

February 9, 2009

Mr. Peter Crase, Public Assistance Officer
California Emergency Management Agency
Public Assistance Section
3650 Schriever Avenue
Mather, CA 95655

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

Dear Mr. Crase:

This letter is the City of Atascadero's Second Appeal of FEMA's decision regarding funding for repairs to its City Hall due to damages resulting from the San Simeon Earthquake of December 2003. FEMA provided its final project worksheet to the City on October 22, 2007. The City filed its first appeal of the decision on February 1, 2008. FEMA provided to the State of California its response to that appeal on November 10, 2008. FEMA's response was transmitted by the State to the City on December 12, 2008.

In its First Appeal Response, FEMA found certain claims to be valid and approved the revised eligible funding amounts. However, the majority of claims were rejected and are hereby appealed by the City. An analysis of the City's claims follows. The City has included new documentation for its positions.

The City respectfully requests that FEMA, in the spirit of the Stafford Act section 423, conduct a fair and impartial consideration of this appeal, making a sincere effort to review this Second Appeal with fresh eyes and an open mind, and not to assume the opinions of the earlier experts were correct, but to form their own opinions, fairly reviewing the expert opinions provided by the City as well as using their own experts. The City has been provided information, including verbal confirmation and emails from FEMA Project Officers and others, confirming that the same consultant technical expert (Dr. Robert Hanson) who provided advice on the City's Project Worksheet has also provided FEMA's technical advice on the City's First Appeal. This was not a fair and impartial consideration of the City's First Appeal. The City is addressing the validity of its First Appeal in a separate process from this Second Appeal. This Second Appeal is

filed at this time in order to comply with FEMA's regulatory deadlines for appeals, however, the City reserves the right to call into question FEMA's First Appeal Response as a separate matter. The City notes that it is unfair and inappropriate for the City to have to write a second appeal in response to a first appeal decision that is potentially null and void. The City should have the opportunity to complete a new first appeal, and when that is complete, and if necessary, the City should have the opportunity to submit an effective second appeal.

Executive Summary:

The purpose of this Second Appeal is to address the erroneous rulings rendered by FEMA during the assessment of damages, Project Worksheet (PW) documentation and 1st appeal on eligibility of public assistance. There are 14 specific issues that the City is appealing in order to restore the Atascadero City Hall to its pre-disaster (San Simeon Earthquake of December 2003) condition and function. The City is requesting in bullet summary:

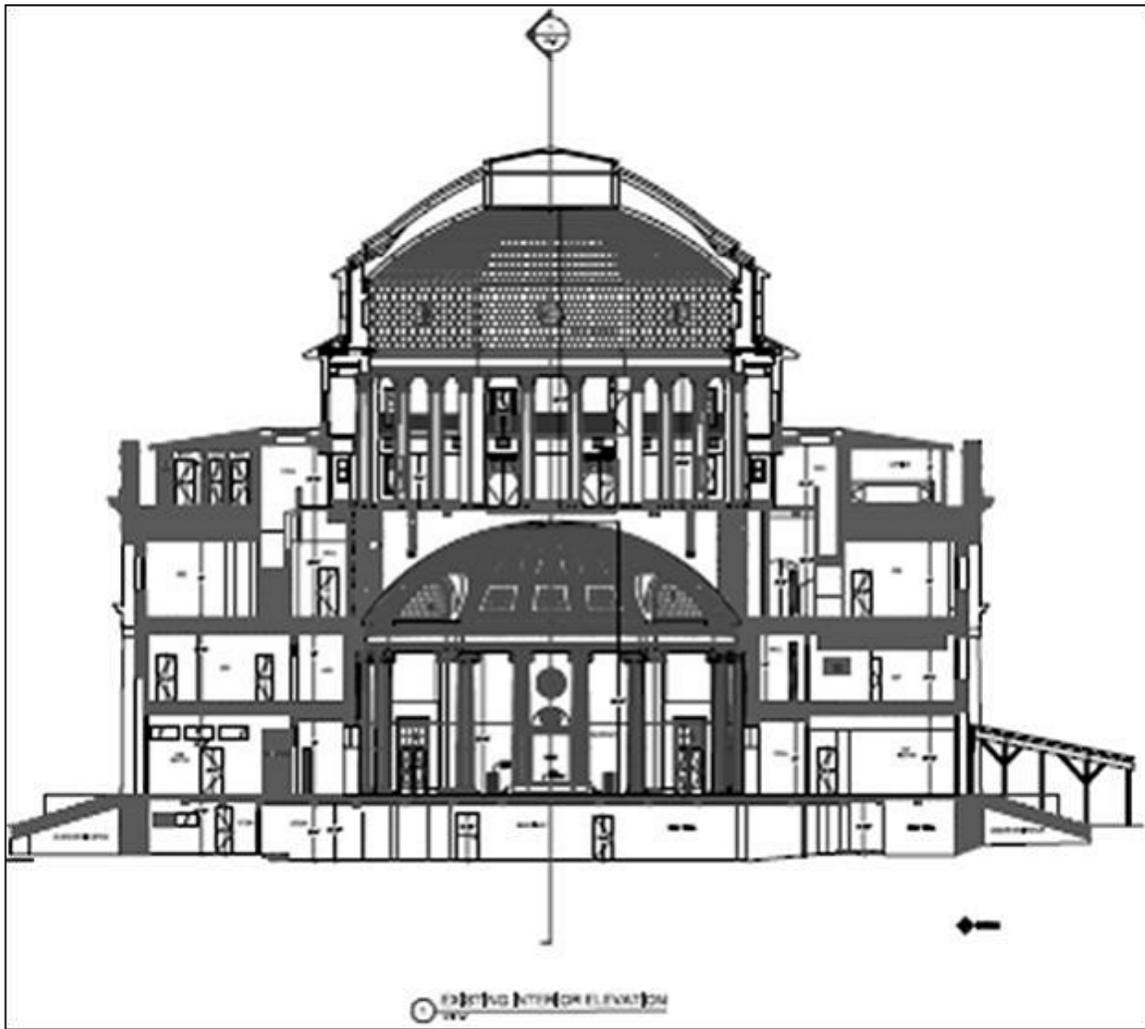
- That FEMA acknowledge that the City's building code satisfies FEMA's five criteria regarding codes and standards and therefore is the applicable code for repair of City Hall. As such, work to repair earthquake damage as required by the City's code is eligible for reimbursement for actual cost pursuant to the Stafford Act, FEMA's policies, and implementing regulations.
- That FEMA add language to the PW, making eligible the repair and replacement of damaged URM walls with concrete and carbon fiber overlays.
- That FEMA indicate re-leveling of the building is an eligible disaster related repair cost, reimbursable at actual cost.
- That FEMA add language to the PW indicating that repair of the façade due to re-leveling is eligible.
- That FEMA include language in the PW stating that work to repair the floor cracks and spalls on the 2nd and 3rd floor levels is an eligible repair.
- That FEMA include language in the PW scope of work for cleanup (abatement and testing) of pigeon guano, mold, and mildew at actual costs.
- The FEMA include language in the PW for replacement of the entire HVAC system or its identified damaged components.
- That FEMA add language to the PW clarifying that reasonable eligible costs to restart the mechanical, electrical, and plumbing systems (including HVAC) are eligible.
- That FEMA add language to the PW to indicate that code required items are eligible as part of the scope of work.
- That FEMA add language to the PW stating that all rooms that have any plaster cracking in the walls may be repainted in their entirety, based upon the City providing documentation that such painting is cost-effective.
- That FEMA acknowledge on the PW scope of work that reasonable costs for storage and repair, or replacement, of damaged lighting is eligible.
- The FEMA acknowledge that re-seeding, as reasonable and appropriate, be allowed as an eligible cost.

- That FEMA revise the PW to include all costs for fence rental, rotunda netting, mold testing, construction walkway and bin storage of bricks as an eligible cost.
- The City requests that FEMA acknowledge in the PW that A & E be estimated as a variable percentage of the costs of work.

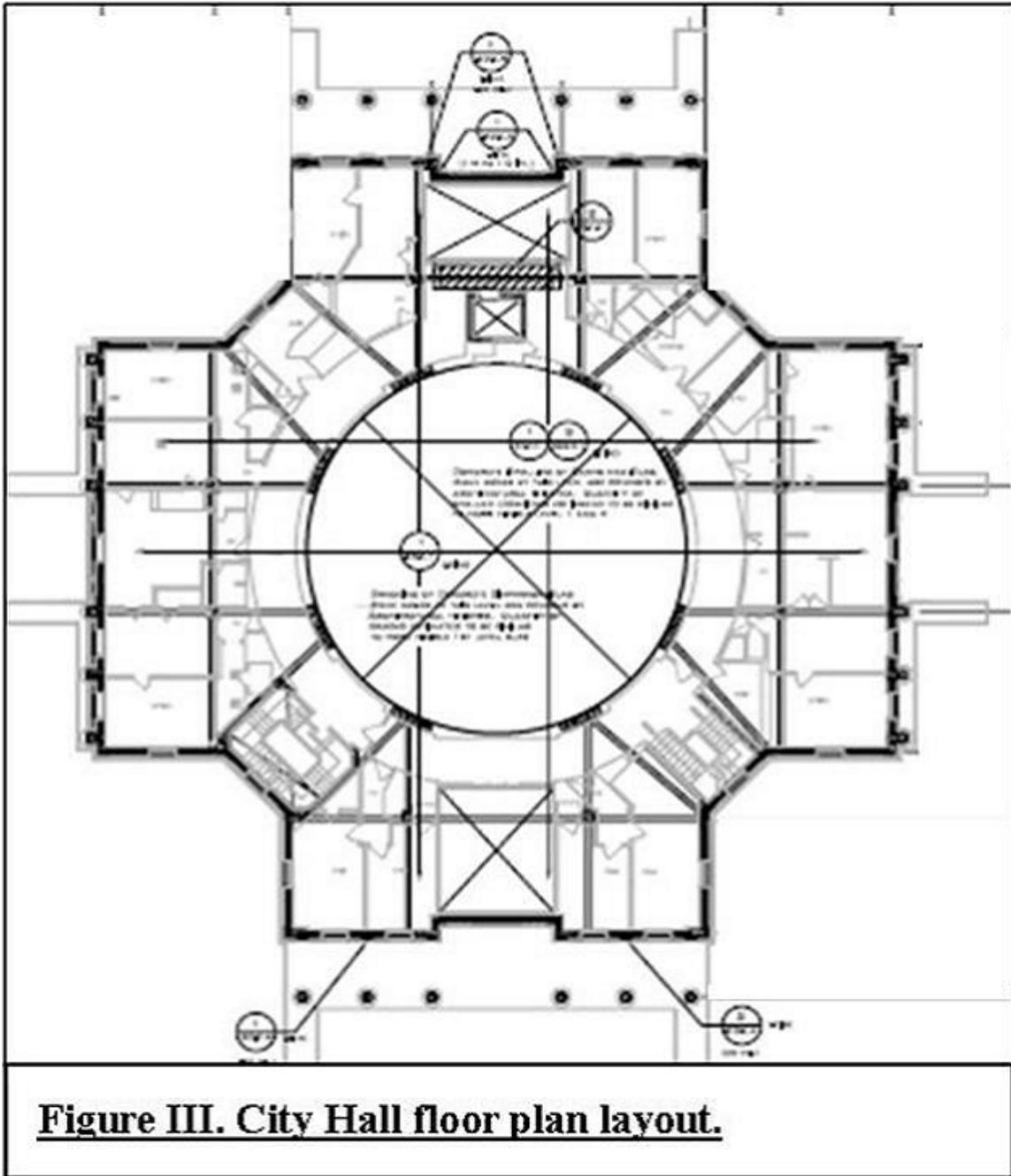
The City is requesting a favorable response on all of the issues addressed in this appeal.

Background:

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. The building was constructed between 1914 and 1918 using local resources including bricks made from red clay. The Structure was listed on the National Register of Historic Places (*77000336) in 1977 and was made a California Registered Historic Landmark (*958) in 1984.



Designed as a Greek Cross in plan, the 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. 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.



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. (See *Damage Assessment and Rehabilitation Plan*, Volume 1, Pfeiffer Partners, April 4, 2005, Section 5.3, page 23, Attachment 7 to the City of Atascadero's First Appeal.)¹ Damages included:

- Significant settlement caused by sub-surface soil liquefaction due to the earthquake.²
- At the 1st through 3rd floor levels, the URM infill walls in both directions have very large cracks all the way through three wythes of brick.³
- At the 4th and 5th floor levels, the URM vertical base 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.⁴
- 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.⁵
- The concrete floors spalled, cracked, and deformed in localized areas.⁶
- 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 unsafe for workers to drain and properly secure the HVAC system in a normal manner.⁷

¹ When we refer to documents that are already contained in the City's First Appeal, The City has chosen to make reference to those documents where they are attached to the First Appeal, rather than create a duplicate set of documents for this Second Appeal. All new documentation will be presented as an attachment to this appeal.

² *Damage Assessment and Rehabilitation Plan*, Volume 1, Pfeiffer Partners, April 4, 2005, Section 4.2, page 13, Attachment 7 to the City of Atascadero's First Appeal.

³ *Damage Assessment and Rehabilitation Plan*, Volume 1, Pfeiffer Partners, April 4, 2005, Section 4.3, page 15-16, Attachment 7 to the City of Atascadero's First Appeal.

⁴ *URM Wall Repairs*, Nabih Youssef & Associates, January 17, 2008, page 10, Summary B to the City's First Appeal.

⁵ *Damage Assessment and Rehabilitation Plan*, Volume 1, Pfeiffer Partners, April 4, 2005, Section 4.8, page 17, Attachment 7 to the City of Atascadero's First Appeal.

⁶ *Damage Assessment and Rehabilitation Plan*, Volume 1, Pfeiffer Partners, April 4, 2005, Section 4.2-4.3, page 13-14, Attachment 7 to the City of Atascadero's First Appeal.

⁷ *City's Response to Draft PW*, City of Atascadero, December 12, 2006, Section 2, Attachment 11 to the City's First Appeal.

- 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 of rainwater over time has created a significant development of mold wherever water has intruded into the building.⁸

The City hereby incorporates by reference from its *City of Atascadero, First Appeal*, dated February 1, 2008, pages 3-14, its complete 1.0 Description of the Building, 2.0 Earthquake Damage, 3.0 Chronology of Recovery Events, and 4.0 Repair Plan sections.

The Reconstruction Plan:

Major elements of repairs to be completed:

- Deconstruction of upper rotunda and abatement of pigeon guano, mold and mildew prior to construction (4th floor up)
- Correct the foundation that settled
- Rebuild upper rotunda
- Restore the strength of damaged URM walls using structural overlays (4th & 5th floors)
- Restore strength of damaged URM walls with interior application of shotcrete (1st through 3rd floors)
- Replace/repair the HVAC system
- Complete finishes, lighting, and site work
- Repair building system to meet code required life safety requirements

Construction Sequence:

- Construction begins with removal of interior finishes on floors, walls and ceilings as necessary to make repairs at all floor levels and place scaffold. At the same time, the removal of guano deposited by pigeons, mold and mildew to make the work site safe will take place.
- 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 repaired at a level 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.
- The heating, ventilation, and air conditioning (HVAC), and electrical and plumbing systems are removed as necessary.

⁸ *City's Response to Draft PW*, City of Atascadero, December 12, 2006, Section 6, Attachment 11 to the City's First Appeal.

- At floor levels 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 floor levels 4 and 5, repair surface of damaged URM walls and apply a carbon fiber overlay set in an epoxy matrix to the walls. Anchor overlay to the walls and floors below.
- At the sixth (6) level, reconstruct the collapsed exterior masonry walls and apply the carbon fiber overlay and anchor 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.
- Epoxy inject earthquake-related cracks in concrete floors and re-point and clean exterior walls.
- Replace/repair the HVAC, electrical and plumbing systems, reconstruct interior partitions, reconstruct/restore interior finishes, lighting, and sitescaping.

First Appeal:

In its First Appeal requesting repairs to its City Hall, the City of Atascadero appealed the following issues:

- Applicable Building Code
- Wall Repairs
- Building Settlement
- Repair of the Façade Due to Re-Leveling
- Floor Cracks and Spalls
- Mold and Pigeon Guano Abatement
- Heating, Ventilation, and Air Conditioning System
- Re-Start of Mechanical, Electrical and Plumbing System
- Code Requirements
- Painting
- Damage to Roof Drains and Second Floor Lavatories
- Lighting
- Grounds/Sitescape
- City Costs Incurred to Date
- Architectural and Engineering (A & E) Services

FEMA determined, in its First Appeal Response, that the City was eligible for additional repair funding totaling \$166,738 for wall repairs, HVAC, MEP, painting, and roof drains. \$5,372 that was previously approved for mitigation was re-characterized as repair due to the level of damage. Re-categorization and additional funding for other work was denied.

Summary of Repair Costs:

The City requests FEMA revise the City Hall project worksheet (PW) to include changes to the scope of work as well as the estimated repair costs. Estimated repair costs from the project worksheet, the First Appeal and response, and this Second Appeal are summarized in the table below. Detailed funding requests are provided in Attachment A: *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation.*

Request Summary	A & E Services	Repair	Hazard Mitigation	Total
Approved PW	\$356,753	\$4,628,602	\$10,830,863	\$15,816,218
City’s First Appeal Request	\$3,017,381	\$21,076,749	\$1,724,783	\$25,818,914
FEMA’s First Appeal Response*	\$356,753	\$4,800,712 (+\$172,110*)	\$10,825,491 (-\$5,372*)	\$15,982,956 (+\$166,738*)
City’s Second Appeal Request**	\$4,463,453 (+\$4,106,700)	\$21,199,446 (+\$16,398,734)	\$1,724,523 (-\$9,100,968)	\$27,388,322 (+\$11,404,466)

*Approved in FEMA response to First Appeal: \$166,738 in additional repair funding, \$5372 in hazard mitigation re-characterized as repair.

**Total project funding request in bold. Additional funding requested above that which has already been approved by FEMA is in parentheses.

The Appeal Issues:

5.1 Applicable Building Code

In its First Appeal, the City of Atascadero requested that FEMA acknowledge that 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.

In its First Appeal Response on the Atascadero City Hall, FEMA agrees that the 2001 California Building Code and Title 8 Building Regulations of the Atascadero Municipal Code apply to the repair of City Hall, but not that they require upgrades. (Note that all references to the CBC and CHBC throughout this document are to the 2001 versions of the codes in place at the time of the event.)

FEMA and the City agree that the 2001 California Building Code and Title 8 of the Building Regulations of the Atascadero Municipal Code are the prevailing applicable building codes for the repair of City Hall. The City disagrees with FEMA upon what the codes require.

The CBC is applicable to the repair of all occupancies within the state. When the State of California passed the California Building Code (CBC), the State made this code automatically applicable throughout the State within 180 days after passage, allowing communities to adopt more stringent standards if they chose. The California Health And Safety Code, Section 17958, provides:

“... If any city or county does not amend, add, or repeal ordinances or regulations to impose those requirements or make changes or modifications in those requirements upon express findings, the provisions published in the California Building Standards Code [which contains the California Building Code (CBC)] or the other regulations promulgated pursuant to Section 17922 [building standards and rules] shall be applicable to it and shall become effective 180 days after publication by the California Building Standards Commission.”

The CBC itself states:

CBC Section 101.3 – “The provisions of this code shall apply to the construction, alteration, moving, demolition, repair, maintenance, and use of any building or structure within this jurisdiction [The State of California].”

FEMA has acknowledged the CBC as the prevailing building code for all political subdivisions in the State. “FEMA agree[s] that the California Building Code is the Building Code applicable to the repair of the facility.” (*City of Richmond, Ford Assembly Building, FEMA Second Appeal Response*, p. 16.)

FEMA agreed in its Atascadero City Hall First Appeal Response that the CBC is applicable to the City Hall repairs but stated that it does not require upgrades, only that repairs must be done in a code compliant manner using code compliant materials. FEMA did not explain clearly in its Response why it believes the CBC does not require upgrades. However, FEMA referred the City to two FEMA appeal responses that it feels explain the issue. After reading these appeals, it appears FEMA believes that the CBC does not require upgrades because FEMA believes that the CBC does not contain “triggers” as defined in FEMA policy. FEMA explains in these two referenced appeals that the CBC is applicable but that it contains no triggers so it doesn’t require upgrades, only repairs that conform to new construction standards.

In *City of Paso de Robles, Carnegie Library, First Appeal Response*, p.8, FEMA states that the five criteria do not apply to the CBC because the CBC does not contain an upgrade trigger.

“Only if a code has a trigger that mandates a change to the pre-disaster construction or design of a facility – e.g. and upgrade, such as an increase in structural capacity – is an analysis of the code with respect to the five criteria relevant. FEMA goes on to say that “the CBC permits repairs, alterations and additions to be made to any building without requiring that the entire building be brought into full compliance with the code, so long as the repair itself conforms to that required for a new building. The code-compliant repair work need only include that which is necessary to bring the damaged element into conformance with new building standards.”

In the *City of Richmond, Ford Assembly Building, FEMA Second Appeal Response*, FEMA states the CBC does not contain a “trigger” that requires upgrades:

“The CBC is the “prevailing code” code applicable to the structural repair of the facility. The CBC itself contains no earthquake damage or repair triggers applicable to the Facility. The CBC requires only that repair work itself be carried out in a code-compliant manner. It is FEMA’s position the CBC, therefore, requires that damaged structural elements (such as the columns) be repaired using CBC-approved materials and “present day” construction methods that restore the pre-disaster capacity and stiffness of the damaged elements to the greatest extent practicable. Because the CBC, the current applicable code, is silent with respect to the nature and extent of upgrading work required as a result of earthquake-related damage or repairs, the eligible scope of work for the Facility may appropriately be determined by FEMA to include only work which is required to repair disaster damage in a code-compliant manner based on engineering judgment that such would remove the specific life safety risks caused by the earthquake (rather than the deficiencies which existed before).”

FEMA issued Interim Policy on Construction Codes and Standards for the San Simeon Earthquake, Recovery Division Policy Number 9527.3 on June 25, 2004 (Codes and Standards Policy). This policy dictates that code provisions that require upgrades must comply with the five criteria set forth in this policy in order to be eligible for FEMA funding. Although FEMA states that it believes the CBC does not require upgrades, it does not appear that an analysis has been conducted of whether the CBC meets FEMA’s “Five Criteria” listed in the policy. 44 CFR § 206.226(d) provides that, to the extent a code or standard requires changes to the pre-disaster construction of a facility when it is being repaired or restored, those changes will only be eligible for FEMA funding if the code meets the following five criteria:

1. Apply to the type of repair or restoration required (standards may be different for new construction and repair work);
2. Be appropriate to the pre-disaster use of the facility;
3. Be found reasonable, in writing and formally adopted and implemented by the state or local government on or before the disaster declaration date or be a legal federal requirement applicable to the type of restoration;
4. Apply uniformly to all similar types of facilities within the jurisdiction of owner of the facility; and
5. For any standard in effect at the time of a disaster, it must have been enforced during the time it was in effect.

Upon analysis, the CBC meets the five criteria in FEMA's policy.

- 1. Apply to the type of repair or restoration required (standards may be different for new construction and repair work)*

California has adopted the CBC as the prevailing code for both repairs to existing construction as well as for new construction. FEMA acknowledges in its First Appeal Response that the CBC applies to the repairs to be performed on the Atascadero City Hall.

- 2. Be appropriate to the pre-disaster use of the facility*

Eligible work to repair the building to pre-disaster condition will be based on the facility's pre-disaster design or actual use at the time of the disaster. CBC requirements are appropriate to the pre-disaster use of the facility. The facility was in use, and will continue to be in use, as the Atascadero City Hall. The CBC is applicable to repairs to all occupancies in the State.

- 3. Be found reasonable, in writing and formally adopted and implemented by the state or local government on or before the disaster declaration date or be a legal federal requirement applicable to the type of restoration*

The CBC has been formally adopted by the State of California as applicable within all of its jurisdictions to all occupancies. The CBC has been found reasonable, it is in writing, and has been implemented on or before the disaster declaration date. CBC Section 101.3 states "The provisions of this code shall apply to the construction, alteration, moving, demolition, repair, maintenance, and use of any building or structure within this jurisdiction [the State of California]." The California Health and Safety Code, Section 17958, provides: "... If any city or county does not amend, add, or repeal ordinances or regulations to impose those [building] requirements ... the CBC ... shall be applicable to it and shall become effective 180 days after publication by the California Building Standards Commission."

4. *Apply uniformly to all similar types of facilities within the jurisdiction of owner of the facility*

CBC code provisions apply to all similar types and classifications of facilities in the State of California, regardless of the entity that owns the facility. This includes all facilities, private and public, eligible and ineligible for FEMA assistance, in the entire governmental jurisdiction or in a particular hazard zone within that jurisdiction.

The CBC applies to all similar facilities within its jurisdiction. The CBC is applicable to construction, alteration, moving, demolition, repair, maintenance, and any use of any building or structure within the state of California. See CBC Section 101.3. Provisions of the CBC are applicable to buildings being repaired, altered, etc., for any cause, whether due to disaster or any other damage. Records (permitted projects as demonstrated through past practices) show the City Building Official consistently enforced the CBC upon all new or repaired City buildings.

5. *For any standard in effect at the time of a disaster, it must have been enforced during the time it was in effect.*

The State of California and the City of Atascadero have consistently enforced the CBC during the time it has been in effect, through its rules, procedures and past practices. This code has been enforced in a manner that imposes the same requirements on all projects without regard to ownership (e.g. public or private) or the funding source for the mandated repairs and upgrades. These same code provisions have been enforced on all buildings within the City of Atascadero, and the City is not asking for anything more or different for the City Hall. The City requires permits, and all permits are based upon the same criteria. The code is not subject to discretionary enforcement by building officials; it provides for minimum uniform construction requirements and accountability in the event of noncompliance. The City of Atascadero still contracts with the same private plan review firm it did on the day of the earthquake. This firm reliably enforced these same code sections to all structures that were damaged by the quake and will ensure they are consistently enforced upon the City Hall. Additional information or examples of consistent enforcement upon other buildings within the City of Atascadero can be supplied upon request.

In addition, FEMA's San Simeon Codes and Standards policy requires that a code contain a threshold that triggers repairs. FEMA does not specifically define "threshold" or "trigger" but gives some examples. These examples appear to be non-exclusive, meaning there could be other types of "thresholds" or "triggers" besides those listed in the Policy. FEMA's Recovery Division Policy Number 9527.3, *Interim Policy on Construction Codes and Standards for the San Simeon Earthquake*, June 25, 2004, states:

7. Policy: A. *General Provisions*

2. Code Threshold. a. Codes may contain various types of thresholds - often referred to as "triggers" - which, when reached, require that upgrade work be performed in conjunction with the repair of damaged elements. These thresholds may be triggered when repair work exceeds a certain dollar cost or a certain percentage of the building's replacement cost (damage repair thresholds), or when the damage results in a loss of a certain portion of a building's structural capacity (capacity thresholds) as a result of a disaster.

b. A trigger may mandate different types of upgrades. For instance, a trigger may require that the entire structural system be upgraded or, in addition to upgrading the entire structural system, that non-structural systems (e.g. mechanical, electrical) be brought into conformance with current codes for new construction. FEMA will determine the applicability and reasonableness of all code thresholds, pursuant to subsection 7B of this policy, and will pay only for upgrade work within the same system (i.e., structural, electrical, mechanical) as the disaster-related damages. There must, consistent with this policy, be a direct relationship between the upgrade work and the disaster damage.

The City disagrees with FEMA's premise that the CBC does not contain triggers. Discussion of thresholds and triggers is not well-addressed in the FEMA Policy. Although it gives limited examples of thresholds, it does not give a definition or explain how they are applied. Given the vagueness of the FEMA policy, the provisions of CBC Section 3403.2 can be seen as imposing thresholds for repair work and code compliance pursuant to FEMA policy.

CBC § 3403.2 - "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."

The threshold for compliance with CBC code-required repairs is not a percentage of damage, or a monetary threshold. It is a threshold based upon fire and life safety current code conformance. Violations of provisions of this code are not permitted. This section of the code recognizes the code is a minimum and will not permit an alteration or repair to jeopardize life safety in the existing building, to endanger the structural integrity of the building, or to allow the structure to become unsafe. This threshold requires certain life safety code requirements be met before the building can be re-occupied. These are discussed in Section 5.7 Code Requirements, below.

Regardless of the discussion of triggers, the City's main premise in regards to the repair work is that the work the City is proposing in order to repair the City Hall does not constitute code-required upgrades. Rather the work is meant to repair the building to its pre-disaster condition, meaning its pre-disaster structural capacity. FEMA acknowledges, in its First Appeal Response and in various FEMA appeal responses cited earlier in this section, that the CBC requires repairs/alterations made to an existing building or structure to conform to that required for new buildings or structures. See the

FEMA appeal citations listed in the earlier paragraphs in this section. The repairs the City proposes are just that: repairs to pre-disaster condition that conforms to current building standards. They are not upgrades. This will be discussed further in the relevant sections below.

In general, additions, alterations or repairs must conform to the CBC standards for new buildings or structures.

CBC Section 3403.2 – “Additions, alterations or repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of the code, provided the addition, alteration, or repair conforms to that required for a new building or structure. ...”

In addition, repairs/alterations must not make a building unsafe or in violation of the provisions of the Code.

CBC Section 3403.2 – “... 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 building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded, will not provide adequate egress in compliance with the provisions of this code or will obstruct exits, will create a fire hazard, will reduce required fire resistance, or will otherwise create conditions dangerous to human life. ...”

CBC Section 3405.1 – Change in Use – “Conformance: No change shall be made in the character of occupancies or use of any building that would place the building in a different division of the same group of occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancy. ...”

No change in the character of the occupancy of a building shall be made without a certificate of occupancy, as required in Section 109 of this code.”

The City Building Official has consistently interpreted these sections of the CBC to apply to the type of reconstruction being completed to the City Hall. The City Building Official has interpreted and applied the CBC using specific rules and standards consistently over the years, not based upon discretion. When a building is to be reconstructed/alterd, and the proposed changes to the building will make other portions of the building unsafe, the CBC requires that those safety requirements be addressed. When this occurs, a building loses its existing non-conforming rights. Existing buildings are generally “grandfathered in” under the CBC so that when the CBC was adopted, existing buildings (remaining unaltered) were generally not required to make immediate code upgrades. However, when alterations to the building occur, these alterations may cause the building to lose its

existing non-conforming rights as related to those areas of the building affected by the alterations.

In order to obtain the certificate of occupancy to reoccupy the building, the City must be in compliance with life-safety code issues. The City is not requesting a complete upgrade of the building to current codes and standards, rather it is requesting compliance with code-required life safety issues that will affect the safety and welfare of the general public who will be occupying the building after it is reconstructed. Particular life-safety code requirements are addressed in Section 5.7 Code Requirements.

In addition to the CBC, the California Historical Building Code (CHBC) must also be taken into account. The California Historical Building Code was created in order to allow flexibility in dealing with construction related to historical buildings, and it is generally performance-oriented rather than prescriptive. Generally the CHBC requires compliance with the regular code (the CBC) where appropriate, but (the CHBC) gives flexibility in certain areas to apply reasonably equivalent alternatives to the regular code (the CBC) when dealing with historic buildings.

As the City Hall is a registered historic building in both the State of California and the National Historic Register, the CHBC is applicable to repairs to the building. In particular, in this appeal we focus on the CHBC in the sections governing wall repairs (Section 5.2) as well as code requirements (Section 5.7). The CHBC will be discussed in more detail in those sections. However, a key point regarding the CHBC is mandated in Chapter 8-8. FEMA has argued that the CHBC allows the City to ignore current building standards in the regular code (the CBC). This is clearly not correct. Chapter 8-8 Archaic Materials and Methods of Construction, mandates totally reconstructed walls must be constructed in accordance with the regular codes.

CHBC § 8-805.3 – Reconstructed Walls. Totally reconstructed walls utilizing original brick or masonry, constructed similar to original, shall be constructed in accordance with the regular code. Repairs or infills may be constructed in a similar manner to the original walls without conforming to the regular code.

Generally the wall repairs to City Hall will consist of total reconstruction of the failed damaged walls, not simple repairs or infills. This will be discussed in more detail in Section 5.2, Wall Repairs, of this appeal.

Another area of consideration in this is appeal has to do with “systems” versus “elements”. Generally, the repairs proposed by the City are directly related to damaged elements of the building. However, in some cases, repairs may be proposed as related to a system in the building. FEMA’s Codes and Standards Policy, at subsections 7.B.1.c. and d., makes clear that repair work to areas that are part of a system that sustained disaster damages may also be eligible for FEMA funding.

“If a facility, system or element is eligible only for repairs (structural or non-structural), funding will be based on the codes governing repair. Funding will be limited to repair of the disaster-related damage to the facility or element itself, and to eligible work that is reasonably related to repair of the damaged facility or element. Work to upgrade or change the configuration of systems that sustained disaster-related damages to conform to certain code provisions will be evaluated for reasonableness on a case-by-case basis.”

For instance, wall repairs and HVAC system repairs may be looked at as a system in some areas, rather than as discrete sections of damages. In addition, the CBC & CHBC requires certain life safety items be addressed while the City completes its reconstruction.

In summary, the Atascadero City Building Official enforces the local building codes and ordinances. In the case of the Atascadero City Hall, the CBC was the applicable “local code”. The Building Official, representing the local community, should have the final say in determining the code work required for any building project within their jurisdiction.

The City requests that FEMA acknowledge that 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 First Appeal, the City set forth that the City’s 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 the repair of URM walls using the overlays.

The City’s appeal was partially granted. Most of the costs requested by the City were not approved by FEMA. Approval of removal and replacement with reinforced brick construction meeting current code requirements at cracks #1 and #4 in the first story was approved. Use of carbon fiber overlay at the upper corners of the fifth floor level, previously categorized as mitigation, was approved as a cost effective repair of the damage and is therefore re-categorized as repair, but with no additional funding.

The City appreciates FEMA's grant of "406 hazard mitigation" funding. But, due to the classification of the repairs as "406 hazard mitigation", it causes the City to incur unwarranted pressure and restrictions when repairs are bound by the additional compliance rules and regulations of "406 hazard mitigation". The City contends that the majority (if not all) of the damages are eligible for repair funding.

The wall repairs proposed by the City are required by code, are a repair to pre-disaster condition, not an upgrade, and are cost-effective. The Project Worksheet for City Hall appears to be missing the vast majority of wall damage. When all wall damages are taken into account, it becomes clear that the requested concrete and carbon fiber overlays are the most appropriate method of repair.

FEMA has not taken into account all of the wall damage. FEMA's response characterized wall damages as either "heavy damage" or "moderate damage" and that characterization determined the level of repair allowed by FEMA. However, FEMA seems to take into account only a limited amount of the damage to the walls in its cost estimation. Six key borings were completed by the City to provide a sample of the extent of damages to the walls. The City tested two small, two medium, and two large cracks. The borings showed that all of the six cracks ran through the three wythes of brick.⁹ The City provided the results of this testing to FEMA, intending to show an example of the extent of damage. It appears FEMA took these six cracks to be the full extent of structural crack damage to the walls. However, there are numerous additional structural cracks causing extensive wall damage that requires repair. These damages are reported in the City's Damage Assessment and Rehabilitation Plan drawings.

In addition, FEMA has failed to recognize that even the minor cracks go through all three wythes of the walls. Therefore shoring will be required during repair, which will increase the cost of repairs.

The City is preparing a report to document the full extent of wall damage. It will be provided to FEMA as soon as possible, separately from this appeal. The report will show that the extent of damages to the walls is severe and that the damaged walls must be reconstructed, not repaired, due to the severity of damages. This reconstruction will include wall overlays from floor to ceiling and column to column, as well as the needed building support. This report will provide a complete analysis of the wall repair issues and arguments, contain a classification of the wall damage and cracks, a graphical description and complete list documenting the extent of the wall damage and cracks, as well as an analysis of the repair technique proposed by the City. Documentation will be provided for the repair methodology upon which the City bases its proposal, including a determination of the particular cause of the cracks and damage, which will dictate the particular standards to be followed in repair. The remaining balance of this section (5.2 Wall Repairs) takes into account the damages and repairs in the report stipulated above.

⁹ *Results of Masonry Wall Coring*, Earth Systems Pacific, July 18, 2007 (Attachment 29 to the City's First Appeal).

Repair to City Hall’s unreinforced masonry (URM) walls is governed by the CBC. California building codes do not allow any new construction to contain un-reinforced masonry. The CBC requires repairs to comply with standards for new construction. CBC 3403.2 states:

“Repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of the code, provided the ... repair conforms to that required for a new building or structure.” (emphasis added)

Standards for new construction require steel reinforcement for walls. Therefore in-kind replacement of the walls needing repair with unreinforced masonry (URM) walls is not permitted and has not been permitted for a number of years.

CBC §2106.1.12.4 – “Special provisions for Seismic Zones 3 and 4. All masonry structures built in Seismic Zones 3 and 4 shall be designed and constructed in accordance with ... the following additional requirements and limitations:

CBC §2106.1.12.4.2.3 – “Wall reinforcement. All walls shall be reinforced with both vertical and horizontal reinforcement.”

FEMA has stated in the past that these sections apply only to NEW construction. (See FEMA’s *Support Narrative and Worksheets for Draft PW*, FEMA, August 9, 2006, p.14, Attachment 20 to City of Atascadero First Appeal.) It is true that these are the standards for new construction. That is the point. The CBC requires that all repairs to buildings “conform to that required for a new building or structure.” See CBC §3403.02. FEMA acknowledges this in several past appeals. In *City of Richmond, Ford Assembly Building, FEMA Second Appeal Response*, p. 17, FEMA states “The CBC is the “prevailing code” code applicable to the structural repair of the Facility. ... It is FEMA’s position that the CBC therefore, requires that damaged structural elements ... be repaired using CBC-approved materials and “present day” construction methods that restore the pre-disaster capacity and stiffness of the damaged elements to the greatest extent practicable.” In *City of Paso de Robles, Carnegie Library, First Appeal Response*, p. 9, FEMA states that “the CBC permits repairs, alterations and additions to be made to any building without requiring that the entire building be brought into full compliance with the code, so long as the repair itself conforms to that required for a new building. The code-compliant repair work need only include that which is necessary to bring the damaged element into conformance with new building standards.” It is quite clear, based upon FEMA’s own appeal response language, as well as the language of the CBC, that all repairs must conform to current standards for new buildings. The current building standard, in the case of the wall repairs, is CBC §2106.1.12.4. and CBC §2106.1.12.4.2.3 which provides that all walls in masonry buildings must be reinforced.

The California Historical Building Code (CHBC) must also be taken into account in looking at wall repairs. As discussed earlier in this Second Appeal, the CHBC allows some flexibility in repairs to historic buildings. A key point is mandated in Chapter 8-8.

FEMA has argued that the CHBC allows the City to ignore current building standards in the regular code (the CBC). This is clearly not correct. Chapter 8-8 Archaic Materials and Methods of Construction, mandates totally reconstructed walls must be constructed in accordance with the regular codes.

CHBC § 8-805.3 – Reconstructed Walls. Totally reconstructed walls utilizing original brick or masonry, constructed similar to original, shall be constructed in accordance with the regular code. Repairs or infills may be constructed in a similar manner to the original walls without conforming to the regular code.

Pursuant to the report that the City will provide as described above, the City will show that the extent of damages to the unreinforced masonry walls mandates total reconstruction of those walls, not repair and infills (with limited possible exceptions for very minor cracks). Therefore, the CHBC mandates compliance with the regular code (the CBC) in completing the wall repairs. Thus the wall repairs must include reinforcement, and cannot be completed as in-kind replacement using unreinforced masonry.

The next important point in this argument is that the City is attempting to bring the City Hall back to its pre-disaster condition. Wall repairs are not intended as “upgrades”. Rather, the repairs are intended to bring walls back to their pre-disaster structural capacity. This is consistent with FEMA policy. FEMA states in *Support Narrative and Worksheets for Draft PW*, FEMA, August 9, 2006, p. 15, (Attachment 20 to the City of Atascadero’s First Appeal): “... 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.” Pre-disaster condition, therefore, as acknowledged by FEMA, relates to the structural capacity of the element or facility being repaired, and not the materials or style of the original construction.

The lateral capacity of the URM walls has been reduced by approximately 43% due to damage from the earthquake. To confirm the damage assessment, the City used methods recommended in FEMA Publication 356: non-linear finite element analysis was performed for the unreinforced masonry wall panels using the FEM/I program. (See *Damage Assessment and Rehabilitation Plan*, Pfeiffer Partners, April 4, 2005, pages 21-24, Attachment 7 to the City’s First Appeal.) The concrete and carbon fiber wall overlays will return the walls to their pre-disaster structural capacity.

The concrete and carbon fiber overlays are not an “upgrade”. The CBC prohibits use of unreinforced masonry in repairs to masonry buildings. Therefore, the City cannot repair the damaged walls using replacement in-kind with unreinforced masonry. Repair with reinforced masonry is required to conform to current building standards. FEMA policy is to allow repair funding sufficient to return a facility to pre-disaster condition using code conforming methods and materials, as stated in FEMA’s *Support Narrative and*

Worksheets for Draft PW, FEMA, August 9, 2006, p. 15, (Attachment 20 to the City of Atascadero's First Appeal). Therefore, repair of walls using reinforced masonry is not an upgrade, it is simply a repair using code conforming method and materials. In addition, as the City proves later in this section, the use of concrete and carbon fiber overlays is the most cost effective repair method, less expensive than use of reinforced masonry. Therefore, use of the wall overlays to reconstruct the earthquake-damaged walls is not an upgrade, but is a cost-effective alternative repair technique that meets code and will repair the walls to their pre-disaster strength.

The repairs proposed by the City are cost-effective. The City proposes replacing walls on the first through third floors with concrete overlays and those on the fourth and fifth floors with carbon fiber overlays. This is the preferred method of repair for several reasons.

There are three possible methods for repair to the walls. The first is replacement of the walls in-kind with unreinforced masonry. This repair method, suggested by FEMA, involves replacement with in-kind materials, meaning replacing portions of wall with URM. This repair method does not meet the current building standards, for the reasons listed in the paragraphs above, i.e., walls in masonry structures must be reinforced. See CBC §2106.1.12.4.2.3.

The second method is replacement of the walls with reinforced masonry. This method is not preferred for several reasons. Rebuilt portions of reinforced masonry walls will be thicker to accommodate the addition of reinforcing steel. The localized strength and stiffness of the rebuilt portions of wall can adversely affect the overall earthquake safety of the building. The walls must be built in a symmetrical layout to avoid rotation during an earthquake and they must be in a continuous vertical configuration to avoid strength/stiffness discontinuities known as soft/weak stories. Reconstruction using reinforced masonry is very expensive, i.e., not cost effective. Finally, reconstruction using reinforced masonry would have a serious negative impact on the historic features of the building and would complicate FEMA's satisfaction of historic review.

The third method for wall repair, chosen by the City, is to repair using wall overlays: concrete on the first through third floors and carbon fiber on the fourth and fifth floors. This method has the following advantages: overlay techniques are code compliant structural repairs; overlay techniques are less expensive than reinforced masonry; repair by overlay techniques is far less invasive on historical materials of the building than reinforced masonry reconstruction; and shotcrete and carbon fiber overlays have been used for repair of URM walls on many FEMA-funded projects damaged by the 1994 Northridge Earthquake.

The City provided a comparative cost study of the three methods of wall repair to show that the overlay method is cost effective. (*See URM Submittal Letter – Cost Study for URM Wall Repairs*, City of Atascadero, sent to Charles Rabamad, OES, February 9, 2007, p.5, Attachment 23 to City of Atascadero's First Appeal.) This study shows the repair cost using each of the three methods:

Base Scheme (wall overlays):	\$ 899,000
URM Replacement In-Kind	\$1,086,000
URM Replacement with Reinforced Masonry	\$3,674,000

This study shows that the City’s proposed repairs using wall overlays is cost effective. FEMA disagreed with the City’s cost-effectiveness analysis, stating that the damage to the walls was only moderate, not severe. FEMA explains its standards for repair. For moderate damage: “The FEMA eligible repair scope of work for the moderately damaged URM walls consisted of the following: for those portions of the wall where there was moderate damage, removing the damaged bricks/blocks and resetting or replacing them with “in-kind” materials. This moderate damage generally occurred in the exterior wythe of walls that are three wythes thick.”¹⁰ For severe damage: “when damage to a wall is severe (that is, where complete demolition and replacement of the wall is needed), FEMA eligible repairs consist of replacing the entire section of severely damaged URM walls from floor to floor column to column with “in-kind” materials using code compliant methods and materials; in this case, replacing the URM with reinforced masonry.” Therefore, since FEMA characterized the City Hall’s wall damage as moderate, replacement of walls from floor to ceiling column to column with reinforced masonry was not included as part of the eligible scope of work. (See *Additional Information for PW & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007, p.2, Attachment 23 to the City of Atascadero’s First Appeal).

FEMA disputes the cost analysis and adds additional costs to the overlay method, and deletes costs from the in-kind method, therefore concluding that the overlay method is not cost-effective. (see *Additional Information for PW & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007, p.3-4, Attachment 23 to the City’s First Appeal). FEMA does not explain why it believes a new foundation will be needed if the City makes repairs using wall overlays (the City proposes only some strengthening of the foundation which may be funded as hazard mitigation) and does not explain upon what it bases its excessive cost estimate for that foundation work. In addition, FEMA does not take into account the full extent of damages to the walls. For instance, FEMA states that much of the moderate damage takes place in the exterior wythe of walls that are three wythes thick. FEMA is incorrect in this assumption. All of the cracks sampled and documented by the City pass through all three wythes of brick. Therefore FEMA’s analysis of the City’s cost-effectiveness study is incorrect, and the City’s numbers are accurate. The wall overlay repair method is the most cost effective repair method.

It is interesting to note that in its First Appeal Response, FEMA approves the carbon fiber overlays as being the most cost effective repair method. In its First Appeal Response, FEMA acknowledges that damages to the corners of the fifth floor are more severe than originally thought, and states that “carbon fiber overlay, which was previously approved

¹⁰ The City disputes FEMA’s assertion that the moderate wall damage generally occurred in the exterior wythe of walls that are three wythes thick. All of the cracks sampled and documented by the City pass through all three wythes of brick.

as mitigation at \$25 per SF, is a more cost effective repair alternative for this damage than removal and replacement.” Why then does FEMA, in its *Additional Information for PW & Cost Study for URM Wall Repairs*, FEMA, April 4, 2007, p.3-4, Attachment 23 to the City’s First Appeal, as discussed in the paragraphs immediately above, disallow the wall overlays as a cost effective repair method? This seems inconsistent (and incorrect) and leads us to the conclusion that the concrete and carbon fiber wall overlays are the most cost-effective method of repairing the URM walls.

The City will provide additional documentation, as discussed earlier in this section, in a report provided in relation to this Second Appeal regarding the extent of damage to the walls. With this additional documentation of more severe damage than previously acknowledged by FEMA, the cost-effectiveness of the wall overlays will only increase.

To summarize, the City’s proposed wall repairs using concrete and carbon fiber overlays are code compliant and cost effective. These wall treatments will return the building to pre-disaster condition. They are not upgrades and are not intended to strengthen the building beyond its pre-disaster structural capacity. Because FEMA has underestimated the amount of damages, the repairs suggested by FEMA are ineffectual and will not restore the building to its pre-disaster structural capacity. Epoxy injections are an ineffective solution for the extent of damages that the City has documented (to be provided to FEMA in a related report as detailed above). FEMA’s suggested method of in-kind replacement is also not compliant with the building code.

The City requests FEMA add language to the PW making eligible the repair and replacement of damaged URM walls with concrete and carbon fiber overlays. This is the most cost-effective repair method, which is also consistent with the building code and will restore the building to its pre-disaster structural capacity.

5.3 Settlement:

In its First Appeal, the City explained that the 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, is a threat to the general public’s safety and welfare and 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.

The Atascadero City Hall has suffered from building settlement as a result of the 2003 San Simeon Earthquake. The City’s April 2005 *Damage Assessment & Rehabilitation Plan*¹¹ included a levelness survey of the 1st floor indicating a differential settlement of the building of 6.8” from the high to the low side. This translates to approximately 0.6”

¹¹ *Damage Assessment & Rehabilitation Plan*, Volume II of III, Appendix B, April 2005, (Attachment 7 to the City’s First Appeal).

for every 10'. The second through fifth floors of the building also show settlement of approximately 0.6" for every 10', consistent with the first floor's rate of settlement.¹² The exterior walls were also surveyed and data confirmed that the building settlement caused the walls to tilt to the North at an average rate of approximately 0.6" for every 10' of wall height.

As the building settled, its walls rotated (twisted) to a certain extent as well. Building floor level surveys indicate the building settled at different rates, resulting in varying pressures on each portion of the building and causing the West portion of the basement floor to buckle and produce a bulge.

FEMA has acknowledged in its First Appeal Response that the building is not level, and seems to agree to the extent that the building is out of plane, as stated by the City. However, FEMA, and specifically its consultant technical expert, Dr. Hanson, contend that there is no visual evidence of earthquake settlement at ground level. Specifically, FEMA states that because there is no evidence of differential settlement at the surface area surrounding the building, such as sand boils or uneven ground, then liquefaction could not have taken place. The City contends that the ground shook violently farther below the surface and the result was "differential settlement" at the 4 corners of the building. This gives the building its slanted and rotated look. FEMA's expert, Dr. Hanson seems to base his opinions on personal subjective observation with no scientific documentation as backup. There is both technical and anecdotal evidence that the building did settle due to the earthquake.

The City hired a soil consultant, Earth Systems Pacific (ESP), to evaluate liquefaction-induced damage to the City Hall. ESP's geotechnical analysis indicates soil conditions such that liquefaction occurred due to the earthquake, and that the settlement of the City Hall was due to this liquefaction.¹³ ESP used Standard Penetration Testing with "extreme care" to determine whether liquefaction occurred.

FEMA hired URS to evaluate the report provided to the City by ESP. URS concluded that "Hypothetically, if the data obtained by this method [Standard Penetration Technology] was reliable, it would not be unreasonable to conclude that soil liquefaction is possible, under conditions similar ... [to] those experienced during the 2003 San Simeon Earthquake". URS goes on to state that the method used by the ESP is not the preferred method, but is acceptable if "extreme care" is used. ESP performed initial boring tests and a follow-up boring test, using "extreme care" from start to finish.¹⁴ ESP came to the same conclusion at the end of each testing procedure.

URS does not explain the basis for its preference for use of mud-rotary or cone penetrometer drilling methods. ESP states in its report that there are no specific industry

¹² *Evaluation of Liquefaction-Induced Damage to Structure*, Earth Systems Pacific, November 9, 2005, (Attachment 10 to the City's First Appeal.)

¹³ *Evaluation of Liquefaction-Induced Damage to Structure*, Earth Systems Pacific, November 9, 2005, (Attachment 10 to the City's First Appeal).

¹⁴ *Results of Additional Subsurface Exploration*, Earth Systems Pacific, May 17, 2007, revised July 27, 2007, (Attachment 28 to the City's First Appeal).

methods for evaluating liquefaction potential in existing buildings, and ESP chose the best method in its professional opinion. ESP used California Division of Mine and Geology, and So Cal Earthquake Center standards. These standards are for undeveloped sites, but in ESP's professional opinion the most applicable for developed sites. Liquefaction is the cause of the settlement.

When FEMA's URS report challenged ESP's methodology for the testing, ESP responded: In the Central Coast region, hollow-stem augers are the drill method of preference due, in part, to the lack of availability of mud-rotary or cone penetrometer drill rigs; no local drilling companies provide these types of drill rigs. Consequently bringing in such a rig would be costly and unnecessary. Use of drilling fluid is also an environmental concern. In addition, any preference for the use of mud-rotary and cone penetrometer drilling stems from studies from the 1970's, and hollow-stem drilling (Standard Penetration Method (SPT)) has greatly evolved since then, giving equivalent or possibly better results than the other potential methods. ESP's report provides additional reasons why the hollow-stem auger (SPT) method is preferable, including that the great preponderance of liquefaction studies in recent years directly correlate SPT tests to liquefaction potential. (See *City's Response to Draft PW*, City of Atascadero, December 11, 2006, which includes *Letter from Earth Systems Pacific*, dated November 27, 2006, revised December 6, 2006).

Additionally, URS (as represented by Dr. Hanson) does not provide a professional source or basis (such as a professional standard) for its preferred methodology. Also, URS does not dispute the possibility of liquefaction, it merely states: 1) if the City's methodology was reliable, then liquefaction is not unreasonable, 2) in any event, no conclusion can be made about the liquefaction potential, and 3) URS recommends additional independent testing be conducted. FEMA has not implemented the methodology for testing that was recommended by URS and therefore that methodology cannot be used as a counter-analysis to defend its position.

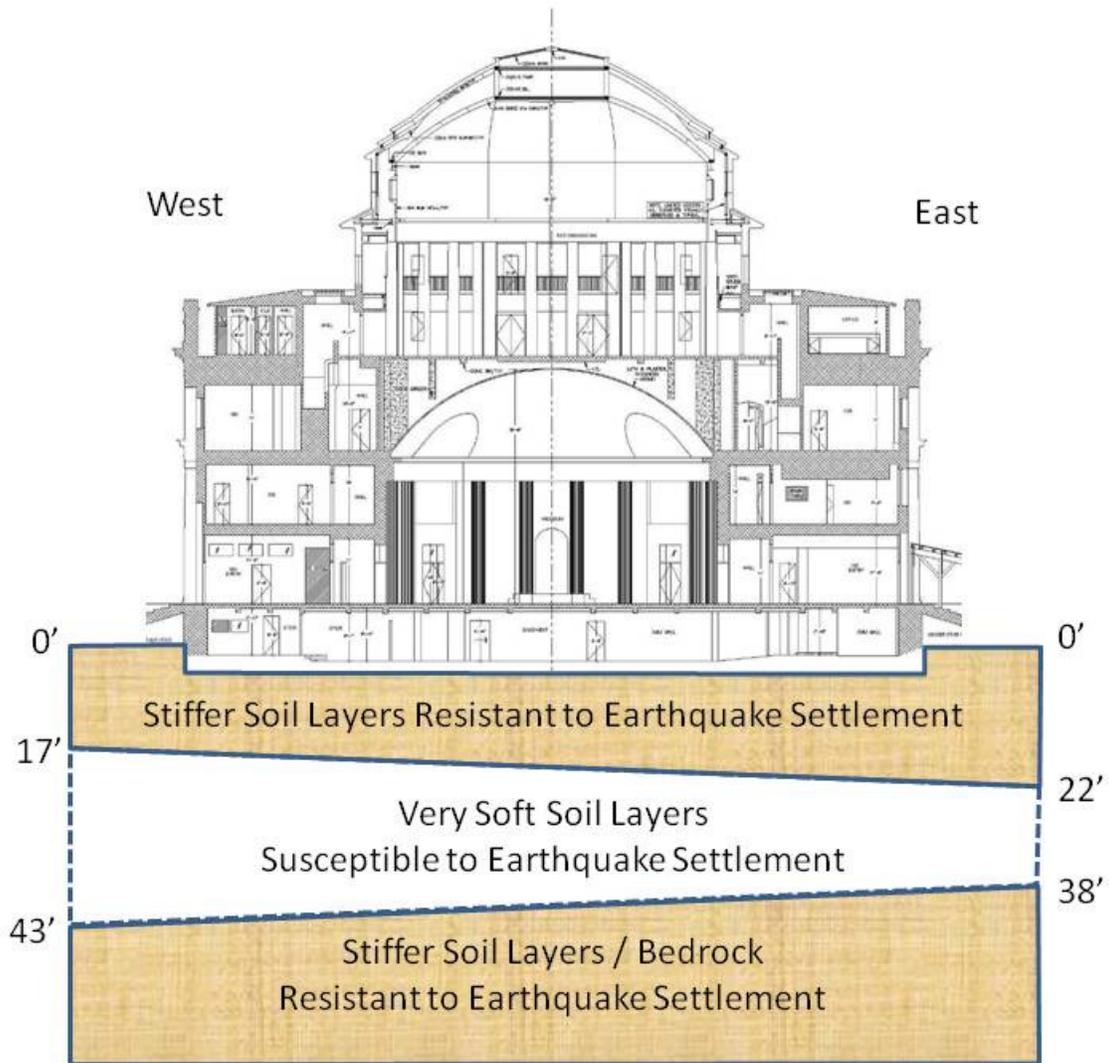
FEMA did not independently conduct any testing for liquefaction potential. Conversely, the City has provided proof through professional testing of liquefaction potential, using methods proven by recent studies to be accurate. FEMA has not provided proof that liquefaction did not occur. FEMA's position seems to be based solely upon Dr. Hanson's personal opinion, without a basis in technical and professional standards, whereas the City has provided reports and tests from a team of technical experts, including geotechnical experts, engineers, architects, and City building officials and staff.

In the first appeal, FEMA doesn't dispute the validity of the City's conclusions, only its testing methods. The City has documented that its testing methods are valid and accepted by engineering industry and local building officials.

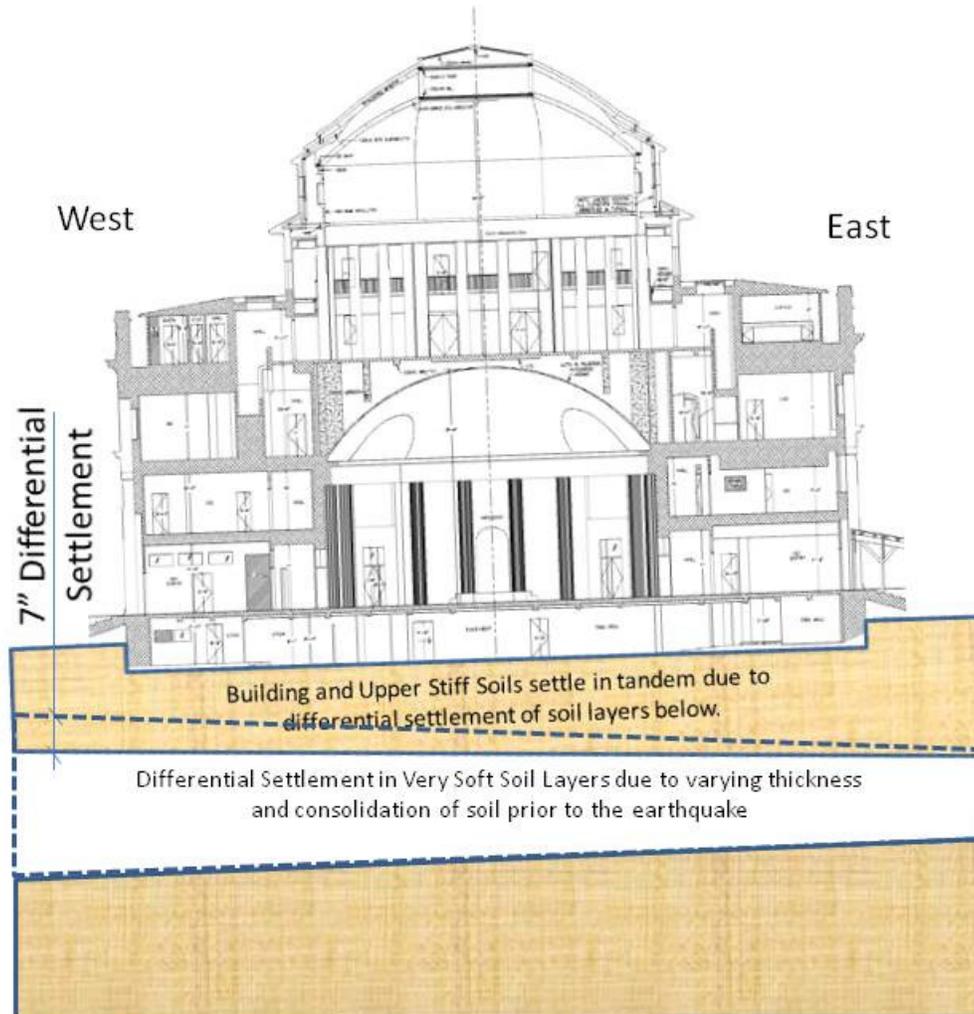
In addition, FEMA takes the position, based upon Dr. Hanson's opinion and advice that there would need to be aboveground differential settlement if liquefaction had occurred. The City's technical experts have shown, through professionally accepted testing methods, that the liquefaction occurred below the ground level. The building and ground

surface moved at the same time, in the same way, so there is no visual above ground evidence. The Two Graphics below illustrate the before and after condition of the City Hall. Graphic #1 and #2 show a visual representation of the building and ground settlement before and after the earthquake. Both graphics show three layers of soil below the City Hall building. The middle layer is composed of very soft soil. This is where the liquefaction took place. By comparing the two graphics, one can see that the middle layer of earth moved or settled and caused the uneven leveling of the building. The top layer remained intact. Thus there was no above ground visual evidence of ground disturbance or differential settlement.

Before San Simeon Earthquake



After San Simeon Earthquake



No surface evidence of settlement since settlement occurs predominantly in below grade soil layers.

In FEMA's contention that the building was not moved by the earthquake, FEMA's stated position is that there is no paper documentation of a baseline floor level established prior to the earthquake and therefore any assessment is flawed. However, in addition to the City's technical documentation, the City can support its position with anecdotal information. For instance, City engineers have noted that interior doors in the building no longer close properly, windows are inoperable, chairs roll across the floor and supplies roll off desks (noted before furnishings were removed from the building), and there are noticeable slants to the floor. In some places the new slants to the floor were extreme enough to cause a file cabinet drawer to fall open (this was noticed before the building was cleared of furnishings.) This is a condition that did not exist before the disaster event. Common sense dictates earthquake damage incurred and subsequent repairs should be eligible.

Also in support of the City's position that the building was significantly moved is that:

- Prior to the earthquake the building was fully functional; after the earthquake, many of the components (utilities, doors, windows, etc.) did not work at all.
- Prior to the earthquake, the building was certified safe to operate by local enforcement agencies; after the earthquake, the building was yellow or red tagged as uninhabitable.

Staff who worked in the building every day noticed extreme changes in the building's floor levels immediately after the earthquake. The following descriptions are five examples of testimonial accounts of the noticeable incurred settlement.

- One member of the City's senior management stated that, after years of walking those hallways in the dark on nights she would work late, she had come to know how the floor felt under her feet. The very first time she walked into the building after the earthquake, she could feel, with her feet that the floor was noticeably different, specifically, in her own word, "weird".
- Another staff member responsible for maintenance and care of the building noted, immediately after the earthquake, that in the west side of the building, floors were extremely out of level and uneven and that many of the doors and windows did not close properly.
- A different senior staff member, who has been working in the building since 1997, in an opportunity to walk the building in the course of his job in days immediately after the earthquake, noticed a major difference following the earthquake. He stated he was surprised by the amount of settlement which he felt was quite apparent throughout the building and the required measure of balance required walking the floors.
- An assistant to the City Manager, whose usual job duties took her regularly throughout the building before the earthquake, noticed a definite slant to the floor that could cause a person to stumble – a condition not there before the earthquake.
- A clerical staff member, after being allowed to enter the building to retrieve files, noticed the quake had caused severe changes to the building floor, a slant that

had not been present prior to the earthquake and that all contents in the building had obviously moved appreciably.

These statements were taken from various employees who had spent a great deal of time (years) in the building prior to the earthquake. These statements can be certified and provided upon request as well as the testimony of numerous other building occupants and community citizens extensively familiar with the building.

In summary, the physical and geotechnical evidence clearly indicates that the building settlement was a direct result of the earthquake. The City has provided professional geotechnical expert studies, as well as anecdotal physical evidence to support its claim that the City Hall building suffered liquefaction-induced settlement due to the 2003 San Simeon Earthquake. FEMA has provided no scientific professional evidence to prove that settlement did not occur. FEMA's position is based upon the personal opinion of one man, Dr. Hanson.

Lastly, FEMA has officially acknowledged that settlement occurred directly due to the earthquake. In FEMA's Benefit Cost Analysis (BCA) and by granting 406 hazard mitigation (HM), FEMA has to stipulate that the repair measures and their corresponding 406 hazard mitigation enhancements must be directly related to damages incurred by the disaster event.

All damaged elements included in the HM BCA are attached (directly or indirectly) to the foundation of the building. The first floor walls are attached to the foundation; the upper level walls and dome are attached through the first floor walls. The first floor walls could not be shaking (from the earthquake) without the foundation shaking; the dome could not be shaking without the foundation shaking. Since FEMA acknowledges all damaged elements attached to the foundation were directly damaged by the earthquake, accordingly FEMA should acknowledge that the foundation settlement was due to the earthquake as well. At the least, FEMA should acknowledge that the earthquake exacerbated the settlement of the building. Therefore, re-leveling should be an eligible repair.

There is no other explanation for this drastic change in the building than that the earthquake did indeed cause settlement of the building.

The City cannot proceed in the repair of the building or ultimately occupy the building until the settlement conditions as described in this section by the City's geotechnical experts, engineers, architects, building officials and staff have been corrected. These are conditions that did not exist until the earthquake occurred.

Therefore, the City requests that FEMA indicate re-leveling of the building is an eligible disaster related repair cost, reimbursable at actual cost. All costs should be included as repair costs, not hazard mitigation.

5.3.1 Repair of Façade Due to Re-Leveling –

In its First Appeal, the City requested that FEMA include language in the PW scope of work for repairs that will be necessary due to re-leveling of the building.

The City will need to re-level the floors as part of the process of restoring the building to pre-disaster condition. It is inevitable that new cracks will occur in the façade due to this re-leveling process.

In its First Appeal Response, FEMA has denied eligibility for repair of the façade due to re-leveling. Because FEMA had denied funding for repair of the building due to settlement, any work associated with re-leveling was also denied.

FEMA's First Appeal Response does not address potential eligibility if it were proven that the building settlement was caused by the earthquake. If settlement is proven, FEMA should agree to eligibility of repairs to the façade due to re-leveling.

Damages unavoidably caused during repairs are eligible for FEMA funding. *FEMA Public Assistance Guide*, Chapter 2: Eligibility, Work, p.29, states "Damage caused during the performance of eligible work may be eligible." *FEMA Public Assistance Policy Digest*, Eligible Work, p.44, also states that "The repair of damage caused by an applicant, if unavoidable, maybe be eligible." FEMA does not state in its appeal response any reason why repairs to the façade due to re-leveling would not be eligible, if it were determined that the building settlement was caused by the earthquake. Based upon FEMA policy as demonstrated in *FEMA's Public Assistance Guide* and *Policy Digest*, repair of the façade due to re-leveling is an eligible cost.

The City requests that FEMA add language to the PW indicating that repair of the façade due to re-leveling is eligible. Costs will be determined after re-leveling has occurred, but prior to construction repairs for FEMA's information and approval.

5.3.2 Floor Crack and Spalls

In its First Appeal, the City requested 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.)

In its First Appeal Response, FEMA assumes this request is tied to the re-leveling process. This is incorrect. The City is asking for repairs to earthquake-induced cracks that are not currently visible because the 2nd and 3rd floors are typically covered by ceiling and floor finishes and are not directly accessible without extensive removal of the finishes. Evidence of earthquake-induced cracking and spalling is visible on the 1st and

4th floors, therefore the City's engineering/architectural consultants are confident that the damage exists on the 2nd and 3rd floor levels and will need repairs.

FEMA seems to acknowledge, in its First Appeal response, that cracks discovered in the 2nd and 3rd floor upon removal of the floor and ceiling finishes, prior to re-leveling taking place, will be eligible for repair using epoxy injection. FEMA states in its First Appeal Response, page 6, that:

“Floor cracks on floors 2 and 3 that may be discovered when floor coverings are removed, before any re-leveling and where it can be demonstrated they are related directly to building earthquake response will be eligible for epoxy injection.”

In addition, FEMA states in its *Eligibility Analysis of Repair Costs Worksheet*, FEMA, November 26, 2007, (Attachment 6 to the City's First Appeal):

“The scopes of work that are projected [for floor cracks and spalls] 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.”

However, some of FEMA's language in its First Appeal Response is unclear, therefore the City would like positive confirmation from FEMA that these costs will be eligible. FEMA states in the First Appeal Response on pages 6-7:

“The City's appeal for FEMA to include floor crack epoxy injection on floors 2 and 3 corresponding to the floor cracks on floor 1 that are discovered upon removal of the second and third floor covers but before re-leveling, if re-leveling is done, is eligible. However, any work associated with damage caused while re-leveling is not eligible.”

The City is not clear what is meant by “corresponding to the floor cracks on floor 1”. The City would like confirmation that FEMA intends that all documented disaster-caused cracks on the 2nd and 3rd floor levels will be considered eligible repairs.

In addition, should cracks occur in the floors due to re-leveling, the City disagrees with FEMA's position that those costs are ineligible. Damages unavoidably caused during repairs are eligible for FEMA funding. *FEMA Public Assistance Guide*, Chapter 2: Eligibility, Work, p.29 states “Damage caused during the performance of eligible work may be eligible.” *FEMA Public Assistance Policy Digest*, Eligible Work, p.44, also states that “The repair of damage caused by an applicant, if unavoidable, maybe be eligible.” FEMA does not state in its appeal response any reason why repairs to the cracks in the floors due to re-leveling would not be eligible, if it were determined that the building settlement was caused by the earthquake. Based upon FEMA policy as demonstrated in *FEMA's Public Assistance Guide* and *Policy Digest*, repair of the cracks in the floors due to re-leveling is an eligible cost.

The City requests FEMA include language in the PW stating that work to repair the floor cracks and spalls on the 2nd and 3rd floor levels is an eligible repair. The City will work with FEMA to document the cracks and spalls as discovered during the construction process.

5.4 Mold and Pigeon Guano Abatement

In its First Appeal, the City requested 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.”) Quantities of the work will be estimated immediately prior to the start of construction. The cost of the abatement work will be reimbursed for actual cost.

FEMA has agreed in its First Appeal Response that pigeon guano and mold abatement is an eligible cost. FEMA’s First Appeal Response, page 7, states:

“The actual reasonable costs for mold and guano abatement related to earthquake damage is an eligible cost, however, the City still has not supplied sufficient documentation supporting a scope of work that justifies the requested costs for mold and guano abatement.”

FEMA has also included some language in the City Hall PW for mold and guano abatement. That language requires the City to provide documentation and justification of the scope of work.

The City initially planned to complete abatement work prior to beginning construction and repairs in the building. However, due to safety concerns in the sixth floor rotunda area, the City has been unable to hire an abatement specialist willing to work in that area prior to the area being made safe. Therefore abatement will take place concurrently with the deconstruction of the rotunda. The City will submit the estimate for abatement separate from this appeal document, at the time of contracting.

As discussed in the City’s First Appeal, it was impossible due to safety concerns to close in the ceiling/roof area where the pigeons entered, and where rain leaked in. The City was unable to find a contractor willing to go up into the roof area to enclose certain exposed areas due to safety concerns.

Although FEMA has stated that it was unnecessary for the City to appeal mold and pigeon guano abatement, the City felt it prudent to mention its request in order to prevent any possible confusion when processing the PW.

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 current version of the PW states these costs are ineligible. Quantities of work will be estimated immediately prior to start of construction. The cost of the abatement work and any

testing that FEMA requires to establish eligible quantities will be reimbursed for actual cost.

5.5 Heating, Ventilation, and Air Conditioning System

In its First Appeal, the City requested that FEMA consider the cost for replacement of the HVAC system as cost effective when compared to repair and to include that cost in the eligible scope of work. The estimated replacement cost is eligible for reimbursement for actual cost.

FEMA responded by partially granting the City's appeal. Funding was approved for the following scopes of work: Replace the domestic water heaters in City Hall and a roof air conditioner. The construction cost estimate for the above items are: two 40-gallon gas fired water heaters for \$4,500; two 2-gallon electric water heaters for \$2,000; six instantaneous water heaters for \$25,000; and one roof air conditioner for \$9,000. The total construction estimate is \$40,500.

Any additional damages to the HVAC system are denied by FEMA, due to the lack of technical documentation to support the City's assertion that the entire system needs replacement. FEMA has stipulated that test results are required to confirm damages. As there is disagreement over the full extent of damages to the HVAC system, the City will hire an expert to test the system. Access to areas of the building are limited at the moment, and build-up of pigeon guano and mold has created a hazardous environment in certain areas of the building. It has been determined that the cost of testing can be greatly reduced, due to increased levels of access and hazard abatement, achieved at the reconstruction phase of the repairs to the building. The City will conduct and complete testing during the process of dismantling and construction as it will be easier to access the areas needed for the testing. Testing results and damage estimates will be submitted to FEMA at that time. FEMA agreed to this timeframe during the conference call between the City and FEMA on Tuesday, March 24, 2009.

The extent of damages may show a necessity to replace, rather than repair, the complete system. If replacement of the system will be cost-effective versus repair, the City will submit documentation to substantiate this claim.

The City took maximum efforts to minimize damages with its limited access and ability in the weeks after the disaster. Immediately after the earthquake, the building was red-tagged for no entry. Days later, when the building was re-assessed as yellow-tagged, limited access was allowed only for essential tasks. It was deemed too dangerous at that time to allow staff to perform a complete shut down and drainage of the system. During this time, the system severely deteriorated since it was impossible for workers to enter the building to perform protection, repair, and maintenance work. The City Engineer and Risk Manager concluded that a system restart was too high a risk for workers. Testing of the system is required (and will be obtained) before a restart of the system is attempted.

As a point of clarification, because it is mentioned in FEMA's First Appeal Response, the City notes that although FEMA's First Appeal Response refers to the use of chemically treated water in the system, FEMA has confirmed to the City, during the conference call of Tuesday, March 24, 2009, that use of chemically treated water is not relevant to the extent of damage. FEMA's expert confirmed that use of chemically treated water wouldn't have made a significant difference in deterioration of the system in this situation.

The City requests replacement of the entire HVAC system or its identified damaged components upon completion and submitted results of the HVAC's testing for safety and properly functional operation which existed prior to the event.

5.6 Re-Start of Mechanical, Electrical and Plumbing Systems

In its First Appeal, the City requested that FEMA evaluate newly identified damage and include funding in the scope of work in order to repair these damaged items.

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 discovered additional damages that were not presented to FEMA previously. This cost is for re-start of the mechanical, electrical, and plumbing systems.

FEMA acknowledged partial eligibility and granted an additional \$10,500 for pressure testing and flushing existing condenser water piping with detergent solution, and refilling the system with chemically treated water, as well as pressure testing, flushing, and disinfecting the domestic water piping system. This is based upon FEMA's observation that the piping loop within the building appears to be in good condition, thus only requiring pressure testing and flushing before re-start.

The City contends that damage to the MEP system is actually much more extensive than FEMA recognizes, and therefore will require greater start-up costs. As part of the HVAC system testing, the City will evaluate and provide documentation to FEMA of the true extent of damages to the system. This assessment will be submitted separately from this appeal.

In addition to the HVAC system, The City also shows greater costs for start-up of other portions of the MEP system. Those costs are detailed in the attached *Table of Appealed Items, Scope of Work, and Repair or Hazard Mitigation*.

The City requests FEMA add language to the PW clarifying that costs to restart the mechanical, electronic, and plumbing systems are eligible. The HVAC system start-up costs will be reconciled with FEMA after the City obtains the results of its MEP system testing. The other MEP system costs are provided in the attachment to this Second Appeal. The City expects FEMA will pay reasonable eligible costs.

5.7 Code Requirements

In its First Appeal, the City requested FEMA allow funding for code work required in order for the City to be able to obtain an occupancy permit to begin using the building.

FEMA denied this request.

To be clear, the City is requesting FEMA allow funding for certain specific code-required repairs that are dictated by the code due to the specific repairs/alterations taking place in the building. The City is NOT requesting FEMA fund a complete upgrade of the building to meet current codes and standards. Only areas related to or affected by reconstruction are being requested.

Code required repairs include life safety issues such as egress, fire sprinklers, proper ventilation, and other items. A complete list is attached in the *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation*, page 10. These items are required by the CBC:

CBC Section 3403.2 – “Additions, alterations or repairs may be made to any building or structure without requiring the existing building or structure to comply with all the requirements of the code, provided the addition, alteration, or repair conforms to that required for a new building or structure.

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 building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded, will not provide adequate egress in compliance with the provisions of this code or will obstruct exits, will create a fire hazard, will reduce required fire resistance, or will otherwise create conditions dangerous to human life. ...”

CBC Section 3405.1 – Change in Use – “Conformance: No change shall be made in the character of occupancies or use of any building that would place the building in a different division of the same group of occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancy. ...

No change in the character of the occupancy of a building shall be made without a certificate of occupancy, as required in Section 109 of this code.”

The City has consistently interpreted these sections of the CBC to apply to the type of reconstruction being completed to the City Hall. The City Building Official enforces the local codes and standards. In the case of the Atascadero City Hall, the applicable “local”

code is the CBC. Over the years, the City Building Official has enforced rules and standards consistently and applied the CBC fairly to all building projects in the City of Atascadero. This is not subject to the City Building Official's discretion, but is an application of codes and standards that have been in place and implemented over the years since the CBC was adopted. The City Building Official decision is the final word on code-required work.

When a building is to be reconstructed, and the changes to the building will make other portions of the building unsafe or will cause a violation of code, the CBC requires that those life safety requirements be addressed. See CBC § 3403.2. This is because, when a building's character of occupancy or use is changed, the CBC requires the building conform to the requirements for the new occupancy status. In addition, the change in occupancy or use may not occur without a certificate of occupancy being issued. See CBC § 3405. When this occurs, a building loses its existing non-conforming rights. Existing buildings are generally "grandfathered in" under the CBC so that when the CBC was adopted, existing buildings were generally not required to make immediate code upgrades. However, when alterations to the building occur, the building loses its existing non-conforming rights as related to those areas of the building affected by the alterations. Certain requirements of the CBC become applicable as related to the alterations.

In addition, the California Historic Building Code (CHBC) must be considered. The CHBC provides specific life safety requirements for historic buildings where the building has remained unoccupied and the use of the building is to be changed. In the case of the City Hall, its use and occupancy will change because it is currently yellow-tagged as uninhabitable, and after reconstruction it will become occupied as a building open to the public. Under CHBC Section 8-302.1:

"The use or character of occupancy of a qualified historical building or property, or portion thereof, shall be permitted to continue in use regardless of any period of time in which it may have remained unoccupied or in other uses, provided such building or property otherwise conforms to all applicable requirements of this chapter."

This brings us to Occupancy Separations per CHBC Section 8-302.3 and Fire-Resistive Construction per CHBC Section 8-3.2.6 See Chapter 8-4.

CHBC Section 8-410.1 "Every historical building which cannot be made to conform to the construction requirements specified in the regular code for the occupancy or use, and which constitutes a distinct fire hazard (for definition of "distinct hazard," see Section 8-205), shall be deemed to be in compliance if provided with an approved automatic fire-extinguishing system."

CHBC Section 8-410.2 - "An automatic fire-extinguishing system shall not be used to substitute for or act as an alternative to the required number of exits from any facility. " (See Chapter 8-5 for exiting requirements.)

Section 8-502.1 - “Except as provided in this section, exits shall conform or be made to conform to the provisions of the regular code.”

CBC Chapter 10 provides the requirements for Means of Egress from buildings, as referred to in the CHBC. Chapter 9 provides the requirements for Fire Protection Systems.

The CHBC provides these requirements for the safety and welfare of the general public who will occupy these buildings. It is important to note that although the CHBC allows alternative building and construction methods in many situations, it finds the safety of the public to be of such imperative that it does not allow suspension of the regular code’s life safety requirements.

FEMA has stated in its First Appeal Response that these life safety items are ineligible because they interpret the second paragraph in section 3403.2 of the code (“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 building or structure to become unsafe”) not to apply to repairs, but only to additions or alterations. However, the City has consistently interpreted the CBC to define structural repairs such as these seismic repairs to constitute an “alteration” under the CBC, not merely a “repair”. The CBC defines alteration and repair:

CBC Section 202 – A:

Alteration: is any change, addition, or modification in construction or occupancy or structural repair or change in primary function to an existing structure other than repair or addition.

CBC Section 219 – R:

Repair: is the reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

The CBC defines repair as merely in relation to maintenance of a building, whereas structural repairs (for example, reconstructing walls) is defined as an alteration. Therefore, the work being completed within the City Hall does constitute an alteration, according to the CBC and to City procedures.

In addition, the California Historic Building Code must be considered. Similar to the CBC, the CHBC contemplates repairs as being related to maintenance and day to day continued use of a facility. The CHBC provides:

CHBC Section 8-202 – A:

Alteration: A modification to a building or structure that affects the usability of the building or structure, or part thereof. Alterations include but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, changes or rearrangements of the structural parts of elements, and changes or rearrangements in the plan configuration of walls and full-height partitions.

CHBC Section 8-219 – R:

Repair: Renewal, reconstruction or renovation of any portion of an existing property, site or building for the purpose of its continued use.

Therefore, according to the CBC and the CHBC, the seismic and other structural repairs to the building constitute alterations, and trigger the provisions of the CBC that require life safety code requirements to be met as part of the repair of City Hall.

As added support for the City's position, the State of California's Attorney General has issued an opinion stating that "The seismic strengthening of an unreinforced masonry building required by local ordinance constitutes a "building alteration, structural repair or addition" for purposes of providing access to the building for disabled persons." *California Attorney General Opinion No. 94-1109*, May 10, 1995. It is worth remembering that the CBC functions as the local ordinance when it comes to building repair within the State of California. Although in the case at hand the City is not contemplating issues related to providing access to the building for disabled persons, this opinion demonstrates the legal position of the State of California that seismic strengthening does constitute an alteration and therefore a trigger or threshold for code required repairs.

There are various ways to look at these life safety requirements. These requirements can be seen as creating a threshold pursuant to FEMA's Recovery Division Policy Number 9527.3, *Interim Policy on Construction Codes and Standards for the San Simeon Earthquake*, June 25, 2004, Section 7. Policy.

7. Policy: A. *General Provisions*

2. Code Thresholds a. Codes may contain various types of thresholds - often referred to as "triggers" - which, when reached, require that upgrade work be performed in conjunction with the repair of damaged elements. These thresholds may be triggered when repair work exceeds a certain dollar cost or a certain percentage of the building's replacement cost (damage repair thresholds), or when the damage results in a loss of a certain portion of a building's structural capacity (capacity thresholds) as a result of a disaster.

b. A trigger may mandate different types of upgrades. For instance, a trigger may require that the entire structural system be upgraded or, in addition to upgrading the entire structural system, that non-structural systems (e.g. mechanical, electrical) be brought into conformance with current codes for new construction.

FEMA will determine the applicability and reasonableness of all code thresholds, pursuant to subsection 7B of this policy, and will pay only for upgrade work within the same system (i.e., structural, electrical, mechanical) as the disaster-related damages. There must, consistent with this policy, be a direct relationship between the upgrade work and the disaster damage.

In addition, the code requirements discussed in this section should be viewed as directly related to the damaged areas being repaired. These code items are required as a direct result of the reconstruction of the building. These requirements are all related to the areas being reconstructed, or required due to particular repair/alterations as part of the reconstruction. For instance, due to the walls being reconstructed on levels one through six, requirements for egress and sprinkler systems in those areas are triggered.

FEMA's Interim Codes and Standards Policy for the San Simeon Earthquake allows:

“If a facility, system or element is eligible only for repairs (structural or non-structural), funding will be based on the codes governing repair. Funding will be limited to repair of the disaster-related damage to the facility or element itself, and to eligible work that is reasonably related to repair of the damaged facility or element. Work to upgrade or change the configuration of systems that sustained disaster-related damages to conform to certain code provisions will be evaluated for reasonableness on a case-by-case basis.”

The City understands that certain code related repairs that are completely unrelated to damaged areas may be ineligible. However, FEMA's policy clearly allows repairs to areas that are “reasonably related to repair of the damaged facility or element.” This gives FEMA flexibility to approve the life safety repairs dictated by the CBC as requested by the City.

FEMA's San Simeon Codes and Standards Policy states that it will pay for upgrade work that is “reasonably related to repair of the damaged facility or element. Work to upgrade or change the configuration of systems that sustained disaster-related damages to conform to certain code provisions will be evaluated for reasonableness on a case-by-case basis.”

In summary, the code-required life safety items discussed in this section are required due to the reconstruction work being completed. They are reasonably related to repair of the damaged facility or element. Therefore, these items should be eligible for FEMA repair funding.

The City requests that FEMA add language to the PW to indicate that code required items are eligible as part of the scope of work.

5.8 Painting

In its First Appeal, the City requested 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. The City also requested FEMA re-evaluate the scope of work so that the entire wall in the upper rotunda can be repainted and the room restored to its pre-disaster condition.

FEMA granted these requests and made eligible the additional funding amounts as provided by the City.

5.8.3 Paint Balance of Building

In its First Appeal, the City requested 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.

FEMA denied this request stating that its policy is to allow painting only to damaged and repaired walls.

Generally contractors will charge more to paint selective areas of a room, rather than the entire room. Preparation costs include protecting the walls that are not to be painted. The major additional cost would be to match the new paint color to that which is already on the walls.

The City will obtain contractors estimates for painting these rooms to show that it is more cost effective to paint each room in its entirety rather than to only paint the walls that are to be repaired. These estimates will be submitted to FEMA as soon as possible, separately from this appeal.

In addition, the City has shown in the section on wall repairs above that the extent of wall damages is greater than that originally acknowledge by FEMA. Therefore more walls will qualify for repair and repainting. Thus, the allowable funding for repainting should increase, making it even more evident that it is cost-effective to repaint the rooms in their entirety.

The City requests that FEMA add language to the PW stating that all rooms that have any plaster cracking in the walls may be repainted in their entirety, based upon the City providing documentation that such painting is cost-effective.

5.9 Damage to Roof Drains and Second Floor Lavatories

In its First Appeal, the City requested that FEMA evaluate newly identified damage to roof drains and second floor lavatories and include funding in the scope of work in order to repair these damaged items.

FEMA approved this request and made funding for these items eligible.

5.10 Lighting

In its First Appeal, the City requested that FEMA pay to replace the fixture elements listed, in order to restore 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.

A number of the City Hall lighting fixtures were damaged or destroyed due to the 2003 San Simeon Earthquake. A complete list is included in the attached *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation*, page 12.

FEMA has verbally agreed, on a Tuesday, March 24, 2009 conference call with the City, that lighting damaged by the earthquake is an eligible repair cost. This is a change from FEMA's First Appeal Response.

In its First Appeal Response, FEMA denied funding for the lighting, due to a misunderstanding of some language in the City's expert report. The City's *Engineering Assessment Report, Mechanical/Electrical/Plumbing/Fire Protection Systems*, Gaynor Engineers, June 4, 2007, page 5, Attachment 27 to the City's First Appeal, notes the lighting fixtures as "missing." These items were actually damaged due to the earthquake, and removed as part of the cleanup process. The items were not "missing" before the earthquake. For instance, damaged items included faceplates for Exit Signs. The City would not have been operating the City Hall with missing Exit Sign faceplates. These items were damaged during the earthquake and removed. They should be included within the eligible scope of work.

In addition, the City will need to remove and store lighting in areas where construction will take place. It may be less expensive to replace the lighting after reconstruction, rather than store and re-install the lighting. The City will provide estimates at the time of contracting to show which is more cost effective, either to store and re-install lighting, or to simply replace the lighting after construction. FEMA has agreed verbally that it will consider these costs and provide funding for the most cost-effective alternative.

The City requests that FEMA acknowledge on the PW scope of work that reasonable costs for storage and repair, or replacement, of damaged lighting is eligible. The City will provide cost estimates to document which method is cheaper.

5.11 Grounds/Sitescape

In its First Appeal, the City requested 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.

FEMA denied funding for landscaping, based upon its *Disaster Assistance Policy 9524.5, Trees, Shrubs, and Other Plantings Associated with Facilities*. The City acknowledges that landscaping, other than re-seeding, is ineligible and withdraws this portion of its request.

The City requests re-seeding, as reasonable and appropriate, be allowed as an eligible cost. Cost estimates will be provided at the time of contracting for reconstruction work.

5.12 City Costs Incurred to Date

In its First Appeal, the City requested funding for fence rental, netting around the upper rotunda, brick storage costs, and mold testing be approved as eligible costs in the City Hall PW. The City noted costs incurred to date for these items are documented in *Listing and Copies of Invoices for City Incurred Costs*, prepared by the City, located in Attachment 35 to the City's First Appeal.

FEMA agreed in its First Appeal Response that costs for fence rental, rotunda netting, and mold testing are eligible. FEMA stated that these costs are allowed, but that they are already accounted for in the PW. If costs exceed what is already accounted for in the PW, FEMA will add funding.

The City has reviewed the PW and found that these costs are actually not already accounted for in the PW. In fact, footnote #1 to FEMA's First Appeal Response states that mark-ups included in FEMA's estimates account for General Conditions, Contractor's Overhead and Profit, Contingency for Development of Design, Escalation to Midpoint of Construction, Owner's Reserve for Change Orders and Project Management. These mark-ups do not include the work requested under this section. A list of the unpaid costs is included as Attachment B: *Additional Items Worksheet*.

In addition, the costs for brick storage bins were denied by FEMA. FEMA's denial was based upon its assumption that the City Hall property was fenced in, and therefore the bricks were protected from theft, as well as the bricks not needing protection from the elements as the bricks are about 100 years old. The City again appeals this decision.

Bin storage was necessary initially because, contrary to FEMA's assumption, the City Hall grounds were not initially fenced in. Fencing was completed two years after the earthquake because the City was having difficulty keeping people out of the building and property. Some people were even caught taking bricks and other items as "mementos". Therefore, the bricks needed to be secured from theft.

In addition, the City has another new cost to add to this section. A covered construction walkway was completed that takes the place of the sidewalk in one area. This was built to protect people walking on the sidewalk from falling bricks on the West Mall side of the building. This would normally be done as part of construction anyway and the State has assured the City it will be included in the scope of work. However, it is not specified as a line item on the backup documentation so we mention it here to ensure it will be included as an eligible cost.

The City requests FEMA revise the PW to include all costs for fence rental, rotunda netting, mold testing, and construction walkway as presented by the City. In addition, the City requests FEMA re-consider the eligibility of bin storage for the bricks, and adjust the language of the PW scope of work to include bin storage of bricks as an eligible cost.

6.1 A&E Costs

In its First Appeal, the City requested that additional funding for A & E services be approved and included in the PW. 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).

FEMA responded in its First Appeal Response that, while additional funding is not warranted at this time, reasonable actual eligible costs for A & E and PM/CM services will be reconciled and funded at project closeout, to the extent they are not capped as part of the approved hazard mitigation scope of work.

FEMA stated that A & E and PM/CM associated with the Atascadero City Hall approved scope of work was approved in the PW. Funding for the A & E services included in the PW was based on the actual costs performed to a specific date, while funding for the PM/CM services was estimated using FEMA's CEF, according to FEMA. However, FEMA has denied several items under A & E costs in the City Hall PW.

It appears that certain A & E costs were not included in the PW as part of CEF, as previously stated by FEMA. These costs were not accounted for under administrative costs or mark-ups or roll-up costs. A list of A & E expenses that are unaccounted for in the FEMA PW are included in Attachment A: *Table of Appealed Items, Scope of Work and Repair or Hazard Mitigation*, Section 6.1.

The City requests that FEMA acknowledge in the PW that A & E be estimated as a variable percentage of the costs of work. Once actual costs are calculated, then a final A

& E amount will be determined. The City expects FEMA will pay reasonable eligible costs.

Cost Summary:

Here is a summary of the costs requested by the City. To provide consistency over time, this table is updated directly from the Table used in the First Appeal, and based upon the Damage Assessment and Rehabilitation Plan dated April 2005.

Request Summary	A & E Services	Repair	Hazard Mitigation*	Total
APPROVED PROJECT WORKSHEET	\$ 356,753	\$ 4,800,712	\$ 10,825,491	\$ 15,982,956
APPEAL ITEMS				
1st through 3rd Floors		777,804	(777,804)	-
4th and 5th Floors		397,025	(397,025)	-
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		3,029,531	-	3,029,531
Re-Start Systems		885,811	-	885,811
Code Requirements		918,612	-	918,612
Lower Rotunda Paint Quantities		-	-	-
Upper Rotunda Paint Quantities		-	-	-
Re-Paint All Walls in Room		160,750	-	160,750
Damage to Roof Drains & 2nd Floor Lavatory		30,671	-	30,671
Lighting		9,585	-	9,585
Grounds / Sitiescape		71,886	-	71,886
City Costs Incurred to Date		70,142	-	70,142
Architecture, Engineering, Special Services & Studies	4,106,700		-	4,106,700
Construction Management, Testing & Inspection		899,613	(416,572)	483,041
PROJECT WORKSHEET REQUEST	\$ 4,463,453	\$ 21,199,446	\$ 1,724,523	\$ 27,387,422

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

The City requests FEMA provide funding for the items as requested in this appeal. The detailed cost of each of the appeal issues discussed above are shown in Attachment A: *Table of Appealed Items, Scope of Work, and Repair or Hazard Mitigation*. Should FEMA have any questions or require additional information, City management and staff are available to provide information as needed. The additional reports and documentation discussed in this appeal will be provided as quickly as possible.

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

Sincerely,

Rachelle Rickard
Director of Administrative Services

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Attachments:

- A. Table of Appeal Items, Scope of Work and Repair or Hazard Mitigation*
- B. Additional Items Worksheet*
- C. First Appeal*