



**MEMORANDUM**

CS Memorandum No. 1356

**DATE:** February 13, 2013

**TO:** SFMTA Board of Directors  
Tom Nolan, Chairman  
Cheryl Brinkman, Vice-Chairman  
Leona Bridges, Director  
Malcolm Heinicke, Director  
Jerry Lee, Director  
Joél Ramos, Director  
Cristina Rubke, Director

**THROUGH:** Edward D. Reiskin  
Director of Transportation

**FROM:** John Funghi  
Program Director, Central Subway Project

**SUBJECT:** Central Subway Program – North Beach Retrieval Shaft Site Relocation – Process, Engineering Approach, and Environmental Investigation

For the past two months, at your direction, SFMTA staff and multiple city agencies have been working to enable the relocation of the retrieval site of the Central Subway's tunnel boring machines (TBMs) from the right-of-way at Columbus Avenue and Union Street to private property, known as the Pagoda Palace (1731-1741 Powell Street).<sup>1</sup> The impetus for this effort was community concerns about construction and traffic disruption associated with the original plan.

As we work to move forward with this change, we are aware that new concerns have been raised about the plan to relocate the retrieval site. We would like to comprehensively address these concerns to reaffirm that we have pursued the Pagoda Palace option with all due adherence to environmental regulation and engineering best practices. We are confident that the plan for construction will be environmentally and structurally sound, and that it will minimize construction-related inconveniences to the North Beach neighborhood.

The concerns we wish to address involve the following:

- The process of selecting and pursuing the Pagoda Palace option
- The soundness of the engineering approach and construction methods to be used in the construction of the retrieval shaft at the Pagoda Palace site
- The adequacy of the environmental addendum to the Central Subway SEIS/SEIR in complying with NEPA/CEQA requirements

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<sup>1</sup> The site has also been referred to as the Pagoda Theater.



We hope the information provided here allays any concerns about moving forward with the Pagoda Palace option. Throughout this process, we have worked quickly and diligently to respond to community feedback and build consensus around this amended construction plan. We will continue our thorough and efficient work as this process progresses.

cc: Mayor Edwin M. Lee  
San Francisco Planning Commission  
San Francisco Board of Supervisors  
Federal Transit Administration  
CS File No. M544.1.5.0970.a

## Selecting and Pursuing the Pagoda Palace Option

The original plan was to retrieve the TBMs through a shaft constructed in the right-of-way on Columbus Avenue, in front of Washington Square Park. As utility relocation began last year, many in the North Beach community expressed concern about this plan, fearing that the construction, which would involve large construction equipment and require the closing of two lanes of Columbus Avenue between Union and Filbert streets for nearly one year, would create significant disruptions to local businesses, traffic, transit, and residents.

In response to community feedback and after comprehensive discussions with the Mayor's Office and Supervisor David Chiu last summer, the Central Subway team began researching and analyzing four alternatives to the plan to remove the TBMs on Columbus Avenue. The approved plan was also assessed.

All five options were evaluated for three criteria: 1) potential impacts to the Central Subway Project's cost and schedule timeline; 2) potential impacts to the adjacent neighborhood, including traffic, proximity of construction work to residences, and impacts to residential and commercial property access; and, 3) impediments to a potential (but not yet planned) future extension of the T-Third Line to North Beach and Fisherman's Wharf. In addition, due to the timing and cost associated with additional environmental study, no option was pursued if it was determined, on initial consideration, to have new significant environmental impacts.

The options reviewed were:

1. Approved plan: Complete TBM removal on Columbus Avenue between Powell and Union streets
2. Leave the TBM heads underground north of the Chinatown Station
3. Leave the TBM heads under Columbus Avenue north of Union Street
4. Complete TBM removal at 1731-1741 Powell Street (Pagoda Palace site)
5. Leave TBM heads underground north of Taylor Street under Columbus Avenue

In November 2012, the SFMTA hosted a community meeting in partnership with Supervisor Chiu's office to discuss the five TBM options. Many of the community members in attendance expressed support for some of the new options, including removing the TBMs at the Pagoda Palace. Many attendees also expressed support for a North Beach station and eventually extending the T-Third Line to North Beach.

Of the four new options, the Pagoda Palace option is the only one that would minimize construction impacts in North Beach while leaving no physical impediments to a potential future extension of the T-Third Line to North Beach and Fisherman's Wharf.

A significant number of community members also expressed support for abandoning the TBM heads north of the Chinatown Station. However, this option would leave an encapsulated large obstacle that would be difficult and disruptive to remove at a later date, significantly complicating or precluding reasonable prospects for a future extension of the T-Third Line. In addition, leaving the TBM heads underground in Chinatown could delay the station contractor's work and create site access issues for the tunnel and station contractors. Finally, given that the city had pursued and achieved funding and approvals to

extend the tunnel to Columbus Avenue, doing so as part of the current project would be more cost effective than doing so in the future. For these reasons, SFMTA staff did not recommend further investigation of that option.

Questions have also arisen about why the TBMs could not 1) be removed at the Chinatown Station site; or, 2) be turned outside of the approved tunneling path in Chinatown and abandoned at a location that would not interfere with a potential future line extension.

Removal of the TBMs at the Chinatown Station site was reviewed in the original SEIS/SEIR, but not proposed for adoption because the design of the Chinatown Station makes this concept significantly more expensive and complicated than removing the TBMs elsewhere. At this stage in the construction process, removal of the TBMs at the Chinatown Station would require significant redesign of the tunnel. In addition, it would conflict with the Chinatown Station contractor's schedule and create site access issues for the station contractor. Significant cost increases and neighborhood impacts would result.

The concept of turning the TBMs out of the approved tunnel right-of-way and abandoning them at another location within Chinatown was not proposed because doing so would require significant additional environmental work. Moreover, abandoning the TBMs outside of the City's right-of-way in Chinatown would involve entering and constructing the tunnel within private property, requiring approval by the property owner(s) (or eminent domain) and appropriate compensation.

SFMTA staff presented the five potential TBM options and their recommendations to the SFMTA Board on December 4, 2012. At that meeting, a number of community members, many representing community groups, testified in support of the Pagoda Palace option, stating that it would minimize the disruption to Columbus Avenue and facilitate removal of the existing building, which has long been considered a blight on the neighborhood. The supporters who spoke at the meeting represented the North Beach Business Association, North Beach Neighbors, Russian Hill Neighbors, SPUR, and the Chinatown Community Development Center. Mayor Lee and Supervisor David Chiu also expressed support for the Pagoda Palace plan. Since November, the SFMTA has received 14 letters of support from individuals and community groups in favor of removing the TBMs at the Pagoda Palace.

Based on the opinions of the members of the North Beach community, and in consideration of the criteria discussed above, the SFMTA Board of Directors directed SFMTA staff to pursue the feasibility of using the Pagoda Palace site for extraction of the TBMs.

In the intervening time, SFMTA staff has worked to obtain the rights to access the property, prepare the required design and engineering approvals, complete an environmental addendum to fulfill requirements of the California Environmental Quality Act (CEQA), seek concurrence from the Federal Transit Administration (FTA) for the modified project under the requirements of the National Environmental Policy Act (NEPA), and identify a funding source to cover the increased costs associated with the Pagoda Palace option. Timing has been critical – construction of the retrieval shaft must be completed before the TBMs reach North Beach. The retrieval shaft will take almost a year to construct, and the first TBM is currently scheduled to arrive in North Beach in spring 2014. This schedule constraint strictly limits the timeline in which the SFMTA may pursue the retrieval shaft location change.

The SFMTA, the Central Subway Project team, Supervisor Chiu's office and the Mayor's Office of Economic and Workforce Development have worked closely with the North Beach community. A dedicated staffer from OEWD has met frequently with community members and coordinated with the SFMTA and other relevant city agencies. The community has received frequent email updates about the status of the plan. In addition to the November 22 community meeting, three meetings were held with property owners, business tenants and residents adjacent to the Pagoda Palace site to inform them of the possible construction plan and potential impacts. On January 22 the SFMTA hosted another public meeting to update the community on the plan.

The effort to change the retrieval site has involved a significant amount of work on a very tight timeline. With the strong support of Mayor Lee and Supervisor Chiu, the SFMTA has worked closely with several City agencies, including the Planning Department, the City Attorney's office, and the Department of Building Inspection, to try to make the Pagoda Palace option a reality.

The SFMTA has completed negotiations to enter into a two-year lease with the owner of the Pagoda Palace property. The not-to-exceed \$3.15 million lease will allow the SFMTA to demolish the building and use the site for retrieval of the TBMs. Key lease terms are as follows:

- The SFMTA will pay the landlord \$400,000 per year in rent.
- The SFMTA will reimburse the landlord up to \$450,000 for certain out-of-pocket costs.
- The SFMTA will reimburse the landlord up to \$1,500,000 for inflationary construction cost increases (if any) due to delaying its project.
- The SFMTA will reimburse the landlord up to \$400,000 for partially removing and backfilling the SFMTA excavation shaft when the landlord builds its project.
- The SFMTA will demolish the existing building through conventional demolition.
- Either party may immediately terminate the lease if the required conditions for demolishing the existing building are not completed by April 1. These conditions include obtaining clearance under NEPA from the FTA and acquiring approval of the Special Use District and Conditional Use application relating to the Pagoda Palace site.
- The SFMTA will install construction fence around the perimeter of the premises and, on termination of the lease, perform general site cleanup and leave the premises in a safe and neat condition.

In addition, SFMTA will incur up to \$6 million in construction and demolition costs to access the site, construct the retrieval shaft, and retrieve the TBMs. The funding will come from various local sources, including reserve funds, fund balance, and operating savings.

On January 8, 2013, Supervisor Chiu introduced an ordinance proposing a Special Use District (SUD) for the Pagoda Palace and tunnel boring machine extraction site. The property owner filed a new Conditional Use (CU) application on January 15, 2013. The SUD is drafted to address provisions in the Planning Code that would preclude the Pagoda

Palace redevelopment project as it was previously approved and entitled on October 28, 2010. The only exception is that the size of the restaurant was increased slightly.

In compliance with CEQA, the Planning Department prepared an addendum to the Central Subway Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR). In addition, the project team has been working with the FTA and the State Historic Preservation Officer (SHPO) to review the modified project in compliance with NEPA requirements. Additional details about the environmental review and related review processes are included in this memo, in the section titled "Environmental Addendum and Complying with NEPA/CEQA Requirements."

### **Pagoda Palace Retrieval Shaft Design and Construction Plan**

This section explains the design of the Pagoda Palace retrieval shaft and the construction methods that the tunnel contractor plans to use to build it. This section also contains a response to a report written by a consulting geotechnical engineer, Lawrence B. Karp (the Karp report), at the request of SaveMuni, a group that opposes the Central Subway Project. The Karp report, issued February 5, 2013, contains incorrect information about the design and the construction plan.

Design drawings for the retrieval shaft have not yet been provided by tunnel contractor Barnard Impregilo Healy, and additional geotechnical evaluation will be performed before that design is finalized. However, based on previous investigations at the Pagoda Palace site and nearby the original retrieval shaft site, the SFMTA expects the site conditions and planned construction methods for the retrieval shaft at the Pagoda Palace to be very similar to the Columbus Avenue design.

The construction plan will be consistent with the requirements of the tunnel construction contract and will comply with applicable regulations concerning protection of properties adjacent to the site. The construction contractor will perform pre-construction surveys to confirm existing site conditions within the Pagoda Palace site and at adjacent properties. Monitoring equipment will be installed on nearby buildings and, if necessary, ground improvement work and shoring will be performed. Mitigation measures such as these will safeguard neighboring properties during construction.

Based on current assumptions and in advance of a final geological investigation at the Pagoda Palace site, the retrieval shaft at the Pagoda Palace (approximately 45 ft. by 49 ft., with a depth of 42 ft.) will be slightly larger than the retrieval shaft that was planned for Columbus Avenue (40 ft. by 40 ft., with a depth of 40 ft.).

The SFMTA expects the construction methods at the new site to be the same as those planned, designed, vetted, and approved for the retrieval shaft on Columbus Avenue. Before the retrieval shaft is excavated, secant piles will be drilled into the ground to form a watertight wall around the area to be excavated. The secant piles will extend to a depth of approximately 70 feet into material that is impervious to ground water.

In the process of excavating the retrieval shaft, the excavation will be braced internally using steel walers. Bracing will be installed in several levels within the excavation to stabilize it. This construction method requires no external shoring or intrusion into neighboring properties. Inside the retrieval shaft, entrapped water will be pumped out while excavation is in progress.

The SFMTA utilized information from borings performed in 2008 at the Pagoda Palace by Treadwell & Rollo, the property owner's engineering consultant, and from boring reports prepared by City consultants at the original retrieval shaft site on Columbus Avenue to assess soil and groundwater conditions. At the Pagoda Palace, a boring was drilled inside the existing building to a depth of 31 feet. On Columbus Avenue, borings were drilled to a depth of 60 feet. At both locations, the borings indicated that the ground consists of several feet of clayey sand above very dense silty sand. On Columbus Avenue, the approximate depth of bedrock is 70 feet.

To confirm ground conditions below 31 feet, additional borings will be performed at the Pagoda Palace site before construction begins. It is expected that ground conditions at the Pagoda Palace will be similar to those on Columbus Avenue; however, should ground conditions differ significantly, the retrieval shaft design will be amended as necessary to address those conditions.

A high groundwater table is present at both the Pagoda Palace and Columbus Avenue locations. The planned retrieval shaft design will take into account the high groundwater table, and dewatering will only be required within the excavation, not outside of it or in neighboring properties.

The City's plans for the excavation of the Pagoda Palace site differ significantly from the plan described in the Karp report. In his report, Mr. Karp incorrectly describes the depth of the proposed Pagoda Palace retrieval shaft excavation, misrepresents the geological investigations that have been and will be performed before construction begins at the site, draws inaccurate conclusions about the construction methods that will be used to construct the retrieval shaft, and incorrectly describes the impacts of construction on nearby properties and groundwater tables.

Contrary to what is indicated in the Karp report, the SFMTA has thoroughly investigated and smartly designed the Pagoda Palace retrieval shaft to minimize impacts to neighboring properties and groundwater tables.

The paragraphs below address each of the statements in the Karp report and explain why they are incorrect.

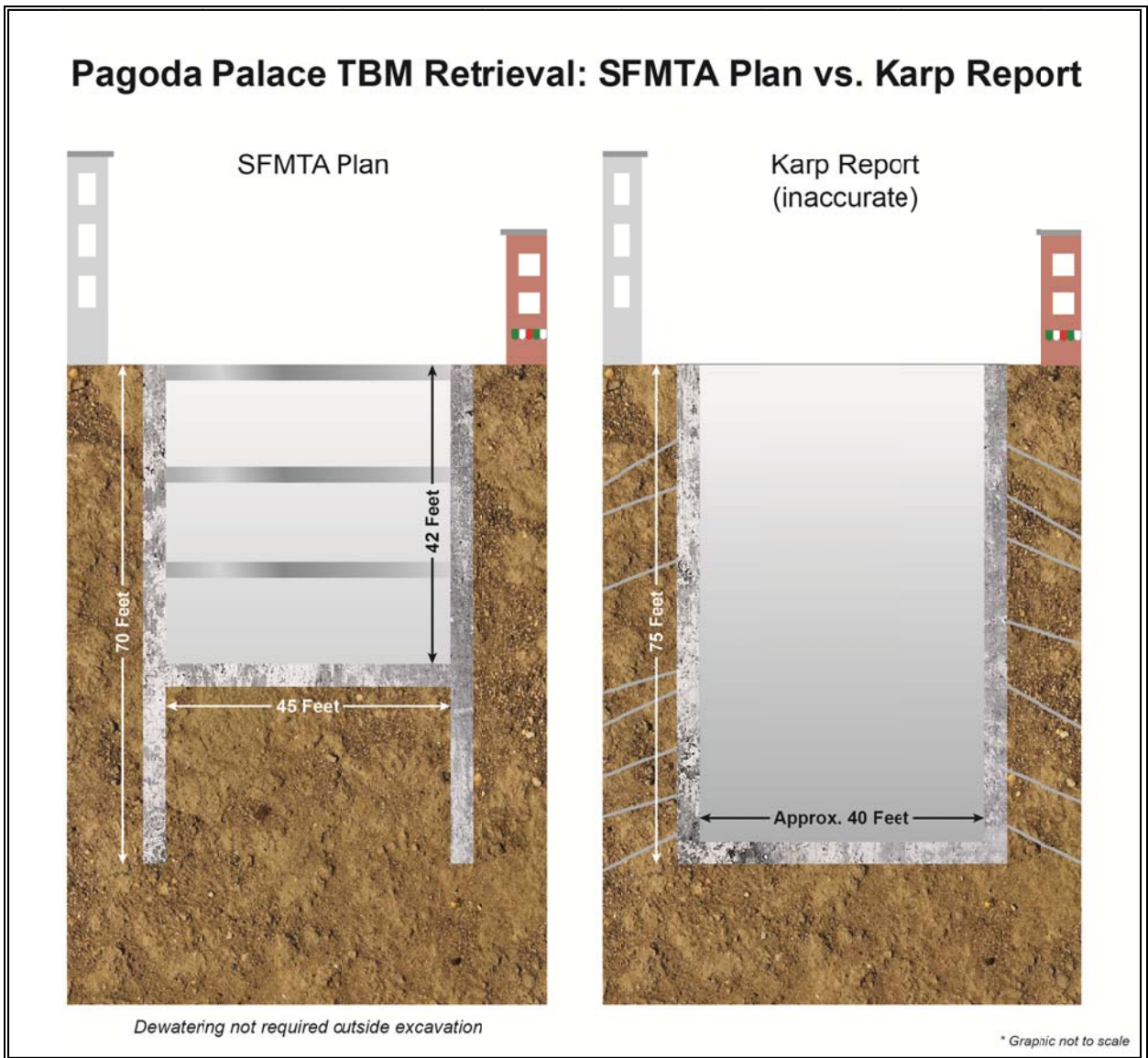
- Mr. Karp states that the excavated depth of the retrieval shaft at the Pagoda Palace will be 75 feet. This statement is incorrect. The excavated depth of the planned retrieval shaft will be approximately 42 feet.
- Mr. Karp states that the retrieval shaft cannot be braced internally because internal bracing "would interfere with TBM extraction." He further concludes that "tiebacks for soldier beams are really the only solution but tiebacks will intrude at least 40 feet into

neighboring lots.” This statement is inaccurate. The retrieval shaft will be braced from the inside. Steel walers will stabilize the excavation at several levels. The bracing will be installed in such a way that it does not interfere with the entry of the TBMs into the excavated retrieval shaft. This construction method requires no external shoring or intrusion into neighboring properties.

- Mr. Karp misrepresents the geological investigations that have been performed at and around the Pagoda Palace site. The SFMTA utilized information from borings performed at the Pagoda Palace (Treadwell & Rollo 2008) and at the original retrieval shaft site on Columbus Avenue to assess soil and groundwater conditions. At the Pagoda Palace, a boring was drilled inside the existing building to a depth of 31 feet. On Columbus Avenue, borings were drilled to a depth of 60 feet. Additional borings will be performed within the Pagoda Palace construction site before construction begins to confirm ground conditions there.
- Mr. Karp states that constructing the retrieval shaft at the Pagoda Palace site would “require dewatering” and “will lower the groundwater table under buildings on Union, Powell, Columbus and Filbert.” This statement is inaccurate. Dewatering of excavations is a common construction method that, when performed correctly, does not cause subsidence or other adverse impacts to properties adjacent to the excavation. Dewatering will not be required outside the retrieval shaft excavation. The secant pile walls installed surrounding the excavated retrieval shaft will create a watertight barrier between the excavation and the soils and groundwater around it. The walls, which will extend to a depth of approximately 70 feet, will be constructed using interlocking concrete secant piles. The piles will be drilled into the ground before excavation begins.

The diagram on the following page illustrates the differences between the SFMTA’s construction plan and the retrieval shaft as described in Karp’s evaluation.





As planned, the secant piles will be drilled to a depth of approximately 25 feet below the depth of the retrieval shaft, which should block most, if not all, ground water from the excavation. Any water that might seep in would be minimal and would be removed without impact to surrounding properties.

## **Environmental Addendum and Complying with NEPA/CEQA Requirements**

### ***California Environmental Quality Act***

To comply with CEQA, the Planning Department has developed an addendum to the Central Subway SEIS/SEIR. Use of the addendum to an EIR is governed by Section 15164 of the CEQA Guidelines.

An addendum is appropriate when there is a minor change to a project, but:

- The changes to the project do not create new significant environmental impacts or substantially increase the severity of previously identified environmental impacts;
- The changes with respect to the circumstances under which the project occurs do not lead to new significant impacts or substantially increase the severity of previously identified significant impacts; and
- There is no new information which provides a basis for a conclusion that there is a new or substantially more severe significant impact.

The January 31, 2013, addendum to the Central Subway SEIS/SEIR considers whether tunneling the additional distance to the Pagoda Palace, moving the TBM retrieval shaft from Columbus Avenue to the Pagoda Palace site, and constructing the mixed use building would create new significant impacts not covered in 2008 SEIS/SEIR.

The following summarizes the findings of the addendum to the SEIS/SEIR and the process used to perform the additional environmental review. It also discusses the adequacy of the planning process used in developing the details of the Pagoda Palace option.

### *Geotechnical Issues and Mitigation Measures*

It is common to complete environmental review under CEQA (and NEPA) before projects have detailed engineering drawings addressing geotechnical issues. The environmental analysis in these cases relies on geotechnical reports, which indicate any existing soils-related concerns and contain recommendations for construction.

The 2008 Central Subway SEIS/SEIR addressed geotechnical issues at the appropriate level for environmental review. Because the exact construction methods necessary to minimize settlement of adjacent structures could not be identified until construction was proceeding, the SEIS/SEIR identified, and the SFMTA adopted, a mitigation measure requiring ongoing monitoring and appropriate support of such structures.

The geotechnical discussion of the tunnel and excavation work in the addendum acknowledges the condition of the soils and the need for dewatering at the Pagoda site. The addendum indicates that the mitigation measure identified in the SEIS/SEIR would also apply to the extension of the tunnel and the TBM retrieval shaft location change. No further mitigation measures specific to moving the tunnel to the Pagoda Palace site are necessary.

In completing the January 2013 addendum to the SEIS/SEIR, the Planning Department reviewed a 2008 geotechnical report prepared for the 1731-1741 Powell Street site. The

report acknowledges the soil conditions and shallow groundwater on the site, indicates the need for dewatering to accommodate construction, and recommends shoring and underpinning of adjacent buildings.

The addendum acknowledges the recommendations in the geotechnical report prepared for the site. As with all other projects, impacts from the soil conditions and shallow groundwater on the site are typically not considered a significant impact because they are addressed by the Building Code during the building permit application process. For these reasons, no new mitigation is needed to address these site conditions, and an addendum to the SEIS/SEIR is appropriate.

#### *Vibration*

The 2008 SEIS/SEIR contains mitigation measures for potential construction effects on historic buildings that may sustain vibration, albeit at levels that would not cause damage to structures or architectural features. The addendum identifies the potential historic resources closest to the Pagoda site that would have the most exposure to vibration from tunneling and construction and recognizes that the existing vibration-related mitigation measures are applicable at the Pagoda site. No new significant impacts not previously identified in the SEIS/SEIR would occur, and no new mitigation measures are needed.

#### *Cultural Resources*

The addendum considers the potential effects on archeological resources of the proposed additional tunneling and excavation at the Pagoda Palace site. The mitigation measures for impacts to archeological resources identified in the 2008 SEIS/SEIR and imposed on the Central Subway Project would also be applicable to the additional tunneling and excavation at the Pagoda Palace. The Planning Department's staff archeologist considered the likelihood of the presence of significant archeological resources in the newly affected area and concluded, based on the history of the area and the site and the composition of the soils, that the mitigation measure contained in the SEIS/SEIR would be adequate and no new mitigation was needed.

As indicated in the addendum, the Department's archeologist noted that the Section 106 agreements associated with archeological work would need to be amended. The section 106 process is not completed to comply with CEQA and does not need to be completed prior to CEQA review. The need to amend the archaeological Area of Potential Effect does not indicate a new significant impact, and does not indicate a need to prepare a subsequent or supplemental EIR.

The Planning Department reviewed the impacts of the project changes on historic resources. The addendum concluded that there would be no new significant impacts to historic architectural resources.

The site is within an adopted historic district, the Washington Square Historic District. Although a North Beach Survey that included the Pagoda Theater was completed, there is no adopted North Beach Historic District. The Pagoda Theater building is a contributor to the Washington Square Historic District and a potential contributor to a potential North Beach

Historic District, but it does not retain sufficient integrity to be an individual resource. Therefore, the historic resource impact analysis considered the effect of the project on the integrity of the Washington Square Historic District. The analysis concluded that because the new project would replicate the massing and blade sign of the existing building, no significant impact to that District would occur.

The historic resource analysis does not consider the effect of a project on each surrounding building individually, but rather on the setting and context of the district as a whole. As with the archeological review, the historic review under Section 106 does not occur prior to completion of CEQA, and the need for Section 106 review does not indicate that a subsequent EIR is required.

#### *Growth Inducement*

The addendum concludes that moving the TBM retrieval shaft site would not have impacts due to growth inducement. Moving the retrieval shaft would not increase the potential for a station in North Beach or future extension of the Central Subway. As there is no current plan or funding for a station or extension, any potential impacts from a station or extension would be speculative. A future station and/or extension would require its own environmental review at the appropriate time.

#### ***National Environmental Policy Act***

The Pagoda Palace retrieval shaft option also requires review under NEPA by the Federal Transit Administration (FTA). The SFMTA will seek concurrence from the FTA that the proposed change to the Project requires no supplemental environmental review under 23 CFR Section 771.130(c) of the regulations implementing NEPA. To that end, the SFMTA has forwarded relevant documents to the FTA regarding the Pagoda Palace option, including the addendum prepared under CEQA, for its consideration. We anticipate that the FTA will use the addenda as well as this memorandum to inform its determination as to the appropriate level of additional review required. Demolition of the Pagoda Palace cannot proceed until the FTA makes this determination.

In order to make the determination described above, the FTA must receive concurrence from SHPO under Section 106 of the National Historic Preservation Act. On January 18, 2013, FTA submitted a request to SHPO seeking concurrence that the architectural Area of Potential Effect (APE) be expanded to include the properties adjacent to the Pagoda Palace and that the Pagoda Palace does not retain any historic integrity, and is therefore not an historic resource. On February 11, 2013, SHPO sent a letter to the FTA concurring in this determination.

On January 29, 2013, FTA supplemented its initial letter to SHPO with a further request to expand the archaeological Area of Potential Effect to include the Pagoda Palace site. We anticipate that FTA will further supplement its correspondence with a recommendation to SHPO that there be a finding of no adverse effect from amending the archaeological APE to include the Pagoda Palace option. The SFMTA is currently working with its archaeologists to provide the required documentation to SHPO and the FTA.