Moore-Love, Karla

From: Carter, Tom
Sent: Thursday, May 07, 2015 3:22 PM
To: Council Clerk – Testimony; Adam, Hillary
Subject: Testimony--final rebuttal memoranda from PWB for LU 14-249689 DM
Attachments: PWB WP final rebuttal memo 5-7-15.pdf; Geotech memo final 5 7 15.pdf

Attached are a final rebuttal and a final Geotechnical memorandum for the record in this case.

Please let me know you have received them and if anything else is needed.

Sincerely,

Tom Carter
Senior City Planner
Portland Water Bureau
1120 SW 5th Avenue, Room 600
Portland, OR 97204
(503) 823-7463
tom.carter@portlandoregon.gov

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Nick Fish, Commissioner
David G. Shaff, Administrator

1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water

Memorandum

Date: May 7, 2015

To: Mayor Hales
Commissioner Fish
Commissioner Fritz
Commissioner Novick
Commissioner Saltzman

From: Tom Carter, Senior City Planner
Teresa Elliott, Principal Engineer

Re: Washington Park Reservoirs Type IV Land Use Hearing LU 14-249689 DM
Memorandum discussing testimony in the record

On April 23, 2015 the City Council considered public testimony on the above-cited land use request and left the record open for two seven-day periods. During the first period, new evidence and discussion was submitted. The second period allows PWB the opportunity to rebut any submittal from the first seven day period. In this memorandum, PWB responds to arguments made in materials submitted up to the end of the first seven-day period.

Many comments and several documents were submitted concerning the geotechnical characterization of the site. Opposing commenters claim that PWB has misstated the significance of the landslide and geologic hazards at the site. A rebuttal from two PWB licensed professional engineers, one of whom is a licensed professional geotechnical engineer, is provided in an attached memorandum.

Adequacy of public involvement by PWB

Those who assert inadequate public involvement claim that this project did not adequately consider alternatives to the current proposal (e.g., Exhibits I-60 and I-61). In these and some additional comments, opponents say that the City of Portland's response to the EPA regulation (LT2) should be reconsidered, and that the current proposal should be the vehicle for reconsidering it.

In light of this, it bears repeating that the current proposal is a request for a land use review of a historic resource demolition at a specific property. The current proposal is the outgrowth of previous public processes and previous City Council decisions. It does not ask to reconsider all previous decisions because this reconsideration is not required and not relevant to the current proposal.

PWB responded to the claim that public involvement has been inadequate in its letter of April 30, 2015 (Exhibit I-51). That letter pointed out that the bureau carried out an extensive public outreach and involvement process for this project as documented in Section 1-4 of the application (Exhibit A-7), the Public Involvement Summary (Exhibit H-15), and other exhibits (e.g., Exhibits H-3, H-14, H-16, H-18a, F-2, F-8a & b, F-12a & b, and F-13).

PWB anticipated a robust public outreach effort would be required for the project. The program was initiated 2 years ago with the hiring of the consultants and public involvement experts and the development of the public involvement program. Beginning in late June, 2013, PWB and its consultant team conducted a thorough outreach and public involvement program. This program involved a wide variety of ways for the public to get involved, including three reservoir tours that hosted 47 members of the public, project staff attendance at 17 neighborhood meetings, issuance of 13 blog articles and 38 social media messages, and many other activities described in the Public Involvement Summary.

Opposing comments in Exhibit I-60 say that the city's Principles of Public Involvement have been violated. The information provided in the Public Involvement Summary submitted prior to the hearing refutes these claims. Specifically (bulleted comments are from Exhibit I-60; page numbers refer to the Public Involvement Summary):

- "The 'sounding board' excluded the broad-based community and key community stakeholders." It did not respect the right of stakeholders to be involved in decisions that affect them.

The Community Sounding Board (CSB) consisted of eight stakeholders who represented a variety of neighborhoods and interests (although they participated as individuals). Page 6 describes the people and the interests they represented. Many other individuals and neighborhood association representatives were invited to participate, but declined. The CSB held nine meetings. All meetings were open to the public and the public was invited to speak during the meetings. Prior to the Community Sounding Board, PWB and its consultants carried out a series of 10 stakeholder interviews involving 29 individuals representing a broader set of interests (pages 4 and 5).

- The principle of early public involvement was violated.

Public involvement started in June, 2013, with the stakeholder interviews. The design concepts were developed after receiving and using input from the first CSB meeting, which was held in July, 2013. Public involvement has informed the design process from the very beginning of the project.

- The principle of building relationships and community capacity was violated because "decisions particularly those related to LT2 compliance were made backroom..."

This project is an outgrowth of prior City Council decisions and public processes that selected an approach to complying with the LT2 rule, as described in the application materials (Exhibit A-7) and documented in several submittals to the record (the Novick letter to OHA attached to Exhibit H-15; Exhibit I-53). Those prior decisions and public processes are not the subject of this review.

- The principle of inclusiveness and equity was violated.

Commenters only state that this principle was violated, but do not describe how or offer any evidence of this. The Public Involvement Summary (Exhibit H-15) provides an extensive accounting of the efforts made to involve a broad cross-section of the public through outreach using a variety of modes, including site tours, in-person open houses, online public houses, social media, and other methods.

These assertions by the commenters are simply not supported by the evidence.

PWB has not followed the correct procedures

One commenter asserts that because PWB has not completed the Type III Historic Resource and Conditional Use reviews that are required, PWB has not met the procedural requirements nor met the approval criteria that apply to those procedures (Exhibit I-59). This commenter asserts that PWB has therefore not met the requirements for approval of this demolition review.

Nothing in the Zoning Code requires the Type III reviews to be completed before applying for a Type IV Historic Demolition Review. In fact, the May 13, 2014 letter from Hillary Adam to Sheila Frugoli in the Pre-Application Conference summary memo (Exhibit A-5) states "The Type IV application can be submitted prior to submittal of the Type III application."

PWB followed this advice and decided to submit the Type IV application first. As clearly stated in the application narrative (Exhibit A-7), Type III Historic Resource and Conditional Reviews will follow this Type IV review. Nothing in the approval criteria for the Type IV review requires completion of any other land use review. PWB is following the correct procedures.

PWB must consolidate lots

One commenter asserts that BDS established a requirement that the lots be consolidated (Exhibit I-55). In fact, as PWB showed in Exhibit I-51 (on p. 4), this was advice given at the Pre-Application Conference by the PWB Development Services reviewer and said that lot consolidation "may be required" (Exhibit A-5). In their subsequent response to the LUR application, the PWB Development Services reviewer stated that there are no issues and no conditions of approval are required. Information provided at the Pre-Application Conference is advisory, intended to assist the applicant in preparing a complete application, and is not a decision (see PCC 33.730.050).

At least one commenter asserts that PWB and BDS have failed to follow the dictates of the Multnomah County Land Division Ordinance (MCC 11.45). This ordinance applies only to land divisions in the unincorporated area of Multnomah

County (MCC 11.45.030). Washington Park is inside the City of Portland limits—and the current application is not for a land division, in any case.

In summary, as has been explained in previous submittals, lot consolidation is not required. PWB has not proposed a lot consolidation, nor has it proposed a land division. The City of Portland owns all of the taxlots and platted lots that make up Washington Park. PWB can apply for land use review on city-owned lands.

Full consideration of alternatives to demolition

As discussed in Exhibit I-51 (the April 30, 2015 PWB letter), the Historic Demolition Review process itself is designed to allow for full consideration of the alternatives to demolition. The various alternatives mentioned by commenters were described in the application (see Exhibit I-51 for specific references), and none of them satisfy the four project drivers. Only demolition of the reservoir basins and the weir building will allow PWB to satisfy all of the project requirements, so PWB is requesting approval for demolition of these three historic resources.

Nitrification of water in covered reservoirs

Opposing commenters argue that water quality will worsen as a result of nitrification in covered reservoirs as compared to the open reservoirs (Exhibits I-56 and I-62). The evidence they present is a non-technical paper concerning a tank in Los Angeles, not Portland. It does not show that nitrification will create a water-quality problem in Portland's proposed covered reservoirs.

This argument overlooks important facts that are already in the record. Comprehensive Plan Policy 11.26 is discussed (along with other policies within Goal 11) on pages 71-74 (Exhibit A-7). This policy states that PWB must "maintain the quality of its water supply at its current level, which exceeds all state and federal water-quality standards."

If PWB does not replace its open drinking-water reservoirs with covered storage, PWB will, in fact, be in violation of federal water-quality standards—the opposite of what this policy seeks to ensure.

Reservoirs cannot be demolished because their use would be lost
At least one commenter asserts that demolition of the historic reservoir basins would terminate the use of the reservoirs as drinking water utilities, and that this historic use cannot be terminated (Exhibit I-59). This argument confuses the *use*—"basic utilities"—with the *development*, which consists of the historic structures (PCC 33.910 defines "development," and PCC 33.920 describes the use categories).

The demolition of historic structures is allowed (PCC 33.445.330), and the Historic Demolition Review establishes a thoughtful and careful process for evaluating the proposal and its alternatives, ensuring that the city's Comprehensive Plan goals and policies are supported, and considering the future development of the site if the demolition is approved.

In fact, the use of the site for "basic utilities" will continue and not be lost. As described in the application materials (Exhibit A-7), the proposed redevelopment will include a new covered drinking-water reservoir and associated facilities.

Comments that the Infrastructure Master Plan does not list the open reservoirs as vulnerable to earthquakes and are not priorities
The 2000 draft of the Infrastructure Master Plan (IMP) is not a Comprehensive Plan goal or policy and is not part of the current proposal. As a result, it is not directly relevant to this review. A project opponent has submitted the cover and two pages from a draft of this plan and appears to argue that since there are other seismic projects to do, then the seismic risk at Washington Park is not significant (Exhibit I-60).

PWB is choosing to respond to this claim because this is not at all what the IMP says. As noted on p. 31 of the IMP (part of Exhibit I-60), the IMP "synthesizes" information from five PWB studies that were occurring during the same time frame. These studies are: 1) System Vulnerability Assessment (SVA); 2) Open Reservoir Study (ORS); 3) Supply, Transmission, and Storage Analysis (STSA); 4) Regional Transmission and Storage Strategy (RTSS); and 5) Powell Butte Master Plan.

As mentioned in the excerpt submitted, the IMP considered a multitude of issues, some of which were common to all 5 studies. The issues of emergency storage,

and provision of safe, secure and reliable water in all conditions were among the common themes that drove the five studies and preparation of the IMP. The excerpt presented for the record represents only two pages of Chapter 3, and ignores the context of all the other studies that were part of the IMP.

Nevertheless, on p. 3-2, it says that the System Vulnerability Study identified other "moderate-high, moderate, and 'quick fix' priority projects to increase the reliability" of the water system. These recommended projects included "projects that address seismic stability of various reservoirs." Although the commenters want to use this report to assert that seismic upgrades are not necessary, the excerpt submitted to the record says exactly the opposite.

The excerpt submitted for the record is from the 2000 draft IMP—not a final document. As the record shows (Exhibit A-7, the application narrative), there are new project drivers and new information about how to address the long-standing project drivers that provide the impetus for the current proposal. Fifteen years have passed since these reports were written. Exhibit A-7 provides at least a partial accounting of how codes have changed, knowledge of seismic risks has increased, and PWB has developed a better, more detailed understanding of the Washington Park than existed in the year 2000.

Comments that the Landslide is not a problem

Dan Hogan and Michael Stuhr are both licensed professional engineers. Mr. Hogan is also a licensed geotechnical engineer. They have provided a rebuttal of testimony regarding the nature of and dangers posed by the landslide at the site (see Attachment A).

Summary--Review Criteria and Comprehensive Plan Goals

The PWB application (Exhibit A-7) addresses, in extensive detail, how the proposal meets the applicable approval criterion for demolition review (33.846.080.C.2):

Demolition of the resource has been evaluated against and, on balance, has been found supportive of the goals and policies of the Comprehensive Plan, and any relevant area plans.

1. *The evaluation may consider factors such as:*
   a. *The merits of demolition;*

b. *The merits of development that could replace the demolished resource, either as specifically proposed for the site or as allowed under the existing zoning;*
c. *The effect demolition of the resources would have on the area's desired character;*
d. *The effect that redevelopment on the site would have on the area's desired character;*
e. *The merits of preserving the resource, taking into consideration the purposes described in Subsection A; and*
f. *Any proposed mitigation for the demolition.*

The review criterion was considered in the context of these six suggested evaluation factors. To meet the criterion, *it is not necessary to support every applicable goal and policy of the Comprehensive Plan.* Rather, the criterion requires that City Council find that *on balance*, the proposed demolition of the three contributing resources is supportive of the goals and policies of the Comprehensive Plan (including any adopted area plans).

The PWB application (Exhibit A-7, Part II) provides the findings of fact and conclusions that show that most comprehensive plan goals and policies support demolition of the three contributing resources – with proposed redevelopment and historic mitigation measures that will have a positive effect on the desired character of the area. The findings and conclusions show that, on balance, the proposal is supportive of the goals and policies of the Comprehensive Plan and satisfies the approval criterion.

BDS staff reached the same conclusion in their staff report (Exhibit H-19) to City Council.

Notably, the Portland Historic Landmarks Commission, which reviewed and commented on plans as they developed at four separate meetings, also recommended approval of proposed demolition (April 13, 2015 letter to City Council, Exhibit H-18a).

In their testimony, project opponents address some of the Comprehensive Plan goals, including certain goals that PWB believes are not applicable. The opponents cite statements in the BDS staff report, but make no reference to the extensive

assessment of Comprehensive Plan *goals and policies* provided in the PWB application.

Following is a guide to the location in the record of PWB findings, conclusions, and additional testimony concerning the Comprehensive Plan goals that have been highlighted by opponents:

Goals 1 and 2. As reviewed in PWB's April 9, 2015 memo to City Council (Exhibit H-14), PWB does not believe that Comprehensive Plan Goal 1 (Metropolitan Coordination) and Goal 2 (Urban Development) are directly applicable to this proposal. However, in our memo we offered findings that address the goals and related policies to the extent they may be deemed applicable. In short:

- Goal 1 Metropolitan Coordination requires that the Comprehensive Plan be coordinated with federal and state law and support regional goals, objectives and plans adopted by Metro. To the extent that Goal 1 is applicable, the demolition proposal has been coordinated with relevant state and federal agencies—particularly the U.S. Environmental Protection Agency, the Oregon Health Authority, and the Oregon State Historic Preservation Office—and thus supports the goal of intergovernmental coordination.
- Goal 2 Urban Development is to "Maintain Portland's role as a major regional employment, population and cultural center through public policies that encourage expanded opportunity for housing and jobs, while retaining the character of established residential neighborhoods and business centers." To the extent that Goal 2 is applicable, the proposed reservoir will support planned employment and population growth by providing critical infrastructure. In addition, the proposal supports Goal 2, Policy 2.6 Open Space by (1) replacing the existing reservoirs with new reflecting pools and by rehabilitating historic structures that offer visual relief from nearby developed areas; and (2) restoring pathways that provide public access to the entire Historic District during regular park hours and connect with the Washington Park trails and the 40-Mile Loop Trail. Policy 2.6 overlaps with other comprehensive plan goals and policies that are addressed in Section 2-3 of the application.

The BDS staff report (Exhibit H-19) provides findings for Goals 1 and 2, concluding that both goals are met.

Goal 3. PWB's response to public comments on Goal 3 Neighborhoods and evidence in support of this goal are provided in the public record (e.g., the public information report (Exhibit H-15) and Exhibits F-2, F-8, F-13, H-14, H-16, H-18). The application (Exhibit A-7) addresses public involvement in Section 1-4, and Part II specifically addresses Goal 3, including Policy 3.1 Physical Condition and Policy 3.5 Neighborhood Involvement. Today's memorandum also separately addresses concerns raised relative to public involvement.

Goal 6. PWB's findings and response to public comments on Goal 6 Transportation are provided in the record. The application (Exhibit A-7, Part II) specifically addresses Goal 6, including Policy 6.22 Pedestrian Transportation and Policy 6.23 Bicycle Transportation. In addition, comments concerning the reservoir's limited public access in recent years are addressed in our April 30, 2015 memorandum to City Council.

Goal 8. Public comments referencing Goal 8 Environment state that the LT2 regulation is under review and that the landslide risk is overstated. These concerns are reviewed in other submittals, including PWB memos dated April 9 and April 30, 2015, and memoranda from Dan Hogan and Michael Stuhr dated April 30 and May 7, 2015. The application (Exhibit A-7, Part II) specifically addresses Goal 8, including Policy 8.5 Interagency Cooperation – Water Quality, Policy 8.13 Natural Hazards, Policy 8.14 Natural Resources, Policy 8.16 Uplands Protection, and Policy 8.17 Wildlife Habitat.

Goal 9. PWB's response to public comments on Goal 9 Citizen Involvement is provided in this memo and in previous PWB submittals. The citizen involvement process is documented in Section 1-4 of the application (Exhibit A-7), the public information report (Exhibit H-15), and in other evidence provided by local neighborhoods, Community Sounding Board members, and the Historic Landmarks Commission (e.g., Exhibits H-3, H-14, H-16, H-18a, F-2, F-8a&b, F-12a&b, F-13).

Goal 11. Public comments on Goal 11 Public Facilities question public access restrictions and the need for the reservoir storage. These and related Goal 11 comments are addressed in Exhibit H-14 and in PWB's April 30, 2015 memo. The application (Exhibit A-7, Part II) specifically addresses Goal 11, including Policies

11.1 Service Responsibility, 11.6 Water Supply, 11.26 Quality, 11.28 Maintenance, 11.29 Storage, 11.31 Design and Community Impact, 11.36 Water Pressure, 11.37 Energy Conservation, 11.38 Master Development Plans and 11.39 Maintenance.

Goal 12. PWB's response to public comments on Goal 12 Urban Design includes Exhibits H-14 and I-51. Opposing testimony (e.g., Exhibits F-18 and I-22)-asserted that the Washington Park Reservoirs Historic Structures Report (HSR) (Exhibit F-14) showed that the reservoirs are in good condition. As noted in Exhibit I-51, the HSR was a draft document and served as baseline documentation, which was then augmented with detailed assessment drawings and updated condition information in the Exterior Building Assessment (Exhibit A-4). As documented in the April 23, 2015 Council testimony by Historic Preservation Architect Peter Meijer, the reservoir basins are not in good condition.

In addition, the HSR clearly recognized the deteriorated condition of the reservoirs and the continuing threat caused by the landslide. In describing the Reservoir 3 site "Condition/ Observations" (page R3-13), the HSR states:

> "The basin has had a long history of drainage and geologic problems. Measures have been taken to stabilize the condition, but with the underlying geologic condition, these problems presumably will continue. At this time, there is a buckling or heave zone at the most problematic section on the west side of the reservoir, that is evident beneath the liner and that extends across the walkway and hillside retaining wall. Reservoir construction undercut the toe of an ancient landslide. Landslide continues to move or creep.
>
> The dam has numerous cracks on the south or downstream side. Crack monitors have been installed at various times in the past, some as much as 20 years ago, according to Water Bureau staff. A review of available reports and literature indicates that larger scale geological movements have been an ongoing concern for the Washington Park reservoirs and dams. The open guard rail at the west end of the dam has several significant cracks."

In describing the Reservoir 4 site "Condition/Observations" (page R4-19), the report states:

"The basin lining has numerous patches that give it a spider web appearance. The dam has heavy staining and biological growth on its lower sloped walls and below top drainage outlets. Water leakage appears to have been an ongoing issue, as evidenced by the extent of efflorescence and calcium/lime buildup at numerous locations on the lower portions of the downstream dam face. Some areas were wet during the site observations, indicating leakage is continuing."

The HRS itself does not support the statement that the reservoirs are in good condition and are well-functioning.

Conclusion

In conclusion, PWB asks that City Council find that on balance, the proposal supports the Comprehensive Plan goals and policies, including adopted area plans.

Attachment A: Memorandum of May 7, 2015, from Dan Hogan and Michael Stuhr

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Nick Fish, Commissioner
David G. Shaff, Administrator

1120 SW 5th Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water

Memorandum

Date: May 7, 2015

To: Mayor Hales
Commissioner Fish
Commissioner Fritz
Commissioner Novick
Commissioner Saltzman

From: Dan Hogan, Engineer, P.E., G.E.
Michael Stuhr, Chief Engineer, P.E.

Subject: Washington Park Reservoirs Type IV Land Use Hearing
LU 14-249689 DM – Response to public comments about geologic hazards

The purpose of this memorandum is to provide rebuttal and clarification to public comments about geologic hazards at this site and how the Portland Water Bureau (PWB) is engineering approaches for managing them.

The public opponents have submitted several technical engineering papers as part of their testimony. In their written comments many members of the public have cited passages from these engineering and technical papers out of context and drawn incorrect interpretations and conclusions from these selective quotations.

Oregon licenses professional geotechnical engineers and engineering geologists to work with geologic hazards because they use their expertise and understanding to protect public health. Understanding and designing for geologic hazards requires a

high level of expertise. PWB and its consultants have conducted site-specific studies and analyses to understand the nature of the geologic hazards and guide the safe design of the future facilities.

Although the structural and geotechnical designs of the new facility are not part of this land use review, PWB has submitted information that addresses the issues raised by the project opponents. Following is a summary of that information.

This was and remains an active landslide. The landslide is still moving today as shown in Table 1 of the authors' Memorandum to Council dated April 30, 2015. This movement has required the PWB to make several major repairs of the existing reservoir basins over time as shown in the Application for Historic Demolition Appendix C. Changes Over Time (Exhibit A-2). Geotechnical engineers have studied this slide and the anticipated movements due to a large seismic event are estimated to be on the order of 15-22 inches as detailed in the April 30, 2015 Memorandum. This Memorandum demonstrates that the existing reservoir wall strength is not adequate to survive the tremendous loads imposed by the landslide and a seismic event.

The proposed mitigation for the landslide as presented in the Application (Exhibit A-7, pages 69-71) describes the PWB's strategy to increase stability of the landslide. This strategy is reiterated in the memorandum dated April 30, 2015 and is summarized below.

A portion of the existing Reservoir 3 (west wall) is in the active landslide today. The proposed reservoir will be located completely out of the active landslide. A mechanically stabilized embankment (MSE) wall will be placed at the toe of the active slide providing resistance to slide movement that does not exist today. A compressible inclusion will be placed between the new reservoir and the new MSE wall.

A portion of the existing Reservoir 4 (west wall) is in the active landslide today. We are proposing to buttress the landslide by restoring, with new backfill, the mass of soil removed by the original excavation. The restored fill on the toe of the landslide at Reservoir 4 will help slow the overall slide movement.

Public written testimony claims that an inclusion could be used to protect the existing reservoirs. This is not technically possible as noted in the Application (Exhibit A-7, page 70) there would be no room to construct the compressible inclusion.

Public written testimony claims that the City has not addressed the potential hazard of excavating a "marginally" stable landslide. This is not a part of this land use review. This is an issue to be addressed by licensed professional engineers in developing the construction methods to be used on the site.

Moore-Love, Karla

From: Adam, Hillary
Sent: Thursday, May 07, 2015 3:38 PM
To: Council Clerk – Testimony
Subject: Re: LU 14-249689 DM - Washington Park Reservoirs DM
Attachments: czarnecki re washpkres 4-30-15 .pdf

Karla,

I received these comments from John Czarnecki at 5:03pm on April 30th – three minutes after the close of the first 7 days of the record being held open.

My supervisors said that it could be included as part of the rebuttal testimony for the 2nd 7-day period which ends today at 5pm. No new information is presented in the attached comments.

~Hillary

Hillary Adam
Bureau of Development Services
p: 503.823.3581

From: John/Mary Czarnecki-NTA [mailto:jrca@aol.com]
Sent: Thursday, April 30, 2015 5:03 PM
To: Adam, Hillary
Subject: 4-30-15 czarnecki testimony Demolition Review for Wash Pk Reservoirs LU 14-249689 DM (pc# 14-139549

Hello Hillary-
Attached is a pdf of my testimony for consideration by Council during their next deliberation regarding the Washington Park Reservoir Historic District. Would you please pass it on to the appropriate Council staff?
Thanks for your help.
John

John R. Czarnecki, AIA
Principal
Mary F. Czarnecki, CNU
Principal

"All new things built with the idea of preserving the beauty of the city and adding to it" *A.E. Doyle, September 16, 1906*

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NEWTRADITIONAL ARCHITECTURE
"All new things built with the idea of preserving the beauty of the city and adding to it" *A.E. Doyle, September 16, 1906*

April 30, 2015

Portland City Council
Portland City Hall
1221 SW Fourth Avenue
Portland OR 97204

C: Hillary Adam, BDS

Re: Demolition Review for Washington Park Reservoirs
Washington Park
LU 14-249689 DM (pc# 14-139549) ***SUPPLEMENTAL TESTIMONY***

Dear Mayor Hales and Commissioners Fish, Fritz, Novick and Saltzman,

In response to oral testimony presented by others at the April 23rd 2015 Council Hearing, this written testimony continues to strongly support preserving the character of the Washington Park Reservoir Historic District by urging Council to **deny approval for demolishing Reservoir #4**

The new sub-surface reservoir is proposed beneath reservoir #3 only. Rebuttal testimony by the Applicant on April 23rd may have resulted in a misconception that maintaining deep water is not possible in either reservoir. My point is intended to reinforce the possibility of restoring historically deep water in Reservoir #4 within its current perimeter.

Please note the images on page two. You may recall the approved National Register of Historic Places Nomination states that *"the most defining principle of Reservoirs 3 and 4 is the open expanse of water 40 feet deep. Because of the great depth and the towering firs that surround (them), the water is a rich, deep hue."*

I commend the Applicant and their team for efforts to restore and improve the District in concept and detail. Sensitive restoration and preservation of key elements is proposed. These proposals can be delightfully compatible with the entire District, including historically deep water in Reservoir #4.

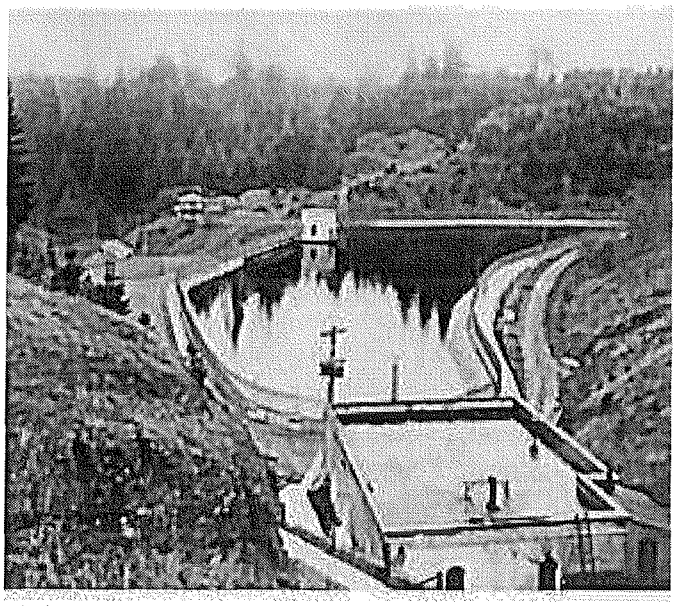
Please ensure that this precious resource is worthy of conservation for continued use to enhance the visual and atmospheric character historically intended for this portion of the park. Reflection of an expansive sky and the experience of deep water are more than a reminder of the past. They make possible a poetic, even existential continuity of critical public experience.

Thank you for your stewardship and forward thinking on behalf of us all.

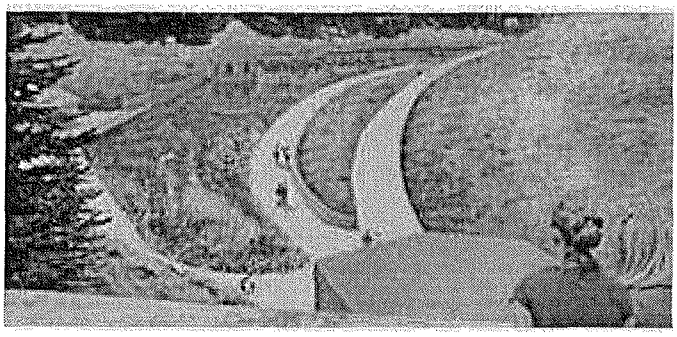
Sincerely,

John R. Czarnecki, AIA
Past Chair of the Portland Historic Landmarks Commission

208 SW Stark No.505 Portland, OR 97204 503-222-3522 newtraditionalarchitecture.com



Historic view of Reservoir 4 ca 1897



View following demolition as proposed by the Applicant

"It is not simply to give the people of the city an opportunity for getting fresh air and exercise; …It is not simply to make a place of amusement or for the gratification of curiosity, or for gaining knowledge. The main object and justification of the park is to produce a certain influence in the minds of people, and through this to make life in the city healthier and happier. "

Frederick Law Olmstead

Associated Landscaping at Washington Park Reservoirs Historic District

The most defining landscape principle of Reservoirs 3 and 4 is the open expanse of water, 49 feet deep and 40 feet deep, respectively. Because of the great depth and the due to the reflection of the towering fir trees that surround them, the water is a rich, deep hue. Situated in a natural deep ravine, their irregular shape, rusticated concrete structures and ornate wrought iron detailing of fences and lampposts, the reservoirs are a striking and elegant addition to the serene forest that makes up this end of Washington Park. From the high point on Southwest Murray at the nouthwest end of Reservoir 3, a striking view is provided of the water and all of the features of the reservoir. Reservoir 4 offers a grand vista from a point south along southwest Murray above the southwest side of the reservoir, of the City skyline, Mount Hood, and the watershed area, 50 miles to the east.

208 SW Stark No.505 Portland, OR 97204 503-222-352 newtraditionalarchitecture.com

Moore-Love, Karla

From: Carter, Tom
Sent: Thursday, April 30, 2015 3:01 PM
To: Adam, Hillary
Cc: Council Clerk – Testimony
Subject: PWB submittals for record LU 14-249689 DM
Attachments: final PWB response letter 4-30-15.pdf; Geotech Letter 4 30 15.pdf

Hi, Hillary,

Here are two memoranda from PWB to Council to be entered into the record for this LUR.

Thank you.

Tom Carter
Senior City Planner
Portland Water Bureau
1120 SW 5th Avenue, Room 600
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tom.carter@portlandoregon.gov

"From forest to faucet"
Please consider the environment before printing this email

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Nick Fish, Commissioner
David G. Shaff, Administrator

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Memorandum

Date: April 30, 2015

To: Mayor Hales
Commissioner Fish
Commissioner Fritz
Commissioner Novick
Commissioner Saltzman

From: Tom Carter, Senior City Planner TEC
Teresa Elliott, Principal Engineer TEC for TE

Re: Washington Park Reservoirs Type IV Land Use Hearing LU 14-249689 DM

On April 23, 2015 the City Council considered public testimony on the above-cited land use request, then left the record open for a period of seven days for new evidence. The Portland Water Bureau (PWB) believes that most issues raised in testimony are covered in the record, or were addressed at the hearing. However, we would like to respond to a few points that may not have been raised previously.

Comments on Historic Structures Report

Citizens commented that the May, 2009 Draft Washington Park Reservoirs Historic Structures Report (HSR) was excluded from PWB's application. In fact, PWB's historic resource consultant, Peter Meijer Associates (PMA), reviewed the HSR, which provided the baseline data for PMA's Exterior Building Assessment (Exhibit A-4), which supersedes the draft HSR. The Exterior Building Assessment presents the results of detailed assessment drawings and updated condition information. The draft HSR focused on visual appearance of the historic structures. The general observations provided by the HSR were expanded upon and incorporated, where appropriate, into the scope of work related to the

historic resources in this project.

Comments on Public Access

Public testimony noted that there has been some public access to the Reservoir site since the 1970s. While the application mentions existing "limited public access," PWB would like to clarify that there has been limited public access to Reservoir 3 during special events, such as the reopening of the Grand Stairway event. However, there is no public access to Reservoir 4. In addition, the hours of access to the Reservoir 3 area are less than the access hours of the rest of Washington Park in general. References in PWB's application to the Design Concept's "increased" and "restored" public access should be understood in this context. There will be four restored public entrances to the site, with walkways around both upper and lower reflecting pools, and Murray Street linking the upper and lower areas of the site. With few exceptions (such as maintenance closures), the site will generally be open to the public during normal Washington Park hours. No such broad public access has existed for the last 40 years or so.

Comments on Citizen Involvement and Allowing Citizens to Consider Alternatives to Demolition.

PWB has carried out an extensive public outreach and involvement process for this project as documented in Section 1-4 of the application (Exh. A-7), the public information report (Exh. H-15), and other exhibits (e.g., Exhibits H-3, H-14, H-16, H-18a, F-2, F-8a&b, F-12a&b, and F-13).

Testimony claimed that the public has never had an opportunity to "fully consider alternatives to demolition," as stated in PZC 33.445.330, which states:

> "Demolition of other historic resources within a Historic District requires demolition review to ensure their historic value is considered. The review period also ensures that there is an opportunity for the community to fully consider alternatives to demolition."

This provision clearly states that the current "review period," i.e., the period of this Historic Demolition Review itself, provides the opportunity to "fully consider alternatives to demolition."

In fact, the community has availed itself of the opportunity to fully consider alternatives to demolition. Project opponents have recommended doing nothing,

installing floating covers, or providing treatment of the water at the reservoir outlets. Each of these is an alternative to the proposal.

The applicant has provided evidence and discussion in Exhibit A-7 (the revised Application) showing that none of the alternatives meets the project requirements.

As noted in Exhibit A-7, the revised Application, the project arises from four drivers: 1) the active landslide; 2) the water quality requirements of EPA's Long-Term 2 Enhanced Surface Water Treatment Rule (LT2); 3) Aging Infrastructure; and 4) Seismic Susceptibility. PWB presented evidence that the project must address all four of these drivers. That is, the four drivers are project requirements.

Doing nothing addresses none of the four project drivers. It would leave the reservoirs vulnerable to failure due to landslide damage, would fail to satisfy the EPA's requirements, will fail to update the equipment and infrastructure that has passed its design life, and would leave the reservoirs and other aging infrastructure vulnerable to earthquake damage.

Treatment at the outlet is discussed on page 22 of Exhibit A-7 (see footnote 8 on that page). In a review in 2003-4, treatment at the outlets was studied and deemed infeasible due to costs, the need for two or more separate treatment plants, and the difficulty in finding land and getting permit approval in the parks (Mt. Tabor and Washington Parks) or in the residential neighborhoods that adjoin the parks. Even if these complicating factors changed, treatment at the outlet addresses only one of the four drivers: the water quality requirements of EPA's LT2 rule. It would do nothing to address the other three drivers, which each pose risks to the water system and the City of Portland.

The floating cover option is discussed on page 73 of Exhibit A-7. It also only addresses the LT2 rule's water quality requirements. It would not only fail to address the other three drivers, it would damage the aesthetics of the site by covering the open water with a plastic membrane. As documented in Section 1-4 of Exhibit A-7 (Public Involvement), the community and the Historic Landmarks Commission expressed a strong preference for maintaining a large expanse of accessible, open water at both reservoir sites.

Comments about Ownership and Lot Consolidation

Public testimony raised questions about ownership and lot consolidation, making assertions such as the following:

1. PWB does not own, and therefore cannot do work on, some or all of the platted lots that are part of the application.
2. Property owned by Portland Parks & Recreation cannot be used by PWB unless ownership is transferred and the General Fund is reimbursed for the land.
3. BDS stated that a lot consolidation is required for the application in the Pre-Application Summary notes.

There is only one owner of the entire park: The City of Portland, a municipal corporation. Individual bureaus cannot and do not own real estate, and City Council does not transfer ownership of parcels to a City bureau; rather, it assigns management responsibilities to individual bureaus.

The Zoning Code allows "ownerships" (contiguous lots under a single ownership, see Chapter 33.910) to be considered as a single property. That is the case here: all the lots are owned by the City of Portland—and in addition, they are all in the same Open Space zone. The existing platted lot lines still exist, but have no significance with respect to the land use review or the development standards.

The Bureau of Development Services did not and does not require consolidation of platted lots or tax lots for this application. The Water Bureau's Development Services staff advised during the May 2014 Pre-Application Conference that a tax lot consolidation would be required (the Pre-Application Conference notes memorandum was submitted as Appendix A to the application). The Pre-Application conference is intended to provide preliminary information, and is not a decision (33.730.050).

During review of the current proposal, PWB's Development Services staff commented that there are "no issues" and asked for no conditions of approval (Exhibit E.2). This comment (during the current review) supersedes the earlier Pre-Application advice.

Finally, PWB has provided all information required by the Zoning Code. BDS does not administer deed restrictions or titles, and the Zoning Code does not require

them for the land use review requested. The Director of BDS found that the application met all submittal requirements, in accordance with Zoning Code section 33.730.060.

Comments that These Reservoirs Are No Longer Needed
Citizens commented that Reservoirs 3 and 4 are often empty, and that they will be empty for four years during construction. They claim that this shows that these reservoirs are unnecessary, and that if they are unnecessary, the project to replace them is unnecessary.

Reservoir 4 is typically empty during low-demand periods, but may be used during high-demand periods—typically summertime. Reservoir 3 is currently empty as PWB studies its methods for operating without it during the construction period.

It is possible to operate the water system temporarily without these two reservoirs because the entire system is built with redundancy. The system must have redundant elements to allow for continuous and reliable operation during routine maintenance as well as emergencies. Without these two reservoirs, the water system will lose some of its redundancy, which increases the possibility that there could be service interruptions, especially in the case of an emergency.

This means that—without Reservoir 3—if there were an emergency, it increases the risk that there might be insufficient water to maintain continuous service to customers west of the river. Emergencies can take the form of major pipe breaks, landslides, large fires, earthquake damages and other unexpected events. PWB must take the temporary risk of operating without these reservoirs in order to satisfy the four project drivers in the long term (as discussed above and in Exhibit A-4, pp. 21-23). To eliminate Reservoir 3 from the system without replacing it poses unacceptable risks to the community due to loss of water service.

Comments that the Landslide is not a Problem
Citizens testified that the landslide is not really a problem because it moves very little, that the risk of earthquakes is overblown, and that Reservoir 4 should be left as it is instead of being filled to buttress the landslide. This testimony results from a poor understanding of the geological hazards at the site and of the measures needed to mitigate them. In addition, PCC Title 10 requires stormwater runoff from the site to be managed on site and space is required in order to do

this. In addition the area in the reservoir 4 basin is needed in order to drain and clean Reservoir 3 and would serve as a detention basin in the unlikely even of an overflow. This is required by Oregon Health Authority. Reservoir 4 is the recommended location for these facilities on the site.

Dan Hogan and Michael Stuhr are both licensed professional engineers. Mr Hogan is also a licensed geotechnical engineer. They have provided additional information to supplement the evidence in the record (see Attachment A).

Attachment A: Memorandum of April 30, 2015, from Dan Hogan and Michael Stuhr

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Nick Fish, Commissioner
David G. Shaff, Administrator

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Memorandum

Date: April 30, 2015

To: Mayor Hales
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From: Dan Hogan, Engineer, P.E., G.E.
Michael Stuhr, Chief Engineer, P.E.

Subject: Washington Park Reservoirs Type IV Land Use Hearing
LU 14-249689 DM – Clarification of Landslide & Seismic Assessments

The purpose of this memorandum is to provide rebuttal to certain claims that citizens have made at the subject Land Use Hearing. Citizens claimed that the landslide has slowed down to point that it is now under control and does not pose a risk to the reservoirs. Citizens have claimed that a large earthquake would only cause minor damage to the reservoirs with minor leaks and that the Water Bureau overstates the damage that would occur. These claims are simply not true and are rebutted below. Citizens have stated that since Reservoir No. 4 is not needed for storage the reservoir should remain in its current state. As shown below the area of reservoir basin is needed to provide mitigation for the landslide and to provide needed functions of the proposed Reservoir No. 3.

Washington Park Landslide Movements: Past, Present and Future

The Washington Park landslide has been monitored for over a century since it was reactivated during the construction of the Washington Park Reservoirs in the 1890s. The initial monitoring consisted of survey lines measured for movement across the slide area. This practice continued up until the 1970s when it was replaced by current state of the art inclinometer casings which continue to be monitored semi-annually today. The table below is developed from Water Bureau monitoring data and indicates the total average movement that has occurred in the landslide area over the course of this monitoring period.

TABLE 1

Date	Annual Rate of Movement	Total movement since 1895	Description of Events
1893 - 1894	Unknown	-	Reservoirs Constructed.
1895 – 1896	15 inches/year	30 inches	Water Bureau assessing cause of movement.
1897 – 1898	1½ inches/year	33 inches	Pump dewatering of exploratory shafts reduces movement rate.
1899 - 1900	4 inches/year	41 inches	Exploratory shafts completed; movement rates increase due to stoppage of dewatering pumps; survey grid installed.
1901 - 1904	¼ inch/year	42 inches	Drainage Tunnels constructed.
1904 - 1906	1-1/3 inches/year	45 inches	Movement increases; additional drainage tunnels are installed.
1906 - 1916	½ inch/year	50 inches	Detailed survey monitoring.
1916 - 1920	-	-	See note below.
1920 - 1970	½ inch/year	75 inches	Continued survey monitoring.
1970 – 1975	-	-	See note below.
1975 - 1986	¼ inch/year	77.5 inches	Measurements obtained from 2 Earth Deformation Recorder (EDR) casings.
1987 - 2010	0.14 inch/year	79.5 inches	Measurements from 7 inclinometers.
2011 – 2015	0.14 inch/year	80 inches	Measurements from 7 inclinometers.

Note: Measurements are not available between 1916 to 1920 and 1970 to 1975. Movement from these time periods was not extrapolated and is not included in the total movement summation.

The overall total movement since measurements were first made in 1895 is over 6.5 feet. Total movement since 1987 at the current rate is about 4 inches.

Future anticipated movements based on the current 0.14 inches/year movement rate being maintained are:

7 years - 1 inch
20 years - 3 inches
50 years - 7 inches
100 years - 14 inches

(Note: This does not include seismic induced movements. See seismic discussion below)

Of particular concern, it should be noted that while the landslide continues to move, portions of the reservoir move along with this slide movement while other portions outside of the slide do not move. This induces tremendous forces and load on the sections of the reservoir for which it was not designed to accommodate. The thin and relatively lightly reinforced section of the reservoirs are inadequate to resist these loads. For comparison, the following table compares the existing open reservoirs strengths in comparison to our newest code compliant reservoirs.

TABLE 2 -- CONCRETE RESERVOIR WALL STRENGTH

	Concrete				Steel Reinforcement		
	Allowable Compressive Force (lb)	Allowable Compressive Stress (psi)	Wall Thickness (in)	Wall Area (sq in)	Allowable Tensile Force (lb)	Yield Strength (psi)	Reinforcement Area (sq in)
Powell Butte 2	1,250,000	4,000	26	312	94,000	60,000	1.58
Kelly Butte	648,000	4,500	12	144	360,000	60,000	0.47
Reservoir No. 5,6	192,000	2,000	8	96	0	0	0
Reservoir No. 1,3,4	120,000	2,000	5	60	4,000	33,000	0.125

Seismic Assessment of Reservoirs and Landslide

The public testimony stated that the landslide isn't a problem, and even if there is major earthquake. Our analysis indicated that this would not be the case. During a major earthquake such as the Cascadia Subduction Zone (CSZ) or the Portland Hills fault, the reservoir structures will be subjected to significant loads in addition to the current landslide loads. With reference to the above Table 2, it can be seen that normal current code requirements for strengths of reservoirs absent landslide loads are orders of magnitude greater that the current open reservoirs. The addition of the landslide load makes this significantly greater. The exception is the massive dam structures that have been analyzed by previous work.

During a large earthquake, we do anticipate the dams at Washington Park will survive with minor cracking. However, the dams at Washington Park make up a small portion of the basins. Thus, although the dams are expected to survive, the basins as a whole will not survive or be able to hold water. The water would leak into the ground and would have a negative impact to the landslide and result in the loss of drinking water at this site.

Our proposed design was analyzed for seismic induced landslide movements. The proposed design moves the footprint of the new reservoir out of the slide plane and includes a Mechanically Stabilized Embankment (MSE) wall being constructed to the west of the new reservoir. This new MSE wall provide additional resistance to the landslides movement. Between the MSE wall and the new reservoir a compressible inclusion will installed. This inclusion will provide a buffer between the landslide and the reservoir limiting the load caused by the landslide on the new reservoir.

The landslide was analyzed for movement during a seismic event. The analysis was based on a site specific 2,500 year return period seismic event. Ground motions from several sources were analyzed including local crustal, CSZ intraslab, and CSZ interface. The analysis used a FLAC (finite difference model) model to estimate displacements. The results of that analysis are as follows:

At the base of the proposed MSE wall lateral displacements were estimated to be 8" – 15"

At the top of the proposed MSE Wall lateral displacements were estimated to be 15" -22"

The anticipated movements for the existing reservoirs was not analyzed. The movement would be expected at a minimum to be what is stated above or more. Simply put, there is less resistance to movement for the existing reservoir than there will be for the proposed reservoir.

In summary, during a large seismic event such as the Cascadia Subduction Zone or the Portland Hills fault, the landslide is expected to move between 15 and 22 inches into the existing reservoir basins. We believe this will cause failure of the existing open reservoirs while the proposed new reservoir will be constructed to survive and be operational after such an event.

Reservoir No. 4

During the Land use hearing testimony was given that since Reservoir No. 4 will not be used to store drinking water it should be preserved in its current state. However, the Reservoir No. 4 basin area is needed for several functions on site to allow construction of the proposed new reservoir. This includes landslide stabilization, reservoir draining and overflow, and a stormwater basin.

One of the key issues driving this project is the presence of an active, ancient landslide at the reservoir site. When the Washington Park Reservoirs were constructed in 1893-1894, this landslide was reactivated by the excavation of part of the toe (bottom portion) of the landslide. The City's proposed landslide mitigation strategy for the project is to resist further movement by returning as much of the soil weight as possible to the bottom of the landslide. Essentially providing a buttress that resists the landslides movement. The proposal is to re-create a similar topography to what existed before Reservoir 4 was constructed. The replaced soil fill on the toe of the slide at the Reservoir 4 site will help slow the overall slide movement above both Reservoirs 3 and 4. This will require filling in the basin to Reservoir No. 4 and constructing a slope above the basin's western wall.

In order to clean and perform maintenance on the proposed reservoir it will need to be drained. The reservoir water requires treatment (removal of chlorine) prior

to being sent to the stormwater sewer. This requires a large basin area. The proposed plan is to utilize the stormwater and lowland habitat area to accomplish this treatment.

Development of the reservoir site requires a stormwater facility to be included on site in the design per City stormwater requirements. Since the existing Reservoir No. 3 surface area is being hardened (reflecting pool) and other site development is occurring, the stormwater facility needs a relatively large area to meet City stormwater requirements. The only available space on site is the Reservoir No. 4 area.

As outlined above, the reservoir No. 4 basin area is needed to buttress the landslide and slow the movement, to provide reservoir draining and overflow, and to comply with City stormwater requirements.