffing, deployment, stations, etc.

Collectively, these steps were intended to provide the project team with a full understanding of the current methods of service delivery by HFD, its operations and the environment within which services are provided. This approach was also intended to ensure that all participants had opportunities for input into the study process.

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Executive Summary

The analysis and supporting documentation contained within this report are extensive. This Executive Summary is intended to provide a brief synopsis of those results. In no way should the recommendations included in this report be construed as limiting the need to address future issues that could not be anticipated by this study. The table, below, provides a summary of our findings and recommendations with fiscal and operational impacts.

Finding	Recommendation	Fiscal Impact
The City of Hoboken has not established service level objectives for fire, rescue, and emergency medical services.	After consideration of the historical workloads of the HFD, local risks, and current service levels, the City should establish standards for fire, rescue, and emergency medical services. At a minimum the City should utilize a 1-minute target for dispatch process and 1-minute target for fire department reflex time to 90% of emergency incidents.	None

Finding	Recommendation	Fiscal Impact
The HFD's performance falls below that targeted in national reflex time standards.	The project team found that reflex times (from time of alarm to the unit being en-route) were at or below 60% - in other words, 60% of the time the units were en-route in 90 seconds or less. The national standard is 90% of the time in 90 seconds or less for emergency incidents. The HFD should more closely monitor performance to ensure that rescue calls are responded to in 90 seconds or less 90% of the time, and that fire calls are responded to in 80 seconds or less 90 of the time.	None
The HFD's performance on drive times is excellent, with 90% of calls for service responded to in less than four minutes 90% of the time.	Total responses indicate that there is additional capacity for work throughout the response system. However, the system has been designed to provide for nationally targeted response times of four minutes or less.	
The project team examined staffing on the line from several view points including levels of workload and capacity. While the HFD could certainly increase the utilization level of Firefighters, the system is well designed to provide for effective first and total response. The Department's level of staffing and resources are sufficient, in conjunction with mutual aid from surrounding communities, to allow for the elimination of an engine company.	Eliminate the Battalion Chief's driver (a Firefighter). Eliminate an engine company while at the same time up-staffing two others to allow for the reduction in staffing of four Captains positions. Some of these savings have already been realized due to un-filled positions following retirements. The savings shown is in overtime avoidance. The project team has assumed that the City has already realized the savings from not filling the positions. Promote eight firefighters to bring the total to 30 Captains. This can be paid for from the $822,000 in savings estimated by the City that will result from upcoming retirements. Avoidance of out of class pay, which is currently being made to personnel covering Captain and Battalion Chief slots, would further improve savings. Successful implementation of a Lieutenant classification would result in annual savings.	($1.2 million) ($300,000) ($300,000) ($345,000)

Finding	Recommendation	Fiscal Impact
Fire prevention staffing and workloads are appropriately matched. The City has experienced significant growth from 2000 to 2010 with more growth and development planned.	Make no changes to staffing in the Fire Prevention Bureau.	None
Engine and other company personnel can provide basic inspections and improve their familiarity with facilities in the City by doing basic walk through inspections.	Training and implementation of a company inspection / walk through / pre-plan program should be instituted. This improves safety in the community and enhances Fire staff utilization.	None
The HFD's training program is primarily overseen by the Training Captain. This provides for effective centralization of services but there are some gaps in the current approach.	The Department, through the Training Captain, should focus on improving training through linkages with post-incident reviews, development of standards based training efforts, creation of a new hire training program, and provision of management training.	$10,000
The current approach to providing emergency communications in the Fire Department is not efficient.	The Fire Department communications functions should be made responsible for providing 3-1-1 services.	None
The organizational structure of the Fire Department offers few opportunities for increased efficiency. The current structure is logical and does not have excess staff level positions.	Make no changes to the current organizational structure. Elimination of the Operations Chief would result in savings of almost $200,000 annually, but would introduce a number of challenges including placing the Chief directly in charge of maintaining consistency among operational shifts.	None
The Fire Department currently does not operate with many formal performance or other management systems in place.	The Fire Department, in conjunction with the City's administration and policy makers, should work to develop specific performance indicators for the HFD. The Department's financial management systems are adequate for ensuring that budgetary and overtime issues can be identified quickly. Once these are in place, simple management systems focused on tracking these indicators should be developed by the Department.	None

The culmination of these recommendations is for a total complement of 116 personnel of all classifications and assignments, as shown, below:

Position	Line	Prevention	Training / Spec. Ops.	Administration	Total
Chief	0	0	0	1	**1**
Battalion / Fire Marshal / Operations Officer	5	1	0	1	**7**
Captain	28	1	1	0	**30**
Firefighter	65	2	0	0	**70**
Civilian Clerk	0	1	0	1	**2**
Fire Alarm Operators	8	0	0	0	**8**
Maintenance	0	0	0	1	**1**
Total	**106**	**5**	**1**	**4**	**116**

Note that the table above assumes no change in the delivery of fire dispatch, but does assume the reduction of one engine company with up-staffing on two other engines and the elimination of the Battalion Chief's aide on shift. If those changes are not implemented, the complement would have to be increased per the analysis shown in the body of the report.

2. ANALYSIS OF EMERGENCY OPERATIONS

This chapter discusses the project team's analysis and findings related to emergency operations within the Hoboken Fire Department. Key questions addressed in this chapter include the following:

- Have the City of Hoboken and the Fire Department adopted service level objectives that target effective and efficient service levels?
- Is the Department capable of meeting adopted or recommended service level objectives? Where are there gaps and/or areas of duplication?
- Does the Hoboken Fire Department have the resources needed to provide targeted service levels?
- Are there opportunities to enhance service levels or provide services more cost effectively through redeployment of resources?

Each of these questions is addressed in the following sections. The first section, that follows, discusses service level targets.

1. THE CITY OF HOBOKEN HAS NOT YET ADOPTED SERVICE LEVEL STANDARDS

The adoption of performance standards for fire and EMS response is a critical first step in the evaluation of fire, rescue, and EMS service levels and staffing alternatives. While there are national standards that can be used to evaluate fire and EMS service delivery, each community must identify the key risks and necessary level of protection it needs based on its own unique circumstances. Once these performance standards are established a community can assess its performance and determine if current resources support the desired level of service.

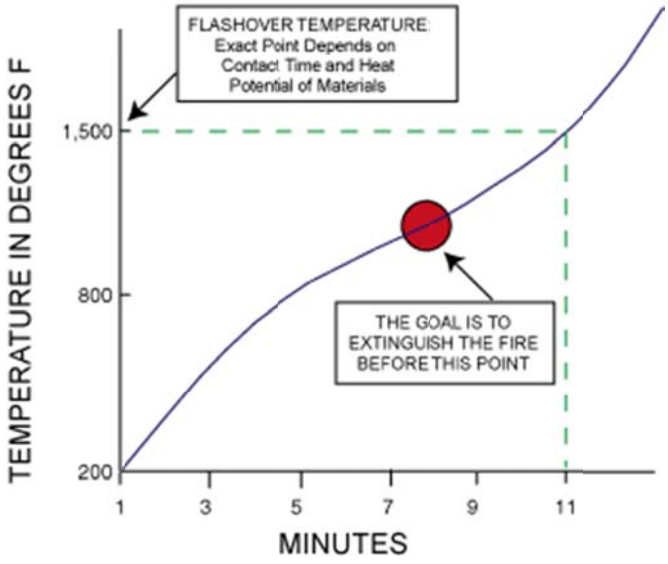
(1) Efforts to "Standardize" Service Level Objectives Are Based on Fire Growth Behavior and Research on Cardiac Arrest.

Nationwide, a great deal of effort and research has been put into developing performance objectives for the delivery of fire and EMS services. This effort is critical for agencies making decisions about deployment and location of emergency resources. The objectives promoted for fire/rescue and EMS have their basis in research that has been conducted into two critical issues:

- What is the critical point in a fire's "life" for gaining control of the blaze while minimizing the impact on the structure of origin and on those structures around it?
- What is the impact of the passage of time on survivability for victims of cardiac arrest?

The chart, that follows, shows a typical "flashover" curve for interior structure fires. The point in time represented by the occurrence of "flashover" is critical because it defines when all of the contents of a room become involved in the fire. This is also the point at which a fire typically shifts from "room and contents" to a "structure" fire – involving a wider area of the building and posing a potential risk to the structures surrounding the original location of the fire.

Generalized Flashover Curve



Note that this exhibit depicts a fire from the moment of inception – not from the moment that a fire is detected or reported. This demonstrates the criticality of early detection and fast reporting as well as rapid dispatch of responding units. This also shows the critical need for a rapid (and sufficiently staffed) initial response – by quickly initiating the attack on a fire, "flashover" can be averted. The points, below, describe the major changes that occur at a fire when "flashover" occurs:

- It is the end of time for effective search and rescue in a room involved in the fire. It means that likely death of any person trapped in the room – either civilian or firefighter.

- After this point in a fire is reached, potable extinguishers can no longer have a successful impact on controlling the blaze. Only larger hand-lines will have enough water supply to affect a fire after this point.

- The fire has reached the end of the "growth" phase and has entered the fully developed phase. During this phase, every combustible object is subject to the full impact of the fire.

- This also signals the changeover from "contents" to "structure" fire. This is also the beginning of collapse danger for the structure. Structural collapse begins to

become a major risk at this point and reaches the highest point during the decay stage of the fire (after the fire has been extinguished).

It should be noted that not every fire will reach flashover – and that not every fire will "wait" for the 8-minute mark to reach flashover. A quickly responding fire crew can do things to prevent or delay the occurrence of flashover. These options include:

- Application of portable extinguisher or other "fast attack" methodology.
- Venting the room to allow hot gases to escape before they can cause the ignition of other materials in the room.
- Not venting a room – under some circumstances this will actually stifle a fire and prevent flashover from occurring.

Each of these techniques requires the rapid response of appropriately trained fire suppression resources that can safely initiate these actions. In the absence of automatic fire suppression systems, access to interior fires can again limited by a safety requirement related to staffing levels. OSHA and related industry standards require the presence of at least 2-firefighters on the exterior of a building before entry can be made to a structure in which the environment has been contaminated by a fire. In the absence of a threat to life demanding immediate rescue, interior fire suppression operations are limited to the extent a fire service delivery system can staff to assure a minimum of 4-people actively involved in firefighting operations. The second issue to consider is the delivery emergency medical services. One of the primary factors in the design of emergency medical systems is the ability to deliver basic CPR and defibrillation to the victims of cardiac arrest. The exhibit, that follows, demonstrates the survivability of cardiac patients as related to time from onset:

This graph illustrates that the chances of survival of cardiac arrest diminish approximately 10% for each minute that passes before the initiation of CPR and/or defibrillation. These dynamics are the result of extensive studies of the survivability of patients suffering from cardiac arrest. While the demand for services in EMS is wide ranging, the survival rates for full-arrests are often utilized as benchmarks for response time standards as they are more readily evaluated because of the ease in defining patient outcomes (a patient either survives or does not). This research results in the recommended objective of provision of basic life support within 4-minutes of notification and the provision of advanced life support within 8 minutes of notification. The goal is to provide BLS within 6 minutes of the onset of the incident (including detection, dispatch and travel time) and ALS within 10 minutes. This is often used as the foundation for a two-tier system where fire resources function as first responders with additional (ALS) assistance provided by responding ambulance units and personnel.

Additional recent research is beginning to show the impact and efficacy of rapid deployment of automatic defibrillators to cardiac arrests. This research – conducted in King County (WA), Houston (TX) and as part of the OPALS study in Ontario, Canada –

shows that the AED can be the largest single contributor to the successful outcome of a cardiac arrest – particularly when accompanied by early delivery of CPR. It is also important to note that these medical research efforts have been focused on a small fraction of the emergency responses handled by typical EMS systems – non-cardiac events make up the large majority of EMS and total system responses and this research does not attempt to address the need for such rapid (and expensive) intervention on these events.

The results of these research efforts have been utilized by communities and first responders, often on their own with no single reference, to develop local response time and other performance objectives. However, there are now three major sources of information to which responders and local policy makers can refer when determining the most appropriate response objectives for their community:

- The Insurance Services Office (ISO) provides basic information regarding distances between fire stations. However, this "objective" does little to recognize the unique nature of every community's road network, population, calls for service, call density, etc.

- The National Fire Protection Association (NFPA) promulgated a documented entitled: "NFPA 1710: Objective for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments." This document (NFPA 1710) was published in 2001 and generated a great deal of dialogue and debate – which is still on-going.

- The Commission on Fire Accreditation International (CFAI) in its "Objectives of Coverage" manual places the responsibility for identifying "appropriate" response objectives on the locality. These objectives should be developed following a comprehensive exercise in which the risks and hazards in the community are compared to the likelihood of their occurrence.

While each of these efforts provides a reference point for communities to follow, only NFPA 1710 offers any specificity. It is important to note that the performance

objectives (in terms of response times) provided in the NFPA 1710 document are derived from the basic research previously described. These include the following (all are taken from section 4.1.2.1.1 of NFPA 1710):

- One minute (60 seconds) for the processing of an incoming emergency phone call, including the completion of the dispatching of fire response units.
- "One minute and 20 seconds (80 seconds) for turnout time." This is also called reflex time, reaction time, "out-the-chute" time, etc. This is the time that elapses between dispatch and when the units are actively responding. The 2009 edition added 20 seconds for fire personnel when responding to fire incidents. This time was added to account for additional time needed to put on personal protective equipment.
- "Four minutes (240 seconds) or less for the arrival of the first arriving engine company at a fire suppression incident and / or 8 minutes (480 seconds) or less for the deployment of a full first-alarm assignment at a fire suppression incident."
- "Four minutes (240 seconds) or less for the arrival of a unit with first responder or higher level capability at an emergency medical incident."
- "Eight minutes (480 seconds) or less for the arrival of an advanced life support unit at an emergency medical incident, where this service is provided by the fire department."
- In section 4.1.2.1.2, NFPA 1710 goes on to state: "The fire department shall establish a performance objective of not less than 90 percent for the achievement of each response time objective specified in 4.1.2.1.1"

It is important to note the "and / or" found in the initial response objective statement. This indicates that a system would meet the intent of the standard if it can reasonably plan to deliver either the single unit, 4-minute travel time standard, the first alarm, 8-minute travel time standard, or both. It should also be noted that it is implied that the total time allotted is additive with each successive event. For example, a system which arrived on-scene in 6-minutes or less 90% of the time (from time of dispatch) would be in compliance – even if the turnout time was longer than a minute (though that should clearly be improved).

It is also critical to note that these time objectives apply to emergency calls for service – there is nothing in NFPA 1710 (nor in any other objective) that suggests that communities cannot establish a differential response to calls for service determined to be non-emergency in nature. A second element of the NFPA 1710 performance objectives addresses unit and total response staffing. These objectives are described in NFPA 1710 as follows:

- Engine and truck companies should be staffed with a minimum of four personnel (sections 5.2.2.1.1 and 5.2.2.2).
- Section A.3.3.8 defines a company as either a single unit or multiple units, which operate together once they arrive on the fire ground.
- A total initial response is defined (in section 5.2.3.2.2) as having a total of 15 people (if an aerial is utilized) for 90% of calls. This is broken down as follows:
    - One (1) incident commander.
    - One (1) on the primary supply line and hydrant.
    - Four (4) to handle the primary and backup attack lines.
    - Two (2) operating in support of the attack lines, performing forcible entry.
    - Two (2) assigned to victim search and rescue.
    - Two (2) assigned to ventilation.
    - One (1) assigned to operate the aerial device.
    - Two (2) to establish an initial rapid intervention team.
- If an incident is determined to require additional resources, the fire department should have as an objective the ability to respond with:
-
    - Additional units as needed (through its own resources or via automatic and mutual aid).
    - Assignment of two (2) additional personnel to the rapid intervention team.
    - Assignment of one (1) as an incident safety officer.

It is important to note that the four person companies discussed in some areas of NFPA 1710 are not maintained in the description of primary tasks to be accomplished on the fire ground – recognition that the requirements of the response in the field are dynamic and do not fit neatly into size and shape of any particular response configuration. These objectives apply to the initial and follow-up response for reported structure fires. The document does not suggest that this response be mounted for all incidents.

(2) The City of Hoboken Should Formally Adopt Locally Defined Service Level Objectives.

The City and the Fire Department have not identified or formally adopted service level targets for initial response to rescue calls or fire incidents. While the project team believes the standards utilized in the following sections are appropriate for the City, service level targets should be adopted only after careful consideration of local risks and the financial implications of maintaining those levels.

Recommendation: The City should formally adopt service level objectives. While targets should be locally determined, the project team believes the City should adopt a one-minute dispatch processing time and one-minute reflex time for 90% of emergency calls.

2. THE CURRENT SYSTEM PROVIDES RAPID RESPONSE TO EMERGENCY INCIDENTS WITHIN THE CITY OF HOBOKEN.

The project team collected response time data to document actual response times achieved by the Hoboken Fire Department over the past several years. The tables, that follow, shows the percentage of emergency incidents responded to within various response time intervals.

Hoboken Fire Department
Response Times Achieved
2007 to 2010

Dispatch to En-route	2007	2008	2009	2010
0 to 1 Min	67%	61%	62%	59%
2 Mins to 3 Mins	28%	34%	33%	35%
4 Mins or more	5%	5%	5%	6%
Average	1.30	1.50	1.40	1.50
Total Calls	3,609	3,376	3,288	3,352

Travel Time	2007	2008	2009	2010
0 to 4 Mins	90%	92%	91%	90%
5 Mins or more	10%	8%	9%	10%
Average	2.4	2.3	2.3	2.6
Total Calls	3,609	3,376	3,288	3,352

Incident Length	2007	2008	2009	2010
0 to 29 Minutes	88%	89%	89%	87%
30 to 59 Minutes	8%	8%	8%	9%
60 to 89 Minutes	2%	2%	2%	2%
More than 90	2%	1%	1%	2%
Average	18.9	18.9	18.8	18.6
Total Calls	3,609	3,376	3,288	3,352

The following points highlight the information presented above:

- As shown above, the average reflex time (dispatch to en-route) is approximately 1.5 minutes. Approximately 62% of calls receive a reflex time of 1 minute or less, and 90% are responded to within 3 minutes or less. Part of the delay in reflex time can be attributed to station design and the lack of adequate space for apparatus.

- Between 2007 and year to date 2010, the Hoboken Fire Department achieved a travel time of 4 minutes or less approximately 90% of the time. In addition, the average drive time was approximately 2.5 minutes. This is a very high level of service.

- Overall handling time (from dispatch to clear), was 30 minutes or less for approximately 90% of incidents handled by the fire department.

- The changes seen in the response times over the period appear to be those related to typical year-to-year fluctuations. These can result from unrelated issues such as location of the call, traffic, road construction, weather events, etc. A review of the data show that the response times in all facets have moved up and down in recent years in small increments.

Overall, the Fire Department provides a rapid response to emergency incidents. However, the HFD should monitor reflex times to ensure that crews respond as quickly as possible to emergency incidents.

Recommendation: The HFD should monitor reflex time to ensure that rescue incidents receive a reflex time of 60 seconds or less, 90% of the time, and fire incidents receive a reflex time of 80 seconds or less, 90% of the time.

3. ANALYSIS OF CALLS FOR SERVICE WORKLOAD INDICATES THERE IS SUFFICIENT CAPACITY IN THE CITY. HOWEVER, DEPLOYMENT IS BASED UPON OBJECTIVES FOR FIRE RESPONSE.

The project team collected data, which describe the actual workloads and utilization of fire units within the Hoboken Fire Department. The tables, which follow, show the average number of responses handled by each front line unit in the HFD.

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Unit 155

Hour	2007	2008	2009	2010	Avg. / Hr.
0000 to 0100	50	64	60	46	0.15
0100 to 0200	38	54	48	51	0.13
0200 to 0300	31	53	57	49	0.13
0300 to 0400	37	37	47	46	0.11
0400 to 0500	32	36	45	40	0.10
0500 to 0600	22	39	40	28	0.09
0600 to 0700	38	42	30	29	0.10
0700 to 0800	40	48	42	55	0.13
0800 to 0900	54	60	56	74	0.17
0900 to 1000	55	85	86	91	0.22
1000 to 1100	72	104	85	95	0.24
1100 to 1200	89	97	95	97	0.26
1200 to 1300	73	92	82	83	0.23
1300 to 1400	79	90	84	102	0.24
1400 to 1500	62	90	91	79	0.22
1500 to 1600	72	85	79	85	0.22
1600 to 1700	63	95	70	82	0.21
1700 to 1800	60	64	78	89	0.20
1800 to 1900	59	73	82	86	0.21
1900 to 2000	64	95	101	86	0.24
2000 to 2100	70	83	82	92	0.22
2100 to 2200	73	62	81	80	0.20
2200 to 2300	49	66	69	69	0.17
2300 to 0000	40	57	62	59	0.15
Total	1,322	1,671	1,652	1,694	4.34

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Engine 1

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	61	31	30	22	0.10
0100 to 0200	43	40	25	32	0.10
0200 to 0300	43	28	29	23	0.08
0300 to 0400	42	23	29	29	0.08
0400 to 0500	43	23	17	17	0.07
0500 to 0600	32	18	20	15	0.06
0600 to 0700	38	20	17	18	0.06
0700 to 0800	45	16	27	34	0.08
0800 to 0900	78	31	32	42	0.13
0900 to 1000	75	46	58	35	0.15
1000 to 1100	75	65	48	39	0.16
1100 to 1200	107	52	50	48	0.18
1200 to 1300	95	44	54	60	0.17
1300 to 1400	97	39	57	52	0.17
1400 to 1500	87	48	52	51	0.16
1500 to 1600	105	56	45	46	0.17
1600 to 1700	85	51	36	40	0.15
1700 to 1800	84	33	44	51	0.15
1800 to 1900	87	46	58	48	0.16
1900 to 2000	99	54	67	65	0.19
2000 to 2100	105	52	34	37	0.16
2100 to 2200	93	39	43	51	0.15
2200 to 2300	75	36	37	39	0.13
2300 to 0000	55	26	34	40	0.11
Total	1,749	917	943	933	3.11

Average Hourly Responses, 2007 to 2010
Engine 3

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	3	4	37	9	0.04
0100 to 0200	3	4	21	20	0.03
0200 to 0300	2	2	27	9	0.03
0300 to 0400	1	2	17	9	0.02
0400 to 0500	2	3	28	11	0.03
0500 to 0600	1	1	21	9	0.02
0600 to 0700	1	4	10	8	0.02
0700 to 0800	1	2	20	12	0.02
0800 to 0900	0	7	32	18	0.04
0900 to 1000	0	7	39	25	0.05
1000 to 1100	0	7	41	28	0.05
1100 to 1200	0	6	48	37	0.06
1200 to 1300	1	5	42	25	0.05
1300 to 1400	0	5	33	25	0.04
1400 to 1500	1	2	47	29	0.05
1500 to 1600	1	5	54	23	0.06
1600 to 1700	1	6	36	34	0.05
1700 to 1800	1	8	49	39	0.07
1800 to 1900	0	8	43	17	0.05
1900 to 2000	0	4	48	31	0.06
2000 to 2100	1	6	48	18	0.05
2100 to 2200	4	3	45	22	0.05
2200 to 2300	3	6	30	26	0.04
2300 to 0000	4	4	38	15	0.04
Total	31	111	854	499	1.02

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Engine 4

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	58	62	40	37	0.13
0100 to 0200	46	59	34	42	0.12
0200 to 0300	40	50	41	29	0.11
0300 to 0400	44	37	31	32	0.10
0400 to 0500	37	37	25	34	0.09
0500 to 0600	30	37	28	17	0.08
0600 to 0700	42	42	20	23	0.09
0700 to 0800	39	41	25	42	0.10
0800 to 0900	73	67	44	60	0.17
0900 to 1000	73	77	57	66	0.19
1000 to 1100	75	80	54	66	0.19
1100 to 1200	109	84	58	68	0.22
1200 to 1300	86	85	58	66	0.20
1300 to 1400	94	78	71	68	0.21
1400 to 1500	77	87	59	65	0.20
1500 to 1600	93	87	41	57	0.19
1600 to 1700	85	90	45	60	0.19
1700 to 1800	76	68	63	71	0.19
1800 to 1900	74	74	52	69	0.18
1900 to 2000	93	96	62	72	0.22
2000 to 2100	95	81	46	72	0.20
2100 to 2200	88	68	50	75	0.19
2200 to 2300	69	65	47	52	0.16
2300 to 0000	50	54	42	54	0.14
Total	**1,646**	**1,606**	**1,093**	**1,298**	**3.87**

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Engine 5

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	66	45	40	29	0.12
0100 to 0200	50	36	29	32	0.10
0200 to 0300	54	36	36	23	0.10
0300 to 0400	45	32	20	22	0.08
0400 to 0500	39	27	31	29	0.09
0500 to 0600	28	22	31	17	0.07
0600 to 0700	37	30	24	18	0.07
0700 to 0800	47	37	31	29	0.10
0800 to 0900	94	57	47	55	0.17
0900 to 1000	82	58	47	65	0.17
1000 to 1100	89	76	55	62	0.19
1100 to 1200	118	70	63	65	0.22
1200 to 1300	107	71	50	54	0.19
1300 to 1400	115	76	50	59	0.21
1400 to 1500	95	59	47	42	0.17
1500 to 1600	108	63	58	54	0.19
1600 to 1700	88	77	54	57	0.19
1700 to 1800	99	57	56	55	0.18
1800 to 1900	90	60	55	51	0.18
1900 to 2000	98	57	59	54	0.18
2000 to 2100	104	63	63	69	0.21
2100 to 2200	102	43	55	52	0.17
2200 to 2300	70	41	48	52	0.14
2300 to 0000	54	46	36	37	0.12
Total	1,879	1,239	1,085	1,083	3.62

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Rescue 1

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	59	68	67	57	0.17
0100 to 0200	48	63	54	55	0.15
0200 to 0300	43	55	63	42	0.14
0300 to 0400	41	41	46	49	0.12
0400 to 0500	38	43	49	43	0.12
0500 to 0600	31	36	41	26	0.09
0600 to 0700	39	45	32	34	0.10
0700 to 0800	44	46	52	55	0.14
0800 to 0900	80	74	77	80	0.21
0900 to 1000	79	83	89	95	0.24
1000 to 1100	85	97	89	94	0.25
1100 to 1200	104	94	90	103	0.27
1200 to 1300	83	100	93	85	0.25
1300 to 1400	97	100	103	100	0.27
1400 to 1500	69	98	106	89	0.25
1500 to 1600	93	99	85	92	0.25
1600 to 1700	86	98	77	88	0.24
1700 to 1800	78	82	99	100	0.25
1800 to 1900	71	93	96	91	0.24
1900 to 2000	90	114	104	100	0.28
2000 to 2100	93	103	93	106	0.27
2100 to 2200	87	83	90	94	0.24
2200 to 2300	64	84	84	85	0.22
2300 to 0000	48	67	72	82	0.18
Total	1,650	1,866	1,851	1,847	4.94

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Truck 1

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	74	47	60	40	0.15
0100 to 0200	57	46	48	35	0.13
0200 to 0300	53	38	57	32	0.12
0300 to 0400	46	30	47	35	0.11
0400 to 0500	45	27	45	20	0.09
0500 to 0600	35	32	40	17	0.08
0600 to 0700	42	30	30	26	0.09
0700 to 0800	54	28	42	39	0.11
0800 to 0900	84	56	56	48	0.17
0900 to 1000	91	54	86	52	0.19
1000 to 1100	86	70	85	54	0.20
1100 to 1200	123	65	95	57	0.23
1200 to 1300	118	63	82	68	0.23
1300 to 1400	109	57	84	69	0.22
1400 to 1500	103	57	91	57	0.21
1500 to 1600	120	65	79	59	0.22
1600 to 1700	101	67	70	52	0.20
1700 to 1800	103	56	78	65	0.21
1800 to 1900	118	69	82	75	0.24
1900 to 2000	122	71	101	85	0.26
2000 to 2100	129	83	82	66	0.25
2100 to 2200	117	56	81	75	0.23
2200 to 2300	95	61	69	55	0.19
2300 to 0000	72	37	62	54	0.15
Total	2,097	1,265	1,652	1,237	4.28

Hoboken Fire Department
Average Hourly Responses, 2007 to 2010
Truck 2

Hour	2007	2008	2009	2010	Avg./Hr.
0000 to 0100	82	54	57	39	0.16
0100 to 0200	62	46	41	54	0.14
0200 to 0300	65	49	53	35	0.14
0300 to 0400	53	39	32	31	0.11
0400 to 0500	51	34	39	37	0.11
0500 to 0600	36	24	31	22	0.08
0600 to 0700	49	41	38	25	0.10
0700 to 0800	57	47	44	39	0.13
0800 to 0900	106	68	64	69	0.21
0900 to 1000	102	71	70	75	0.22
1000 to 1100	113	85	70	69	0.23
1100 to 1200	144	92	87	92	0.28
1200 to 1300	119	84	68	66	0.23
1300 to 1400	129	94	77	74	0.26
1400 to 1500	107	84	71	52	0.22
1500 to 1600	129	82	74	77	0.25
1600 to 1700	92	98	75	79	0.24
1700 to 1800	115	87	85	86	0.26
1800 to 1900	117	93	82	80	0.25
1900 to 2000	119	96	90	69	0.26
2000 to 2100	129	85	79	95	0.27
2100 to 2200	118	65	75	77	0.23
2200 to 2300	91	61	66	65	0.19
2300 to 0000	71	61	51	51	0.16
Total	2,256	1,640	1,519	1,458	4.71

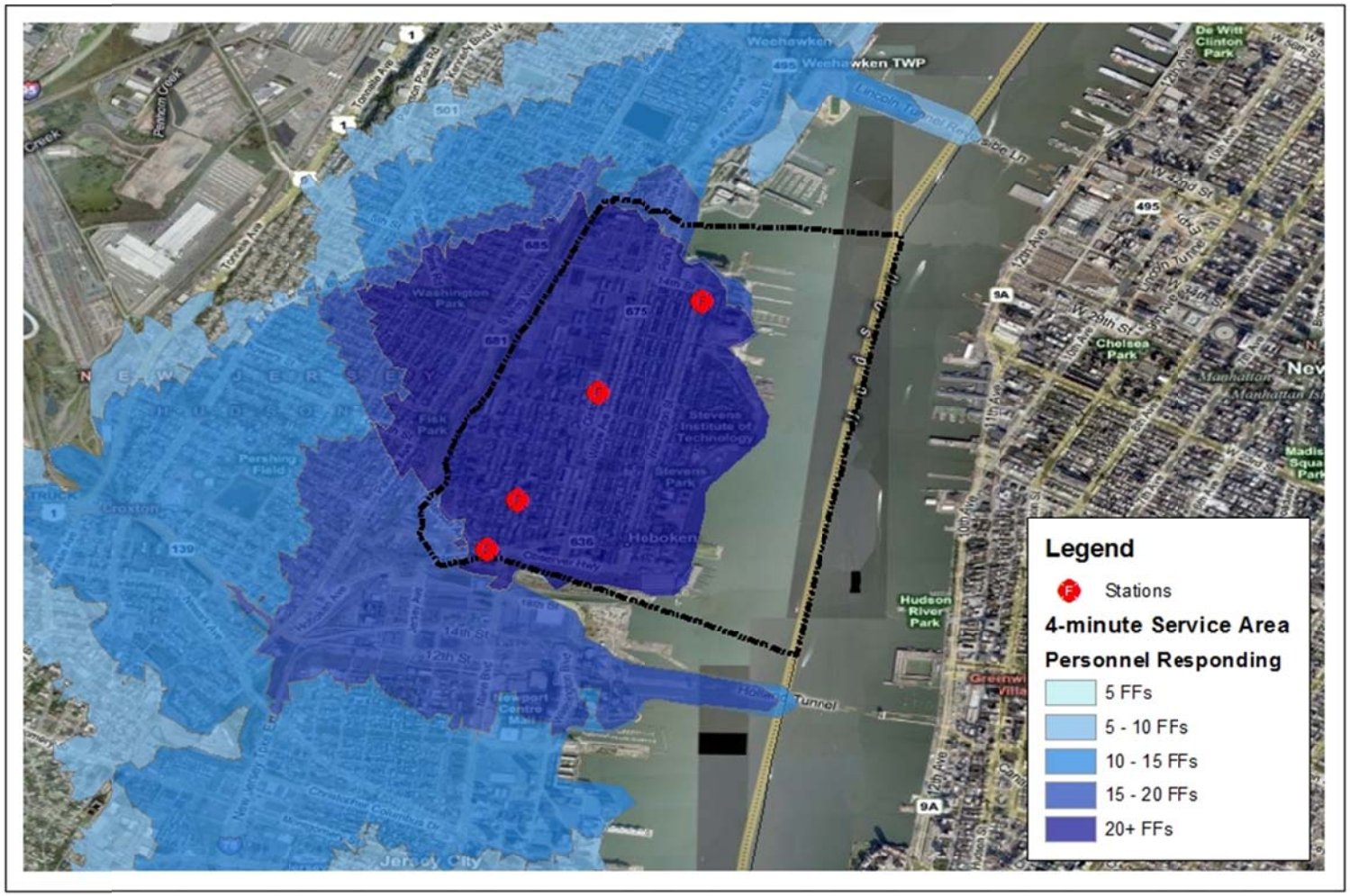
As shown above, the average hourly utilization of units is relatively low. No single unit averages more than half a call for service per hour. The average daily responses range from 3 to 5 runs per day. The busiest unit is Rescue 1 at approximately 5 responses per day.

Despite the relatively low utilization, the deployment of personnel and resources is based upon the Fire Department's objectives for structure fire response. The typical response consists of 2 engines, 1 ladder truck, 1 rescue, and 1 Battalion Chief. This 1st alarm response consists of 14 personnel. A second alarm calls for an additional engine and ladder truck as well as mutual aid response from North Hudson Regional Fire or

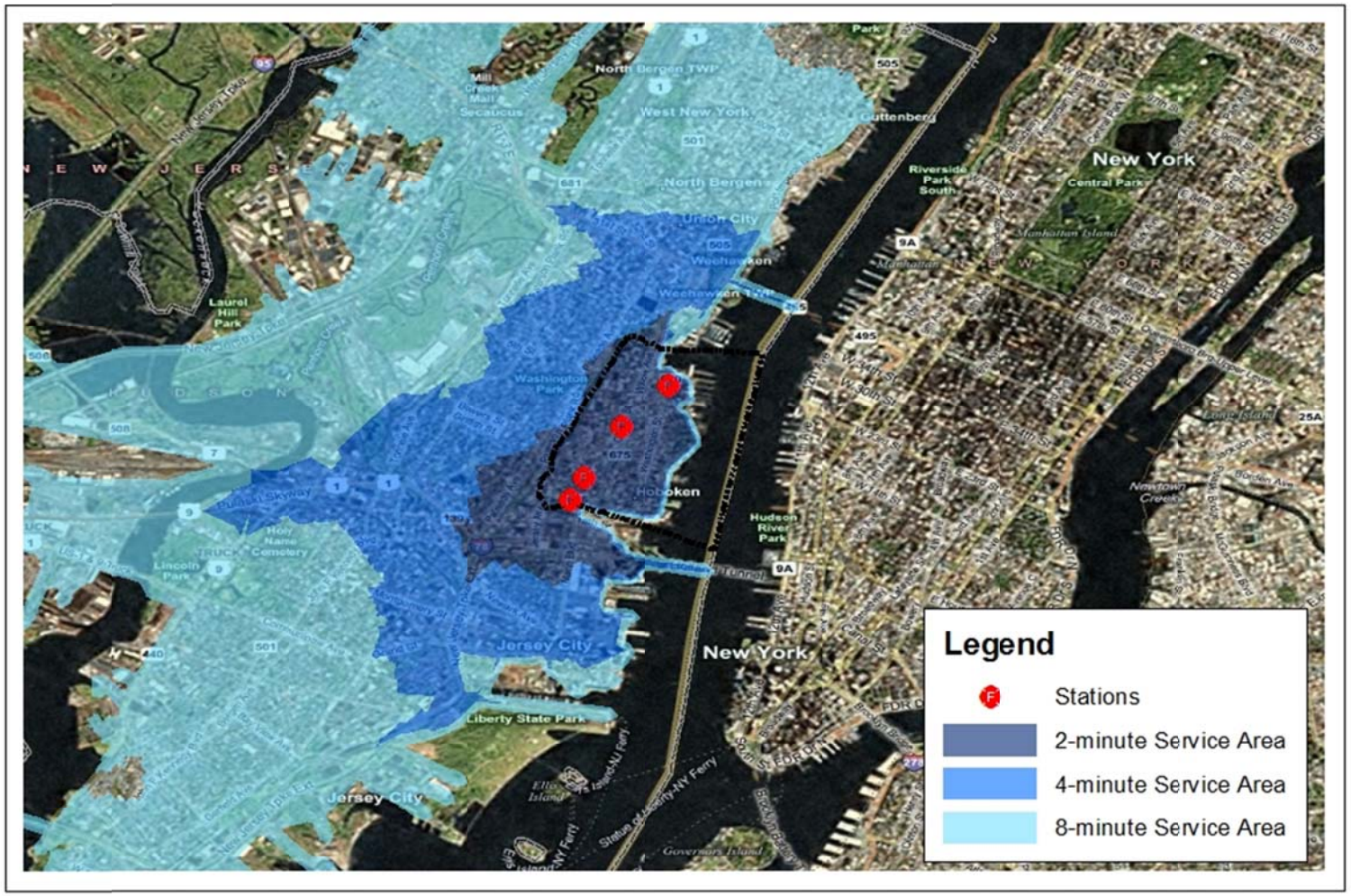
nearest department. A second alarm response would assign a total of 20 personnel. Current daily minimum staffing calls for 23 personnel.

As shown in the maps, below, the current deployment of resources provides excellent coverage to the City of Hoboken. This is true both with and without the available mutual aid companies from surrounding areas.

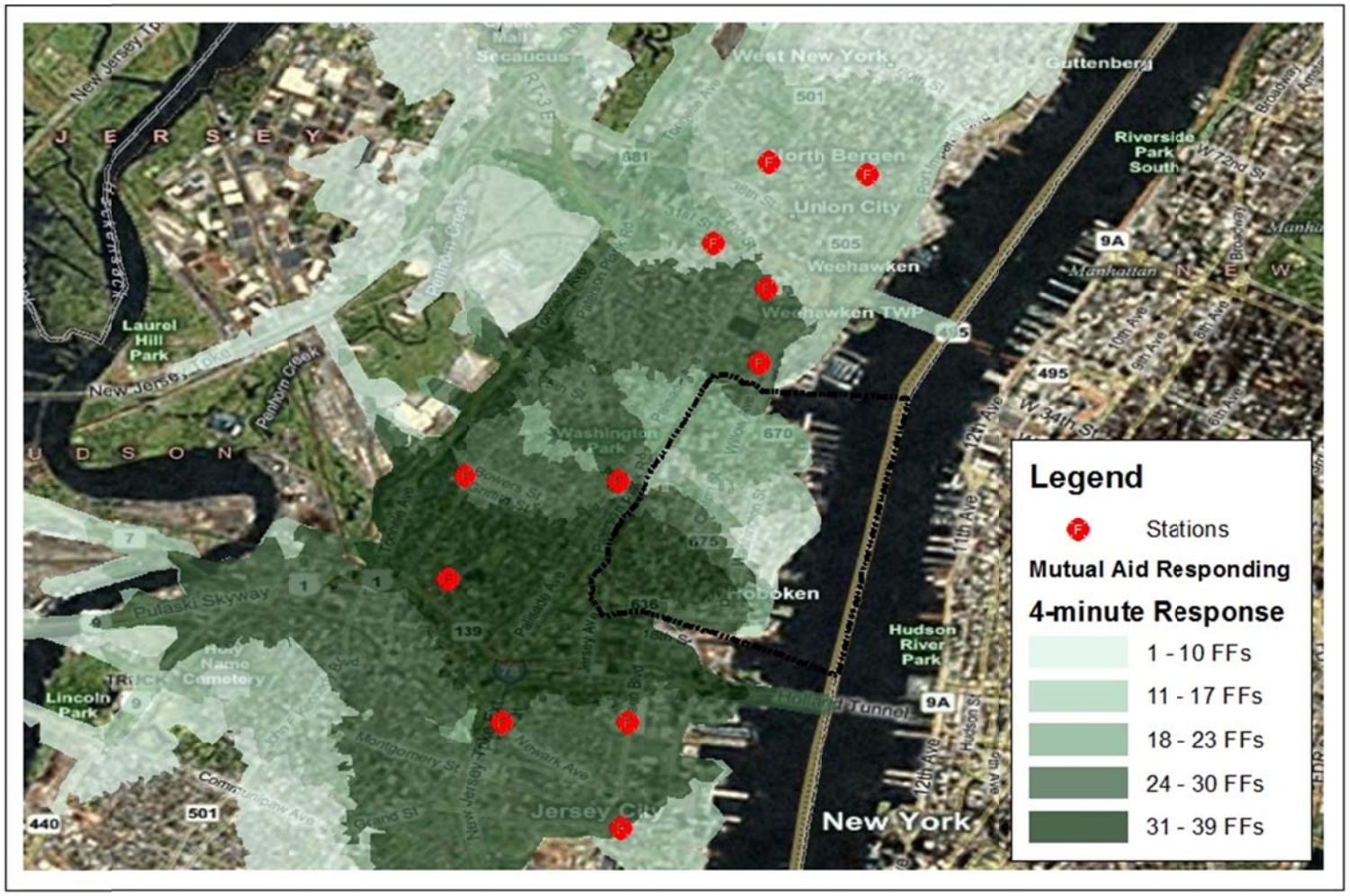
Hoboken, NJ
4-Minute Service Area



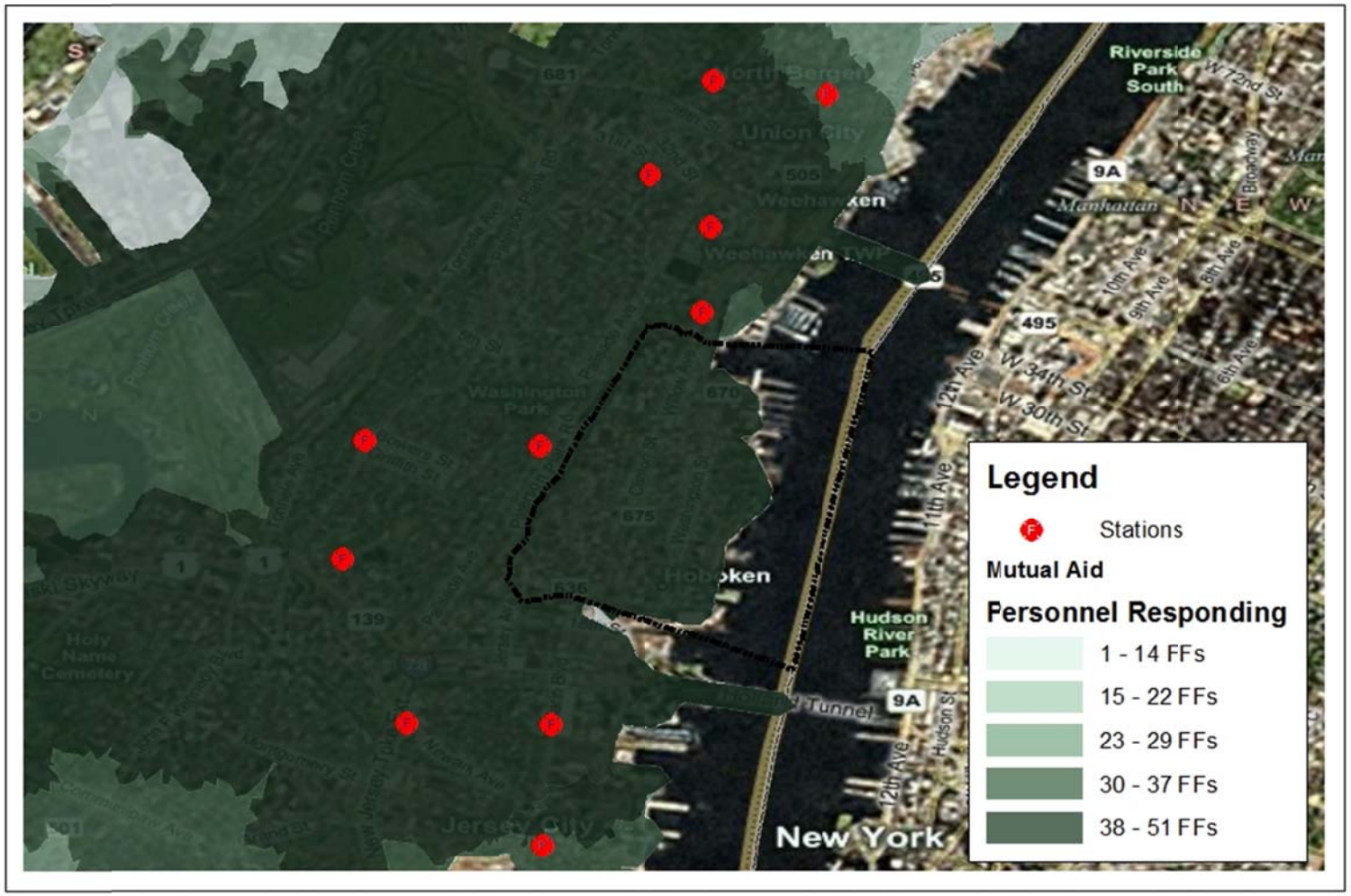
Hoboken FD
2-minute, 4-minute & 8-minute Service Area



Hoboken FD
Mutual Aid Response Capabilities from Closest Stations
4-minute Response Time



Hoboken FD
Mutual Aid Response Capabilities from Closest Stations
8-minute Response Time



These maps show that the City of Hoboken enjoys an exceptional level of coverage not only from its four current fire stations and seven front-line apparatus, but also from neighboring communities that could reasonably be expected to respond with mutual aid on a regular basis. The following paragraphs provide a summary of key findings to take from these exhibits:

- As shown in the first map, every road segment in the City of Hoboken can be reached in four minutes or less of drive time by the entire on-duty response capability of the Fire Department (when they are all in quarters).

- The second map shows a layering of 2-minute, 4-minute and 8-minute response capability. This map asks the question: how long would it take at least one unit to arrive if all units were available? This analysis shows, in fact, that the entire City is within the 2-minute (or faster) travel time from at least one fire station.

- The third and fourth maps on the preceding pages show the response capability of the mutual aid companies that surround the City of Hoboken. These two maps do not assume the availability of any resources for response from the Hoboken Fire Department.

    - The third map (or the first mutual aid map) shows the level of resources that are available within a 4-minute drive time from their stations. Every road segment in the City of Hoboken is within a 4-minute drive of at least one fire company (we have assumed only a single 3-person unit per mutual aid station to make the analysis easier – additional companies would simply increase the availability of resources).

    - The fourth map (or the second mutual aid map) shows the level of resources that could reach the City in an 8-minute drive time. In this model, again, no City of Hoboken Fire Department resources were assumed to be available. In this analysis, 10+ companies can reach the City in less than an 8-minute drive time – a substantial level of mutual aid availability.

These analyses indicate that not only does the City of Hoboken provide a high level of service through its own fire companies, but that it also enjoys an advantageous level of mutual aid coverage should the resources of the HFD become fully committed or if the companies and staff in the HFD are simply not sufficient to handle a massive

event or concurrent incidents. The next section examines the level of staffing necessary to meet the current minimum staffing target of the HFD.

4. ANALYSIS OF THE FIRE DEPARTMENT'S CURRENT INTERNAL MINIMUM STAFFING PLAN SHOWS THAT THERE IS A SHORTAGE OF STAFF TO MAKE SHIFT MINIMUMS WITHOUT RELYING ON OVERTIME.

The project team compiled use of leave data to document actual personnel availability during the past year. A sample of watch sheets was utilized to estimate the number of personnel who report to work each day. Based on this information, we determined the number of firefighters needed to meet the Hoboken Fire Department's current internal minimum staffing plan.

Current HFD Minimum Staffing Target
Compared to the T/O

Apparatus	BC	Capt. [1]	FF	Total / Shift
Battalion Chief	1		1	2
Engine 4		1	2	3
Rescue 1		1	2	3
Engine 3		1	2	3
Ladder 1		1	2	3
Engine 1		1	2	3
Ladder 2		1	2	3
Engine 5		1	2	3
Total	1	7	15	23

All Shifts - 4	4	28	60	92.00
Net Availability Rate [2]	82%	82%	82%	82%
Total Needed with Leave	5.00	34.00	73.00	112.00
Current Assigned	5	22	77	104.00
Shortage / Overage	-	(12.00)	4.00	(8.00)

[1] The NJ Personnel Merit Board finding indicated that the City was unable, in 2002, to demonstrate a significant difference in the roles of front line supervisors (Captains and Lieutenants) if the City were to institute a new classification. While the units from a station do often operate together, particularly the Ladder / Engine pairs, there are sufficient opportunities where the units operate independently to require a supervisor on each unit. A number of personnel who had been promoted to Lieuenant were promoted, en masse, to the rank of Captain at the end of 2002 following a decision by the Personnel Merit Board.
[2] The net availability factor is simply one way of examining the number of personnel required to fill a position 24 hours a day. This shows that personnel are available to work on 82% of their schedule shifts.

As shown above, the net availability rate for firefighters is approximately 82%. This means that these personnel actually work 82% of regularly scheduled hours after considering sick leave, vacations, military, training, and other absences.

- Based on this figure, the current minimum staffing plan, and the number of assigned personnel, the Department is appropriately staffed at the Battalion Chief position, short by 12 positions as the Captain position and 'over' by four positions at the firefighter classification.

- As a result, the Department has utilized acting assignments, consolidates companies for supervision, or has utilized overtime to staff positions. However, the preceding analysis indicates that overall, the Fire Department is short eight positions *under the current minimum staffing plan*.

- This is made more complicated by the fact that the Fire Department has seven companies but only five or six Captains in the T/O per shift (six on two and five on the other two).

This is further complicated by the fact that Fire Department retirements over the past several years have not been filled, resulting in a number of vacant positions. As shown, below, this has had an impact on either overtime (for coverage) or unit staffing. Per a breakdown provided by the Department, the staffing gaps are more significant on each shift, at this target for minimum staffing:

Current HFD Minimum Staffing Target
Compared to the Current Shift Staffing

Apparatus	BC	Capt.	FF	Total / Shift
Battalion Chief	1		1	2
Engine 4		1	2	3
Rescue 1		1	2	3
Engine 3		1	2	3
Ladder 1		1	2	3
Engine 1		1	2	3
Ladder 2		1	2	3
Engine 5		1	2	3
Total	1	7	15	23

All Shifts - 4	4	28	60	92.00
Net Availability Rate	82%	82%	82%	82%
Total Needed with Leave	5.00	34.00	73.00	112.00
Current Assigned	2	21	77	100.00
Shortage / Overage	(3.00)	(13.00)	4.00	(12.00)

The analysis presented, above, will reportedly change on April 1, 2011 when an additional five retirements are planned (2 Battalion Chiefs and three more line personnel), resulting in a net shortage of 17 personnel rather than the 12 shown, above, once those retirements take place. This is shown, for illustrative purposes, below:

Current HFD Minimum Staffing Target
Compared to the Expected Shift Staffing on 4/1/2011

Apparatus	BC	Capt.	FF	Total / Shift
Battalion Chief	1		1	2
Engine 4		1	2	3
Rescue 1		1	2	3
Engine 3		1	2	3
Ladder 1		1	2	3
Engine 1		1	2	3
Ladder 2		1	2	3
Engine 5		1	2	3
Total	1	7	15	23

All Shifts - 4	4	28	60	92.00
Net Availability Rate	82%	82%	82%	82%
Total Needed with Leave	5.00	34.00	73.00	112.00
Current Assigned	0	19	76	95.00
Shortage / Overage	(5.00)	(15.00)	3.00	(17.00)

A review of the Department's watch sheets indicates that the minimum-staffing plan has not always been maintained. There are a number of examples where an engine company is closed and personnel are re-assigned to another unit. This is also evidenced by the Department's low utilization of overtime, as shown below:

Line Item	FY 07-08 Expended	FY 08-09 Expended	FY 09-10 Expended
Regular Pay Salaries and Wages	$13,210,140	$12,170,100	$12,757,169
Temporary	$-	$-	$-
Fire Department Overtime	$123,349	$26,245	$148,008
Overtime as % of regular salaries	1%	0%	1%

Typically, the project team looks for overtime to be no higher than 5 to 7% of regular salary costs. As shown above, the Hoboken Fire Department has averaged 1% or less over the past three years. Interviews with the Chief indicate that overtime has increased as the Department has made an effort to maintain staffing on all seven front line companies, with the practice of shutting down an engine company having been discontinued in recent months.

The project team contacted several departments in the region and learned that only one has assigned a driver to its Battalion Chief (but does not assign one to the shift commander Deputy Chief):

Question	Bayonne	East Brunswick	New Brunswick	Perth Amboy
Apparatus & Staffing by Type:				
Engines	7	4	6 (3 FL, 3 R), Min Staffing – 3	3 (2FL, 1R), Min. 2
Trucks	2	3	2 (1 FL, 1 R), Min Staffing – 3	2 (FL)
Heavy Rescues	1 (cross staffed)	1	2, Not staffed/only as needed	1 Light Rescue, 1HR(R)
Chief Officer Cars	2	1	1	1
Do you have a driver/aide assigned to the Chief's car?	Battalion Chief Yes, Deputy Chief No.	No	Only when staffing permits, but typically No	No

Question	Bayonne	East Brunswick	New Brunswick	Perth Amboy
Who handles dispatch for your Department?	Police Department	Police Department	Police Department	Police Department
How many people are assigned to Fire Dispatch?	No dedicated staff	No dedicated staff	No dedicated staff	1 per shift
What shifts do they work?	N/A	N/A	N/A	4 on/ 4 off 8 hour shift

The results of the survey indicate that assigning a driver to the shift commander / battalion chief is not a common practice, even in nearby communities. The Battalion Chief's aide position should be considered for a reduction (or staffed only when personnel are available). The fiscal impact of these reductions would be a savings of $498,972 as shown, below:

Position	Total Salary	Total Benefits	Total Position Cost
Firefighter	$77,940	$46,803	$124,743
Number Reduced	-4	-4	-4
Total Fiscal Impact	($311,761)	($187,210)	($498,972)

These savings would result in a change in current operating practices where the Firefighter assigned to the Battalion Chief (who currently serves as a safety responder, providing assistance at incidents to which the Battalion Chief responds). These savings are over-stated, however, given the current policy in the City to not fill vacancies in the Fire Department. These positions are, or will be following the next round of retirements, being covered with increased overtime expenditures. The actual fiscal impact of this change is captured in the next section.

The project team would note that the City of Hoboken has received significant grant funds and is potentially eligible to receive more than $748,000 in grant funds, as shown, below:

Grant Purpose	$ Amount
New Fire Apparatus	$270,000
Fire / Rescue Boat	$364,000
SCBA Equipment	$114,000
Total	**$748,000**

These are new grants for capital items: replacement Engine for a unit which is 18 years old, replacement fire / rescue boat and replacement SCBA equipment for 25 units which are passing their useful life. These funds, and SAFER grant funds themselves may be in jeopardy from lack of compliance with SAFER grant requirements. However, the savings accruing the to City from not filling the vacancies and, if taken, from eliminating the Chief's Aide position on each shift would quickly make up these lost funds.

Recommendation: Eliminate the position of Chief's Aide on each shift.

5. THE FIRE DEPARTMENT COULD SAFELY OPERATE AND CONTINUE PROVIDING HIGH LEVELS OF SERVICE WITH ONE FEWER COMPANY. STAFFING ON TWO OF THE REMAINING ENGINES COULD BE INCREASED TO MINIMIZE THE OVERALL IMPACT ON RESPONSE CAPABILITY.

The preceding section examined the staffing required under the current Fire Department minimum staffing plan. This section examines the question of minimum staffing from a 'zero-base' point of view. Specifically, what level of staffing and what level of capability does the Fire Department in Hoboken require? How should these decisions be made? The project team raises the following issues:

- What should the Fire Department be able to handle 'on its own' before reaching out to mutual aid resources?

- What would happen if current resources were reduced? Would the Department be able to provide rapid response times and be able to handle concurrent incidents at the level experienced in the City?

- What is the availability of mutual aid in the City from surrounding communities? Would a change in the level of HFD staffing significantly alter the number of times that the Fire Department reaches out to its neighbors for mutual aid support?

The project team proposes the following answers to these questions:

- The Hoboken Fire Department should be able to handle the following combinations:

  - Multiple single-engine, EMS, rescue, auto-accident calls that occur concurrently.

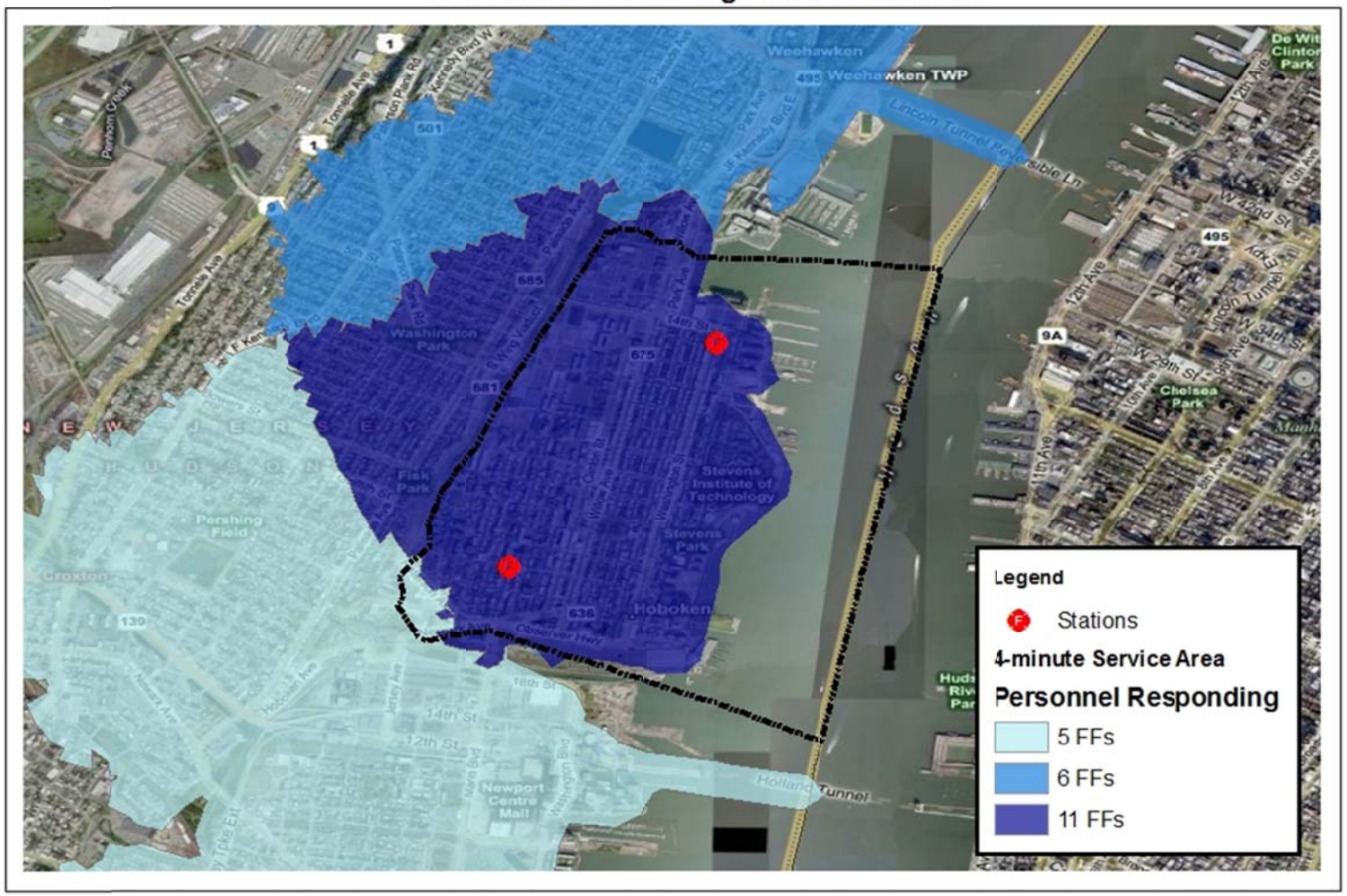
  - A first alarm (small) structure fire response while an EMS / small incident is on-going.

  - A full structure fire response while no other incidents are on-going concurrently.

- The project team assessed what the capability of the Department would be if units were taken out of service. A map showing the impact of removal of <u>two</u> stations is shown on the prior page – this was done to emphasize the minimal impact on response time coverage for the City of Hoboken (no mutual aid units). The map, on the preceding page, clearly shows that the HFD can cover the City from any combination of the stations that it currently has. The limiting factor is the ability of the stations to house sufficient personnel and unit to be useful.

- The current structure fire response of the HFD, on initial alarm, is 2 engines, 1 truck, 1 rescue, 1 Chief (this results in 13 if there is not an Aide). Under current staffing this preserves two engines and a truck. Second alarm calls for another engine and a truck and may also result in calls for mutual aid from North Hudson Regional Fire. This brings the total response to 20 (or 21 if the Aide is included).

Hoboken, NJ
4-minute Service Area
HQ and 1313 Washington Street Station



- Concurrent call risk, while present in the City of Hoboken, is not a major issue given the distribution and availability of units. As was shown in several preceding exhibits, the typical unit in the City averages fewer than five calls per day. As an example, the elimination of an engine would increase the workload of the engines to just over five runs per day.

Unit	2007	2008	2009	2010	Avg. / Year	Avg. / Day
155	1,322	1,671	1,652	1,694	1,585	4.34
Engine 1	1,749	917	943	933	1,136	3.11
Engine 3	31	111	854	499	374	1.02
Engine 4	1,646	1,606	1,093	1,298	1,411	3.87
Engine 5	1,879	1,239	1,085	1,083	1,321	3.62
Rescue 1	1,650	1,866	1,851	1,847	1,803	4.94
Ladder 1	2,097	1,265	1,652	1,237	1,563	4.28
Ladder 2	2,256	1,640	1,519	1,458	1,718	4.71
Total	12,630	10,315	10,649	10,049	10,911	29.89

Note the drop in the number of runs for Ladder 1 and Ladder 2 as the HFD's response policies were altered and the number of calls to which the trucks were assigned declined.

- Mutual aid, as has been demonstrated in a preceding series of maps, is quite significant in its availability to the City of Hoboken. The entire City is well within the reach of at least one engine in less than a 4-minute drive time and in most cases within reach of multiple companies in that same period of time. The City enjoys the position of being strategically located within a network of high-density career fire departments (a network of which it is a part, clearly).

All of these findings suggest that the City of Hoboken can operate with one fewer company without significantly downgrading the level of service. The following findings support this conclusion:

- Unit utilization levels would remain at or around five run per day for engines if one were permanently eliminated.

- The size of the community works to the advantage of the Department. While there are significant potential for risk in the community (density of structures, highways, rail, waterfront, high-rises, etc.) the Department also faces a small response area to serve.

- In addition, the availability of mutual aid is quite favorable, allowing for significant coverage by neighboring departments when resources are required for major incidents, or major concurrent events.

The table, below, provides our calculation of the number of personnel required to meet a minimum staffing plan for: 3 engines, 2 trucks, 1 rescue and a shift commander:

Staffing Target With Three Engine Companies and no Aide for BC
Compared to the Expected Shift Staffing on 4/1/2011

Apparatus	BC	Capt.	FF	Total / Shift
Battalion Chief	1		0	1
Engine 4		0	0	0
Rescue 1		1	2	3
Engine 3		1	2	3
Ladder 1		1	2	3
Engine 1		1	2	3
Ladder 2		1	2	3
Engine 5		1	2	3
Total	1	6	12	19

All Shifts - 4	4	24	48	76.00
Net Availability Rate	82%	82%	82%	82%
Total Needed with Leave	5	28	60	93.00
Current Assigned	0	19	76	95.00
Shortage / Overage	(5)	(9)	16	2.00

This shows that a total complement of 93 personnel would be required to staff the shift (compared to the current actual assignment). This shows that with the Aide position removed, and the elimination of the engine assigned to the Jefferson Street station, there are currently (prior to April 1) seven more personnel than required to meet this suggested level of minimum staffing.

The savings that could be derived from the closure of an engine company and elimination of the Battalion Chief's aide are significant, as shown, below:

Position	Total Salary	Total Benefits	Total Position Cost	Number Reduced	Fiscal Impact
Firefighter - Chief's Aide	$77,940	$46,803	$124,743	-4	($498,970)
Firefighter - Engine Elimination	$77,940	$46,803	$124,743	-8	($997,940)
Captain - Engine Elimination	$123,243	$66,518	$189,761	-4	($759,044)
				Total	($2,255,954)

The savings that the City can expect is dependent on the definition of 'current staffing' and the number of companies that are being staffed. If current staffing is viewed as the T/O count of 112, with a total of seven (7) front line fire companies, the savings are the $2.5 million calculated above. If the current level of staffing is viewed as 95 personnel, with a total of seven (7) front line fire companies, the savings is the elimination of the overtime that would be used to fill the four positions recommended for elimination on each shift. The calculation, below, shows the potential overtime impact of these vacancies if the Fire Department continues to try to operate seven companies at current and expected staffing levels:

Vacancies to Meeting Minimum (as of 4/1)	17
Net Availability	82%
Scheduled Hours / Person	2,184
Hours / Person Available	1,791
Hours Going Uncovered at Current Minimum	30,445
Overtime Rate (Top Step Firefighter)	$54
Annual Cost if Overtime Used to Cover All Vacant Hours	$1,629,725

This analysis shows that any effort to maintain current levels of minimum staffing without filling some of the vacancies will result in a more than ten-fold increase in overtime over current levels. To avoid this expense, the City must reduce companies. It should also be noted that an additional $822 thousand [3] will come off the Department's annual payroll with the five additional retirements that are expected to occur on April 1, 2011 – these savings are not included in our savings calculation.

In order to convert eight (8) Firefighters to Captain, the City would incur the following cost:

[3] This figure is based on an estimate provided by the Fire Department and the City of Hoboken.

Position	Total Salary	Total Benefits	Total Position Cost	Number Reduced	Fiscal Impact
Eliminate Firefighters	$77,940	$46,803	$124,743	-8	($997,943)
Promote Captains	$123,243	$66,518	$189,761	8	$1,518,090
				Total	$520,147

Note that this cost of $520 thousand would be covered, with $300,000 in annual savings remaining, compared to the retirements that will take place in April 2011. In addition, this promotion would reduce the City's reliance on paying personnel to work up from their current classifications (e.g., Firefighters being paid to work as Captains) which means that the City is effectively paying for these Captains regardless. The table, below, shows an estimate of the potential cost avoidance from this element of making the promotions (this is a conservative estimate):

Total Captain Hours (7 Units)	44,520
Total Current Captains (5/1/11)	19
Total BC Hours	8,760
Total Current BC's (5/1/11)	0
Available Capt / BC's to Cover	19
Total Hours to Cover	53,280
Total Captain Hours @ 82%	34,027
Variance	19,253
Estimated Split OT / Out-of-Class	25%
Out of Class Hours	14,440
Cost of Out of Class Hours	$299,529

This shows that the City's true savings from promoting these personnel would be at least $600,000 per year.

As an alternative, the City should consider up-staffing two of the engines (Engine 3 and Engine 5) from their current target of three personnel (one Captain and two Firefighters) to a target of four personnel (one Captain and three Firefighters). This preserves the two line positions that would otherwise be eliminated with the reduction of

the engine at Jefferson Street, reducing only the Captain position. The table, below, shows the staffing implication of this change:

Staffing Target With Three Engine Companies and no Aide for BC
Engines 3 and 5 Up-Staffed to a Target of Four Firefighters
Compared to the Expected Shift Staffing on 4/1/2011

Apparatus	BC	Capt.	FF	Total / Shift
Battalion Chief	1		0	1
Engine 4		0	0	0
Rescue 1		1	2	3
Engine 3		1	3	4
Ladder 1		1	2	3
Engine 1		1	2	3
Ladder 2		1	2	3
Engine 5		1	3	4
Total	1	6	14	21
All Shifts - 4	4	24	56	84.00
Net Availability Rate	82%	82%	82%	82%
Total Needed with Leave	5.00	28.00	65.00	98.00
Current Assigned	0	19	76	95.00
Shortage / Overage	(5.00)	(9.00)	11.00	(3.00)

Under this scenario, the total required number of personnel for the line increases to 98 (5 Battalion Chiefs, 28 Captains and 65 Firefighters) in suppression operations. This would generate savings from the elimination of four Captain positions. This results in the savings shown, below:

Position	Total Salary	Total Benefits	Total Position Cost	Number Reduced	Fiscal Impact
Firefighter - Chief's Aide	$77,940	$46,803	$124,743	-4	($498,970)
Captain - Engine Elimination	$123,243	$66,518	$189,761	-4	($759,044)
				Total	**($1,258,014)**

The result is more than $1.2 million in cost avoidance each year from making this transition to three engines, with increased staffing on two units.

The City could consider trying to create a Lieutenant classification for the company officer running the second unit in the 2-unit stations in the HFD. The idea behind this is that the Captain in each station would be responsible for both overseeing

their unit and for overseeing the daily operations and maintenance in the station itself. The Lieutenants would be responsible for overseeing the operations of their units, under the direction of the Captains during non-emergency events. This practice is common in many fire / rescue agencies around the United States. The exhibit, below, shows the cost implications:

Total Number of Company Officers Required (6 Units)	28
Captains	12
Lieutenants	16
Fully Loaded Cost of a Captain	$189,761
Fully Loaded Cost of a Lieutenant (1/2 Way Between Capt and FF)	$160,996
Cost of Position if Only Captains Are Used (24 Captains)	$5,313,314
Cost of 12 Captains	$2,277,135
Cost of 12 Lieutenants	$2,575,942
Cost of Optional Approach	$4,853,077
Variance	-$460,237

The City's ability to be successful with this will depend on their ability develop a distinction between the roles of the Captain and Lieutenant. This will be particularly important given the prior effort before the Personnel Merit Board.

Finally, the City should recognize that several operational implications will arise from the elimination of the Chief's Aide position and the elimination of the engine company at Jefferson Street:

- Response times for first due engines will be virtually unchanged due to the geography of the City. Our GIS analyses demonstrates that there is an excellent level of coverage throughout the City in less than four minutes from every fire station due to the road network and small size of the community.

- The Department will still be able to maintain a total initial response force of 21 personnel including the Battalion Chief.

- Elimination of the Chief's Aide will require a change in current ICS in that a Fire Fighter will need to be detailed to the Chief to assist with radio communication and other tasks at the command post.

- The City will, as has been mentioned, need to place some increased reliance on mutual aid if major incidents occur, or when multiple incidents require response from the Department that exhausts the six remaining companies.

It should be noted that the City should promote personnel to fill the vacant Battalion Chief positions, which would also trigger promotions to the rank of Captain. Ultimately, the Department would require five line Battalion Chiefs, 28 Captains and 65 Firefighters for the line. This does not count personnel assigned to Fire Prevention, Training, Apparatus Maintenance or Operations.

Recommendation: The City of Hoboken should eliminate the Engine company assigned to the headquarters station on Jefferson Street and the Battalion Chief's Aide. Concurrently, the City should up-staff two of the remaining engines to a target for four personnel per day. This will result in annual cost-avoidance of more than $1.2 million. Creating the Lieutenant classification with the linked compensation savings would result in annual savings of more than $460,000.

3. ANALYSIS OF SUPPORT SERVICES

This chapter of our report evaluates training, fire prevention, emergency communications, and special operations within the Fire Department.

1. THE FIRE PREVENTION BUREAU PERFORMS A LARGE NUMBER OF LIFE HAZARD USE AND NON LIFE HAZARD USE INSPECTIONS EACH YEAR.

This section examines fire prevention and inspection activities in the Fire Department.

(1) Staffing in the Fire Prevention Bureau is Appropriate Given the Mix of Risk, Development and Workload.

The Fire Prevention Bureau is staffed by a Fire Marshal, one Captain, and two Firefighter Specialists. These personnel are responsible for enforcing the state fire code as well as non-life hazard use inspections, arson and fire investigations, and plan review. The table, below, shows inspection activity for 2009:

Total Life Hazard Uses	263
Total LHU's inspected	257
Total Number of LHUs re-inspected	185
Total Number of Certificates of Inspection Issued	257

Total Non Life Hazard Uses	734
Total Number NLHU Inspected	734

Total Number of Permits Issued	291
Total Number of Permit Inspections	291

1 & 2 Family Fire Extinguisher, Smoke & CO Detector Inspections

Total Number of Certificates Issued	691

Revenues received during the year

Total Rebates from State	$75,500
Total Non-Life Hazard Use Fees	$32,825
Total Permit Fees	$13,462

Total NJAC 5:70-2.12A Penalties	$8,050

As shown above, the Fire Prevention Bureau performed 257 life hazard inspections and 734 non-life hazard inspections last year. This unit also generated over $121,000 in revenues. The Bureau also inspects 1 and 2 family occupancies for fire extinguisher, smoke, and CO detectors. During 2009, a total of 691 of these inspections were performed.

Based upon the current workloads and number of occupancies within the City, the current staffing within the Fire Prevention Bureau is appropriate.

Recommendation: Maintain current staffing levels within the Fire Prevention Bureau.

(2) There Are Opportunities to Enhance the Engine Company Inspection Program.

Hoboken Fire Department should utilize engine and other companies for mercantile inspections. The goals of the program should include:

- Improve engine companies' familiarity with local commercial structures and businesses.
- Collect emergency contact and ownership information for local businesses.
- Increase the interaction of the Fire Department with the community on a non-emergency basis.
- Conduct inspections of properties for blatant fire hazards and/or violations (e.g. blocked exits, dangerously stored hazardous chemicals, functionality of emergency lighting systems, etc.

The points, which follow, discuss several opportunities for improvement with respect to the business inspection program.

- The Department does not have a central database that provides information regarding the total number of inspectable properties, as well as inspectional history and status. There is no simplified system of tracking its fire prevention workload that can be performed by engine companies.

- The Fire Department does not have access to an integrated permitting system; data are not linked to the business licensing process (which would inform the Department of new business, changes in ownership, etc.) or building permit process. This means that besides field visits (e.g. driving through parts of the community), the Department does not have a method for being notified and tracking new businesses or changes in ownership as they occur.

The project team recommends expanding the engine company inspection program to include the following:

- Fire prevention activities including annual inspections of rental properties (proper exits, smoke detectors, etc).

- Collecting useful information and documentation of hazardous situations and general layout of facilities. This information should be entered into data bases and uploaded to the CAD system for real time information to responding companies.

- Use of laptop and/or tablet computers with proper software would allow in field data collection and automatic updating of information.

Further, with the assistance of the Training Division, the Fire Prevention Division should:

- Develop a training program for all fire suppression personnel to properly conduct building inspections of all types of occupancies. This should include data collection and entry. This is not intended to suggest that all personnel become certified inspectors.

- An annual inspection plan with monthly targets.

- A computerized tracking system to track assigned, versus completed inspections.

- Computerization of documenting potential violations and follow-up issues to the Fire Prevention Bureau as well as a system for tracking violations and related follow-up activities.

Recommendation: The Hoboken Fire Department should expand its inspection program to include front line companies to conduct fire prevention, building code and complaint inspections. Purchase and utilize an updated computer system that allows real time tracking and data entry that allows important information to be available in the CAD system for dissemination to responding companies to emergencies, allow input and access to floor plans and list known hazards in the target buildings.

2. THERE ARE OPPORTUNITIES TO IMPROVE THE CURRENT TRAINING PROGRAM IN PLACE WITHIN THE HFD.

The Hoboken Fire Department has a one dedicated training position, a Fire Captain, who reports to the Operations Chief (a Battalion Chief). The points, which follow, summarize our key findings:

- Training is currently assigned 1 Captain to oversee training. Hazardous materials training is overseen by the Operations Chief (B.C. who is also the Department's USAR manager).

- The Captain develops the training schedule and topics. He also develops curriculum. Many of the training sessions are appropriately taught by company officers, using this centrally developed curriculum. Others are taught by the Training Captain.

- The Operations Chief oversees hazardous-materials and technical rescue training exercises and curriculum. He also attends monthly meetings in Newark regarding USAR and technical rescue issues that have regional impacts or planning elements.

- Potential opportunities for improvement include the following:

    - While the Department indicates that it endeavors to follow the ISO, training 20 hours per month, but do not record all training in Red Alert (RMS).

    - The Fire Department command staff should require that Captains do daily entry with regard to training conducted on shift. The training Captain has not been able to enter training exercises given his other commitments. The RMS has not been updated since September 2009. This is a risk management issue as well as a best practice that is not being followed.

    - The HFD occasionally goes to Bergen County's training facility to do live fire training and scenario based exercises. The Department infrequently conducts scenario based drills for companies, similar to those identified as basic knowledge drills in NFPA 1410.

        - There is no policy that ties post-incident critiques to training topic development. Training is rarely directly impacted by post-incident lessons learned. Post incident critiques are ad hoc and done by the shift crews and responding Battalion Chief only. There appears to be no process by which these lessons learned are distributed to others in the Department.

The Matrix Consulting Group recommends that the City and the Fire Department take the following steps:

- The Training Captain and the Operations Chief should develop a schedule allowing pairs of companies to conduct multi-company training evolutions. These drills should comply with the evolutions found in NFPA 1410. While the easiest pairings involve the engine / truck companies co-located with one another, the schedule should allow for varied combinations of units.

- The Fire Department, by tasking the Training Captain – and tapping the resouces available from other officers, should adopt a series of minimum standards for new and incumbent employees. These minimum standards should be made part of the process by which new employees either pass or fail their probationary period. These standards should continue to serve as the nucleus for in-station and multi-company training. Recommended standards include the following:

  - Area familiarization.
  - Vehicle familiarization.
  - Use of SCBA system.
  - Incident command and safety.
  - Use of ropes.
  - Use of ladders.
  - Use of hoses and streams.
  - Medical equipment.
  - Use of other tools and equipment.
  - Ventilation.
  - Emergency vehicle driver training.

  These standards require the company officer assigned to the new employee to mentor the person to ensure their understanding of the minimum requirements. In addition, each minimum standard has a test that is administered to ensure their knowledge. This provides a formal methodology for assessing employee performance and enables the Fire Department and the City to make more informed decisions.

- Develop a calendar-based system to support the company officers in their delivery of the training program. This would consist of the development of a series of key topics with supporting materials, pictures, reference guides, tests, suggested activities that would be provided to each fire station or on the internet for the Department. The key elements of the program are described, below:

  - The program would work by assigning a topic to a number (1-30).

  - A notebook (hardcopy or virtual) would be provided to each station.

  - Each topic would be covered when the date corresponds to its topic number.

  - This would ensure consistency (each topic would be taught from the same set of materials – the "Hoboken way").

  - The list of topics can be as narrow or broad as the Department desires. It can remain the same or can be changed quarterly or annually. Example topics include the following:

••	Ventilation	••	Overhaul	••	SCBA
••	Construction	••	Salvage	••	Entry
••	Hoses	••	Ground Ladders	••	Pumping
••	Fire Streams	••	Incident Command	••	Safety
••	Communications	••	Sprinklers	••	Streets
••	EMS	••	Hydrants	••	Policies

- The training program should be developed in accordance with NFPA 1410 – "Standard for Training for Initial Emergency Scene Operations." This is a standard which focuses less on topical skills training (as above) but also provides for scenario based minimum standards for a fire agency. This approach can easily be adopted to encompass both training as well as performance assessment for the line crews. A number of specific minimum skills are defined in the document. One example of the types of minimum standards set forth in NFPA 1410 follows:

  - Forward-lay a hose 300 feet from a hydrant using a single supply line.

  - Advance a pair of attack lines 150 feet each from the engine.

- Charge the lines so that the primary attack line can pump and maintain 100 gpm. The secondary (backup) line should be able to pump and maintain a flow of 200 gpm.

- This task should be completed by a 3-person engine company in less than three (3) minutes.

- Crews should be tested annually (or more often) on their ability to meet these minimum qualifications. Those units that cannot meet these standards should be immediately scheduled for training supervised by the Training Captain.

- The Training Captain should also utilize the recommended standards from NFPA 1410 to develop and oversee multi-company training. This training should be done on at least a quarterly basis for all units. The Deputy Chief on-duty should be involved in the exercises and full incident command practices should be utilized in all exercises involving any fire or rescue and all events with three or more units on-scene.

- All personnel from the rank of Captain and above should be provided with specific training to enable them to better oversee operations. The project team recommends that the Fire Department adopt an approach recommended NFPA 1021 “Standard for Fire Officer Professional Qualifications.” This standard sets forth requirements to achieve various classifications of Fire Officer 1 through Fire Officer 4. These are summarized, in the exhibit that follows:

Fire Officer I	Fire Officer II
• Firefighter II • Minimum standard for department. • Familiar with budget process. • Departmental operating procedures. • Fire prevention and education. • Cultural diversity. • Methods of supervision. • Group dynamics. • Rights of management and bargaining unit. • Contractual language. • Ethics. • Fire related ordinances. • Basic writing and organizational skills.	• All from FO1 • Ability to evaluate member performance. • Human resource policies of the city. • Communicate orally an in writing. • Preparing a project or divisional budget. • Purchasing laws and regulations. • Working with the press. • Incident command, health and safety.
Fire Officer III	**Fire Officer IV**
• All from FO 1 and FO 2. • Ability to research and analyze data. • Working with the public outside the agency. • Develop and oversee large budgets. • Ability to evaluate construction for issues.	• All from FO 1, FO 2 and FO 3. • Advanced training in personnel, administration, legal and other issues. • Advanced training in analysis and information management. • Training in long range planning and evaluation. • Major incident oversight. • Major incident planning.

This exhibit does not exhaustively cover the text of the 25-page standard. However, it does show the sense of progression that is encouraged by this program. The Fire Department could either adopt the standard formally (by linking, for example, promotions to these various levels) or could design a program for new and existing officers. Many of the elements of these programs can be provided by the City's Human Resources, Finance, Information Technology, Purchasing and other support departments. The City should budget an additional $10,000 in training funds to provide for outside training to management personnel.

The training program of the Fire Department should be enhanced to improve the consistency of training and to enhance the support of company officers. In addition, particular focus should be given to enhancing the training given to new employees and to management personnel. Specific steps that should be taken to enhance the delivery of management training include the following:

- Provide "grade appropriate" training to personnel in the Fire Department. Identify the training needs that are relevant to officers and provide this to them. Do not require officers who do not actively participate in line activities to spend time on line training.

- Access the programs made available at the Community College that focus on training mid-managers and senior managers to be more effective trainers. These classes focus on methods of instruction and identify the various ways in which people learn and retain information.

- Consider joint training exercises for managers in the Fire, Police and other City departments. The focus should be on sharing training opportunities which have broad applicability. City departments should focus on cross-cutting training issues such as personnel, budget management, capital planning, etc. and provide these to personnel in all public safety agencies in the City.

Recommendation: The Fire Department needs to make several major changes in its training program. These include improving the continuity in the position of Training Captain, development of a standards-based training program, annual testing against these minimum standards, development of new hire training, and provision of management training. The City should budget an additional $10,000 to cover the cost of the management and supervisory training - much of which can be provided in-house for no additional cost.

3. ANALYSIS OF COMMUNICATIONS WORKLOADS INDICATES THAT LESS THAN ONE COMMUNICATOR IS NEEDED DURING EACH HOUR OF THE DAY. THE CITY AND THE HFD SHOULD CONSIDER CONSOLIDATION OF DISPATCH OR ASSIGNMENT OF OTHER FUNCTIONS.

There are several approaches, which can be used to assess the staffing needs of a public safety communications center serving individual or regional areas. These approaches include the following:

- Methods which are based on comparisons with other agencies. These methods are inconsistent because the workload, technology and service level requirements vary tremendously among agencies.

- Approaches which are based on staffing a targeted number of "fixed posts" allocated on a functional basis (e.g. call taker, law enforcement radio, fire / rescue radio, etc.). These approaches are unsound because they do not tie staffing to actual workload.

The Matrix Consulting Group used a quantitative process for assessing communications staffing needs based on actual workloads in the existing communications center. The paragraphs below summarize this approach, its assumptions and the time standards used.

- As an analytical starting point, there are relationships among communications center workloads that are relatively constant from one agency to another and in a single agency over time. These workload relationships include measuring calls by type such as:

  - The total number of telephone calls received in a communications center expressed on a "per incident" or "per call for service" basis.

  - The total number of radio transmissions handled in a communications center expressed on a "per incident" or "per call for service" basis.

  - The total number of other workloads handled and expressed on a "per incident" or "per call for service" basis.

- Since most agencies do not track individual work elements of a communications center, such as the number of transmissions, and since virtually no agency consistently measures the time taken for each task, standards are borrowed from other agencies and verified, where data exists, against workloads handled in the dispatch centers.

- These standards were developed by the project team and others using detailed time and motion studies of communications centers nationwide. These communications centers incorporated state of art CAD technology and provided service to both law enforcement and fire / rescue agencies and emergency medical dispatch (EMD).

- Since police and fire calls for service are typically counted consistently and by most agencies, these communications "standards" are converted on the basis of total minutes of workload per call for service.

- More specifically, estimates of total communications center police and fire workloads (including not only calls for service related workloads, but also workloads associated with self-initiated and administrative activities) are expressed as a ratio of time per call for service. These time standards include:

  - For each law enforcement call for service, the equivalent of 8.9 minutes of call, self-initiated and administrative related communications workloads are allocated. This includes time estimates of radio, telephone, record check and administrative tasks. The 8.9 minutes is comprised of the following elements:

    - 130 seconds are allocated to process a service request (citizen generated call for service) and transfer to a radio dispatcher. This standard incorporates the fact that multiple calls can be generated by the same incident and that administrative / business calls are handled by staff in the communications center.

- •• 327 seconds of total radio transmissions related activity expressed on a "per call for service" basis – including call-related and officer initiated field workloads and administrative transmissions.

- •• 13 seconds are allocated for record checks via the teletype – expressed on a "per call for service" basis.

- •• 64 seconds are allocated for other tasks associated with the dispatch center (administrative, record-keeping, other activities).

- For each fire, emergency medical and service related incident, the equivalent of 8.2 minutes of call and administrative workloads are allocated. This includes time estimates of radio, telephone and administrative tasks. The 8.2 minutes is comprised of the following elements:

  - •• 120 seconds are allocated to process service requests and to transfer the call to a fire / rescue dispatcher. This standard incorporates the fact that multiple calls can be generated by the same incident and that administrative / business calls are handled by staff in the communications center. This includes time accounting for Emergency Medical Dispatch (EMD).

  - •• 372 seconds are allocated to radio transmissions – this is also expressed on a "per call for service" basis.

- These time standards are then applied against known or estimated call for service workloads handled by the dispatch center. Call for service counts are distributed on a time of day basis and multiplied by the time standards described above (i.e., 8.2 minutes per call for fire / rescue and 8.9 minutes per call for law enforcement). This calculation yields total average communications workloads on a time of day and day of week basis.

- Finally, to arrive at the number of dispatch center staff required to handle these workloads, a critical assumption needs to be made regarding the levels of productivity desired. An allowance needs to be made regarding the proportion of time which is desirable to have a dispatcher actually involved in call handling, radio transmission and related workloads. There are several reasons why direct task allocation should not be 100% of available time, including:

  - Dispatch centers which have relatively high utilization levels tend to "burn out" staff leading to high turnover and use of sick leave, disability, etc.

- Communications centers which have relatively high utilization levels experience “queuing” problems in which responses to incoming calls are delayed because of the number of calls or field units handled.

- Quality begins to suffer because dispatchers are cutting calls and radio transmissions short. This impacts service to field units and the public.

The project team used a task-loading factor of 30 minutes of actual call/radio activity per dispatch personnel per hour. The basis of this assumption is that one-half of every working hour should be used for direct communications workloads. This 30-minute factor is divided into the hourly workload amount in the dispatch center.

Utilizing the methodology described above, the project team evaluated dispatch staffing needs based on current workload. The table on the following page shows the number of dispatchers needed per hour:

Hour	2007	2008	2009	2010	Avg/Year	Avg/Hour	Dispatch Workload	Dispatchers Needed
0000 to 0100	121	110	122	99	113	0.31	2.75	0.09
0100 to 0200	98	102	83	106	97	0.27	2.37	0.08
0200 to 0300	106	97	100	79	95	0.26	2.33	0.08
0300 to 0400	85	75	82	74	79	0.22	1.93	0.06
0400 to 0500	71	69	76	63	70	0.19	1.70	0.06
0500 to 0600	57	62	62	42	56	0.15	1.36	0.05
0600 to 0700	82	81	76	60	75	0.20	1.82	0.06
0700 to 0800	97	81	93	92	91	0.25	2.22	0.07
0800 to 0900	149	144	137	148	144	0.40	3.52	0.12
0900 to 1000	164	147	151	162	156	0.43	3.80	0.13
1000 to 1100	177	174	167	159	169	0.46	4.12	0.14
1100 to 1200	219	194	167	188	192	0.53	4.68	0.16
1200 to 1300	182	171	159	163	169	0.46	4.12	0.14
1300 to 1400	200	173	172	159	176	0.48	4.29	0.14
1400 to 1500	177	173	184	142	169	0.46	4.12	0.14
1500 to 1600	193	174	165	160	173	0.47	4.22	0.14
1600 to 1700	160	194	154	151	165	0.45	4.02	0.13
1700 to 1800	166	174	180	185	176	0.48	4.30	0.14
1800 to 1900	196	186	191	182	189	0.52	4.60	0.15
1900 to 2000	217	199	197	180	198	0.54	4.84	0.16
2000 to 2100	219	199	167	208	198	0.54	4.83	0.16
2100 to 2200	193	151	166	186	174	0.48	4.24	0.14
2200 to 2300	164	143	143	151	150	0.41	3.66	0.12
2300 to 0000	133	115	113	136	124	0.34	3.03	0.10

As shown above, less than one dispatcher is needed during each hour of the day to handle emergency communications workload. However, a minimum of one dispatcher would be needed, as well as coverage for breaks, meals, training, and administrative time. The table, below, shows the estimated number of dispatchers needed:

Dispatcher Staffing Calculation

Daily Coverage	24
Weekly	168
Annual	8,736
Scheduled	2,184
Leaves	327.6
Training	20
Net Shifts Worked	77
Admin / Breaks per Shift (Mins)	90
Total Admin Time	115
Net Available Hours	1,722
Dispatchers Needed	5
Current	8

As shown above, a total of 5 dispatchers are needed to meet the coverage requirements. Currently, there are 8 dispatchers assigned. However, as a practical matter, more than one dispatcher would need to be available to assist a dispatcher during a 24-hour period, for meals, breaks, and / or emergency incidents. As a result, in order to provide this level of staffing, the Fire Department would need to consolidate operations with another dispatch center so that the position paid for by the City could be covered and supported by other staff.

As an example, the North Hudson Regional Communications Center could provide this service. However, there are several issues that should be considered before this change is made:

- The Hoboken Fire Department and NHRCC are on different frequencies. As a result, the Fire Department would need to upgrade its repeaters in the City as

well as replace all of its portable and fixed radio equipment. This would be a one-time capital cost to the City of Hoboken.

- This would require negotiation with NHRCC or another entity regarding costs as well as operational policies. It would be important for dispatchers to have an understanding of the geography of the city. Clear policies would have to be formally established to ensure that there are no issues with how calls and units are dispatched.

A review of the NHRCC indicates that the total cost for one Public Safety Communicator is approximately $67,000 in salaries and benefits ($47,000 average salary + $20,000 in benefits). Five positions would cost approximately $335,000 annually. The current cost for dispatchers in the HFD is $507,637 in salaries and benefits. As a result, approximately $172,000 annually could be saved. Some of these savings would be reduced in the first year due to potential capital investment to convert the fire department's radio system. Another impact would be the City's estimated $140,000 per year in additional benefit costs that would have to be paid out to the majority of current dispatchers – thereby reducing the savings to $30,000 per year.

Another option would be to merge Police and Fire Communications. This would not require any changes in radio equipment and would provide telephone support for the Fire Communicators. There would be a requirement for additional training (in how to handle phone calls related to Fire) and to cross-train current Fire Communicators to handle Police telephone and radio work. Interviews with the Department have indicated that the transition of the current employees in the fire dispatch center would take an extended period given their contract with the City.

Another alternative would be to retain the current level of staffing but to assign additional tasks within the Fire Communications center. This could include the concept of supporting a new 24-hour 3-1-1 initiative in the City utilizing existing personnel.

Implementing 3-1-1 would likely cost the City more than $100,00 in software and other related costs.

Recommendation: The Fire Department and the City should develop a 3-1-1 functions utilizing the 24-hour capacity of existing fire dispatch personnel.

4. ANALYSIS OF COMMAND STRUCTURE AND SYSTEMS

This chapter examines the organizational structure and key management systems of the Fire Department.

1. KEY TO EVALUATING ANY ORGANIZATIONAL STRUCTURE IS THE NEED TO IDENTIFY CRITERIA FOR ASSESSMENT.

In order to evaluate the organizational structure of the Hoboken Fire Department, the project team first had to identify the criteria by which the organizational structure would be judged. The paragraphs, that follow, describe those criteria as well as describe what is meant by each of them:

- **Accountability and Responsibility is clearly identified:** The organization must be consistent with the concept that clear lines of authority and decision making are essential for any organization to achieve excellence. Areas of responsibility are clearly delineated and points of accountability are readily identifiable.

- **Span of Control or Communication is Optimal:** Effective organizations are structured so that lines of communication are identifiable and where there are multiple reporting relationships, responsibility for communication and control are clearly identified and understood.

- **There are essential checks and balances in place where necessary:** As it relates to this project, checks and balances are necessary in the area of clinical performance review as opposed to operational performance review.

- **Structure is based on task requirements and work flow as opposed to specialized skills of individual members:** There is a tendency in some organizations to organize work patterns around the specific passions or skills of individual members. This results in high friction levels of most work processes and the relationships between group members and groups them.

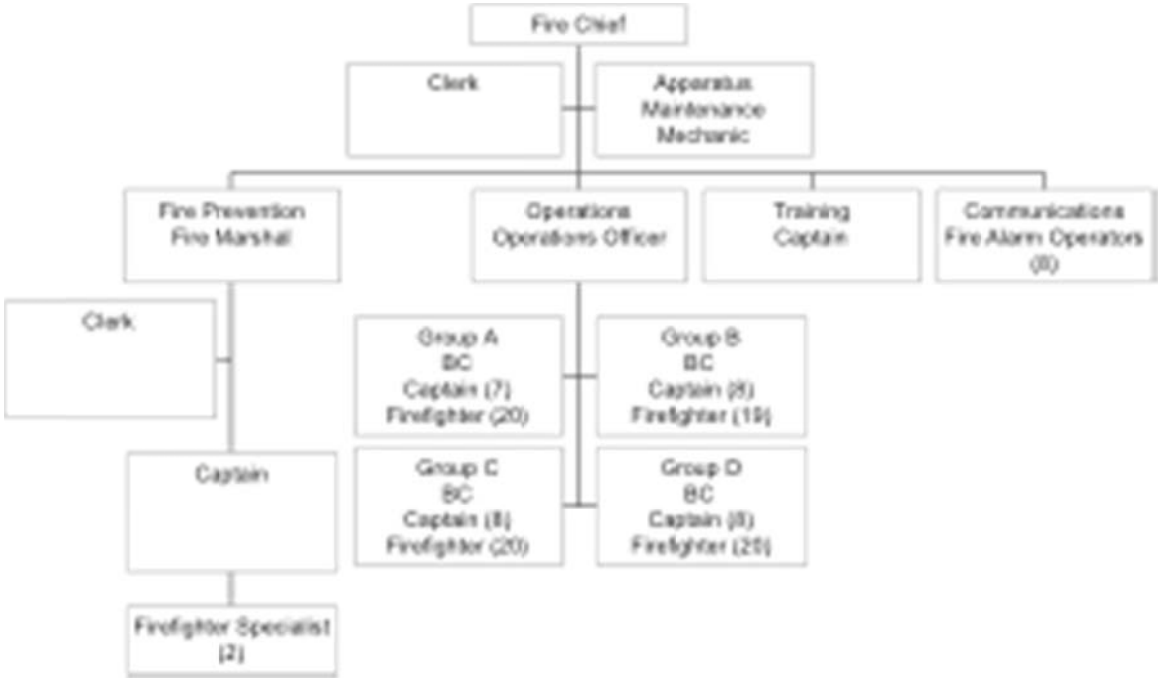
- **Similar titled positions have similar responsibilities and levels of accountability:** The organization should be structured such that decision making authority and the ability of decisions to impact the organization in a strategic way are all found at similar levels of the hierarchy.

- **Support functions are logically grouped and do not, through this grouping, create additional layers of oversight:** Organizational structures should group support functions together, separated from operations, only when the scale and scope of the operation requires it.

The section, that follows, provides our analysis of the current organizational structure and opportunities for improvement.

2. THE CURRENT ORGANIZATIONAL STRUCTURE LARGELY MEETS THE CRITERIA FOR AN EFFECTIVE ORGANIZATION.

The current organization of the Hoboken Fire Department is along fairly typical lines, as shown, below:



The exhibit, that follows, provides a graphical assessment of the current organizational structure. Note the "√" marks in a box indicate that the organizational unit meets that criteria described in the preceding section of the report.

Organizational Unit	Authority	Span of Control	Checks and Balances	Based on Work Flow	Similar Titles / Similar Duties	Support Integrated into Ops
Office of the Fire Chief	√	√	√	√	√	√
Operations	√	√	√	√		√
Training	√	√	√	√		√
Communications	√	√	√	√		√
Fire Prevention	√	√	√	√		√

The paragraphs that follow provide a summary of the project team's findings and conclusions regarding the current organizational structure of the Fire Department:

- The overall organizational structure of the Fire Department effectively represents the primary mission and the administrative necessities of the Department.
- There is one operational function assigned within the Office of the Chief (Maintenance) – an appropriate organizational approach in an agency of this size.
- Functions are logically grouped in the Department.

The following section considers the organizational options available to the Fire Department. There are no logical alternatives to the current organizational structure that would not either 1) increase the span of control of the Chief significantly (through elimination of the Operations Chief) or 2) increase the cost of the organizational structure.

The fiscal impact of eliminating the Deputy Chief job is shown, below:

Position	Total Salary	Total Benefits	Total Position Cost
Battalion Chief	$153,469	$43,291	$196,759

The Operations Chief is a Battalion Chief classification. To eliminate that position would save the City approximately $197,000 annually in salaries and benefits. However, doing so would have the following operations ramifications:

- The Operations Chief ensures consistency across the four shifts. If this position is eliminated, this role will devolve to the Fire Chief.
- If the position is eliminated, the Chief's span of control increases from six to nine.
- The Operations Chief is also responsible for Hazardous Materials and USAR roles – including oversight and training. These tasks would have to be reassigned.

Recommendation: The organizational structure in the Fire Department should remain unchanged. The sole practical alternative facing the City and the Department would be the elimination of the Operations Chief. While this will provide for annual savings of $197,000 it would also introduce a number of management challenges.

3. MANAGEMENT SYSTEMS IN THE FIRE DEPARTMENT ARE VARIED WITH MANY NOT BASED ON DATA FOR DECISION MAKING AND ACCOUNTABILITY.

The Hoboken Fire Department represents a multi-million dollar investment on the part of the community. For the investment, the community expects to receive effective and efficient fire, rescue and related services. In order to assure the community that these funds are well spent and that operations are being managed effectively, the Fire Department must have data-driven management systems in place. In general, management systems should be able to provide managers with insight into the following critical areas:

- Performance responding to emergencies.
- Training for both fire and EMS skills.
- Use of leave (sick, vacation, etc.).
- Budgetary performance.

- Overtime utilization by cause.
- Fire / EMS "run" reports and billing documentation.

The Matrix Consulting Group found that the Department's key management systems vary in their utility and in the level of utilization by the command staff. Our findings are summarized, below:

- Systems that provide for financial reporting are present and are under the control of the City. Systems are in place which enable the Department to monitor budgetary performance. These are linked to the City's financial management systems. The project team found that the Department reconciles its own performance against the budget in an on-going manner, enabling potential budgetary issues to be identified quickly.
- Systems are also in place that enable detailed tracking of the use of overtime, the use of leave, etc. – all key indicators on the utilization of personnel. The project team found that the Department maintains detailed accounting of all overtime utilized by reason. This enables overtime to be billed, for example, to the ambulance account – rather than the general fund – when appropriate.
- There are no performance measures established for the Fire Department (nor for any other department in the City apparently). The result of this is that there is no objective measure against which to evaluate the Department's operations, performance, etc. The lack of these targets can impact planning decisions related to staffing, training, equipment purchases, etc.
- The Department does not utilize available data to assess its own performance internally.
- There are no internally developed performance objectives for response, on-scene activities, etc. which are actively measured. Personnel are not held directly accountable for their individual performance.

The Fire Department command staff has focused on the oversight of key financial indicators. This is not surprising given the high level of scrutiny under which the Department has come, particularly on financial issues in the past. There has been relatively little focus by the City on the establishment of performance objectives for any of the City's departments – the Fire Department included – that are not outcome related.

Few performance measures are focused on service delivery – and therefore few are useful in terms of measuring performance contemporaneously.

Performance measures should be easily understood and easily calculated. Suggested performance measures for the Fire Department should include the following:

- 911 call processing time (call answered to call dispatched): 1 minute or less 90% of the time.
- Emergency call reaction time (call dispatched to unit en-route): 1 minute or less 90% of the time.
- First unit drive time to emergency calls (unit en-route to unit on-scene): 5 minutes or less, 90% of the time (should include calls in the City of Hoboken only).
- Quality assurance score of 85% of better on 90% of emergency medical calls for service.

Other communities will also identify on-scene performance indicators, or measures that must be met in training. These may include:

- On-scene to charged line at the front door of a structure fire: three minutes or less 90% of the time.
- Water from hydrant to supply engine: two minutes or less 90% of the time.

The point of the performance measures is to identify the community's expectations in a quantifiable way, and to use the measurement of the Department's performance against these objectives to identify areas which may need improvement or additional resources.

Recommendation: The Fire Department, in conjunction with the City's administration and policy makers, should work to develop specific performance indicators for the HFD. The Department's financial management systems are adequate for ensuring that budgetary and overtime issues can be identified quickly. Once these are in place, simple management systems focused on tracking these indicators should be developed by the Department.

APPENDIX A
DESCRIPTIVE PROFILE

This profile of the Hoboken Fire Department (HFD) provides summary information regarding the current organization and operations of the HFD. The information contained in this profile was developed through interviews of HFD management and staff, review of available documents, and access to computerized records and statistics. It should be noted, however, that the information contained in this profile reflects the organization, staffing and operations of the Hoboken Fire Department when we conducted our fieldwork in the Fall of 2010.

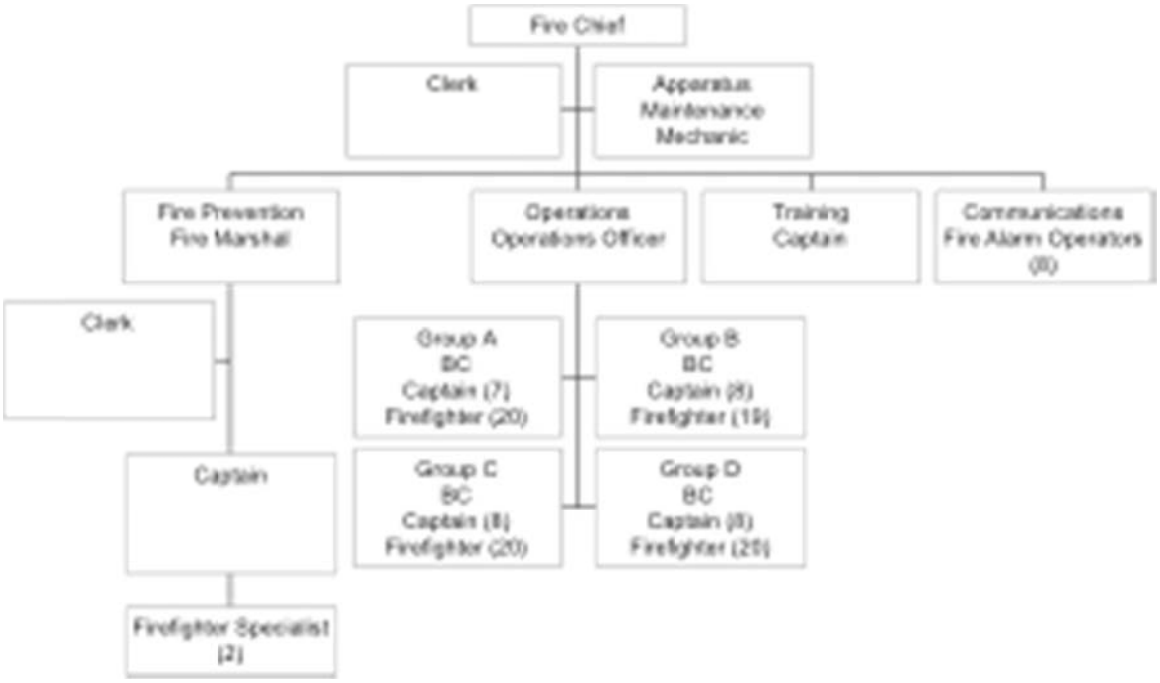
A summary of staffing and organization, roles and responsibilities, and operational / workload are provided for the following areas:

- General Overview
- Fire Administration
- Emergency Operations
- Fire Prevention
- Apparatus Maintenance
- Personnel Costs

The first section provides a general overview of the HFD, including the basic organizational structure and budget information.

1. GENERAL OVERVIEW OF THE HOBOKEN FIRE DEPARTMENT

The Hoboken Department provides fire, rescue, and first responder emergency medical services (when requested) to the City of Hoboken. The overall organization of the Fire Department is shown below:



The next section provides information on budgeted positions within the HFD.

(1) The Hoboken Fire Department Has 132 Authorized Positions. However, Many of These Positions Are Not Filled.

The following exhibit shows the number of authorized positions for the Fire Department by classification:

FY 2011 Budgeted Positions

Position	Number
Chief	1
Battalion Chief	6
Captain	24
Fire Marshal	*1*
Training Officer	*1*
Firefighter	80
Firefighter - Ops	*78*
Firefighter Specialist (Prevention)	*2*
Fire Alarm Operators	8
Civilian Clerks	2
Apparatus Maintenance	1
Total	**132**

As shown above, the Hoboken Fire Department has a total of 132 budgeted positions for the current fiscal year. A total of 11 positions are civilian employees and 121 positions are sworn employees. The following table shows the expected staffing, after likely promotions are made, on or shortly after April 1, 2011:

Position	Line	Prevention	Training / Spec. Ops.	Administration	Total
Chief	0	0	0	1	**1**
Battalion / Fire Marshal / Operations Officer	5	1	0	1	**7**
Captain	20	1	2	0	**23**
Firefighter	70	2	0	0	**72**
Civilian Clerk	0	1	0	1	**2**
Fire Alarm Operators	8	0	0	0	**8**
Maintenance	0	0	0	1	**1**
Total	**103**	**5**	**2**	**4**	**114**

(2) The Hoboken Fire Department Has An FY 2011 Budget of Approximately $11.5 Million.

The project team collected information on the budgeted and actual expenditures within the HFD. The table, that follows, shows actual expenditures for the past three fiscal years. Please note that these figures do not include year-end encumbrances, reimbursements, or transfers.

Hoboken Fire Department
FY 08 to FY 10 Actual Expenditures

Line Item	FY 07-08 Expended	FY 08-09 Expended	FY 09-10 Expended	% Change FY 08 to 09 Expended
Regular Pay Salaries and Wages	$13,210,140	$12,170,100	$12,757,169	-3%
Temporary	$-	$-	$-	
Fire Department Overtime	$123,349	$26,245	$148,008	20%
Fire Department Civilians			0	
Uniform Fire Safety Chargeback			$86,145	
Fire Department O/E				
Office Supplies	$13,660	$819	$444	-97%
Subscription & Publication	$2,828	$-	$-	-100%
Printing & Stationery	$-	$-	$-	
Advertising	$-	$-	$-	
Membership & Dues	$150	$150	$-	-100%

Conventions & Seminars	$15,500	$-	$-	-100%
Travel & Entertainment	$-	$318	$-	
Maintenance & Repairs	$53,529	$47,498	$4,457	-92%
Legal & Audit	$50,618	$19,900	$4,430	-91%
General Expense	$176,809	$63,859	$7,266	-96%
Vehicle Maintenance			$37,434	
Firefighting Supplies			$3,814	
Education & Training			$386	
Maintenance Contracts			$797	
Building Maintenance			$12,335	
Tools			$2,657	
Communication Equipment			$2,589	
Information Technology			$769	
Medical Supplies			$-	
Medical Service			$-	
Personal Protective Equipment			$3,498	
Uniforms			$296	
Marine One			$222	
Map Services			$-	
Department Total	**$13,646,583**	**$12,328,889**	**$12,900,425**	**-5%**

The following points highlight the information presented in the table:

- Overall, the HFD's budget has declined by 5% from FY 2008-08 to FY 2009-10, from $13,646,582 to $12,900,425.

- The largest decrease in expenditures came from Regular Pay Salaries and Wages, which declined by $367,831, or approximately 5%.

- The City and the HFD have changed the way that certain expenditures are budgeted. In FY 07-08 there were several expenditures classifications (e.g. repairs, maintenance, equipment and supplies) included in "General Expenses." In FY 2009-10, some of these costs are broken out into new categories. Overall, these expenditures have declined $176,809 to $72,063 in FY 09-10.

The next section describes the organization, staffing, and roles and responsibilities of Fire Administration.

2. FIRE ADMINISTRATION

The Fire Chief is responsible for setting policy and mission of the Hoboken Fire Department. The Chief's Office also is the primary contact point for the media and public concerning Department affairs. The Chief has four direct reports: the Fire Marshal, the Operations Chief, the Training Officer, and his Secretary.

The following table describes the key roles and responsibilities of Fire Administration:

Position / Classification	Positions	Key Roles and Responsibilities
Fire Chief	1	• Provides the executive management of the Fire Department, including the development of policies and procedures, providing leadership for future services, budget development, identifying service gaps, working with the elected officials and City management to ensure that the HFD interests are considered. • Provides education regarding how the HFD operates, what its services are, what the resource needs are. • Supervises the Operations Chief, Training Officer, Fire Marshal, and Secretary.
Secretary / Clerk	1	• The Secretary / Clerk provides administrative support to the Chief and command staff. • Prepares payroll for the Department, maintains files, and provides general administrative support.
Mechanic	1	• Performs preventive maintenance and minor repair of vehicles and equipment for the Fire Department. • Coordinates major repairs and preventive maintenance with outside vendors. • Operates out of the Department's four fire stations.

The next section provides information about emergency operations.

3. EMERGENCY OPERATIONS

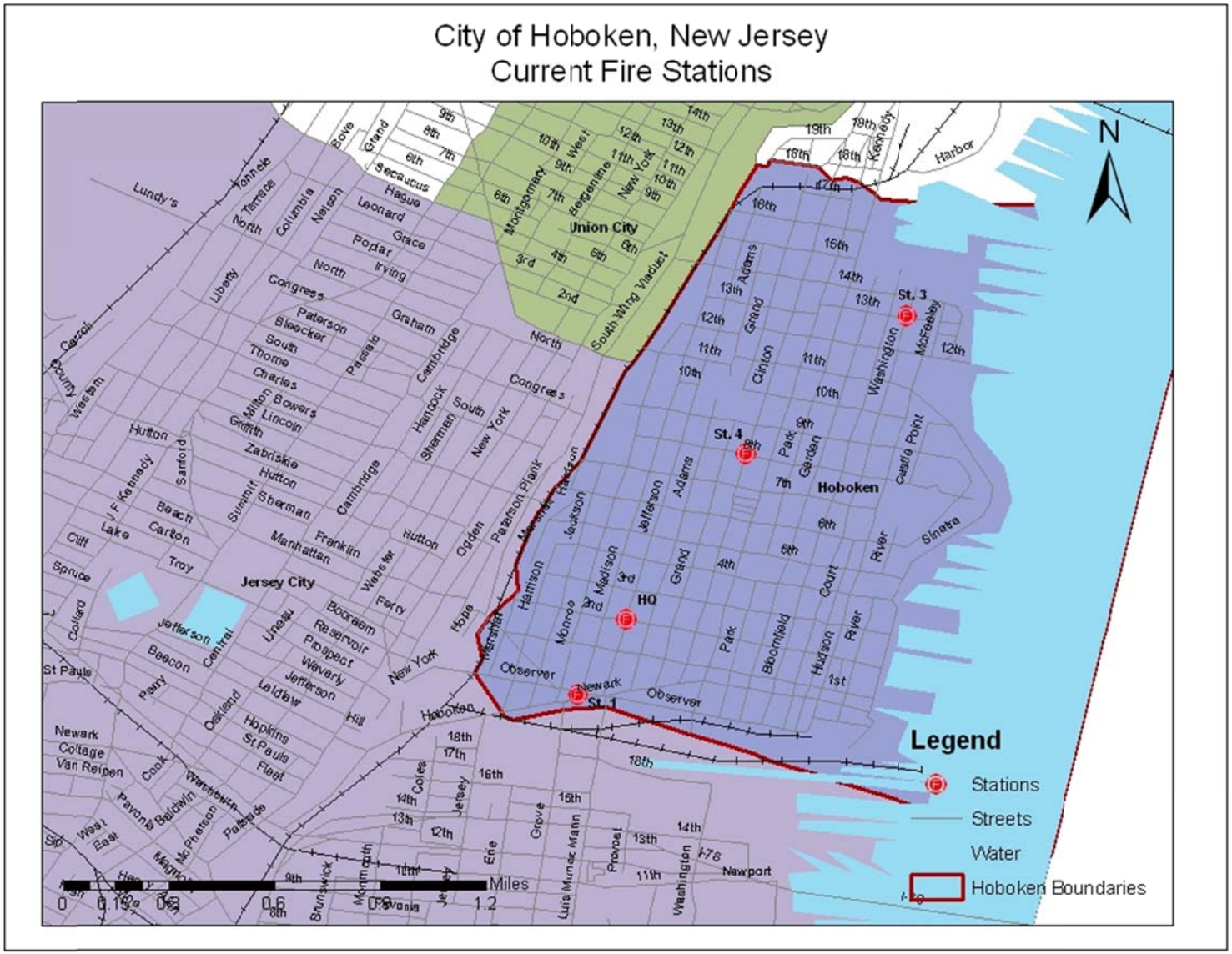
Personnel assigned to emergency operations are responsible primarily for responding to fire, rescue, and emergency medical calls (when requested) for service within the City of Hoboken. Service is provided from four fire stations located throughout the City. The table, below, shows the assignment of personnel and apparatus at each station and street address:

Hoboken Fire Department
Apparatus and Personnel Deployment

Station	Address	Apparatus	Staffing
Headquarters	201 Jefferson Street	Battalion Chief	2
		Haz Mat Unit	
		Engine 4	3
Rescue	801 Clinton St.	Rescue 1	3
		Engine 3	3
Uptown	1313 Washington St.	Ladder 1	3
		Engine 1	3
Downtown	43 Madison St.	Ladder 2	3
		Engine 5	3

As shown above, the Fire Department deploys 4 front-line engines, 2 Ladders, 1 Rescue, and a Battalion Chief, for a daily minimum staffing of 23 personnel.

The map, on the following page, shows the location of each of the stations within the City of Hoboken.


City of Hoboken, New Jersey
Current Fire Stations
N
Union City
Hoboken
Jersey City
St. 3
St. 4
HQ
St. 1
Legend
Stations
Streets
Water
Hoboken Boundaries
Miles
0
0.6
1.2

(1) Roles and Responsibilities

The table below describes the roles and responsibilities of personnel assigned to shift operations.

Position / Classification	Positions	Key Roles and Responsibilities
Operations Chief	1	• Responsible for overall management and supervision of Emergency Operations. • Develops and reviews policies and procedures and ensure that Division goals and objectives are met. • Acts as the Rescue Officer for the Department as part of the Statewide USAR team comprised of 11 rescue companies. The UASI group meets once per month in Newark for training and meetings • Oversees Haz Mat training and responds to Haz Mat incidents. • Develops grant proposals and administers grant funds. • Responds on 2nd and 3rd alarm fires. • Coordinates firehouse, apparatus and equipment maintenance and testing.
Battalion Chief Captain Firefighter	5 33 90	• Battalion Chiefs manage each personnel assigned to each shift and are responsible for 4 stations. • One Battalion Chief is assigned to each of the four shifts and one B.C. is assigned as a floater. • The work group is comprised of Captains and Firefighters. Battalion Chief's are responsible for the management of all fire and rescue incidents in city and act as incident commander at major incidents. • Captains ride on and directly supervise one of the 4 Engine Companies, Rescue Company, and 2 Truck Companies on duty each day. • Officers are also responsible for ensuring that company pre-fire plans, training, and other duties are performed each day. • Firefighters are responsible for the operation of the Engine, Rescue and Ladder apparatus assigned to shift operations. This includes driving the vehicle, and operating the major equipment on each unit. This includes pumping operations and operations of the aerial on the Ladders. • All firefighters are certified at the first responder level for EMS. The fire department is dispatched if the volunteer ambulance corps does not have a unit available. • All personnel, work a 24-hour shift on a 1-on, 3-off rotation. • As of 1/1/2011 – carrying 11 Captain Vacancies and 5 Firefighter vacancies.

Position / Classification	Positions	Key Roles and Responsibilities
Apparatus Maintenance Technician	1	• The Apparatus Maintenance Technician is responsible for coordination of all preventive maintenance and repairs for Department apparatus and vehicles. • Most repair work is provided by outside vendors. • Performs preventive maintenance; coordinates repairs with outside vendors, and tracks maintenance of vehicles and equipment.

(2) Emergency Response Workload

This section provides information on incident trends, call types, and response times achieved by the Hoboken Fire Department over the past five years.

The tables, below shows call for service data by hour of day and day of week over the three-year period. The table, below, shows all incidents responded to by the HFD:

Hoboken Fire Department
Total Incidents Responded to from 2007 to 2010 (Annualized)
By Hour of Day

Hour	2007	2008	2009	2010*	Avg/Year	Avg/Day
0000 to 0100	121	110	122	99	113	0.31
0100 to 0200	98	102	83	106	97	0.27
0200 to 0300	106	97	100	79	95	0.26
0300 to 0400	85	75	82	74	79	0.22
0400 to 0500	71	69	76	63	70	0.19
0500 to 0600	57	62	62	42	56	0.15
0600 to 0700	82	81	76	60	75	0.20
0700 to 0800	97	81	93	92	91	0.25
0800 to 0900	149	144	137	148	144	0.40
0900 to 1000	164	147	151	162	156	0.43
1000 to 1100	177	174	167	159	169	0.46
1100 to 1200	219	194	167	188	192	0.53
1200 to 1300	182	171	159	163	169	0.46
1300 to 1400	200	173	172	159	176	0.48
1400 to 1500	177	173	184	142	169	0.46
1500 to 1600	193	174	165	160	173	0.47
1600 to 1700	160	194	154	151	165	0.45
1700 to 1800	166	174	180	185	176	0.48
1800 to 1900	196	186	191	182	189	0.52
1900 to 2000	217	199	197	180	198	0.54
2000 to 2100	219	199	167	208	198	0.54
2100 to 2200	193	151	166	186	174	0.48

Hour	2007	2008	2009	2010*	Avg/Year	Avg/Day
2200 to 2300	164	143	143	151	150	0.41
2300 to 0000	133	115	113	136	124	0.34
Total	3,626	3,388	3,307	3,273	3,398	9.31

Hoboken Fire Department
Total Incidents Responded to from 2007 to 2010 (Annualized)
By Day of Week

Day of Week	2007	2008	2009	2010*	% of Total
Sunday	556	495	520	497	15%
Monday	557	476	462	505	15%
Tuesday	502	486	420	459	14%
Wednesday	501	491	489	447	14%
Thursday	469	440	433	442	13%
Friday	526	430	481	428	14%
Saturday	515	570	502	496	15%

* Annualized based on Jan. 1 to August 25th

As shown above, the busiest time of day is from 1800 to 2100, where the Department responded to an average of 0.5 calls per hour. On average, the Fire Department responds to approximately 9 calls for service each day. The table above also shows that calls for service area fairly evenly distributed throughout the week, although workload is slightly higher on Saturday, Sunday, and Monday.

Fire departments respond to many different kinds of emergencies and non-emergency service calls. The data in the following table presents information about the types of emergencies the Department responded to from 2006 to 2010.

Hoboken Fire Department
Calls for Service by Type, 2006 to 2010

Call Type	YTD 2010	2009	2008	2007	2006	Avg. / Yr.
Fire - All	128	178	214	232	180	200
Structure Fires	97	145	174	160	122	150
Other Fires	31	33	40	72	58	50
Rescue, EMS	159	291	306	393	403	328
False Alarms	1,130	1,719	1,784	1,762	1,517	1,704
Mutual Aid Given	20	4	10	33	34	22
Haz Mat Responses	101	155	149	177	130	153
Other Hazardous Condition	140	173	209	189	147	187
All Other	437	783	712	839	777	757
Total	2,115	3,303	3,384	3,625	3,188	3,351

As shown above, False Alarms comprised the largest share of calls for service at 55%, followed by fire alarm calls at 17%. Fire calls represented approximately 4%. Other calls (including service calls, lock outs, requests for assistance, etc.) comprised 13% of total calls.

The number of runs made by a fire company (apparatus and its staff) is an indicator of the amount of workload generated by service calls. The total number of runs by apparatus is greater than the total number of emergency calls because multiple pieces of apparatus are dispatched to service calls. The exhibit that follows shows the total number of apparatus runs during 2007, 2008, 2009, and 2010 (annualized) for front-line apparatus:

Hoboken Fire Department
Apparatus Runs, 2007 through 2010

Unit	2007	2008	2009	2010	Avg. / Year	Avg. / Day
155	1,322	1,671	1,652	1,694	1,585	4.34
Engine 1	1,749	917	943	933	1,136	3.11
Engine 3	31	111	854	499	374	1.02
Engine 4	1,646	1,606	1,093	1,298	1,411	3.87
Engine 5	1,879	1,239	1,085	1,083	1,321	3.62
Rescue 1	1,650	1,866	1,851	1,847	1,803	4.94
Ladder 1	2,097	1,265	1,652	1,237	1,563	4.28
Ladder 2	2,256	1,640	1,519	1,458	1,718	4.71
Total	12,630	10,315	10,649	10,049	10,911	29.89

The preceding exhibit shows that the busiest unit in Emergency Operations is Rescue 1, which averages approximately 5 responses each day, followed by 155 (Battalion Chief), and Ladder 2.

(3) Emergency Response Times

The project team also developed some preliminary response timetables to summarize response times achieved by the Hoboken Fire Department from 2007 to 2010.

The exhibits, which follow, show the percentage of emergency calls, which were responded to within various time intervals:

Hoboken Fire Department
Turn-out Time (Dispatch to En-route), 2007 to 2010

Dispatch to En-route	2007	2008	2009	2010
0 to 1 Min	67%	61%	62%	59%
2 Mins to 3 Mins	28%	34%	33%	35%
4 Mins or more	5%	5%	5%	6%
Average	1.30	1.50	1.40	1.50
Total Calls	3,609	3,376	3,288	2,121

Hoboken Fire Department
Travel Time (En-route to On-scene), 2007 to 2010

Travel Time	2007	2008	2009	2010
0 to 4 Mins.	90%	92%	91%	90%
5 Mins. or more	10%	8%	9%	10%
Average	2.4	2.3	2.3	2.6
Total Calls	3,609	3,376	3,288	2,121

Hoboken Fire Department
Committed Time (Dispatch to Clear), 2007 to 2010

Incident Length	2007	2008	2009	2010
0 to 29 Minutes	88%	89%	89%	87%
30 to 59 Minutes	8%	8%	8%	9%
60 to 89 Minutes	2%	2%	2%	2%
More than 90	2%	1%	1%	2%
Average	18.9	18.9	18.8	18.6
Total Calls	3,609	3,376	3,288	2,121

The following points highlight the information presented in the tables above:

- As shown above, the average reflex or turn-out time for fire department units was approximately 1.5 minutes. Approximately 60% of calls received a reflex time of 1 minute or less.

- Drive time was 4 minutes or less for approximately 92%, in 2008, to 90% in 2010. The average drive time was approximately 2.5 minutes.

- The average handling time or committed time from 2007 to 2010 has not changed significantly. Approximately 90% of incidents are handled within 30 minutes or less.

The next section provides information on the Training Bureau.

4. TRAINING

The Training Bureau is staffed by one Captain who oversees all new recruit training and in-service training. The roles and responsibilities of this Division and assignment of personnel are described in the following table:

Position / Classification	Positions	Key Roles and Responsibilities
Training Officer (Capt.)	1	• The training office is responsible for all new recruit training as well as in-service, fire, rescue, and emergency medical services training. • The Captain develops the annual training objectives and schedule. • The Captain provides curriculum for on-going fire, rescue, and EMS training, and deliver continuing education classes. • First responder (EMS) training is provided by a Fire Captain who is also the president of the volunteer ambulance corps in the City. • Specialty training is provided by Captains who perform these duties as a collateral assignment: 2 Officers are trained in Technical Rescue and provide on-going training; 1 Captain is assigned as the Hazardous Materials Officer and provides on-going training. • The HFD follows ISO guidelines for fire training (i.e. night drills, 20 hours of training monthly). The Department also conducts annual fitness tests and equipment tests. • Live fire training is performed at the Bergen County Fire Academy approximately 1 time each year. Additional scenario based training is performed by acquiring properties and performing fire simulations. • The Training Captain also coordinates and provides prep tests for new firefighters as part of the federal consent decree.

The project team has collected training data, which describe the number and types of training courses and drills conducted by the HFD. However, the Department has not entered training records into the Red Alert RMS for the past year due to time / staffing constraints.

5. FIRE PREVENTION AND INVESTIGATIONS

Fire Prevention and Investigations is responsible for New Jersey Fire Code inspections, non- life hazard inspections, as well as fire and arson investigations. The table, which follows, describes the assignment of personnel and the major roles and responsibilities of this Division.

Position / Classification	Positions	Key Roles and Responsibilities
Fire Marshal (Captain)	1	• The Fire Marshal is responsible for the management and supervision of the Fire Prevention and Investigations Division. This includes developing policies and procedures, division goals and objectives, and budget development. • The Fire Marshal directly supervises the Captain who supervises the two fire inspectors / investigators. • The Fire Marshal attends development review meetings with other City Departments and building / planning permit applicants.
Captain Firefighter Specialist Civilian Clerk	1 2 1	• The Captain is the group supervisor, although also performs inspections, investigations, and public education functions. • Fire Prevention personnel inspect all Life Hazard Uses within the City in accordance with the New Jersey Fire Code. Based on year-end 2009 figures, there are 263 life hazard use occupancies within the City. • Inspectors also inspect non-life hazard use occupancies. This includes any commercial space not considered a Life Hazard Use. Based on year-end 2009 figures, there are 734 non-life hazard use occupancies within the City. • The Fire Prevention Bureau is a certified arson unit. One Firefighter Specialist is a sworn peace officer with arrest powers. Fire inspection duty is shared through a call out rotation. • All fire prevention personnel provide public education classes for schools, nursing homes, and other groups upon request.

The tables, which follow, provide a summary of activities of the Fire Prevention Division.

Hoboken Fire Department

Fire Prevention Inspections, Fines and Fees Collected, 2009

Total Life Hazard Uses	263
Total LHU's inspected	257
Total Number of LHUs re-inspected	185
Total Number of Certificates of Inspection Issued	257

Total Non Life Hazard Uses	734
Total Number NLHU Inspected	734

Total Number of Permits Issued	291
Total Number of Permit Inspections	291

1 & 2 Family Fire Extinguisher, Smoke & CO Detector Inspections

Total Number of Certificates Issued	691

Revenues received during the year

Total Rebates from State	$75,500
Total Non-Life Hazard Use Fees	$32,825
Total Permit Fees	$13,462

Total NJAC 5:70-2.12A Penalties	$8,050

As shown above, the Prevention Bureau conducted 257 life hazard use inspections during 2009 and 734 non-life hazard use inspections. In addition, 691 smoke and CO detector inspections were conducted.

Approximately $122,000 in revenue was received from inspection activity during the year.

While the Fire Department does not track public education activities, they estimate that public education instruction is provided to 14 schools and 131 classes in addition to community groups (e.g. Boys and Girls Club, nursing homes, Stevens Institute, etc.).

6. APPARATUS INVENTORY

As described above, the Fire Department assigns one mechanic to oversee preventive maintenance and minor repairs of vehicles and equipment. The mechanic is responsible for several Department vehicles, shown below:

Hoboken Fire Department
Vehicle Inventory

Vehicle Description	Year	Make / Model	Location	Call Number
Ford	2006	Explorer	HQ	Director
Ford	2008	Escape	HQ	Chief
Dodge Van	2001	Ram Wagon	HQ	153
Chevy Suburban	2002	Command	HQ	Spare 155
Dodge Van	2001	Ram Van	HQ	157 Maintenance
Dodge	2006	Durango	HQ	155 Command
Ford	2008	Escape	HQ	Fire Marshal
Jeep	2006	Liberty	HQ	160 FP
Jeep	2006	Liberty	HQ	164 FP
Ford Explorer	1998	XLT	HQ	165 FP
Dodge	2006	Durango	HQ	161 Arson
Pumper Eone	1993	Protector XL	Uptown	E1
Pumper Eone	1993	Protector XL	Midtown	E4
Pumper Eone	2003	Protector XL	Downtown	E5
Ha Mat Eone	2000	International	HQ	HAZMAT
Haz Mat Support	2009	Trailer	HQ	HAZMAT Support
Ahrens-Fox	1932	Hose Wagon	Museum	HFD Museum
Eone Aerial Ladder	2003	110" Rear Mount	Uptown	L1
Eone Aerial Ladder	2003	110" Rear Mount	Downtown	L2
Marine 1	2006	Parker	Marina	Marina @ 14th
Rescue Eone	2006	UASI - Heavy Rescue	Midtown	UASI
Rescue Eone	1998	Cyclone II	HQ	RESCUE 1
Pumper - Mack	1987	CF688FC	HQ	Spare E3
Seagrave Aerial Ladder	1987	110" Aerial	HQ	Spare L4
Jeep	2010	Sport Utility 4 Door	HQ	Marine 172

As shown above, the Fire Department utilizes 22 vehicles plus a Marine Unit.

7. SALARY AND BENEFIT COSTS

This section provides information on personnel costs including salaries and benefits.

The first table, below, shows the average base salary and longevity for each position within the Hoboken Fire Department:

Hoboken Fire Department
Average Position Salary and Longevity

Position	Base	Longevity	Total Salary
Battalion Chief	$131,170	$22,299	$153,469
Clerk Typist	$40,814	$2,857	$43,671
Communication Operator	$41,963	$2,098	$44,061
Fire Captain	$109,457	$13,786	$123,243
Fire Chief	$157,000	$28,260	$185,260
Firefighter	$72,986	$4,955	$77,940
Mechanic	$45,000		$45,000
Principal Clerk Typist	$48,390	$3,387	$51,777
Public Safety Telecommunicator	$38,367		$38,367

The project team also collected detailed budget data to document actual expenditures for employee benefits. This information is used to calculate the benefit rate (i.e. the cost of benefits as a percentage of salary). This factor is useful in evaluating whether it is more cost effective to utilize overtime or hire additional personnel to maintain minimum staffing levels.

The table, below, shows average costs for employee benefits by position:

Position	Clothing	Sick Incentive	Pension	SUI / SDI	Medicare	Health Ins.	Total Benefits
Battalion Chief	$800	$1,500	$48,588	$310	$2,168	$25,467	$78,834
Clerk Typist	$700	$500	$13,826	$310	$633	$9,315	$25,285
Communication Operator	$700	$500	$13,950	$310	$639	$9,315	$25,414
Fire Captain	$800	$1,500	$39,019	$310	$1,742	$23,146	$66,518
Fire Chief	$800	$1,500	$58,653	$310		$25,467	$86,731
Firefighter	$800	$1,500	$24,676	$310	$1,108	$18,409	$46,803
Mechanic	$700	$500	$14,247		$653	$22,225	$38,324
Principal Clerk Typist	$700	$500	$16,393	$310	$751	$17,288	$35,942
Public Safety Telecommunicator	$700	$500	$12,147		$556	$24,118	$38,021

Based on these costs, the project team determined the average benefit rate for each position within the HFD.

Hoboken Fire Department
2010 Average Salary and Benefit Cost by Position
Benefit Rate (Cost of Benefits as % of Total Salary)

Position	Total Salary	Total Benefits	Total	Benefit Rate
Battalion Chief	$153,469	$78,834	$232,303	51%
Clerk Typist	$43,671	$25,285	$68,956	58%
Communication Operator	$44,061	$25,414	$69,475	58%
Fire Captain	$123,243	$66,518	$189,761	54%
Fire Chief	$185,260	$86,731	$271,991	47%
Firefighter	$77,940	$46,803	$124,743	60%
Mechanic	$45,000	$38,324	$83,324	85%
Principal Clerk Typist	$51,777	$35,942	$87,719	69%
Public Safety Telecommunicator	$38,367	$38,021	$76,388	99%

As shown above, the benefit rate for sworn personnel ranges from 51% for Battalion Chiefs to 60% for Firefighters. This indicates that in some instances, the cost of hiring additional personnel is more cost effective than using overtime to meet minimum staffing plan.