Tabor Reservoir Adjustments W01524
Disconnection and Reconnection Info
Updated 01/10/15

Location	Type, Size	Existing Valve or closure	Proposed Work to Disconnect	Possible Work to Reverse Disconnection[1]
Reservoir 1	36" Outlet to Distribution West of Gate House 1 under valve platform	36" butterfly valve (109)	Remove valve & plastic pipe, install blind flange	Remove blind flange, install valve and plastic pipe
Reservoir 1	36" Opening in Gate House 1 to Tank (at bottom of Gate House 1)	Sluice gate valve (108L)	Close valve by welding	Open valve; remove weld
Reservoir 1	Rectangular weir inlet fed by Inlet Chamber and Conduit 3 on west side of Reservoir 1	Weir opening in Reservoir 1 west wall	Add recessed screen. Cut & plug upstream pipe (Conduit 3)	Install pipe from new Conduit 3-4 connection to old Conduit 3 remnant.
Reservoir 1	Conduit 1 & 4 in through Gate House 1, 33"	Over weir in Gate House	Cut & plug Conduit 1 remnant, close Gate House openings	Uncover openings. Conduit 1 is in poor condition and probably won't be reconnected.
Reservoir 1	36" opening into Reservoir 1 from aft bay inside Gate House	36" Sluice gate valve inside Gate House 1 (101)	Close and lock out sluice gate	Open sluice gate.
Reservoir 1	36" pipe from weir to Tank	36" Sluice gate valve in tank (102)	No change	No change
Reservoir 1	32" pipe outlet of tank in Gate House 1 to south	24" Gate valve (3103)	Close valve	Open valve
Reservoir 1	36" in from Conduit 2 under valve platform	36" butterfly valve (110)	Remove valve, install blind flange	Remove blind flange, install valve
Reservoir 1	2 - 24" pipe connections to Reservoir 5	24" pipes	Install grating over openings	No change
South of Reservoir 1	30" Steel pipe from Conduit 2 to Reservoir 1	none	Cut and plug at Conduit 2	Install 30" pipe and reconnect Conduit 2
South of Reservoir 1	30" Steel pipe from Reservoir 1	none	Cut and plug 30" at 30X16 tee	Install 30" pipe at 30X16 tee
South of Reservoir 1	24" Steel pipe, Highland Main to Vernon	none	Cut 24" main at juncture to 12" CI main to Montavilla	Install 24" pipe at juncture to 12" CI main to Montavilla
South of Reservoir 1	Conduit 4 to Conduit 1 into Reservoir 1	30" butterfly valve at the intertie from Conduit 4 to 1 (TAB 181)	Cut and plug Conduit 1 remnant south of Reservoir 1	Conduit 1 is in poor condition and probably won't be reconnected.
South of Reservoir 1	Conduit 3	none	Cut off Conduit 3 connection to Reservoir 1; and connect to Conduit 4	Install a pipe from the new connection between Conduits 3 and 4, and extend that pipe and connect to the southern end of the Conduit 3 remnant.
South of Reservoir 1	Conduit 4	none	Cut off Conduit 4 and connect to Conduit 3	Install pipe to reconnect Conduit 4; or rely on other connections, based on demands

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Location	Type, Size	Existing Valve or closure	Proposed Work to Disconnect	Possible Work to Reverse Disconnection[1]
South of Reservoir 1	24" intertie to Conduits 3 and 4	none	Unused portions of Conduits 3 and 4 near the old 24" intertie will be cut and plugged.	Install a pipe from the new connection between Conduits 3 and 4, and extend that pipe and connect to the southern end of the Conduit 3 remnant, or to the east end of the Conduit 4 remnant.
Conduit 2 at 30" intertie to Conduit 4 and 30" steel pipe	Conduit 2	none	Cut and plug Conduit 2 downstream (northwest) of 30" intertie	Install 44-inch pipe and reconnect Conduit 2 downstream of 30" intertie
Conduit 2 at 30" intertie to Conduit 4 and 30" steel pipe	Conduit 2	None	Install air release valve assembly on Conduit 2 possibly using the 30" piping into the vault over Conduit 4. Install pressure sensor	Remove air release valve assembly on Conduit 2 if there is a reason to do so - otherwise no change.
Conduit 4 at 30" intertie to Conduit 2 and 30" steel pipe	Conduit 4	30" butterfly valve (TAB 193)	Cut & plug Conduit 4 upstream (southeast) of intertie.	Reconnect Conduit 4 with 56-inch pipe.
Reservoir 5	Conduit 4 into Reservoir 5 near chlorine building	Butterfly valve (TAB 191) upstream of Chlorine/Weir building	Open and close valve as necessary for filling reservoir.	No change
Reservoir 5	Rectangular Weir opening to reservoir, in south reservoir wall	Weir opening at Chlorine/Weir building	Install grating across weir entrance	No change
Reservoir 5	54" Sluice Gate from aft bay inside Gate House, to Reservoir	54" Sluice gate valve near weir inside Gate House (502)	Close and lock out sluice gate	Open sluice gate
Reservoir 5	54" Sluice gate into Tank	54" Sluice gate valve in weir inside Gate House (503)	No change	No change
Reservoir 5	54" Sluice Gate Outlet from Reservoir into Gate House	54" Sluice gate valve outlet inside tank (504)	Bolt blind flange on opening on the reservoir side	Remove blind flange
Reservoir 5	48" out of Tank in bottom of gatehouse 5	54" Sluice gate valve (506)	Close valve	Open valve
Reservoir 5	36" out of tank in bottom of gatehouse 5	42" Sluice gate valve (3505)	Close valve	Open valve
Reservoir 5	12" drain line out of tank to 24" drain	12" gate valve (508)	No change	No change
Reservoir 5	24" Drain out of Reservoir	24" gate valve (507)	Leave gate operational, install screen on drain opening in Reservoir	No change

Tabor Reservoir Adjustments W01524
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Location	Type, Size	Existing Valve or closure	Proposed Work to Disconnect	Possible Work to Reverse Disconnection[1]
Reservoir 5	12" Overflow line to 24" drainline	none	No change	No change
Reservoir 5	8" Sub drain into 24" drainline	8" gate valve (501) and 12" gate valve (509)	No change	No change
Reservoir 5	2 - 24" pipe connections to Reservoir 1	24" pipes	Install grating over openings	No change
West of Reservoir 5	48" Loc-Bar Distribution Pipe	30" butterfly valve (TAB 205)	Remove valve and vault, install dished head on live side that remains pressurized with potable water, install thrust block, plug pipe on side to be taken out of service. This will restore a small area to grass	Remove thrust block, install new vault with valve, piping, telemetry, electrical power, and appurtenances.
West of Reservoir 5	36" Steel pipe from Reservoir 5 to 6, reduces to 30" near a vault	30" butterfly valve (TAB 187)	Remove valve, replace cross with tee on pressurized side, weld steel plate on pipe to be abandoned. Remove vault; this will restore a small area of grass.	Install 30" BFV, remove blind flange, replace vault, piping, telemetry, electrical power, and appurtenances. However, given the parallel 48" pipe from Reservoir 5, and piping improvements elsewhere, it may not be necessary to reverse this disconnection or parts of it.
West of Reservoir 5	30" Steel pipe connecting to 24" Steel pipe at a cross	2- 24" butterfly valves (TAB 188, 189)	Cut out cross and install new tee. Install new valve on pipe to the west to be used to fill Reservoir 6.	Replace tee with cross and reconnect to 30" pipe to the east. However, given the parallel 48" pipe from Reservoir 5, and piping improvements elsewhere, it may not be necessary to reverse this disconnection.
West of Reservoir 5	30" Steel pipe with 30" butterfly valve to 24" Steel pipe	30" butterfly valve (TAB 206)	Remove valve and vault, and cut and plug 30" main at vault location. Add thrust block. This will restore a small area to grass	Remove thrust block and replace 30" pipe, valve, vault, telemetry, electrical power, and appurtenances. However, given the parallel 48" pipe from Reservoir 5, and piping improvements elsewhere, it may not be necessary to reverse this disconnection.
Reservoir 6	East Gate House (Inlet) - 30" inlet to South Cell	30" valve in Gate House	No change	No change

Tabor Reservoir Adjustments W01524
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Location	Type, Size	Existing Valve or closure	Proposed Work to Disconnect	Possible Work to Reverse Disconnection[1]
Reservoir 6	East Gate House (Inlet)	Hydro-electric generator	Remove hydro-electric generator; install diesel powered emergency generator; power conduit and roof vent	No change
Reservoir 6	East Gate House (Inlet) - 36" butterfly valve at northwest corner of Gate House that allows inlet to Reservoir Bypass pipe	36" butterfly valve (605)	No change	No change
Reservoir 6	West Gate House (Outlet) - two 30" pipes from the north half of Reservoir 6, and two 30" pipes from the south half.	Four 30" gate valves inside Gate House.	Close outlet openings with blind flanges.	Remove blind flanges.
West of Reservoir 6	2 - 30" pipes conveying water out of the west side of Gate House, to distribution pipes in SE 60th Ave.	Isolation valves (TAB 659 and 660) west of the Gate House.	Cut and plug two 30" pipes where they connect to other pipes at SE 60th Ave.	Install pipes to reconnect

Note: Proposed work to reconnect reservoirs is theoretical and depends on how much time elapses between the disconnection and the reversal, condition of the pipes, valves and appurtenances, system operational needs, code changes, engineering practice and judgement. The system at Tabor is aging infrastructure and is long past due for replacement. The original Tabor Adjustments project (in 2009) proposed complete replacement of pipes and appurtenances on site in order to continue using them long term. The current project (in 2015) is scaled to just disconnect the outlets but does not do any infrastructure improvements, except the added pipe. Long term infrastructure improvement will eventually need to be done to continue using facilities on-site.

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

January 12, 2015

To: Historic Landmarks Commission

From: Tom Carter
Teresa Elliott, PE

RE: LU 14-218444 HR EN, Discussion of Conditional Uses in the OS Base Zone

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Primary and accessory uses
Within the OS zone, uses in the "Basic Utilities" category that are accessory to a park use are allowed (Section 33.100.110). Other "basic utilities" uses are allowed to be a primary use only as a conditional use (Section 33. 100.100 and Table 100-1).

The PWB facilities at Mount Tabor are part of the City's water supply system and are not accessory to the park uses. In fact, the earliest water facilities on site predate the creation of Mount Tabor Park and the park was built around the reservoirs.

Here are the Zoning Code definitions: of accessory and primary uses:

> ***Accessory Use.*** *A use or activity which is a subordinate part of a primary use and which is clearly incidental to a primary use on a site.*
>
> ***Primary Use.*** *An activity or combination of activities of chief importance on the site. One of the main purposes for which the land or structures are intended, designed, or ordinarily used. A site may have more than one primary use.*

There are two primary uses at Mount Tabor Park: 1) Parks and Open Space and 2) Basic Utilities. The water system is clearly not incidental to the Parks and Open Space Use, as the water infrastructure serves a wide area of the city. The park has for years been intended for use in both categories; therefore, both uses are "primary" uses.

The proposed work alters the development of the conditional "Basic Utilities" use; that is, it makes alterations to the water infrastructure, but it does not change the utility use of the site. The "Basic Utility" designation applies to the site, not just to the reservoirs.

Thresholds that trigger a Conditional Use Review
Whether alterations to the physical development require a Conditional Use Review is defined in this case by 33.815.040.B.1:

> *B. Proposals that alter the development of an existing conditional use.*
> *Alterations to the development on a site with an existing conditional use may be allowed, require an adjustment, modification, or require a conditional use review, as follows:*
>
> ***1. Conditional use review not required.*** *A conditional use review is not required for alterations to the site that comply with Subparagraphs a through g. All other alterations are subject to Paragraph 2, below. Alterations to development are allowed by right provided the proposal:*
>
> *a. Complies with all conditions of approval;*
> *b. Meets one of the following:*
> *(1) Complies with the development standards of this Title, or*
> *(2) Does not comply with the development standards of this Title, but an adjustment or modification to the development standards has been approved through a land use review;*
> *c. Does not increase the floor area by more than 1,500 square feet;*
> *d. Does not increase the exterior improvement area by more than 1,500 square feet. Fences, handicap access ramps, and on-site pedestrian circulation systems , ground mounted solar panels, Community Gardens, Market Gardens, and parking space increases allowed by 33.815.040.B.1.f, below, are exempt from this limitation;*
> *e. Will not result in a net gain or loss of site area; and*
> *f. Will not result in an individual or cumulative loss or gain in the number of parking spaces, except as follows: (not reproduced here)*

Discussion:

> ***1. Conditional use review not required.*** *A conditional use review is not required for alterations to the site that comply with Subparagraphs a through g. All other alterations are subject to Paragraph 2, below. Alterations to development are allowed by right provided the proposal:*
>
> *a. Complies with all conditions of approval;*

This refers to existing conditions of approval. The reservoirs and the water system on the site have “automatic conditional use” status because the zoning regulations were applied to them after they were constructed. As a result, there was no Conditional Use Review, and therefore there are no conditions of approval, which are created through such reviews. This does not apply.

b. Meets one of the following:

(1) Complies with the development standards of this Title, or

(2) Does not comply with the development standards of this Title, but an adjustment or modification to the development standards has been approved through a land use review;

As part of the land use review process, PWB applied for a pre-application conference. One purpose of the pre-application conference is to identify any development standards that are not being met with the proposal. In addition, part of the BDS review of LUR applications is to look for aspects of the proposal that do not meet the development standards of PCC 33 so that the applicant has the opportunity to amend them or to apply for an adjustment or modification to the standards as part of the land use review. BDS has not identified any such project elements.

As a result, the current application meets all development standards. In the event the applicant proposes anything that does not meet the development standards, the applicant will either have to modify the proposal to satisfy the standards (and the provisions of this land use review) or else undergo another land use process to gain an adjustment or modification to the standards.

c. Does not increase the floor area by more than 1,500 square feet;

PCC 33.910 defines "floor area" as "the total floor area of the portion of a building that is above ground." It defines a "building" as "A structure that has a roof and is enclosed on at least 50 percent of the area of its sides." The current proposal makes no changes to any floor area.

PWB is proposing to install two equipment cabinets and 2 vents above ground, but these are defined as mechanical equipment rather than buildings. In any event, they cover only a small fraction of the 1,500 square foot threshold.

d. Does not increase the exterior improvement area by more than 1,500 square feet. Fences, handicap access ramps, and on-site pedestrian circulation systems , ground mounted solar panels, Community Gardens, Market Gardens, and parking space increases allowed by 33.815.040.B.1.f, below, are exempt from this limitation;

"Exterior improvements" are "all improvements except buildings or other roofed structures." Therefore, the "exterior improvement area" is the area devoted to all improvements except buildings or other roofed structures. Where PWB is installing subsurface elements beneath pavement, gravel, in or on existing vaults, or other exterior improvements, there is no net change in exterior improvement area. Here is a tally of the changes in exterior improvement area as a result of the proposed work:

Work Area	Item Description	Change in Exterior Improvement Area, sq. ft.

1	NA	0
2	Buried pipe	0
3	Buried pipe, vault, appurtenances and manhole and valve lids	0
4	Buried pipe and valve lids	0
5	Buried pipe and vent	0
5	Vault for air/vacuum release and manway	+80
6	Pipe in existing vault, vent on existing vault	0
6	Buried vault	0
7	Remove 3 existing vaults	-254
7	Rectifier pad in grass area	+24
7	Buried pipe and conduits, cathodic protection	0
8	RTU pad in grass area	+42
9	Reservoir 1 grates, caps, blind flanges, screens	0
10	Reservoir 5 grates, caps, blind flanges, screens	0
11	Reservoir 6 grates, caps, blind flanges, screens, roof vent in gatehouse, conduits, and wall penetration	0
	NET TOTAL	-108

The net change in exterior improvement area is thus a decrease in 108 square feet.

e. Will not result in a net gain or loss of site area; and

The "site" is Mount Tabor Park, and none of the proposed work will result in a gain or loss of site area.

f. Will not result in an individual or cumulative loss or gain in the number of parking spaces, except as follows: (not reproduced here)

There are no changes to parking proposed as part of this project.

Conclusion

The proposed alterations comply with Subparagraphs a. through g. of this section of the Zoning Code, which means that they are allowed by right. No Conditional Use Review is required.

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

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January 12, 2015

To: Historic Landmarks Commission

From: Tom Carter
Teresa Elliott, PE

RE: LU 14-218444 HR EN, Comments about "Reversibility"

Some commenters have asked for higher standards of "reversibility" of PWB's proposed work.

PWB has designed its project to minimize adverse impacts on the historic resources at the site and to ensure that the reservoirs can continue to be filled, drained, and cleaned after they are disconnected from the drinking-water distribution system. An important aspect of this has been to take actions that can be reversed.

As important as this is to people, "reversibility "is not an approval criterion, and the word cannot be found in any of the applicable approval criteria.

The approval criterion that comes closest to the idea of reversibility is this:

> 9. Preserve the form and integrity of historic resources. New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic resource and its environment would be unimpaired.

The term "historic resources" refers to the listed contributing resources in the listing documents, which consist of the constructed elements: reservoir basins, gatehouses, drives, paths, and so on. This approval criterion also applies to the "form and integrity" of these constructed features, not to their use.

This criterion speaks of the effects of the proposed alterations only. It does not apply to maintenance, repair, or restoration.

None of the physical alterations proposed by PWB make any significant change in the appearance (i.e., the form) of any historic resource. Likewise, all of the changes preserve the integrity of the historic resources. The reservoirs will still be able to hold water, the drives will

still be available for vehicles, and the identified views will be unimpaired. The alterations will be almost unnoticeable.

Because of this, if PWB removes the alterations, the form and integrity of the park, the reservoirs, and all historic resources will still be preserved.

There is no requirement to have fully developed plans and cost estimate for how a project would be reversed. If some regulatory change occurs in the future that allows the City to resume using the open reservoirs as drinking water storage supply, then the City will evaluate and develop appropriate plans and cost estimate to allow reusing the reservoirs. However, we are providing a table that summarizes work being done to disconnect and the related work that would potentially be done to reverse it.

Proposed work to reconnect the reservoirs depends on how much time elapses between the disconnection and the reversal, the condition of the pipes, valves and appurtenances, system operational needs, code changes, and current engineering practice and judgment at the time plans and specifications are being developed. The system at Mt. Tabor is an aging infrastructure and is long past due for replacement.

The original Tabor Adjustments project (in 2009) proposed complete replacement of pipes and appurtenances on site in order to continue using them long term. The current project (in 2015) is scaled to just disconnect the outlets but does not do any infrastructure improvements, except the added pipe. Long term infrastructure improvements will eventually need to be done to continue using facilities on-site.

Attachment: Jan 10, 2015 Table summary of disconnection and reconnection info

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

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January 9, 2015

To: Hillary Adam, BDS
Tim Heron, BDS
Stacey Castleberry, BDS

From: Tom Carter and Teresa Elliott, PWB

RE: LU 14-218444 HR EN, Follow-up to proposed conditions of approval

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In our letter of December 23, 2014, we proposed modifications to the conditions of approval in the Staff Report and Recommendation for this case.

Having had time to analyze our proposed modifications in more depth and to reconsider them, we wish to amend our proposals as indicated below.

Historic Resource Review conditions of approval:

> **Condition B. Following completion of the disconnection, Reservoirs #1, #5, and #6 must continue to hold water within the normal historic operating range for each reservoir. The reservoirs must be maintained (as capable of holding such water) and cleaned, and may be emptied (partially or fully) for periods necessary to do so or to address system operational requirements, to maintain security, regulatory compliance, or for safety.**

We accept the modifications recommended by Ty Wyman (with a minor modification to the clause about safety that simplifies it) though we do not agree with his arguments or the reasons for them.

> **Condition C. The City of Portland shall develop an appropriately scaled interpretation program that tells the history of the Mt. Tabor Reservoirs and the Bull Run water delivery system, including the proposed disconnection, within 5 years of final approval of this land use review.**

We propose changing only the date at which the compliance period begins. PWB will not be able to include this item in its budget until July 2016. It will be necessary to involve the public, develop a proposal, and complete a Type II Historic Resource Review, which is expected to take about a year. After that PWB must engage a contractor and have the physical elements fabricated and installed. This required over two years for the interpretive program at Powell Butte, and could require as long here. And finally, it must be installed and inspected. Five years is approximately what is likely to be required.

Condition D. The applicant will engage a qualified archaeologist to conduct a pedestrian survey of the work areas before the construction permits are issued. In the event of any archaeological discovery, work potentially affecting the archaeological resources will be delayed or stopped, the State Archaeologist will be notified, and the procedures specified by state regulations will be followed.

PWB proposes no changes to this.

Environmental Review conditions of approval:

A. Temporary construction fencing shall be installed according to Section 33.248.065 or 33.248.068 (Tree Preservation Plans/Tree Protection Requirements), except as specified below. Temporary chain link, construction fencing shall be placed along the Limits of Construction Disturbance for the approved development, as depicted on Exhibit C.32 & C.35 Construction Management Plans, and as described in Exhibit A.1 Appendices C and F (Construction Management Plan and Tree Protection Plan) or as required by inspection staff during the plan review and/or inspection stages.
   1. **No mechanized construction vehicles are permitted in the environmental zones outside of the approved "Limits of Construction Disturbance" delineated by the temporary construction fence. All planting work, invasive vegetation removal, and other work to be done outside the Limits of Construction Disturbance, shall be conducted using hand held equipment.**
   2. **All temporary construction areas in the environmental zones shall be revegetated, using native vegetation, as described in the Construction Management Plan in Exhibit A.1 Appendix C.**

PWB proposes to add the underlined clauses to clarify that these conditions apply only in the environmental overlay zones, not to work everywhere in the park.

We hope you find these modifications suitable and can support them to the Historic Landmarks Commission.