To: Honorable Mayor and Members of the City Council
From: Dee Williams-Ridley, City Manager
Submitted by: Timothy Burroughs, Interim Director, Planning & Development Department
Subject: Update on Retrofit Grants Program, Activities Funded by FEMA Hazard Mitigation Grant, and Status of the Soft Story Ordinance

SUMMARY
This report provides an update on the successful launch of the new Retrofit Grants program and other activities funded by a Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant. The City of Berkeley was one of three California local governments that met rigorous FEMA requirements and obtained a grant to address seismically vulnerable private buildings. The Building and Safety Division applied for and received the $3 million FEMA grant that will allow the City to provide financial assistance to building owners for seismic retrofits over the grant period through September 2019. As a result of extensive outreach by Building and Safety staff, the first round of grant applications, launched in February, has received strong interest from the owners of remaining Soft Story and unreinforced masonry buildings subject to Berkeley’s mandatory seismic retrofit requirements.

A second round of the $3 million Retrofit Grants program will become available early next year and will expand program eligibility to seismically vulnerable tilt-up and non-ductile concrete buildings in an effort to improve the community’s resilience in the event of a major earthquake.

This report also provides an update on the status of mandatory seismic retrofits required by Berkeley Municipal Code Chapter 19.39 for buildings with a soft, weak or open front (“Soft Story”) condition and five or more dwelling units. Soft Story building owners had a December 31, 2016 deadline to apply for building permits for seismic retrofits. Of the 86 buildings remaining on the Soft Story inventory, 62 buildings containing 617 dwelling units have now applied for or been issued permits.

CURRENT SITUATION AND ITS EFFECTS
Through the Retrofit Grants program, building owners can be reimbursed with FEMA funds for up to $5,000 of engineering costs and up to 40% of construction costs, up to a total of $25,000 per building for seismic retrofit expenses. Design costs are reimbursed after the building permit is issued for a project. Construction costs will be reimbursed after the final inspection of the completed retrofit.
As a result of focused outreach by Building and Safety staff between February and April of this year, 41 Soft Story building owners applied for the first round of Retrofit Grants. In addition, three of Berkeley's remaining six unreinforced masonry buildings applied for design and construction grants. In total, the Building and Safety Division received applications for nearly $1 million in grants in the first round of the program, which had an application deadline of April 20, 2017.

### Retrofit Grants - First Round Applications

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Story buildings that have applied for a Retrofit Grant</td>
<td>41</td>
</tr>
<tr>
<td>Unreinforced Masonry buildings that have applied for a Retrofit Grant</td>
<td>3</td>
</tr>
<tr>
<td>Design grants reserved</td>
<td>$182,222.50</td>
</tr>
<tr>
<td>Construction grants reserved</td>
<td>+$772,170.00</td>
</tr>
<tr>
<td>Retrofit Grant dollars reserved for these projects</td>
<td>$954,392.50</td>
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Building and Safety staff are planning for the second round of the $3 million Retrofit Grants program, which is expected to include additional Soft Story buildings as well as grants for retrofits of seismically vulnerable tilt-up and non-ductile concrete buildings. Tilt-up buildings are typically one- or two-story commercial buildings with concrete walls that are poured horizontally at the jobsite and then tilted into a vertical position. Due to inadequate connections between walls and roof, the walls can pull away and collapse during an earthquake. Concrete buildings built prior to code standards for ductile detailing have also performed poorly in recent earthquakes around the world, with some catastrophic collapses occurring. Retrofits of tilt-up buildings tend to be less expensive than retrofits of non-ductile concrete buildings, though both types of structures are considered to be among the most hazardous building types in the event of an earthquake.

Berkeley’s tilt-up buildings are predominantly warehouse and industrial structures concentrated west of San Pablo Avenue. Older non-ductile concrete buildings are found throughout the City and are concentrated in central Berkeley, surrounding the UC Berkeley campus, and west of San Pablo Avenue.

The Building and Safety Division has done significant research to establish inventories of tilt-up and non-ductile concrete buildings and engaged the expertise of the local engineering community to increase our knowledge and awareness about Berkeley’s potentially hazardous tilt-up and concrete building stock. The Earthquake Engineering Research Institute (EERI), an Oakland-based national nonprofit, will facilitate a field survey later this summer by teams of volunteer engineers to refine a list of approximately 200 concrete and tilt-up buildings previously identified in Berkeley. The Building and Safety Division wrote contract specifications, solicited proposals and is in
the process of engaging two expert structural engineering teams to develop and publish engineering guidelines for seismic retrofits of tilt-up and non-ductile concrete buildings in Berkeley. Later this year, the Building and Safety Division will begin outreach to owners of tilt-up and non-ductile concrete buildings eligible for assistance during the second round of the Retrofit Grants program.

BACKGROUND
A “Soft Story” or soft, weak or open front (“SWOF”) building is a wood-frame building with more than one story that typically has parking, a commercial storefront or other similar open floor spaces on the ground floor. This can lead to a relatively soft or weak lateral load resisting system in the lower story and makes the building potentially hazardous in the event of an earthquake. On October 5, 2005, Chapter 19.39 was added to the Berkeley Municipal Code, requiring owners of Soft Story buildings with five or more dwelling units to submit a seismic engineering evaluation report analyzing the ability of the building to resist earthquake forces and describing work to remedy weaknesses. The ordinance also required owners to notify tenants of the building’s “SWOF” condition and post an earthquake warning notice at the building entrance. On December 3, 2013, Council adopted amendments to Berkeley Municipal Code Section 19.39.110 establishing mandatory seismic retrofit requirements for Soft Story buildings with five or more dwelling units. The ordinance established December 31, 2016 as the deadline for property owners to apply for a building permit, and owners must complete retrofits within two years of submitting the permit application.

Of 328 buildings on the Soft Story inventory, 242 have either completed retrofits or were removed from the inventory through appeals. Of the remaining 86 buildings, containing 854 dwelling units, 62 have applied for or been issued a building permit for the required retrofit work. There are 24 buildings that have not yet applied for a permit. The Building and Safety Division issued warning letters of administrative citation on March 28, 2017 to owners who had not applied for a building permit and the first citations were issued to ten building owners on May 30.

The City’s new Retrofit Grants program is funded by a Hazard Mitigation Grant from FEMA and the Governor’s Office of Emergency Services (Cal OES). The Building and Safety Division learned of this funding opportunity in early 2016 and staff developed a thorough grant application that was submitted in June 2016. The application was well-received and staff worked with Cal OES and FEMA to refine the program design in the fall of 2016. With Council’s December 13, 2016 authorization, the City Manager executed a subgrant agreement with Cal OES on January 10, 2017. This agreement
initiated Phase One of the $3 million FEMA grant. Phase One consists of a 75% Federal share of $1,063,438, matched by a 25% local share of $354,479. The first round of the Retrofit Grants program is focused on the remaining Soft Story and Unreinforced Masonry buildings subject to Berkeley’s mandatory retrofit requirements.

After the City’s acceptance of the grant, the Building and Safety Division quickly moved to launch the Retrofit Grants program. A new project-based Community Services Specialist II position, funded by the FEMA grant, was created to assist with project management and outreach and filled on March 1, 2017. Meanwhile, staff developed all program rules; created outreach materials, a logo, and application forms; and mailed information packets to eligible property owners in early February. Staff developed a web page which contains all program materials (http://cityofberkeley.info/retrofitgrants) and held two informational meetings for property owners in March, 2017.

Over the coming months, FEMA will conduct an environmental and historical review of all proposed projects to assess whether these projects have an impact on historic properties. FEMA must review each building retrofit design and approve it for funding prior to the start of construction. To facilitate this review, two planning interns who support the program created photographic documentation of all eligible buildings. Following the April 20 application deadline, Building and Safety staff compiled a package of information including photographs and either design drawings or engineering evaluation reports of grant-eligible buildings and sent this package to FEMA in early May. Staff anticipates FEMA will complete its review by October, after which construction on the first round of grant-funded projects can begin. Meanwhile, applications for design grants for additional projects will be accepted on a rolling basis, with construction on those projects to occur after a second round of funding and FEMA review.

In mid-June 2017, the Building and Safety Division submitted a Notice of Interest to Cal OES for a second $3 million Hazard Mitigation Grant, from funding provided by FEMA to the State of California as a result of the severe winter storms and flooding in January and February and the resulting federal disaster declaration. These funds would allow the Retrofit Grants program to provide grants to additional seismically vulnerable buildings, to offer larger grants for more complex projects or to extend eligibility to additional building types and extend the duration of the grant program through 2021. Staff also served as a resource for several other cities seeking to replicate Berkeley’s program.
ENVIRONMENTAL SUSTAINABILITY
Retrofitted buildings will be less likely to suffer severe damage or collapse in the event of a major earthquake, and as a result will be less likely than non-retrofitted structures to create additional environmental impacts from demolition and rebuilding efforts.

POSSIBLE FUTURE ACTION
Several other cities in California have established mandatory retrofit requirements for tilt-up and/or non-ductile concrete buildings, including Fremont, Hayward, Los Angeles, and Santa Monica. Using FEMA grant funds, the Building and Safety Division will refine the Berkeley inventories of tilt-up buildings and non-ductile concrete buildings and publish technical requirements to facilitate grant-funded voluntary retrofits of these buildings. This work will supply improved data and expert recommendations in the event that Council chooses to enact mandatory retrofit requirements for tilt-up and/or non-ductile concrete buildings at a future date.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION
The fiscal impact of mandatory seismic retrofit requirements for tilt-up and/or non-ductile concrete buildings would be minimal. Without a mandatory ordinance, it will likely be necessary to increase the size of grants for owners of tilt-up and non-ductile concrete buildings considering voluntary retrofits to garner their interest. While a mandatory retrofit ordinance would increase permit applications and grant applications, the additional work of reviewing plans and conducting inspections would be covered by permit fees. The FEMA Hazard Mitigation Grant pays a portion of staff time for project management through September 2019.

CONTACT PERSON
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Jonathan Cherry, Community Services Specialist II, 510-981-7475

Attachments
  1. Map of Seismically Vulnerable Buildings Eligible for Retrofit Grants
  2. Retrofit Grants Program Flyer for Phase One
Eligibility & Program Rules

Retrofit Grants are available for the following types of buildings:

- **Soft Story** with 5 or more residential units, subject to mandatory retrofit
- **Soft Story** with 5 or more residential units or commercial spaces, or hotels/motels with 5 or more rooms, not subject to mandatory retrofit
- **Unreinforced Masonry** buildings subject to mandatory retrofit

Owners of qualifying buildings must wait for FEMA approval of their retrofit project before beginning construction to be eligible for grant funding. The City expects to notify building owners they may proceed with construction by November 1, 2017.

A second round of funding for retrofits of **Tilt-Up** and **Non-Ductile Concrete** buildings will be available at a later date.

Grants are NOT available for Single Family Homes or Duplexes.
Grant Reimbursements

Grants will be paid as reimbursements for design fees and construction costs for seismic retrofits. All work related to a seismic retrofit must be performed by a licensed contractor to qualify for grant funding. The maximum grant size is $25,000 per building.

Design Grants up to $5,000
1. Obtain a Building Permit
2. Submit a Reimbursement Request with copies of invoices and cancelled checks

Construction Grants
30% of retrofit costs up to $25,000
1. Wait for notification of FEMA approval before beginning construction
2. Visit www.cslb.ca.gov to confirm your contractor's license is current
3. Complete retrofit construction within six months of FEMA approval
4. Obtain an approved Final Inspection
5. Submit a Reimbursement Request with copies of invoices and cancelled checks

How to Apply:
1. Check Eligibility Requirements
2. Apply for a Building Permit if you haven't done so already (Engineering drawings submitted with a permit application will be forwarded to FEMA for review and program approval.)
3. Submit Grant Application:
   Applications are due by April 20th, 2017

For eligibility, reimbursement guidelines, & to fill out a grant application online, visit: www.cityofberkeley.info/retrofitgrants

Example project calculation:

<table>
<thead>
<tr>
<th>Retrofit Cost</th>
<th>Construction Grant</th>
<th>Design Grant</th>
<th>Total Reimbursement</th>
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<tbody>
<tr>
<td>$40,000</td>
<td>$12,000</td>
<td>$5,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>$100,000</td>
<td>$20,000 or $25,000</td>
<td>$5,000 or $0</td>
<td>$25,000</td>
</tr>
</tbody>
</table>

Questions?
Contact Jenny McNulty (510) 981-7451 • jmcnulty@cityofberkeley.info
or visit www.cityofberkeley.info/retrofitgrants for more information