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ANDREA SHERIDAN ORDIN
County Counsel

March 31, 2011

Kevin H. Brogan
Hill, Farrer & Burrill
One California Plaza
37th Floor
300 South Grand Avenue
Los Angeles, California 90071-3147

Re: Westside Subway Extension

Dear Mr. Brogan:

For several months, MTA has been trying to obtain from Beverly Hills Unified School District a copy of the plans and drawings for the existing buildings on its High School campus. As you know, the information contained in foundation drawings is extremely helpful in determining the feasibility of tunneling under developed property. Unfortunately, it appears the City of Beverly Hills Building Department does not have these plans, and our repeated attempts to obtain a set from BHUSD have thus far been unsuccessful.

We're quickly approaching a point in the CEQA/NEPA and Preliminary Engineering process where we need to know the depth and breadth of foundations supporting the existing buildings at the High School. Obtaining as-built building plans (whenever available) is part of the normal Preliminary Engineering process to verify existing conditions which will be encountered during tunneling. Without the actual drawings, we will need to make assumptions based on visual observations and measurements of subterranean structures. However, we're hoping that under your direction, renewed efforts can be made during the next week that will locate the actual drawings and plans.

Please keep in mind that BHUSD requested that MTA analyze the risk of tunneling under the High School. Without as-built plans, it will be more difficult to perform such analysis and the results may be less precise. We therefore seek BHUSD's cooperation in presenting such plans to MTA in a timely manner so it can complete the geotechnical and structural analysis that BHUSD requested.


Kevin H. Brogan
Hill, Farrer & Burrill
March 30, 2011
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Please let me know by Friday, April 8th whether you've been able to find the building plans. If you're still unable to locate the plans by then, we will assume that the plans either no longer exist or cannot be found, in which case we would request access to the school buildings during the following two week period so that we can take measurements which will be used to re-create foundation plans based on observations and measurements taken within the buildings. Of course, MTA will share with BHUSD any foundation plans we create.

We appreciate your continuing cooperation and efforts to locate the as-built plans and look forward to hearing from you by April 8th. Thank you.

Very truly yours,

ANDREA SHERIDAN ORDIN
County Counsel

By 
RONALD W. STAMM
Principal Deputy County Counsel
Transportation Division

RWS

c: Tim Buresh
Veronica Becerra
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April 27, 2011

Ronald W. Stamm
Principal Deputy County Counsel
Transportation Division
County of Los Angeles
One Gateway Plaza
Los Angeles, CA 90012-2951

Re: Westside Subway Extension
Subj: Beverly Hills High School Master Plan Implications for Metro

Dear Mr. Stamm:

The Beverly Hills Unified School District continues to support the Metro Westside Extension Project. The District continues to believe Metro representations that the ongoing Metro process will fairly and objectively evaluate all factors in making its final alignment recommendation.

Thus far, in its analysis of potential impacts on the Beverly Hills High School campus, Metro has requested site access for extensive geotechnical investigation, site access for Metro tunnel experts, and existing building as-built information. The District has complied with all of these requests.

Metro has also requested information related to Beverly Hills Unified School District's Measure E Bond program and planned construction at the Beverly Hills High School campus. However, the questions of compatibility between Metro and the Beverly Hills Unified School District usage of the Beverly Hills High School site go well beyond the immediate short term implications. Unlike a commercial interest, or residential interest, or any other taking that Metro is contemplating for the project, there is no alternate location for the Beverly Hills High School. This site is and will be the only high school location for the Beverly Hills Unified School District. The site has been in continuous usage as a high school for the last century and should be expected to remain as a high school for the next century. Any analysis of joint usage must take the uniquely long range concerns of the Beverly Hills High School and its singular mission into account.

The attached report titled Beverly Hills High School Master Plan Implications for Metro addresses the short term issues related to Measure E construction and the long term issues related to the Beverly Hills Unified School District's continued usage of the campus and its ability to serve its educational and public service missions. This analysis is based solely upon information contained in the Metro Draft EIS/EIR because of the ongoing refusal by Metro to provide updated information.

The conclusion is unambiguous: the proposed Option H Alignment is incompatible with the long term requirements of the campus, jeopardizes the ongoing Measure E bond program, will inevitably cause immediate and long term increases in school construction costs, will absolutely compromise the future ability of the campus to accommodate all of the facilities necessary to fulfill its educational and



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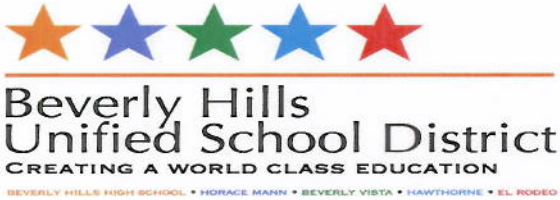
community service missions, and will compromise the ability to accommodate the inevitable growth attendant to normal and expected community growth and student population increases.

The Beverly Hills Unified School District specifically requests that Metro incorporate the information contained in the letter and report into its ongoing analysis and planning. It further requests a written response by Metro to the issues raised including specifically addressing any measures considered by Metro to mitigate any of the issues raised in this document, and the opportunity to respond to any proposed mitigation prior to its inclusion into the Final EIS/EIR.

Respectfully,

Richard Douglas
Superintendent

HFB 1044306.1 B3902002



Beverly Hills High School Plan Implications for Metro

Summary

The Los Angeles Metropolitan Transportation Authority (Metro) has proposed a subway alignment that cuts across the Beverly Hills High School campus. The proposed tunnels in this area are relatively shallow because of geometric constraints posed by Metro's proposed configuration and particularly Metro's Constellation station location and elevation.

The Beverly Hills Unified School District has considered the implications and ramifications to its use of the Beverly Hills High School campus based on the Metro Draft EIS/EIR, the only information available to the Beverly Hills Unified School District at this time.

It is important to recognize that this campus has now been in continuous use for a century. It is highly likely that it will continue to be used as an education facility for another century. At the same time, subway tunnels may have a very long life span despite Metro's short and tenuous experience with subways. Many subways in other parts of the country have served for more than a century. Any evaluation of potential impacts to the educational purpose and mission of the Beverly Hills High School must consider the very long term consequences and implications of co-locating both facilities on the same piece of property.

The proposed Metro alignment would place in jeopardy the entire modernization program for the Beverly Hills High School campus – a program for which bonds have been approved and sold by the Beverly Hills Unified School District. The proposed co-location raises serious compatibility issues, is incompatible with future continued use of the property for educational and other public purposes, and is inconsistent with the long term educational master plan for the Beverly Hills High School campus.

School Demographic and Program Requirements

The Beverly Hills Unified School District currently serves an attendance area that matches the boundaries of the City of Beverly Hills. The Beverly Hills High School is the only high school serving the Beverly Hills Unified School District. The Beverly Hills High School campus currently accommodates all Grade 9-12 high school activities, plus accommodates all adult education classes for the entire Beverly Hills Unified School District, and also serves as a community center for the City of Beverly Hills. The campus auditoriums are used for hundreds of public (non-school) events per year, in addition to the normal range of high school extracurricular activities. The campus athletic fields are used for Beverly Hills High School teams, as tournament space, support other Beverly Hills Unified School District athletic programs, and are used by the community at large. The Beverly Hills High School campus must also serve as an emergency center for the community of Beverly Hills.



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Currently the twenty two acre campus is very crowded and is considered undersized by current California Department of Education high school standards. However, there is no practical alternative site for a high school in the City of Beverly Hills. The city is effectively built out and property acquisition would be prohibitively expensive (if even possible) to either expand the current site or find a replacement site. Based upon physical, financial and policy considerations, the current site will remain the only high school campus for the district for the foreseeable future.



Figure 1 – Beverly Hills High School campus.

The Beverly Hills High School student population can vary considerably. The recent grades 9-12 population has varied between 2300 and 2800 students. Local demographic changes and changes in education policy can drastically and quickly change that population. For example, the Baby Boom was followed by a reduction in population followed by a Baby Boomlet increase. Another upswing appears likely. A significant portion of the potential student population within the attendance area currently attends private schools; these students retain the right to return to Beverly Hills High School. Since the start of the current recession, the Beverly Hills Unified



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School District has seen an increase in the number of students leaving private schools and returning to public schools, especially at the Beverly Hills High School. Out of district student attendance is currently restricted. Changes in State or Federal law will likely impact these restrictions allowing additional out of district students to enroll at the Beverly Hills High School. Current educational trends incorporate more college level coursework at the high school level which will likely also increase the net student population. The campus must also accommodate continued growth due to the overall population increase of the community. Demographic swings in comparable communities indicate a potential long term maximum student population of 4,000 high school students. However, any number of factors could dramatically increase this number. Regardless of the actual student population change, the Beverly Hills Unified School District must accommodate all students. Long term planning for the Beverly Hills High School must make provisions for this substantially increased population as well as increased public use of the campus.

The Beverly Hills High School campus also serves as a community center. The Beverly Hills Unified School District has a cooperative use agreement with the City of Beverly Hills to accommodate community functions on campus. These functions primarily consist of large gatherings that use the various theater, auditorium and performance spaces on campus, and community sports programs. There are now hundreds of public gatherings per year on the campus. Sports programs demand exceeds the current capacity. There is no other facility with comparable capacities within the City of Beverly Hills, and the cooperative use agreement is an important source of school funding. Future development must preserve and expand these facilities and accommodations, including improved parking and transit access.



Figure 2 – Beverly Hills High School Auditorium used for community events.

Current Conditions

The Beverly Hills High School campus consists of a number of facilities. The majority of the campus was constructed by the 1930's. There have been numerous expansions and modifications over the decades, but the distinctive architectural character of the campus has been maintained. The campus buildings are considered historically significant.



Figure 3 –Beverly Hills High School circa 1930's future graduation lawn and original Building B

The attached marked up aerial photo indicates the various building locations and identification. (Refer to Attachment 1 at the back of this document.)

- Building A – classrooms and parking, circa 1970
- Building B – classrooms, circa 1920's with multiple additions and modifications
- Building H – classrooms and sports, circa 1930's
- Building L – classrooms, circa 2007
- Building E – gymnasiums and lockers, circa 1930's
- Building F – gymnasium with retractable floor over swimming pool, circa 1930's
- Building N1 – District administration, circa 1970
- Building N2 – Adult education classrooms, circa 1962

Many of the facilities do not meet current program requirements. For example, the older classrooms are undersized and do not meet current California State educational standards. The gymnasiums and swimming pool (although architecturally significant) do not meet California Intramural Federation (CIF) standards. The Beverly Hills High School is required to provide sports parity under federal law (Title 9) and currently lacks the facilities to be in full compliance with federal requirements.



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A number of buildings have exceeded their useful life. Many are seismically deficient. They will require replacement or reconstruction in the near future. However, all of the facilities on campus will eventually require replacement. Master planning must anticipate the placement of structures currently missing or undersized for a student population of no less than 3,000, plus a potential student population expansion to 4,000. These requirements translate into the following space requirements for the campus:

- Existing Structures – 688,000 SF
- Near Range Build-out for 3,000 Students – 809,000 SF
- Long Range Build-out for 4,000 Students – 1,000,000 SF

In addition, the campus lacks adequate parking for current uses and population. The surrounding neighborhood predominantly consists of multi-family structures making it already parking challenged. The Beverly Hills High School campus is on the extreme western edge of the attendance area resulting in a higher than average percentage of students driving to school. Community events held at the Beverly Hills High School frequently overwhelm all on-campus and neighborhood parking. Anticipated increased use of the site will strain parking capacity beyond existing levels.

The Beverly Hills High School campus is the only location in which the Beverly Hills Unified School District may construct those replacement buildings. The Beverly Hills Unified School District must preserve all reasonable development capacity for near term and long term replacement and expansion of facilities.

Site Constraints

There are several major constraints that impact future building design and placement:

- Because there is no excess capacity in the existing structures, existing buildings must remain operational until new construction comes on line. Any classrooms lost during construction will require temporary portable classrooms, for which there is limited space. (Note that under the State Education Code, students may only be placed in Field Act compliant structures, which excludes all commercial structures.)
- The “Graduation Lawn” area is one of the rare open spaces in the community, is used frequently for school and community events, and must be maintained relatively intact.
- Open space is so valuable that community expectations are that when the N1 and N2 buildings are eventually removed, the remaining area will be dedicated to open space.
- The campus is bisected by Heath Road, a public street. The street could potentially be relocated, but not eliminated because of fire access requirements and the necessity to serve the Beverly Hills High School parking areas. There are numerous utilities including water, storm and sewer underlying Heath that must also be relocated.
- The above ground oil operations area at the south end of campus will remain in place. Underground wells and production facilities will remain in service and be expanded. Oil



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production provides methane mitigation for the campus, is an important source of revenue to the Beverly Hills Unified School District, and is subject to lease obligations.

- The south end of the campus must remain essentially a sports area for multiple reasons including:
 - It acts as buffer to noise or traffic impacts from Olympic Boulevard.
 - It is underlain by abandoned oil wells, sumps and production facilities, plus operating oil wells and pipelines. Cleaning up the abandoned facilities and contaminated soils and relocating operating wells to allow continued oil production would be prohibitively expensive.
 - It is the only part of the Beverly Hills High School campus that is flat and large enough to accommodate the football field and track.
 - It provides the best public access to the campus from local public streets.
- The site is not level: it rises some 40 feet from East to West, and 10 feet from South to North.

The presence of seismic faults and their location on site has not been fully investigated and is not well understood at this point in time. The Beverly Lineament and the Newport-Inglewood faults are in the immediate vicinity of the campus and may cross portions of the Beverly Hills High School campus site. If so, they could severely restrict the usability of the site for future buildings. If they intersect an existing building, that building may require immediate partial or total replacement.

The Division of the State Architect is the controlling building authority for school construction operating under special design criteria and building codes (the Field Act). The Field Act embodies many special restrictions that are unique to school construction in California and which substantially modify the State Building Code. The most significant restrictions relate to school seismic design standards and fire/life safety concerns. For example, the Division of the State Architect requires mandatory setbacks from faults, and will not allow building construction to traverse active faults. Schools are designed to higher structural standards than commercial structures that are more akin to essential public building structures standards for importance and survivability.



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Figure 4 - Graduation Lawn, Building B showing sloping site.



Figure 5 - Stair access to Buildings B from S. Moreno Drive.



Figure 6 - Oil production at south end of Beverly Hills High School campus.

The Modernization Program

Beverly Hills Unified School District recognized the current deficiencies in the Beverly Hills High School campus, proposed and passed Measure E, a +\$300 million district-wide renovation and improvement bond program, in 2008 two years before Metro announced the proposed alignment that passes under the campus. The bulk of the bond funding will go to the Beverly Hills High School campus. The Beverly Hills Unified School District is now in the early stages of master planning for this program. No finalized planning documents are available at this time. However, it is possible to recognize the various site limitations, project future requirements, and yield a rough definition of the most likely physical solutions to the long term needs of the campus.

In the near term, the following major additions are being actively considered:

- Add new CIF-compliant gymnasium and aquatics building, while maintaining the current sports facilities, buildings E and F. 60,000 SF
- Add community sports administration, processing and bus transfer facility. 10,000 SF
- Add a parking garage with +600 new slots to replace parking lost to Building L construction, anticipated loss of parking near Buildings E and H, and any other lost surface parking. Maintain at least 1,000 cars total parking capacity. +96,000 SF
- Add additional community functions and classroom space to make up for undersized facilities in current structures. 58,000 SF
- Add replacement classrooms for any existing space lost to the renovation program. TBD SF

The building program has anticipated the seismic retrofit and preservation of the 1930's era Building B. However, this may not be practical in which case it must be replaced in kind in the near term, requiring an additional 200,000 SF of new construction.

In the longer term, Buildings A, B, N1 and N2 will exceed their useful lives and must be replaced somewhere on campus. When the campus population increases, as is inevitable, additional space will be required. For example, if the population increases from 3,000 to 4,000 students, an additional 200,000 SF of instructional space would be required, along with a proportional increase in parking and support space.

Most Likely Building Scenario

The prime location available for new construction is the area of the campus that extends from the tennis courts and parking near Building F at Moreno to the soccer field near Heath – directly over the proposed Metro tunnel alignments. The following site plan indicates the prime building area for the campus shaded yellow.



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Figure 7 - BHHS Site Plan and Prime Building Area

In the near term and at a minimum, this area must accommodate the additional facilities required to achieve the 3,000 student build-out, plus a net 1,000 car parking garage capacity. In the long term, the area must accommodate the replacement of Buildings B, N1 and N2 plus additional space required for ant student population increase. Construction in this area will probably cause the loss of Building H and a portion of Building B, and will require in kind replacement. This poses a substantial build-out in a relatively small footprint.

A number of factors will limit the ability to build upward above grade:

- If built at grade, the resultant set of structures will be disproportionately large when compared with other structures on campus and in the adjacent Beverly Hills neighborhood.
- The Beverly Hills High School campus is seen as a buffer between the residential neighborhood and the ever expanding high rise construction of Century City. Placing a large above grade structure on the campus would draw criticism that it overwhelms the community and is inconsistent with community expectations. Community sentiment on this subject will only strengthen as proposed high rise construction continues in Century City.
- City building standards for commercial construction require underground parking. Although not binding on school construction, they are an important reflection of community expectations. The City is also an important source of BHUSD funding under the cooperative use agreement and will have influence in any design.
- The sloping site will accentuate the apparent height of any structure placed on the top of the slope.
- Existing campus structures are limited in height (four stories for Buildings A and L, but first floors are partially embedded in the slope).
- Health and safety codes for schools strictly limit the height above grade for fire access and egress. Generally, above grade school construction is limited to three floors and strictly controlled by the Division of the State Architect.
- School circulation is not like commercial structures: the entire student population leaves a classroom and goes somewhere else every 50 minutes. Stairwells form choke points and unsupervised areas. Good school design limits the number of floors for classrooms to improve circulation and security.
- The campus is already short of surface area for athletics and other public gatherings. Construction in the prime building area will cause the loss of the tennis courts. Underground construction will minimize overall surface space loss.

Moreover, the community wants to maintain the architectural appearance of the 1930's era design motif. A large above ground structure is simply incompatible with this design style. The net impact is that any new construction is likely to place a significant amount of construction below grade.

The combination of needs and constraints is most likely to support the following planning decisions.

The prime building area must retain the long term ability to incorporate a replacement for Building B. The old Building B will then be demolished, releasing its footprint for a future replacement of Building A. (The sequence could be reversed to replace Building A first; both structures are of comparable size.)

The new gymnasium and aquatics center is most likely to be placed next to the existing Building F and near South Moreno Drive. Associated development would include the sports administration and reception area including off-street bus access and transfer. This would consolidate sports activity and related public access in one location of the campus which would improve student security and public access. These facilities will absorb virtually all of the space available on the lower elevation of the campus.

These considerations leave a block of potentially developable land consisting of the “bluff” and extending to the western border of the site in which to accommodate new educational space in the short term, and long term replacements for Buildings B (or A), N1 and N2. The site must maintain Heath Road and existing circulation around Building A.

As a practical matter, underground parking will be required to preserve more of the site for buildings and open space. Near term construction must recover lost surface parking; long term construction must consolidate parking and expand parking to reflect changes in student demographics and community usage. It is quite likely that underground parking will be placed under the new sports facilities and closest to South Moreno Drive as the least disruptive and most cost-effective planning choice.

No finalized building plans exist at this point in time. However, even a cursory level of block modeling indicates that new buildings could well extend three or four stories below current grade across the entire prime building area. This requirement translates into a first floor finish elevation between 185 and 200. However, if the site becomes further constrained by seismic concerns, environmental concerns, or an inability to modify Heath, or if Building B requires near term replacement, or if student population growth is faster or larger than anticipated, or if community needs and activities increase, then future construction may well have to go deeper sooner.

Metro Requirements

Metro is seeking a permanent subsurface easement for the alignment crossing of the Beverly Hills High School campus. Metro has not provided specific requirements for its easement. However, Metro has established a common set of restrictions that it applies to all underground easements. The State Building Code further imposes restrictions of future building loads on existing structures. The figure below demonstrates a typical Metro tunnel alignment cross section and associated permanent subsurface easement. There is no indication that Metro has considered State Division of the State Architect requirements in establishing its own restrictions.

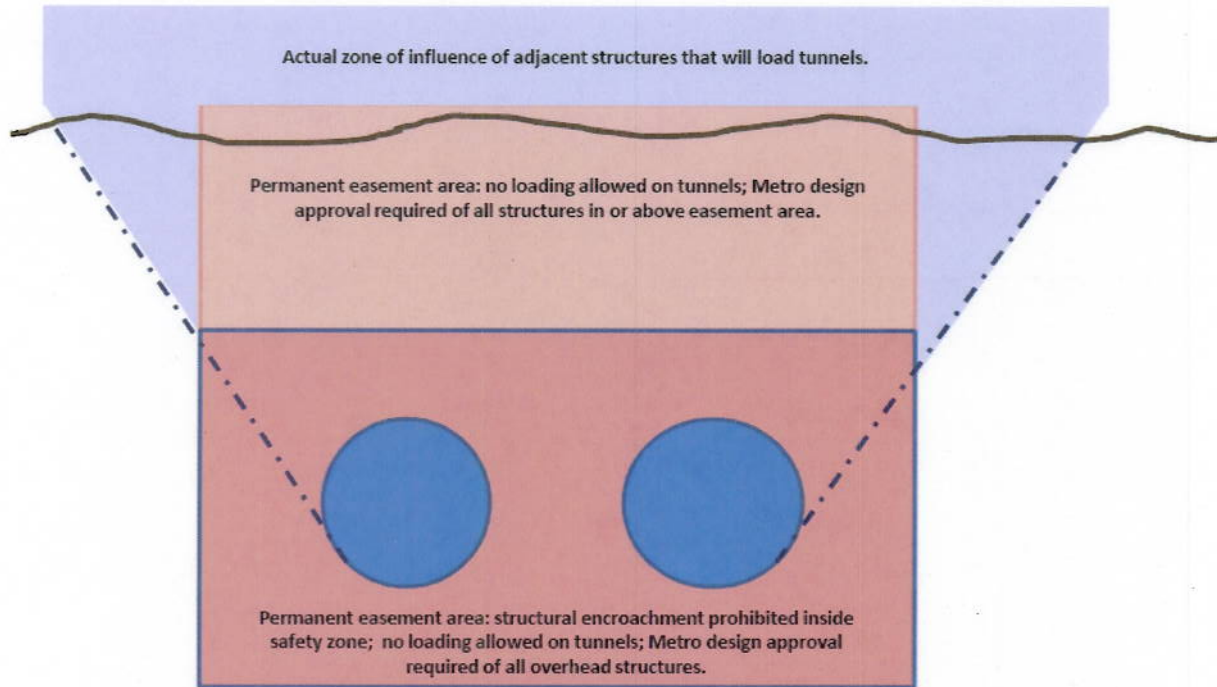


Figure 8 – Typical Tunnel Cross Section and Zone of Influence

The typical Metro permanent underground easement contains a set of restrictions that would limit future campus construction:

- There is normally a safety zone around tunnels that bars any encroachment by other structures; the idea is to prevent anything accidentally coming in contact with the tunnels. This restriction would limit the depth of future construction over and near the tunnels.
- The State typical Metro permanent underground easement prohibits any structural loading of the tunnels from any new structure inside the boundaries of the permanent easement. New construction would be required to “span” or “bridge” the entire width of the easement. This potentially creates a “no load” zone at least 140 feet wide extending across the entire prime building area of the campus. Future buildings would require substantially more complicated and expensive structural systems to avoid the no load zone and could be rendered prohibitively more expensive.
- New construction is prohibited by the State Building Code from placing additional loading on existing structures. Per standard soil mechanics, this creates an actual zone of influence defined as anything inside a nominal 1:1 slope from the outside edge of the tunnels. Any new building foundation must be outside the actual zone of influence, either increasing the horizontal separation between new construction and the tunnels, or by extending foundations to a depth that is lower than the 1:1 slope line. The actual zone of influence will be substantially wider than the easement width, increasing proportionate to the depth of tunneling:

Tunnel depth	Actual zone of influence	Easement Width
30 ft.	140 ft.	140 ft.
40 ft.	160 ft.	140 ft.
60 ft.	200 ft.	140 ft.
80 ft.	240 ft.	140 ft.

The actual zone of influence based on the profile shown in Alignment Option H in the Metro EIS/EIR is substantially wider than the subsurface easement sought by Metro. It will impact and restrict building over virtually the entire prime building area of the Beverly Hills High School campus.

- Design approval by Metro would be required for any structure built within the easement, or outside the easement but within the actual zone of influence. Metro would possess substantial control over the direction of school design and construction including the right to bar school construction that it deemed not to meet its criteria.
- It is unclear how Division of the State Architect would react to a school building located over a tunnel: it has never been done by a public school in California. By statute and experience, Division of the State Architect is extremely conservative and would certainly require additional steps to be taken in design and construction simply because of the presence of the Metro tunnels.

The only alignment information provided by Metro is the Option H Alignment drawings contained in the EIS/EIR. The Option H Alignment location and profile as shown essentially guts the prime future building area of the Beverly Hills High School campus.

Impact on Metro Planning

Metro should make the following assumptions in its planning:

- The prime building area for new buildings on the Beverly Hills High School campus is the area bounded by: Moreno on the east side; Buildings E and F on the south and southeast; the athletic fields on the south; the Century City border on the west; and Building A, Building B and the Graduation Lawn on the north. This is the only area available to Beverly Hills Unified School District for large new school construction and is immediately over the proposed Metro tunnel alignment shown on Drawing C-702H of the EIS/EIR.
- In the near term, Beverly Hills Unified School District is very likely to build a new athletic facility constructed with a bottom pool elevation of approximately 230 in the area immediately above the proposed Metro tunnels and in the eastern one third of the Beverly Hills High School prime building area nearest Moreno Drive. This structure may incorporate underground parking in which case it will have a bottom finish floor (not foundation) elevation of 185 to 200. This construction will be either concurrent or ahead of the Metro Westside Extension. Without parking, this will create a vertical separation between the bottom of the pool and the tunnel crown of 20 feet or less as shown on Drawing C-702H of the EIS/EIR, violating Metro's minimum separation standards for tunnel safety, settlement, and vibration. With parking, the proposed tunnel alignment would encroach into the underground parking structure.
- In the long term, Beverly Hills Unified School District will definitely build a new education building(s) and parking garage(s) in the area immediately above the Metro tunnels and covering the western two-thirds of the Beverly Hills High School campus prime building area. At best for Metro, this structure will have a lower floor elevation of approximately 235. This will create a vertical separation between the bottom of the building and the tunnel crown of less than 20 feet as shown on Drawing C-702H of the EIS/EIR, violating Metro's minimum separation standards for tunnel safety, settlement, and vibration. However, if the campus building site is constrained in any way (e.g. cannot remove Heath or utilities, need to avoid faults with new construction, environmental restrictions, or faults impacting existing buildings), or if the initial parking is simply continued across the site, this structure could easily have a bottom floor elevation (not foundation elevation) of approximately 185 - 200. This elevation will eliminate any vertical separation between building and the tunnels: the Metro tunnels would encroach inside the building for the entire length of the planned building by as much as 45 feet as shown on Drawing C-702H of the EIS/EIR.



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- Beverly Hills Unified School District will definitely have existing 1930's era buildings that will remain in operation adjacent to or over the tunnel alignment for many decades. The Metro EIS/EIR states that there will be a minimum vertical separation of 50 feet between the existing building foundations and the tunnels. However, that is not correct for Buildings A, B and H and potentially Buildings E and F as well depending on the final alignment curvature selected by Metro. Based on Drawing C-702H of the EIS/EIR, Building E will have a vertical separation of 35 feet, Building F will have a vertical separation less than 20 feet, Building B will have a vertical separation of 45 feet to the first floor, and Building A will have a vertical separation of 40 feet to the first floor: the actual separation between existing building foundations and tunneling operations will be considerably less. This separation is well within the minimum separation used by Metro to prevent and mitigate any subsidence effects at the surface or under foundations and will provide an inadequate factor of safety for subsidence in violation of Metro standards and good engineering practice. It also is less than the minimum separation used by Metro to prevent vibration or vibration induced noise impacts on sensitive structures and will provide an inadequate factor of safety for vibration in violation of Metro standards and good engineering practice.
- Various site constraints, future growth issues, and public access requirements may force the Beverly Hills Unified School District to substantially expand and maximize the amount of construction placed in the prime building area, shifting construction further east and downward, extending all the way to Moreno Drive and westward toward Heath or the western border of the campus resulting in lower floor elevations below the 185 foot level. This would further increase the quantity of encroachment of Metro tunnels into school buildings.
- Metro planning cannot presume that future Beverly Hills High School buildings will automatically use spread footing systems. Regardless of Metro requirements, new construction at Beverly Hills High School may require deeper pile based foundation systems based on normal structural design criteria contained in the Field Act and as applied by the Division of the State Architect. These foundations would undoubtedly intersect the proposed Metro alignment and create a large design conflict. If Metro proceeds with the tunnels, and new high school buildings are impacted by any loading restrictions related to the Metro tunnels, either by Metro or by the Division of the State Architect, their foundation systems will inevitably become deeper, more complicated, and more expensive.
- Portions of the Beverly Hills High School campus have been actively producing oil for 100 years. There are numerous abandoned oil wells, sumps, pipelines and other facilities scattered over the campus; some are mapped and recorded; many others are not. The

proposed tunnel alignment as shown on Drawing C-702 H clearly intersects several known abandoned oil sumps of undetermined depth and abatement status. (Reference the preceding site plan in Figure 7.) It is highly likely that the Metro tunnels will encounter contaminated, soft soils at sumps and other improperly abandoned oil production facilities which will underlay existing and future Beverly Hills High School facilities. Tunneling through these areas will have a substantially higher risk of excessive settlement and other issues.

Beverly Hills Unified School District is required by law to preserve the most cost-effective building solutions for the current bond act and for future generations. Similarly, the Beverly Hills Unified School District must preserve the ability to increase the campus population and associated facilities in response to changing demographics and educational missions for at least the next century.

The Beverly Hills Unified School District has obtained the Measure E bond funding for the modernization of the Beverly Hills High School campus and is beginning its planning process. It has not completed its geotechnical analysis of the site which could yield further restrictions that impact this planning. It has not engaged in discussion with the City of Beverly Hills, the Fire Marshall, or the Division of State Architect regarding circulation requirements and the ability or practicality of modifying Heath Street and any attendant restrictions on building placement.

Beverly Hills Unified School District is not aware of any public school in the state that has been built over a subway tunnel; Metro has not identified such a project, if it exists. It is unclear how the Division of the State Architect would treat the presence (or even the potential presence) of a subway tunnel and what modifications to the school design would be required under the Field Act. Note that the Field Act requires that school facilities be constructed to a higher safety standard that is more comparable to essential structures codes than to commercial structures codes. It is certain that because the Metro potential tunnel alignment is common knowledge, the Division of the State Architect will not approve any Beverly Hills High School design that has not addressed the engineering complications raised by the Metro proposal to tunnel under the campus. The mere potential presence of the Metro tunnels under a new school building will definitely cause increased expense and delay to the Beverly Hills High School building program and could jeopardize the entire modernization program approved by the voters in 2008.

All of the factors listed above could substantially impact the Beverly Hills Unified School District building and planning process and further exacerbate the conflicts and issues already identified with the proposed Metro tunnel alignment.

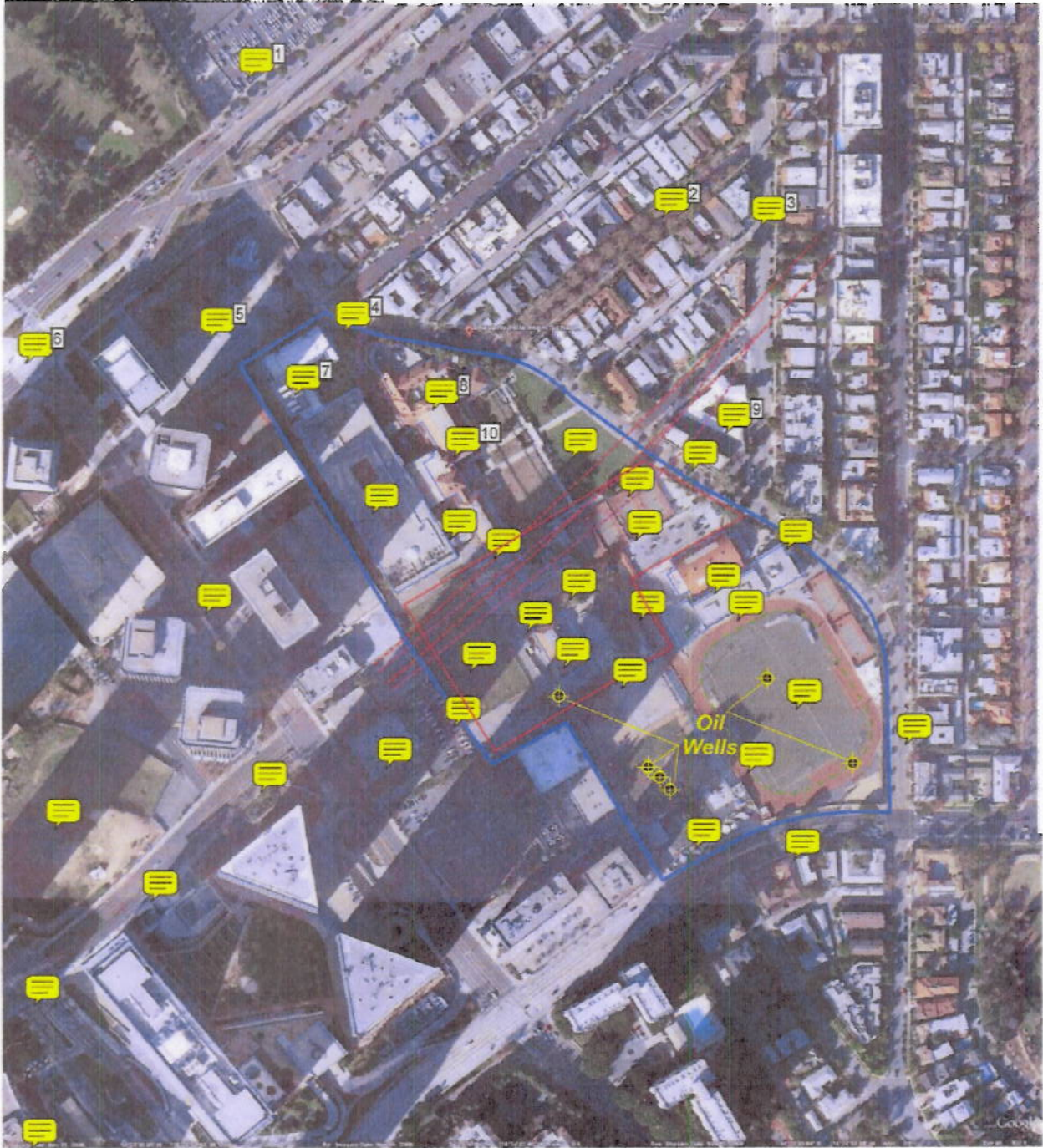


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Attachment 1 - Beverly Hills High School Site Plan and Identification Notes





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Summary of Comments on Beverly Hills High School.cvx

Page: 1

Sequence number: 1

Author: Primesource

Subject: Note

Date: 4/25/2011 2:45:22 PM

Former Robinsons May department store under redevelopment

Sequence number: 2

Author: Primesource

Subject: Note

Date: 4/25/2011 3:13:59 PM

Sequence number: 3

Author: Primesource

Subject: Note

Date: 4/25/2011 3:10:40 PM

S. Lasky Drive

Sequence number: 4

Author: Primesource

Subject: Note

Date: 4/25/2011 3:10:58 PM

S. Moreno Drive - elevation 250 - main vehicle entrance to BHHS campus parking

Sequence number: 5

Author: Primesource

Subject: Note

Date: 4/25/2011 2:45:54 PM

Approved high rise condo project

Sequence number: 6

Author: Primesource

Subject: Note

Date: 4/25/2011 2:03:52 PM

Santa Monica - station or crossover section depending on placement

Sequence number: 7

Author: Primesource

Subject: Note

Date: 4/25/2011 2:20:08 PM

BHHS Building L - Academic + auditorium - 4 story building - built circa 2007

Sequence number: 8

Author: Primesource

Subject: Note

Date: 4/25/2011 2:20:53 PM

BHHS Building B - Academic - finish floor elevations 267 and 270 this area

Sequence number: 9

Author: Primesource

Subject: Note

Date: 4/25/2011 2:34:26 PM

BHHS Building N1 - Administration - two story building plus partial basement - built circa 1970 - first floor elevation 248

Sequence number: 10

Author: Primesource

Subject: Note

Date: 4/25/2011 2:11:21 PM

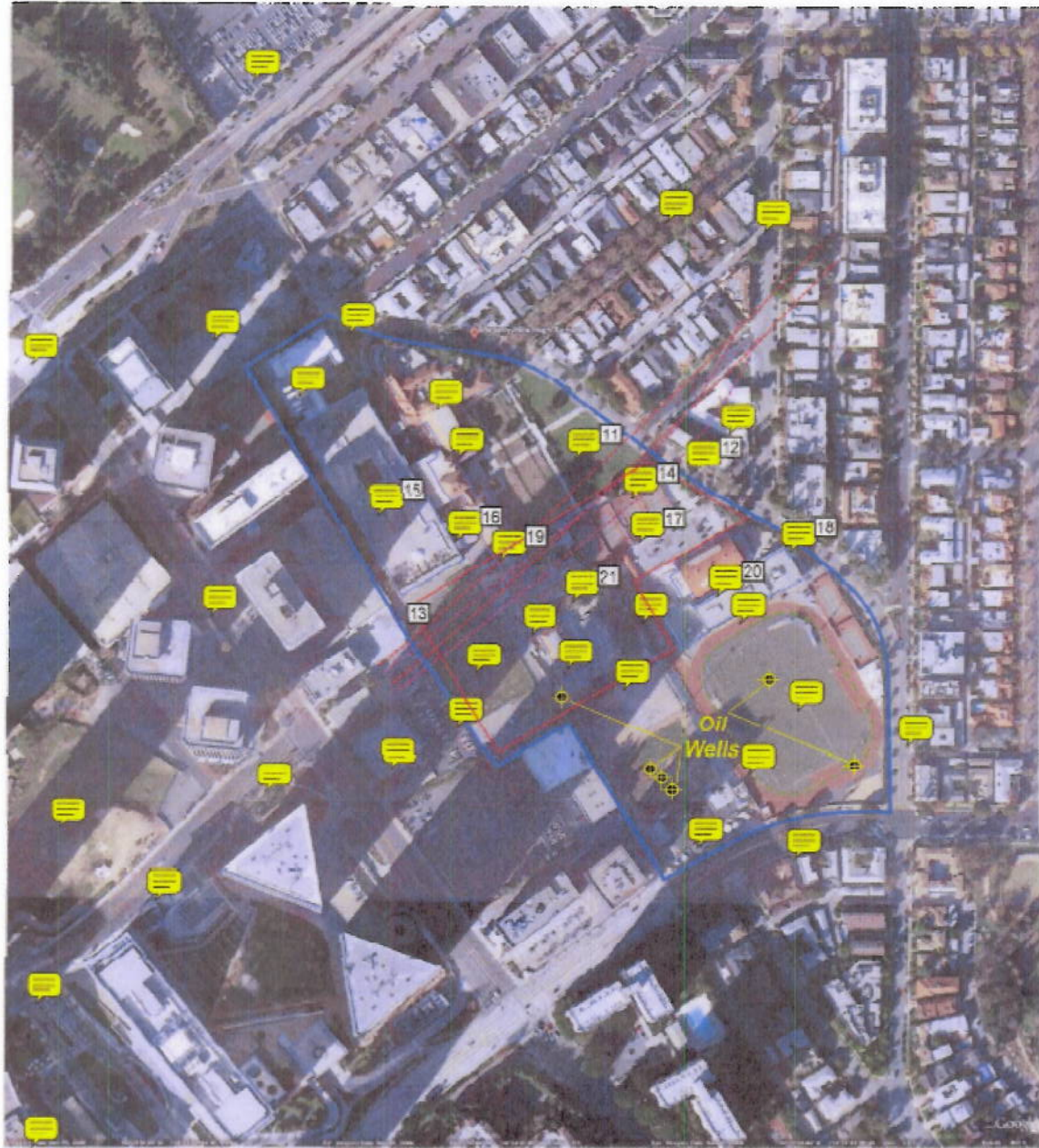
Comments from page 1 continued on next page



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BHHS Building B - Theater area - finish floor elevation 274

Sequence number: 11
Author: Primesource
Subject: Note
Date: 4/25/2011 2:35:15 PM

BHHS Graduation Lawn - open space

Sequence number: 12
Author: Primesource
Subject: Note
Date: 4/25/2011 2:33:35 PM

BHHS Building KZ - Academic - three story - built circa 1962 - first floor finish elevation 247

Sequence number: 13
Author: Primesource
Subject: Polygon
Date: 4/25/2011 3:17:41 PM

Sequence number: 14
Author: Primesource
Subject: Note
Date: 4/25/2011 2:43:36 PM

Metro tunnel alignments as shown in EIS/EIR - red lines Constellation South alignment (abandoned) - purple lines Constellation North alignment - alignment being adjusted for both line and grade - could move substantially

Sequence number: 15
Author: Primesource
Subject: Note
Date: 4/25/2011 2:09:29 PM

BHHS Building A - Classroom, offices, parking - 4 stories - built circa 1967 - first floor elevation 263 (area closest to planned tunnels), second floor elevation 278, third floor elevation 284, fourth floor elevation 310

Sequence number: 16
Author: Primesource
Subject: Note
Date: 4/25/2011 3:11:29 PM

Heath Drive

Sequence number: 17
Author: Primesource
Subject: Note
Date: 4/25/2011 2:24:10 PM

BHHS Tennis courts - future building site - multiple elevations from 250

Sequence number: 18
Author: Primesource
Subject: Note
Date: 4/25/2011 3:10:23 PM

S. Moreno Drive - elevation 240

Sequence number: 19
Author: Primesource
Subject: Note
Date: 4/25/2011 2:25:01 PM

BHHS Building D - Academic + theater + assembly - one story, two story and three story structure with partial basement - original campus building constructed circa 1915 through 1920 with multiple revisions and additions - first floor finish elevation this area 273

Sequence number: 20
Author: Primesource
Subject: Note
Date: 4/25/2011 2:27:01 PM

BHHS Building F - Swimgym - one story plus full basement + underground mechanical spaces - built circa 1930's - first floor (gymnasium floor) finish elevation 250, bottom of pool 225

Sequence number: 21
Author: Primesource

Comments from page 1 continued on next page



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Subject: Note

Date: 4/25/2011 2:21:10 PM

BHHS Building B (sometimes referred to as Building D) - Academic - finish floor elevation 263

Sequence number: 22

Author: Primesource

Subject: Note

Date: 4/25/2011 2:36:41 PM

Century Park East

Sequence number: 23

Author: Primesource

Subject: Note

Date: 4/25/2011 2:36:00 PM

BHHS - Future building site - ground elevation +/- 248

Sequence number: 24

Author: Primesource

Subject: Note

Date: 4/25/2011 2:28:37 PM

BHHS Building E - Sports - two story building - built circa 1930's with multiple modifications and additions - first floor finish elevation 244

Sequence number: 25

Author: Primesource

Subject: Note

Date: 4/25/2011 2:17:48 PM

BHHS Building B (sometimes referred to as Building C) - Academic - finish floor elevation 275

Sequence number: 26

Author: Primesource

Subject: Note

Date: 4/25/2011 2:22:00 PM

BHHS Building H - Academic and sports - two story - built circa 1930's - first floor finish elevation 260, second floor finish elevation 280

Sequence number: 27

Author: Primesource

Subject: Note

Date: 4/25/2011 2:22:53 PM

BHHS Sports Field - Future building site - rough elevation - 288 to 287

Sequence number: 28

Author: Primesource

Subject: Note

Date: 4/25/2011 3:18:18 PM

Red Outlined area - red solid line indicates prime future building area

Sequence number: 29

Author: Primesource

Subject: Note

Date: 4/25/2011 2:46:49 PM

BHHS Sports field and track - elevation 242-243

Sequence number: 30

Author: Primesource

Subject: Note

Date: 4/25/2011 2:37:50 PM

Dividing line between Century City and DHHG campus - continuous wall, no vehicle or pedestrian access

Sequence number: 31

Author: Primesource

Subject: Note

Date: 4/25/2011 2:41:18 PM

Spalding - elevation 235

Sequence number: 32

Author: Primesource

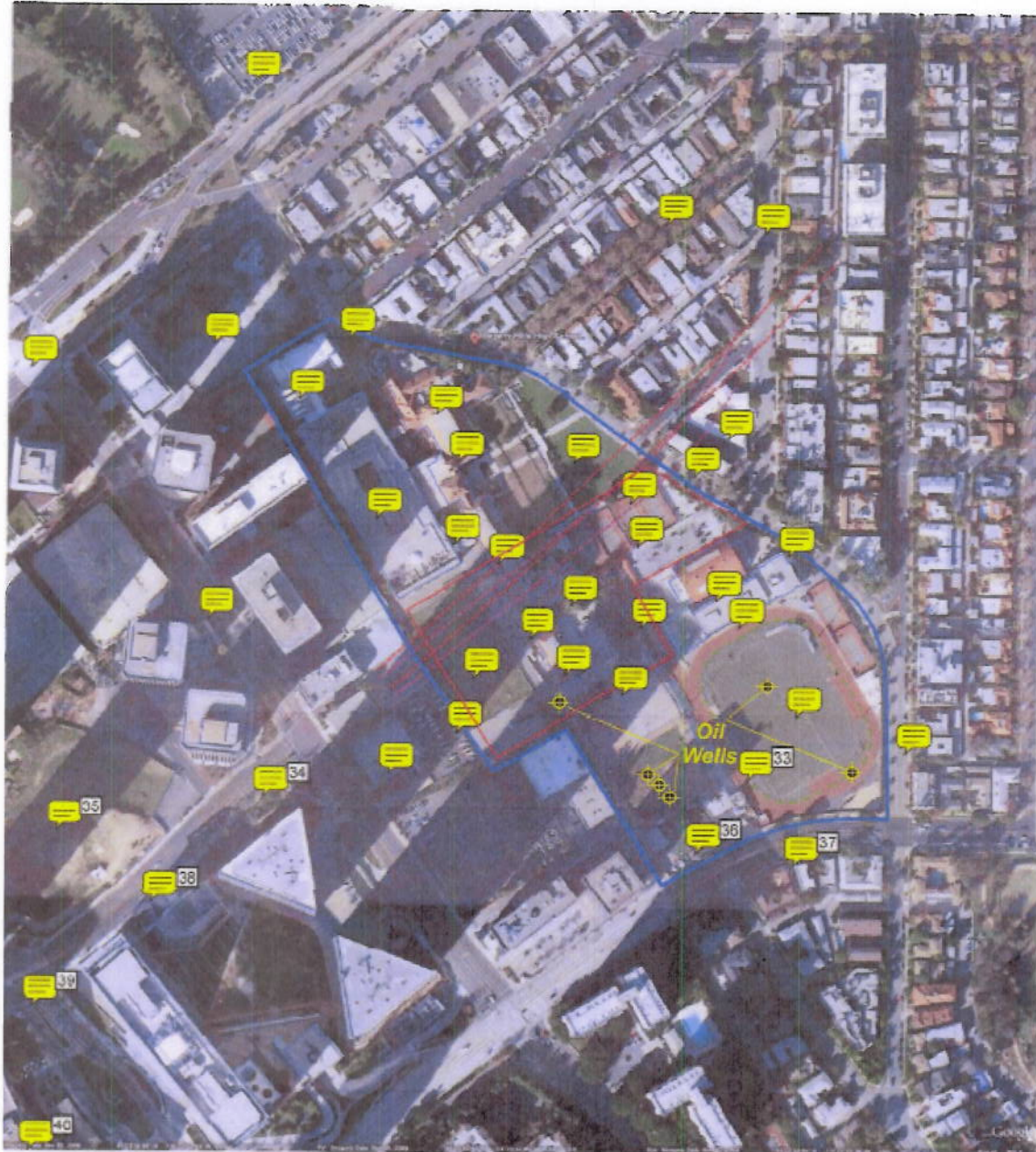
Comments from page 1 continued on next page



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Subject: Note
Date: 4/25/2011 2:01:35 PM
AT&T Building

Sequence number: 33
Author: Primesource
Subject: Note
Date: 4/25/2011 2:39:19 PM
Total of 13 active oil well heads; unknown number of abandoned and unmarked wells in BHHS campus area

Sequence number: 34
Author: Primesource
Subject: Note
Date: 4/25/2011 2:00:37 PM
Constellation - crossover tunnel section

Sequence number: 35
Author: Primesource
Subject: Note
Date: 4/25/2011 2:44:19 PM
JMB proposed office development (previously approved condo project)

Sequence number: 36
Author: Primesource
Subject: Note
Date: 4/25/2011 2:38:22 PM
BHHS oil production area - surface facilities

Sequence number: 37
Author: Primesource
Subject: Note
Date: 4/25/2011 3:01:46 PM
Olympic

Sequence number: 38
Author: Primesource
Subject: Note
Date: 4/25/2011 2:01:13 PM
Constellation - station section

Sequence number: 39
Author: Primesource
Subject: Note
Date: 4/25/2011 3:10:09 PM
Intersection Avenue of the Stars and Constellation -

Sequence number: 40
Author: Primesource
Subject: Note
Date: 4/25/2011 3:03:03 PM
Century Plaza Hotel

LAW OFFICES
GILCHRIST & RUTTER
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WILSHIRE PALISADES BUILDING
1299 OCEAN AVENUE, SUITE 900
SANTA MONICA, CALIFORNIA 90401-1000

TELEPHONE (310) 393-4000
FACSIMILE (310) 394-4700
E-MAIL:

May 17, 2012

BY HAND

Board of Directors
Los Angeles County Metropolitan
Transportation Authority
One Gateway Plaza, MS 99-22-2
Los Angeles, CA 90012

Re: Westside Subway Extension/May 17, 2012 Hearing

Honorable Board Members:

By this letter, the City of Beverly Hills renews its request for a continuance of this afternoon's hearing in order to allow its experts to appear and offer testimony personally to the Board. In the City's letter of May 10, 2012 to Mr. Arthur Leahy, the City requested that the City's hearing pursuant to Public Utilities Code Section 30639 be continued to at least next week due to the unavailability of the City's two primary experts. By letter dated May 11 from Mr. Charles Safer, the Metropolitan Transportation Authority (Metro) denied that request.

As noted in our letter of May 10, had Metro consulted the City or followed the procedure for setting the hearing provided in the Public Utilities Code, the City could have informed Metro of the scheduling conflicts that prevented the City's experts from attending a hearing on May 17 and another date could have been selected without the inconvenience of rescheduling or continuing the hearing. However, the City was denied the opportunity to be heard regarding the hearing date.

Please note that Public Utilities Code Section 36340 requires that the hearing date be set by the **Metro Board**. Had Metro followed the procedure set forth in Section 36340, then the Board would have held a meeting to set the hearing date (or set the hearing date at a regularly scheduled meeting) at which time the City would have had an opportunity to be heard regarding a fair hearing date. Clearly, the statutory requirement for the Board to set the hearing date was enacted to allow the Board to consider the input of the affected party. Failure to have the Metro Board itself set the date deprived the City of this opportunity, violated the letter and spirit of the statute, and resulted in prejudice to the City's ability to present its case.

Thus, the City again renews its request for a hearing date and time at which the City's primary experts may appear.

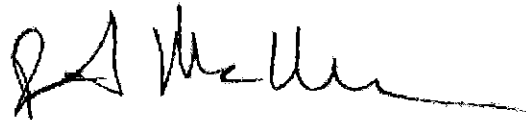
May 17, 2012
Page 2

Secondly, the City has grave concerns about the ability of the Board to conduct a fair hearing concerning the issues before the Board. First, the Board has certified a Final EIS/EIR as complete and adequate despite the fact that the Final EIS/EIR already draws a conclusion regarding the subject of today's hearing. In order to provide a fair hearing, the Board must rescind its pre commitment to the determination that is the very subject of the scheduled hearing. The City must be afforded an unbiased decision maker, and the public is entitled to a full consideration of evidence concerning environmental effects of the project before certification. Additionally, any Board member who has made a statement that the hearing is simply a delaying tactic or otherwise has indicated that he or she does not have an open mind to consider the content presented at the hearing must be asked to recuse himself or herself. This matter before the Board is a quasi-administrative matter that requires findings and an unbiased decision maker. Thus, the City requests that any Board member who has previously demonstrated a bias in this matter to recuse himself or herself.

Thank you for your consideration of these matters.

Sincerely,

GILCHRIST & RUTTER
Professional Corporation

A handwritten signature in black ink, appearing to read "R. McMurry", written over a horizontal line.

Robert I. McMurry
Of the Firm

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TELEPHONE (310) 393-4000
FACSIMILE (310) 394-4700
E-MAIL: rmemurry@gilchristutter.com

May 24, 2012

BY HAND

Board of Directors
Los Angeles County Metropolitan
Transportation Authority
One Gateway Plaza, MS 99-22-2
Los Angeles, CA 90012

Re: Westside Subway Extension Project / May 24, 2012 Hearing

Honorable Board Members:

In light of the MTA Board's proposed decision, and in anticipation of the Regular and Special Board Hearings on May 24, 2012, the City of Beverly Hills hereby makes the following objections to the proposed decision and associated findings relating to the hearing held on May 17, 2012 ("May 17 Hearing") at the request of the City of Beverly Hills pursuant to Public Utilities Code section 30639:

- (1) The proposed Public Utilities Code findings are not supported by the evidence;
- (2) The proposed Public Utilities Code findings address the wrong question. The findings must set forth and explain the basis for selecting the proposed Constellation station and alignment, not the "reasonableness" of the proposed station and alignment. The word "reasonableness" as used in Public Utilities Code Section 30639 modifies rates, not the fixing of the location of facilities. Furthermore, the findings fail to address in any manner the choice among alignments presented at the hearing and the fact that alternative alignments are available to Metro that would avoid any risk of tunneling beneath Beverly Hills High School. Such failure to address the question presented to the Board renders the findings inadequate ;
- (3) The proposed decision is a discretionary act subject to the California Environmental Quality Act (Pub. Res. Code §§ 21000 et seq.; "CEQA") and must be covered by the Final EIS/EIR for the Project. Additionally, as a "project" within the meaning of CEQA, the decision pursuant to the Public Utilities Code Section 30639 et seq. must be accompanied by findings as required by Public Resources Code Section 21081. ;

Honorable Board Members
May 24, 2012
Page 2

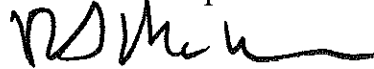
(4) The Board did not have a quorum for a substantial part of the May 17 Hearing, and thus failed to fulfill the statutory requirement to hold a proper hearing before the Board. The Board's rules provide that a quorum is a majority of the voting members. (Metro Administrative Code Sec. 2-01-060.) After the break during the May 17 Hearing, only six voting members were present. A seventh person replaced Director Wilson at the instruction of the Board Chair. However, the Board Chair had no authority to make such an appointment for the purpose of meeting the requirements of a quorum. (See Metro Board Rules and Procedures Sec. 2.1);

(5) As a quasi-adjudicative matter, only those Board members who were present at the May 17 Hearing or have otherwise heard all of the testimony may vote on this matter. The City objects to any other Board member voting on this matter at the May 24 meeting.

I have also attached a copy of the May 17, 2012 letter, submitted during the May 17 Hearing, in which the City of Beverly Hills renewed its request for a continuance of the May 17 Hearing and expressed its concerns about the ability of the Board to conduct a fair hearing.

Very truly yours,

GILCHRIST & RUTTER
Professional Corporation



Robert I. McMurry
Of the Firm

310441_3.DOC/5107.001
Enclosure

cc: Mr. Ray Tellis
Mr. Raymond Sukys
Mr. David Mieger



Current Status of Geotechnical Investigations

Executive Summary

Two seismic studies were released in October 2011 by the Los Angeles Metropolitan Transportation Authority ("MTA"), the Century City Area Tunneling Safety Report and the Century City Area Fault Investigation Report (collectively, the seismic studies) to address seismic safety concerns related to the proposed Century City station on Santa Monica Boulevard. This report summarizes the current status of a series of geotechnical and geologic investigations being conducted in response to the determinations and recommendations contained within the Seismic Studies.

It is anticipated that three separate reports will be submitted to the California Geologic Survey (CGS):

1. A standard fault study of the BHHS campus responding to the specific faults predicted by Metro and intersecting or likely to intersect the BHHS campus. This report will be submitted to the CGS next week.
2. A preliminary fault analysis of the El Rodeo campus responding to Metro's general prediction of area faulting trending towards the El Rodeo campus. This report will be submitted to the CGS in mid-May.
3. An analysis of area geology to develop a kinematic model and understanding of the geologic development of the area to respond to the Metro Alquist-Priollo recommendation. This report will be submitted to the CGS at the end of May.

All three reports must be submitted for CGS review and acceptance. The CGS review and acceptance process normally requires four to six weeks and may entail additional investigation, analysis and report revision. However, this is not a normal process. It is well recognized that the reports have regional implications that go well beyond the school campus boundaries. CGS has been actively participating in the investigation so it is hoped that the review and acceptance period will not be unduly extended despite the higher than normal degree of scrutiny required.

The BHUSD analysis is still underway and assessments are being revised as the multiple lines of investigation are concluded and reconciled. However, the following points are now highly certain:

- We were unable to find any of the active faults predicted by Metro along the WBHL either on Santa Monica Boulevard or on the BHHS campus.
- When Metro profiles were corrected for the various errors described above, all of the faults predicted along Transects 2E, 4 and 7 have been resolved: there are no active faults along these transects.



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- It is unlikely that the WBHL is a seismic feature. If the Newport-Inglewood Fault Zone extends this far north, it is somewhere east of the WBHL.
- The area is covered by very old soils. Faults that extend to the surface are most likely to surface in very old soils. It is unlikely that any of the faults in the area are active, meaning occurring within the last 11,000 years.

These conclusions are consistent with our observations of the Metro source data.

Background and Initiating Events

Two seismic studies were released in October 2011 by the Los Angeles Metropolitan Transportation Authority ("MTA"), the *Century City Area Tunneling Safety Report* and the *Century City Area Fault Investigation Report* (collectively, the seismic studies) to address seismic safety concerns related to the proposed Century City station on Santa Monica Boulevard.

The scope and impact of those studies extends well beyond the immediate question of station placement and safety and have implications for a large swath of Century City, Westwood, Santa Monica and Beverly Hills.

These studies conclude that the area underlying the proposed Santa Monica Boulevard station is located at the confluence of three active fault systems: the Santa Monica Fault, the Newport-Inglewood Fault Zone, and the West Beverly Hills Lineament (determined by MTA to be an extension of the Newport-Inglewood Fault Zone). As a result, MTA concluded that due to the presumed presence of specific active fault locations a Century City subway station could not be located at the two precise station locations evaluated on Santa Monica Boulevard and instead must be located one block away at Constellation Boulevard, thereby forcing the subway alignment to cross the Beverly Hills High School (BHHS) campus.

MTA further identified numerous presumed active faults extending throughout the area and recommended that a large swath of land in this area be designated as an Alquist-Priolo restricted building zone, thereby prohibiting all future occupied structure building in this area. The Seismic Studies' conclusion raised an immediate question regarding the safety of hundreds of existing structures in the area including two Beverly Hills Unified School District (BHUSD) schools. If left unchallenged, these conclusions would have a potentially devastating impact on the Beverly Hills High School, El Rodeo School and their students. BHUSD is in the middle of a voter approved bond expansion program. Once MTA released its studies, which would render the BHUSD modernization and expansion plans impossible, BHUSD immediately directed that a very detailed investigation and seismic analysis be conducted to answer three critical questions:



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1. Is there an immediate threat to the safety of the thousands of students, staff and visitors that occupy the schools daily due to the presence of previously unknown active faulting identified by Metro?
2. Is the future ability to modernize and develop either campus now reduced or eliminated due to the presence of previously unknown active faulting identified by Metro?
3. Is the Alquist-Priollo recommendation of the Seismic Studies and its consequences warranted or must a large swath of the community be off limits to school construction and community development?

The BHUSD investigation differs substantially from the investigation conducted by MTA in depth and level of regulatory oversight. BHUSD's work product is under the auspices of and must ultimately satisfy the California Geologic Survey ("CGS") which has strict regulatory oversight over all school seismic and geotechnical analysis. CGS has been actively involved our field investigations and has made numerous visits to our field investigation sites, Conversely, CGS was uninvolved with the MTA report. The United States Geologic Survey (USGS), which participated in the peer review of the Metro Seismic Studies but not the investigation, has also been actively involved in our field investigations, and has also made visits to the field investigation sites.

Path of Investigation

The BHUSD investigation and review began with a detailed review of the Metro Seismic Studies. That review raised numerous questions related to methodology, depth of investigation, and ability to support conclusions based on the evidence presented. This review was repeatedly delayed due to the incremental and partial release of Metro source documents and permission to view boring cores obtained by Metro. Despite being obligated to share this information under a right of entry agreement between Metro and the BHUSD, Metro has only slowly and incrementally released information and provided access. For example, core inspection of the cores taken on the BHHS was not allowed for almost one full year after it occurred and three months after the Metro release of its Seismic Studies. This caused the BHUSD investigation to unnecessarily replicate Metro field borings and CPT at great expense and delay and delayed reconciliation between the Metro information and the BHUSD information.

The three questions posed by the BHUSD have initiated several overlapping lines of investigation and inquiry:

- There has been extensive drilling and continuous core extraction on both school campuses and the surrounding area.
- There has been extensive Cone Penetrometer Test (CPT) investigation of the BHHS and surrounding area.
- There has been extensive trenching across the BHHS campus.
- There has been shallow soil pit testing and soil aging profiles on campus and in the adjacent areas.

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- There has been an extensive review of the Metro reports and all supporting data revealed by Metro.
- There has been an extensive review of the Metro drilling cores and the associated boring logs and analysis.
- There has been extensive cross-comparison between cores.

If correct, the Metro Seismic Studies identify a previously unknown and serious seismic hazard at the BHHS and El Rodeo. The absolute safety of students is a very serious priority to the BHUSD. The BHUSD direction was to balance the urgent need for a rapid confirmation or denial of the Seismic Studies' conclusions with the need for a very high confidence level in that answer, regardless of the outcome.

Investigation and Report Schedule

The BHUSD investigation has been pursued as aggressively as possible including extensive after-hours, weekend and holiday work. This investigation has been iterative, requiring multiple adjustments by investigators, regulators and reviewers as information has been obtained and processed. Final field processing of the latest round of drilling cores was completed only last week. It is well recognized by the BHUSD and the CGS that the BHUSD investigation will have wide ranging consequences for a very large swath of Century City, Westwood and Beverly Hills. The studies have intentionally incorporated parallel but separate paths of inquiry with independent investigators plus extensive and ongoing multi-disciplinary discussion and peer review to prevent any investigative bias and to ensure that any conclusions will withstand industry, peer and regulatory scrutiny.

It is anticipated that three separate reports will emerge from the investigation:

4. A standard fault study of the BHHS campus responding to the specific faults predicted by Metro and intersecting or likely to intersect the BHHS campus
5. A preliminary fault analysis of the El Rodeo campus responding to the general prediction of area faulting trending towards the El Rodeo campus
6. An analysis of area geology to develop a kinematic model and understanding of the geologic development of the area to respond to the Metro Alquist-Priolo recommendation.

All three reports must be submitted for CGS review and acceptance.

At this time, all anticipated field investigation has been completed. Some laboratory analysis is outstanding. The current status of reports follows:

- Report 1 will contain the bulk of the field investigation data which will be referenced by all three reports. That data (e.g. boring logs, CPT profiles) has now been assimilated into cross sections and maps. The report is in draft form and is now undergoing peer review. BHUSD previously informed Metro that this report would be submitted to the CGS in early May. We now anticipate submitting the report next week.



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- Report 2 contains supplementary boring information from the El Rodeo campus. There were two rounds of borings, the latest round being completed less than two weeks ago. El Rodeo is a particularly congested campus where it is very difficult to incorporate field investigations safely into the operating school environment. Unlike Metro, the BHUSD has been unable to obtain access to the adjacent Los Angeles Country Club which has delayed the progress of the El Rodeo investigation. It is anticipated that the report will be completed by the third week in May.
- Report 3 relies upon the assimilation and incorporation of data and analysis for other aspects of the investigation. It also has required the repeated examination of Metro cores; the access to these cores was delayed by Metro for months unnecessarily delaying the analysis and report. It is now anticipated that this report will be complete by the end of May.

Both Metro and the FTA have been repeatedly updated regarding the timeline for the completion of these reports. Despite repeated delays by Metro, all reports are being completed and submitted on or ahead of the promised schedule.

Initial Observations of the Metro Seismic Studies

While our review of MTA's seismic studies is ongoing, our initial research reveals a number of concerns related to the quality of data obtained by MTA and its subsequent analysis process.

- The starting point for any investigation should be an attempt to understand the overall stratigraphy of a region and the related forces and energies at work. This is a key step to ensure that conclusions and observations in the field are consistent and make sense. MTA did not perform this analysis.
- MTA performed its borings with multiple drillers and boring loggers. This introduced a large variation in drilled core quality and recovery, as well as in boring log interpretation and terminology. Normally this variation is resolved through a Quality Assurance review process. However initial review of MTA cores indicates numerous instances of identical soil features receiving very different boring log notations.
- MTA developed its soil profiles from a limited numbers of soil borings supplemented with a large number of Cone Penetrometer Tests (CPT) at a large spacing. CPT testing requires adequate confirmation borings to verify the data interpretation and correlation to actual soil conditions. There are multiple possible interpretations of CPT data that can only be sorted out by confirmation borings. BHUSD has now conducted sufficient paired borings and CPT tests to contradict the interpretation given to numerous MTA CPT tests.
- Soil profiles are developed based on all available data consistently incorporated. MTA used extensive seismograph lines to identify deep faults. While MTA identified and included many seismograph features as faults in the area of the Santa Monica Boulevard stations, similar seismograph features in the area of Constellation Boulevard were not



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included in the MTA profiles.

- There appear to be numerous mechanical errors in the incorporation of boring and CPT data and logs into the relevant soil profiles. For example, one 48 ft. deep CPT was plotted at 75 ft. deep, leading to a discontinuity in soil layering. Another boring top elevation is 15 feet too high, again leading to a false discontinuity. The field markings for an entire series of borings and CPT tests are transposed in the soil profiles; it is not yet clear whether the data was correctly incorporated into the soil profiles. When MTA errors are corrected along Transect 4, the soil discontinuities presumed by MTA to be faults disappear. Separate paired BHUSD borings and CPT tests on Transect 4, although still underway, have confirmed that there are no soil discontinuities.
- MTA soil profiles plot soil layering based upon the direct data from the borings and CPT tests as is normally done. However, in some cases there are several instances in which the final soil profile shown deviates substantially from adjacent boring or CPT data, another apparent error. MTA soil profiles frequently presume that soil layering between their boring or CPT tests is flat; therefore any difference in elevation between adjacent but widely spaced borings or CPT tests is presumed to indicate a soil discontinuity and, therefore, a fault. MTA's approach has artificially created false discontinuities: MTA's own comments and data indicate a widely understood pattern of downward sloping to the East. If even a few degrees of sloping is presumed and applied to the soil profiles, the apparent discontinuities disappear. BHUSD tests conducted to date located between MTA tests have confirmed a consistent sloping of layers, not discontinuity.

Initial Conclusions and Observations

The BHUSD analysis is still underway and assessments are being revised as the multiple lines of investigation are concluded and reconciled. However, the following points are now highly certain:

- We were unable to find any of the active faults predicted by Metro along the WBHL either on Santa Monica Boulevard or on the BHHS campus.
- When Metro profiles were corrected for the various errors described above, all of the faults predicted along Transects 2E, 4 and 7 have been resolved: there are no active faults along these transects.
- It is unlikely that the WBHL is a seismic feature. If the Newport-Inglewood Fault Zone extends this far north, it is somewhere east of the WBHL.



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- The area is covered by very old soils. Faults that extend to the surface are most likely to surface in very old soils. It is unlikely that any of the faults in the area are active, meaning occurring within the last 11,000 years.

Further conclusions will emerge as the final reports are concluded.



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- The MTA soil profiles indicate soil layering that contradicts common understanding of area geology. For example, there are several instances in which the MTA profile shows younger soil layers under older soil layers which are not physically possible.
- Normally, boring logs are prepared individually and then revised to ensure conformity across a set. However, in this case the MTA boring logs appear to be uncorrelated creating many false discontinuities. The partial review of MTA cores conducted to date has identified key marker layers across multiple borings that are continuous and consistent and which appear to resolve the discontinuities between boring logs that MTA incorrectly interpreted as faulting.
- Finally, while MTA's study reviewed the Santa Monica Boulevard station areas in depth, it has ignored similar hazards on Constellation Boulevard despite the fact that the MTA's seismograph data alone indicate deep faulting along Constellation Boulevard sufficient to warrant additional investigation. MTA's analysis gives the strong appearance that it has applied a double standard in its approach — exaggerating issues at the Santa Monica station locations and ignoring potentially damaging issues at the Constellation Boulevard station location in an improper effort to support MTA's predetermined conclusions.

MTA's analysis essentially presumes that any soil discontinuity identified in its soil profiles along Santa Monica Boulevard reveals an active fault. It further presumes that any faults so identified are active based on a predetermined area model that consists of three large active faults that intersect and underlie relatively young soils. It further presumes there are numerous related but not-yet-identified fault strands that impact the entire area. This predetermined sequence of presumption is flawed, is not supported by MTA's own data and is premature.

The seismic studies were prepared very quickly. The flaws in MTA's conclusions could have easily been corrected had MTA taken more time and additional steps to corroborate its analysis and conclusions.

For example, MTA conducted no trenching, the only method that can absolutely demonstrate whether faults reach the surface, whether they are tectonic or the result of other factors such as erosion and folding, and date them. MTA also made no effort to date any of the suspected faults, or even the surrounding soils either in the field or in the laboratory. In contrast, BHUSD has conducted extensive trenching on the high school campus and area soil sampling and



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profiling sufficient to determine that much of the area is generally overlain by very old soils (e.g. +100,000 years old), which is in stark contradiction to MTA's geologic theory.

MTA presumed that the scarp features on Santa Monica Boulevard and along the West Beverly Hills Lineament are solely the result of tectonic activity, and that therefore any discontinuity in soil layers between tests revealed a fault. MTA did no field work to confirm this predetermined assumption. There are many alternative explanations which were not considered by MTA. BHUSD trenching clearly indicates an area pattern of repeated erosion and deposition, a process that inevitably results in irregular and uneven soil layers. This irregularity is a result of erosion — not of tectonics. BHUSD is continuing to develop an area geologic model that conforms to all of the data available.

In response to MTA's publicly announced and flawed conclusions, BHUSD is conducting its own independent field investigations in addition to reviewing the MTA studies. Although the BHUSD experts are working as hard as they can, their investigation and analysis is far from complete. Note that MTA delayed access to its cores for several months, extending the evaluation process and forcing BHUSD to make additional borings and CPT tests to replicate data that MTA would not release. However, there are several preliminary observations that are evident:

- BHUSD has found none of the shallow, active faults predicted by MTA on the BHHS campus, either along the proposed tunnel alignment or on the end closest to the proposed Santa Monica Boulevard station location.
- It appears that many of the shallow, active faults predicted by MTA on the BHHS campus and the Santa Monica station disappear when the various errors in MTA data and analysis are resolved.
- BHUSD has an emerging area geological model that does not support the predetermined tectonic theory postulated by MTA for the Century City-West Beverly Hills area.

Because the potential for active faults in the vicinity of a school raise significant public safety and child safety issues, the BHUSD and CGS are approaching this issue with an unusual amount of detail and peer and agency collaboration. The BHUSD has no control over the CGS and must comply with its requirements, including responding to new questions and theories as they arise from the CGS.



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The timeline for BHUSD study completion now appears to be dictated by the completion of additional field testing (anticipated to require one more month), required minimum turnaround times for laboratory work already submitted (approximately one more month), plus compliance with the normal submission and review process of the CGS which typically requires six weeks after submission of the final report.

BHUSD is, and has been, committed to public safety. Its experts are working as expeditiously as possible to complete their seismic analysis and issue a final report. However, even their preliminary work indicates numerous, material errors in MTA's data and seismic analysis. In addition, MTA has failed to apply consistent evaluation standards to a potential subway station at Constellation Boulevard and/or Santa Monica Boulevard.



Executive Summary

This report summarizes observations and findings related to the Westside Subway Extension FEIS/EIR (FEIS/EIR). Many of the conclusions stated in the FEIS/EIR are not supported by information within the FEIS/EIR or other supporting documents provided by Metro. Metro has consistently refused to provide detailed backup information related to ridership modeling, cost estimating, and any software program used to create information within the FEIS/EIR. The review is therefore limited to the information provided to date by Metro and knowledge of common industry practices and standards.

The report is primarily concerned with the alignment and station alternatives serving Century City: a Santa Monica Blvd. station proposed in the original Metro planning documents, and a Constellation station that was an alternative added in late 2010.

The FEIS/EIR has concluded that it is unsafe to build a station on Santa Monica because of the presence of active seismic faulting. The FEIS/EIR has further concluded that, even if a station were buildable on Santa Monica, a Constellation station would result in higher overall ridership that is worth the additional cost required for the Constellation station and alignment. The FEIS/EIR further concludes that the Constellation alignment will have no negative impact on the Beverly Hills High School either for its existing condition or for its future development.

This report must take exception to each of these findings:

- The Metro Seismic Fault Study has a major issue: Metro did not positively identify a single active fault. Metro chose not to conduct any trenching or make any effort to date area soils and deformations — the two key steps required to positively identify an active fault. (Note: there are ongoing geotechnical investigations being conducted under the auspices and regulatory authority of the California Geologic Survey which will resolve the doubts created by the Metro Seismic Fault Study. This process and its current status are addressed under separate cover.) However, Metro's own reports have identified an area along Santa Monica that does not have evidence of faulting and that is sufficient for a station. The FEIS/EIR failed to include and evaluate this particular location.
- The FEIS/EIR ridership study is flawed: Constellation may have higher Century City ridership because of better average proximity; Santa Monica will have better system ridership because of decreased system travel time. It appears that Metro did not fully account for both factors - which are essentially offsetting. The FEIS/EIR does not overstate Constellation ridership, but it does understate Santa Monica ridership. This conclusion has been confirmed by an independent matched pair modeling of the



Century City area — an industry standard practice which Metro chose not to do in favor of a substantially more simplistic modeling approach.

- The FEIS/EIR's various cost estimates have issues. The FEIS/EIR present more than a dozen separate estimates of the cost difference between the Constellation and Santa Monica alternatives. A decision-maker cannot answer the simple question of whether the supposed ridership advantage of Constellation is worth its added cost. The FEIS/EIR also imposes numerous inappropriate design changes on both stations with the clear effect of artificially decreasing the cost at Constellation and increasing the cost at Santa Monica. Independent review using Metro's pricing information indicates that Constellation is at least \$100 million more expensive than Santa Monica.
- The BHUSD will not be able to complete its modernization program due to the encroachment of the Metro tunnels into the bottom of future buildings. The campus has a 50 foot elevation difference from side to side that has made the physical encroachment less obvious. Metro has ignored and made no effort to accommodate BHUSD master plan and mission obligations — unlike elsewhere along the alignment where the FEIS/EIR has made substantial revision to avoid or minimize impacts to developers.

The conclusion of this report is that a Santa Monica alignment can be done safely, will deliver comparable ridership benefits to the overall Metro transit system, will do so at a \$100 million cost savings to the project, and have no negative impact on the Beverly Hills High School. A Constellation alignment will require \$100 million more to deliver a minimal ridership benefit and cause a very large — and avoidable — negative impact on another public agency.

Scope and Limitations of this Report

This report summarizes observations made during a review of the Los Angeles County Metropolitan Transportation Agency (Metro) Westside Subway Extension FEIS/EIR (FEIS/EIR).

There are numerous areas of the FEIS/EIR in which Metro has presented conclusions without explanation, backup analysis, or identification and incorporation of referenced source reports. Metro has consistently refused to provide detailed backup information related to ridership modeling, cost estimating, and any software program used to create information within the FEIS/EIR. The ability to evaluate, analyze or corroborate the FEIS/EIR has been seriously compromised by the absence of these materials. Many of the conclusions within the FEIS/EIR are unsupported: they are merely presented as objective facts without disclosing the methodology or sources used to generate these conclusions. They are unsupported within the



FEIS/EIR, the FEIS/EIR Appendices, the FEIS/EIR Technical Reports, or by any other documents provided by Metro to date.

At the time of this report, there are several dozen outstanding FOIA/PRA requests seeking the source materials that were used by Metro to develop its unsupported conclusions. At this time, many of these requests have been outstanding for more than one year. In the absence of the requested source documents, this review of the FEIS/EIR is based upon the exact language of the FEIS/EIR.

There are numerous instances in which the conclusions presented in the FEIS/EIR are clearly in error or appear to violate industry standards and approaches. Metro has thus far consistently refused to make available, within the limited time period in which responses to the FEIS/EIR must be made, any of its calculations or modeling details which may attempt to explain any of its deviations. Metro's refusal to disclose the documents it contends may support its conclusions seriously limits the ability of any reviewer to identify proper corrections to calculations and to make precise factual adjustments to the FEIS/EIR: the review is limited to identifying the fact that an error is present.

Main Emphasis of the Report

The Beverly Hills Unified School District (BHUSD) has repeatedly expressed its overall support for the Westside Extension Project. The BHUSD has strong concerns over a project alternative that would traverse the BHUSD's only high school campus. This transversing alignment is the only practical way to serve a proposed Century City station location on Constellation Boulevard. The BHUSD has no objection to the tunnel alignment or any of the proposed station locations on Santa Monica Boulevard.

This report is the result of a limited review of the FEIS/EIR with a focus on the Metro selection of a station location to serve Century City, and, more particularly, whether to place the station on Santa Monica or on Constellation. All station and station entrance location decisions should revolve around a balancing of benefits, costs and risks to obtain the greatest overall project benefit. There are four principal criteria that should be considered for this particular site:

1. Geotechnical — are there serious seismic (or other physical) issues with a site that would make construction unsafe or impractical?
2. Ridership — are there substantial ridership benefits or differences in one location over another?
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4. Burden and benefits — is either site disproportionately burdensome or beneficial to a particular community?

The FEIS/EIR purports to answer all of these questions, and to answer them uniformly in favor of a Constellation location. The FEIS/EIR formally concludes that Santa Monica is not buildable because of the presence of hypothesized active seismic faulting. The FEIS/EIR further concludes that Constellation would have higher ridership although at a higher cost than Santa Monica, and, based upon a perceived ridership benefit, is worth the added public cost. The FEIS/EIR recommends Constellation over Santa Monica even if Santa Monica were buildable. The FEIS/EIR further concludes, without explanation, that there is no negative impact or disproportionate burden of a Constellation location on the surrounding community, particularly on the Beverly Hills High School.

This report disputes the staff conclusions and recommendations. There are numerous issues within the FEIS/EIR should be resolved before any decision is made in order to allow a properly considered and impartial decision that is in the best interests of the entire project. Types of issues addressed below include:

- There are several key attributes that are useful in comparing the relative benefits of one option over another. There are numerous examples of an inconsistent process used by Metro to compare and contrast options. The same standard should be used for both.
- The FEIS/EIR is a layering and iterative process where a key attribute is determined based upon previous analysis of other attributes. There are numerous examples of inconsistently or incompletely carrying forward early layers of analysis into later comparisons.
- The FEIS/EIR indicates that it is based upon numerous source documents. Some of these documents have been completed for a long time while some were in revision close to the issuance date of the FEIS/EIR. There are numerous examples of the FEIS/EIR not using the most current version of a source document, or worse, using multiple versions of a source document in multiple locations. Metro has refused to provide many of these source documents in connection with the public review of the FEIS/EIR.
- An evaluation of key attributes should incrementally and consistently compare and contrast those attributes at the station level, across the entire Westside Extension, and on the Metro system as a whole. There will be many instances where the best decision at the station level may result in an inferior outcome at the system level. The FEIS/EIR has not consistently or correctly maintained this multi-level balancing.
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methodologies and measurement systems in its analysis of other station alternatives, which raises questions of consistency, and objectivity. It appears that application of the special methodologies and measurement systems across all stations would substantially change many of the key attribute assessments.

FEIS/EIR contains numerous examples of these types of inconsistencies. Each of the four principle factors for the Century City station and alignment option will be reviewed in turn below.

Area 1: Geotechnical Issues

Metro issued the *FEIS/EIR Appendix 03 Century City Area Fault Investigation Report* (Seismic Fault Study) and *FEIS/EIR Appendix 05 Century City Area Tunneling Safety Report* (Tunnel Safety Report) in October 2011 that made far reaching conclusions regarding the geologic character of the Century City area. In particular, the Seismic Fault Study concluded that the Century City area is underlain by numerous active strands of the Santa Monica Fault Zone which connect with the Newport Inglewood Fault Zone which the report concludes extends all the way to the Hollywood fault. Based on this analysis, the Seismic Fault Study concludes and recommends that a significant portion of the Century City area and surrounding portions of Beverly Hills and Westwood be classified as a restricted building area under the state Alquist-Priolo statute.

The project implications of the Seismic Fault Study are precise:

- A station cannot be safely built on Santa Monica in the two locations selected by staff
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- The BHHS campus is unbuildable — future building is barred by the presence of active faults, therefore there is no impact to future construction

The Metro reports have far reaching extremely severe consequences that go well beyond the question of whether a station may be built at Santa Monica and whether school buildings may be built at BHHS. They have put in motion an extensive investigation and debate among the entire geologic community and regulators that cannot be condensed or expedited to serve the preferences or timeline of Metro. The truth or adequacy of the Metro Seismic Fault Study will be resolved in due course.

However, there is an immediate process question that must be addressed: Since the FEIS/EIR has determined that the Seismic Fault Study approach and conclusions are correct and should be applied to the decision process, has Metro consistently and correctly applied that same

approach and conclusions to the rest of the FEIS/EIR analysis? It has not.



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However, there is an immediate process question that must be addressed: Since the FEIS/EIR has determined that the Seismic Fault Study approach and conclusions are correct and should be applied to the decision process, has Metro consistently and correctly applied that same approach and conclusions to the rest of the FEIS/EIR analysis? It has not.



There is no evidence of faults at Constellation. The Metro geotechnical investigation clearly indicates that Constellation received only a fraction of the attention that was placed on Santa Monica. Metro has looked deeply at Santa Monica and found numerous faults, concluding it is unsafe; Metro has not looked at Constellation, and therefore concluded that it is safe. That is an inconsistent approach in the extreme. Metro's own analysis and conclusion is that there must be numerous fault strands in the area, many more than were identified in its investigation. If so, then it becomes very likely that there are similar faulting patterns at Constellation. A refusal to even look for such faulting is fundamentally flawed.

Metro's claimed evidence of faulting at Constellation is unsupported. The FEIS/EIR says there is no evidence of faulting at Constellation. Metro's Seismic Fault Study data says there is. The Metro approach to identify a fault was fourfold: (1) it used seismograph data, soil borings and Cone Penetrometer Tests (CPTs) to identify discontinuities in soil layering; (2) it determined that any discontinuity in soil layering was evidence of seismic faulting (ignoring any alternative cause of such discontinuities); (3) it concluded that the Santa Monica Fault Zone and Newport-Inglewood Fault Zones in this area are active, therefore any fault strands must be considered active; (4) it projected active fault strands well beyond the point of intersection with a transect.

Assuming that Metro's Seismic Fault Study approach is correct, Metro failed to apply it consistently. The seismograph data for Transects 3 and 8 include numerous anomalies near Santa Monica that Metro has concluded indicate faults. There are very similar anomalies near Constellation which Metro has ignored. One very prominent and distinctive strand indicated by this data intersects Avenue of the Stars at an angle which would cross the proposed station entrance on the JMB property and, if extended as Metro extended other fault lines, would intersect the Constellation station box. The Metro boring and CPT data in this area is sorely lacking, leaving such a wide gap that the fault clearly indicated by the seismograph data cannot be dismissed or resolved. There are other anomalies in the limited data available for Constellation. Where such data was found at Santa Monica, it was presumed to be an active fault; where it was encountered at Constellation — in the very limited examination that occurred — it was not discussed.

If the Metro analysis and conclusions are correct, and if they are applied consistently to Constellation, then Metro has ample evidence of the presence of faulting at Constellation station and at least one entrance.

The FEIS/EIR Transit Oriented Development analysis is inconsistent with the Metro Seismic Fault Study. Metro has made a specific Alquist-Priolo area recommendation impact across

Century City. However, in order for this to be true, it means that the Santa Monica fault must



be active its entire length covering Westwood and Santa Monica. The consequence of an Alquist-Priolo designation is that an entire area is barred for future development of inhabited structures. The impact of the recommended designation on existing structures is much less clear. Does building occupancy change? Do buildings become less desirable? Does property valuation change? Are structures insurable? Can structures be renovated over time, or must they be frozen in stasis and gradually decrease in economic value? What is the impact on financing? On property tax valuation and revenues? This would not be the first instance of an Alquist-Priolo zone being imposed on a developed area. There are numerous examples of clearly identified negative impacts and consequences. Here are several — out of many — examples:

Growth Inducing Impacts — *FEIS/EIR Technical Report 13. Growth-inducing Impacts Technical Report* contains an analysis of future job growth and population growth in the area. This analysis is used to provide data incorporated into Metro Travel Demand model and the Ridership models. Because the Santa Monica fault (as defined by Metro in the project study area) follows Santa Monica Boulevard, an Alquist-Priolo designation would have a concentrated impact on commercial development and activity. It would inevitably cause a repression in job growth, which would then trickle through other portions of the FEIS/EIR analysis. Metro has not made this adjustment.

Transit Oriented Development Analysis Impact - *The FEIS/EIR Technical report 15. Land Use and Development Opportunities Report* provides measurement of existing and future development potential in the study area and at station locations. This analysis is based upon various municipal planning documents — many of which would incur substantial revision due to an Alquist-Priolo designation in the study area. Metro's Transit Oriented Development assessment predicts substantial future development and very high building occupancy levels in Century City. However, an Alquist-Priolo designation would preclude much of this future development, and would negatively impact existing development patterns. The Metro Seismic Fault Study is completely at odds with the development assessment in the FEIS/EIR. Both cannot be true.

Travel Demand Model Impact - In *FEIS/EIR Technical Report 23. Smart Growth Evaluation Report* the Metro Travel Demand Model predicts immediate and long term ridership based on the development and job predictions made in other reports — numbers that are over-inflated without an adjustment for the recommended Alquist-Priolo designation. The Alquist-Priolo recommendation by Metro would very likely depress overall study area growth and ridership, and would definitely cause a substantial alternation of the Century City ridership projections.



Ridership Analysis Impact - Metro's ridership analysis presumes health ridership growth in Century City related to a substantial increase in jobs and residents. However, the "centroid" of Metro's ridership analysis lies inside a mall that lies squarely over Metro's recommended Alquist-Priolo zone. An Alquist-Priolo designation in Century City would eliminate many of the building projects identified by Metro as providing future growth, and may actually cause a decrease in area jobs and residents. The FEIS/EIR ignores this impact altogether. The Metro Seismic Fault Study is completely at odds with the ridership assessment in the FEIS/EIR. Both cannot be true.

Station Entrance Impact — As explained above, if the Metro Seismic Fault Study is implemented consistently, it may not even be possible to build the Constellation Station, or the entrance on the proposed JMB development. Of course, there would be no JMB development because of the fault identified in the Metro seismograph data. The station entrance analysis has presumed that any area of Constellation would be buildable; this is completely at odds with the data and methodology behind the Seismic Fault Study.

Area 2 – Ridership Issues

The Metro Travel Demand Model inventories area characteristics (e.g. land use such as residential units) then applies conversion factors (e.g. trips per household) to determine overall travel activity. The system is an appropriate tool to determine the level of demand for an area and to determine where a station is needed and will be supported by demand. Although the Metro Travel Demand Model is based on an industry standard application, there are numerous variables within the model that can have profound effects in estimating overall system ridership and specific station ridership. For example, there are normally a set of factors developed to correlate model predictions to match existing system actual ridership both at the system-wide level and at the station level. These correlation factors are then carried forward and used to predict ridership at new stations. Metro has not provided access to the specific Travel Demand Model used to calculate ridership for the Westside Extension and for the Metro system as a whole. There are certain aspects of the model that could substantially influence this particular application.

Evaluation of Station Location Benefits— There is a very large and serious problem with the methodology as presented in the FEIS/EIR: it conducts an analysis that looks solely at potential Century City transit riders, determines that Constellation will have 3,325 more riders because of its proximity to destination and sources, and stops the analysis. Every statement in the FEIS/EIR indicates that Constellation will generate 3,074 more riders than Santa Monica. Metro did not fully

assess the impact of the longer alignment, with sharper curves and numerous grade



changes. The impacts of the travel time difference required to serve Constellation decreases ridership on the Westside Extension and across the entire Metro transit system.

The FEIS/EIR has determined that Constellation is between 23 and 26 seconds slower than Santa Monica (*FEIS/EIR Section 05 Chapter 3 Transportation — Table 3-4*). Out of context, 23 to 26 seconds seems like a trivial impediment that should not have a sizable impact. However, the Metro Travel Demand Model shows otherwise. One of the large differences between the Draft EIS/EIR and the Final EIS/EIR was the decision to change train headways: the Westside Extension headways were increased from 3:30 to 4:00 minutes, and the Red Line headways were decreased from 5:00 to 4:00 minutes. This resulted in a decreased ridership on the Westside Extension by 3325 riders, but resulted an increased ridership in the rest of the system by 7,925 riders, resulting in a net increase in system-wide ridership of 4,600. This was a good planning decision.

Headway and travel time are strongly overlapping variables in a model. Metro has continued to refuse access to the model or inputs it used to support its conclusions. The exact impact of the increase travel time cannot be determined from the documents released by Metro. However, based upon the data Metro has provided, switching from Constellation to Santa Monica would increase ridership in then Westside Subway Extension by approximately 3,000 riders and result in another increase in ridership in the rest of the system. Even if the Metro Walk Study Access conclusions were valid — which they are not —the difference in ridership between Santa Monica and Constellation are not significant on the entire Metro system. The FEIS/EIR does not contradict this conclusion — it simply omits the discussion altogether (e.g. *FEIS/EIR Technical Report 25. Transit Impact Assessment Report — Section 4.7 Study Corridor Travel Time Comparison*).

There are numerous other aspects of the Metro FEIS/EIR ridership modeling that have artificially and inconsistently skewed the apparent ridership benefits of Constellation over Santa Monica.

Correlation between riders and fare paying patrons — It is common knowledge that under the Metro "honor system" the number of transit riders far exceeds the number of paying riders. The FEIS/EIR appears to have calculated system ridership based on a correlation to the actual number of passengers riding the system. Metro has long term plans to abandon the "honor system" and go with a traditional turnstyle system. It is industry experience that once a turnstyle system is activated, actual revenue increases but actual ridership decreases. The Metro ridership and operating revenue projections are inconsistent: it is either overstating

operating revenue, or overstating user benefits by a substantial factor.



Accommodation of geographical barriers — The basic Travel Demand Model is essentially blind to geographic barriers. As long as TAZ's (or demand neighborhoods) have similar levels of impedance scattered throughout, specific barriers are irrelevant. For most of the stations proposed on the Westside Extension, there are no unusual geographic boundaries that must be factored into the model. This is not true for Century City, which is a city of walls: the east and west sides are literally walled off from Westwood and Beverly Hills; the residential areas are all gated communities with single entrances; Fox Studios has multiple layers of access restriction on its borders and within the complex; Century City is made up of super blocks with fewer routes — and shortcuts — than comparable business communities in Los Angeles. The key assumption in the travel model was increased access walk time to the station site which does even discuss, let alone account for, these barriers. Barriers translate into impedance which translates into lower ridership.

Lack of Shuttle Service — It must be presumed that the Metro Travel Demand Model has been calibrated to match existing Metro ridership patterns. Century City is a high rise urban jobs center with a profile most analogous to the downtown Los Angeles area. However, there is a critical difference: all of the downtown stations in Los Angeles and many of the stations west of downtown are served by the DASH system, which acts as a feeder shuttle to the downtown stations. There is no shuttle in Century City. It is not clear how the Metro Travel Demand Model has addressed this difference. Note that many of the other proposed Westside Extension stations will be served by shuttles, especially the Westwood/UCLA station; this issue is unique to the Century City station.

The peculiar parking problem of Century City — The FEIS/EIR presumes that the bulk of the subway riders at Century City will be employee commuters. The availability and cost of parking is a key factor in employee choice between driving and riding the subway. The FEIS/EIR has noted the fact that the parking supply in Century City is disproportionately higher than at other stations (e.g. *FEIS/EIR Section 05 Chapter 3 Transportation — Table 3-15* and attendant text). Unlike similar high density urban stations in Los Angeles, Century City has ample parking in all of the office buildings, plus has ample reduced rate parking at the shopping mall. The FEIS/EIR noted the disparity, determined that the parking supply would not be a barrier to transit use by patrons who drive to the station, but ignored the fact that the parking creates a disincentive for commuter patrons. The Century City parking situation may increase resident ridership, but will decrease employee ridership with a substantial net loss in station ridership — unless corrected. The negative parking effect on ridership is more pronounced at Constellation (newer buildings, higher parking space ratio, more subsidized parking spaces embedded in leases) than at Santa Monica (older buildings, lower parking space ratio, smaller quantity and ratio of subsidized



parking spaces). Redevelopment of buildings (with lower parking space ratios to encourage transit use) will have a greater long term effect at Santa Monica than at Constellation because of the age of the buildings. The FEIS/EIR ridership analysis has also ignored the formal offer of a park and ride facility by the City of Beverly Hills to be located close to the east end of the Santa Monica station. The vast majority of Metro stations lack park and ride facilities: adding one to Century City will increase resident usage of the station, particularly by the walk-averse population or population that is outside the half mile radius of the station, which is the vast majority of residents in the area. The impact on transit ridership of the "first and last mile travelled" is well understood in the industry, and has been the focus of much of Metro's transit planning. It should not be ignored here.

Metro Fails to Accurately Account for Student Ridership -The basic Metro Travel Demand Model tracks University trips, but does not track high school trips per se — they are aggregated into a factor that is applied to residential units. That approach works as long as the TAZ contains a "normal" distribution of residential units and schools. It does not work for Century City because the residential units that generate the student trips are not located in the Century City walkshed, and because the BHHS concentrates all of the high school students for the entire city in one school. The reality is that the BHHS concentrates almost 3,000 potential transit riders at the edge of the Century City walkshed — and the Metro Travel Demand Model ignores them altogether. This factor alone skews the Century City ridership calculations substantially. The BHHS ridership impact is disproportionately greater than its population: it contains an ideal transit-oriented population with the characteristics that the FEIS/EIR identifies as making a population more prone to use transit: the vast majority do not own cars, they are already conditioned toward walking, they walk farther than average and are less sensitive to distance and impedance than other transit patrons, a sizable fraction already ride a bus somewhere on their daily journey to school, and Metro subsidizes student transportation costs (which makes the students even more prone to use transit for non-school commuting trips).

The BHHS population and its characteristics are in stark contrast to the dominant residential population in South Century City — car owning, wealthier, older, high percentage of retirees, traditional non-transit riders, very sensitive to walk impedance: all factors that the FEIS/EIR has identified as negative impacts on ridership. These uniquely transit-prone and transit-averse populations may have little net impact in predicting ridership over the entire project study area. However, they are very relevant and significant for individual station predictions. Although the FEIS/EIR specifically recognizes the positive and negative factors discussed above and their potential impact on ridership, the Travel Demand Model has ignored them altogether in the analysis of Century City ridership and especially in attempting to compare the two station alternatives.

The Metro Walk Study — The Metro Travel Demand Model is not designed with the kind of precision to accurately measure small differences in station box or entrance locations. It is



simply the wrong kind of tool to make these kinds of evaluations. *FEIS/EIR Technical Report 39. Century City TOD and Walk Access Study* is an attempt to "calibrate" the Metro Travel Demand Model and measure these differences. However, the Walk Access Study is an overly simplistic method of making these measurements.

Normal industry practice for these kinds of analyses is well defined and standardized: a detailed map of the potential walkshed is developed, identifying all building developments and then determining potential walking paths — including specific impedance factors such as the delay from signalized intersections and sidewalk availability. Station entrances and locations are varied in an iterative process until the optimal location/ridership balance is achieved.

Metro did not take this approach. Instead it simply calculated a "walk time" from the various station entrance locations to the centroid and then devalued potential ridership according to a one eighth mile, one quarter mile and one half mile degradation formula. There are numerous obvious errors and flaws with this approach as conceived and as executed.

- The proposed centroid (per the *FEIS/EIR Technical Report 50. Technical Report Summarizing the Results of the Forecasted Alternatives*) is right in front of the B.J. Restaurant in the Westfield Shopping Center. It is not clear how this centroid was calculated — but even a cursory site visit will demonstrate that this is simply the wrong location: it is less than 400 feet away from the west wall of Century City and almost every high rise building and its population is to the east of the shopping center. Mathematically, it is impossible that the walkshed centroid be located inside the mall boundaries. A proper walkshed analysis will place the actual walkshed centroid somewhere inside the superblock bounded by Santa Monica, Century Park East, Constellation and Avenue of the Stars.
- If the centroid is adjusted to somewhere within the correct superblock, leaving everything else the same in the Metro walk study analysis, the apparent ridership differences between the two station locations shrink dramatically.
- The Metro walking analysis determined that the Century Park East entrance is a ten minute walk from the centroid. The ten minute walking time would definitely have a negative impact on ridership — if it were real. The fact is that even a casual walk to the B.J.'s centroid takes considerably less than ten minutes to accomplish, which would dramatically increase the Santa Monica ridership compared to the Constellation ridership. Metro used a walking speed of 3.5 mph, which is the conservatively slow walking speed used to time intersection crossing times and avoid stranding slower walkers in the crosswalk. This 3.5 mph walking speed has little bearing to the walking speed of the average transit patron who travels much quicker.
- The Metro walking study has artificially determined a wide variation in ridership between the Constellation and Santa Monica station alternatives.

The Metro walking study analysis creates a misleading measurement of differences in ridership. If the walking study premises were indeed valid then they stand for the following premises:



- Elderly, car owning, non-transit riding, retired people will use the subway more than non-car owning, transit oriented, daily commuting students — even if the student travel is subsidized.
- The "west wall of Century City" is not a barrier for residents seeking transit.
- People in Century City will walk three times as far to get lunch as they will walk to catch a train. The entire study is not adequate to support the ridership basis for station location.

The walk access method utilized by Metro to evaluate Century City is not applied consistently in the FEIS/EIR

-The most glaring indictment of the Metro walking study is the Metro refusal to use it to evaluate any of the other station alternatives, even though they present similar ridership questions. The walking study has determined that 600 feet is an all-important cutoff range for ridership. This means that the Westwood/UCLA on- and off- street stations would serve completely different sets of high rise buildings. This means that the Westwood/UCLA station would receive zero ridership from the UCLA medical complex, which is more than one half mile from either station, zero UCLA students whose classroom "centroid" is almost one mile away from the either station, and very few patrons from the Westwood Village area. Neither Westwood/UCLA station (or the Westwood/VA stations) will serve the Federal Center —despite its very large transit oriented population. The Metro Travel Demand Model has identified a relatively small difference in ridership; Metro has used the walking study to discount ridership from the demand model. If Metro were to apply the same approach at Westwood/UCLA, it would find an equally substantial (and misleading) dropoff in ridership that would have large impacts throughout the FEIS/EIR.

There is a gross error in judgment in Metro's 600 foot radius utilized in its Walking Study. The Metro Walking Study has determined that there is a very substantial ridership decline beyond a 600 foot radius. The research, although confirming a general trend toward decreased ridership with increasing distance, does not support the Metro methodology. The methodology is also not supported by Metro's own experience: a transit rider must walk more than 600 feet just to get from the Union Station platform to the Alameda Street curb. The walk study would insist that no riders from Union Station would ever cross the 101 freeway into downtown Los Angeles.

This methodology would have profound effects on other proposed stations: The vast majority of the VA hospital complex is out of walking range of the either Westwood/VA station location. Fairfax station patrons would walk to LACMA West, but almost never walk to LACMA East or to the La Brea tar pits. These predictions fly in the face of common sense and observation of the walking patterns of Metro's existing transit patrons and bus riders. The majority of the research provided by Metro uses a 'A and 1/2 mile distance (measured in varying ways) to predict and evaluate ridership. Walking distance does play a factor in ridership, but Metro's particular approach in radius definition and in predicted walking time has created an artificially disproportionate impact.



Most significant of all, if Metro were to apply the same walking study rules to all of the other station locations it would have an immediate and consistent decline in ridership across the entire Westside Extension. The decision to only apply it to Century City is inconsistent with its modeling approach everywhere else in the Westside Extension. If the walking study methodology and conclusions are valid and appropriate for Century City then it should be applied everywhere else with attendant decrease in ridership.

The centroid is not utilized consistently by Metro. Metro bases its conclusions on the fact that proximity of a station to the TAZ centroid is all important. If that is the case, Metro fails to explain why it did not place the Constellation station entrance at the Northwest corner, which is closest to the TAZ centroid. There are no technical barriers: the property owner is interested, and the cost and engineering challenges are similar. This is yet another example of Metro inconsistently applying its own standards.

Metro fails to apply its walking literature recommendations to entrances as well as stations.

Metro has gathered extensive walkshed research to determine the ideal station location. It then disregards that same research and, without explanation, applies a single entrance rule to all station locations, except for Westwood/UCLA. This flies in the face of industry practice and knowledge. Transit literature and research does indeed demonstrate a relationship between ridership and proximity to a station entrance as stated by Metro. However, the actual research findings are far more subtle than indicated in the FEIS/EIR: the average transit patron will judge station access based on the walking time from his building entrance to the closest transit station entrance. Patrons typically ignore the travel time component within their building and within the transit station. (Note: The FEIS/EIR confirms this understanding by measuring walking distances from station entrance locations, not center of platform as described in *FEIS/EIR Section 04 Chapter 2 Alternatives*, pages 2-73 through 2-75.)

With a typical Metro station box (platform and crossover tunnel) of 1000 feet, a double entrance station with entrances at both ends will substantially expand the perceived 118th mile radius "sweet spot" for ridership. Adding multiple additional entrances during initial construction is a very small incremental cost. The payback is substantial: a 1% increase in project cost for the additional entrances may generate a 10% increase in ridership. At least this is the experience and conclusion of most of the major transit systems in the United States including in the Bay Area, Chicago, Washington, New York Atlanta and Boston — as well as Paris, London and many other large urban centers.

The ridership benefit of multiple entrances is not uniform across all station options. In Century City, the benefit to Santa Monica would be substantially greater than the benefit to Constellation. A Santa Monica station an entrance at Avenue of the Stars will make the station perceptibly accessible well into Westwood and a second entrance near Century Park East will make the station perceptibly accessible well into the Beverly Hills hotel, commercial and high



school population centers. Multiple entrances at Constellation do not yield similar ridership enhancements primarily because of the impedance of the many walled barriers surrounding the station

The considered location of the Santa Monica station is singular and illogical. Initial planning had the Santa Monica station centered on the Avenue of the Stars, which appeared to intersect the Santa Monica fault. The Metro Board directed staff to investigate alternative locations to the east that could avoid the Santa Monica fault while still serving Century City. Staff did not follow Board direction: instead of evaluating a range of alternatives, staff evaluated exactly one poorly selected location centered on Century Park East. This location raised a conflict with a large storm drain culvert which in turn forced a further eastward extension of the station crossover tunnel. Staff has ignored potential placement of a Santa Monica station that is between Avenue of the Stars and Century Park East, perhaps located closer to the southern boundary of South Santa Monica Boulevard. This particular location is far enough eastward and south to miss the Santa Monica fault strands identified in the Metro Seismic Fault Study, while also far enough west to avoid the Newport-Inglewood Fault Zone also identified in the Metro Seismic Fault Study and the Benedict Canyon drainage culvert. Besides avoiding the seismic traps that befall the staff selected location, this particular location allows the construction of multiple entrances at minimal cost serving the corners at Century Park East, Avenue of the Stars and even reaching the northern side of Santa Monica Blvd.. A detailed industry standard walkshed modeling effort by BHUSD has confirmed that this particular location and entrance configuration will reduce or eliminate the near term ridership difference between stations.

The TOD long-term impact on ridership — Even a casual walking tour of the proposed Century City station area will confirm the following observations:

- Constellation is dominated by modern high rise transit adverse structures (e.g. ample subsidized parking, overly wide unfriendly streets, lack of an existing pedestrian culture). It is not ripe for redevelopment.
- Santa Monica, inside Century City, is dominated by older high rises that are already more transit-oriented (e.g. less subsidized parking, more bus riders, established pedestrian patterns, ample pedestrian shortcuts). This area is ripe for redevelopment, which has already begun at both ends. Century City redevelopment will be skewed towards Santa Monica, not Constellation for decades.
- Santa Monica will also serve Westwood and Beverly Hills. Adjacent commercial development is low rise and older. Both cities have adopted growth plans that envision redevelopment and replacement with greater density, transit-friendly buildings which has already begun.

A review of the development of the Century City area indicates that the Santa Monica station will encourage and benefit from long-term Transit Oriented development much more than Constellation.



Metro has failed to evaluate existing pedestrian habits and patterns. It is very surprising that Metro did extensive walking analysis and calculation without simply measuring existing pedestrian patterns and speeds. Had Metro observed Century City pedestrians, it would have found that there is a well-established pedestrian culture that is centered on Santa Monica Boulevard and in the Westfield Mall — but not on Constellation. It is basic transit planning to place stations where the people are already walking rather than to create a new culture. Had Metro measured walking speeds, it would have found that Century City pedestrians do not dawdle — they move substantially faster than the walking speeds used by Metro and they avail themselves of numerous shortcuts (like the pedestrian bridge over Avenue of the Stars). The result is that Metro's 10-minute walking radius zone is substantially larger than predicted. Santa Monica will attract riders from outside Century City and in large quantities. The net effect is that the ridership difference between Constellation and Santa Monica due to longer walking time will largely disappear.

Area 3: Capital Cost Issues

The FEIS/EIR cost analysis is a mish mash that fails to clearly identify, compare and contrast the cost differences between the Century City station and alignment alternatives. It is difficult to determine the source of many of the figures used and their method of calculation. In response for clarification and supporting cost estimate documents, Metro has responded that the cost information has been provided on the posted FEIS/EIR.

It appears — but cannot be confirmed without Metro's documents — that Metro followed the capital cost estimate process described in detail in *FEIS/EIR Technical Report 28. Accelerated Financial Plan — Section 2.1.2.* which is an updated version of the process identified in *FEIS/EIR Technical Report 08. Cost and Financial Analysis* dated August 2010. That description indicates that the starting point for all capital cost estimates was the Metro *Final Capital Cost Estimate Report (120F)* dated December 2010, which was then further adjusted to reflect expenditures to reflect "current in-progress estimate changes within each SCC category".

Metro has precisely described all of the components of a final cost estimate in the Metro *Final Capital Cost Estimate Report (120F)* dated December 2010. They include: an Estimating Basis and Assumptions Document, a narrative, an electronic Excel spreadsheet, detailed worksheets, backup documentation, and a historical cost database. However, Metro has refused to provide any of this backup to any of the estimates contained within any section of the FEIS/EIR Main Sections, Appendices or Technical Reports. Metro has refused to provide any cost estimate revisions that have taken place since December 2010.

It is impossible to understand and interpret Metro's estimating process or conclusions without a complete set of supporting documents and backup. It is impossible to identify what changes

have been made to the estimate between December 2010 and the present other than to note



any change in total project cost. Unfortunately, as described below, total project cost varies widely throughout the FEIS/EIR and supporting documents.

This report is primarily concerned with the relative cost difference between a Century City station and alignment at Constellation or Santa Monica, not the overall project cost. Unfortunately, without access to detailed estimate elements, it is very difficult to parse out the real cost difference between the Constellation and Santa Monica station alternatives in Century City. The cost differences are indirectly presented in various locations throughout the FEIR/EIS, and in varying and inconsistent amounts.

The FEIS/EIR Section 09 Chapter 6 Cost and Financial Analysis — Table 6-1 identifies cost ranges for all eight of the station/alignment configurations currently being considered in the FEIS/EIR. By pairing the information in Table 6-1 one can determine the net cost difference between the Constellation and Santa Monica options:

Matched pairs from FEIS/EIR Section 09 Chapter 6 Cost and Financial Analysis— Table 6-1					
Station Combinations				Total Cost Range (\$2011 millions)	
Santa Monica	Westwood/ UCLA On-Street	Westwood/VA Hospital South	1	\$4,348	\$4,435
Constellation			5	\$4,369	\$4,409
Constellation is more (+ value) or less (- value) expensive than Santa Monica:					(\$26)
Santa Monica	Westwood/ UCLA On-Street	Westwood/VA Hospital North	2	\$4,382	\$4,468
Constellation			6	\$4,402	\$4,442
Constellation is more (+ value) or less (- value) expensive than Santa Monica:					(\$26)
Santa Monica	Westwood/ UCLA Off-Street	Westwood/VA Hospital South	3	\$4,323	\$4,410
Constellation			7	\$4,344	\$4,384
Constellation is more (+ value) or less (- value) expensive than Santa Monica:					(\$26)
Santa Monica	Westwood/ UCLA Off-Street	Westwood/VA Hospital North	4	\$4,357	\$4,444
Constellation			8	\$4,377	\$4,417
Constellation is more (+ value) or less (- value) expensive than Santa Monica:					(\$27)

The answer is clear: Constellation is about \$20-21 million more expensive than Santa Monica — unless it is \$26-27 million cheaper. Metro has provided no explanation for the wide range in estimates — or even why there is a range at all. There is nothing in either the FEIS/EIR Technical Report 28. Accelerated Financial Plan — Section 2.1.2. or in the FEIS/EIR Technical Report 08. Cost and



Report (120F) dated December 2010 — the three estimating documents in the FEIR/EIS - that would generate such a wide range of cost expectations.

This is not the only inconsistent indication of the cost difference in Century City. The FEIS/EIR 09 Chapter 6 Cost and Financial Analysis — Section 7-3 presents another cost estimate declaring that Constellation is "slightly" more expensive than Santa Monica, and that the cost difference is due to the greater length that would result in a cost increase of \$25 million.

The FEIS/EIR does not identify or explain the source of any of the cost estimates that it contains. Metro has simply indicated that all of the cost estimate information has been provided. There is no additional cost estimate information in the Appendices to the FEIS/EIR. That takes the analysis to the Technical Reports section of the FEIS/EIR.

FEIS/EIR Technical Report 08. Cost and Financial Analysis — Tables 3-1 and 3-2 offer a limited pairing option that should also identify the cost difference between Constellation and Santa Monica:

Matched pairs from FEIS/EIR Technical Report 08. Cost and Financial Analysis - Tables 3-1, 3-2				
Station Combinations				
Alt 2	Santa Monica	Westwood/ UCLA	Westwood/VA	\$4,357,988
Alt 2 with Constellation	Constellation	Off-Street	Hospital South	\$4,439,029
Constellation is more (+ value) or less (- value) expensive than Santa Monica:				
Alt 2 less Crenshaw	Santa Monica	Westwood/ UCLA	Westwood/VA	\$4,171,089
Alt 2 with Constellation less Crenshaw	Constellation	Off-Street	Hospital North	\$4,216,592
Constellation is more (+ value) or less (- value) expensive than Santa Monica:				

The problem with this data is that the numbers are measuring exactly the same scope of work: they should be equal. Without access to the source documents refused by Metro, it is impossible to reconcile this difference.

The FEIS/EIR Technical Report 08. Cost and Financial Analysis completed in August 2010 refers to the Metro Capital Cost Estimate Report dated May 2010, for the detailed SCC worksheets that support the estimates presented in FEIS/EIR Technical Report 08. Cost and Financial Analysis completed in August 2010. Metro has refused to provide this report. Instead it provided the Metro Final Capital Cost Estimate Report (120F) dated December 2010. Presumably, this is a more advanced version of the May 2010 report and should be more likely to have been included in the FEIS/EIR cost analysis. The Metro Final Capital Cost Estimate



Report (120F) dated December 2010 contains the "Detailed SCC Worksheets" used to prepare an estimate for the various alternatives contained in FEIS/EIR Technical Report 08. Cost and Financial Analysis, but not the estimates contained in the main FEIS/EIR. The "detailed SCC worksheets" contained in the Metro Final Capital Cost Estimate Report (120F) dated December 2010 are in fact summary level sheets only that do not reveal any of the detailed components of a final estimate. Metro has refused to provide any of this backup to any of the estimates contained within any section of the FEIS/EIR, Appendices or technical reports. in components of The cost estimates for the various alternates match those in FEIS/EIR Technical Report 08. Cost and Financial Analysis:

Matched pairs from Metro Final Capital Cost Estimate Report 1120f) -Table				6-1, 6-2
Station Combinations				
Alt 2	Santa Monica	Westwood/ UCLA	westwoodrVA	\$4,357,983
Alt 2C with Constellation	Constellation	Off-Street	Hospital South	4,459,029
Constellation is more (+ value:) or less i - va lilel -expensive than Santa Monica				
Alt 2B less Crenshaw	Santa Monica	Westwood/ UCLA	Westwood/VA	\$4,171,039
Mt 2.E with Constellation less renshaw	Constellation	Westwood/ UCLA off-Street	Hospital North	\$4,216,592
Constellation is more (4- value: or less aluej expens e than Santa				

Again, although the two technical reports are consistent, they are consistently wrong. The estimates are supposed to be measuring exactly the same scope of work: they should be exactly equal. Without access to the source documents refused by Metro, it is impossible to reconcile this very large difference.

The Metro Final Capital Cost Estimate Report (120F) - Tables 6-1 and 6-2 dated December 2010 does allow a separation between major cost codes in order to better understand the relative cost differences as shown by the pairings in the table below. Once again, these pairings are supposed to be measuring the exact same scope of work and should present the exact same cost difference for every type of system element. With the exception of the Systems Elements which are relatively close, the other cost estimate elements are so widely and inconsistently divergent that it calls the entire cost estimate into question.



Matched pairs from Metro Final Capital Cost Estimate Report: 120Fi - Tables 6.1, 6-2				
Station Combinations				
Guideway and Track Elements				
Alt 2	Santa Monica	Westwood, / UCLA.	Westwood/VA	5831,68B
Alt 2C with Constellation	Constellation	Off-Street	hospital South	5864,065
Constellation is more ; + value) or less l: - value) expensive than Santa Monica:				
Alt 2B less Crenshaw	Santa Monica			5843,853
Alt 2E with Constellation less Crenshaw	Constellation	Westwood/ UCLA Off-Street	Westw o od/VA Hospital North	5864,870
Constellation is more t+ value) or les.. - value) expensive than Santa Monica:				
System Elements				
Alt 2	Santa Monica	Westwood./ UCLA	Westwood/VA	5166,510
Alt 2C with Constellation	Constellation	Off-Street	Hospital South	5171,426
Constellation is more l, -i- value) or less (- value) expensive than Santa Monica:				
Alt 2B less Crenshaw	Santa Monica			\$160,941
Alt 2E with Constellation less Crenshaw	Constellation	Westwood, " UCLA Off-Street	Westwood/VA Hospital North	\$165,240
Constellation. is more l, -i- value) or less 1.- value) expensive than Santa Monica:				
Stations				
Alt 2	Santa Monica	Westwood/ UCLA	We stw ood/VA	ri. 009,757
Alt 2C with Constellation	Constellation	Off-Street	Hospital South.	\$1,009,757
Co nstel iation. is more i: + value] or less l- value; expensive than Santa Monica:				
Alt 2B less Crenshaw	Santa Monica			\$916,007
Alt 2E with Constellation less Crenshaw	Constellation	W'estw ood/ UCLA Off-Street	Westwocxl/VA Hospital North	5886,151
Constellation is more ; + value) or less (- value) expensive than Santa Monica:				
Sitework and special conditions				
Alt 2	Santa Monica	Westwood/ UCLA	Westwood VA	\$317,178
Alt 2C with Constellation	Constellation	Off-Street	Hospital South	\$321,164
Constellation is more i, + value) or less. 1- value) expensive than Santa Monica:				
Alt 2B less Crenshaw	Santa Monica			5320,011
Alt 2E with Constellation less Crenshaw	Constellation	Westwood) U CIA Off-Street	Westwood/VA Hospital North	5298,108
Constellation is more l: + value) or less E- value) expensive than Santa Monica:				
Right of Way				
Alt 2	Santa Monica	Westwood/ UCLA	Westwoo.d/VA	\$159400
Alt 2C with Constellation	Constellatio n	Off-Street	Hospital South	\$178,173
Constellation is more i+ value) or less f- value) expensive than Santa Monica:				
Alt 25 less Crenshaw	Santa Monica			5101,639
Alt 2E with Constellation less Crenshaw	Constellation	Westwood/ UCLA. Off-Street	Westwood/VA Hospital North	\$178,173
Constellation is more 0- v_alue) or less l: - value) expensive han Santa				



FEIS/EIR Technical Report 06. Comparative Benefits and Costs Analysis — Table 5-1 introduces yet another cost estimate, stating that Constellation will be \$4.1 million ("base year dollars") less expensive than Santa Monica. This report also demonstrates the disproportionate impact that small capital cost differences can have on the cost effectiveness rating: the \$4.1 million cost savings will improve the Cost Effectiveness Rating from \$31.96 to \$31.29 (lower is better). The cost effectiveness rating is a key component of the federal funding application process.

FEIS/EIR Technical Report 06. Comparative Benefits and Costs Analysis — Table 6-5 states that the cost impact of Constellation will be a \$23.5 million cost increase, contradicting the cost savings in Table 5-1, and demonstrating that the Constellation station alternative will make the cost effectiveness rating worse.

Metro simply presents (another) project cost estimate dated September 2011 in the *FEIS/EIR Technical Report 28. Accelerated Financial Plan — Section 2.0* indicates that the total project cost is \$5,129 million (YOES) and \$4,406 million (YOES w/o financing). The estimate is presented out of context and without explanation. Presumably this estimate reflects the current staff recommended LPA: Alt 2 less Crenshaw Constellation Westwood/UCLA On-Street Westwood/VA Hospital South. Presumably, the estimate reflects most current thinking regarding engineering design and project costs for all elements. The LPA cannot be compared directly to any of the preceding estimates because the scope of the LPA does not match any of the Alternates discussed in the balance of the FEIS/EIR, and because Metro has not provided the backup necessary to construct a comparable scope of work cost estimate from the prior estimates. However, an indirect comparison can be made of the primary cost elements against the other non-LPA alternatives:

Alt 2	Alt 2C		Alt 2B	Alt 2E	
Guideway and Track Elements	\$331,633	\$364,055	\$843,353	\$ P.,64,370	\$ 1,150,00G
System Elements	\$166,510	\$171,426	\$160,941	\$165,240	\$251,000
Stations	\$1,009,757	\$1,109,757	\$,915,757	\$EL1.6,151	\$633,0013
Sitework and special conditions	\$317,173	\$321,164	53213,011	\$293,103	\$419,000
Right of Way	\$159,400	\$173,173	\$1G1,539	\$173173	\$374,000
Alt 2, 2C, 2B, 2E from Metro Final Capital Cost Estimate Report (120F) dated December 2010 LPA from Accelerated Financial Plan Table 2-2					

Although the scopes are different between elements, costs should still be roughly comparable. The LPA costs are suspiciously and widely inconsistent with previous estimates. Again, there is

The *FEIS/EIR Technical Report 38. Century City Station Location Report — Table 2-2* presents a very complicated set of comparison estimates that theoretically compare all 16 of the different station entrance locations. However, Metro has refused to provide any backup whatsoever

no way to explain these discrepancies from the information released by Metro.



regarding these sixteen estimates — none of which match any estimate value anywhere else in the FEIS/EIR — so that it is impossible to identify scope differences or any other basis for variation in cost between the alternatives.

In summary, according to the FEIS/EIR, what is the cost difference between a Constellation and a Santa Monica alignment and station? It depends where you look:

- Constellation is **\$20.5** million more expensive
FEIS/EIR Section 09 Chapter 6 Cost and Financial Analysis — Table 6-1
- Santa Monica is **\$26.5** million more expensive
FEIS/EIR Section 09 Chapter 6 Cost and Financial Analysis — Table 6-1
- Constellation is **\$25** million more expensive
FEIS/EIR 09 Chapter 6 Cost and Financial Analysis — Section 7-3
- Constellation is **\$81** million more expensive
FEIS/EIR Technical Report 08. Cost and Financial Analysis — Tables 3-1 and 3-2
- Constellation is **\$45.5** million more expensive
FEIS/EIR Technical Report 08. Cost and Financial Analysis — Tables 3-1 and 3-2
- Constellation is **\$81** million more expensive
Final Capital Cost Estimate Report (120F) - Tables 6-1 and 6-2
- Constellation is **\$45.5** million more expensive
Final Capital Cost Estimate Report (120F) - Tables 6-1 and 6-2
- Constellation is **\$4.1** million more expensive
FEIS/EIR Technical Report 06. Comparative Benefits and Costs Analysis — Table 5-1
- Constellation is **\$23.5** million more expensive
FEIS/EIR Technical Report 06. Comparative Benefits and Costs Analysis — Table 6-5
- Constellation is **\$19.9** million more expensive
FEIS/EIR Technical Report 38. Century City Station Location Report — Table 2-2
- Constellation is **\$58.6** million more expensive *FEIS/EIR Technical Report 38. Century City Station Location*
- Santa Monica is **\$64.4** million more expensive *FEIS/EIR Technical Report 38. Century City Station Location* *Report — Table 2-2*
- Santa Monica is **\$25.7** million more expensive *FEIS/EIR Technical Report 38. Century City Station Location* *Report — Table 2-2*

The FEIS/EIR has presented over a dozen separate estimates of the cost difference between Constellation and Santa Monica, with a difference between the estimates \$145 million.

Beyond the chaos of the Metro estimating approach, there are some hard factual differences between Constellation and Santa Monica both in station design and placement that do make a significant difference in cost. An objective cost-focused design would make the following differences:



- Tunnel length — The Constellation alignment is longer than Santa Monica; that cannot be changed.
- Station and Crossover length — The FEIS/EIR station design for Santa Monica is 200 feet longer than Constellation. They are the same functional stations. They should be the same size.
- Station depth - If the Santa Monica station is placed between the two alternates reviewed by Metro, it will miss the Metro faults and the large storm drain channel. This will allow the Santa Monica station to be shallow; Constellation cannot move and must remain deep because of geometric constraints. Cost of excavation and shoring increase exponentially with depth.
- Station access — Constellation will be built completely in the street and will require 100% decking at the surface — on a sloping street. This is unavoidable. Santa Monica could be placed within the boundaries of the existing median strip + one lane of traffic. This would allow construction without 100% decking which is substantially faster and less expensive.
- Gassy conditions — Constellation is gassy; Santa Monica is not. The exterior wall systems for the station box will be much simpler and less expensive than at Constellation.
- Oil Field conditions — Constellation requires tunneling through an oil field with added costs and delays; Santa Monica avoids the oil field.
- Real Estate — Metro has assumed that right of way across the high school will be \$10,000. It will not be that small. Right of way for Constellation is substantially more expensive because of the larger number of properties to be traversed and the cost of dealing with property impacts, even for underground easements.
- Station and crossover box — costs of the structures and finishes should be very similar because they serve the same patron loads and functions.
- Entrances — multiple entrances are recommended for both stations because of the enhancement to ridership. The entrances at Santa Monica can be spread further apart than at Constellation, increasing the total quantity of access tunnels square footage. However, this cost is substantially reduced if the access tunnels are incorporated into the station box excavation and/or serve double duty providing construction access and permanent patron access.

These differences are very real. It is estimated that they would exceed \$100 million in cost advantage of Santa Monica over Constellation.

Area 4 — Impacts on the Beverly Hills High School

The FEIS/EIR unilaterally concludes that there will be no adverse impacts to the Beverly Hills High School, either the existing buildings or to future development. This conclusion is false and ignores the information provided by BHUSD to Metro on its current use of, and future needs for, the site.



Metro has ignored the long term mission and requirements of the campus — The BHUSD sent Metro a detailed planning document *Master Plan Implications for Metro Tunnels* dated April 2011 that identified the long term needs of the campus, especially its requirements for future development and the need to preserve specific areas and depths for future developments. The FEIS/EIR fails to even mention or acknowledge this document or its requirements. The FEIS/EIR makes no accommodation for the long-term requirements and development of the campus. Despite notice and knowledge, the Metro FEIS/EIR has ignored the specific long-term requirements and development of the campus which BHUSD has advised Metro staff will be substantially and negatively impacted by the Metro tunnel alignment and depth.

The BHHS serves several important and protected public missions: it must provide the secondary education of all high school students within the City of Beverly Hills; it serves as a community center under a Joint Powers Agreement with the City of Beverly Hills; it acts as the primary community disaster and emergency gathering center; and it provides critical public open space in an area underserved by public parks and green space. All of these missions will continue for the foreseeable future.

There is no viable alternative location for the campus - The BHHS has been the sole high school campus serving Beverly Hills for the last century; it will remain the sole campus serving the community for the next century. Even if possible, it would be prohibitively expensive to expand the campus beyond its existing property boundaries. The campus must accommodate whatever growth or changes in student population or education mission or community service mission occur over the next century, and it must be able to do so within the existing campus boundaries and without disruption to its continuing missions. It is the fiduciary responsibility of the BHUSD to preserve the ability to construct new facilities and re-construct existing facilities to meet all ongoing campus missions for the reasonably foreseeable future.

The campus must grow — Student population will increase proportionate to area residential population growth. In recent decades, City growth has lagged well behind regional growth. Approximately half of the population resides in rental units, the average age of which is now well beyond the normal replacement age. It is quite possible that the City will incur disproportionately higher growth as it catches up to the region.

Student population will also increase as the education mission evolves - There are numerous factors that could dramatically shift the student population upward besides population growth: including, incorporation of community college classes onto the campus (now being negotiated); shifting of students from private to public schools (already occurring); expansion of adult education (occurring); allowance of out of district attendees (recently decreased); State adjustment of boundaries and attendance (unpredictable and beyond the control of BHUSD); Federal orders to allow students to switch from low performing to high performing schools



(being debated). A long term student population between 3,000 and 4,000 students is likely; a substantially higher population is reasonably predictable.

The BHUSD has defined a reasonable space restriction — The BHUSD did not attempt to preserve space to the center of the earth. It has defined a prime building area with a bottom elevation of 200 as being a realistic reservation of space for new buildings based upon a realistic estimate of near-term space and parking needs. However, there are numerous factors related to the long term mission (e.g. incorporation of community college coursework onto campus, expansion of the joint use community activities on campus — both of which are actively under discussion at this time) that would definitely increase the underground parking requirement even further. If an additional layer of parking were required, the space reservation would drop to elevation 185. By keeping the space reservation at elevation 200 the BHUSD has made a very reasonable definition of its future requirements.

Campus redevelopment is real, imminent and will be ongoing -The fact that there will be substantial redevelopment on the campus is undeniable: many of the buildings are now over 80 years old and require replacement or major renovation. Over the next century, every existing building on campus will require replacement. That replacement must occur in a phased approach that maintains existing capacity while building new structures. There is already a shortfall of space to serve the current population that must be addressed. The BHUSD has already passed two construction bonds to fund the first phase of redevelopment. The first phase of that redevelopment is fully funded, is now in planning and design and will be into construction well before Metro starts building its tunnels.

Metro has failed to treat all property owners equally — Between the release of the DEIS/EIR and the FEIS/EIR, Metro received information that the developer adjacent to the Westwood/UCLA Off-Street station planned a hotel with four stories of underground parking. Metro revised the FEIS/EIR design substantially by dropping the tunnel and station elevation to ensure at least 30 feet of clearance below the underground parking garage. The bottom of the station was 50 feet down; now it is 90 feet down. (Reference DEIS/EIR Drawing C-705T and FEIS/EIR Drawings C-318.) The drop in station elevation forced additional changes in the station design with an attendant increase in construction schedule, cost and risk to Metro.

Similarly, Metro has adjusted its alignment under the Westfield Mall, dropping the bottom of the station and tunnel as it crosses the Westfield Mall by 20 feet. Although Westfield has not planned a major expansion of underground parking, it will now have 50-60 feet of clearance between the top of tunnel and the bottom of planned future structures. (Reference DEIS/EIR Drawing C-701P and FEIS/EIR Drawings C-115.)

Metro has failed to consider BHUSD's Plans to Expand the School Use on Site —BHUSD made an explanation of its development plans, just as was done by other developers along the alignment, in the Master Plan Implications for Metro Tunnels document dated April 2011 that



was provided to Metro. Metro blythely states that "the vertical alignment of the tunnel would be 55 to 70 feet below the ground surface (to the top of the tunnel), which would allow for construction of an underground structure over the tunnel at a future date." (Reference FEIS/EIR Chapter 8 — Public and Agency Outreach — Section 8.8.3.) This is inconsistent with BHUSD's plans for the high school site. There is no separation between the top of the Metro tunnel and the BHHS development: the tunnel will encroach into the planned BHHS development for over 600 feet — virtually the entire width of the BHHS campus. This does not even take into account the protective envelope around the tunnel structure which Metro typically requires. Only under the existing administration buildings does the tunnel not encroach, but the top of tunnel will be only 10-15 feet below the future BHHS development.

Metro has completely ignored the Master Plan Implications for Metro Tunnels document dated April 2011, and does not even acknowledge it in the FEIS/EIR, much less change its design to accommodate the legitimate development needs of the BHHS. Metro has made serious and expensive design changes to allow developers to proceed as they wish but has refused to make any accommodation to the BHHS. The disparate treatment is further compounded by the impact on the parties: developers can modify the size of their project or go somewhere else to work around Metro; the BHHS cannot shrink its project needs and it cannot go anywhere else.

Metro has made an extensive analysis of the potential for vibration on existing structures and ignored the impact on future structures. Every possible building scenario at BHHS requires underground construction and to the maximum extent possible. There is no separation between the tunnel and the structure. This is not acceptable for the planned continued use of the site for school purposes.

Vibration is not the only reason for separation of school structures and Metro's proposed tunnel. There are also concerns related to minimizing settlement and protecting the tunnel structures from other construction. Metro has defined the adequate minimum separation between top of tunnels and bottom of structures by its actions in its adjustment of the Westwood/UCLA Off-Street station to achieve a 40 foot separation between the top of tunnel and the lowest level of the parking structure. (Reference FEIS/EIR Drawing C-318.) This must be the minimum acceptable separation — or Metro would not have placed the tunnel so deep and incurred unnecessary added cost. Metro's planned crossing of the BHHS campus would have to be substantially deeper to comply with Metro's own best practices and to treat BHHS the same as it is treating developers and other property owners along the alignment. It is not a question of Metro lowering the tunnel enough to get out of the BHHS buildings, it must be lowered another 40 feet to achieve the minimum acceptable separation.

The FEIS/EIR fails to adequately address issues relating to oil wells — The Constellation alignment — but not the Santa Monica alignment - must cross an old oil field under the BHHS campus. There is evidence of dozens of abandoned oil wells in the area in addition to the



ones listed in the State DOGGR logs and identified by Metro. This poses the very practical question of finding these wells and dealing with them during tunneling. Metro has provided a detailed description of the multiple methods that it will use to explore in advance of tunnel advancement to identify any wells in the alignment; it does not appear that Metro has included the additional cost required for this work in the Constellation cost estimates.

Metro has also presented a very detailed description of how Well Casings may be removed with an open face tunneling machine. However, Metro states that this project will use a closed face, earth pressure balance, or slurry tunnel boring machine. Site conditions preclude use of an open face tunneling machine. Working outside of the face on a closed face machine as described by Metro is extremely difficult and expensive and is simply not done except in extreme conditions. There is no indication that Metro has considered any of the impacts of the type of work Metro will be required to undertake if it chooses the route which takes it through these oil fields. Further, the conclusions set forth in the FEIS/EIR are completely contradictory to Metro's conclusions in connection with other projects and proposed projects addressing similar issues.

Conclusion.

The FEIS/EIR and related documents provided by Metro fail to fairly and adequately assess the impacts of its proposed project, particularly as to the selection of a site for a station to serve the Century City area of Los Angeles. The data presented by Metro to support a recommendation that a station be built at Constellation, and rejecting its previous designation of a Santa Monica Blvd. station site, fails to consider the varied and numerous impacts on the public and fails to support a conclusion that the proposed Constellation site is in the interest of the public.



MAY 3 1 2012

GSA Pacific Rim Region

Mr. David Mieger
Project Director
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza, MS 99-22-5
Los Angeles, CA 90012-2952

Subject: Metropolitan Transportation Authority (Metro)
Westside Subway Extension Final EIS/EIR
Los Angeles, CA

Dear Mr. Mieger,

Thank you for your presentation and tour of the LA Metro Crossover Box on March 1, 2012. We appreciate the effort you have put forth in keeping us informed of the development and progress of the Westside Subway Extension project.

It was brought to our attention last week that the project Final EIS/EIR was approved by the MTA Board of Directors and released on April 26, 2012. Please note that GSA did not receive a formal notice of the release of the project Final EIS/EIR. While GSA fully supports public transportation, as the owner, landlord and property manager of the Federal Building at 11000 Wilshire Boulevard we have concerns about the potential impacts that the subway extension presents to our facility and tenants. These concerns are reiterated below.

To alleviate GSA concerns, LA Metro should implement a noise control program that includes the following:

- LA Metro Contractor shall be required to take noise and vibration measurements throughout construction to demonstrate compliance with contract specifications and applicable permits.
- LA Metro Contractor shall administer a quality assurance program to verify compliance.
- LA Metro shall develop a program to evaluate, monitor and resolve public and GSA complaints regarding construction noise.
- Mitigation measures should be considered prior to construction to solicit GSA input and facilitate GSA acceptance and cooperation with the subway project.

U.S. General Services Administration
450 Golden Gate Avenue
San Francisco, CA 94102-3434
www.gsa.gov

- Criteria for control of noise and vibration should be reasonable, measurable and achievable.
- Contractor mitigation measures should be designed by specially qualified noise and vibration consultants.

Furthermore, with respect to construction noise and vibrations, some specific guidelines are recommended below. However, it is strongly encouraged that LA Metro proposes its own design criteria and program for GSA's review and approval to mitigate these concerns.

Construction Noise:

- Conduct pre-construction surveys, collect ambient noise measurements and do simulations to gather useful data.
- Estimate source noise levels for the types of equipment expected or specified.
- Estimate the noise impact from the expected source levels, hours of operation of the equipment and the distance to the noise sensitive receptors.
- OSHA Daily Permissible Noise Level Exposure for a full day is 90 dB, however, it will be difficult to accurately calculate the sound transmission capabilities and properties of the ground and building in advance. We will need ongoing coordination (see below).
- Decibel (Loudness) Comparison Chart was provided for your reference in prior correspondence.

Blasting Vibration:

- According to the criteria established by the US Bureau of Mines (USBM), safe levels for blasting are defined as those unlikely to produce interior cracking or other damages to neighboring building. USBM has established safe levels for low (<40 Hz) and high (>40 Hz) frequency vibration.
- The recommended maximum peak particle velocity to avoid damaging interior drywall is 50mm/second (MMPS) or 2.0 inches/second (IPS).

Blasting Noise:

- Restrictions established for blasting are based on the State Department of Environmental Quality's (DEQ's) restrictions for "impulse sounds". The DEQ regulation states that impulse sounds from blasting will be limited to 98 dBC between 7am and 10pm, and 93 dBC between 10pm and 7am.

Threat and Vulnerability Assessment (TVA):

- During our last meeting in March, GSA requested the TVA for our review along with a presentation on the findings and recommendations. To date we have not yet received a copy of the report. This report will be necessary for the GSA and our tenants to determine the potential security risks associated with the project.

In summary, GSA participation during planning, design and construction is desired to create an expectation of performance, accountability and responsiveness toward controlling construction noise and vibration by the LA Metro project.

Thank you for your attention to our comments and our tenants. If you have any questions regarding this matter, please contact Ms. Moonyeen Alameida, Capital Investment Branch Branch Chief, at (415) 522-3486 or Mr. Osmahn Kadir, Acting Regional Environmental Quality Advisor, at (415) 522-3617. We look forward to working with the City of Los Angeles Metro through completion of the Westside Subway Extension Project.

Sincerely,

A handwritten signature in blue ink that reads "Matthew Jear". The signature is written in a cursive, flowing style.

Matthew Jear
Acting Director, Portfolio Management Division
Public Buildings Service, Region 9

CC: Patricia Chang-Lynn
Catherine Lee
Clark Van Epps
Jim Kane