

TO: JAMES L. APP, CITY MANAGER

FROM: MEG WILLIAMSON, ASSISTANT TO THE CITY MANAGER  
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SUBJECT: LIBRARY/CITY HALL SULFUR SPRING & CARNEGIE LIBRARY

DATE: SEPTEMBER 20, 2005

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Needs: For the City Council to receive and file an update on the status of earthquake repairs related to the City Hall/Library Sulfur Spring and the Carnegie Library.

Facts and  
Background:

**Sulfur Spring Repair**

1. On July 5, 2005, City staff reported to Council on the status of the repair for the sulfur spring/parking lot. At that meeting the Council confirmed an approach that maximizes the eligibility for financial reimbursement from FEMA. The following steps were indicated for repair:
  - Complete environmental assessments before proceeding with final design of parking lot repair and water disposal alternative method;
  - Proceed with parking lot repair construction as phase one of the total project repair once the secondary PW has been received;
  - Proceed with construction of a water disposal alternative as phase two of total project repair.
2. Since July 5 the following meetings and actions to facilitate the environmental assessments have occurred:
  - National Marine Fisheries Service (NMFS) meeting
  - US Fish and Wildlife Service (USFWS) meeting in Ventura
  - Project Worksheet on partial funding has been received
  - State Regional Water Quality Control Board meeting
  - Biological Surveys have begun
3. The City's preferred alternative for the repair and disposal of the spring flow was shared with the above noted federal and state agencies (see attached for detailed description):
  - Permanent gravity pipeline to convey the sulfur flow to the Salinas River
  - Installation of a bio-filter near the river with the intent to reduce water temperature and hydrogen sulfide levels for odor removal (restoration of pre-earthquake conditions)
  - Outflow dissipation structure (at river edge – 100 square feet of “rip rap”)

4. The odor removal / Bio-filter attributes are:
  - Reduces hydrogen sulfide levels to remove odor at the outflow (river environs)
  - Presents an environmentally responsible approach by reducing water temperature
  - Restores parking lot and environs to its pre-earthquake condition in an environmentally superior manner to other pre-treatment methods
  - Preserves the economic and recreational viability of the river front
  - Would require approximately 36,000 square feet (close to an acre) of public land for installation of filter “beds” outside of the 100-year flood plain
  - Has reoccurring operation and maintenance costs
5. FEMA is the lead agency in the Federal environmental process and has initiated all discussions with the federal environmental agencies. Meetings with both USFWS and NMFS representatives showed their preference for inclusion of the bio-filter in the water disposal portion of the repair. Additionally, after the initial informal meeting with the USFWS, it appeared there would be a requirement to conduct biological surveys for multiple federally listed endangered species, causing a 12-18 month delay in preparation of the environmental documents.
6. Based on the position that the current flow of water is a condition not subject to federal agency purview (the baseline for environmental review) the need to conduct the time delaying biological protocol surveys (on all species) is eliminated. Consequently, the ability for the federal environmental agencies to go on record that the bio-filter is a necessary/integral part of the project because of its beneficial impacts to the environment is also eliminated. This factor may weaken FEMA’s willingness to fund the bio-filter portion of the project repair.
7. FEMA’s next step in the environmental process is to submit a letter report with biological survey findings to both the US Fish and Wildlife Service and the National Marine Fisheries describing the City’s preferred option for repair. The information submitted to these agencies is hoped to render a finding by each of them that the repair will not have an adverse impact on the environment.
8. Once findings have been received back from the noted federal agencies, FEMA can complete the preparation of their Environmental Assessment (EA) for circulation and comment. The CEQA (California Environmental Quality Act) document can be completed at that time as well.
9. The timing for this environmental process cannot be assessed at this time. Updates will be provided to the City Council periodically to provide the project status, during which time staff will continue to pursue the repairs in a diligent and fiscally responsible fashion.

### **Carnegie Library**

10. FEMA provided the City with a Project Worksheet for the repair of the Carnegie Library in an amount of \$384,000.00, based on FEMA’s opinion that the \$384,000 would re-store the building to pre-earthquake condition.
11. It is the City’s position that the codes adopted by the State of California and the City of Paso Robles require the building to be repaired to the degree that it meets the building code currently in effect.

12. The anticipated cost for rehabilitation/repair to meet current code is estimated to cost approximately 1.2 million dollars. FEMA has to date denied the City's request to amend the existing Project Worksheet to provide the necessary 1.2 million dollars.
13. As a result the City filed the First Level Appeal with State OES on March 31,2005, asking that the additional funding be provided.
14. State OES forwarded the City's appeal with a very strong recommendation to FEMA on May 27,2005. We expect a reply from FEMA regarding the appeal by the end of September.
15. The Schematic Drawings depicting the scope of work being recommended were submitted to the City for review on April 19, 2005. The review was conducted by the City Manager, Assistant to the City Manager and the Interim Public Works Director.
16. The following is the most current schedule for completion of the drawings and rehabilitation/repair of the Carnegie Library:
  - o Construction plans to be 95% complete by October 2005.
  - o Review of the 95% drawings should be complete by Mid-November.
  - o Completed 100% drawings should be in plan review by the City end of December.
  - o The project should complete and ready for bid by February 2006 and under construction by May/June 2006.
17. This schedule is based on the City going forward with rehabilitation in accordance with its Seismic Safety Ordinance. It presumes the City will complete the work regardless of where it may be in its negotiations with FEMA regarding reimbursement of the cost of repair.

Analysis and  
Conclusion:

Earthquake repairs continue to be pursued as diligently as feasible while taking fiscal, environmental, and procedural elements into consideration. Based on the past directive by Council, staff will continue to follow the processes established by FEMA and procure repairs so as not to jeopardize FEMA assistance. It should be noted that FEMA assistance is not guaranteed at this point for either project. However, repairs are being pursued based on the application of practiced and appropriate rules and standards for buildings and the environment.

Fiscal  
Analysis:

The degree of funding to be received from FEMA and State OES for these projects is unknown at this time.

Options:

1. Receive and file.
2. Amend, modify or reject options above.

Attachment:

1. Project Description of Sulfur Spring Repair

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## **Paso Robles Sulfur Spring Disposal Description**

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### **Background**

On December 22, 2003, the San Simeon earthquake released a geo-thermal hot spring in the Paso Robles City Hall parking lot, resulting in a surface flow of thermal mineral-laced water. The initial rate of discharge of the spring water was approximately 400 gallons per minute (gpm) at 111 degrees Fahrenheit. The thermal spring water flowing out of the rupture traveled south and east through streets and gutters and ultimately flowed into the Salinas River.

Since December of 2003, the City has conducted a number of investigations to analyze the water and control the flow. Attempts to cap the source and stop the flow altogether are not feasible because of the subsurface hydrology of the spring.

The spring flow was initially diverted into the City's sewage treatment plant system using a mechanical pump system discharging to an existing sewer line. The poor quality of the thermal spring water caused operational problems at the wastewater treatment plant, and the discharge of effluent into the Salinas River exceeded the approved limits for total dissolved solids. The water also caused damage to the sewer collection system. As a result, the City discontinued the diversion to the wastewater treatment plant and returned spring water directly to the river as had occurred naturally after the 2003 event. This was accomplished by constructing a temporary six-inch pipeline through a City storm drain, along a railroad right-of-way easement and culvert, through a Caltrans culvert under State Highway 101, and ultimately through a short surface channel into the Salinas River. This system requires mechanical pumping of the water from the City Hall parking lot.

The current flow rate of the thermal spring is approximately 200 gpm at 111°F. Geotechnical investigations and monitoring have shown that the rate of discharge has decreased by about 50% since the 2003 event. Investigators do not have a good understanding of the hydrologic system that feeds the spring. It has been suggested by the project hydrogeologist that the flow could continue to decline and at some point stop altogether; however, it could also continue indefinitely at the present rate and temperature.

### **Sulfur Spring Water Quality**

Water quality tests of the spring water conducted by the City show that it contains a number of undesirable elements including boron, hydrogen sulfide, high total dissolved solids, sodium, chloride, and ammonia. A comprehensive water quality report is attached. Also attached is a comparison of the spring water to the Paso Robles WWTP NPDES permit limits, Primary and Secondary MCLs for potable water, and the Central Coastal Basin Plan water quality objectives. Water quality after treatment was also estimated.

### **Preferred Disposal Method**

A conventional collection and drainage system is proposed to control the flow of water from the spring and bring the water to a single point of outlet. The drainage system would be constructed by lining the walls of the excavation with geotextile, backfilling the excavation with relatively free drainage material (drain rock), and installing a perforated pipe collections system to collect the water from within the rock. A manhole or wet well would be installed in the parking lot to accept the water and allow for its discharge by gravity or pumping.

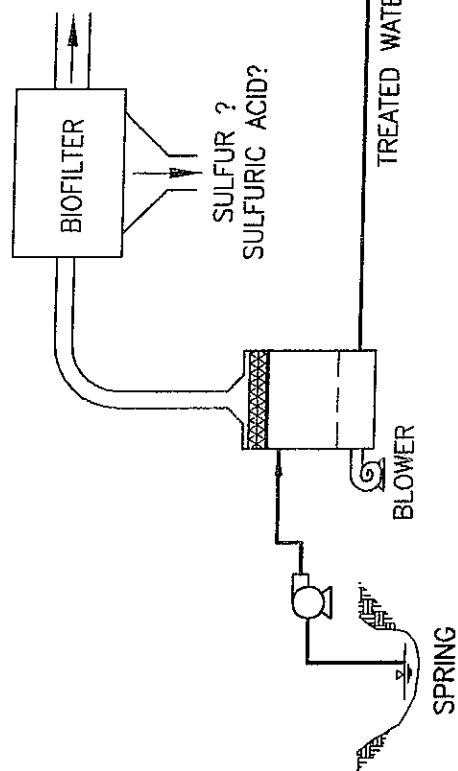
The preferred method for the long-term disposal of the spring water includes removing the hydrogen sulfide ( $H_2S$ ) from the water to reduce odor and corrosivity before discharging the water to the Salinas River. By removing the  $H_2S$  from the water, the City hopes to restore the City Hall and river areas to pre-disaster condition.

The preferred treatment method currently being investigated involves the use of an air stripper and biofilter. Air stripping and biofiltration is a common and accepted method for removing  $H_2S$  from water. A permanent pipe would transport the thermal spring water to City property along Paso Robles Street, adjacent to the Salinas River. Sulfur water would then be sprayed into a stripping tower. A stripping tower is a structure that is designed to blow air through a fine spray of water. Chemicals in the water that are easily volatilized (such as  $H_2S$ ) are separated from the water and are captured in the air. pH may have to be adjusted to optimize this process, possibly by utilizing the sulfuric acid that is naturally created through the oxidation of  $H_2S$  with air. The air/ $H_2S$  mixture would then be transferred through a biofilter (Earth, planter bed, or biological media contained in a fiberglass vessel) where biological activity would convert the  $H_2S$  to sulfur and/or sulfate ions, thereby eliminating odor and corrosivity.

The spring water, at a reduced temperature and mostly free of  $H_2S$ , would then be transported to the Salinas River. At this time, it is thought that aside from possible pH adjustment, nothing would be added to the water to facilitate the  $H_2S$  removal. Boron, sulfate, ammonia, TDS, and other constituents naturally present in the spring water would not be reduced, and would be discharged to the river. A small outfall structure (approximately 10'x10', riprap or similar) would be constructed adjacent to the river. The structure would be well out of the river channel, but would be within the 100-year flood plain.

#### **Facilities Required**

Preliminary sizing estimates show that approximately 36,000  $ft^2$  of land would be required to convert all of the  $H_2S$  in the Sulfur Spring water. A 25-30 foot tall stripping tower would be required near the biofilter site. A high volume air blower would be required which could cause some noise.



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CITY OF EL PASO DE ROBLES  
SULFUR SPRING

AIR STRIPPER / BIOFILTER