



# FINAL Tideflats Emergency Response Plan

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Appendix A: 2020 and 2035 Projects

March 26 memo 'Elements of Response Time' and 'Response Time Performance Implications'

TFD Summary Tideflats Resource History, 1990-2014





## BACKGROUND

The Tideflats area under review is the industrial hub of Tacoma. Among the Tideflats businesses are major shipping terminals, a pulp mill, oil and chemical refineries, oil and chemical storage, salvage and recycling operations, a federal immigration detention facility and a prisoner residential reentry center.<sup>1</sup> As the largest landowner in the area, the Port of Tacoma's successful expansion and development have substantially altered the traffic patterns of the Tideflats. The former arterial street grid based primarily upon East 11<sup>th</sup> Street and bridges over the Puyallup River and the various Tideflats waterways has been replaced by I-5, SR 509 and arterial spurs serving import/export related activities alongside the expanded waterways. The east-west access and egress have been significantly altered in recent years. The increase in rail and long-haul truck traffic resulting from increased Tideflats area business and the vacation of secondary streets within the Port of Tacoma's expanded container and auto import operations coupled with the development of Northeast Tacoma has led to increased traffic congestion in the corridors leading into and out of the Tideflats area. In addition, recent financial constraints have necessitated the closure of fire stations within the Tideflats.

The purpose of the study is to:

- Build upon the previous Port of Tacoma and City studies that identified the current and planned Tideflats transportation network to conduct an assessment of current and likely future fire and Emergency Medical Services (EMS) capability into and out of the study area.
- Identify the current and anticipated impact of rail and traffic congestion through 2035.
- Identify any proposed/planned street vacations that could also result in increased response times by emergency service providers and impact emergency evacuation of the area.
- Provide proposed mitigation measures to account for the identified impacts created by proposed street vacations.
- Identify and prioritize traffic improvements that preserve or improve emergency response capability and emergency evacuation.
- Map the planning process for the development and implementation of an intelligent transportation system (ITS) within the study area.
- Provide a model of prospective and anticipated long-term locations from which to base emergency response into and out of the study area.

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<sup>1</sup> During the business day the population of the Tideflats increases significantly to one of Tacoma's more populous neighborhoods. Some businesses, notably the detention center and prisoner reentry center, function as around the clock operations with significant inmate populations.





- Describe alternative funding strategies for securing the desired outcomes

In addition to the City of Tacoma's interest in improving emergency response to the Tideflats, the Port of Tacoma's Land Use & Transportation Plan, developed in consultation with the City of Tacoma in 2014, calls for "addressing transportation congestion on and off the Tideflats, while at the same time identifying transportation improvements that will be necessary to sustain the projected growth at the

Port over the next 10 years."<sup>2</sup> The Plan's strategies included a focus to "work with the City of Tacoma and other emergency responders and stakeholders to develop an Emergency Response Plan for the Port of Tacoma Manufacturing and Industrial Center" and to "develop and implement Intelligent Transportation Systems (ITS) improvements", both catalysts for the timing of this Study.<sup>3</sup> Another consideration for the City behind this study is the need to better "ensure that existing and future developments pay for some or all of the costs of capital improvements or new facilities that are deemed necessary, by reason of their respective developments, to reduce existing deficiencies or replace obsolete facilities."<sup>4</sup>

## STUDY AREA

The study area is shown in **Figure 1**. The Blair-Hylebos Peninsula is between the Blair and Hylebos Waterways. West of the peninsula is the central Tideflats while the area east of Downtown Tacoma is the western Tideflats.

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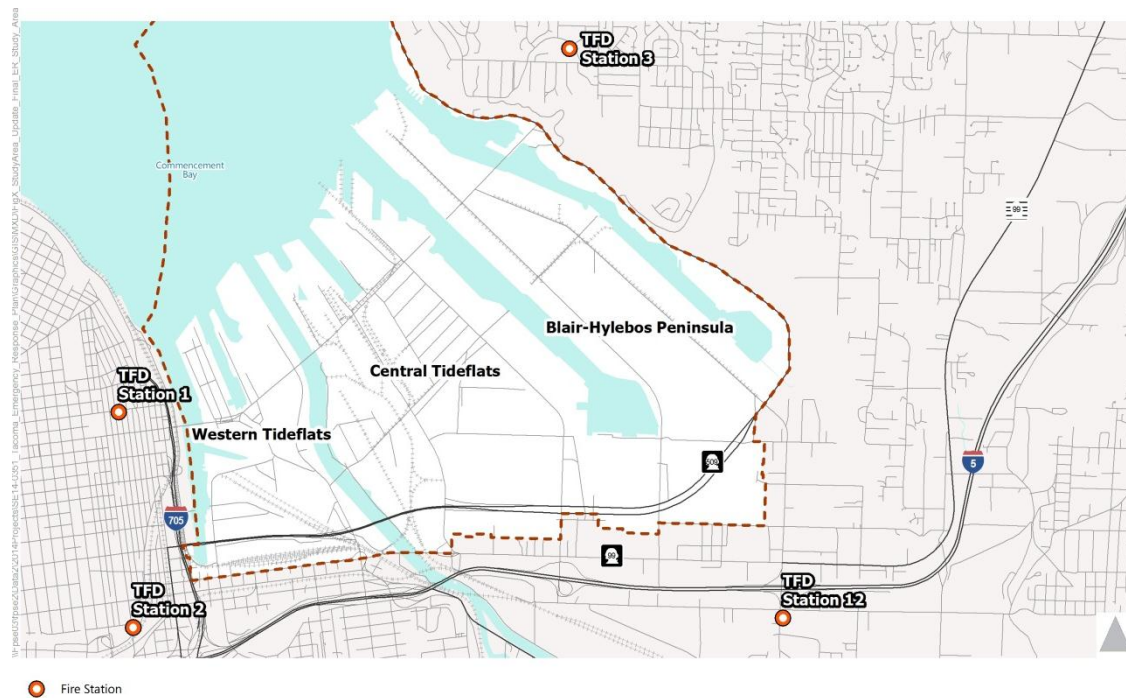
<sup>2</sup> Port of Tacoma, Land Use & Transportation Plan, 2014, p.33.

<sup>3</sup> Ibid, pp. 29, 45.

<sup>4</sup> City of Tacoma, City of Tacoma Comprehensive Plan, Capital Facilities Element, 2014, p. 2.



Figure 1. Tideflats Study Area





## THE EMERGENCY RESPONSE PROBLEM

The emergency response problem has two facets. First, the Tideflats has a mix of land uses and operations that have the potential for serious fire or EMS emergencies. Second, the emergency response times to the Tideflats have increased over the past several years. Each of these factors is summarized below.

### TIDEFLATS LAND USE AND OPERATIONS

Within the City of Tacoma, the Tideflats is the highest risk zone for Hazardous Material (HazMat) incidents. Within the area, there is resurgence in manufacturing, particularly on the Blair-Hylebos peninsula. Several of the proposals include operations with higher emergency risk potential. While potentially adding to the demand for fire services, these developments will help restore the economic and tax-generating base within the Tideflats.

There are other key factors that heighten the emergency response needs within the Tideflats:

#### Geographic

- Location of incidents spread out through entire zone
- Marinas are in fairly remote locations so land response is longer; not quickly or easily accessible by water routes either
- Access to area limited by waterways, rail, vacated streets and closed bridges

#### Demographic

- Low residential population but a 1575-bed detention center and a 75-bed reentry facility and a high daytime worker population

#### Physical

- Mostly chemical releases and combustible/flammable liquid spills/leaks
- Large un-sprinkled buildings/yards with high fire load
- Private hydrants with limited water
- Presence of flammable liquid pipelines
- Abundant ignition sources







## CHANGE IN EMERGENCY RESPONSE TIMES

The past decade has seen an increase in the Tacoma Fire Departments (TFD) emergency response times to the Tideflats area due to a number of factors. Contributing factors for the response time deficiencies are listed below.

- Temporary blockage of certain roadways within the Port area by Tacoma Rail and other Port operations
- Roadway congestion resulting from local and regional traffic patterns
- Permanent vacation of a portion of Alexander Avenue north of SR509 and other recent street vacations
- Poor roadway surfaces within the Port that make travel difficult for fire apparatus
- Permanent closures of bridges and an increase in truck activity/congestion
- Closure and relocation of fire stations

This section details the existing conditions of these factors and their impacts on emergency response.

## FIRE AND EMERGENCY MEDICAL RESPONSE (EMS) OPERATIONS

Response time is critical to effective fire and EMS response. For fires, the key reference point is the phenomenon of 'flashover', which is the point in fire growth where the contents of an area reach their ignition temperature and serious fire damage occurs. It is important to have fire companies arrive on-scene before or at the flashover, which occurs between four and 10 minutes after the beginning of the free burning stage of fire growth. For EMS, research has shown that brain damage occurs within four minutes of the body being deprived of oxygen, and that damage will be irreversible after ten minutes without intervention (American Heart Association). Again, rapid response time is critical to maximize the likelihood of survival in an EMS situation.

As previously shown in Figure 1, there are currently no fire stations or EMS units deployed directly within the Tideflats area. Twenty five years ago, the city had four fire stations situated in the Tacoma Tideflats<sup>5</sup>. Subsequent restructuring and budget reductions resulted in a gradual consolidation and closure of fire stations in the Tideflats. Although the Tideflats area has been identified by the Fire Department as an area

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<sup>5</sup> Fire Station 6, located at 1015 E. "F" Street, served as quarters for Engine 6 and the cross-staffed hazardous materials response unit. Fire Station 12, located at 2316 E. 11<sup>th</sup> Street, was home to Ladder 4. Engine 15 was based out of Station 15, located at 3510 E. 11<sup>th</sup> Street. Fireboat *Commencement* was assigned to Station 18, 302 E. 11<sup>th</sup> Street.





with significant industrial fire, explosion, and life safety risks, the reality of resource constraints and relatively low call volume have discouraged relocating a unit there.

As a consequence of the Tideflats area transformation, the Tacoma Fire Department's emergency units and facilities located on or adjacent to East 11th Street were relocated. Fire Stations 6, 12, and 15 (were all eventually closed. Fire Station 3 (206 Browns Point Blvd) is now the closest station to the areas along the Hylebos Waterway, north side of the Blair Waterway, and most of Marine View Drive and Taylor Way. Stations 1 (Downtown) and 12 (Fife) cover the area served previously by Station 6 (areas along the Foss Waterway, Puyallup River, and Port of Tacoma Road). The resident ladder company in the Tideflats (Ladder 4) was moved to Fife (2015 54th Ave. E.) as a result of the elimination of the Blair Bridge. Ladder 4 was then teamed with a new engine company (Engine 12) that serves both Fife and the Tideflats. Former Tideflats based engine companies (Engines 6 and 15) were moved out of the Tideflats area or eliminated. The Department also lost fireboat staffing during this time.

In addition to the units located in Fife, the Fire Department currently provides emergency response into the Tideflats area from units located in Downtown, Northeast and East Tacoma. Most of the responses to the area are from three stations (#1- Downtown Tacoma; #12- Fife; and #3- Northeast Tacoma).

## TRANSPORTATION SYSTEM

### Existing and Historic Roadway System

The Tideflats area is served by a network of regional and local roadways. Major north-south access is provided by I-5, with the connecting I-705 spur into downtown Tacoma. SR 509 is the east-west spine of the Port area, with connections to I-5 via I-705, Portland Avenue, Port of Tacoma Road, and 54<sup>th</sup> Avenue. The recently completed Lincoln Avenue Bridge across the Puyallup River provides improved accessibility between the central and western Tideflats.

Access to/from the Tideflats over the past 20 years has been limited by previous and current bridge restrictions, closures, reconstructions and street vacations. As summarized below, these changes have changed travel patterns and disrupted emergency response to various portions of the Tideflats.

#### *East 11<sup>th</sup> Street Viaduct Closure*

Currently the East 11th Street viaduct is closed, which limits emergency response access to the central Tideflats from Fire Station #1 in Downtown Tacoma. There are no active plans to rebuild the viaduct.





### *Blair Bridge Removal and SR 509*

The removal of the Blair Bridge (spanning the Blair Waterway at East 11<sup>th</sup> Street) also had impacts on emergency response. The new SR 509 connection became the alternative route for traffic and emergency vehicles<sup>6</sup>. Although SR 509 restored east-west access across the Tideflats, the access frequently resulted in longer response times to many locations because the new roadway was farther south than East 11th Street.

The emergency response units in the Fife station, provided as part of the service contract with Fire District 10, provided the initial responding units to emergencies in the central Tideflats following the removal of the Blair Bridge. However, the station location in Fife resulted in longer response times into the northern portions of the area than was the case before the bridge removal, and the units also were less timely responding to events on the Blair-Hylebos peninsula or areas of the Tideflats west of the Puyallup River than was formerly the case.

### *Hylebos Bridge Reconstruction and Alexander Avenue Vacation*

Subsequently, the Hylebos Bridge was closed, leaving Station 15 operating in relative isolation along a narrow peninsula with limited access to the east or west. Following the closure of the Hylebos Bridge, Port staff began discussion with City Public Works staff to repair and reopen the bridge as part of the Port's development plans for the east side of the Blair Waterway.

At the same time, the Port and the Puyallup Tribe were jointly interested in vacating a portion of Alexander Avenue to enable development adjacent to the waterway to occur. In the event that Alexander Avenue was partially or fully vacated, the Hylebos Bridge was needed to provide a second way off the Blair-Hylebos peninsula.

The Port agreed to assist the City to pay the cost to repair and reopen the Hylebos Bridge. In the interim, the Port also agreed to maintain an emergency access corridor through the vacated right-of-way until the bridge repair was complete. The bridge was eventually reopened in May 2012.

### *Murray Morgan Bridge*

Just prior to the recession in 2007, the Murray Morgan Bridge was closed by the Washington State Department of Transportation due to structural deficiencies. During the closure and reconstruction, the Fire Department redeployed some emergency response to help mitigate the impact of the closure on response times. Those additional resources were discontinued in 2009 due to the continued impact of the

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<sup>6</sup> The City Council approved vacation of the approaches to the Blair Bridge in 1995 and in January 1997, following completion of SR 509, the Blair Bridge was dismantled.





recession. The Bridge remained closed until a major repair and reconstruction project was completed in February 2013.

### *Puyallup Avenue Bridge*

The Puyallup Avenue Bridge across the Puyallup River has weight restrictions due to its structural deficiencies. Plans for replacing the bridge are underway by the city.

## **Planned Roadways**

There are several planned roadway projects in the Tideflats area, such as:

- Port of Tacoma Road Interchange- Final design with construction being phased as funding is available
- 54<sup>th</sup> Ave Interchange- Reconfiguration being studied
- SR 167 extension- Final design; awaiting funding from the State
- Puyallup Avenue Bridge- Rebuild- Under design

Details regarding planned local and regional roadway projects are found in the attached map and table in **Appendix A**.

## **Pavement Conditions**

Streets in the Tideflats handle anywhere from 1,000 to 5,000 trucks a day and upwards of 20,000,000 tons<sup>7</sup> of freight on an annual basis. Most of these streets are not built for this level of truck traffic. Additionally, many of the streets are designated on the Heavy Haul Industrial Corridor. These streets are allowed to handle ocean-going containers with up to 98,000 lbs. of gross vehicle weight. However, none of the streets in the Heavy Haul Corridor were originally built to handle the additional weight on a consistent basis.

The City has enacted Heavy Haul Industrial Corridor design standards, which include the provision of a minimum 10-inch deep asphalt paving section over 2 inches of crushed surfacing top course over 26 inches of crushed surfacing base. Other sections may allow for 10 inches of Portland-cement concrete over base consistent with geotechnical study and design. This standard is being applied to the Port of Tacoma Road rehabilitation project that will replace approximately 1.5 miles of Port of Tacoma Road to bring it up to Heavy Haul Corridor standards.

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<sup>7</sup> Tideflats Area Transportation Study and WSDOT FGTS designations



## CURRENT FIRE AND EMS OPERATIONS

### STAFFING, STATIONS AND UNITS

The Tacoma Fire Department (TFD) is responsible for protecting 62 square miles, including the cities of Tacoma, Fircrest and Fife, which have a total of approximately 218,000 residents. The TFD has 357 uniformed personnel and 15 fire stations that are divided into three battalions. There are 13 engine companies, 4 ladder companies, 5 medic companies, and 2 squad companies. The department employs one safety officer, one technical rescue unit that is cross-staffed at Station 8, one hazardous materials unit that is cross-staffed at Station 12, and two fireboats that are cross-staffed at Station 14. The TFD receives approximately 41,900 calls per year (2014), 69 percent of which are EMS related. The location and staffing details of each station are summarized in **Table 1**.

**Table 1. TFD Stations and Staffing**

<i>Station</i>	<i>Address</i>	<i>Units</i>	<i>Total Staffing</i>
Station 1	901 Fawcett Avenue, Tacoma	Engine 1, Ladder 1	6
Station 2	2701 Tacoma Avenue South, Tacoma	Engine 2, Battalion 2	4
Station 3	206 Browns Point Boulevard, Tacoma	Engine 3 (ALS Engine) <sup>1</sup>	3
Station 4	1454 Earnest S. Brazil Street, Tacoma	Engine 4, Medic 4	5
Station 7	5448 South Warner Street, Tacoma	Engine 7	3
Station 8	4911 South Alaska Street, Tacoma	Engine 8, Ladder 2, Medic 2, Battalion 3, Tech Rescue 48	9
Station 9	3502 6th Avenue, Tacoma	Engine 9, Battalion 1	4
Station 10	7247 South Park Avenue, Tacoma	Engine 10 (ALS Engine) <sup>1</sup>	3
Station 11	3802 McKinley Avenue E, Tacoma	Engine 11, Medic 5	5
Station 12	2015 54th Avenue E, Fife	Engine 12, Ladder 4, Medic 3, Hazmat 44, Water Tender 51	8
Station 13	3825 North 25th Street, Tacoma	Squad 13/Engine 13 <sup>2</sup> , Ladder 3	6 or 5
Station 14	4701 North 41st Street, Tacoma	Engine 14/Fire Boat <sup>3</sup>	3
Station 15	6415 McKinley Avenue, Tacoma	Squad 15/Engine 15 <sup>2</sup>	3 or 2
Station 16	7217 6th Avenue, Tacoma	Engine 16, Medic 1, Air Rig 43	5
Station 17	302 Regents Boulevard, Fircrest	Engine 17 (ALS Engine) <sup>1</sup> , Air Rig 42	3

- Notes:
1. ALS Engines are staffed with a paramedic, but do not do transports.
  2. Squad/Engine cross-staffed deployed based on daily staffing availability. Normal budgeted Squad staffing is peak-time only, 0700 to 1900 daily.
  3. Engine 14 is cross-staffed with the Fire Boat.
  4. Shading indicates units closest to the Port.

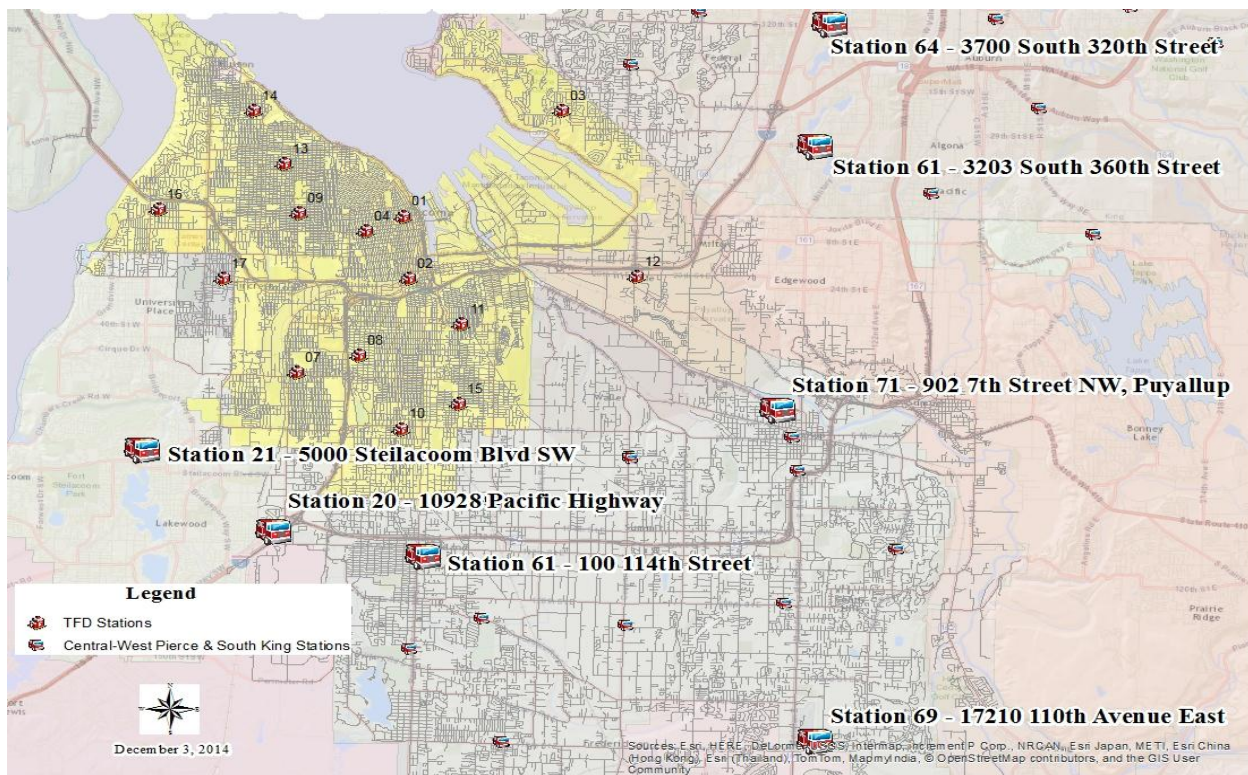




## HAZMAT AND TECHNICAL RESCUE CAPABILITIES

Tacoma Fire Department's technical rescue unit and staffing is currently at Station 8, on South Alaska Street. However, the unit is cross-staffed, so deployment and training are constrained by the need to be able to readily respond to other emergencies. Station 12 in Fife provides the Hazmat unit and staffing and is also cross-staffed. There are additional equipment caches at the fire department training facility within the Port. Regional Hazmat and Technical Rescue services include a number of stations in Central and West Pierce County and South King County. However, the response times to the Tideflats area from these units are long as many are between eight and 12 miles away. **Figure 2** highlights the specific locations of the regional Hazmat and Technical Rescue resources.

**Figure 2. Regional Special Operations' Stations**





## MARINE RESOURCES

The TFD maintains three fire boats. Fireboat *Commencement* is a modified hovercraft based surface effect style vessel constructed in the early 1980s. An extensive \$4 million renovation of *Commencement* was completed for the vessel in 2006. Fireboat *Destiny* is a new primarily federal DHS grant funded 32' vessel placed into service as a result of an interagency agreement between the Port and the City in 2012. A 50' Metalcraft fireboat, also financed primarily from DHS grant funds, was completed in 2014 and will enter service this year.

TFD fireboats are not staffed fulltime, but cross-staffed by a land company (Station 14) that responds to both land and water incidents. Response times for TFD fireboats are quite long, typically in the 30 to 45 minute range, depending on the actual incident location, availability of a crew, weather, and other factors. The operation of the boats and marine operations generally are ad hoc, with training provided as needed.



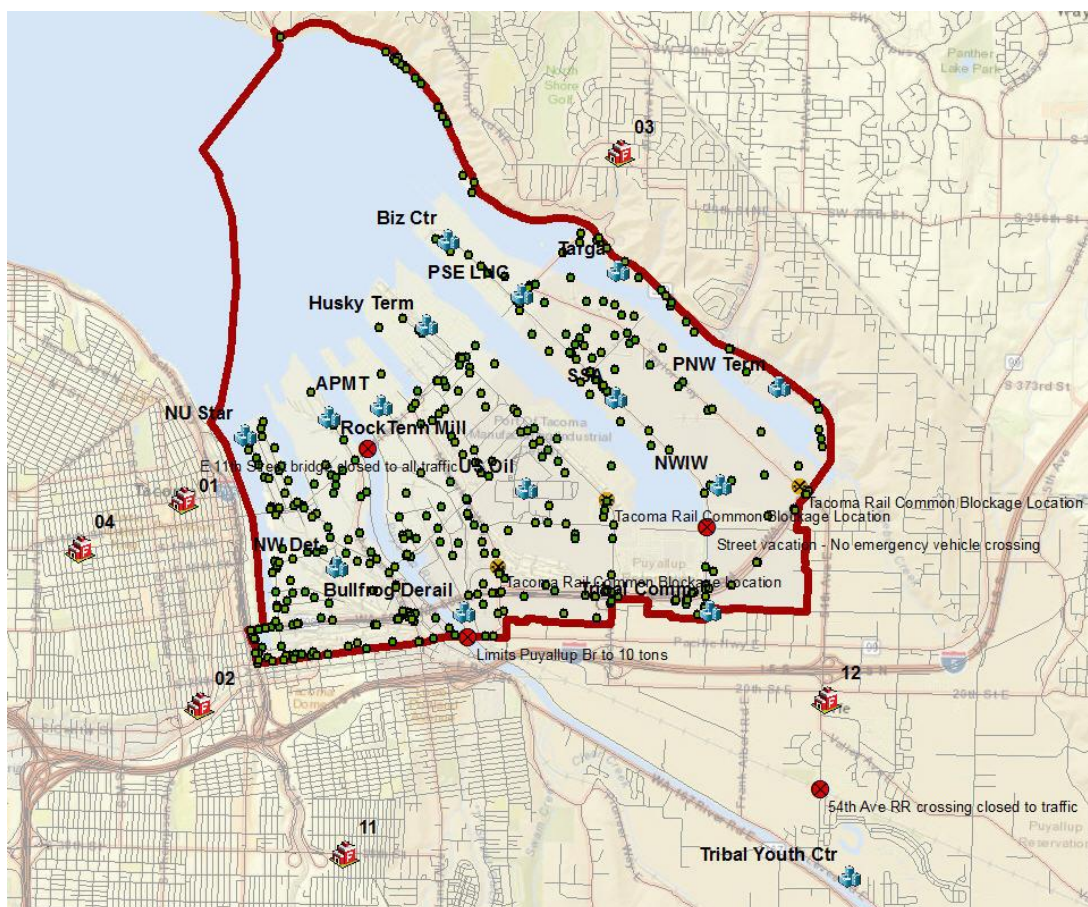
## EMERGENCY RESPONSE ANALYSIS – EXISTING CONDITIONS

### RESPONSE TIME DATA

The project team evaluated historical incident data from 2012 to 2014 to understand the overall demand in the Tideflats area and the average response times. Approximately 550 calls (requiring the response of just over 1,000 TFD units) occur in the Tideflats area on average each year. Of these, the majority are medical emergencies.

The incident data provided location-based information to understand the spatial distribution of the calls from 2012 to 2014. As shown in **Figure 3**, emergency response calls are distributed throughout the Tideflats area, with the only notable gaps where land is currently vacant.

**Figure 3. Locations of Emergency Response Calls, 2012 – 2014**

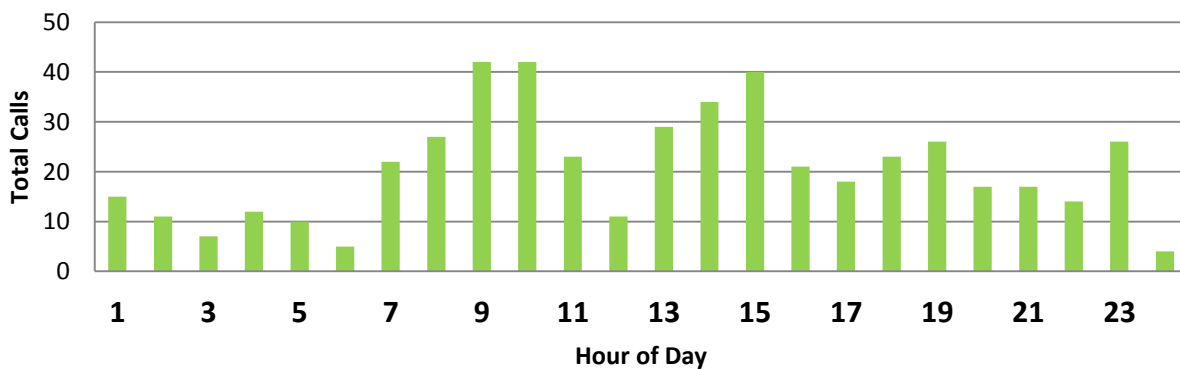


## TIME OF DAY VARIATION

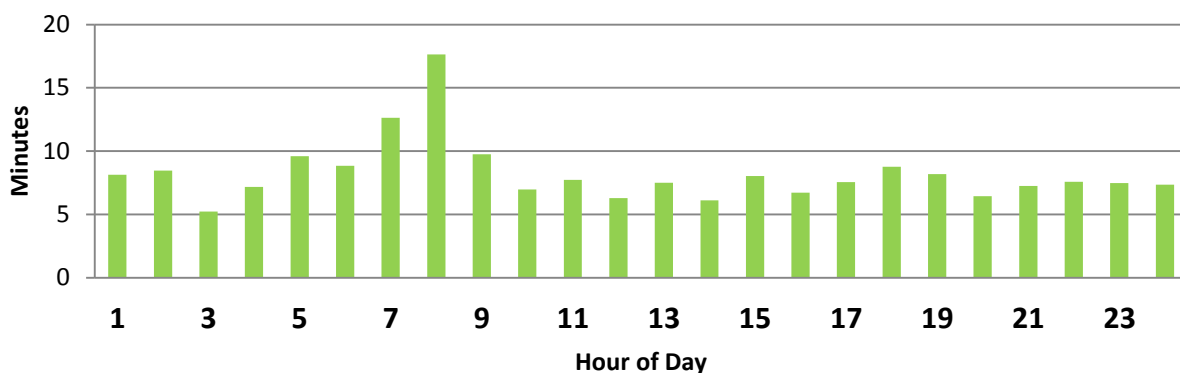
Variations in the call volume by time of day also highlight response conditions. Peaks during the morning period from 7AM to 10AM and additional peaks in the afternoon from 1PM to 3PM exist, as shown in **Figure 4**. The first unit average response times also show variations throughout the day. **Figure 5** indicates that the slowest response time is during the morning peak period from 7AM to 8AM, with response times at least five minutes slower than during other times of the day.

The TFD effectively uses peak-load staffing. Adjustments are made in deployment based on demand and the time of day as well as available staffing. The same methodology can be used for the Port, which has a recurring weekday life-cycle with the highest level of demand occurring during weekdays.

**Figure 4. Call Volume by Hour of the Day**



**Figure 5. Average Response Times for First Unit by Hour of the Day**

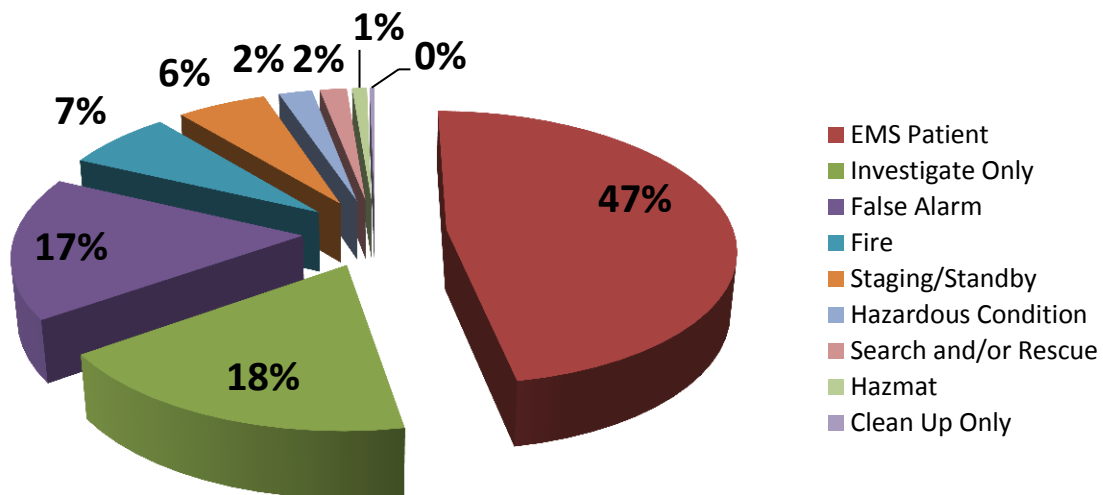




## CALL AMOUNTS BY TYPE OF EMERGENCY

Historical data was analyzed to understand the relative demand by type of emergency. As shown in **Figure 6** "EMS Patient" calls make up a large portion (47%) of the response type in the Tideflats area, with "Investigate Only" and "False Alarm" comprising 35% of the total call volume.

**Figure 6. Call Volumes by Type of Incident**

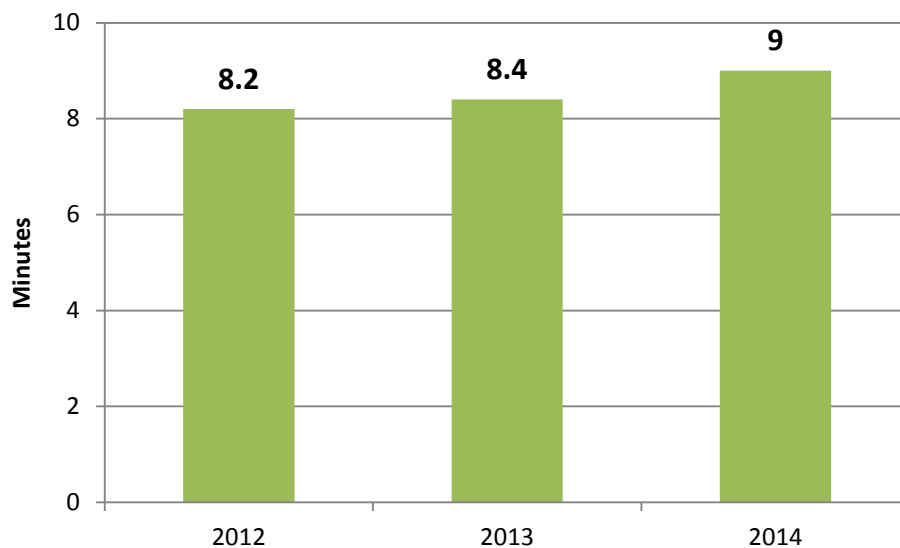




## AVERAGE RESPONSE TIMES

Comparing the change in response times over time and the historical times to standards set by the Fire Department highlighted the issues surrounding response to the Tideflats area. On average, response times in the Tideflats area have been increasing since 2012. As shown in **Figure 7**, the average total response time for first unit response was 8.2 minutes and increased to a 9.0 minute average by 2014.

**Figure 7. Average Response Times by Year**



## AVERAGE RESPONSE TIME BY CALL TYPE

The performance objectives identified by the Tacoma Fire Department are highlighted in **Table 2**. For example, the standard response time for first responders to a Hazmat incident is 6 minutes and 50 seconds as defined by the performance objectives. These objectives were compared to actual response times by call type in **Table 3**. Both the average response times and the 90<sup>th</sup> percentile response times for Fire, ALS and Search/Tech Rescue incidents are greater than the standard set by the Fire Department, with Search/Tech rescue over four minutes above the threshold.

The National Fire Protection Association (NFPA) standards define specific components of a response time, with travel time representing a large proportion of that time. NFPA 1710 identifies as standards a 4-minute travel time for the first responding unit and an 8-minute travel time for full alarm capability. The next section specifically evaluates the travel time portion of emergency response.



**Table 2. Tacoma Fire Department Performance Objectives**

		<i>Total Response Time</i>				
		Fire	EMS	HazMat	Rescue	Marine
<b>Alarm Processing</b>	Pick-up to Dispatch	60 sec.	90 sec.	90 sec	90 sec.	90 sec.
<b>Turnout</b>	Turnout Time 1 <sup>st</sup> Unit	80 sec.	60 sec.	80 sec.	80 sec.	80 sec.
<b>Travel*</b>	Travel Time 1 <sup>st</sup> Due	4:00	4:00	4:00	4:00	4:00
	Travel Time - Balance	8:00	8:00	8:00	8:00	8:00
<b>Total Response Time (TRT)</b>	TRT 1 <sup>st</sup> Due	6:20	6:30	6:50	6:50	22:30
	TRT - Balance	10:20	10:30	10:50	10:50	22:30

\*NFPA travel time standards are 4 minutes for 1<sup>st</sup> due and 8 minutes for balance of companies

**Table 3. Actual Response Times by Call Type Compared to Standards**

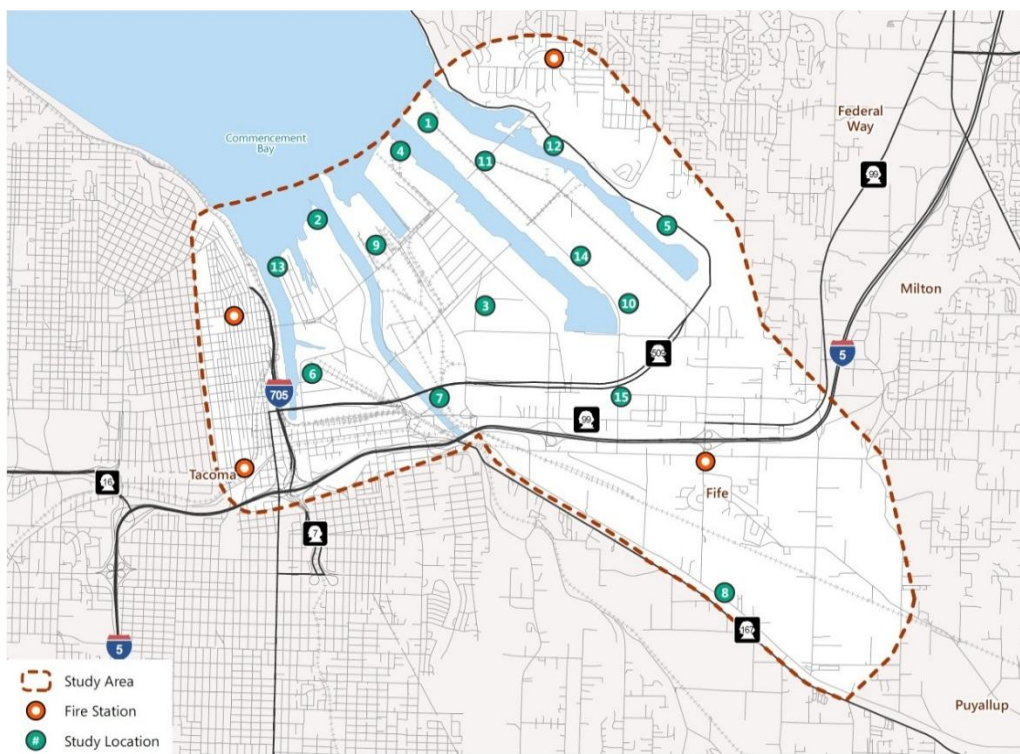
		<i>Total Response Time</i>			
		Standard	Average	90th Percentile	90th Percentile Compared to Standard
<b>Fire Incidents</b>	First Arriving Unit	<b>6.2</b>	7.3	10.5	+3.2
	Last Arriving Unit (Full Complement)	<b>10.2</b>	11.7	21.2	+8.9
<b>ALS Incidents</b>	First Arriving Unit	<b>6.3</b>	6.5	9.6	+2.1
	Last Arriving Unit (Full Complement)	<b>10.3</b>	8.1	12.9	+0.4
<b>Hazmat Incidents</b>	First Arriving Unit	<b>6.5</b>	8.9	11.5	+3.7
	Last Arriving Unit (Full Complement)	<b>10.5</b>	13.3	23.9	+11.1
<b>Search / Tech Rescue Incidents</b>	First Arriving Unit	<b>6.5</b>	7.2	12	+4.2
	Last Arriving Unit (Full Complement)	<b>12.8</b>	10.7	16.5	+3.7



## STUDY LOCATIONS

During a technical committee meeting held in September 2014, the group identified over 20 locations to be analyzed as case studies for the emergency response analysis. This list of 20 locations was trimmed to 15 locations based on input from the committee. The selected locations were primarily illustrative and are not intended to identify or call out specific locations as dangerous or potential problem areas. The final set of study locations are shown in **Figure 8**.

**Figure 8. Study Locations**



Label ID	Full Name
1	Earley Business Center
2	West Rock Paper Mill
3	US Oil and Refining Company
4	Husky Terminal & Stevedoring
5	PNW Terminal
6	NW Detention Center
7	Bullfrog Junction
8	Puyallup Tribal Youth Center
9	APM Terminals
10	NW Innovation Works (proposed)
11	PSE Liquefied Natural Gas Plant (proposed)
12	Targa Sound Terminal
13	NU Star Energy
14	Marine View Ventures
15	Residential Tribal Community





## 4-MINUTE AND 8-MINUTE TRAVEL TIME SHEDS

Utilizing the historical response times as calibration, the existing travel time sheds were developed in GIS. Based on NFPA standards, the four minute travel time objective is the desired maximum travel time for the initial responding units to all emergencies. The 8 minute travel time objective is the desired maximum travel time for all ALS transport units. The street network and travel speeds were provided by Tacoma Fire Department and the network routing analyst created travel time sheds from each of the adjacent fire stations. The following were assumed road and bridge closures:

- 11<sup>th</sup> Street Viaduct between E Portland Avenue and Milwaukee Way
- Puyallup Avenue Bridge
- Alexander Avenue north of SR509
- 54<sup>th</sup> Avenue railroad crossing

The travel time sheds were based purely on travel time and are not considered the total response time. While the GIS travel shed analysis is good for comparison purposes, previous studies revealed that actual response and travel times are longer than those calculated using this technique.

As shown in **Figure 9**, a large portion of the Tideflats is not reachable within four minutes, while the area is covered by the 8-minute travel time shed.

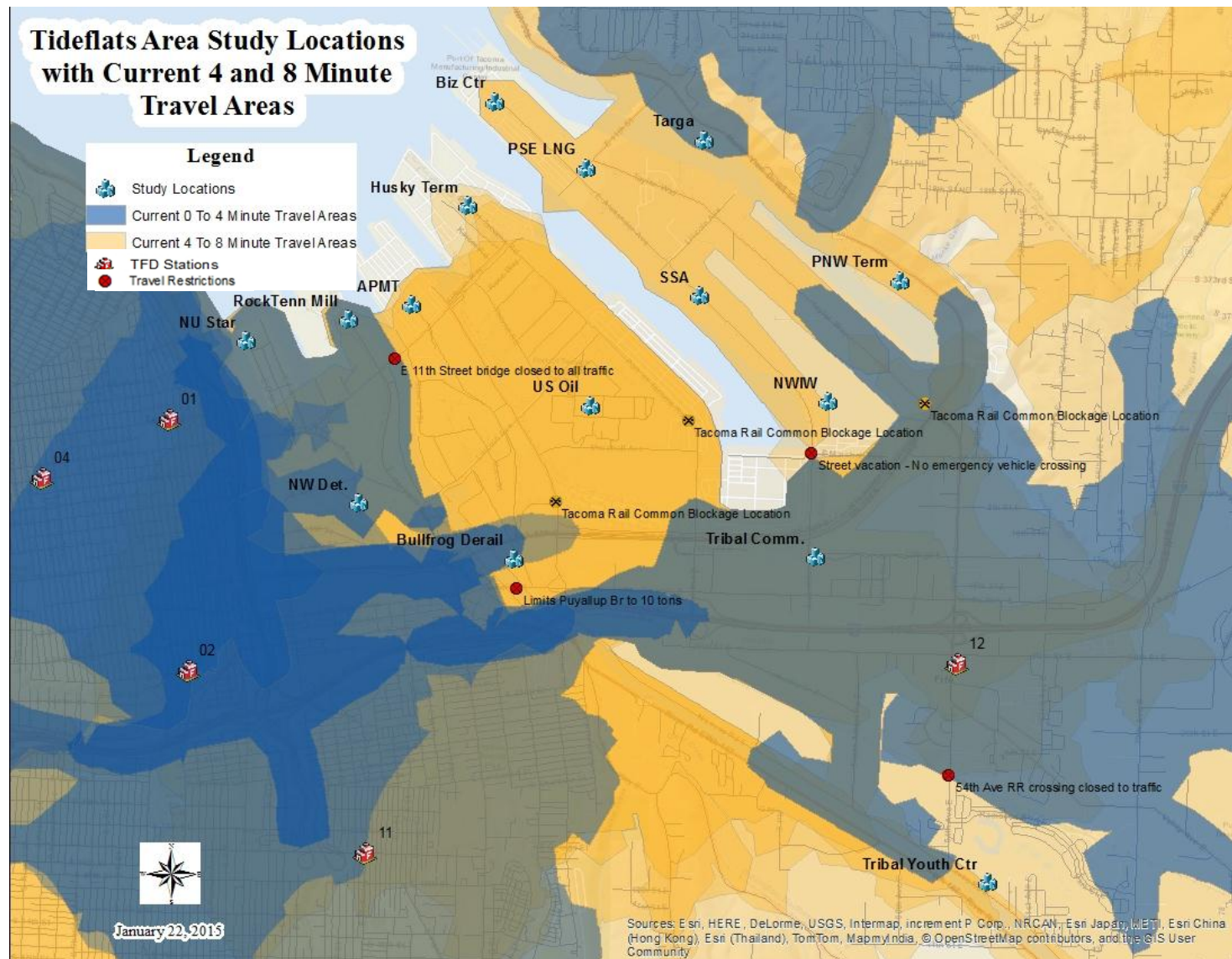
The northern peninsulas of the Tideflats are the areas most underserved in terms of coverage and long response times. To illustrate, a number of the study locations are not served within the four minute travel time shed, including:

- APMT terminals
- Husky Terminal
- US Oil
- The Earley Business Center
- Marine View Ventures
- Northwest Innovation Works (proposed methanol facility)
- PNW Terminal





Figure 9. Existing 4-Minute and 8-Minute Travel Time Sheds







## EMERGENCY RESPONSE ANALYSIS – FUTURE SCENARIO TESTING

To understand impacts of future street network configurations and congestion, travel times were estimated based on proposed 2020 and 2035 transportation projects. Additionally, the Tacoma travel demand model provided speed adjustments based on future congestion for 2020 and 2035 conditions.

### TRANSPORTATION NETWORKS (2020 AND 2035)

The 2020 network was based on near-term transportation project implementation. **Figure 10** shows the locations of the improvements, with key projects noted below (the numbers refer to the project number in the Figure). The full list of projects including extended descriptions can be found in **Appendix A**.

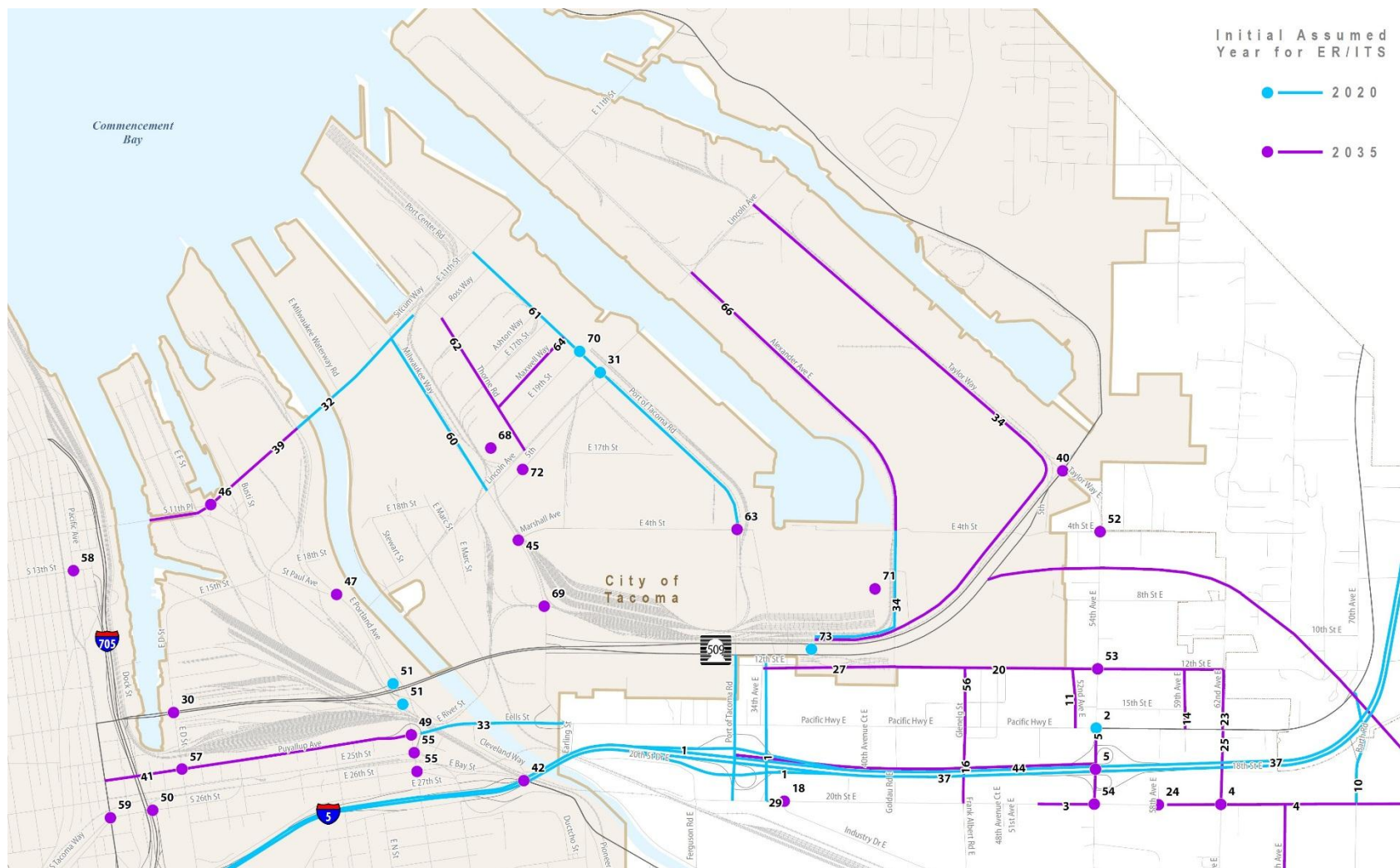
1. Port of Tacoma Rd Interchange
32. 11<sup>th</sup> Street viaduct sensitivity tests
33. Puyallup Avenue bridge
37. HOV lanes along I-5
51. Portland Ave off-ramps from SR-509
60. Milwaukee Way vacation

Key projects noted for 2035 incorporate the 2020 projects and include the following:

5. Fife 54<sup>th</sup> Avenue interchange rebuild
6. D Street ramps from SR-509
36. SR-167 connection
64. Maxwell Way street vacation
66. Alexander Avenue street vacation



Figure 10. Future Projects for 2020 and 2035 Street Networks



## RESPONSE TIMES (2020 AND 2035)

In 2020 and 2035, the modifications in the street configurations and future congestion levels only create minor changes in the travel time sheds. Slight improvements in travel time due to new roadway connections are somewhat offset by increases in general traffic congestion. In 2035, the additional street vacations would also diminish the response coverage. Much of the Tideflats area and many of the study locations would still lack response time coverage within the four minute travel time shed, as shown in **Figure 11** and **Figure 12**. Note in each of the following two figures, a darker shade of orange represents areas that are covered in the four minute travel shed in 2020 and 2035 that are within the existing travel shed.

**Figure 11. Four Minute Travel Time Shed for 2020 Network**

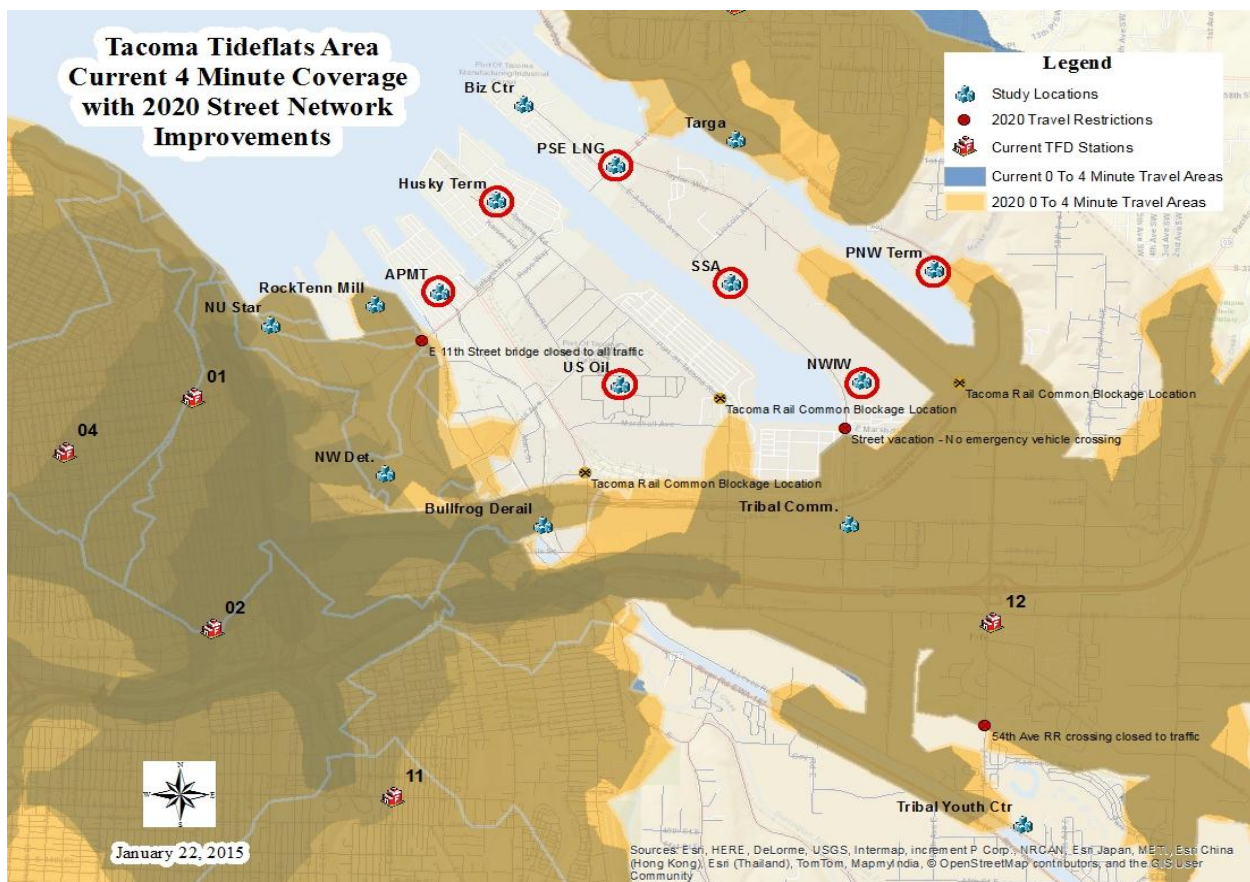
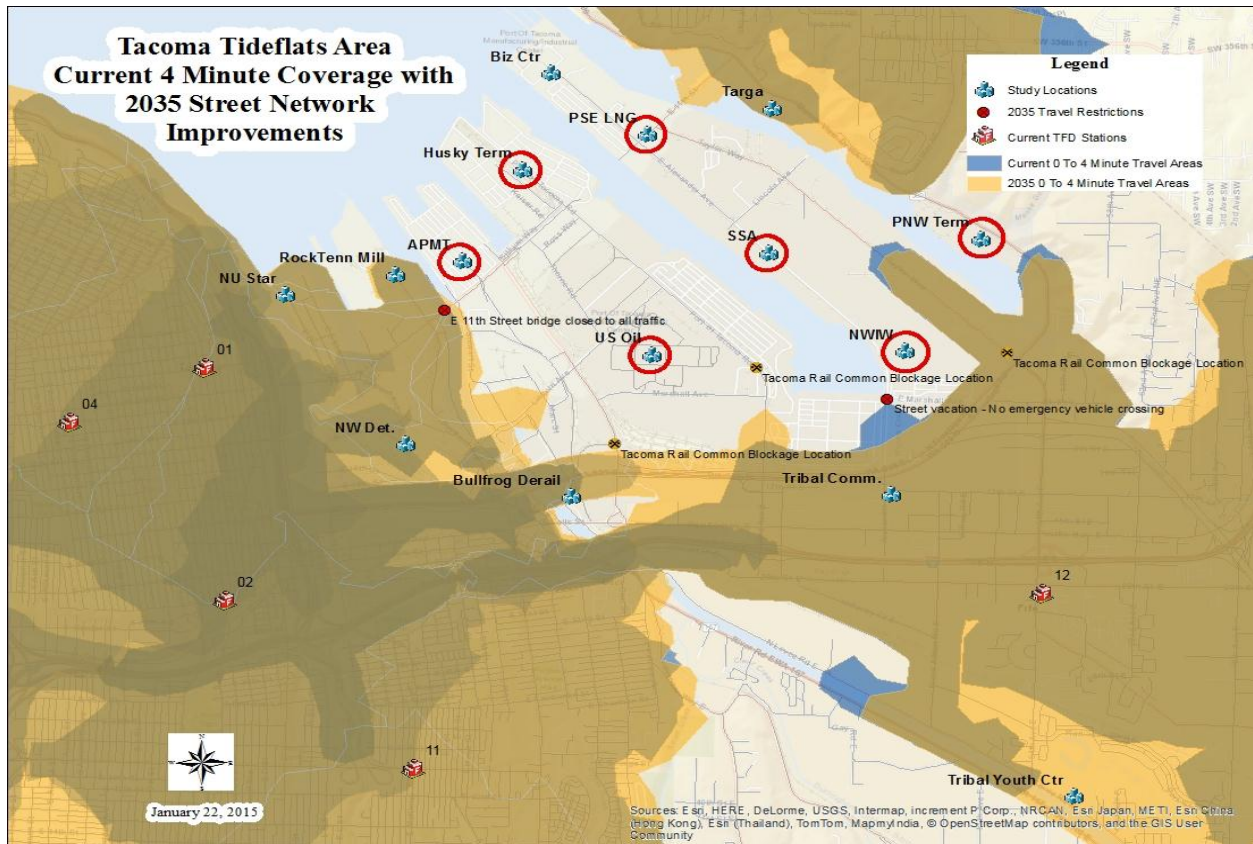




Figure 12. Four Minute Travel Time Shed for 2035 Network





## RESPONSE TIME SENSITIVITY TESTS

In addition to evaluating changes to the travel time sheds based on 2020 and 2035 conditions, the project team conducted detailed sensitivity tests on the existing network under a variety of new fire station configurations and bridge re-opening scenarios. These sensitivity tests do not assume other improvements discussed later in the document, including pavement condition and ITS. The scenarios selected involved various combinations of reopening Station 6 and Station 15, creating a new station at the Fire Training Center<sup>8</sup>, and reopening the 11<sup>th</sup> Street Bridge. The following scenarios were evaluated:

- Station 6 open and 11<sup>th</sup> Street bridge open
- Station 6 open and 11<sup>th</sup> Street bridge closed
- Station 6 and Station 15 open and 11<sup>th</sup> Street bridge open
- New Station at Fire Training Center location open and 11<sup>th</sup> Street bridge closed
- New Station at Fire Training Center location and Station 15 open and 11<sup>th</sup> Street bridge closed

The maps that depict the change in travel time sheds present overlapping four-minute response times. Therefore, darker shades of blue represent areas that are within the four-minute travel time shed of multiple station locations. For each scenario, the study locations that are not covered by the existing four-minute travel time shed are circled on the map for reference.

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<sup>8</sup> The fire training center is located on Marshall Avenue east of Milwaukee Way.

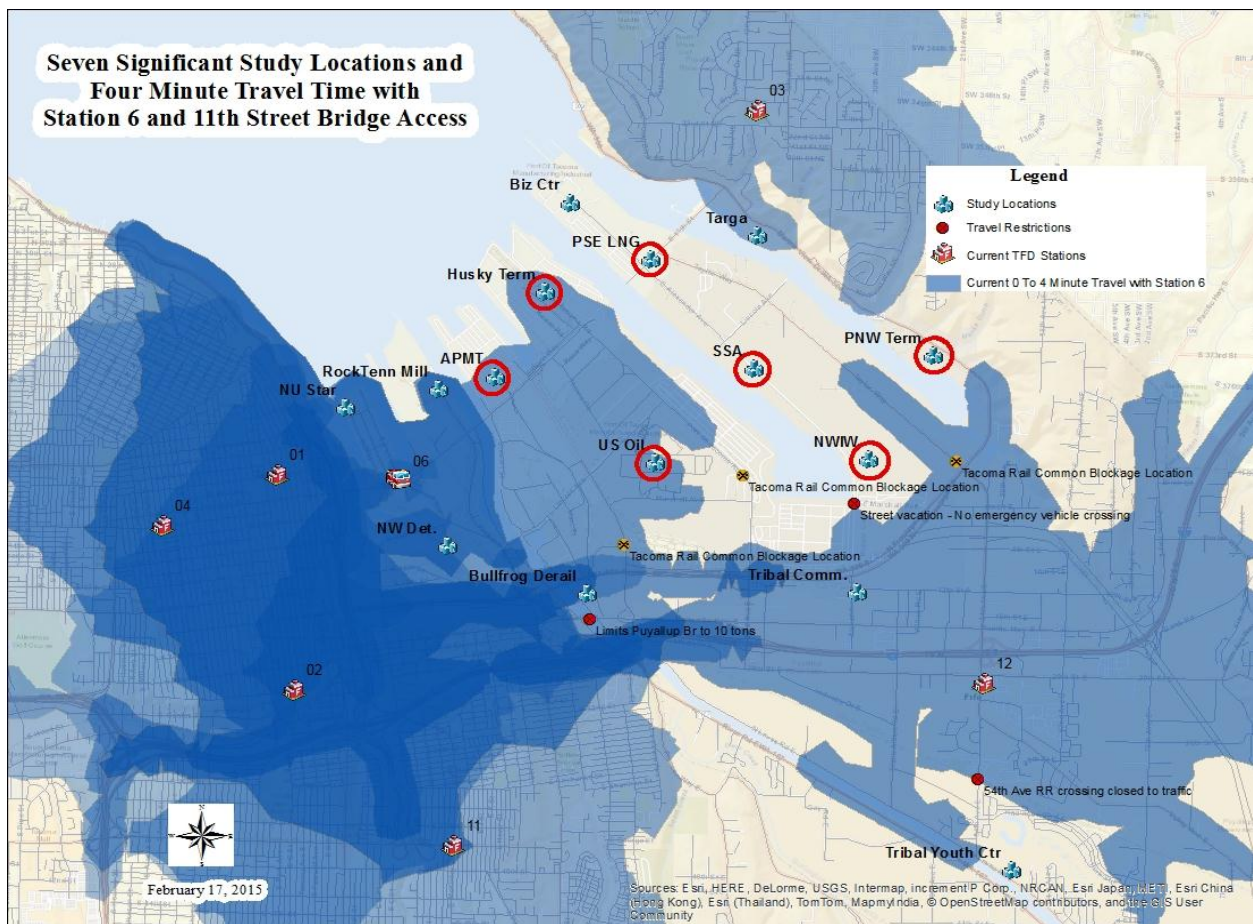




### Station 6 Open and 11<sup>th</sup> Street Bridge Open

The opening of Station 6 in coordination with the 11<sup>th</sup> Street bridge opening provides expanded coverage into the Tideflats area, providing four minute travel time reach to all of the study locations on the central Tideflats. However, a gap still exists on the Blair-Hylebos Peninsula, as no change in the coverage is provided from this scenario as shown in **Figure 13**.

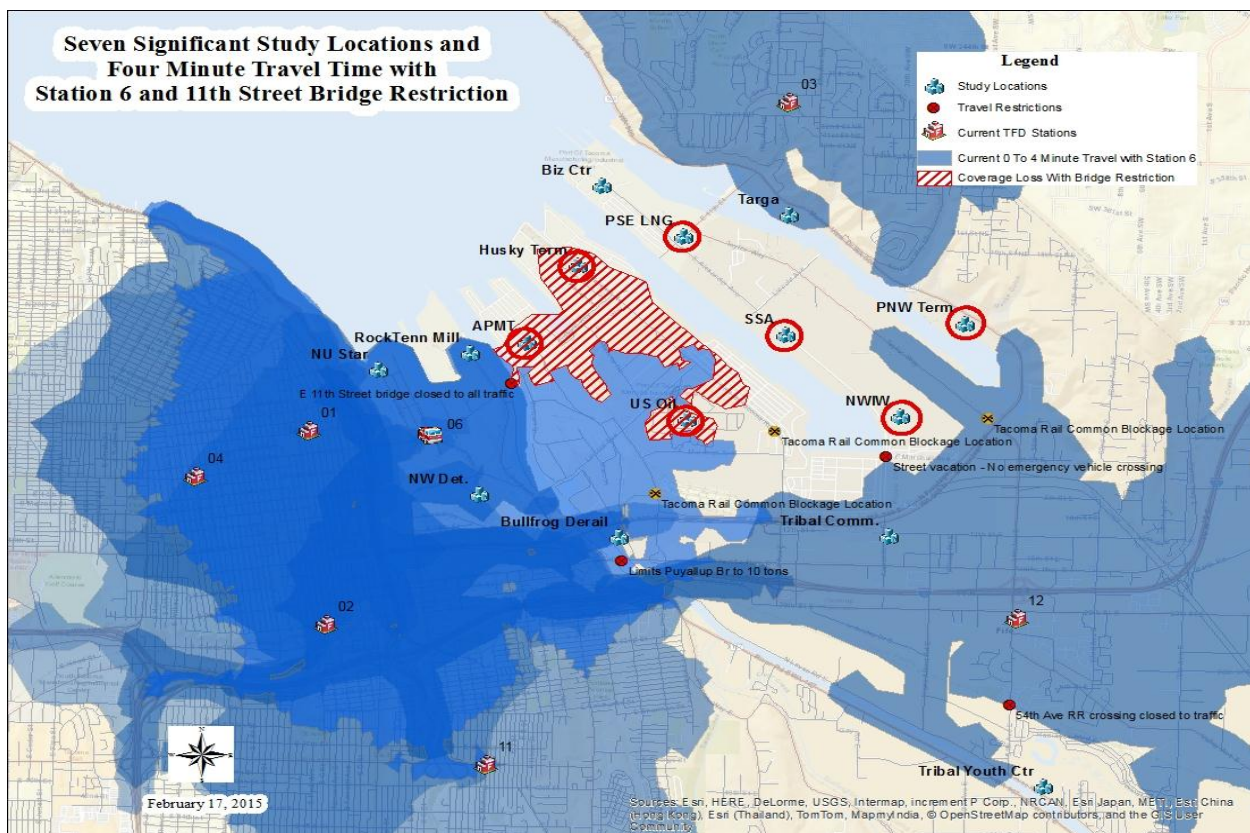
**Figure 13. Four Minute Travel Time Shed for Scenario with Station 6 and 11<sup>th</sup> Street Bridge Access**



## Station 6 Open and 11<sup>th</sup> Street Bridge Closed

With a closed 11<sup>th</sup> Street bridge, the opening of Station 6 does not significantly expand the coverage into the Tideflats area due to the diversion required to reach the central Tideflats via Portland Avenue and Lincoln Avenue. Key study locations such as the APMT Terminal, the Husky Terminal and the US Oil site still are not within the four minute travel shed. Additionally, the gap still exists on the Blair-Hylebos Peninsula as no change in the coverage is provided from this scenario as shown in **Figure 14**.

**Figure 14. Four Minute Travel Time Shed for Scenario with Station 6 and 11<sup>th</sup> Street Bridge Restriction**

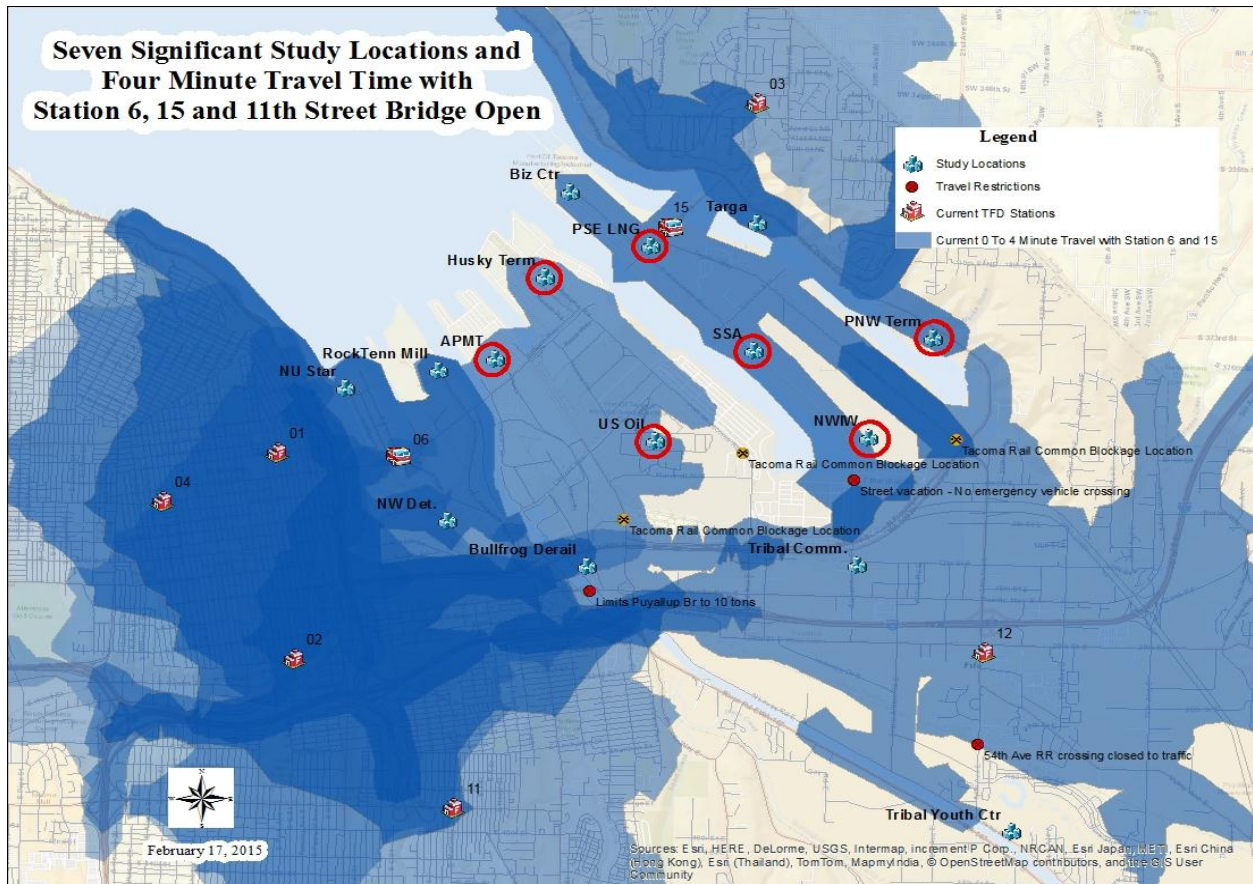




### Station 6 and Station 15 Open and 11<sup>th</sup> Street Bridge Open

The opening of Station 6 and Station 15 in addition to the 11<sup>th</sup> Street bridge opening provides extensive coverage throughout the Tideflats area, with all study locations reachable within four minutes of travel time. A small portion near Marshall Avenue and Port of Tacoma Road still is outside of the four minute travel shed as shown in **Figure 15**.

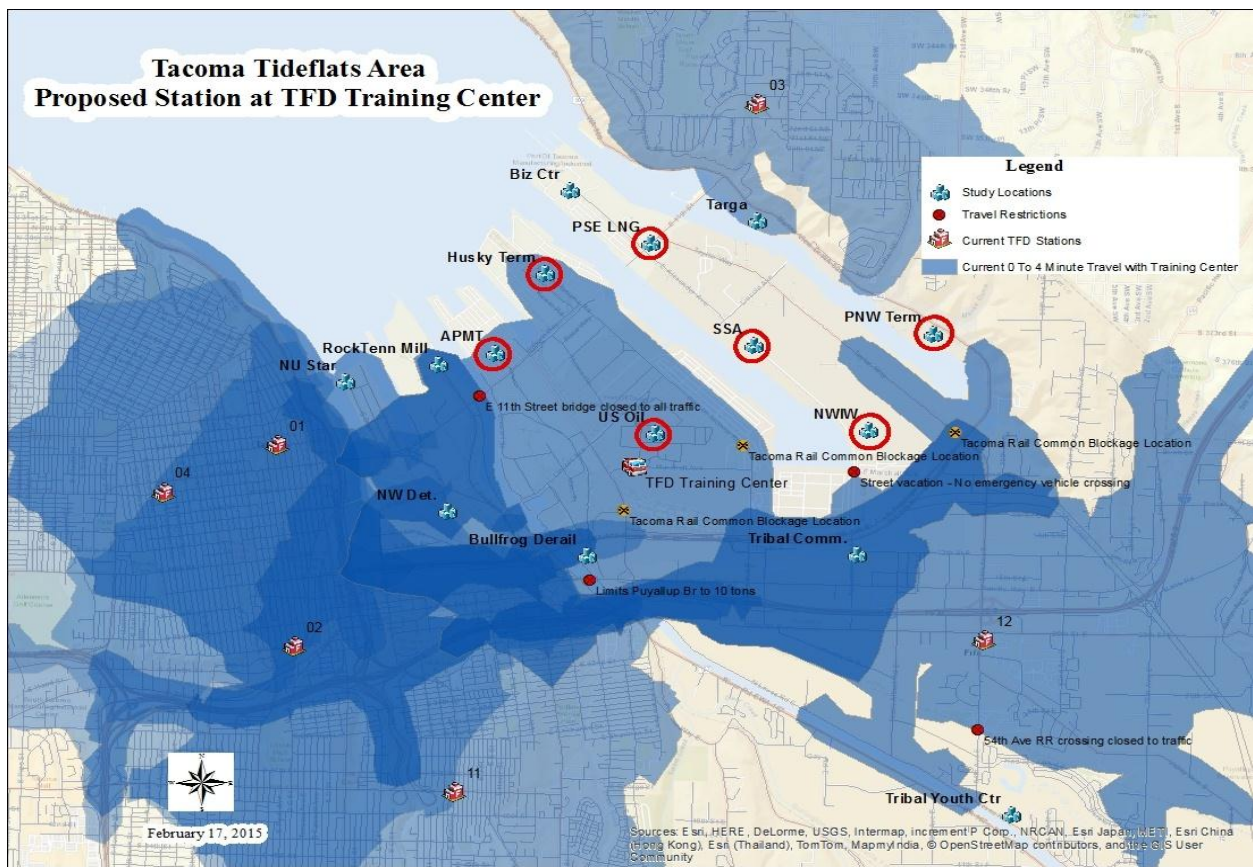
**Figure 15. Four Minute Travel Time Shed for Scenario with Station 6, 15 and 11<sup>th</sup> Street Bridge Access**



### Station at Training Center Open and 11<sup>th</sup> Street Bridge Closed

A station at the current TFD training center or another suitable nearby location provides extensive coverage throughout the central Tideflats, even with the 11<sup>th</sup> Street bridge remaining closed. However, the gap along the Blair-Hylebos Peninsula still exists with the only coverage provided by Station 3 and Station 12 as shown in **Figure 16**.

**Figure 16. Four Minute Travel Time Shed for Scenario with TFD Training Center**

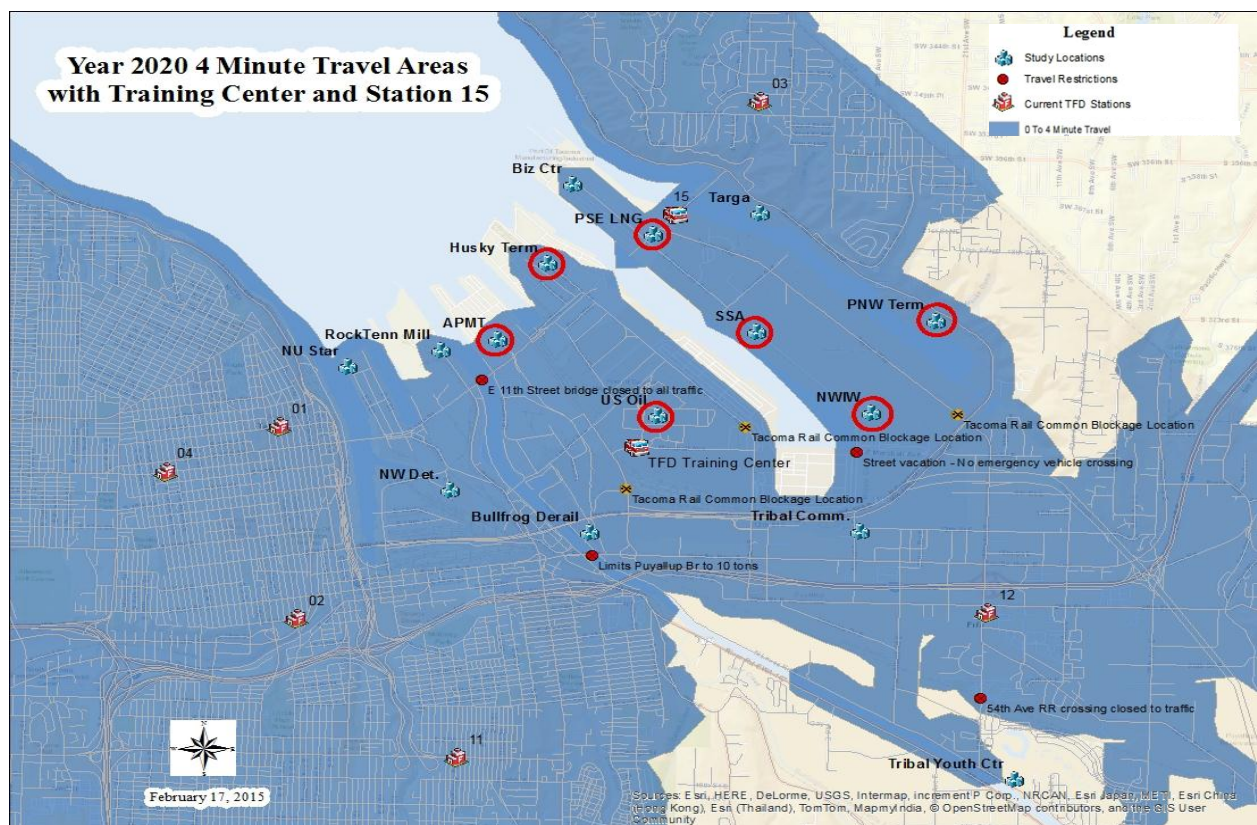




## Station 15 and Training Center Station Open and 11<sup>th</sup> Street Bridge Closed

The combination of Station 15 and the training center or another suitable nearby location opening expands coverage throughout the Tideflats, even with the 11<sup>th</sup> Street bridge remaining closed. The central location of the training center fills the existing gaps in coverage of the Husky Terminal, APMT Terminal, and the US Oil site while Station 15 covers all locations on the Blair-Hylebos Peninsula as shown in **Figure 17**.

**Figure 17. Four Minute Travel Time Shed for Scenario with Station 15 and the TFD Training Center Station**





## SUMMARY OF COVERAGE SHED ANALYSIS

While response coverage doesn't change substantially in the 2020 or 2035 network conditions, modifications to fire station opening configurations significantly affect the response sheds in the Tideflats area. Additionally, the 11<sup>th</sup> Street bridge closure has a major impact on providing coverage to study locations such as APMT Terminal and the Husky Terminal. However, even with the 11<sup>th</sup> Street Bridge remaining closed, converting the Fire Training Center into a station and re-opening Station 15 on the Blair-Hylebos Peninsula expands the coverage throughout the Tideflats and ensures the entire area is within a four minute travel time.

Each of these scenarios encompasses various operating and capital cost elements that should be considered when evaluating the overall benefits of each scenario. Additional modifications to response times may be possible with improvements in pavement conditions or through Intelligent Transportation Systems, as discussed below.

## POTENTIAL IMPACTS ON COVERAGE SHEDS

### PAVEMENT CONDITION

Good pavement conditions are important to emergency response time, as poor pavement can necessitate a slower travel speed along portions of a corridor, exhibiting a similar effect as traffic calming devices. Research has documented that traffic calming or other impacts to a smooth traveling surface can require deceleration and slow emergency response by anywhere between two and ten seconds per location. Applying these estimates to local conditions, the rehabilitation of the 1.5 mile portion of Port of Tacoma Road could reduce the emergency response time along that corridor by an estimated 10 to 30 seconds. Improvements to the surface condition of Taylor Way could reduce travel time in that corridor by 15 to 40 seconds. The travel time savings could extend the current 4-minute travel shed an average of between 550 and 1,400 feet further north along Port of Tacoma Road and an average of between 750 and 1,900 feet further north along Taylor Way, based on a traveling speed of 40 mph.

Because freight trucks and emergency response vehicles have similar operating characteristics, the improvement in pavement conditions would also benefit freight mobility. With these shared benefits, pavement replacement represents a near-term opportunity that serves a variety of stakeholders in the Tideflats area.



## INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Another opportunity to improve response times is Intelligent Transportation Systems (ITS). A concurrent ITS study was performed to examine strategies to improve emergency response and freight movements within the area.

The study identified an overall ITS Strategic Plan and specific steps to be taken following the study completion, leading to the eventual phased or full build out of the ITS. This study considered the results of the Washington State Department of Transportation (WSDOT) Statewide Intelligent Transportation System Plan, updated in 2013, that identified an unfunded priority need for ITS on I-705 and SR 509 as well as WSDOT's current ramp metering operations along I-5 that affect traffic patterns on I-5 and SR 509.

Based on the results of a user survey, stakeholder interviews, and input from a project committee, the team developed a set of user needs that represent the collective. The needs are focused around seven ITS areas listed below.

1. Data Communications
2. Safety
3. Real-time Traffic Management
4. Regional System Management
5. Freight Management
6. Weather Information Management
7. Traffic Operations Evaluation

From the user needs and stakeholder input, the team developed a set of potential goals for the ITS Strategic Plan that would also align with the goals and policies from the City of Tacoma Comprehensive Plan Container Port Element and the goals from the Port of Tacoma Land Use and Transportation Plan. The goals and strategies helped frame a concept of operations for the ITS system as a whole and identified relevant ITS strategies that may be appropriate for improving emergency response to the Tideflats. The benefits of particular ITS strategies are noted below.



- **Video-sharing**
  - Improved coordination between agencies
  - Detailed viewing of incidents before response arrives
  - Understanding of current traffic conditions and any road blockages
  - On-site routing improvement with video surveillance
- **Cameras at railroad crossings**
  - Better routing around potential blockages
  - Savings of up to one to three minutes depending on the location of the blockage, the notification timing and the availability of alternative routes
- **Signal preemption on priority corridors**
  - Savings of between 10 and 30 seconds per intersection for emergency response
  - Reduction in travel time of up to 30 seconds along certain corridors in total
- **Updated signal coordination**
  - 7-25% reduction in overall vehicle delay
  - Specific impact on emergency response not confirmed and would depend on whether the incident occurs during periods of peak travel demand<sup>9</sup>

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<sup>9</sup> While the benefits were not quantified for this study, regularly updating signal timing can be a cost effective way to reduce congestion and queuing. Note that the 54<sup>th</sup> Street Avenue corridor has been reviewed previously by WSDOT and they have been unable to identify changes that may significantly improve travel times in that corridor.





## RECOMMENDATIONS – A SET OF TRADE-OFFS

### STRATEGIES

Improvements to emergency response in the Tideflats can come from various strategies. Each of these strategies provides certain emergency response benefits, along with both capital and operating costs. Following are a list of the available overall strategies:

- New or modified roadway infrastructure (e.g. new connections, road widening, improved pavement conditions, etc.)
- Operational improvements using Intelligent Transportation Systems (e.g. signal coordination, emergency preemption, traveler information, coordinated dispatch Computer Aided Dispatch (CAD) etc.)
- New or modified fire/paramedic facilities in the Tideflats
- Designation of Emergency Response Corridors as a means to alleviate impacts due to street vacations and closures. These Emergency Response Corridors would be prioritized for street and ITS improvements to ensure consistent access and travel times for emergency response services and as potential evacuation corridors.<sup>10</sup>

The recommended approach was developed from looking at tradeoffs among these strategies over different time periods.

### RECOMMENDATIONS

The project team assembled a set of recommendations that can address emergency response needs over the short (0-5 years), medium (5-10 years) and long term (10+ years). These

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<sup>10</sup> Although review of Tideflats area evacuation plans was not part of the scope of this study, the technical team partners who assisted the consultant in the performance of the study acknowledged that recent changes in Tideflats streets and bridges should cause those plans to be reviewed and updated, if needed.



preliminary recommendations are based on the following observations of the analyses conducted to date:

- Existing emergency response is poor as compared to fire department standards in several portions of the Tideflats.
- Response times are not significantly affected in 2020 or 2035 with the planned roadway projects. There are several roadway improvements (e.g. POTR interchange, Puyallup River bridge replacement) that will improve overall accessibility to/from the Tideflats, but these will not substantially affect response times given the locations of the existing fire stations. General increases in traffic congestion would offset some of the roadway improvements.
- Implementing ITS Strategies and maintaining good pavement conditions would assist in emergency response and provide other transportation benefits, but they would not be enough to provide a 4-minute emergency response to the entire study area.
- As shown previously in Figures 5 and 6, the primary underserved areas are the central Port area along Port of Tacoma Road, along with the Blair-Hylebos Peninsula. Our analysis indicates that rebuilding the East 11<sup>th</sup> St Viaduct would help response times to areas along East 11<sup>th</sup> Street and Port of Tacoma Road to the north of Lincoln Ave.
- The team has identified an option to build a new Fire Station on Marshall Avenue at the existing Fire Training Center or another suitable nearby location. Analysis shows that this station would allow full emergency response service to properties along POTR and connecting streets, along with the Thea Foss area (combined with Station #1). Based upon the preliminary design and feasibility study of that facility completed by Lawhead Architects in 2014, only an addition is needed to enable the assignment of a first responding unit out of that facility. Moreover, if the unit is only to be stationed there during the business day (0700 to 1900 hours, Monday through Friday), the operation could commence without the addition as an interim improvement.
- The East 11<sup>th</sup> St Viaduct replacement would not be needed (for emergency response) if a first responding unit is assigned to the Fire Training Center or another suitable nearby location. However, replacing the viaduct would provide improved overall traffic circulation and redundancy of access for emergency response.





- There are no identified transportation improvements that would improve emergency response services to the Blair-Hylebos Peninsula sufficient to meet the four minute guidelines. Reopening Station # 15 is the only way to substantially serve the Blair-Hylebos Peninsula, even if a new Marshall Avenue station is built
- As redevelopment occurs in the Tideflats, and as new utilities are installed, all reconstructed streets designated within the Heavy Haul Industrial Corridor should be built according to those standards. Any new street projects should attempt to restore a full cross-section as opposed to half of a street as the extreme loading may compromise the interface between the old and new sections.

Beyond the specific recommendations related to transportation infrastructure and fire station locations, there are staffing and operations recommendations identified through a review of current emergency response into the Tideflats which include the following:

- Improve the planning, coordination, and response capabilities to the Tideflats region by organizing a new Special Hazards and Marine Response (SHMR) division within the TFD.
- Create a two-person Advanced Life Support (ALS) unit/squad. Place the unit at the fire training facility or a re-opened Station 15 with the unit being staffed during weekday hours
- Add one TFD Captain (40 hour) and one Hazardous Materials Specialist/ Engineer (40 hour) to coordinate all planning, inspections, and response activities within the Tideflats region. The coordinator should be responsible for the coordination and policy development for all of the TFD's special hazards' programs.
- Staff one fireboat with two persons 24/7 (one officer and one technician/ pilot) and continue the policy of cross-staffing the boat with Station 14's crew to augment the fireboat's two-person fulltime crew.
- Provide the required funding for the hazards and response initiatives needed for Tideflats through a surcharge or other funding source paid for by new developments and current operators/shippers within the Tideflats region, and those that ship hazardous commodities by rail through Tacoma.





- Work with the State Department of Ecology to explain the hazards associated with the Port and other transportation systems, especially the oil trains.

## PHASING OF EMERGENCY RESPONSE PROJECTS

This section identifies a potential phasing plan to lead towards a long-term improvement to Tideflats emergency response. The timing of these actions is approximate, depending on available funding and sequencing of other projects within the study area. The potential phasing plan is presented in **Table 3**. Short-term cost estimates for the roadway projects, ITS elements and the Fire/EMS facilities are included in **Table 4**, **Table 5** and **Table 6**, respectively. The location of certain ITS projects along with the location of the proposed Emergency Response Corridors are shown in **Figure 18**.



**Table 4. Potential Project Phasing**

	Roadway infrastructure	Operational Improvements Using Intelligent Transportation Systems (Refer to Figure 15, pg. 42)	Fire/EMS Facilities
<b>Short Term (0-5 years)</b>	<ul style="list-style-type: none"> <li>• Puyallup Ave Bridge Replacement</li> <li>• Port of Tacoma Road Interchange</li> <li>• I-5 HOV lanes and ramp metering</li> <li>• Port of Tacoma Road Rehabilitation</li> <li>• Taylor Way Rehabilitation Continue other local and regional projects</li> <li>• E 11th St Viaduct – Retrofit or Rebuild - Pre- Design Study</li> </ul>	<ul style="list-style-type: none"> <li>• Establish agreements / MOU regarding operation and maintenance of ITS Infrastructure</li> <li>• Construct initial ITS Infrastructure needed for basic information sharing among stakeholders</li> <li>• Set up Port of Tacoma “Port Traveler Information” website*</li> <li>• Add “Port Travel Information” option to the State’s 511 system</li> <li>• Establish video-sharing between Port, City (Fire, PW, and Rail) and WSDOT**</li> <li>• Add cameras to key locations including existing at-grade rail crossings</li> <li>• Install signal preemption for existing signals on priority corridors</li> <li>• Update signal coordination for signals on Pacific Highway and 54<sup>th</sup> Avenue NE</li> </ul>	<ul style="list-style-type: none"> <li>• Assign first response unit to Fire Training Center or another suitable nearby location during the business day (temporary)</li> <li>• Reopen Station #15 for fire and EMS</li> </ul>

\*The Port could provide a link to relevant cameras, WSDOT flow maps and travel times, construction schedules etc. Once set up, it would require little maintenance on the Port’s end. They could direct freight operators to the site that would be seen as a one-stop shop for traveler information. This information would also be available to the City as needed for emergency response planning or other coordination.

\*\* WSDOT and Tacoma Fire already share a video link. The Port could make a similar link through WSDOT or a cloud-based system to enable sharing of selected cameras



	Roadway infrastructure	Operational Improvements Using Intelligent Transportation Systems (Refer to Figure 15, pg. 42)	Fire/EMS Facilities
<b>Mid Term (6-10 years)</b>	<ul style="list-style-type: none"> <li>Continue other local and regional projects</li> </ul>	<ul style="list-style-type: none"> <li>Complete remainder of ITS infrastructure, including WSDOT program on I-705 and SR 509</li> <li>Develop Tideflats Advanced Transportation Management System, linking agency stakeholders, private entities, and the public</li> <li>Design and begin implementation of new traffic signal system for City of Tacoma</li> <li>Evaluate feasibility of Variable Message Signage at modified Port of Tacoma road interchange</li> <li>Update signal coordination along Port of Tacoma Road as part of the interchange modification</li> </ul>	<ul style="list-style-type: none"> <li>Open new or expanded fire station on Marshall Avenue at Fire Training Center or a nearby suitable location; Provide 24/7 service.</li> <li>Determine ongoing needs for Station #15</li> </ul>
<b>Long Term (10+ years)</b>	<ul style="list-style-type: none"> <li>Reopen East 11<sup>th</sup> Street Viaduct or comparable facility</li> <li>Rebuild 54<sup>th</sup> Avenue Interchange</li> <li>Complete SR 167 Extension (Phase 1 initially)</li> <li>Continue other local and regional projects</li> </ul>	<ul style="list-style-type: none"> <li>Implement adaptive traffic signal control system</li> <li>Continued maintenance, upgrades and integration of Advanced Transportation Management System</li> </ul>	<ul style="list-style-type: none"> <li>Continue to upgrade facilities</li> </ul>

\*The Port could provide a link to relevant cameras, WSDOT flow maps and travel times, construction schedules etc. Once set up, it would require little maintenance on the Port's end. They could direct freight operators to the site that would be seen as a one-stop shop for traveler information. This information would also be available to the City as needed for emergency response planning or other coordination.

\*\* WSDOT and Tacoma Fire already share a video link. The Port could make a similar link through WSDOT or a cloud-based system to enable sharing of selected cameras





**Table 5. Short Term Roadway Infrastructure Costs**

Project	Cost (millions)	Notes on Project Costs
Puyallup Ave Bridge Replacement	\$38.7	Includes replacement of sections F16A & F16B (western portion)
Port of Tacoma Road Interchange	\$44.4	Phase 1 is fully funded and includes one-way couplet of Port of Tacoma Road and 34 <sup>th</sup> Avenue E while Phase 2 is partially funded and includes modification of I-5 SB on and off-ramp at the interchange.
I-5 HOV lanes and ramp metering	\$548.0	Currently under design and construction with a three year construction timeline for completion with HOV lanes and meters between SR16 and the Pierce County line
Port of Tacoma Road Rehabilitation	\$8.9	Reconstruction of Port of Tacoma Road from E 11 <sup>th</sup> Street to Marshall Way
Taylor Way Rehabilitation	\$8.5 - \$11.1	Based on project cost of Port of Tacoma Road rehabilitation and input from the Port of Tacoma and Tacoma Public Works
E 11th St Viaduct – Retrofit or Rebuild Pre- Design Study	\$0.5	Conduct study to determine feasibility of rebuild or retrofitting viaduct. Examine combination of at-grade + bridge and full viaduct options

\*Note that funding for these projects is from a number of federal, state and local sources





**Table 6. Short Term ITS Cost Estimates for Emergency Response**

ITS Element	Cost Range	Notes on Deployment
Construct initial ITS Infrastructure needed for basic information sharing among stakeholders	\$150,000 - \$230,000	Costs will vary depending on scope and need once gaps in the Port Security network are identified. Low-range estimate assumes only the costs to splice/pull the fiber needed along Taylor Way for strategic camera placements. Assumes the use of existing city-owned overhead fiber cable along Taylor Way
	\$775,000 - \$1,050,000**	Medium-range cost based on full installation of new fiber along Taylor Way. Includes low-end estimate costs
	\$2,200,000 - \$2,990,000**	High-range estimate involves major fiber construction where gaps exist and where overhead fiber would be buried. It is meant to represent the most conservative estimate for ITS fiber needs. Includes burying overhead fiber along Taylor and all medium-range estimate costs from above
Establish video-sharing between Port, City (Fire, PW, and Rail) and WSDOT	Minimal cost based on MOUs	Port Security is capable of sharing video via IP address with secure login information. TFD and WSDOT currently share video and can leverage the future Viewpoint system as a means of hosting a collective platform for video sharing. Cost of Viewpoint is already assumed as part of the software contract with TFD
Add cameras to key existing at-grade rail crossings	\$260,000 to \$350,000	Fixed cameras on poles at up to seven high volume crossing locations identified by TFD and Tacoma Rail. Required amount may be reduced based on Port Security camera locations, ability to share current poles, and possible relocation of existing cameras.
Install signal preemption for existing signals on priority corridors	\$65,000 to \$150,000	Range of 6 to 10 total signals updated with preemption along Emergency Response Corridors within the Tideflats

\*Note that the signals at 54<sup>th</sup> Avenue/SR99 and 54<sup>th</sup> Avenue/I-5 off-ramps are included in both the Pacific Highway and the 54<sup>th</sup> Avenue signal coordination cost elements

\*\*Costs for ITS fiber infrastructure are additive. The medium-range estimate includes the elements in the low-range and the high-end estimate includes the low and medium-range cost elements





ITS Element	Cost Range	Notes on Deployment
Update signal coordination for signals on Pacific Highway	\$99,000 to \$135,000*	9 total signals re-timed and coordinated between 54 <sup>th</sup> Avenue and E Portland Avenue including the two ramp terminal signals off of Port of Tacoma Rd and 54 <sup>th</sup> Avenue due to coordination requirements
Update signal coordination for signals on 54th Avenue	\$55,000 to \$75,000*	5 total signals re-timed and coordinated between I-5 and SR509
ITS Coordinator	1 FTE	Based on final deployment level of ITS elements and the need between agencies for coordination

\*Note that the signals at 54<sup>th</sup> Avenue/SR99 and 54<sup>th</sup> Avenue/I-5 off-ramps are included in both the Pacific Highway and the 54<sup>th</sup> Avenue signal coordination cost elements

\*\*Costs for ITS fiber infrastructure are additive. The medium-range estimate includes the elements in the low-range and the high-end estimate includes the low and medium-range cost elements





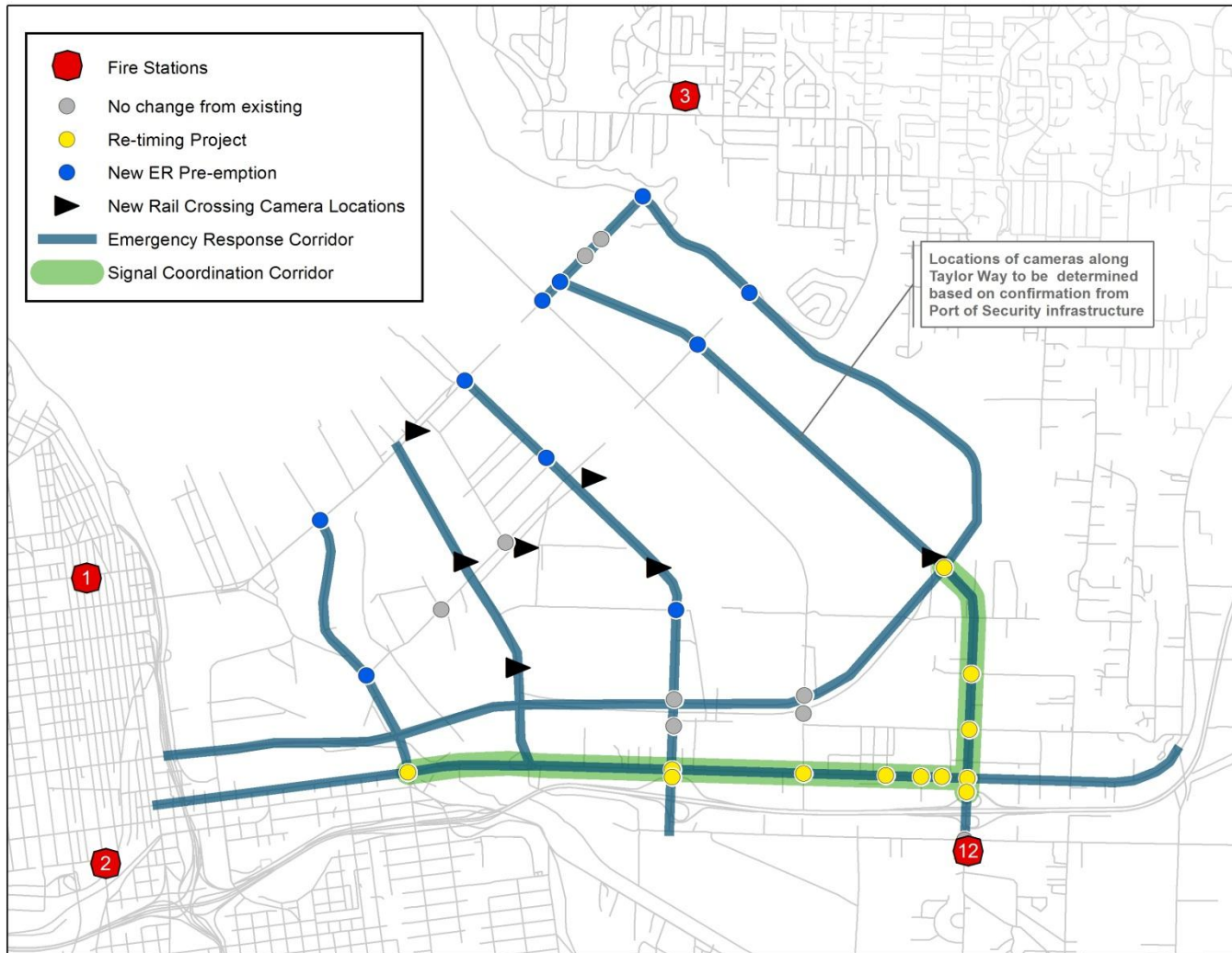
**Table 7. Short Term Fire / EMS Facilities Costs**

Project	Cost	Notes on Fire/EMS Facilities Costs
Assign first responding unit at Fire Training Center or other suitable nearby location during the business day (temporary)	-	More refined cost estimates are needed for this project. Operating costs for this facility are estimated to be \$500,000 per year. If a temporary structure was needed nearby, capital costs would be between \$500,000 and \$1,000,000 to construct.
Reopen Station #15 for fire and EMS	-	More refined cost estimates are needed for this project. Operating costs for this facility are estimated to be \$1.5 million per year. The estimated cost to renovate the station would be approximately \$470,000.
Expand the central Tideflats business day responding unit to 24/7 fire and EMS service	-	Expansion to a 24/7 unit would cost approximately \$1 million in annual operating costs; however this unit would not have fire response capability. To expand to a three-person engine, the estimated operating costs would be \$1.5 million per year. The capital costs for this expansion would be approximately \$3-\$4 million for additional engines and crew quarters and vehicle storage at the existing Training Center.





Figure 18. ITS Project Recommendations

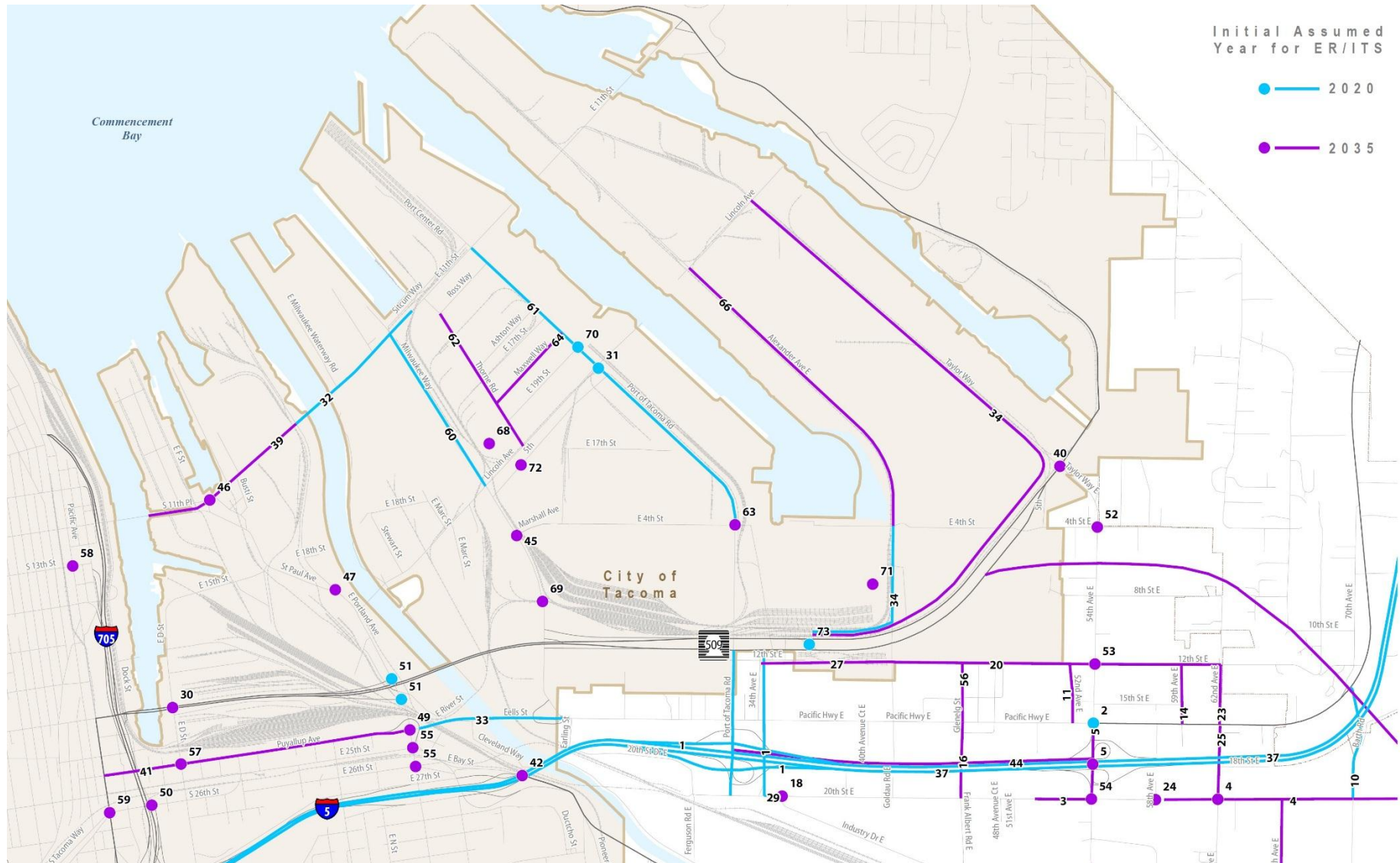


## **APPENDIX A: 2020 AND 2035 PROJECTS**





## Attached Map and Table: Future Local and Regional Transportation Projects





ID	Project Name	Project Description
1	Port of Tacoma Rd Interchange - Phase 1	Purchase ROW and construct new SB off-ramp from I-5. Wetlands mitigation is the only construction funded part of this stage. Will also include truck route along 34th Ave and 12th Street to PoT Road
2	Pacific Hwy / 54th Ave Intersection Improvement	2nd WB left-turn lane
3	20th St E - Expansion	5 lane profile from 50th to 54th Avenue
4	20th St E - Reconstruct	Bike lanes/SW add from 59th Ave E to 70th Ave E. New signal at 62nd Ave E
5	54th Interchange / I-5	Rebuild interchange and intersections from Pacific Hwy to 20th St E
6	Valley Ave E reconstruction	54th Ave E to Brookville Gardens. Widen to 3-lanes with roundabouts at 58th and 62nd Ave E
7	54th Ave E - Grade separation	Separation at UPRR
10	70th Ave E - Reconstruction	Reconstruct 4-lane from 20th St E to Pacific Hwy E. Replace the I-5 bridge
11	52nd Ave E - New Road	New road from Pacific Hwy to 12th E



ID	Project Name	Project Description
12	70th Ave E - RR overpass	Construct an overpass structure above UPRR
13	70th Ave E - Expansion	Reconstruct to 5-lane section from N Levee R to 43rd St E. Mostly developer funded
14	Extension of 59th Ave E	Pacific Hwy E to 12th St E extension. Funded by Tribe. <b>Completed 2012</b>
15	N Levee Rd - Expansion	3-lane expansion from 54th Ave to Freeman Rd. Is broken into 3 segments (54th Ave/70th Ave cut points)
16	Frank Albert Rd Overcrossing I-5	Extend Frank Albert Rd from 20th St E to Pacific Hwy
18	20th St E and Industry Dr	New Signal
19	48th St E - Expansion	3-lane expansion and signalization. Largely developer funded from 70th Ave E to Freeman Rd
20	12th St E - Expansion	From 62nd Ave to Alexander Ave. 3-lane roadway
22	20th St E - Expansion	70th Ave E to Freeman Rd. E. 3-lane roadway with bike lanes
23	62nd Ave E - Expansion - North Segment	3-lane roadway from Pacific Hwy to 12th St E



ID	Project Name	Project Description
24	20th St E / 58th Ave E	New Signal
25	62nd Ave E Overpass	Extend 62nd Ave E from 20th St E to Pacific Hwy.
26	New Connector Arterial @ 32ND Street E - 54th Ave E to Frank Albert Rd	3-lane roadway. Tribal funded
27	12th St E - Extension	3-lane extension from Alexander Ave to 34th Ave E
28	66th Ave E - New road	From 20th St E to 26th St E. Developer funded
29	20th St E - Expansion	3-lane from Industry Dr to 34th Ave E
30	SR-509 / D Street Slip ramps	The project will construct a half diamond interchange at East D Street and SR-509. An interchange justification report (IJR) is required for approval of the added access to SR-509. The project includes public/private partnerships that are developing. Awaiting WSDOT confirmation of IJR
31	Lincoln Ave / Port of Tacoma Rd - New signal	This project will install a new traffic signal or other traffic control device at this intersection. Additional funding is required.



ID	Project Name	Project Description
32	E 11th St Viaduct – Retrofit or Rebuild	Rebuild or retrofit viaduct. Examine combination of at-grade + bridge and full viaduct options
33	Puyallup Ave Bridge - Rebuild	Rebuild for removal of weight restrictions and expansion of lane capacity
34	Extend A/D Rail Line	Extend the line across Alexander Ave to Taylor Ave. Port is planning to increase arrival/departure train lengths from 8,000 to 10,000 feet
35	Freeman Rd - Expansion	3-lane profile from River Rd to 20th St E
36	SR-167 Extension Phase 1	Tolled extension of SR-167 to SR-509
37	Add HOV Lanes on I-5 from SR-16 to Federal Way	Two-way HOV lanes
38	Valley Ave - Expansion	Widen to 4 lanes and widen east approach
39	11th Street East Corridor Improvements	This project is recommended by the East Foss Transportation Study. It calls for a redesign of the East 11th Street corridor from the Murray Morgan bridge to the Puyallup River. It also includes improvements to the St. Paul and F Street intersection. As of 2013, this project is NOT fully funded. The unmet funding need will be determined during the design phase.



ID	Project Name	Project Description
40	SR 509, Taylor Way, & 54th Ave Improvement	This project includes intersection improvements as identified by Blair Hylebos Terminal Redevelopment Plan (BHTRP), SSA/Puyallup Tribal Terminal, and Tideflats Area Transportation Study (TATS). Anticipated developer funding includes \$4.8M. As of 2012, this project is NOT fully funded.
41	Puyallup Avenue Road Diet	The Puyallup Avenue project scope includes Pacific Avenue to Portland Avenue. The new road will be designed to lessen pavement, add facilities for active lifestyles (such as bike lanes), rain gardens, and other boulevard treatments.
42	I-5 Variable message signs into Port	ITS VMS strategies for Port access
43	Canyon Rd Extension	Pioneer Way across river to 70th Ave E
44	I-5 - CD lanes	54th Ave to Port of Tacoma Rd
45	Milwaukee Way / Marshall St	New signal
46	St Paul Avenue/ E 11th Street intersection	Construct signal or roundabout
47	St Paul Avenue/ Portland Avenue intersection	Construct signal





ID	Project Name	Project Description
49	Portland Avenue/Puyallup Avenue intersection	Widen intersection with additional left turn/through lanes
50	S 26th Street/I-705 northbound off-ramp intersection	Add signal
51	Portland Avenue on and off ramps at SR 509	Add traffic signals and modify channelization
52	54th Avenue E/4th Street	Add signal
53	54th Avenue E/12th Street E intersection	Create an eight-phase signal operation with protected left turns
54	54th Avenue E/20th Street E intersection	Widen approach legs and rechannelize
55	Portland Avenue/25th and 26th Streets	Add traffic signals
56	Frank Albert Rd - Expansion	From Pacific Hwy to 12th St E
57	E D St / Puyallup Ave	Change signal phasing and add left turn pocket to SB approach
58	Pacific Ave / 13th St	Restripe EB RT lane as shared TH/RT



ID	Project Name	Project Description
59	Pacific Ave / Tacoma Way / 26th St	Restripe EB RT lane as shared TH/RT
60	Milwaukee Way Street vacation	Based on development
61	Port of Tacoma Road Rehab	Grant-funded for surface rehab
62	Thorne Rd - Heavy Haul Improvements	Surface rehab
63	Marshall Ave/ Port of Tacoma Rd	Add signal
64	Maxwell Ave Street Vacation	Based on development
66	Alexander Ave Street Vacation	Based on development
68	Transfer Yard Connection to Lincoln	New crossing required
69	West End Yard Reconfiguration	Would add a 3rd at-grade crossing on Milwaukee Way
70	Washington United Terminal - Double Ending	New at-grade crossing across Port of Tacoma Rd



ID	Project Name	Project Description
71	Pierce County Terminal - Double Ending	New at-grade crossing on Alexander Ave east of PC Terminal
72	Lincoln Avenue "wye" installation	Fire access could be affected by the new track under the Lincoln Ave. Bridge
73	At-grade crossing of SR-509 near Alexander Ave	Upgrading existing crossing system to cantilevered structure over NB lanes. Wiring upgrade for SB lanes. Exempt signage to be installed to allow school buses and hazmat vehicles to pass if there is not signal to stop




**City of Tacoma**  
Tacoma Fire Department

**Memorandum**

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TO: Emergency Response/Intelligent Transportation Systems Study Team

FROM: Michael Fitzgerald, Assistant to the Fire Chief, Budget & Finance 

SUBJECT: **ELEMENTS OF RESPONSE TIME**

DATE: March 26, 2015

Several team members commented on the need to define the elements of response time that have been identified by the Fire Department and the consultants as part of the Emergency Response/Intelligent Transportation Systems (ER/ITS) study.

Attached for your review and information is an excerpt from the draft Tacoma Fire Department (TFD) Annual Report for the year 2014 called "Anatomy of a 9-1-1 Call," that defines and provides summary explanations of each of the elements.

Also included in the attached are process time benchmarks and actual performance data for each of the elements and for total response time, which represent the entire time span from when TFD receives a 9-1-1 emergency call until units arrive on the scene.

As indicated in the attached, for planning purposes the response time benchmarks vary depending upon the type of fire management zone (FMZ). The assignment of a particular FMZ is primarily dependent upon population density with allowance for risks associated with activity.

The Tideflats industrial FMZ is currently identified as a suburban FMZ for purposes of determining response time benchmarks, as indicated in the attached. The area could technically be considered a rural FMZ from the standpoint of population density, but the level of industrial activity does not permit that assignment.

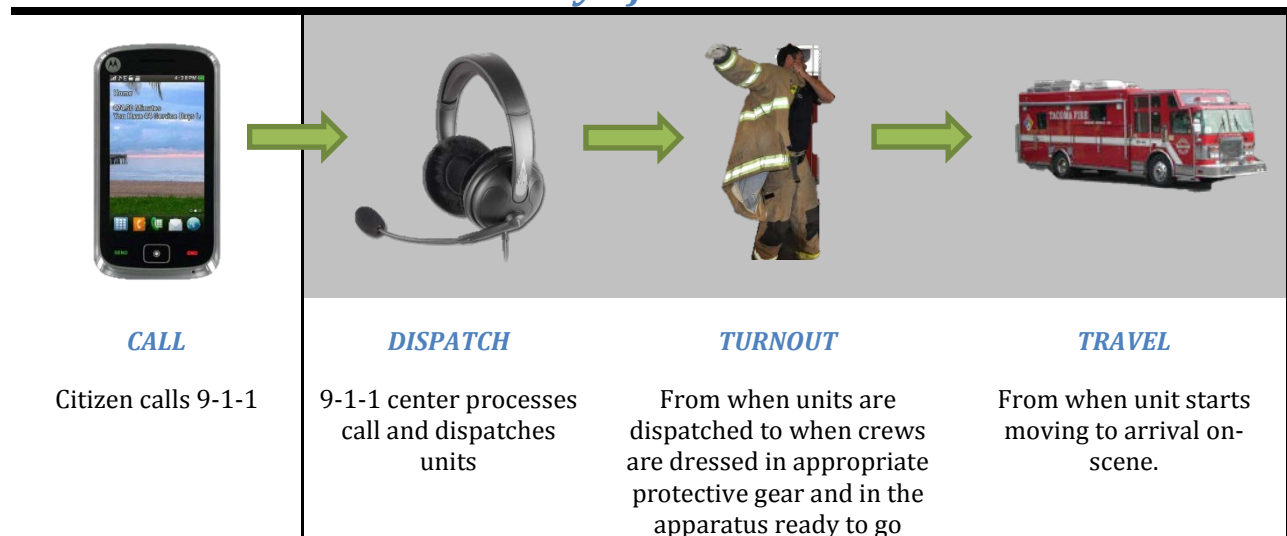
Please review the attached information. If you have additional questions or desire additional information related to this subject, please call me at 591-5157 or email me directly.

Attachments

## TACOMA FIRE DEPARTMENT BENCHMARKS - 2014

TFD response benchmarks specify the minimum criteria needed to effectively and efficiently deliver fire suppression, emergency medical services, and special operations response. These response goals protect the citizens of Tacoma and the occupational safety and health of Tacoma firefighters. For the purposes of this report, the Commission on Fire Accreditation International, *Fire & Emergency Service Self-Assessment Manual, 8<sup>th</sup> Edition*, and *Standards of Cover, 5<sup>th</sup> Edition*, were used as guidelines in the development of TFD response goals.

### Anatomy of a 9-1-1 Call



### Call Processing Time



This measure tracks the time elapsed from the receipt of a 9-1-1 call to the completion of the dispatch directing firefighters to respond. Performance benchmarks are 60 seconds for fire incidents and 90 seconds for EMS and specialty incidents. (\*AP = Actual Performance)

		Fire	AP*	EMS	AP	Haz-Mat	AP	Tech Rescue	AP	Marine	AP
Alarm Processing (TFD receipt of call)	Pick-up to Dispatch	1:00	1:41	1:30	1:26	1:30	1:05	1:30	2:41	1:30	3:36



## Turnout Times



This measure tracks the time elapsed from the receipt of notification of the emergency to the beginning point of travel time to the incident. Performance benchmarks are 60 seconds for critical and urgent EMS incidents and 80 seconds for critical and urgent fire and specialty incidents.

		Fire	AP*	EMS	AP	Haz-Mat	AP	Tech Rescue	AP	Marine	AP
Turnout	Turnout Time 1 <sup>st</sup> Unit	1:20	1:12	1:30	1:33	1:30	1:15	1:30	1:19	1:30	2:27

## Travel Time



This measure tracks the time elapsed from when the company goes en route to arrival on-scene of a critical or urgent emergency incident. TFD travel time benchmarks are based on fire management zone (FMZ) population density criteria, as established by CFAI. Performance benchmarks for the first arriving company on-scene of a critical fire or EMS incident is 4:00 in metro/urban FMZs, 5:00 in suburban/limited FMZs and 10:00 in rural FMZs or less for 90% of incidents.

Performance benchmarks for the balance of the first alarm (effective response force) arriving on the scene of a critical or urgent fire or EMS call is 8:00 in the metro/urban FMZs and 10:00 or less in the suburban/limited FMZs and 14:00 or less in rural FMZs or less for 90% of incidents.

There is no fire management zone or effective response force associated with Marine response. Actual travel time performance for Marine operations was 21:45 for the 1<sup>st</sup> due.

		Zone	Fire	AP	EMS	AP	Haz-Mat	AP	Tech Rescue	AP
Travel	Travel Time 1 <sup>st</sup> Due	Metro/Urban	4:00	5:27	4:00	5:59	4:00		4:00	3:22
		Suburban/Limited	5:00	8:07	5:00	6:07	5:00		5:00	
		Rural	10:00	9:28	10:00	6:53	10:00	9:02	10:00	
	Travel Time ERF	Metro/Urban	8:00	10:56	8:00	9:38	8:00	2:43	8:00	3:42
		Suburban/Limited	10:00	11:41	10:00	10:14	10:00		10:00	
		Rural	14:00	11:02	14:00	9:12	14:00		14:00	

## *Total Response Time*

This measure tracks the time elapsed from when TFD receives a 9-1-1 call until units arrive on the scene of an emergency incident. Total Response Time is the sum of 9-1-1 dispatch, turnout and travel time and is considered industry best practice in performance reporting.

		Zone	Fire	AP	EMS	AP	Haz-Mat	AP	Tech Rescue	AP
Total Response Time (TRT)	TRT 1 <sup>st</sup> Due	Metro/Urban	6:20	5:27	6:30	5:59	6:50		6:50	3:22
		Suburban/Limited	7:20	8:07	7:30	6:07	7:50		7:50	
		Rural	12:20	9:28	12:30	6:53	12:50	9:02	12:50	
	TRT ERF	Metro/Urban	10:20	10:56	10:30	9:38	10:50	2:43	10:50	3:42
		Suburban/Limited	12:20	12:30	10:00	12:50	10:00		12:50	
		Rural	16:20	11:02	16:30	9:12	16:50		16:50	

## Industrial Fire Management Zone

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Fire management zone benchmark and baseline performance objectives are determined by population density. We have adopted the suburban standard for the industrial (Tideflats) fire management zone based on the risk hazards present in the zone.

Suburban\* - An incorporated or unincorporated area with a population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile.

Travel Time				
	1 <sup>st</sup> Unit	2 <sup>nd</sup> Unit	Balance of 1 <sup>st</sup>	Performance
Benchmark	5:00	8:00	10:00	90%
Baseline	6:30	10:24	13:00	90%

Rural\* - An incorporated or unincorporated area with a total population of less than 10,000 people or with a population density of less than 1,000 people per square mile.

Travel Time				
	1 <sup>st</sup> Unit	2 <sup>nd</sup> Unit	Balance of 1 <sup>st</sup>	Performance
Benchmark	10:00	14:00	14:00	90%
Baseline	13:00	18:12	18:12	90%

\*CFAI, Fire & Emergency Service Self-Assessment Manual, 8<sup>th</sup> Edition, pp. 71-72.

## TFD Summary Tideflats Resource History, 1990–2014

In 1990, the City of Tacoma budgeted a total of 379.3 full-time equivalent positions (FTEs) in TFD. Of the total, 367.3 FTEs were budgeted in the General Fund, representing about 34.3% of the total budgeted General Fund positions. An additional 12.0 FTEs were budgeted in the EMS Fund. TFD's 1989–1990 biennium General Fund expense total of \$39,132,042 represented 20.5% of the total General Fund expenses.<sup>1</sup>

At that time, TFD was organized into two bureaus. Staff of the Operations Bureau was assigned to 15 engine companies, four ladder companies, two full-time fireboats, a cross-staffed hazardous materials unit and three advanced life support (ALS) emergency medical ambulances each staffed with two firefighter/paramedics. The above units operated out of 18 active fire stations.<sup>2</sup>

Four of those fire stations were situated in the Tacoma Tideflats. Fire Station 6, located at 1015 E. "F" Street, served as quarters for Engine 6 and the cross-staffed hazardous materials response unit. Fire Station 12, located at 2316 E. 11<sup>th</sup> Street, was home to Ladder 4. Engine 15 was based out of Station 15, located at 3510 E. 11<sup>th</sup> Street. Fireboat *Commencement* was assigned to Station 18, 302 E. 11<sup>th</sup> Street.

Engine 6 was staffed as a four-person company. Ladder 4 and Engine 15 were both three-person companies while the crew of Fireboat *Commencement* was two persons.<sup>3</sup>

In addition, Fireboat *Defiance*, staffed with three firefighters, was based out of Fire Station 5, located at 3301 Ruston Way.

Finally, Pierce County Fire District 10 provided emergency response to Fife and the unincorporated portion of the Tideflats from its station, located at 2015 54<sup>th</sup> Avenue East, in Fife, with a minimum daily staff complement of three firefighters.

During the previous decade, increases to TFD staffing occurred for the fireboat program, which replaced TFD's original 1929 fireboat with two modern British built Surface Effect Style (S.E.S.) fireboats, assigned to Station 18, the existing fireboat station in the Thea Foss Waterway and to Station 5, a new fire station on Ruston Way constructed for that purpose.<sup>4</sup>

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<sup>1</sup> See Table 1, City of Tacoma, Comparative Personnel Summary, 1989–2016, and Table 2, City of Tacoma, 1989–2016 Budgeted Expenditures..

<sup>2</sup> TriData Corporation, Tacoma Fire Department Resource Allocation Study, 1992, pp. 4-1, 4-9.

<sup>3</sup> Ibid., p. 4-9.

<sup>4</sup> Tacoma Fire Department News Release, June 3, 1982. Although arguably designed to be operated by a crew of two, one boat was staffed with a crew of three for non-fire suppression safety operations. See also "First S.E.S. Multi-Purpose Fireboat in the World: City of Tacoma, Washington, USA," April 1986. Two other fireboat stations, one in the Tideflats and one on the west side of Tacoma, recommended by a 1974 U.S. Department of Commerce study, were never constructed. See Tony F. Mitchell to Jack Creighton, October 15, 1979, and comments in response to a June 12, 1979, letter from the U.S. Department of the Interior, Public Works Department Shoreline Permit File No. 141.198, cited in Eileen F. Lewis to Ray E. Corpuz, Jr., "Fire Department Facilities," February 20, 2001, p. 2n.

In addition, in 1988, TFD assumed responsibility for ALS emergency transport. Prior to 1988, paramedic response units were not equipped to transport, as that work was performed by private ambulance companies. Otherwise, operational staffing remained unchanged from 1986.<sup>5</sup>

### **Fireboat Commencement**

In 1991, City Manager Ray Corpuz, Jr., directed staff to perform a study of TFD. TriData Corporation was contracted to perform the work following a Request for Proposals by the City.

The resulting Resource Allocation Study, completed in March 1992, included several recommendations to improve the function of the department. Higher level management positions and more staff were proposed for Fire Prevention and Emergency Medical Services (EMS) to “reflect the increasing importance and complexity” of those programs.

The study also recommended that the City work long term to increase the number of four-person companies and reposition one ladder company to provide better response to South Tacoma.

Within the Tideflats, if restricted budgets required it, the Study recommended that the Fireboat *Commencement* be cross staffed using the crew of Engine 6 and the staff currently assigned to the boat be redeployed to increase staffing on other companies.<sup>6</sup>

The fireboat recommendation was timely as an economic recession then underway was expected to reduce General Fund revenues so that a shared reduction of \$4 million from the General Fund departments was needed in 1992. Instead of cross staffing one of the fireboats, Fire Chief Stan Thaut reduced the fireboat program to a single staffed three-person company at Station 5, closing Station 18 and saving an estimated \$417,672 in 1992.

Following completion of the Study, additional funding cuts were made to TFD so that General Fund budgeted staffing for the 1993–1994 biennium declined 9.6% from adopted 1991–1992, a drop of 35.4 FTEs.<sup>7</sup> As part of the City’s budget strategy, Mayor Karen Vialle and City staff initiated a discussion with Port of Tacoma Commissioners and some related marine businesses to consider alternative funding to permanently staff the second fireboat. The Port Commissioners were not persuaded that such a role was needed or appropriate for the Port. Speaking for the Port, Commissioner Pat O’Malley explained at that time, “The problem is, we really don’t have a direct role in city services. That is not our job. I don’t see the port commission (paying) for the fireboat.”<sup>8</sup>

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<sup>5</sup> Resource Allocation Study, p. 4-5.

<sup>6</sup> Ibid., pp. iii-xiii, 4-1 through 4-60.

<sup>7</sup> See Table 1.

<sup>8</sup> “Fire Department Budget Cut Considerations Includes Long Look at Fire Boats,” Northwest Dispatch, April 29, 1992, p. 1; Robert M. Wells, “Mayor Defends Stance on Fireboat Closure,” Morning News Tribune, May 9, 1992, p. B1.



Port Commissioner Bob Earley added that Port staff investigated the implications of reduced fireboat services earlier in 1992 and concluded there would be no negative consequences for the Port.<sup>9</sup>

### **Blair Bridge Removal – Construction of SR 509**

The recurrence of vessel allisions with the Blair Bridge, the frequency of vessel and rail traffic and the Tribal Settlement Agreement prompted the decision to remove the Blair Bridge and vacate a portion of East 11<sup>th</sup> Street. These factors, which led to the Bridge's removal, had the most impact upon TFD's emergency response capability within the Tideflats.

The bascule style drawbridge over the Blair waterway was part of the network of bridges along East 11<sup>th</sup> Street that connected the Tideflats and Northeast Tacoma with Downtown Tacoma. As the Port developed its container related export and import business, the Blair Bridge and the proximity of East 11<sup>th</sup> Street became major impediments to Port growth generally, especially on the Blair peninsula. The bridge had an opening of 150 feet, a sufficient length when completed in 1953 but increasingly inadequate for vessels in operation during the 1980s.<sup>10</sup> An historian later noted:

Routing a thoroughfare through the busy industrial Tideflats had its problems. Bridge openings stalled traffic. Over the years cargo ships became larger and had increasing difficulty negotiating the narrow opening the bridge provided. Collisions became all too frequent.<sup>11</sup>

Over a 12-year period ending in 1988, the Blair Bridge was struck eight times by ships. A collision in the fall of 1988 by a Panamanian freighter closed the bridge for two months for repairs.<sup>12</sup>

As part of the Land Settlement Agreement with the Puyallup Tribes in 1988, partial funding was identified to reconstruct or bypass the Blair Bridge. Following the settlement, the Port and the Washington State Department of Transportation pushed ahead with proposals for bridge removal and replacement of the East 11<sup>th</sup> Street corridor with an alternate route south of Port development that eventually became SR 509.<sup>13</sup>

The proposed severing of East 11<sup>th</sup> Street at the Blair Bridge and the alternative routing of traffic to SR 509 presented a truly significant operational challenge for TFD. East 11<sup>th</sup> Street not only served as the primary access into the Tideflats, it was the arterial tie between Northeast Tacoma

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<sup>9</sup> Wells, op. cit.

<sup>10</sup> Kit Oldham, "Port of Tacoma – Thumbnail History, Part 3," HistoryLink.org, June 25, 2008, p. 3

<sup>11</sup> Priscilla Long, "Tacoma's Blair Bridge is Closed and Demolition Begins on January 23, 1997," HistoryLink.org, June 7, 2008, p. 1.

<sup>12</sup> Ibid.

<sup>13</sup> Puyallup Tribe of Indians, "History: Land Settlement of 1988" at puyallup-tribe.com; Long, op. cit.; Oldham, op. cit.

and the rest of the city. Bisecting East 11<sup>th</sup> Street by removal of the Blair Bridge significantly affected all of the Tideflats based TFD units. Ladder 4 and Engines 6 and 15 were cut off from a portion of the Tideflats that left the Blair peninsula exposed and subjected Northeast Tacoma to longer response times for the full unit complement to any fires or greater emergency alarms. Although SR 509 restored east-west access across the Tideflats, the access frequently resulted in much longer response times to many locations because the new roadway was much farther south than East 11th Street.

Besides TFD's operational concerns, there was significant public opposition to the proposal to remove the Blair Bridge and bisect East 11<sup>th</sup> Street. Representatives from other Tideflats businesses, Northeast Tacoma residents and members of the local medical community voiced their opposition, complaining that Port related improvements interfered with existing business, prolonged commute times and extended the time required for emergency vehicles to respond to incidents and to arrive at local area hospitals. In 1995, more than 150 people attended a meeting at the Port concerning the bridge removal, at which, nearly all the attendees opposed the project.<sup>14</sup>

Part of the environmental review conducted for the project eventually identified a need for an additional fire station and engine company based in the Blair peninsula. Despite the identified need, there was no statutory authority or precedent for the Port, the State and/or other related parties to pay to the City the recurrent operational expenses of TFD resulting from the project.

Port staff and TFD leadership surveyed a number of sites along the proposed SR 509 corridor for possible sites for a new station. The location of 54<sup>th</sup> Street and East-West Road was considered. However, at that time the City perceived it would be less than ideal to situate a station along the outer perimeter of the service area. Follow-on discussions led by TFD Fire Chief Richard Moore led to a proposed service agreement with Pierce County Fire District 10, whereby the District's employees were consolidated into TFD and the District became part of the TFD service area with TFD units based out of the District station in Fife.<sup>15</sup>

The City Council approved vacation of the approaches to the Blair Bridge in 1995 and in January 1997, following completion of SR 509, the Blair Bridge was dismantled. Over the next ten years, the Port completed major lease agreements with Hyundai Merchant Marine and Evergreen America that led to a dramatic expansion of the Port's container operation.<sup>16</sup>

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<sup>14</sup> Some Tideflats area businesses were vocal critics of the Port's development plans and resulting street vacations. For example, see Testimony of Jeff Brown, Operations Manager, Pioneer America, February 10, 2004, before the City of Tacoma Hearings Examiner, Alexander Avenue Vacation. (Taped Hearings, Hearings Examiner File 124.1206); Long, op. cit.

<sup>15</sup> City of Tacoma Resolution No. 32691, "Agreement for Consolidation of Fire Department Operations and Facilities," July 12, 1994. The Port provided a one-time payment of \$1,930,000 "for fire-service related improvements in the Tideflats area" as part of the provisions of an Interlocal Agreement between the Port and the City approved November 1, 1994. The funds were used by TFD to build the new Fire Training Center on Marshall Avenue in the Tideflats. Interlocal Agreement Between the Port and City of Tacoma, November 1, 1994, p. 1.

<sup>16</sup> Long, op. cit., p. 2.

## **Fire District 10 and Fircrest Service Agreements**

As indicated above, as a consequence of the service agreement with Fire District 10, Ladder 4 and Medic 3 were moved to the District fire station (renamed Station 12) in Fife, and Engine 12, a new engine company, was staffed at the station, paid from District service contract fees. The HazMat unit was relocated to Station 12, cross staffed from the resident engine and ladder. The Fife station was located approximately one mile southeast of the proposed location for the new Blair peninsula based fire station at 54<sup>th</sup> and East-West Road.<sup>17</sup>

The 1995–1996 General Fund biennial budget included funding for over 50 new TFD positions as a result of new service contracts with Fircrest and Fire District 10, an increased EMS Levy and an internal City study of Fire Department overtime that traded positions for overtime funding. In addition to new engine and medic companies, staffing for fire prevention and public education efforts were doubled, as recommended in the TriData Study. The Fire Prevention Division was raised in importance to a third bureau overseen by an additional deputy chief. Otherwise, the additional operational staffing was used to establish flexed fourth positions for additional units including outlying companies such as Engine 3 in Northeast Tacoma and Engine 10 in South Tacoma. A firefighter/paramedic position was added to the staffing of Engine 17, moved to the Fircrest Public Safety Building in Fircrest, as part of the service agreement with that city. With the increase, TFD's General Fund staffing increased to 33.5% of all General Fund positions compared to 30.6% of positions in 1993–1994. TFD's budgeted 1995–1996 General Fund budget represented 22.1% of the total budgeted General Fund expenses. As part of the operational changes, Engine 6, no longer part of the HazMat team, was cross staffed with the Fireboat *Commencement* to again make possible the operation of two fireboats.

The number of positions funded in the EMS Fund increased by nearly 16 FTEs to a total of 46 positions as a result of the increased EMS Levy. Overall, TFD budgeted staffing increased to 429.3 FTEs.<sup>18</sup>

## **Initiative 695: Closure of Fire Station 5, Loss of Staffed Fireboat *Defiance***

In 1999, conservative professional initiative promoter Tim Eyman proposed to the voters Initiative 695 (I-695), to repeal the graduated Motor Vehicle Excise Tax and replace it with a flat \$30 annual fee for most vehicles. In November of that year, the initiative was approved by a 56.2% majority. Although later declared unconstitutional by the Washington State Supreme

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<sup>17</sup> City of Tacoma, Resolution No. 32691, "Agreement for Consolidation of Fire Department Operations and Facilities," July 12, 1994.

<sup>18</sup> Ibid., Michael Fitzgerald to Richard E. Moore, "Fire Overtime & Staffing Analysis," August 17, 1994; City of Tacoma Substitute Ordinance No. 25547, "A Proposition to Place Before the Voters an EMS Levy of \$.42/\$1,000 Assessed Valuation [increased from \$.195/\$1,000] for Six Years," August 2, 1994; City of Tacoma, Ordinance No. 25744, "Agreement for Fire Department Services," August 1, 1995; City of Tacoma, Ordinance No. 25816, December 19, 1995; See Tables 1 and 2. The increase also coincided with the consolidation into the EMS Special Revenue Fund of staff formerly funded from a separate transport revenue funded enterprise fund.

Court, most of the major provisions of the initiative were subsequently signed into law by the State legislature in an effort to support the will of the voters.

Before I-695, the state charged motorists about 2.2% of vehicle value to license a vehicle each year. About 47% of the resulting tax funding was devoted to state transportation needs with 29% more of the proceeds devoted to local public transit support. About 24% of the funding was provided to counties and cities including Tacoma.<sup>19</sup>

Although I-695 certainly served its short term purpose of providing tax relief to Washingtonians, it significantly reduced available public transportation funding. In the ten years following its passage, Eyman himself estimated the tax reduced public funding by \$9.75 billion.

During the campaign for the initiative, opponents proclaimed that passage of I-695 would cause dire impacts to state transportation and local government funding. Although many of the claims were overblown or the impacts were not realized, there were significant impacts.<sup>20</sup>

Locally, passage of I-695 resulted in the loss of more than \$7 million of recurring General Fund revenue to the City of Tacoma annually. TFD's share of the resulting budget reduction totaled \$1,443,145 for 1999. The reduction resulted in closure of Fire Station 5 on Ruston Way and the elimination of 14 positions including TFD's only remaining dedicated fireboat crew. Part-time fireboat operations continued using the cross-staffed (formerly backup) fireboat based out of the Thea Foss Waterway.<sup>21</sup>

The loss of the staffed fireboat occurred at a time when marine traffic in the Puget Sound was increasing significantly and the increased potential for major marine emergency events was recognized. Shortly after the Station 5 closure, a fire near the Tyee Marina destroyed a \$250,000 pleasure boat.<sup>22</sup>

Following that fire and resulting public criticism of TFD's marine firefighting capability, TFD submitted multiple proposals to finance part-time or full-time operation of a staffed fireboat. Although the State provided some temporary funding to assist counties and cities impacted by

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<sup>19</sup> Ed Friedrich, "10 Years After I-695 Changed the Tax Structure, Is Kitsap Better Off?" Kitsap Sun, October 31, 2009, pp. 1-2.

<sup>20</sup> Paul Guppy, "Initiative 695 One Year Later: The Sky Didn't Fall," Washington Policy Center, January 2001, pp. 1-2. A contrasting view is provided in "Initiative 695/ Overview and Impact," Permanent Defense, pp. 1-3. For example, passage of I-695 temporarily or permanently caused delays or cancellation of dozens of transportation projects due to lack of funding. The initiative also repealed a \$2 per vehicle clean air tax that provided nearly half of the State's air pollution abatement and enforcement funding. See "Referendum 49 Projects Shelved by Initiative 695," Central Kitsap Reporter, June 11, 2008, p. 1; "I-695 and Air Pollution," [ecy.wa.gov/programs/air/NEWS](http://ecy.wa.gov/programs/air/NEWS).

<sup>21</sup> Kim Eckert, "Less Protection If Station Closed," The News Tribune, December 5, 1999, pp. B1-B2; Eileen F. Lewis to Ray E. Corpuz, Jr., "Tacoma Fireboat Operational Issues," June 5, 2002.

<sup>22</sup> Al Gibbs, "Payoff Time at Port of Tacoma," The News Tribune, March 11, 2001, pp. D1-D2; Ronald Stephens to Eileen Lewis, "Hits and Near Misses in Puget Sound," July 3, 2001; Kim Eckert, "Boaters Learn Cost of Closing a Fire Station," The News Tribune, March 2, 2000; Chuck Gould, "The Tragic Loss of the M/V Legend," Norwesting, April 2000, pp. 40-44.

the initiative, due to the temporary nature of the funding the Tacoma City Manager directed those funds to the new 800 MHz public safety radio system instead.<sup>23</sup>

By 2002, Fire Chief Eileen Lewis felt compelled to warn City Manager Corpuz that TFD might be unable to provide a timely or effective marine emergency response to a marine emergency in our service area. This was true because “(1) the [cross staffed fireboat] crew is already engaged; (2) trained staff is unavailable, or (3) the [twenty-year old] vessel is not operational. Under the current operational conditions, the Department has documented several instances where the fireboat’s delayed arrival or absence affected the Department’s response.”<sup>24</sup>

The warning was made following two multi-alarm marina fires in Seattle in 2002, after which the City of Seattle added two staffed fireboats and retrofitted the *Chief Seattle* to improve its performance. The backup fireboat *Alki* was moved from Elliott Bay to Fisherman’s Terminal to “help keep watch on the City’s freshwater marinas.” The retrofit and the new boats increased “the ability of the Seattle Fire Department to respond with greater power, speed and pumping capacity.”<sup>25</sup>

Despite the Chief’s warning, continued complaints from boaters and recognition that the marina community in Tacoma faced a similar proportional risk of significant property loss from fire, staffing assistance for TFD’s marine firefighting program was not provided. To this day, the fireboat program is still cross staffed with an engine crew.<sup>26</sup>

Although staffing for the fireboat program remained unchanged, TFD’s fireboat equipment inventory was significantly improved with the assistance of federal grants following the September 11, 2001, terrorist attacks. In 2005, assisted by a \$750,000 Federal Assistance to Firefighters Grant and \$375,000 received from the Puyallup Tribe, TFD undertook to complete a \$4 million major restoration and renovation of the fireboat *Commencement*. Of the project total,

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<sup>23</sup> Chuck Gould, “Nobody’s Home at Tacoma’s 911!” Norwesting, April 2000, p. 6; Sissi Longthorpe to Tacoma City Council, “Reinstatement of Fire Boat,” May 17, 2000; Carol L. Sloman to Mayor [Brian] Ebersole and Members of the Tacoma City Council, May 15, 2000; Bryan Winchell, “Playing With Fire,” Tacoma Reporter, June 2000, p. 7; Tacoma Fire Department, “Resumption of Staffing, FB5, August 1, 2000,” Tacoma Fire Department, “Fireboat Staffing at Station 5 – Memorial Day to Labor Day,” (undated 2001); Michael Fitzgerald to Eileen F. Lewis, “Fire Station 5 Fireboat/Aid Car Funding,” October 29, 2001; Michael Fitzgerald to Nancy V. Forster, “Fire Service Reductions: Fire Station 5,” March 21, 2001.

<sup>24</sup> Eileen F. Lewis, “Tacoma Fireboat Operational Issues.”

<sup>25</sup> “Alki Fireboat to Move Closer to Lake Union,” Seattle Post Intelligencer, May 19, 2002; “Fire Facilities & Emergency Response Levy, Fireboats: Background,” [seattle.gov/fleetsfacilities/firelevy/facilities/marine](http://seattle.gov/fleetsfacilities/firelevy/facilities/marine).

<sup>26</sup> Lewis, op.cit. The lack of marine response resources was noted during the Buracker & Associates review of TFD and its service area completed in 2002, which recommended that a partnership between the Port and the City be used to fund and staff one fireboat. Carroll Buracker & Associates, A Strategic Plan for the City of Tacoma Fire Department, May 2, 2002, pp. 145-146. It is important to note that the Port of Tacoma does not own or operate a marina.



\$2 million was financed by the City internally as a loan to TFD, repaid from non-General Fund service contract proceeds. The loan repayments will be completed in 2021.<sup>27</sup>

In addition, in 2010 the Port entered into an agreement with the City to allow TFD to staff and operate a \$675,000 aluminum fire/patrol boat purchased by the Port primarily with Federal Port Security Grant funds. The new boat entered service in 2012, enabling TFD to reduce operation of the *Commencement* for most fireboat roles, preserving that vessel and reducing TFD marine operating costs.<sup>28</sup>

Finally, in 2013, using primarily Federal Port Security Grant funding, TFD contracted for the construction of a new 50 foot aluminum fireboat. The \$2.1 million dollar vessel that was completed last year and should arrive in Tacoma shortly is capable of faster speeds and comparable pumping capacity to the *Commencement* and is expected to serve as the primary fireboat for some time.<sup>29</sup>

### **Additional Eyman Initiatives, Dot Com Crash and Hylebos Bridge Closure**

The units in the Fife station, provided as part of the service contract with Fire District 10, provided the initial responding units to emergencies in the Blair peninsula following the removal of the Blair Bridge. However, the station location in Fife resulted in much longer response times into the northern portions of the peninsula than was the case before the bridge removal and the units also were less timely responding to events on the Hylebos peninsula or areas of the Tideflats west of the Puyallup River than was formerly the case.

Following the cutting of East 11th Street, Engine 6 on the western edge of East 11<sup>th</sup> Street and Engine 15 on the eastern edge of the same were left in their former but now compromised positions, with reduced response zones and reduced support. By early 2001, Fire staff accepted that both units needed to be moved. Then, in January 2001, Assistant Public Works Director Craig Sivley reported to TFD that the Hylebos Bridge was inoperative and an assessment determined it was likely the bridge would not be repaired.

The Hylebos Bridge closure left Engine 15 even more isolated, “perched at the end of a narrow peninsula bounded by the Hylebos and Blair Waterways, unable to respond to calls adequately either to the east or west.”<sup>30</sup>

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<sup>27</sup> Tacoma Fire Department News Release, “Department of Homeland Security (DHS) Grant to Provide Fire Boat Refit,” March 10, 2005; Michael Fitzgerald to Jim Duggan, “Fire Boat Grant as of 11-26-08,” December 2, 2008; Michael Fitzgerald to Ronald Stephens, “\$2M Loan for the Fireboat,” March 6, 2009; Yvonne Chisa to Michael Fitzgerald, “2008 Fireboat Internal Loan Note,” August 25, 2011.

<sup>28</sup> Resolution No. 38126, October 19, 2010; Seattle Times, “Tacoma Welcomes New \$675,000 Fireboat From Canada,” May 5, 2012.

<sup>29</sup> Resolution No. 38697, July 23, 2013; Jim Duggan to All TFD, “TFD Update,” October 3, 2013.

<sup>30</sup> Eileen F. Lewis to Ray E. Corpuz, Jr., “Fire Department Facilities,” February 20, 2001; Tacoma Fire Department Special Order #01-07, January 16, 2001.

Following meetings with Port and Public Works officials, TFD staff concluded it was “apparent that a series of likely projects in the Port area will gradually eliminate 11<sup>th</sup> Street as an operational arterial by the end of this decade.” Staff began the planning to move both engine companies.<sup>31</sup>

Additional resources were not then available to aid the department in such moves and TFD was subsequently required to make additional budget cuts. The announcement about the Hylebos Bridge coincided with impacts from initiative promoter Eyman’s I-722, an effort to reduce annual growth in the State property tax to 2%. The timing of the proposed initiative constrained local governments because they were forced to reduce their budgets whether the initiative would pass or not. Reductions at the City of Tacoma resulted in a \$1.7 million General Fund 2001–2002 budget reduction for TFD.<sup>32</sup>

In 2002, as part of an ongoing program to conduct internal performance audits of City operating departments and programs, the City’s Office of Management and Budget contracted with Carroll Buracker & Associates to conduct a review of TFD. The Buracker study recommended the relocation of both the existing Station 6 and Station 15. Station 6 was proposed to be moved to the Dome District in the vicinity of Puyallup Avenue and East “D” Street (Station 2 nearby also was proposed for closure). Station 15 was proposed to be moved to the vicinity of Alexander Avenue and SR 509 or 12<sup>th</sup> Street.<sup>33</sup>

The Buracker study recommended the elimination of 47 commissioned positions, eliminating three engines and the fourth person staffing on most TFD units so constituted, thus potentially eliminating most of the staff improvements made by the service contracts and overtime study previously. The study recommendations were reviewed against a backdrop of continued General Fund financial austerity caused by Eyman sponsored tax initiatives, increasing costs for personnel benefits and the lingering impacts of the Dot Com Crash in the Pacific Northwest, the crash of a speculative bubble in the shares of early internet companies called “Dot Coms.”

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<sup>31</sup> Ibid., Gary D. Steinhoff to Eileen F. Lewis, “Tideflats Transportation Issues,” February 26, 2002.

<sup>32</sup> Patrick J. Sullivan, “Local Governments Hold Breath for I-722 Budget Impacts,” PTLeader.com, October 26, 2000, p. 1; Eileen Lewis to Michael Fitzgerald, “I-722 and the Budget,” November 21, 2000; Michael Fitzgerald to Judith Shoudy, “Fire I-722 Reduction,” November 28, 2000, pp. 1-2. I-722 was later declared unconstitutional. See KOMO News Network, “Judge Declares I-722 Unconstitutional,” February 23, 2001.

<sup>33</sup> Carroll Buracker & Associates, Strategic Plan, p. 83.

Although most of the Buracker study recommendations were not subsequently implemented, 10 firefighter/paramedic positions were transferred from the General Fund to the EMS Fund in the 2003–2004 budget.<sup>34</sup> Much more significant TFD reductions were only narrowly averted.<sup>35</sup>

### **Alexander Avenue Vacation**

Following the closure of the Hylebos Bridge, Port staff began discussion with City Public Works staff to repair and reopen the bridge as part of the Port's development plans for the east side of the Blair Waterway. The proximity of Alexander Avenue to the waterway interfered with plans to develop the area for additional container shipping. The Port and the Puyallup Tribe were jointly interested in vacating a portion of Alexander Avenue to enable development adjacent to the waterway to occur. In the event that Alexander Avenue was partially or fully vacated, the Hylebos Bridge was needed to provide a second way off the Hylebos peninsula.

The period 2003–2005 coincided with some major Port projects and an extensive planning effort. In 2003, the Port's expansion plans were helped significantly by Evergreen Line's decision to lease a new 171 acre \$210 million terminal and intermodal yard there. Later that year, the Port opened a \$40 million 146.5 acre auto storage and warehousing facility with capacity to store and process 20,000 vehicles. Following Evergreen's move to its new terminal, its former space was renovated for additional K Line shipping in 2005. Also that year, the Port completed the renovation of K Line's former space at Terminal 7 for Yang Ming Line. With the added commerce, Port volume increased by more than 20% and the Port processed more than 2 million containers in a single year for the first time.<sup>36</sup>

In response to the Port's petition to vacate 2,737 linear feet of Alexander Avenue and 3,500 linear feet of four other roads adjacent to the area to be developed, TFD objected to the vacation primarily because it would increase response times for Engine 15 and other department units responding into the area. Citing the work of Buracker and Associates, Deputy Chief Gary Steinhoff stated that, "including the previous restriction caused by closure of the Hylebos Bridge, the accumulated restrictions are made significant enough to warrant relocation of the unit and

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<sup>34</sup> Ibid., Table 1; Eileen Lewis to Michael Fitzgerald, "Estimated Increase ALS," August 14, 2002; Pat Flynn, "Take Five, Special Edition," August 23, 2002, pp. 1-2; Jesse Colombo, "The Dot-com Bubble," *Forbes*, August 19, 2012, reprinted in the blog "The Bubble Bubble" ([www.thebubblebubble.com](http://www.thebubblebubble.com)), pp. 6-7. To minimize the potentially significant loss of commissioned employees, Buracker argued that TFD should implement BLS transport services in substitution for private sector partners. TFD conducted a six-month experiment with a BLS Aid car to test the consultant recommendation and determined the consultant's recommendation was not financially viable. See Ibid., pp. 405-406; ETeam Staff to Eileen F. Lewis, "Fire BLS Transport Option," October 10, 2002; Tacoma Fire Department, "Basic Life Support Transport Study," [undated PowerPoint].

<sup>35</sup> Kelly Bochenski to David Brame et al, "Summary Programmatic Reductions for Preliminary Budget Document," October 20, 2002; Michael Fitzgerald to Diane Supler, "Estimated 8.5% Reduction," November 13, 2002; Melinda Walter on behalf of Eileen Lewis to Bill Baarsma et al, "Thank You," December 11, 2002.

<sup>36</sup> Kit Oldham, "Port of Tacoma Thumbnail History, Part 3," pp. 4-5.

station.”<sup>37</sup> Unfortunately, TFD was unable to identify “any alternate sites capable of restoring both the unit’s [Engine 15] Tideflats and Northeast Tacoma response capability.”

As mitigation, the Port agreed to assist the City to pay the cost to repair and reopen the Hylebos Bridge. In the interim, the Port agreed to maintain an “emergency access corridor through the vacated right-of-way until the bridge repair was complete.”

TFD reluctantly agreed to the use of the interim access corridor as an emergency response and evacuation route into and from the peninsula. Steinhoff indicated such options are “halfway measures” at best. Historically, TFD found such corridors were often “ignored or misused and continuous employee and public training and awareness” was required for them to remain effective.<sup>38</sup>

The project timeline and budget required to repair and reopen the Hylebos Bridge was significantly underestimated by City Public Works staff and eleven years elapsed before the bridge was eventually reopened in May 2012.<sup>39</sup>

Following the Alexander Avenue vacation and while awaiting the bridge reconstruction, Engine 15’s effectiveness remained reduced. Never a busy unit, from 2000 through 2003, Engine 15 averaged 439 dispatched emergency responses per year, an average of 1.2 incidents per day. Commands to move up to Station 3 to stand by in Northeast Tacoma to support that area while Engine 3 was in service on an emergency there, made necessary by the bridge closure, became a significant additional part of Engine 15’s work load, totaling 196 moves in 2002 and 573 moves in 2003.<sup>40</sup>

## **Second TriData Study**

In 2003, partly as a result of the Port area Tideflats expansion, street vacations and the precarious condition of East 11<sup>th</sup> Street as a continued thoroughfare, TriData was again engaged by the City to “review the current station and unit locations and support facilities” of TFD, “especially in light of contemplated changes in the Port area.”

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<sup>37</sup> Port of Tacoma, Petitioner, “City of Tacoma Petition to Vacate Right of Way,” September 30, 2003, pp. a-b; Gary D. Steinhoff to Kyle Crews, “Port of Tacoma Proposed Alexander Vacation,” December 10, 2003, pp. 1-2.

<sup>38</sup> Alexander Avenue Interlocal Agreement, September 29, 2004; Paul Riemann, Testimony Before Hearings Examiner Rodney Kerslake, Port of Tacoma’s Proposed Alexander Avenue Vacation, February 26, 2004; Steinhoff, op.cit. Compare Steinhoff’s predictions of the corridor in his memo to Crews and his testimony before Hearings Examiner Kerslake with the statements and promises of Jeffrey Lincoln, Port of Tacoma, during his testimony before Kerslake. (Taped Hearings, Hearings Examiner File 124.1206). Steinhoff’s statements also were generally an accurate prediction of TFD’s eventual experience with the Alexander Avenue emergency corridor. This author’s subsequent interview of four responsible battalion chiefs revealed that only one thought the corridor was truly functional for TFD’s emergency use.

<sup>39</sup> “Hylebos Bridge Reopens Today,” Business Examiner, May 21, 2012, p. 1.

<sup>40</sup> Sheila McCoy to Michael Fitzgerald, “E 15 Activity,” December 1, 2014.

TriData's analysis confirmed there were already response time problems for units responding into and out of the Tideflats. Looking into the future, the consultant predicted that if the Murray Morgan Bridge and/or the aging 11<sup>th</sup> Street Viaduct and bridge over the Puyallup River were removed or became inoperable response times would be made significantly worse. Concluding that the western and southwestern portions of the Tideflats were well protected from other units and Engine 15's response zone on the Hylebos peninsula was a relatively low risk, low workload area, the consultants proposed to consolidate the staffs of Stations 6 and 15 into a new station located in the vicinity of SR509 and Port of Tacoma Road.<sup>41</sup>

The TriData Study also called for the refit and renovation of at least one of Tacoma's two fireboats and recommended that one boat be returned to Station 5 on Ruston Way and staffed full-time. In the event the new Port area fire station was constructed and the Murray Morgan Bridge was no longer available, "TFD could move the fireboat to a mooring along the Blair Waterway, closer to the new Port station."<sup>42</sup>

Plans for refit of one of the fireboats was eventually implemented by TFD, as indicated above, and a potential site for the consolidated station was identified by TFD and the Port with \$355,000 in initial City capital funding provided for the temporary relocation of Tideflats based units to a Port area fire station. However, funding for permanent construction and relocation was never identified.

Faced with the project funding shortage and the inability to obtain additional capital or operating funding, Fire Chief Ronald Stephens and his staff reviewed plans for the Tideflats. They concluded the current location of Engine 6 at Station 6 was a better current position than the proposed new location in the south central Tideflats because Engine 6 was better able to "serve the western and central Tideflats from the "F" Street location and continue to cross staff the fireboat."<sup>43</sup>

### **Relocation of Engine 15, Closure of Station 15**

By 2005, it also was apparent to TFD planners that the growing volume of emergency incidents in South and East Tacoma was exceeding the capacity of the resident units. Fire staff reported that emergency incidents in Engine 10 and Engine 11's response zones totaled 5,162 and 4,201, respectively, in 2005. Staff reported "the magnitude of the workload not only kept both engines very busy, it dragged units from all over south and central Tacoma into the zones to handle calls when the resident engines were already engaged."

In a written memo in December 2005, Chief Stephens informed City Manager Eric Anderson about the apparent degradation of emergency response in South Tacoma. The Fire Chief proposed to spend \$550,000 currently earmarked for infrastructure repair to instead purchase

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<sup>41</sup> TriData, Comprehensive Review of the Tacoma Fire Department Facilities and Units, June 2004, pp. iv, 47, Chapter IV.

<sup>42</sup> Ibid., p. 64.

<sup>43</sup> Michael Fitzgerald to Ronald Stephens, "Port Area Fire Station," January 11, 2007.

suitable temporary quarters in East Tacoma for relocated Engine 15 until funding to build permanent facilities could be found.

In a May 3, 2006 memo Chief Stephens thanked the City Manager for approval to proceed with the relocation. In June 2006, TFD purchased a small house at 64<sup>th</sup> and East McKinley for use as the temporary fire station. The City installed traffic signal control equipment, modified the residence and constructed a garage for the engine in the alley behind the house. The relocated engine crew began operation there in April 2007.<sup>44</sup>

### **The Great Recession, Closure of Station 6, Reduction of Engines 13 and 15**

As the local economy improved in 2006, the City Manager proposed and the City Council approved \$3.5 million in Real Estate Excise Tax (REET) based capital funding for TFD “to help address deferred maintenance in the City’s fire stations.” City funding also was provided to enable TFD to complete a master facilities plan for the department. The maintenance funding, which was initially included in the City’s 2007–2008 biennial budget, was intended to be received over a five-year period but was later cancelled due to the onset of the Great Recession and the subsequent shortage of available REET funding. Nearly all of the recommendations included in the Master Facilities Plan have not yet been implemented.<sup>45</sup>

Just prior to the recession in 2007, the Murray Morgan Bridge finally was closed completely by the Washington State Department of Transportation due to structural deficiencies. Following the bridge closure, the City Manager authorized TFD to staff an additional engine (Support Engine 30) out of Station 2, 2701 Tacoma Avenue, to help mitigate the impact of the closure on response times. Staffing of Support 30 continued until August 2009, when it was cut due to the continued impact of the Great Recession. The Bridge remained closed until a major repair and reconstruction project was completed in February 2013, reducing the effectiveness of Engine 6 at Station 6 for the period of the closure.<sup>46</sup>

Officially, the Great Recession is generally considered to have begun in December 2007 although weaknesses in the real estate market and other symptoms of the recession began earlier.

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<sup>44</sup> The proposal to relocate Engine 15 is summarized in Michael Fitzgerald to Jim Duggan, “Station 15 Relocation,” November 14, 2012. See also Michael Fitzgerald to Gary Steinhoff, “Performance Measurement Request,” July 11, 2006; Cydney Ketchum to Gary Steinhoff et al, “6415 McKinley Property,” June 29, 2006; Tacoma Fire Department Bulletin #07-09, April 5, 2007. TFD reported the cost to purchase, renovate and construct facilities for the relocated unit (including additional traffic signal management) totaled \$620,630. See also Jon Lendosky to Allyson Griffith, “Fire 2007-2008 Capital Expenditures,” August 14, 2008, p. 2.

<sup>45</sup> Ibid., p. 1; Melinda Walter, (on Behalf of Ronald Stephens) to Eric Anderson, “TFD Facilities Master Plan,” January 27, 2011, and attachments.

<sup>46</sup> John Gille, “Tacoma’s Murray Morgan Bridge Reopening,” The News Tribune, February 1, 2013, p. 1; Michael Fitzgerald to Mary Reddin, “Projected Fire General Fund Expenses,” February 10, 2008; Tacoma Fire Department Special Order #09-74, “Support 30,” July 29, 2009.



By early March 2008, City revenues already had weakened sufficiently that TFD was tasked with offsetting or eliminating an \$807,000 budget reduction target by the end of that year.<sup>47</sup>

Although Fire Chief Stephens warned TFD staff that the 2009–2010 biennium would likely be difficult years for the City financially, City Manager Anderson maintained to the City Council that the City could ride out the recession using its reserve funding. The strategy apparently assumed that Tacoma was better able to do so than surrounding jurisdictions and that the recovery from the recession would be similar to previous recent recessions.<sup>48</sup>

The City's adopted 2009–2010 General Fund budget included about \$13.9 million in initial reserve funding needed to balance revenues to adopted expenses. However, by the end of the first quarter of 2009 General Fund revenues were about \$4 million less than expected while expenses were \$734,000 more than projected.<sup>49</sup>

The April 2009 status report resulted in the first quarterly revision to the City's biennial operating budget. For the next four years, quarterly financial updates were followed routinely by budgetary reduction assignments. During 2009 and 2010, TFD cut non-essential non-personnel expenses, deferred capital purchases and lease payments for vehicles and equipment, retained unfilled vacant personnel positions and diverted to non-General Fund funding sources formerly General Fund obligations, including the transfer to the EMS Fund of one former General Fund budgeted management position. By March 2010, City Budget Office staff estimated the value of TFD's 2009–2010 General Fund reductions to total about \$4.9 million of the \$29.7 million total reduction then identified.<sup>50</sup>

In December 2009, City Manager Anderson acknowledged the City was working through “a recession that is the worst since the Great Depression” and that staff was unable to predict how long the recession would last. Although State and national economists indicated as early as October 2009 the recession was technically ended, impacts at the local level persisted long after

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<sup>47</sup> Sam Montana, “What Caused the Great Recession of 2008-2009?” Knoji Consumer Knowledge, September 27, 2010, p. 1; Dale Vaughn to Amy Palmer, “2008 Revenue Offsets and Expense Reductions,” March 6, 2008; Peggy Buchanan to Ron Stephens, “Voice Mail to Fitz From Amy,” March 24, 2008;

<sup>48</sup> Tacoma Fire Department Bulletin #08-16, August 8, 2008; Michael Fitzgerald to Ron Stephens, “2009-2010 Budget,” October 10, 2008; Ron Stephens to Michael Fitzgerald, “2009-2010 Budget,” October 10, 2008.

<sup>49</sup> City of Tacoma, “Finance & Economic Status Report,” April 28, 2009, p. 4.

<sup>50</sup> City of Tacoma, “General Fund Changes,” April 28, 2009, p. 1; Michael Fitzgerald to Ron Stephens, “Additional Personnel Vacancies,” August 5, 2009; Ron Stephens to Michael Fitzgerald, “Your Quick Review for Tomorrow's Study Session,” November 2, 2009, including p. 2 of attachment; Ron Stephens to Michael Fitzgerald, “Budget Revisions,” January 24, 2010; Greg Klump to Michael Fitzgerald, “Changes Told to Council Thru 12/31/09,” March 1, 2010, including attachments. The estimated savings of \$973,000 from eliminated overtime for Support 30 was in addition to the TFD reductions, reported as part of the reduction to the Non-Departmental area of the General Fund. See Greg Klump to Michael Fitzgerald, “Special Order #09-74: Support 30,” March 1, 2010.

the national economy began to revive and officials predicted the recovery would be slow and fragile.<sup>51</sup>

Unfortunately, local impacts of the recession were much longer lasting than officials originally expected. Although the City Manager expressed his confidence in January 2010 that the City still would be able “to bridge the \$42.8 million gap in our 2009–2010 [General Fund] budget without layoffs, reduction of services or new taxes,” by April it was apparent that City revenues had not yet revived as much as anticipated and first quarter 2010 revenue receipts were about \$7.4 million less than expected.<sup>52</sup>

Subsequently, the City of Tacoma continued to supplement General Fund revenues from accumulated reserves while further cutting expenses through the balance of 2010 and into the first half of 2011. Along with other General Government departments, TFD struggled with increased austerity, especially a general requirement to retain unfilled vacant budgeted positions without impacting important City services. The directive was difficult to accomplish for TFD because it continued to staff the same total number of first responding units with 32 fewer actual employees than budgeted by December 2010.<sup>53</sup>

The 2011–2012 General Fund budget approved by the City Council totaled \$398.6 million, approximately \$42.2 million less than the initially adopted 2009–2010 biennium total. As part of the budget, a general wage freeze was implemented that affected about one half of all General Fund based employees. In addition, 79 vacant City positions were eliminated and another 54 vacant positions were left unfilled. However, City departments were directed to avoid reductions in services. None of the eliminated positions were commissioned positions in the Police or Fire Departments.

Although given an assignment to yield a savings from unfilled positions, TFD also was budgeted and approved to hire a fire recruit class, its first since the onset of the recession, ten employees of which were actually paid from a FEMA Staffing for Adequate Fire and Emergency Response (SAFER) grant. No reserve funds were technically used to balance the General Fund budget, but transfers to reserve funds from the General Fund were reduced for the new budget.<sup>54</sup>

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<sup>51</sup> “Budget Update From City Manager Eric Anderson,” City of Tacoma, Take Five, December 11, 2009, p. 1; Eric Swenson, “Washington State Economic & Revenue Outlook,” Washington State Economic and Revenue Forecast Council, October 16, 2009, slide 2.

<sup>52</sup> “Fourth Quarter Budget Update From City Manager Eric Anderson,” City of Tacoma, Take Five, January 26, 2010, p. 1; City of Tacoma, “Finance & Economic Status Report, 1<sup>st</sup> Quarter 2010,” April 27, 2010, p. 6.

<sup>53</sup> Michael Fitzgerald to Greg Klump, “May 2010 Gen Gov Vacancies With Fire Revision,” May 25, 2010 ; Michael Fitzgerald to Mary Reddin, “Re: Fire Biennium End General Fund Forecast, 2010,” June 24, 2010; Michael Fitzgerald to Ronald Stephens, “Fire Payroll and FTE Total, PPE 12/19/10.

<sup>54</sup> City of Tacoma, 2011–2012 Biennial Budget, pp. 1.3; City of Tacoma, “City Council Approves 2011–2012 Biennial Budget,” News Release, December 7, 2010; Jim Duggan to Michael Fitzgerald, “Award Notification,” February 11, 2011; Lewis Kamb, “Tacoma: City’s New Budget Hitting Targets, But Officials Remain Cautious,” The News Tribune, April 27, 2011.

Through the first quarter of 2011, Robert Biles, the City's Finance Director, indicated the City of Tacoma was essentially "hitting most targets" in its new budget despite the sluggish economy. However, City Manager Anderson conceded the City was "a long way from being out of the woods."

The City continued to draw from reserves to supplement General Fund revenues. An attempt to make a wage freeze Citywide was unsuccessful, adding a \$1.5 million cost to the biennial budget. Director Biles proposed to target another 76 positions in addition to those already lost or unfilled to manage revenues to expenses.<sup>55</sup>

The end of the second quarter of 2011 coincided with a performance evaluation of the City Manager by the City Council preparatory to potential extension of his employment contract. The evaluation apparently indicated the Council had lost confidence in the City Manager's planning and financial management during the recession. Council Members also felt they were not kept adequately informed on important issues. Following the evaluation, a majority of the Council elected not to renew the City Manager's contract.<sup>56</sup>

Following the departure of Eric Anderson, Finance Department staff prepared new multi-year projections of City revenue and expenses that reexamined assumptions and excluded continued reliance upon reserves. The work occurred during the third quarter of 2011 while City Budget Office staff continued to report monthly revenues and expenses against the current budget. Those reports appeared to indicate that revenues and expenses were essentially within targets.<sup>57</sup>

As the quarter progressed, it became apparent to Finance staff that the City's predictions for recovery in the final two quarters of 2011 were not being realized. As a result, in early October 2011, Interim City Manager Rey Arellano directed General Fund based departments to prepare reduction plans. In a Saturday meeting in the City Manager's Office in mid-October with Arellano and Biles, senior Fire staff discussed proposals to close four engine companies, eliminating 48 commissioned positions, along with other cuts totaling \$11.3 million in recurring savings to the General Fund over a two-year period.<sup>58</sup>

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<sup>55</sup> Ibid.

<sup>56</sup> "Tacoma City Council Terminates City Manager's Employment," PNW Local News, July 13, 2011; "Tacoma Fires City Manager Anderson," Puget Sound Business Journal, July 13, 2011.

<sup>57</sup> Laura McPherson to Karen Buchanan et al, "Financial Reports," July 20, 2011; City of Tacoma, "Finance & Economic Status Report, 2<sup>nd</sup> Quarter, 2011-2012," August 2, 2011; Cindy Cusick to Michael Fitzgerald and Francesca Heard, "General Fund Expenditure Report for September 2011, October 11, 2011. See also Rey Arellano to Department Directors, "Instructions for 2011/2012 Mid Biennium Modification," September 13, 2011, p. 1, that stated "The current revenue projection for the General Fund indicates total revenues for the biennium will come in close to the budgeted amount."

<sup>58</sup> Director Biles' concerns were quoted in a News Tribune article cited in Jim Duggan to Michael Fitzgerald et al, "Today's News Tribune," November 1, 2011; Melinda Walter to Gabriel Engeland and Laura McPherson, "Tacoma Fire Department Budget Reduction Forms," October 24, 2011; Michael Fitzgerald to Mary Reddin, "Assignment to Provide Position Numbers for Personnel Reduction," October 26, 2011. The proposed reduction was increased to 50 commissioned positions when TFD's proposal to return \$347,000 in REET funds was not accepted by Finance staff and an alternate recurring reduction was substituted. See Michael Fitzgerald to Ronald Stephens, "Prevention

Later that month, Arellano reported to staff and the City Council that “a combination of falling revenues and unexpected but necessary expenses” during the third quarter would result in a projected gap of \$26 million in the General Fund by the end of 2012. He told the Council that the size of the gap would compel the City to reduce services and service levels including the contributions made to external agencies.

The following week, Arellano announced that department directors and unrepresented employees would be taking 9.5% and 4.5% pay cuts, respectively, in 2012, and that resulting pay rates for those employees also were frozen. By November, the projected General Fund funding gap had grown to \$31 million. The City announced the availability of one-time retirement incentives of \$12,000 for eligible employees in an attempt to reduce the expected number of employees laid off. Fire staff provided position numbers for 79 TFD positions that were potential candidates for elimination.<sup>59</sup>

At the December 6, 2011, City Council meeting, the City Council was formally notified of the proposed reductions planned for TFD. Phase 1 reductions included elimination of four engine companies: Engines 4, 6, 11 and 13 with accompanying personnel cuts in administration and the Prevention, Training and Safety Divisions, totaling 44 positions. A second round of cuts, scheduled to begin in April 2012, would be announced later. Overall, 262.3 General Fund positions were announced for elimination, a cut of about 17.5% with 166.7 FTEs lost through expected layoffs. However, following the early December budget meetings, the City Council directed the Interim City Manager to take a second look at the initial budget reduction proposals, finding additional savings in general maintenance and operations and delaying layoffs of commissioned employees while negotiations with affected unions continued.<sup>60</sup>

Following agreement to defer contracted wage agreements from both Fire commissioned unions for 2012, TFD eventually implemented Phase I budget cuts totaling about \$4.47 million that included the elimination of 25.3 General Fund positions. TFD also agreed to about \$229,200 in non-personnel related cuts as part of Phase II but further Phase II cuts proved unnecessary due to the Fire Department securing a second SAFER grant. In addition, the Police Department obtained a federal Community Oriented Policing Services (COPS) grant. The multi-year SAFER

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Positions,” October 27, 2011; Ronald Stephens to Gabriel Engeland and Tanya Robacker, “TFD Budget Reduction Proposal, 11-11 Final,” November 4, 2011.

<sup>59</sup> Rey Arellano to Brenda Dean et al, “Budget Message to General Government Employees,” October 25, 2011; City of Tacoma, “Finance & Economic Status Report, 3<sup>rd</sup> Quarter 2011-2012,” October 25, 2011; Rey Arellano to All General Government, “Message From the City Manager,” October 31, 2011; Celia Holderman on Behalf of Rey Arellano to All General Government, “Budget Message to General Government Employees Re: Retirement Incentives,” November 15, 2011; Michael Fitzgerald to Karen Short, “Fire Prevention Positions Identified for Elimination,” November 30, 2011.

<sup>60</sup> “Tacoma Fire Department Budget Reductions,” [undated]; Ronald W. Stephens to Rey Arellano, “Responses to Questions From December 6, 2011 City Council Meeting,” December 14, 2011; Rey Arellano to Marilyn Strickland et al, “Updates for December 6 Budget Workshop Advanced Materials,” December 4, 2011; Celia Holderman on Behalf of Rey Arellano, “Budget Message to General Government Employees,” December 7, 2011.

and COPS grants, totaling \$12.6 million, prevented layoffs of 47 firefighters and 15 police officers.<sup>61</sup>

The SAFER and COPS grant awards occurred coincident with beginning work developing the City's 2013–2014 biennial budget. Intent upon addressing the remaining gap in the 2011–2012 General Fund budget and to eliminate an estimated \$60 to \$65 million gap for 2013–2014, City Manager T.C. Broadnax and City Budget Office staff initially assigned to TFD an additional two-year General Fund budget reduction target of \$13,735,300 along with an EMS Fund reduction target of \$3,941,100 as part of a “back to basics” sustainable budget and reprioritization of City services.<sup>62</sup>

However, the projected gaps were prepared without consideration of the awarded federal SAFER grants, totaling about \$9.3 million in avoided General Fund expense during the period. Even so, TFD needed to propose \$7.3 million in General Fund cuts and \$2.9 million in EMS Fund reductions for 2013–2014. The reductions resulted in the elimination of 31.5 FTEs, elimination of staffing for Engine 6 and partial loss of staffing for Engines 13 and 15 and closure of Fire Station 6 in the Tideflats. Staffing was retained to operate two two-person aid cars in substitution for Engines 13 and 15. However, the staffing for Squad 13 was peak-time only, from 0700 hours in the morning until 1900 hours in the evening.<sup>63</sup>

To determine the proposed operational reductions, Fire Chief James Duggan analyzed a number of factors, including: (1) the volume of emergency responses for each of the units; (2) overlapping response capability from other units; (3) the capacity of adjacent units, (4) freeway responses and (5) the overall impact of closure on the entire response system. The Chief's recommendation represented the “combination with the least number of undesirable effects.”<sup>64</sup>

The Chief said TFD “made the best of a bad situation,” preserving as much emergency response capability as possible and prioritizing life safety over property protection. The closure of

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<sup>61</sup> Michael Fitzgerald to Laura McPherson, “Phase 1 Budget Reduction Proposals Signed and Attached,” March 21, 2012, Michael Fitzgerald to Melinda Walter, “Phase I/II,” August 6, 2014, p. 2; Jim Duggan to Michael Fitzgerald, “Re: Phase 1 Budget,” April 26, 2012; Jim Duggan to All TFD, “SAFER!” June 22, 2012; Lewis Kamb, “Tacoma: Fire Department Wins \$7.7 Million Grant Saving 37 Firefighter Jobs and Closing Part of Budget Gap,” The News Tribune, June 22, 2012; Halley Griffin, “37 Tacoma Firefighters Safe From Layoffs,” KOMO 4 TV, June 21, 2012; Senator Maria Cantwell, “Cantwell, Murray Applaud Grant for Tacoma Police Department,” U.S. Senate Press Release, June 26, 2012. The TFD reduction was part of a \$19.8 million total General Fund reduction. See Michael Fitzgerald to Jim Duggan, “2011-2012 Budget Bulletin No. 15 – 2011-2012 Revised General Fund Budget,” April 5, 2012. The potential TFD layoff was 47 firefighters rather than the 37 reported by the media because the potential grant loss involved the funding for both SAFER grants that supported 47 firefighter positions.

<sup>62</sup> Tanya Robacker to Chief Duggan et al, “Budget Efficiency Targets for 2013-2014,” June 11, 2012; City of Tacoma, “Back to Basics: Budget Overview, 2013-2014 Biennium,” The City Manager's successful effort to reestablish the City budget upon a more transparent and financially sustainable level is summarized in City of Tacoma Washington, “City Manager Executive Profile,” [www.cityoftacoma.org](http://www.cityoftacoma.org)

<sup>63</sup> James Duggan, “City of Tacoma 2013-2014 Proposed Biennial Budget Worksession, Tacoma Fire Department,” November 6, 2012, pp. 59-62; Michael Fitzgerald to Tadd Wille, “Fire Department Reduction Options, Including Identified Position Numbers,” October 11, 2012, with attachments.

<sup>64</sup> Duggan, “Proposed Biennial Budget Worksession,” p. 66.

Station 6 probably would not have been possible without the reopening of the refurbished Murray Morgan Bridge. Even after allowance for the grants, the cuts were truly significant and firefighter layoffs again loomed until made unnecessary by announced incentivized retirements of eligible Fire staff and help from revenue generating decisions made by the City Council. Chief Duggan acknowledged “things could have been much worse.”<sup>65</sup>

Besides the station closure, the introduction of two two-person squad units in substitution for two former three-person engine companies was controversial. Fire union leaders protested the change to the public, noting the squads provided only labor to fight fires as they lacked a fire pump. Shortly after the engine company was eliminated, a house fire occurred one block away from Station 13. Fortunately the fire, which was caused by faulty electrical wiring, was confined to the room of origin by other responding units.<sup>66</sup>

The 2013–2014 General Fund budget reduction left TFD without an operational station in the Tideflats. This has remained the case even though TFD recognizes the Tideflats has the third highest concentration of high risk structures and the planning zone consistently ranks first in certain high acuity conditions per capita such as cardiac emergencies and trauma. It also hasn’t helped that the Tideflats continues to be characterized by limited road access, waterways and at grade rail crossings that limit or impede the transit of emergency vehicles.<sup>67</sup>

Even before Station 6 was closed, TFD identified the addition of a four-person advanced life support engine company as one its proposed improvements for emergency response. Following the 2011–2012 budget reductions, Chief Duggan initiated an exploration of the potential feasibility of modifying the Fire Training Center to provide space and staffing when available for Tideflats emergency response.<sup>68</sup>

The Emergency Response/Intelligent Transportation Systems (ER/ITS) Study sub consultants preliminary draft recommendation to implement a two-person ALS capable squad unit during weekday hours out of the Training Center may provide a comparatively attractive minimum cost unit for timely EMS emergency response within the central Tideflats.<sup>69</sup>

By comparison to 2013–2014, the recently approved City 2015–2016 budget is much improved despite the continued fragile nature of the local economic recovery. Overall, the City budget

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<sup>65</sup> Steve Dunkelberger, “Fire Department Set to Close, Downsize Stations,” Tacoma Weekly, November 7, 2012; King Staff, “Tacoma Fire Department Replacing Some Fire Trucks With Pickups,” King5.com, December 7, 2012; Deborah Wang, “Proposed Tacoma City Budget Includes Big Layoffs,” KUOW News, October 3, 2012; Jim Duggan to Jeffrey Jensen et al, “Budget Adopted,” December 5, 2012; Keith Eldridge, “Budget Cuts to Leave 2 Tacoma Fire Stations Without Fire Engines,” KOMO News, January 7, 2013.

<sup>66</sup> Eldridge, op.cit.; Tacoma Fire Department: “Electrical Wiring Ignites House Fire on North 25<sup>th</sup> Street,” January 8, 2013, <http://tacomafiredepartment.blogspot.com>.

<sup>67</sup> Tacoma Fire Department, Standards of Cover, 2009, pp. 38,51.

<sup>68</sup> Ibid., p. 8; Lawhead Architects P.S., “Tacoma Fire Department Fire Training Facility Feasibility Study, Study Document,” April 2014.

<sup>69</sup> TriData Division of System Planning Corporation, “Emergency Response Review: Tacoma Tideflats,” December 10, 2014, p. 31.



added 110 positions as some City services were restored. TFD lost funding for two additional General Fund positions, one of which was commissioned, but 17 commissioned positions formerly paid from SAFER grant funds were assumed by the General Fund. For 2015, 20 commissioned positions remain funded from SAFER grant funds. TFD's 297.3 General Fund FTEs represent 28.2% of the total budgeted General Fund FTEs. TFD's 2015–2016 General Fund budget of \$96,136,996 represents 22.7% of the total budgeted General Fund expenses.<sup>70</sup>

The ER/ITS Study also is occurring against a backdrop of proposed new or expanded petro carbon based projects. In 2014, the Port announced the lease of Port property to Puget Sound Energy for a liquid natural gas storage and trans filling facility and Northwest Innovations Works proposed a methanol storage and exporting facility on another Port parcel. While potentially adding to the demand for fire services, these developments will help restore the economic and tax-generating base of the Blair and Hylebos peninsulas following the closure of two major chlor-alkali plants and a large aluminum smelter, all of which were abandoned or demolished early in the last decade.

Following completion of the second TriData study, TFD used the occasion of the reduced arterial access and reduced risk on the Hylebos peninsula that arose from the closure of Kaiser Aluminum and other manufacturing facilities there to allow the relocation of Engine 15 to South Tacoma. The current increase in risk resulting from the new petro carbon projects may justify the reestablishment of an engine company on the Hylebos peninsula.<sup>71</sup>

### **Emergency Response/Intelligent Transportation Systems Study, 2014-2015**

As indicated above, the ER/ITS Study was developed in response to proposed new projects in the Tideflats, e.g., the petro carbon projects. It also resulted from frustration with a primarily permit driven Tideflats public safety planning process that limited the City's ability to focus on the general or overall effects of development there. The Study builds on the plans developed by the City and Port. For example, the Container Port Element of the City of Tacoma Comprehensive Plan, 2014, developed in collaboration with the Port of Tacoma, contains the following policies:

- Ensure adequate and efficient provision of services through active consultation and coordination amongst multiple agencies and stakeholders;
- Focus on the needs for "efficient access" and "key transportation corridor improvements;"

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<sup>70</sup> Kate Martin, "Tacoma's Proposed Two-Year Budget Includes Adding 110 Jobs," The News Tribune, October 7, 2014; Zachariah Bryan, "Pierce County's Recovery Continues, But Rebound Sluggish," Business Examiner, January 2015; Teresa Green to Michael Fitzgerald and Peggy Dundas, "2015-16 Adopted Fire ZLABOR [sic]," February 9, 2015; Tables 1 and 2.

<sup>71</sup> Port of Tacoma, "Puget Sound Energy LNG Facility," portoftacoma.com [undated]; John Gillie, "Tideflats Could Become Site for LNG Plant," The News Tribune, March 7, 2014; Port of Tacoma, "Northwest Innovation Works," portoftacoma.com [undated]; Shari Phiel, Andre Steankowsky, "Northwest Innovation Works Planning Methanol Export Facility in Tacoma," TDN.com, April 24, 2014.

- Partner with existing and future developments to cover necessary costs of services and facilities that support them;
- Future developments pay for the costs of those capital improvements necessary for the proper functioning of the Core Tideflats area.<sup>72</sup>

According to data collected by the American Association of Port Authorities, the ports of Seattle and Tacoma’s share of West Coast containerized cargo is declining. With Federal Maritime Commission approval, both ports plan to form a Seaport Alliance with key goals of maximizing their assets, staying competitive and increasing their market share of West Coast cargo. At the time of the ER/ITS Study, quantitative cargo projections for the Seaport Alliance were unavailable but cargo numbers for both ports are expected to increase.<sup>73</sup>

The Port of Tacoma’s Land Use & Transportation Plan, developed in consultation with the City of Tacoma in 2014, calls for “addressing transportation congestion on and off the Tideflats , while at the same time identifying transportation improvements that will be necessary to sustain the projected growth at the Port over the next 10 years.” That work “will be crucial to the Port’s success at enhancing the economic competitiveness of the area.”<sup>74</sup>

The Port’s Land Use & Transportation Plan also calls for collaboration “with city, State, federal, tribal, and private entities in selecting, prioritizing, and phasing transportation projects.”<sup>75</sup>

The Plan’s strategies to “work with the City of Tacoma and other emergency responders and stakeholders to develop an Emergency Response Plan for the Port of Tacoma Manufacturing and Industrial Center” and to “develop and implement Intelligent Transportation Systems (ITS) improvements, e.g., real time information on truck and train movements using GPS and video and active traffic management using signals and messaging, to assist with traffic management and emergency response planning and service delivery” were arguably the basis for the timing of the ER/ITS Study.<sup>76</sup>

Another consideration for the City behind the ER/ITS Study is the need to better “ensure that existing and future developments pay for some or all of the costs of capital improvements or new facilities that are deemed necessary, by reason of their respective developments, to reduce existing deficiencies or replace obsolete facilities.”<sup>77</sup>

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<sup>72</sup> City of Tacoma, City of Tacoma Comprehensive Plan: Container Port Element, 2014, pp. CP3, CP8, CP17.

<sup>73</sup> The assessment is based upon American Association of Port Authorities data included in a PowerPoint presentation about the proposed Seaport Alliance by the Port of Tacoma, January 23, 2015.

<sup>74</sup> Port of Tacoma, Land Use & Transportation Plan, 2014, p.33.

<sup>75</sup> Ibid., p. 40.

<sup>76</sup> Ibid., pp. 29,45.

<sup>77</sup> City of Tacoma, City of Tacoma Comprehensive Plan, Capital Facilities Element, 2014, p. 2.



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