

#1 – Station Exhaust Systems

Project Description: Install Vehicle Exhaust Systems at Fire Station 51 and 52

Justification: Diesel exhaust has been classified as carcinogenic to humans by the International Agency for Research on Cancer (IARC), a branch of the World Health Organization. Diesel engines, used in fire apparatus, produce a mixture of toxic particulates and gases as the result of the combustion process. The composition of this exhaust product depends on several factors, such as the specific fuel used, temperature of the engine, condition of the engine, cleanliness of the air intake filter, among others. An analysis of general diesel engine exhaust has revealed a variety of extremely toxic substances at significant concentrations such as: Oxides of nitrogen, carbon monoxide, volatile organic compounds (VOC's) and polycyclic aromatic hydrocarbons (PAHs).

Much of the diesel exhaust is invisible, including the smaller soot particles. This means that exposure cannot always be detected. Furthermore, diesel exhaust can penetrate into clothing, furniture and other items with which firefighters have routine contact, where it can be later released after the initial exposure or absorb into members' skin.

In addition to the IARC, both the National Institute for Occupational Safety and Health (NIOSH) and OSHA have declared human exposure to diesel exhaust as a potential occupational carcinogenic (cancer-causing) hazard through toxicological studies. NIOSH recommends that occupational exposures to diesel exhaust be kept to the lowest feasible concentration (FEMA, 2018).

Funding: General Fund

Estimated Cost: \$100,000

#2 – Station 51 Structural Evaluation and Mitigation

Project Description: Fire Station 51 Seismic Retrofit/ Remodel

Justification: As identified in the Ehlman Spiess & Haight Inc. Structural Assessment dated January 3, 2020, and the original dated June 23, 2014 Fire Station 51 has been found to have significant structural integrity concerns commensurate with a critical infrastructure, as well as current building codes. Further research and exploration needs to be conducted to confirm the needed mitigation measures. In the interest of efficiency, during a structural retrofit, the opportunity for remodel and reconfiguration will provide an opportunity for the following concerns to be addressed. Minor remodel work would be to update crews' quarters and repurpose space downstairs to accommodate gender segregation and storage.

Funding: General fund

Estimated Cost: Cost unknown depending what is found after the walls are opened up. Original cost estimate was \$3,266,514 in 2014 but current fire station construction costs are \$700 to \$800 per square foot.

#3 - Traffic Preemption

Project Description: Purchase and Install of Traffic Preemption at twenty-five intersections located within the community.

Justification: By temporarily controlling traffic signals so that emergency vehicles can proceed safely through an intersection with a green rather than red light, traffic preemption technology will provide two essential outcomes: 1) protect the safety of first responders and the public by preventing accidents per NFPA 1500 response safety standards; 2) reduce emergency response times and contribute directly to compliance with NFPA 1710 response standards. The department has worked closely with the City's Transportation Department Manager to identify targeted intersections and to select a TPS that is compatible with the City's existing traffic signal hardware. City Public Works Department staff will manage and oversee installation of traffic preemption hardware and software and where necessary coordinate with California Department of Transportation.

The safety of citizens will also be enhanced with use of TPS systems by helping to eliminate confusion at intersections and allowing traffic at intersections to be cleared. Lanes will open up to provide safer navigation through the intersection by the emergency vehicle operator. Significant traffic queues at lights could be eliminated at intersections preventing apparatus from slowing to a crawl at great distances from the signal adding seconds to the response. When repeated at multiple signal locations during a response, minutes can be added that negatively impact timely administration of emergency services and patient outcomes.

Specific Plans or Policies relating to this Project:

"Traffic signal pre-emption equipment allows responding fire personnel to control traffic signals, turning the signal green in their direction and red in all other directions. Utilization of this equipment helps to provide a clear path through a controlled intersection minimizing the delays these intersections can create. Further, it greatly improves safety for both responders and the motoring public." (pg. 126-7 ESCI Master Plan).

Funding: General Fund

Estimated Cost: \$135,000

#4 – Station Alerting

Project Description: Purchase and Install Station Alerting System – Phase 2

Justification: As identified in the ESCI Master Plan's adopted goal, *Goal A: Formally adopt response performance goals; Goal C: Improve turnout time performance;* are significantly impacted with the implementation and use of technology. During initial budget allocation, a small contingent of equipment was installed in both fire stations, with a noticeable move towards working to attain more efficient response times, as well as positively impacting firefighter health and wellness. NFPA 1500 sets the standard for firefighter safety and health and outlines hearing protection, and mitigation of harmful noise. The outdated equipment in both facilities leads to alerts that compromise the health and wellness of fire personnel and staff.

There are several equipment upgrades that would move us to a full outfit in both facilities. The main hardware and software has been installed during phase 1. A connection to the dispatch Computer Aided Dispatch (CAD) would provide for rapid station and personnel alerting, simultaneous to the call being processed. While this would be a significant impact and improvement to response times, the challenge of CAD integration still needs to be explored to evaluate its connectivity to a law platform.

Funding: General fund

Estimated Cost: \$150,000

#5 – Replacement and Relocation of Station 52

Project Description: Replacement and Relocation of Station 52

Justification: The current Fire Station 52 was built in 1985 during a time of growth and advancement within the City. However, the intent was for this facility to be used as a temporary facility. Now 35 years later, we are realizing the challenges of its "temporary" design. With commercial expansion, residential increases, and critical infrastructure, this current station does not serve the community well. In addition, the current design and configuration severely limits resource storage, personnel wellness, and growth opportunities.

With the development and projected developments of housing and commercial properties at the northern boundaries of the city, this will only compound the limitations of this facility and its location. In order to continue to meet the needs of our citizens, and to provide adequate emergency response coverage, a new facility, strategically located and designed, can remedy this challenge, and ensure a more efficient and effective response.

Station 52's location shall be identified through response time analysis, with a focus on long term service and growth potential. The new station should also have a focus on

providing an environment of wellness for its members, training/ conference room capabilities, office work space, gender separation, and public engagement opportunities.

Lastly, if a site can be identified with a focus on the vision of the future, the station and site can be designed in such a manner that allows for growth and expansion. Thereby ensuring the facility can serve the community for decades.

Funding: General Fund

Estimate: Unknown, current fire station construction costs are \$700 to \$800 per square foot. Our estimate is based on a 6000 sq ft. station not including the cost of the parcel.

#6 – Building of Fire Station 53

Project Description: Building a new third Fire station

Justification: As the City continues to grow and expand to the North and Western boundaries, it is imperative that we prepare for added public safety needs. The continuing trend shows the City of Lompoc Fire Department responding to 94.4 calls for service per 1,000 citizens, compared to the National average of 84.6 and the regional average of 64.1.

A new fire station would allow for growth in response capabilities through the addition of an engine company to meet these trends and service needs. The specific location should be chosen based on development, response time analysis, and available parcels.

Funding: General Fund

Estimate: Unknown, current fire station construction costs are \$700 to \$800 per square foot. Our estimate is based on a 6000 sq ft. station not including the cost of the parcel.