

First Level Appeal
Atascadero City Hall



Volume I of VIII

City of Atascadero

February 1, 2008

February 1, 2008

Mr. Charles Rabamad, Public Assistance Officer
Governor's Office of Emergency Services
Public Assistance Section
3650 Schriever Avenue
Mather, CA 95655

**SUBJECT: Atascadero City Hall
First Level Appeal, PW 229-1
FEMA-1505-DR-CA, P.A. ID 079-03064-00
City of Atascadero**

Dear Mr. Rabamad,

The City of Atascadero (City), in accordance with *Title 44 of the Code of Federal Regulations, Section 206.206*, hereby submits a first level appeal regarding the eligible scope of work and estimated repair funding claimed by the City for the above referenced project as contained in the *Notification of Obligation and Payment* received from the Governor's Office of Emergency Services (OES).¹ Attached to the notice from OES was the *Project Application Summary* from the Federal Emergency Management Agency (FEMA).² The summary includes an analysis of costs contained in *Project Worksheet 229-1 (PW)*.³ The *Notification of Obligation and Payment* advised that if the City disagrees with the determination made by FEMA an appeal must be submitted to OES by February 3, 2008, which is 60 days from the date of the notice.

As the result of a presidentially declared disaster, the *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, Public Law 93-288 (Stafford Act), obligates FEMA to restore the function of City Hall to its pre-disaster condition.⁴

- At a minimum, the City requests FEMA to restore the function of City Hall to its pre-disaster condition according to applicable codes and standards, sound

¹ *Notice of Obligation- State Supplement #20*, OES, December 5, 2007. The notice was transmitted by OES to the City by letter dated December 5, 2007, and received by the City on December 13, 2007.

(Attachment 1)

² *Project Application Summary (P.2)*, FEMA, October 22, 2007. (Attachment 2)

³ *Project Worksheet 229-1*, FEMA, October 25, 2007. (Attachment 3)

⁴ *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, Public Law 93-288, Section 206.226. (Attachment 4)

engineering practice, and in a manner that is technically practical at the minimum restoration cost possible so that the City's building official, planning director, fire marshal, and the director of public works can issue an "occupancy permit" and allow the City's administrative personnel and the public to re-occupy the building.

- In support of this appeal, the City presents the reasons it disagrees with FEMA's determinations, regulations that support the disagreements, and descriptions and dollar amounts of the items in dispute.
- Included herein is considerable new information that has not been previously presented regarding the extent of damage.

The City appreciates the efforts expended over the past four years by the OES/FEMA team, who developed the final PW that provides a grant of more than \$15 million in public assistance funding for the restoration of City Hall. However, central to the City's dispute with FEMA are gross errors in categorizing code required repairs as hazard mitigation, and FEMA's finding that the repair of major components of the mechanical, electrical and plumbing systems and other costs are ineligible.

The City respectfully requests that the administrative review of this appeal be expanded to include 'fresh eyes' within the Region IX and/or the national office of FEMA for the following reasons:

- The City and the OES/FEMA team have worked for three years to narrow their technical and funding differences. Unfortunately, after extensive discussion, detailed investigations, additional testing, and clarifying documentation, the parties have made little progress. The prospect for any resolution is remote if the appeal is assigned to, and/or reviewed by, the same FEMA staff, and only serves to prolong the time-line and escalate the costs for the ultimate restoration of City Hall.
- FEMA National has offered an opinion regarding issues surrounding the applicable code, interpretation of the code, and application of the code to this project and other FEMA funded projects. National's involvement may assist in resolving issues, accelerating the restoration time-line, and reducing costs.

As such, the City requests a change in the eligible scope of work and estimated repair costs which are summarized here and are detailed in the last section of this appeal.

Request Summary	A & E	Hazard		
	Services	Repair	Mitigation	Total
Approved PW	\$356,753 ⁵	\$4,628,602 ⁶	\$10,830,863 ⁷	\$15,816,218
Appeal Request	2,660,628 ⁸	16,448,147 ⁹	-9,106,080 ¹⁰	10,002,696
Revised PW	\$3,017,381	\$21,076,749	\$1,724,783	\$25,818,914

There are certain repair items such as those related to deferred maintenance of the building for which the City is wholly responsible and would be considered improvements. Those costs are separated out and are not included in this appeal. All items that are hereby appealed, are eligible for either repair funding or hazard mitigation funding. Additionally, all City improvements will be clearly separated out by line item as the City moves forward with construction documents.

1.0 Description of the Building

The Atascadero City Hall was originally designed and constructed to be the centerpiece of the Atascadero Colony, a utopian planned community by Edward Gardner Lewis.¹¹ The building construction began in 1914 and was completed in 1918, using local resources including bricks made from local clay. The structure was listed on the National Register of Historic Places (#77000336) in 1977 and was made a California



Figure I. View of historic City Hall from the picturesque Sunken Gardens.

⁵ *Eligibility Analysis of A & E Services Worksheet*, FEMA, pg 23. (Attachment 5)

⁶ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, pg 32. (Attachment 6)

⁷ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, pg 32. (Attachment 6)

⁸ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008. p. 2 (Summary C)

⁹ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008. p.2 (Summary C)

¹⁰ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008. p. 2 (Summary C)

¹¹ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 3.0, pg. 3. (Attachment 7)

Registered Historical Landmark (#958) in 1984.¹²

Designed as a Greek Cross in plan, City Hall houses two separate and distinct rotunda spaces on the first and fourth floors in the center of the building with offices ringing the perimeter.

- The 40 foot tall rotunda space on the first floor was designed to be a museum to showcase agricultural and mineral products. It is far more ornate than the fourth floor rotunda due to the decorative plaster, coffered dome, clerestory windows and elaborate chandelier.
- The 44 foot tall rotunda on the fourth floor was originally planned to be the community library and was most recently used as the City Council Chambers. This rotunda is more subdued than the first floor space due to the original space plan for the building.
- The remainder of the building is filled with offices.
- Below the fourth floor, the structural systems consist primarily of cast-in-place reinforced concrete floors and columns that carry the gravity load and un-reinforced masonry (URM) infill walls that perform as the building's lateral system.
- Above the fourth floor, the structural systems consist primarily of wood floor and roof framing supported on URM bearing walls.
- The foundation system of the building consists of shallow spread footings.

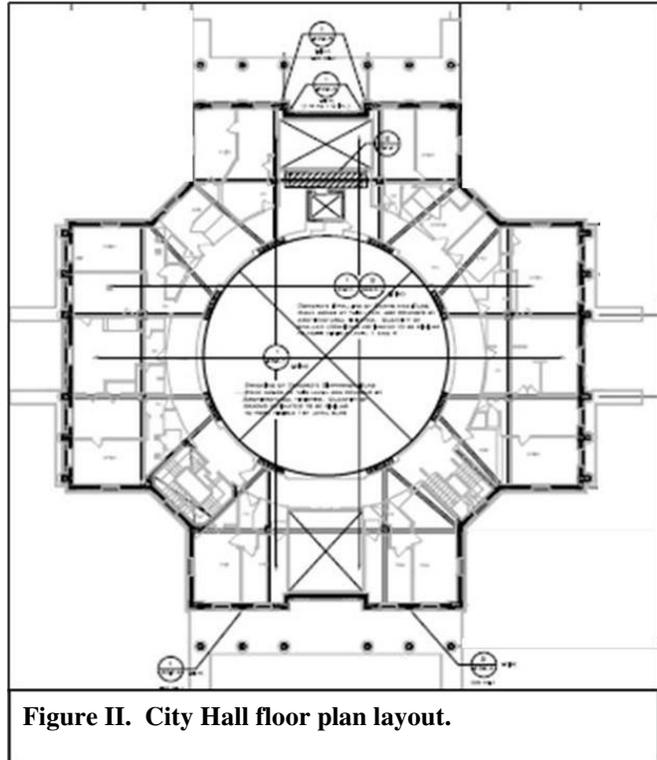


Figure II. City Hall floor plan layout.

¹² *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 3.0, pg. 3. (Attachment 7) and *Damage Assessment and Rehabilitation Plan*, Volume II, Pfeiffer Partners, April 4, 2005, Appendix E (Attachment 8)

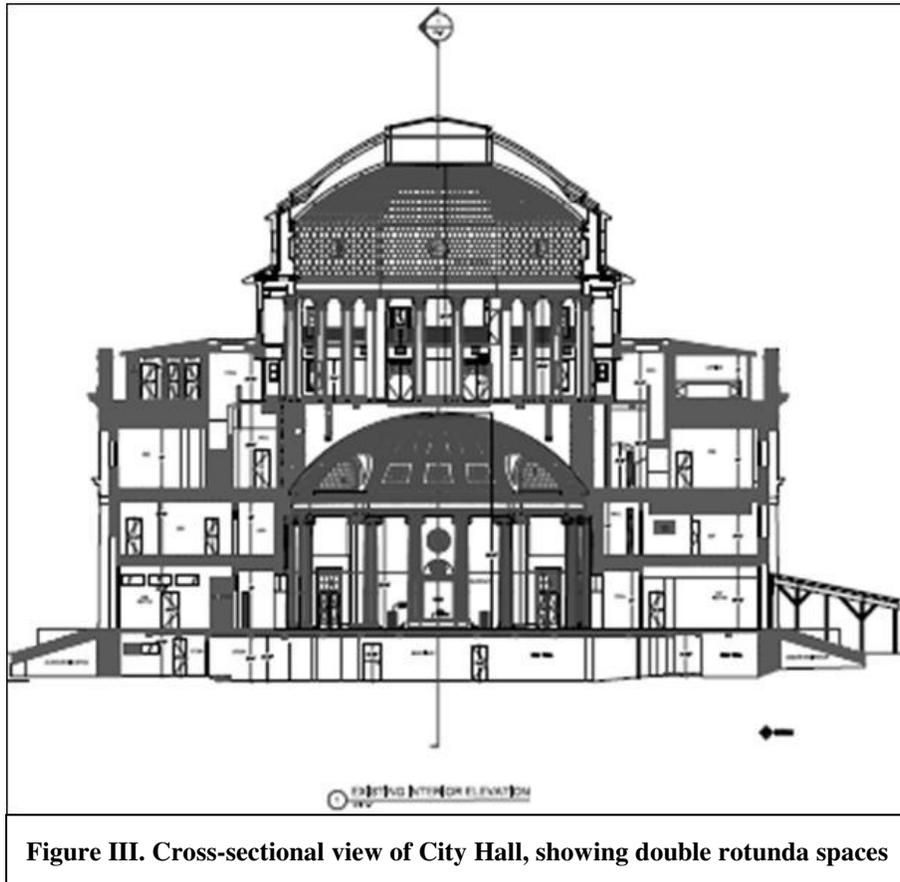


Figure III. Cross-sectional view of City Hall, showing double rotunda spaces

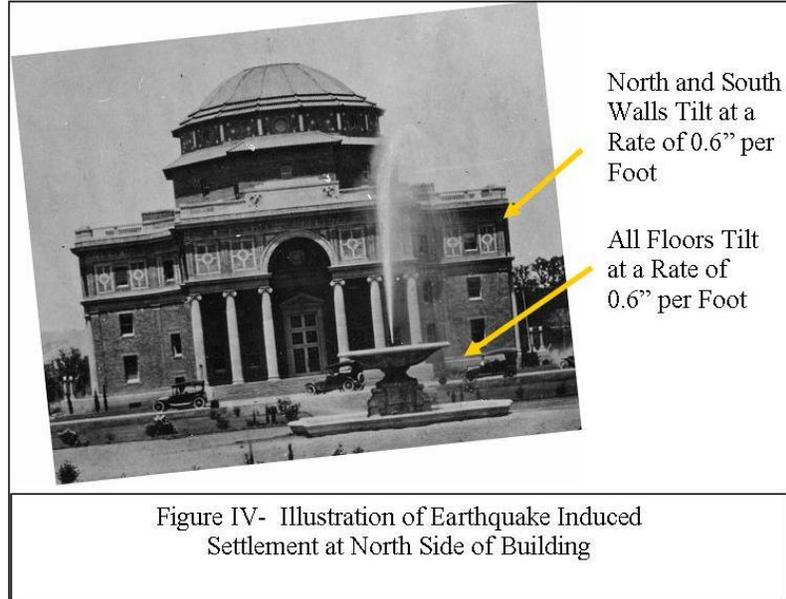
2.0 Earthquake Damage

On December 22, 2003, the San Simeon Earthquake struck the small central coast town of Atascadero. The 6.5 magnitude earthquake left the historic City Hall damaged to such an extent that the building official declared it unsafe (red-tagged) and therefore unusable. The building lost forty three percent (43%) of its capacity to resist lateral earthquake forces.¹³ Fortunately, the URM walls did the job they were originally designed to do: they absorbed all the ground shaking energy of the earthquake, shattered under the impact of significant lateral forces, and in so doing, protected the main concrete structure from catastrophic failure. While there was significant damage to the building, which was fully occupied at the time of the earthquake, there was no loss of life.

The following damage is a direct result of the earthquake:

¹³ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 5.3, pg. 23. (Attachment 7)

- The site experienced significant settlement caused by sub-surface soil liquefaction due to the earthquake¹⁴. All the floors share the same angle of slope to the north and all the walls share the same inclination from vertical which indicates that the building settled towards the north as a whole and in a uniform manner.¹⁵



- At the 1st through 3rd floors, the URM infill walls in both directions have very large cracks all the way through three wythes of brick. (Figures V and VI).¹⁶
- At the 4th and 5th floors, the URM vertical load bearing walls are cracked completely through all three layers of brick and the walls are tilting/leaning away from supporting floor structure. Large sections of the walls are on the verge of collapse (Figure VII).¹⁷
- At the 6th level, large portions of the single wythe brick URM walls collapsed leaving only 1 x 6 wood framing to support the roof (Figure VIII).¹⁸

¹⁴ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 4.2, p. 13. (Attachment 7)

¹⁵ *Earthquake Induced Settlement Damage*, Nabih Youssef & Associates, December 2005, pp. 1-2. (Attachment 10)

¹⁶ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 4.3, pp. 15-16. (Attachment 7)

¹⁷ *Appeal #1 - URM Wall Repairs*, Nabih Youssef & Associates, January 17, 2008, p. 10. (Summary B)

¹⁸ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 4.8, p. 17. (Attachment 7)



Figure V. Diagonal cracking through bricks.



Figure VI. Cracking through bricks at corners.



Figure VII. Fifth floor bulging sections of wall.



Figure VIII. Collapse of sixth floor URM walls.

- The concrete floors spalled, cracked and deformed in localized areas.¹⁹
- The hollow clay tile walls cracked and lost lateral strength.
- Immediately after the earthquake, City staff shut down the heating, ventilation and air conditioning (HVAC) system due to the threat posed by broken gas and water pipes. Because the building was unstable, it was deemed to be unsafe for workers to drain and properly secure the HVAC system in a normal manner.²⁰
- Although the City hired experts to waterproof and secure the building, some areas were too dangerous to seal completely. Therefore, some cracks and openings in the exterior walls and roof that were caused by the earthquake remain open and exposed. As a result, pigeons took roost in many of the rooms, particularly the Council Chamber rotunda. In addition, the exposure to rainwater over time has created a significant development of mold wherever water has intruded into the building.²¹

3.0 Chronology of Recovery Events

The following summarizes the principal recovery events of the past four years:

- | | |
|----------|--|
| Dec 2003 | City Hall was damaged by the San Simeon Earthquake. Personnel were immediately evacuated, the building was red tagged (later changed to yellow-tagged) and the City was forced to move their offices to a vacant pizza parlor slated for demolition where they remain for two years. (The pizza parlor was the only large vacant space available.) |
| Jun 2004 | After completion of the <i>Request For Proposal</i> process, the City retains professional design consultants and begins design of a repair plan. |
| Aug 2004 | City receives draft PW for architectural & engineering fees in the amount of \$242,000. ²² |
| Jan 2005 | OES forwards City's letter requesting additional reimbursement of architectural and engineering fees to date in the amount of \$178,242. ²³ |
| Feb 2005 | City receives official notification that FEMA approves \$242,000 for architectural and engineering fees. ²⁴ |

¹⁹ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, Section 4.2 – 4.3, pp. 13-14. (Attachment 7)

²⁰ *City's Response to Draft PW*, City of Atascadero, dated December 12, 2006, Section 2. (Attachment 11)

²¹ *City's Response to Draft PW*, City of Atascadero, dated December 12, 2006, Section 6. (Attachment 11)

²² *E-Mail and attached Project Worksheet for A & E Services*, FEMA, August 24, 2004. (Attachment 12)

²³ *Request for PW Version – A & E Services*, OES, January 24, 2005. (Attachment 13)

²⁴ *Notice of Obligation – State Supplement #13*, OES, February 2, 2005. (Attachment 14)

- Apr 2005 The City submits the repair plan to FEMA ²⁵ and requests \$22,041,100 for repair of damage, and \$1,659,203 for discretionary hazard mitigation. ²⁶
- Aug 2005 FEMA inspects City Hall and soon thereafter emails the City a document entitled *FEMA City Hall Review* which presents FEMA's eligibility criteria, discusses aspects of the City's repair plan, and requests additional information. ²⁷
- Sep 2005 The City submits their response to *FEMA City Hall Review*. The response contains detailed studies, citations of applicable code and the additional information that FEMA requested. ²⁸
- Dec 2005 The City opens offices in a renovated bowling alley with temporary relocation funds provided by FEMA in the amount of \$4,366,000.
- Dec 2005 OES submits a *Hazard Mitigation Benefit Cost Analysis* to FEMA. ²⁹
- Jan 2006 The City submits a *City Hall Settlement Report*. ³⁰
- Jan 2006 The City drafts letters to request additional reimbursement for brick storage, fence rental and rotunda netting. The City is assured verbally by OES that these costs will be included in the City Hall PW. ³¹
- Feb 2006 City submits request for status of *Request for PW Version – A & E Services*, from January 2005 and attaches copies of all invoices for costs incurred to date ³²
- Aug 2006 Two years and eight months after the earthquake, FEMA circulates a draft PW and an extensive narrative. The PW funds \$4,628,602 for repair of damage, \$10,830,863 for discretionary hazard mitigation which is capped at that amount, and \$356,753 for professional services. FEMA denies \$12,495,227 of the City's request. Even though it is unofficial, this is the first determination regarding eligibility of the claimed scope of work and repair costs. ³³

²⁵ *Damage Assessment and Rehabilitation Plan*, Volumes I, II, & III Pfeiffer Partners, April 4, 2005. (Attachments 7, 8 & 9)

²⁶ *Damage Assessment and Rehabilitation Plan*, Volume II, Pfeiffer Partners, April 4, 2005, Appendix H, pp. 5-24. (Attachment 8)

²⁷ *City Hall Repair Review*, FEMA, August 24, 2005. (Attachment 15)

²⁸ *Supplemental Information Structural Damage Assessment & Rehabilitation Plan*, Nabih Youssef & Associates, September 14, 2005. (Attachment 16)

²⁹ *Hazard Mitigation Benefit – Cost Analysis Report*, OES, December 1, 2005. (Attachment 17)

³⁰ *Letter to Charles Rabamad & Related Attachments*, City of Atascadero, January 10, 2006. (Attachment 10)

³¹ *Letter to Charles Rabamad Requesting Status of City Incurred Costs*, City of Atascadero, January 18, 2006. (Attachment 18)

³² *Request for Status of PW Version – A & E Costs*, City of Atascadero, February 7, 2006 (Attachment 19)

³³ *Support Narrative and Worksheets for Draft PW*, FEMA, August 9, 2006. (Attachment 20)

- Nov 2006 The City meets with FEMA to discuss the scope of work and reimbursement issues. The structural engineer and the geotechnical engineer present a power-point presentation that focuses on the issues surrounding settlement and repair of the URM walls.³⁴
- Dec 2006 The City submits their response to the draft PW entitled *City's Response to Draft PW*.³⁵
- Feb 2007 The City submits a study entitled *URM Wall Repairs, Cost Study* at FEMA's request. The study compares the costs of the City's proposed "overlays" with non-code compliant "in-kind replacement" and code compliant "reinforced replacement" for repair of the URM walls. The City requests that some work categorized by FEMA as hazard mitigation be re-categorized as repair.³⁶
- Apr 2007 FEMA responds to the City's comments on the draft PW in a document entitled *Additional Information for Project Worksheet & Cost Study for URM Wall Repairs*.³⁷
- This is the first official letter sent to the City that addresses FEMA's determinations regarding the City's claim of eligible scope of work and estimated repair costs. FEMA informs the City that there shall be "...no additional funding or scope of work or re-characterization of work...". FEMA incorrectly informs the City that they have 60 days to appeal the determination since the City has yet to receive an official PW.*
- Jun 2007 The City notifies OES of their intent to file an appeal to the PW once it is finalized by FEMA and officially received in accordance with FEMA's regulations.³⁸
- Aug 2007 The City is informed by its consultant (through a communication between the City consultant and FEMA's outside consultant) that FEMA received clearance from the State Historic Preservation Officer. This clearance satisfies FEMA's obligation for federal historic review of the City Hall project, which was the final requirement to be fulfilled before the PW could be issued.³⁹
- Oct 2007 FEMA issues the final PW that approves funding of \$356,753 for professional services, \$4,628,602 for repair, and \$10,830,863 for hazard

³⁴ *Earthquake Settlement Repair- Power Point Slides*, Nabih Youssef & Associates, November 2006. (Attachment 21)

³⁵ *City's Response to Draft PW*, City of Atascadero, December 12, 2006. (Attachment 11)

³⁶ *URM Wall Repairs Cost Study*, Davis Langdon, February 2, 2007. (Attachment 22)

³⁷ *Additional Information for Project Worksheet & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007. (Attachment 23)

³⁸ *Intent to File an Appeal of City Hall Official PW*, City of Atascadero, June 7, 2007. (Attachment 24)

³⁹ *E-mail – SHPO Concurrence for Atascadero*, Pfeiffer Partners, September 20, 2007. (Attachment 25)

mitigation. The PW funds a total of \$15,816,218. The final PW differs from the FEMA letter dated April 2007.⁴⁰

The City has continued to study the repair problem and has prepared new studies that have not been submitted to FEMA previously. They are included within this appeal where noted and are summarized as follows:

- May 2007 A report of the existence of mold in the building, entitled *Evaluation of Mold Colonization on Surfaces*.⁴¹
- Jun 2007 An assessment of repairs to the Mechanical, Electrical, and Plumbing (MEP) systems which is documented in a report entitled *Engineering Assessment Report Mechanical/Electrical/Plumbing/and Fire Protection Systems*.⁴²
- Jul 2007 An additional site soil boring which is documented in a report entitled *Results of Additional Subsurface Exploration*.⁴³
- Jul 2007 Wall cores to assess the severity of URM damage, which is documented in a report entitled *Results of Masonry Wall Coring*.⁴⁴
- Jan 2008 The City's structural engineer prepares two technical summaries of conclusions regarding *Earthquake Induced Settlement Repairs–Appeal #1*⁴⁵ and *URM Wall Repairs*.⁴⁶

4.0 The Repair Plan

In April of 2005, one year and five months after the earthquake, the City completed, conceptual design of a repair plan and submitted it to FEMA.⁴⁷ A summary of the plan follows:

4.1 Elements of the Repair Plan

The following is a simple list of the major repair items.

- Repair building systems to meet life/safety requirements.
- Restore the strength of damaged URM walls using structural overlays.

⁴⁰ *Notice of Obligation- State Supplement #20*, OES, December 5, 2007. (Attachment 1)

⁴¹ *Evaluation of Mold Colonization on Surfaces*, Donald Bogaert, May 25, 2007. (Attachment 26)

⁴² *Engineering Assessment Report Mechanical/Electrical/Plumbing/and Fire Protection Systems*, Gayner Engineers, June 4, 2007. (Attachment 27)

⁴³ *Results of Additional Subsurface Exploration*, Earth Systems Pacific, May 17, 2007, revised July 27, 2007. (Attachment 28)

⁴⁴ *Results of Masonry Wall Coring*, Earth Systems Pacific, July 18, 2007. (Attachment 29)

⁴⁵ *Earthquake Induced Settlement Repairs- Appeal #1*, Nabih Youssef & Associates, January 3, 2008. (Summary A)

⁴⁶ *Appeal #1 -URM Wall Repairs*, Nabih Youssef & Associates, January 17, 2008. (Summary B)

⁴⁷ *Damage Assessment and Rehabilitation Plan*, Volumes I, II, & III Pfeiffer Partners, April 4, 2005. (Attachments 7, 8 & 9)

- Correct the foundation that settled.
- Abatement of pigeon guano, mold and mildew prior to construction.
- Replace the HVAC system.
- Complete finishes, lighting and site work.

4.2 Construction Sequence

The following describes the complex sequence of construction, beginning in the basement and moving up through the building to the roof as the damaged and unstable building is restored.

- Construction begins with the removal of guano deposited by pigeons, mold and mildew to make the work site safe.
- The basement is excavated to install piles under the foundation to stabilize building settlement and re-level the building to pre-disaster condition. Foundations are strengthened to support the vertical loads of the new shotcrete and carbon fiber overlays applied to the walls at the six floor levels above. A new slab is poured.
- Demolish interior finishes on floors, walls and ceilings as necessary to make repairs at all floor levels and place scaffold. The heating, ventilation, and air conditioning (HVAC) system, and electrical and plumbing systems are removed as necessary.
- At floors 1 through 3, install supporting steel to the existing damaged URM infill walls and concrete floors. Place a four (4) inch thick shotcrete overlay on the interior face of the damaged masonry walls and carry the new vertical loads down to the strengthened foundation.
- At floors 4 and 5, repair surface of damaged URM walls and apply a carbon fiber overlay set in an epoxy matrix to the walls. Anchor the overlay to the walls and floors below.
- Complete additional structural repairs including hollow clay tile walls, installation of reinforced plaster, installation of veneer anchors, dome diaphragm, roof repairs, and new roof sheathing and reinstall Spanish tile roof.
- At the sixth (6) floor, reconstruct the collapsed exterior masonry walls and apply the carbon fiber overlay and anchor to the walls and floors below.
- Epoxy inject earthquake-related cracks in concrete floors and re-point and clean exterior walls.
- Repair or replace the HVAC, electrical and plumbing systems, reconstruct interior partitions, reconstruct/restore interior finishes, lighting, and landscaping.

4.3 Summary of Repair Costs

- There is a disparity between the amount that the City's estimates the repairs will cost and the amount FEMA has approved for funding.

	Repairs	Hazard Mitigation
The City Requested ⁴⁸	\$24,094,131	\$1,724,783
FEMA Funded ⁴⁹	\$4,628,602	\$10,830,863

- The public assistance program allows FEMA to fund restoration costs as 'repairs' or 'hazard mitigation'.
 - Based on an eligible scope of repair work, estimated repair costs are funded by an approved PW. After project completion, repair costs are adjusted to reflect increases or decreases such as the low bid amounts, unexpected additional damage, and escalation and are reimbursed to 'actual cost'.
 - Discretionary hazard mitigation must be cost effective, is funded initially based upon an estimate, and should be reimbursable to actual cost based on the past FEMA practice.
- FEMA has classified significant elements of the repair work as hazard mitigation and capped the amount funded.⁵⁰ The City is at risk of significant cost overruns because FEMA will not reimburse the City for amounts over the cap including:
 - Bids that are higher than the estimates and actual cost of the project.
 - New damage that is uncovered during construction.
 - Increases due to labor disputes, material costs and inflation.
- FEMA has determined that elements of the restoration work are not eligible for reimbursement by either 'repair' or 'hazard mitigation' funding.

⁴⁸ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008. (Summary C)

⁴⁹ *Notice of Obligation- State Supplement #20*, OES, December 5, 2007. (Attachment 1)

⁵⁰ *Support Narrative and Worksheets for Draft PW*, FEMA, August 9, 2006, p. 15 and p. 23. (Attachment 20)

5.0 The Appeal Issues

The following are the major issues that have arisen over the past four years regarding the ‘scope of work’ for repair of City Hall.

The final PW was received by the City for review on December 13, 2007.⁵¹ Enclosed with the PW were the following:

- Notification of Obligation and Payment (3 pages)
- Project Application Approval (1 page)
- Administrative Allowance Payment Report (1 page)
- CDAA Obligation Summary (Exhibit “C”) (1 page)
- Applicant History Report – Federal Obligation (1 page)
- Public Assistance Grant Summary (P .5) (1 page)
- Project Application Summary (P .2) (3 pages)
- Project Worksheet Report (10 pages)

There were many references in the PW to attachments that the City did not receive with the PW package. The City did, however, receive an email from Charles Rabamad of OES in late November, 2007, with an attached Excel file named, “*Eligibility_Construction_032007_SHPO.xls*.”⁵² An additional e-mail in November 2007 told us to reference an August 2006 e-mail with an attached spreadsheet named “*Eligibility_A&E.xls*.”⁵³ Although these Excel files were not the named attachments to the official PW, the funding totals in these files matched the amounts on the PW. Therefore, the City used the Excel files essentially as the backup documentation for the PW and relied on the information contained therein to base this appeal.

5.1 Applicable Building Code

In April 2005, the City submitted a proposed repair plan to FEMA for review and comment.⁵⁴ In August 2005, the OES/FEMA team visited City Hall to inspect the damage. Later in August, FEMA emailed an unofficial document to the City entitled *FEMA City Hall Repair Review*.⁵⁵

In their review, FEMA initially focused attention upon the applicability of FEMA’s earthquake damage evaluation guidelines. About the plan, FEMA says:

⁵¹ *Notice of Obligation- State Supplement #20*, OES, December 5, 2007. (Attachment 1)

⁵² *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated. (Attachment 6)

⁵³ *Eligibility Analysis of A & E Services Worksheet*, FEMA, undated. (Attachment 5)

⁵⁴ *Damage Assessment and Rehabilitation Plan*, Volumes I, II, & III Pfeiffer Partners, April 4, 2005. (Attachments 7, 8 & 9)

⁵⁵ *City Hall Repair Review*, FEMA, August 24, 2005. (Attachment 15)

“...the damage documentation, damage evaluation, and development of the structural repairs are based upon the following FEMA publications: ...[FEMA lists the publications]... These are FEMA guidance documents that have been developed to assist the earthquake design community to evaluate earthquake damage and to design alternative repair and upgrade schemes to address the damage. They were not developed for the purpose of determining eligibility of the potential repair or upgrade scopes of work for FEMA funding.”⁵⁶

FEMA informs the City that the guidelines do not meet FEMA’s five criteria for an applicable code or standard and, in particular, they point out that the City never formally adopted the California Building Code (CBC). Instead, FEMA states that:

“The City is requesting funding for upgrades that go beyond the pre-disaster condition of the facility. It appears, however, that these upgrades are not required by any of the above cited codes.”⁵⁷

In reading the City’s repair plan, FEMA made a gross oversight. The City never claimed that the proposed repair work was eligible for FEMA funding because it was required by FEMA’s publications. Contrary to FEMA’s perception, the City’s engineer relied upon FEMA’s publications as they are intended to be used, that is for guidance.

One year later, FEMA shifts its attention from their oversight concerning the City’s use of FEMA’s guidelines to concern over application of the City’s building code to the repairs. As part of their unofficial initial review above, FEMA requested additional information. In September 2005, soon after their request, the City’s structural engineer, Nabih Youssef & Associates, provided detailed supplemental information to FEMA in response to their comments and request for more information about the repair plan.⁵⁸ The supplemental information identifies the City’s building code in effect at the time of the disaster, documents the code’s compliance with the FEMA’s five criteria, cites the sections of the code that apply to each of the proposed repairs, and answers the questions posed by FEMA.

- The engineer argues that the City’s building codes meet the five criteria required by FEMA to qualify as an ‘applicable code’ and further states that...

“Per FEMA Policy No. 9527.3, ‘if FEMA determines that a code meets all five criteria, the work and associated costs – including any eligible upgrades triggered by the code – will be eligible for funding as a repair under Section 406(e) of the Stafford Act.’”⁵⁹

⁵⁶ *City Hall Repair Review*, FEMA, August 24, 2005, p. 1. (Attachment 15)

⁵⁷ *City Hall Repair Review*, FEMA, August 24, 2005, p. 1. (Attachment 15)

⁵⁸ *Supplemental Information, Damage Assessment & Rehabilitation Plan*, Nabih Youssef and Associates, September 14, 2005. (Attachment 16)

⁵⁹ *Supplemental Information, Damage Assessment & Rehabilitation Plan*, Nabih Youssef and Associates, September 14, 2005, Section 0.0 Introduction. (Attachment 16)

- The engineer points out that the 2001 CBC is the ‘prevailing code’ that controls the technical requirements for the structural repair of the facility. He cites the specific sections of code, CBC Section 101.3 and 3403.2, that apply to repair and he concludes that:

*“Based on the provisions of the 2001 CBC, repairs do not require compliance of the entire structural system with the 2001 CBC. However, the design and construction of the repairs must conform with the requirements of the 2001 CBC.”*⁶⁰

In August 2006, nearly a year after the City responded to FEMA’s initial review, FEMA produced a draft PW⁶¹. The draft was again unofficially forwarded to the City by email on August 9, 2006 and in-part addressed the City’s building code. FEMA says:

*“...the California Building Code **does not mandate** the proposed upgrades to City Hall.”*⁶²

Furthermore, FEMA says:

*“...it is FEMA’s determination, consistent with prior decisions, that **the CBC is not an applicable code that mandates the upgrade of facilities at the time they are being repaired.** More specifically, the structural engineering design provisions cited by the City **do not mandate** the proposed upgrades to City Hall when repairing the damaged elements. **Rather these provisions apply to the design and construction of new masonry structures.**”*⁶³

FEMA fails to provide specific information or formulate a logical argument as to why the CBC is not an applicable code or why it applies only to **new** masonry structures. Finally, FEMA concludes:

*“Therefore, consistent with §7.A.3.b of FEMA’s Interim Policy, FEMA need only provide funding to repair the disaster damage in a code compliant manner. This requires that FEMA provide funding sufficient to return the facility to pre-disaster construction, using code conforming methods and materials, to a condition substantially equivalent to its pre-disaster design and structural capacity.”*⁶⁴

Eight months later the City receives FEMA’s first official letter of determination regarding the scope of eligible work and estimated costs. After all of their concern regarding the City’s use of the FEMA guidelines and the City’s building code to the

⁶⁰ Supplemental Information, Damage Assessment & Rehabilitation Plan, Nabih Youssef and Associates, September 14, 2005. (Attachment 16)

⁶¹ Support Narrative and Worksheets for Draft PW, FEMA, August 9, 2006. (Attachment 20)

⁶² Support Narrative and Worksheets for Draft PW, FEMA, August 9, 2006, p 14. (Attachment 20)

⁶³ Support Narrative and Worksheets for Draft PW, FEMA, August 9, 2006, p 14. (Attachment 20)

⁶⁴ Support Narrative and Worksheets for Draft PW, FEMA, August 9, 2006, p 15. (Attachment 20)

repair, FEMA never states an official position regarding the applicable code for repair of City Hall. Building codes are simply never mentioned.⁶⁵

In short, it appears that FEMA's position is that they only pay for repair to pre-disaster condition irrespective of applicable codes and standards. They will pay for repair of cracks in mortar by epoxy injection or re-pointing the mortar. If a brick is broken, they will pay for its removal and replacement. However, FEMA will not pay to repair the wall to restore lateral capacity to its pre-disaster condition as required by the City's code.

In an effort to clarify the interpretation and application of FEMA's regulations and policies regarding the City's building code, the City solicited assistance from OES. Consequently, Mr. Michael Sabbaghian, OES Technical Support, posed the contradictory positions to Mr. Don Smith, Public Assistance Officer, in an email dated January 12, 2007.⁶⁶ Mr. Sabbaghian cited the applicable sections from the California Building Code (CBC), the City's applicable code, that apply to the repair of City Hall. He pointed out that in the Ford Plant Third Appeal (City of Richmond, July 16, 2005) FEMA funded all the costs for repair of damaged elements and that the repairs conformed to the requirements of the code for a new building as required by the CBC. Because of the importance of the issue to the City and the State, Mr. Sabbaghian suggested that Mr. Smith consult with FEMA National to achieve clarity. After a follow-up telephone discussion with Mr. Smith on February 27, 2007, Mr. Sabbaghian confirmed the discussion by email. He confirms that "...you talked with FEMA HQ and agree with the interpretation (application of the UBC, CBC, and the City's building code) in my email."⁶⁷ The email exchange demonstrated agreement among the agencies regarding application of the City's building code to the repair of City Hall.

At the end of February 2007, the City was satisfied that the above email exchange clarified that the City's code was the 'applicable code', that it mandated the repairs as a required code repair, and that the repairs are not an upgrade. The City anticipated that FEMA Region IX would reconsider the determinations it made regarding eligible repair work as presented in their unofficial initial review that was prepared in August 2005 and in their unofficial draft PW narrative in August 2006. On December 13, 2007, the City received the official and final PW. The City was disappointed to read that FEMA made no changes to their determinations based upon the email exchange and the discussions between OES, FEMA Region IX, and FEMA National.

⁶⁵ *Additional Information for Project Worksheet & Cost Study for URM Wall*, FEMA, April 4, 2007. (Attachment 23)

⁶⁶ *E-Mail- CBC Chapter 34*, sent by OES (Michael Sabbaghian), sent to FEMA (Don Smith), February 27, 2007, Section 2, 1-12-07 E-Mail. (Attachment 30)

⁶⁷ *E-Mail- CBC Chapter 34*, sent by OES (Michael Sabbaghian), sent to FEMA (Don Smith), February 27, 2007, Section 1, 2-27-07 E-Mail. (Attachment 30)

Local and State building codes require the City to repair the damaged URM walls and other damaged building components to current code as if they were new components. The City cannot simply rebuild a damaged component to its original pre-disaster condition and expect that the function of a facility has been restored in a code compliant manner. It is not allowed by any California code, it's not sound engineering practice, and it will not be approved by any permitting agency. The reality is that no engineer or building official in California will approve FEMA's proposed designs for repair to pre-disaster condition, if that condition does not comply with the prevailing code.

The City's Position: The City's building code satisfies FEMA's five criteria regarding codes and standards and therefore is the applicable code for repair of City Hall. The code provides that repairs may be made without requiring the entire building to comply with all the requirements of the code, provided the repair conforms to that required for a new building. As such, work to repair earthquake damage as required by the City's code is eligible for reimbursement for actual cost pursuant to the Stafford Act, FEMA's policies, and implementing regulations.

5.2 Wall Repairs

In its repair plan, the City states that:

"Major damage levels have been observed in the URM walls at levels 4 and 5."⁶⁸ and that ... "Heavy to extreme damage levels have occurred in the East/West exterior walls at the 1st and 2nd floor levels."⁶⁹

The repair plan recommends the use of structural concrete overlays applied to the URM infill walls at the 1st, 2nd and 3rd floors and lighter weight carbon fiber overlays applied to the URM bearing walls at the 4th and 5th floors. The overlays will restore the pre-earthquake strength and stiffness of the damaged walls.

In their initial review FEMA states that...

"The proposed CFO, although it seems to provide a needed continuity of these walls at the corners, exceeds what is required to repair the damaged walls to their predisaster condition. Nor is it justified by an 'applicable code'."⁷⁰

FEMA requested that the City explain the purpose, need and justification for the overlays and demonstrate that they are required by an 'applicable code'. The City's

⁶⁸ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 32. (Attachment 7)

⁶⁹ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 31. (Attachment 7)

⁷⁰ *FEMA City Hall Repair Review*, FEMA, August 24, 2005, p. 4. (Attachment 15)

structural engineer responded to FEMA's request with supplemental information which is summarized here.⁷¹

- Re-pointing the walls is not an effective structural repair technique for the level of damage.
- Removal and reconstruction of the masonry without reinforcing does not comply with current applicable codes.
- Removal (i.e. demolition) and replacement (i.e. reconstruction) of the wall in conformance with applicable codes (i.e. with reinforcing) is structurally feasible. However, removal and replacement would adversely impact the historic features of the building.
- The overlays represent the most viable structural repair techniques in conformance with applicable codes while minimizing negative impacts on historic fabric. The overlays are designed to cost effectively restore the pre-disaster condition in conformity with current applicable codes and is not designed to increase the lateral capacity beyond that of the original design of the building.
- The rebuilding or replacing of URM walls has been prohibited by all California building codes since the 1933 Long Beach earthquake.
- Rebuilding or replacing URM walls is prohibited by Chapter 34 of 2001 CBC (3403.1 and 3403.2) which states:
“... repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of this code, provided the addition, alteration or repair conforms to that required for a new building or structure.”
- Rebuilding or replacing URM walls is prohibited by the current applicable codes in the City of Atascadero (2001 CBC, §2106.1.12.4.2.3) which reads in part...
“All walls shall be reinforced with both vertical and horizontal reinforcement.”
- FEMA's own publications, which they provide to design professionals as “guidance”, advises that rebuilding URM walls is not a code compliant repair technique.
- While reinforced masonry wall construction is an acceptable repair technique in the repair of City Hall it has the following limitations:
 - Rebuilt portions of reinforced masonry walls will be thicker to accommodate the addition of reinforcing steel.
 - The localized strength and stiffness of rebuilt portions of wall can adversely affect the overall earthquake safety of the building. The walls must be built in a symmetrical plan layout to avoid rotation during an earthquake and they

⁷¹ *Supplemental Information Structural Damage Assessment and Rehabilitation Plan*, Nabih Youssef & Associates, September 14, 2005, Section 4. (Attachment 16)

must be in a continuous vertical configuration to avoid strength/stiffness discontinuities known as soft/weak stories.

- Reconstruction using reinforced masonry is very expensive.
- Reconstruction would have a serious negative impact on the historic features of the building and would complicate FEMA's satisfaction of historic review.
- Both shotcrete and carbon fiber overlays are code compliant structural repair techniques and have the following advantages:
 - Overlay techniques are less expensive than reinforced masonry reconstruction.
 - Repair by overlay techniques is far less invasive on the historic materials of the building than reinforced masonry reconstruction.
 - Shotcrete and carbon fiber overlays have been used for repair of URM walls on many FEMA funded projects damaged by the 1994 Northridge Earthquake.

As a result of the review meeting on November 28, 2006, FEMA requested that the City prepare a comparative cost study of three URM wall repair methods. The 'base scheme' was that proposed by the City using overlays. The 'in-kind replacement' scheme replaced URM with URM. The third proposed 'replacement of URM with RM' (reinforced masonry). The City's cost consultant prepared a study that concluded:

*"According to the enclosed cost study, the 'base scheme' proposed by the city is clearly the most cost-effective method of repair."*⁷²

In April 2007, the City received FEMA's first official letter of determination regarding the scope of eligible work and estimated costs. FEMA again shifts the focus of their attention regarding the eligibility of URM wall repairs. After their concern regarding the City's use of the FEMA guidelines and the City's building code to the repair of URM walls, which is not mentioned in their letter, FEMA now says that the City's 'base scheme' is not cost effective. FEMA says:

*"Use of the overlay methods exceeds what is required to repair the damage to pre-disaster condition (since it will strengthen the walls). Therefore, in order to consider re-categorization of the hazard mitigation as eligible repair it must be shown that the desired scheme (i.e. structural overlay) is more cost-effective than the eligible scope of work (i.e. in-kind replacement to repair the moderately damaged URM walls to their pre-disaster condition)."*⁷³

The City disagrees with FEMA's determination. The City's structural engineer, Nabih Youssef & Associates, provides a summary of the technical information and a

⁷² URM Submittal Letter – Cost Study for URM Wall Repairs, City of Atascadero, sent to Charles Rabamad, OES, February 9, 2007.

⁷³ Additional Information for Project Worksheet & Cost Study for URM Wall, FEMA, April 4, 2007, p.3. (Attachment 23)

professional conclusion surrounding the URM wall repairs. This information is highlighted here along with new information the City's presents in making its argument.⁷⁴

- The earthquake damage previously reported is more severe than originally documented. Cracks extend through the entire thickness of the URM walls, severely reducing the structural capacity of the walls. The visible damage contradicts FEMA's position that damage generally occurred in the exterior wythe of walls that are three wythes thick.
 - The visible crack damage is classified as 'heavy', 'extreme', or 'severe' by all known technical standards, including FEMA's own guidelines.
 - Computer analysis of the damaged URM walls indicates a tremendous 43% loss of lateral strength to resist future earthquakes. Epoxy injection, as proposed by FEMA, will not restore this lateral strength.
 - At the 4th and 5th floor levels large portions of wall are on the verge of collapse.
 - The only viable options for repair of the damaged URM walls to pre-disaster condition are either re-construction with reinforced masonry that will significantly affect historic fabric or enhancement by use of a structural overlay. These repair techniques are designed to repair the walls to their pre-disaster condition in a code compliant manner and are not designed to strengthen or upgrade the walls.
- The cost data presented by FEMA are grossly inaccurate.⁷⁵
 - Settlement foundation repair costs were included by FEMA in the wall repairs. These costs were not included in the City's estimate, and resulted in an 84% error in the FEMA cost estimate for the 'base scheme'.
 - FEMA included complete 100% replacement of the basement slab on grade in the 'base scheme'. This cost was not included in the City's estimate, is not necessary to repair the URM walls, and should not be included in FEMA's cost estimate.
 - FEMA did not include temporary shoring for the 'in-kind' scheme. The City's cost estimate did include shoring that is required for construction.
- The City's structural engineer draws the following conclusion.

"...the conclusions drawn by FEMA in the April 4, 2007 letter (i.e. the official letter of determination) are based on gross errors in the cost data... The cost data prepared by the City accurately represents the repair conditions and clearly

⁷⁴ Appeal #1 - URM Wall Repairs, Nabih Youssef & Associates, January 17, 2008. (Summary B)

⁷⁵ Appeal #1 - URM Wall Repairs, Nabih Youssef & Associates, January 17, 2008. (Summary B)

indicates that the Base Scheme (concrete and carbon fiber overlay) is the most cost effective approach.”⁷⁶

The City’s Position: The reinforced concrete overlays at the 1st, 2nd and 3rd floors and the carbon fiber overlays at the 4th and 5th floors meet the requirements of the City’s building code, minimize the impact of repair on the historic fabric of the building, and are more effective than reconstruction. The overlays are an eligible code required repair and are not an upgrade. The cost of the overlays, which have already been approved by FEMA as hazard mitigation, should be considered repairs reimbursed for actual cost. The City requests additional funding for repair of the URM walls using the overlays.

5.3 Settlement

FEMA’s initial review of the City’s repair plan did not address the issues of soil liquefaction, building settlement, or the City’s proposed settlement repair work.⁷⁷ In August 2006, nearly a year after the City responded to their initial review and over two and one half years after the disaster, FEMA commented on the settlement issue in their draft PW.

- FEMA doesn’t believe settlement was caused by the earthquake. There is no evidence of liquefaction at ground surface and therefore correcting the settlement of City Hall is not an eligible repair.⁷⁸
- URS Corporation, FEMA’s soil consultant, questions the hollow-stem drilling techniques that the City’s soil engineer used in drilling the core samples and asserts that the engineer failed to use “due professional care” in obtaining the core samples.⁷⁹
- However, FEMA’s soil consultant admits that:
“...if the data obtained... was reliable, it would not be unreasonable to conclude that soil liquefaction is possible, under conditions... experienced during the 2003 San Simeon Earthquake.”⁸⁰

In their response to the draft PW, the City provides a letter from their soils engineer that clarifies the drilling procedures and addresses the physical conditions at the site.⁸¹

⁷⁶ *Appeal #1 - URM Wall Repairs*, Nabih Youssef & Associates, January 17, 2008, p. 2. (Summary B)

⁷⁷ *FEMA City Hall Repair Review*, FEMA, August 24, 2005. (Attachment 15)

⁷⁸ *Additional Information for Project Worksheet & Cost Study Report for URM Wall Repairs*, FEMA, April 4, 2007, p.7 (Attachment 23)

⁷⁹ *Memorandum- Geotechnical Comments, review of Geotechnical Report for Atascadero City Hall, California*, URS, May 9, 2006, p. 2. (Attachment 31)

⁸⁰ *Memorandum- Geotechnical Comments, review of Geotechnical Report for Atascadero City Hall, California*, URS, May 9, 2006, p. 2. (Attachment 31)

- The procedures used are the *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California*.⁸² The procedures were discussed in detail during the power point presentation to OES and FEMA on November 28, 2006, which addressed the site settlement and structural repairs.⁸³
- The absence of sand boils at the surface of the site is not evidence that no liquefaction occurred.⁸⁴
- There is evidence of earthquake settlement at the handicapped ramp at the southeast corner of City Hall.⁸⁵

In their official letter of determination, FEMA reiterates its previous position and concludes that:

*“There is insufficient physical or scientific evidence to support the City’s assertion that City Hall settled or incurred damage as a result of settlement due to the earthquake.”*⁸⁶

The City disagrees with FEMA’s determination. The City’s structural engineer, Nabih Youssef & Associates, provides a summary of the technical information and a professional conclusion surrounding the settlement issue.⁸⁷ This information is highlighted here along with new information the City’s presents in making its argument.

- The building settlement damage did not exist prior to the earthquake. The City interviewed design professionals who worked on projects at City Hall in the years preceding the earthquake and none have reported any evidence of settlement.⁸⁸
- The building and site moved as a unit and therefore there was no evidence of settlement at utility-to-building connections or concrete slab-to building joints.
- The earthquake induced settlement and tilting of the building to the north is consistent with the directionality of the earthquake.⁸⁹

⁸¹ *City’s Response to City Hall Draft PW*, City of Atascadero, December 12, 2006, Appendix A – Letter from Earth Systems Pacific re: Response to Questions. (Attachment 11)

⁸² *Recommended Procedures for Implementation of DMG Special Publication 117- Guidelines for Analyzing and Mitigating Liquefaction in California*, Southern California Earthquake Center- University of Southern California, March 1999. (Attachment 32)

⁸³ *Earthquake Settlement Repair - Power Point Slides*, Nabih Youssef & Associates, November 28, 2006. (Attachment 21)

⁸⁴ *City’s Response to City Hall Draft PW*, City of Atascadero, December 12, 2006, Appendix A – Letter from Earth Systems Pacific re: Response to Questions, p. 2. (Attachment 11)

⁸⁵ *City’s Response to City Hall Draft PW*, City of Atascadero, December 12, 2006, Appendix A – Letter from Earth Systems Pacific re: Response to Questions, p. 3. (Attachment 11)

⁸⁶ *Additional Information for Project Worksheet & Cost Study for URM Walls*, FEMA, April 4, 2006, p.7. (Attachment 23)

⁸⁷ *Earthquake Induced Settlement Repairs – Appeal #1*, Nabih Youssef & Associates, January 3, 2008. (Summary A)

⁸⁸ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 20. (Attachment 7)

- All the floors share the same angle of slope to the north and all the walls share the same inclination from vertical. This indicates that the building and the site settled as a whole in a uniform manner.⁹⁰
- An additional boring was recently obtained from the site using ‘extreme care’.⁹¹ The new boring confirms prior boring data regarding the presence of liquefiable soils below the site. In fact, within the zone of liquefiable soils, the shaft of the drill rig unexpectedly sank 18” into the soil under its own weight where normally the shaft must be power driven. This demonstrates the extreme susceptibility of the soils to earthquake induced liquefaction settlement.
- Based upon the physical and geotechnical evidence, it is the opinion of the soils engineer that settlement occurred in the liquefied soils below the water table at a depth of 28.5 feet and was induced as a direct result of the earthquake.⁹²

The City’s Position: City Hall settled in a uniform manner towards the north as a direct result of the liquefaction of sub-surface soils due to the earthquake. If the settlement (which is an eligible repair to pre-disaster condition and not an upgrade) is not corrected, it will indicate to the public and City staff that the building has not been properly repaired thus jeopardizing further use. Correction of the settlement, already approved by FEMA as hazard mitigation, is an eligible repair reimbursable for actual construction cost. The cost of correcting the settlement should be categorized as a repair and not hazard mitigation.

5.3.1 Repair of Façade Due to Re-Leveling

As part of the restoration of the building to its pre-disaster condition, the floor will need to be re-leveled. The leveling process will cause differential movements in the foundations that will translate into the rigid and brittle masonry façade components. In the PW, FEMA denies funding citing:

“FEMA disapproves the "allowance for re-leveling work" since the work is not related to earthquake damage repairs.”⁹³

⁸⁹ *Earthquake Induced Settlement Repairs – Appeal #1*, Nabih Youssef & Associates, January 3, 2008, p. 2. (Summary A)

⁹⁰ *Earthquake Induced Settlement Damage*, Nabih Youssef & Associates, December 2005, pp 1-2. (Attachment 10)

⁹¹ *Results of Additional Subsurface Exploration*, Earth Systems Pacific, July 27, 2007. (Attachment 28)

⁹² *City’s Response to City Hall Draft PW*, City of Atascadero, December 12, 2006, Appendix A – Letter from Earth Systems Pacific re: Response to Questions, p. 3. (Attachment 11)

⁹³ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, November 26, 2007, p. 45. (Attachment 6)

The City disagrees with FEMA's findings:

- The building settlement damage did not exist prior to the earthquake. The City interviewed design professionals who worked on projects at City Hall in the years preceding the earthquake and none have reported any evidence of settlement.
- The building and site moved as a unit and therefore there was no evidence of settlement at utility-to-building connections or concrete slab-to building joints.
- The earthquake induced settlement and tilting of the building to the north is consistent with the directionality of the earthquake.
- All the floors share the same angle of slope to the north and all the walls share the same inclination from vertical. This indicates that the building and the site settled as a whole in a uniform manner.
- An additional boring was recently obtained from the site using 'extreme care'.⁹⁴ The new boring confirms prior boring data regarding the presence of liquefiable soils below the site. In fact, within the zone of liquefiable soils, the shaft of the drill rig unexpectedly sank 18" into the soil under its own weight where normally the shaft must be power driven. This demonstrates the extreme susceptibility of the soils to earthquake induced liquefaction settlement.
- Based upon the physical and geotechnical evidence, it is the opinion of the soils engineer that settlement occurred in the liquefied soils below the water table at a depth of 28.5 feet and was induced as a direct result of the earthquake.
- Because the settlement was a direct result of the earthquake, the cost to level the foundation to pre-disaster condition is an eligible cost.

Additionally, in informal conversations with FEMA, FEMA has indicated that even when the City has been able to successfully prove that the settlement was earthquake induced, FEMA will still not include the leveling-related crack repair to the façade in the scope of work. FEMA's response has been that only documented cracks are eligible for repair; therefore, since the cracks can not be documented until the re-leveling process has been completed, this item has not been included in the PW.

The City disagrees with this opinion, citing:

- By the very nature of leveling, the differential movements in the foundation will translate in to the rigid and brittle masonry façade components.
- Cracks related to the leveling will absolutely occur. The exact extent of the cracks is yet unknown. Cracks will be fully documented after the leveling has occurred, but prior to construction repairs for FEMA's information and approval.

⁹⁴ *Results of Additional Subsurface Exploration*, Earth Systems Pacific, July 27, 2007. (Attachment 28)

The City's Position: The City requests that FEMA include language in the PW scope of work for repairs that will be necessary due to re-leveling of the building.

5.3.2 Floor Cracks and Spalls

Evidence of earthquake-induced cracking and spalling is visible on the 1st and 4th floor levels of the building. In the PW, FEMA agrees saying,

“Cracking and spalling are visible in reinforced concrete diaphragms due to the earthquake movements of the building.”⁹⁵

The 2nd and 3rd floors are typically covered by ceiling and floor finishes and are not directly accessible without extensive demolition of the finishes. Therefore, although earthquake cracks in the 2nd and 3rd floors are not visible at this time, the City's consultants are confident that the damage exists and will need repairs. In response to the City's request to include all earthquake-induced floor cracks and spalls in the scope of work, not just the visible ones, FEMA cites:

“Based on the floor's predisaster condition and the level of earthquake damage, FEMA approves all the documented proposed repairs as repairs and the proposed hazard mitigation scopes as hazard mitigation. The approved hazard mitigation scope is proven to be cost effective (see Benefit Cost Analysis section below). The scopes of work that are projected are denied since only actual documented damage is eligible. If additional hidden earthquake related damage is later revealed while performing the eligible scope of work, the City may request supplementing the scope of work.”⁹⁶

The City disagrees with FEMA's findings:

- Given the level and pattern of damage in the remainder of the building, the City wholly expects that there will be cracking and spalling on the 2nd and 3rd floors level diaphragms similar to what is seen on the 1st and 4th floors.⁹⁷



Figure IX. Spalling in the beam that supports the fourth level floor framing.

⁹⁵ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, November 26, 2007, p. 39. (Attachment 6)

⁹⁶ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, November 26, 2007, p. 39. (Attachment 6)

⁹⁷ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 14. (Attachment 7)

- The extent of the scope of work is unknown, but the fact that there is earthquake damage that will need to be included in the scope is reasonable to conclude, based on similar visible damage on other floor levels.
- A large portion of the strength and stiffness of the diaphragms is related to undamaged concrete. Earthquake damaged concrete also reduce the stiffness and strength of the beams and columns to support gravity loads.⁹⁸
- Because the ability of the building to support gravity loads and to resist earthquake related forces and displacements is based in part on the strength of the concrete floors, the City feels that it is critical that the scope of work be expanded to include cracking and spalling on the 2nd and 3rd floor levels.⁹⁹

The City's Position: The City requests that FEMA include language in the PW scope indicating that work to repair the floor cracks and spalls on the 2nd and 3rd floor levels is an eligible repair. (The worksheet currently states that this is an ineligible item. The City will work with FEMA regarding quantities and a dollar amount as the extent of damage is revealed during construction.)

5.4 Mold and Pigeon Guano Abatement

The earthquake caused openings in the walls and ceiling of the upper rotunda dome. Pigeons have taken roost in the building and deposited guano. Water has infiltrated through openings and cracks to nurture the growth of mold and mildew.

FEMA disapproves the scope of work due to the lack of supporting documentation. FEMA indicates that the abatement work may be an eligible scope of work if the City can show that the work is specifically related to the earthquake.

In their response to the draft PW, the City states the following:

- California's Department of Occupational Safety and Health recommends that resources should be spent to remove mold (rather than extensive testing for mold), because testing to determine the type and quantity of mold is expensive. FEMA's request for quantities may be a waste of resources, and if they require testing it should be an eligible cost.¹⁰⁰

⁹⁸ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 14. (Attachment 7)

⁹⁹ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, p. 14. (Attachment 7)

¹⁰⁰ *City's Response to Draft PW*, City of Atascadero, December 12, 2006, Section 6.0 p. 21. (Attachment 11)

- The City performed remedial work to protect the building from pigeon and water intrusion, but ultimately decided that complete protection would be ineffective, very expensive, and present a significant threat to workers because of structural instability.¹⁰¹
- The accumulations of guano, mold, and mildew are on-going biological processes that will not end until they are cleaned up. The City proposes to provide quantities of the work to be performed immediately prior to the start of construction.¹⁰²

In their official letter of determination, FEMA reiterates its previous position and concludes that:

“Any future consideration relative to the eligibility of this work and its cost is contingent upon receipt of comprehensive documentation quantifying the damage and delineating and justifying the requested scope of work.”¹⁰³

The City disagrees with FEMA’s omission of guano, mold and mildew cleanup costs from the PW scope of work.

- Were it not for direct earthquake damage to the building, there would not be any guano on the floor of the Council Chamber and there would be no mold in the building.
- In the November 2006 review meeting, FEMA said they would put the language in the PW scope of work, but not the dollar amount. It is not included in FEMA’s final PW.

The City’s Position: The City requests that FEMA include language in the PW scope of work for cleanup of pigeon guano, mold and mildew. (The support documentation for the PW states that these items are “Ineligible”)¹⁰⁴ Quantities of the work to be estimated immediately prior to the start of construction. The cost of the abatement work and any testing that FEMA requests to establish eligible quantities will be reimbursed for actual cost.

5.5 Heating, Ventilation, and Air Conditioning System

The City’s repair plan reported limited earthquake damage to the HVAC system and in their review FEMA determines:

¹⁰¹ *City’s Response to Draft PW*, City of Atascadero, December 12, 2006, Section 6.0 pp. 22-23. (Attachment 11)

¹⁰² *City’s Response to Draft PW*, City of Atascadero, December 12, 2006, Section 6.0 pp. 22-23. (Attachment 11)

¹⁰³ *Additional Information for Project Worksheet & Cost Study for URM Wall*, FEMA, April 4, 2006, p.7. (Attachment 23)

¹⁰⁴ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, November 26, 2007. p. 62. (Attachment 6)

“...the damage reported does not justify the proposed scope of work...” FEMA concludes: *“There is no direct relationship between the scope of work proposed and the damage from the San Simeon earthquake.”*¹⁰⁵

FEMA requests the City to document and quantify the earthquake damage.¹⁰⁶

In their draft PW narrative, FEMA disapproves the proposed replacement of the HVAC system as an eligible scope of work since the damage is not directly caused by the earthquake. In the City’s response to the draft PW, they describe the reasoning underlying their request for replacement of the HVAC system.¹⁰⁷

- Immediately after the quake, continued operation was impossible because of the threat of broken water and gas pipes. The system had to be shut down, deteriorated quickly, and became inoperable.
- The earthquake damaged the building so severely that it was hazardous for workers to enter the building to perform protection, repair and maintenance work.
- After the earthquake the City extensively reviewed the work necessary to restart and run the system. The City Engineer and Risk Manager concluded that a system restart was too high a risk for workers.
- Repair of the system was considered as a component of repair of the earthquake damage to the building that would occur during construction. After expert consultation, it was concluded that replacement of the system would be a cost effective alternative to repair.



Figure X. Damaged roof-top AC unit.

In response to FEMA’s request for the City to document and quantify earthquake damage, the City hired Gayner Engineers to re-examine the HVAC system. Gayner found that the roof-top package AC unit had been severely damaged by falling brick, the closed circuit cooler, boiler, pumps and controls at the central plant were irreparable and need replacement, and 40 heat pumps and associated controllers on the 1st through 4th floors also were beyond repair and required replacement. Additionally, the entire system

¹⁰⁵ FEMA City Hall Repair Review, FEMA, August 24, 2005, p. 6. (Attachment 15)

¹⁰⁶ FEMA City Hall Repair Review, FEMA, August 24, 2005, p. 6. (Attachment 15)

¹⁰⁷ City’s Response to City Hall Draft PW, City of Atascadero, December 12, 2006, Section 2, pp. 6-13. (Attachment 11)

needs to be drained, cleaned, leak tested and repaired. The total costs of repairs to the HVAC system total \$3,043,908.¹⁰⁸ The cost to replace the entire system is only 41% more at a cost of \$4,306,055.¹⁰⁹ According to FEMA's 50% rule, the more effective solution would be replacement.

In their official letter of determination, FEMA reiterates its previous position and concludes that "...for an element to be considered eligible for repair the element must have been damaged by the earthquake."¹¹⁰

The City disagrees with FEMA's determination that the HVAC system is not an eligible repair cost as a direct result of damage caused by the earthquake. The City argues the following:

- FEMA routinely pays for repair of elements that are affected by the repair of disaster related damage, but are not caused by the disaster. They pay for repair of damage to roads due to heavy use caused by large trucks that are transporting materials to and from damaged facilities. They pay for repair of damage caused by removal of materials to verify damage, if the damage is eligible. They pay for replacement of concrete, asphalt and soil that is undamaged, but must be removed to repair a buried sewer line or other types of infrastructure.
- Were it not for direct earthquake damage to the building, the HVAC system would be working today.

The City's Position: The cost for replacement of the HVAC system is cost effective when compared to repair and should be included in the eligible scope of work. The estimated replacement cost is eligible for reimbursement for actual cost.

5.6 Re-Start of Mechanical, Electrical and Plumbing Systems

As a result of moving forward in the construction process and obtaining a more extensive evaluation of the mechanical, electrical and plumbing systems, the City has uncovered repairs that were not presented to FEMA/OES in the *Damage Assessment & Rehabilitation Plan, April 4, 2005*. The initial request to FEMA did not include costs that would be incurred to re-start our mechanical, electrical and plumbing systems. The *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, prepared by Gayner Engineers in June 2007, identifies the following damage, which has not previously been reported to FEMA/OES.

¹⁰⁸ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008.

¹⁰⁹ *Calculation of HVAC Replacement, based on Davis Langdon Pre-Design Report Cost Model*, City of Atascadero, January 29, 2008. (Attachment 33)

¹¹⁰ *Additional Information for Project Worksheet & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007, p. 6. (Attachment 23)

- Sanitary Waste and Vent Piping- The Gayner Report identifies that draining, cleaning and leak testing, and repairing the plumbing piping before re-use will be necessary¹¹¹
- Domestic Cold and Hot Water Piping- The Gayner Report identifies that draining, cleaning and sterilizing the domestic cold and hot water piping before re-use will be necessary¹¹²
- Dry Standpipe- The Gayner Report identifies that draining, cleaning, leak testing and repairing the dry stand pipe will be necessary to put it back into operation.¹¹³

These newly identified costs are a result of:

- The building has been vacant since December 22, 2003, and mechanical, electrical and plumbing systems have mainly been shut down in order to reduce the risk of fire, flooding or further damage to the building.
- It is anticipated that these systems will be breached and repaired as a result of structural, mechanical and architectural repairs to the building. Building code requires cleaning and testing of the system if it has been breached.

The City's Position: The City requests that FEMA evaluate this newly identified damage and include funding in the scope of work in order to repair these damaged items.

5.7 Code Requirements

As stated in section 5.1, Applicable Building Code, FEMA agreed in February 2007 that CBC applies to the repair of City Hall. CBC 3403.2 states,

“Additions or alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any of the provisions of this code and such additions or alterations shall not cause the existing building or structure to become unsafe.”¹¹⁴

¹¹¹ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gayner Engineers, June 4, 2007, p. 16. (Attachment 27)

¹¹² *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, prepared by Gayner Engineers, June 4, 2007, p. 5. (Attachment 27)

¹¹³ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, prepared by Gayner Engineers, June 4, 2007, p. 15. (Attachment 27)

¹¹⁴ *California Building Code, Chapter 34*, 2001. (Attachment 34)

As clarified by the City's structural engineer, "...the design and construction of repairs must conform with the requirements of the 2001 CBC."¹¹⁵ In other words, if an area of construction removes or otherwise disturbs an element that is not code compliant, that element must be replaced in a code compliant manner or with a new, code compliant element.

FEMA has denied a number of code-required items as ineligible, although they have already agreed that CBC applies to the repair of City Hall. With this concurrence, it follows that FEMA must also agree that Section 3403.2 of CBC applies to the repair of City Hall. These items are listed in the *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, under the category, "Code Requirements," and total \$918,612.¹¹⁶ These code requirements by no means represent anything more than the bare minimum that must be done in order to comply with applicable code requirements and be allowed to re-occupy the building.

The City's Position: These code requirements include the minimum amount of work to be done to be allowed to re-occupy the building and must be funded by FEMA.

5.8 Painting

5.8.1 Lower Rotunda Painting

The lower rotunda area comprises the central core of the building's 1st through 3rd floors. The round room is studded by 16 ornate columns.

The elaborate coffered dome stands forty feet high and accents the circular nature of the space. Earthquake damage to the circular wall in this space varied from hairline cracking to plaster delamination depending on the area of the wall.¹¹⁷

FEMA disapproves painting a portion of this wall stating that...

"Based on the City's Report, FEMA calculated the approximate gross area of the lower rotunda to be 5,775 SF, equal to the summation of earthquake damaged wall areas and undamaged (wall and door) areas. The City requested, in the Report and in



Figure XI. City Hall Lower Rotunda.

¹¹⁵ *Supplemental Information Structural Damage Assessment & Rehabilitation Plan*, prepared by Nabih Youssef & Associates, September 14, 2005, Section 0.0. (Attachment 16)

¹¹⁶ *Table of Appealed items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008, p. 8. (Summary C)

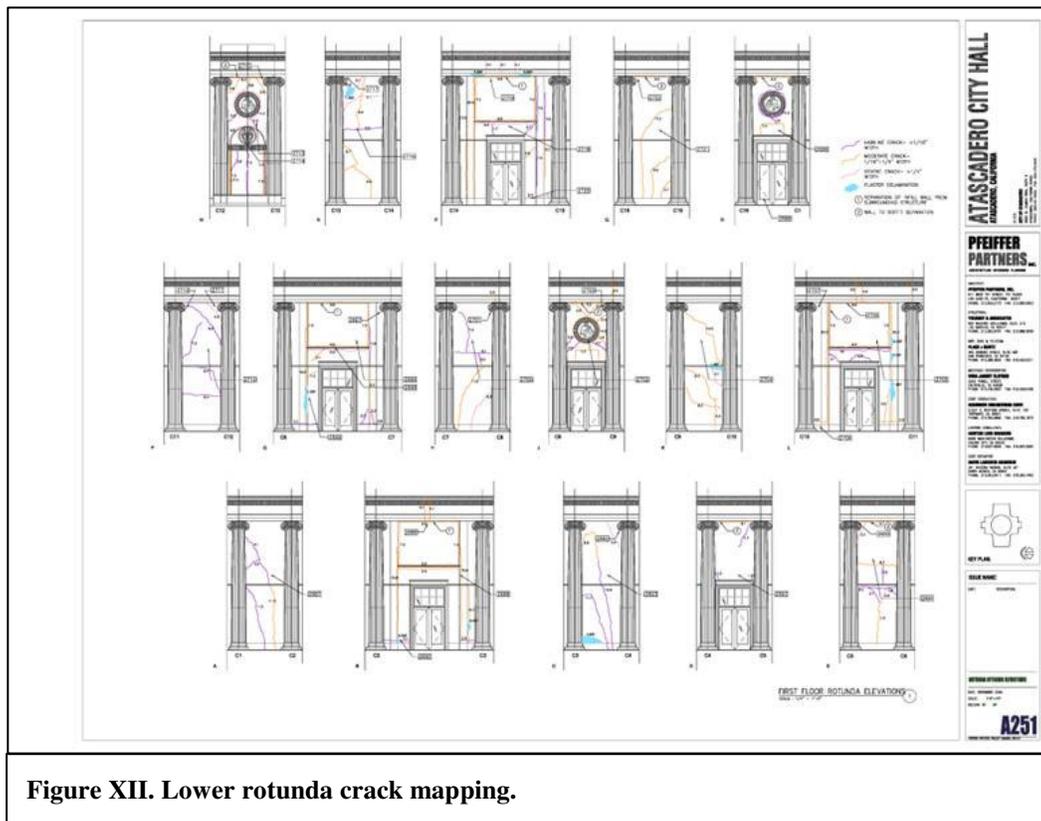
¹¹⁷ *Damage Assessment and Rehabilitation Plan*, Volume I, Pfeiffer Partners, April 4, 2005, pp. 44-48. (Attachment 7)

the logs, \$20,213 to patch and paint 5,775 SF of walls in the lower rotunda. However, only those walls with documented damage are eligible for painting. It is FEMA's determination, based on FEMA's calculation of the damaged wall areas represented in the City's Report, that the wall area to be repaired is 4,421 SF...¹¹⁸

The City's consultants have calculated the exact wall surface area in the lower rotunda to be 5,775 square feet. (This does not include door areas.) FEMA, however, has disapproved in the PW 1,354 square feet of "un-damaged area" to be painted.¹¹⁹

The City disagrees with FEMA's omission of 1,354 square feet of painting in the lower rotunda from the PW scope of work.

- In Volume III of the City's Damage Assessment, Sheet A251, the round room is broken down into 16 manageable segments of wall. (Figure XII)¹²⁰ Each segment of the wall has documented cracks, indicating that all 5,775 square feet of the round room should be eligible for painting in the repair category.



¹¹⁸ *Additional Information for Project Worksheet & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007, p. 5. (Attachment 23)

¹¹⁹ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007), p. 52. (Attachment 6)

¹²⁰ *Damage Assessment and Rehabilitation Plan*, Volume III, Pfeiffer Partners, April 4, 2005, sheet A251. (Attachment 9)

- FEMA regulations clearly state that funding will be provided to return a building to its pre-disaster condition.¹²¹ In the case of Atascadero City Hall, that condition included the fact that the wall in the lower rotunda was uniformly painted. The unpainted section of the wall would still not be consistent with the other freshly painted areas of the walls in the room, and the facility would not be returned to its pre-disaster condition.

The City's Position: The City requests that FEMA re-evaluate the scope of work so that the entire wall in the lower rotunda can be painted and the room restored to its pre-disaster condition.

5.8.2 Upper Rotunda Painting

Continuing the central core of the building up through the 4th level and above, is the upper rotunda. This octagonal room is encircled by the main wall and presents an inner ring of columns several feet from the wall. The dome stands a full forty-four feet high. Earthquake damage to the circular wall in this space varied from hairline cracking to plaster de-lamination depending on the area of the wall.¹²²

FEMA approved only a portion of this wall in the scope of work stating that...

"The City's original quantity, 3,700 SF, to "patch and paint existing walls" is related to earthquake (EQ) and non-EQ damage repairs. Therefore, based on Pfeiffer "Damage Matrix", FEMA divided the City's original quantity (3,700 SF) into the following categories:

- 1,743 for non-EQ damage repairs
- 1,958 for EQ repairs (cracked walls)"¹²³

During a verification process,

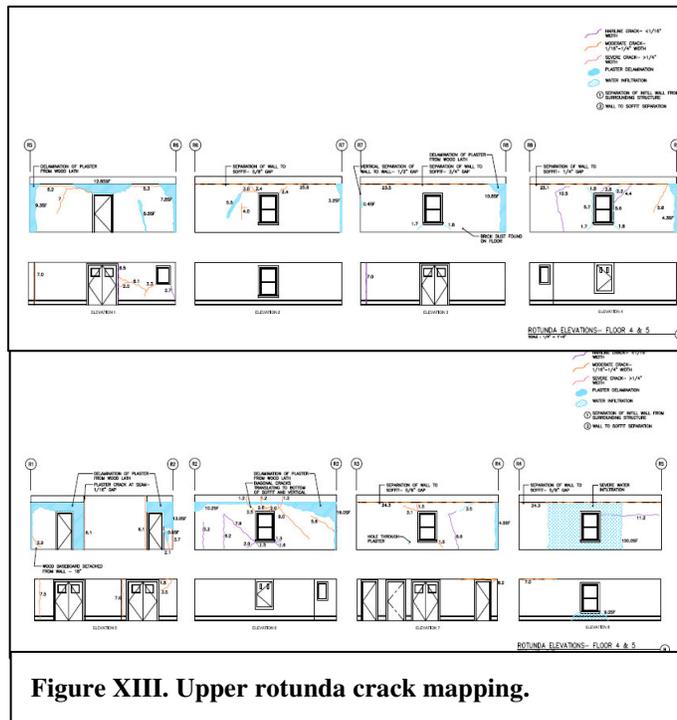


Figure XIII. Upper rotunda crack mapping.

¹²¹ Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, Section 206.226, p. 487. (Attachment 4)

¹²² Damage Assessment and Rehabilitation Plan, Volume I, Pfeiffer Partners, April 4, 2005, pp. 44-48. (Attachment 7)

¹²³ Eligibility Analysis of Repair Costs Worksheet, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007). p. 53. (Attachment 6)

the wall surface area in the upper rotunda was re-calculated by the City's consultants to be 5,788 square feet, not 3,700 square feet as originally calculated. (This measurement does not include door areas or rounded columns.) FEMA, however, has only approved of 1,958 square feet of wall area, thus effectively disapproving of 3,830 square feet of wall area.

The City disagrees with FEMA's omission of 3,830 square feet of painting in the upper rotunda from the PW scope of work.

- In Volume III of the City's Damage Assessment, Sheets A255 & A256, the room is broken down into 8 manageable segments of wall. (Figure XIII)¹²⁴ In almost every segment of the wall, there are varying level of documented cracks.
- FEMA regulations clearly state that funding will be provided to return a building to its pre-disaster condition. In the case of Atascadero City Hall, that condition included the fact that the wall in the upper rotunda was uniformly painted. The unpainted section of the wall would still not be consistent with the other freshly painted areas of the walls in the room, and the facility would not be returned to its pre-disaster condition.

The City's Position: The City requests that FEMA re-evaluate the scope of work so that the entire wall in the upper rotunda can be painted and the room restored to its pre-disaster condition.

5.8.3 Paint Balance of Building

In the City's Repair Plan, the City proposes patching and painting 92,947 square feet of existing walls.¹²⁵ In the detailed spread sheet e-mailed to the City as an attachment to the PW, FEMA breaks out the request into two separate lines and quantities.

FEMA approves funding for 52,696 square feet of patching and painting walls stating:

"FEMA has identified the "Patch and paint existing walls, balance of building" quantities required to repair the earthquake damaged walls. The quantities were derived from the City's "Damage Matrix." ... The calculation of FEMA's eligible

¹²⁴ *Damage Assessment and Rehabilitation Plan*, Volume III, Pfeiffer Partners, April 4, 2005, sheets A255-6. (Attachment 9)

¹²⁵ *Damage Assessment and Rehabilitation Plan*, Volume II, Pfeiffer Partners, April 4, 2005, Appendix H, p. 12. (Attachment 8)

*quantities is presented in the spreadsheet "Damage Matrix Verification" (The spreadsheet is in the backup section of this PW)."*¹²⁶

Although the City does not have access to the *Damage Matrix Verification Spreadsheet* mentioned above, it is assumed that FEMA is approving patching and painting only those walls that have cracks or visible damage.

FEMA disapproves funding for 40,251 square feet of patching and painting walls, stating:

*"FEMA disapproves the proposed "Patch and paint existing walls, balance of building." The reason is that the quantity of proposed scope is related to the entire building and is not specifically linked to the damage caused by the earthquake."*¹²⁷

The City disagrees with FEMA's omission of 40,251 square feet of painting in the rotunda from the PW scope of work. FEMA regulations clearly state that funding will be provided to return a building to its pre-disaster condition.¹²⁸ In the case of Atascadero City Hall, pre-disaster condition included the fact that all of the walls in a room were painted the same color. It is assumed that FEMA is providing funding only for walls that have cracks in them.

- The result of this approach is that there will now be at least one wall in almost every room in the building that does not match the remaining walls since the walls that will not get painted will have different levels of faded and dirty paint. Using the first floor as an example, the first floor has 23 rooms (excluding closets). 12 of those rooms have 3 or more walls that have cracks that will need to be repaired and the walls repainted. 20 of the 23 rooms have 2 or more walls that have cracks that will need to be repaired and the walls repainted.
- Contractors charge more to protect the non-cracked walls in place, than they do to just repaint the walls due to the increase in the amount of labor involved. Even if the City paid the contractors extra to protect the unpaintable walls in place, those unpainted walls would still not be consistent with the other freshly painted walls in the room, and the facility would not be returned to its pre-disaster condition.
- At FEMA's current level of funding, none of the aforementioned rooms will be completely repainted. Consequently, none of them will be returned to their pre-disaster condition.

¹²⁶ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007), p.51. (Attachment 6)

¹²⁷ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007), p.51. (Attachment 6)

¹²⁸ *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, Public Law 93-288, Section 206.226, p. 487. (Attachment 4)

The City's Position: The City requests that FEMA re-evaluate the current funding so all rooms that have any plaster cracking in the walls can be repainted in their entirety to restore them to their pre-disaster condition.

5.9 Damage to Roof Drains and Second Floor Lavatories

As a result of moving forward in the construction process and obtaining a more extensive evaluation of the mechanical, electrical and plumbing systems, the City has uncovered additional damage that was not presented to FEMA/OES in the *Damage Assessment & Rehabilitation Plan, April 4, 2005*. The *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems* prepared by Gayner Engineers, in June 2007, identifies the following damage which has not previously been reported to FEMA/OES.

Roof Drains- The Gayner Report identifies eight roof drains that were damaged on the 3rd Floor Roof.¹²⁹ It then goes on to propose that the City replace the damaged roof drains and add overflow drains with piping connection to existing drain line.¹³⁰ The replacement of these drains will require some patch and repair work to the existing roof in order to properly install the new drains.

Plumbing Fixtures- The Gayner report identifies that the lavatories in the Men's Restroom on the 2nd Floor were damaged by the earthquake. It then further recommends replacing "earthquake damaged bathroom plumbing fixtures in 2nd Floor Men's Room."¹³¹ The replacement of these lavatories will require some patch and repair work to the 2nd Floor Men's Restroom in order to properly install the lavatories.

The City's Position: The City requests that FEMA evaluate this newly identified damage and include funding in the scope of work in order to repair these damaged items.

5.10 Lighting

In the *Damage Assessment & Rehabilitation Plan, April 4, 2005*, the City requested funding to replace the lighting in City Hall with energy code compliant lighting. The reasoning was that most of the lighting would be coming down in order to complete the structural, mechanical and architectural repairs necessary to return the building to its pre-existing condition. Since, for most contractors, it is at least as cost

¹²⁹ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gayner Engineers, June 4, 2007, p. 5. (Attachment 27)

¹³⁰ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gayner Engineers, June 4, 2007, p. 15. (Attachment 27)

¹³¹ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gayner Engineers, June 4, 2007, pp. 5, 15. (Attachment 27)

effective. and sometimes moreso, to replace the lighting rather than remove, protect, store and re-install existing lighting, the City requested replacement.

FEMA indicated that this was not an eligible cost:

“...FEMA disapproves the proposed scopes of work to ‘Repair’, ‘Deferred Maintenance’ and ‘Code Upgrade’ of the ‘Electrical Lighting, Power and Communication’ Systems since these scopes of work are unrelated to the damage caused by the earthquake and not required by applicable code. The ‘Repair’ items are ineligible because of the lack of damage. A statement was made that page 370 of the Pfeiffer Rehabilitation Plan [Report] identifies minimal damage...”

FEMA will review the proposal to repair the City Hall’s electrical system if the City provides
(a) additional documentation of the earthquake damage,
(b) detailed quantification of the repair scope, and
(c) detailed cost estimate”¹³²

In June 2007, Gayner Engineers prepared an Engineering Assessment Report of the Mechanical/Electrical/Plumbing/Fire Protection Systems. In that report, along with the related Davis Langdon Pre-Design Cost Report Cost-Model dated January 29, 2008, the City addresses FEMA’s items a-c above.

- The Gayner report identifies the following earthquake related damage repair/replacement work:
 - Replace missing lens at twelve fixtures
 - Replace missing end plate at six fixtures
 - Replace missing face plate at six exit signs¹³³
- This adjusted scope of work will repair only the damaged lighting and does not address replacement or upgrade of any fixtures.

The City’s Position: The City requests that FEMA pay to replace the fixture elements listed, in order to restore the lighting to pre-disaster condition. In addition, the City requests that FEMA add language to the scope of work indicating that costs to remove, store and re-install existing lighting as necessary for structural, mechanical and architectural work is an eligible cost and that if the contractor can show that replacement of the existing light fixtures is more cost effective than the removal-storage-reinstallation process, that replacement will be an eligible cost.

¹³² *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007, p. 60. (Attachment 6)

¹³³ *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gayner Engineers, June 4, 2007, pp. 5. (Attachment 27)

5.11 Grounds/Sitescape

The grounds and exterior site of the historical City Hall have long been part of the historic fabric of this important landmark. Antique statues and planters, in addition to trees and other landscaping, are part of the very essence of the site's historic nature, and have become synonymous with the building's history to members of the community.

FEMA disallows restoration of the historic site to its pre-disaster condition, citing:

*"Landscape replacement is not an eligible cost. The eligible cost is to reseed."*¹³⁴

The City requests that FEMA include 5,000 square feet of landscape area in the scope of the work and disagrees with FEMA's finding to deny funding.

- Were it not for direct earthquake damage to the building, the site landscaping would be as picturesque as ever. The site has been sustaining damaged by, and since, the earthquake. Because safety of personnel and passers-by is paramount, the City fenced off the site to protect the public from continuously falling debris. The grounds have not been cared for since the time of the earthquake, due not only to the lack of utilities supplied to the building, but also to prevent putting employees in harm's way to spend the time necessary to care for the landscaping.
- The site will experience significantly more damage as the site is used as a staging area for construction. Heavy machinery, materials, tools, and workers will likely crush any remaining plant life, compact the soil, and destroy the irrigation system.
- Historical consultants remind the City that the landscaping is part of the historical nature of the landmark, and should carefully be restored as such.
- While funding for seeding is helpful, it will not restore the other aspects of the historic fabric of the setting of this landmark to its pre-disaster condition.
- FEMA routinely pays for repair of



Figure XIV.
City Hall
sitescape
before and
after the San
Simeon
earthquake.

¹³⁴ *Eligibility Analysis of Repair Costs Worksheet*, FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007, p. 63. (Attachment 6)

elements that are affected by the repair of disaster related damage, but are not caused by the disaster. They pay for repair of damage to roads due to heavy use caused by large trucks that are transporting materials to and from damaged facilities. They pay for repair of damage caused by removal of materials to verify damage, if the damage is eligible. They pay for replacement of concrete, asphalt and soil that is undamaged, but must be removed to repair a buried sewer line or other types of infrastructure.

The City's Position: The City requests that FEMA support the restoration of the historical fabric of the landmark by funding the cost to return the landscaping to its pre-disaster condition.

5.12 City Costs Incurred to Date

Although reconstruction of City Hall has not yet begun, the City has incurred some costs related to pre-construction securing of the building. In January 2006, the City drafted letters to request reimbursement for fence rental, upper rotunda netting and brick storage costs.¹³⁵ These letters were never sent, because the City was ultimately assured that these costs would be included in the City Hall PW.

FEMA has not included these items in the PW. In addition, FEMA required the City to conduct mold testing, to prove the City's assertion that mold has begun to colonize in City Hall.

Fence Rental

- Directly following the San Simeon earthquake, safety fencing was rented and installed around City Hall, for public protection.
- The rental of the safety fencing was included in the PW for City Hall Emergency Protective Measures, but expenditures for the fencing were incurred past the allowable 18-month timeframe for that type of project, until January 23, 2005.
- In January 2005, a more permanent type of fencing was installed, according to City Council direction.
- The City is not seeking reimbursement for the new fencing, but requests reimbursement for the additional fence rental expenditures.

¹³⁵ Letter to Charles Rabamad Requesting Status of City Incurred Costs, City of Atascadero, January 18, 2006.

Netting around Upper Rotunda

- In April 2005, as bricks continued to fall from the City Hall rotunda, it was determined that a chain link netting would need to be installed to prevent bricks from causing further damage to the exterior of City Hall as they fell, and to protect any passersby from being injured.
- The City requests reimbursement for the cost of the chain link netting as well as the cost of the contractor to install the netting around the rotunda.

Brick Storage Costs

- The earthquake caused much of the exterior brick to loosen and fall off City Hall.
- As this is an historic structure, the City is required to reuse the loose bricks when City Hall is reconstructed. This necessitated rental of storage bins to store the bricks until reconstruction occurs.
- The rental of storage bins was included in the PW for City Hall Emergency Protective Measures, but expenditures for the bin rental were incurred past the allowable 18-month timeframe for that type of project.
- At a cost of \$7,080.00 per year for rental of the storage bins, it occurred to the City that purchasing the storage bins would be more cost effective, because the bricks will need to be stored for an extended period of time, until they are needed during construction.
- The City hired temporary workers to transfer the bricks from the rented bins to new, more permanent storage bins.
- The City requests reimbursement for the remainder of storage bin rental expenditures, the purchase of replacement storage bins and the cost for temporary workers to move the bricks.

Mold Testing

- In discussions with the City in November 2006, FEMA indicated that the scope of work for mold abatement would be eligible to be included in the City Hall PW, if the City could prove the existence of mold in the building.
- In May 2007, the City hired a consultant to evaluate and report on the existence of mold in City Hall.¹³⁶

¹³⁶ *Level I Assessment, IESO Standard 2110, Evaluation of Mold Colonization on Surfaces*, Environmental Mold Sampling LLC, May 25, 2007. (Attachment 26).

- The City requests reimbursement for the cost to hire a mold inspector to report on the existence of mold in City Hall.

The City's position: Each of these City costs incurred to date for City Hall are documented in Attachment 35, Listing and Copies of Invoices for City Incurred Costs, prepared by City of Atascadero.¹³⁷ The costs for fence rental and upper rotunda netting serve to protect the public and City Hall. The cost for brick storage is required to protect the historic fabric of City Hall. Mold testing was required by FEMA in order to include the mold abatement scope of work. The City requests that FEMA fund these costs in the City Hall PW.

6.0 Appeal Request

The following summarizes funding for the appeal request.

6.1 Architectural and Engineering (A & E) Services

Due to the complexity of the restoration project, the A & E services for the repair of City Hall will consist of the following technical and specialized services:

- Civil/ Structural Engineering
- Architectural Design
- As- Built drawing/ Surveying
- Geotechnical / Soil Engineering, Testing
- Mechanical / Electrical Engineering
- Environmental / Historical Studies
- Permit fees
- Project Engineering/ Management
- Construction Management

The version 1 to the PW only included \$114,372 for additional A & E services which brought the total approved amount for the project to \$356,753. This is approximately 2% of the amount approved by FEMA for the repairs and hazard mitigation. A & E services calculated at 2% is far below the estimates that are customarily used by the industry and much lower than FEMA's own *Cost Curve A* as provided by regulation. The A & E services approved by FEMA are either a gross oversight on the part of FEMA staff or simply an unreasonably low amount for the magnitude and scope of the project.

In the future, the City will submit a request for a PW version based on the actual

¹³⁷ *Listing and Copies of Invoices for City Incurred Costs*, City of Atascadero, January 31, 2008. (Attachment 35)

A & E expenditures to OES and FEMA. However, for the purpose of this appeal, the City is requesting that additional funding for the A & E services be approved and included in the PW version. The total A & E services should be estimated at 19% of the repair and hazard mitigation cost of the project (14% for A & E and special services/studies and 5% for project testing/construction management).

6.2 Cost Summary

The detailed cost of each of the appeal issues discussed in Section 5 above are shown in a *Table of Appealed Items, Scope of Work and Repair Cost* (Summary C).¹³⁸ To provide consistency over time, the costs shown are from the original *Damage Assessment and Repair Plan* that the City submitted to OES and FEMA in April of 2005 and are not current estimates.

Request Summary	A & E Services	Repair	Hazard Mitigation*	Total
APPROVED PROJECT WORKSHEET	\$ 356,753	\$ 4,628,602	\$10,830,863	\$15,816,218
APPEAL ITEMS				
1st through 3rd Floors		777,804	777,804)	-
4th and 5th Floors		402,137	(402,137)	-
Repair of Settlement		7,509,567	(7,509,567)	-
Repairing Façade after re-leveling work		241,575		241,575
Floor cracks & spalling		87,245		87,245
Mold & Pigeon Guano Abatement		1,308,917		1,308,917
HVAC System		3,043,908		3,043,908
Re-Start Systems		902,585		902,585
Code Requirements		918,612		918,612
Lower Rotunda Paint Quantities		7,570		7,570
Upper Rotunda Paint Quantities		21,414		21,414
Re-Paint All Walls in Room		160,750		160,750
Damage to Roof Drains & 2nd Floor Lavatory		48,563		48,563
Lighting		9,585		9,585
Grounds / Sitescape		71,886		71,886
City Costs Incurred to Date		36,417		36,417
Architecture, Engineering, Special Services & Studies	2,660,628			2,660,628
Construction Management, Testing & Inspection		899,613	(416,572)	483,041
PROJECT WORKSHEET REQUEST	\$3,017,381	\$21,076,750	\$ 1,724,783	\$25,818,914

* We are requesting these items that FEMA has funded as *Hazard Mitigation* be instead funded as *Repair*.

¹³⁸ *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, City of Atascadero, January 31, 2008. (Summary C)

Mr. Charles Rabamad
First Level Appeal. Atascadero City Hall
February 1, 2008
Page 44 of 48

The Historic City Hall building has not been visited by FEMA staff for several years. It has been such a long time since FEMA officials have had the opportunity to view the damage first hand, and because there have been additional damage discoveries, the City respectfully requests your office to coordinate a site visit by FEMA prior to the final determination on the appeal. The City further requests that the site visit include the executive level staff from OES and FEMA Region IX, due to the reasons pointed out in the introduction to this appeal.

Should you have any questions regarding this appeal, please contact my office at (805) 470-3428.

Sincerely,

Rachelle Rickard
Director of Administrative Services

cc: U.S. Senator Barbara Boxer
112 Hart Senate Office Building
Washington, DC 20510

U.S. Congressman Kevin McCarthy
5805 Capistrano Avenue, Suite C
Atascadero, CA 93422

Kermani Consulting Group
49 Thunderbird Drive
Novato, CA 94949

Summaries and Attachments

The following are documents referenced in this appeal.

Summaries

To thoroughly understand the issues surrounding this appeal, please make reference to the following documents which provide excellent summaries of key technical information.

- Summary A *Earthquake Induced Settlement Repairs- Appeal #1*, prepared by Nabih Youssef & Associates, dated January 3, 2008. This is new information not previously submitted to OES or FEMA.
- Summary B *Appeal #1 -URM Wall Repairs*, prepared by Nabih Youssef & Associates, dated January 17, 2008. This is new information not previously submitted to OES or FEMA.
- Summary C *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation Cost*, prepared by City of Atascadero, dated January 31, 2008.

Attachments

The following documents are provided as backup reference materials.

- Attachment 1 *Notice of Obligation - State Supplement #20*, prepared by OES, dated December 5, 2007
- Attachment 2 *Project Application Summary*, prepared by FEMA, dated October 22, 2007. The summary was attached to the "Notice of Obligation."
- Attachment 3 *Project Worksheet 229-1*, prepared by FEMA, dated October 25, 2007
- Attachment 4 *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, Public Law 93-288, Section 206.226.
- 9527.3 Interim Policy on Construction Codes and Standards for the San Simeon Earthquake*, FEMA.
- Hazard Mitigation Funding Under Section 406 (Stafford Act)*, FEMA
- DAP9526.1 FEMA Disaster Assistance Policy*, FEMA.

- Attachment 5 *Eligibility Analysis of A & E Services Worksheet*, prepared by FEMA, undated (received by City as an attachment to an e-mail on August 9, 2006).
- Attachment 6 *Eligibility Analysis of Repair Costs Worksheet* prepared by FEMA, undated (received by City as an attachment to an e-mail on November 26, 2007).
- Attachment 7 *Damage Assessment and Rehabilitation Plan*, Volume I, prepared by Pfeiffer Partners, dated April 4, 2005
- Attachment 8 *Damage Assessment and Rehabilitation Plan*, Volume II, prepared by Pfeiffer Partners, dated April 4, 2005
- Attachment 9 (Drawings) *Damage Assessment and Rehabilitation Plan*, Volume III, prepared by Pfeiffer Partners, dated April 4, 2005
- Attachment 10 *Letter to Charles Rabamad*, prepared by City of Atascadero, dated January 10, 2006.
Earthquake Induced Settlement Damage, prepared by Nabih Youssef & Associates, dated December 2005.
Evaluation of Liquefaction-Induced Damage to Structure, prepared by Earth Systems Pacific, dated November 9, 2005.
- Attachment 11 *City's Response to Draft PW*, prepared by City of Atascadero, dated December 12, 2006
- Attachment 12 *E-Mail and attached project worksheet for A & E Services*, prepared by FEMA, dated August 24, 2004
- Attachment 13 *Request for PW Version – A & E Services*, prepared by OES, dated January 24, 2005.
- Attachment 14 *Notice of Obligation- State Supplement #13*, prepared by OES, dated February 2, 2005.
- Attachment 15 *City Hall Repair Review*, prepared by FEMA. The review was sent to the City by FEMA via email dated August 24, 2005.

- Attachment 16 *Supplemental Information Structural Damage Assessment & Rehabilitation Plan*, prepared by Nabih Youssef & Associates, dated September 14, 2005
- Attachment 17 *Hazard Mitigation Benefit – Cost Analysis Report*, prepared by OES, dated December 1, 2005.
- Attachment 18 *Letter to Charles Rabamad Requesting Status of City Incurred Costs*, prepared by City of Atascadero, dated January 18, 2006.
- Attachment 19 *Request for Status of PW Version – A & E Costs & Attached Invoices*, prepared by City of Atascadero, dated February 7, 2006.
- Attachment 20 *Support Narrative and Worksheets for Draft PW*, prepared by FEMA, forwarded to City via e-mail August 9, 2006.
- Attachment 21 *Earthquake Settlement Repair- Power Point Slides*, prepared by Nabih Youssef & Associate, dated November 2006.
- Attachment 22 *Submittal Letter – Cost Study for URM Wall Repairs*, City of Atascadero, sent to Charles Rabamad, OES, dated February 9, 2007.

URM Wall Repairs Cost Study, prepared by Davis Langdon, dated February 2, 2007.
- Attachment 23 *Additional Information for Project Worksheet & Cost Study for URM Wall Repairs*, prepared by FEMA, dated April 4, 2007.
- Attachment 24 *Intent to File an Appeal of City Hall Official PW*, prepared by City of Atascadero, dated June 7, 2007.
- Attachment 25 *E-mail – SHPO Concurrence for Atascadero*, sent by Stephanie Kingsnorth of Pfeiffer Partners, dated September 20, 2007.

Section 106 Consultation for Repair, Rehabilitation and Structural of Seismic Retrofit of Atascadero City Hall, prepared by Office of Historic Preservation, dated August 14, 2007.
- Attachment 26 *Evaluation of Mold Colonization on Surfaces*, prepared by Environmental Mold Sampling, LLC., dated May 25, 2007.
- Attachment 27 *Engineering Assessment Report Mechanical/Electrical/Plumbing/and Fire Protection Systems*, prepared by Gayner Engineers, dated June 4, 2007.

- Attachment 28 *Results of Additional Subsurface Exploration*, prepared by Earth Systems Pacific, dated May 17, 2007, revised July 27, 2007.
- Attachment 29 *Results of Masonry Wall Coring*, prepared by Earth Systems Pacific, dated July 18, 2007.
- Attachment 30 *E-Mail – Meeting Follow-up*, sent by OES (Michael Sabbaghian), sent to FEMA (Don Smith), dated December 18, 2006.
- E-Mail- CBC Chapter 34*, sent by OES (Michael Sabbaghian), sent to FEMA (Don Smith), dated February 27, 2007.
- Attachment 31 *Memorandum- Geotechnical Comments, review of Geotechnical Report for Atascadero City Hall, California*, URS, dated May 9, 2006.
- Attachment 32 *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California*, Southern California Earthquake Center- University of Southern California, dated March 1999.
- Attachment 33 *Calculation of HVAC Replacement, based on Davis Langdon Pre-Design Report Cost Model*, prepared by City of Atascadero, dated January 29, 2008.
- Attachment 34 *California Building Code, Chapter 34, 2001*
- Attachment 35 *Listing and Copies of Invoices for City Incurred Costs*, prepared by City of Atascadero.