

Central Reservoir Replacement Project

Frequently Asked Questions

Updated April 2018

Tank Height

1) How high will the tanks be?

The top of the new tanks will be approximately 15 feet taller than the existing Central Reservoir roof at the center of the reservoir and approximately 22 feet higher than the existing Central Reservoir roof at the location closest to Ardley Avenue. There are also additional appurtenances such as fall protection railings and air vents that will extend above the top of the tank. Building the new tanks higher than the existing reservoir allows for much smaller tanks while maintaining the existing emergency storage in the distribution system. Higher tanks also will increase operational flexibility, distribution system reliability, and improve water quality.

2) Is it possible for the design to include lower tanks instead of three higher tanks? Is it possible for the tanks to go deeper into the ground so that they will be less visible?

The top and bottom tank elevations are set by hydraulic requirements (i.e., the ability to maintain adequate pressures to customers and accessible storage volume for emergency operations). In a gravity-fed water distribution system, pressures are directly related to elevation. Lowering the elevation of the tank would cause lower pressures and inaccessible water storage; therefore, the tanks cannot go deeper into the ground or be located at a lower elevation. Building storage at the elevations shown (base elevation of 183-feet above mean sea level) is necessary in order to provide sufficient pressure during both normal operations and during emergency conditions for the foreseeable future.

The proposed new tanks, as currently planned, can be operated down to a much lower level than the existing reservoir without impacting levels of service, significantly increasing the emergency response time before customers are impacted. The ability to fluctuate water levels also has water quality benefits.

Finally, the proposed elevation of the proposed new tanks is in line with other EBMUD reservoirs in the area (Dunsmuir and South Reservoirs). When all the reservoirs in an area (or “pressure zone”) are at the same elevation, water can be readily shared between the areas which greatly increases operational flexibility and emergency preparedness.

Tank Material

3) Why was concrete chosen as the material for the tanks instead of steel?

The decision to construct concrete versus steel tanks is addressed on a case by case basis. EBMUD chose pre-stressed concrete for this project because concrete tanks have lower long term project impacts. Concrete tanks have lower roofs and do not require periodic sand blasting and repainting as do steel tanks. Concrete tanks require less maintenance and are expected to last longer than steel tanks. Both materials perform well with respect to leakage. EBMUD has done a number of successful reservoir

replacements using pre-stressed concrete, the most recent of which is Summit Reservoir in Kensington which was completed in 2017. EBMUD also operates several large steel tanks such as Alamo Reservoir and Castaneda Reservoir located in the Danville and San Ramon area.

Water Service during Construction

4) Where will we get water while the reservoir is under construction?

The existing water in the reservoir will be drained prior to constructing the new tanks. EBMUD prepared an outage plan to determine how the distribution system can be operated without Central Reservoir to ensure that water service to customers and fire flow are maintained during construction. The outage plan includes changes in system operations and temporary facilities that allow other storage reservoirs to serve customers while Central Reservoir is taken out of service.

Access Roads

5) Where is the access road now? How will this change with the project?

The current access road is located along the southern perimeter of the site, between the 25th Avenue/E. 29th Street entrance and the E. 30th Street entrance. The new access road will be located in generally the same areas but will extend around the site and also around the new tanks.

Dam and Tank Safety

6) Is there a crack in the current reservoir? Has there been any past flooding of residential lots from the current reservoir?

The California Division of Safety and Dams (DSOD) reviewed the Central Reservoir dams, including a review after the historic rain events in the winter of 2016/2017, and determined that the dams are safe. The lining system underneath the reservoir experiences minor leakage, which is captured through the reservoir's underdrain system and transported to the storm drain. There are no structural cracks in the reservoir that would make the reservoir unsafe. The reservoir has not caused any flooding to residential lots.

7) How safe are the new tanks during an earthquake?

The new tanks will be designed and constructed in accordance with current industry standards and the tank structures and foundation would be built to the latest seismic codes. The new tanks will include isolation valves that can be closed to prevent the reservoir from draining if the pipelines around the reservoir break. Emergency drains will also be installed to drain the reservoir to the storm drain in the event a tank structure is deemed unsuitable for storing water.

8) How are residents notified in the event of an emergency with the existing dam?

EBMUD prepared an Emergency Action Plan (EAP) for its dam structures to ensure effective coordination with local and state emergency management agencies in response to emergency conditions. EBMUD will use the EAP procedures to deploy emergency operation teams who will evaluate the safety of EBMUD dams following an emergency event that could threaten the integrity of a dam such as an earthquake. EBMUD emergency operation personnel are trained when to take immediate defensive actions (i.e., open valves to release water and lower water level). Inundation maps are

provided to local emergency management agencies and these agencies may initiate evaluations in mapped flood zones, if needed. In the event of an emergency related to EBMUD's infrastructure, EBMUD's Public Affairs office alerts the media and will make reasonable attempts to notify residences via autodial calls for affected areas.

Hydrology & Stormwater

9) **What does EBMUD do with stormwater on the site now and how will this change with the new tanks? What does the bioretention area do?**

Similar to residential areas, stormwater from the Central Reservoir site is routed to the nearest storm drain which then transports the water to Sausal Creek. The roof of the new tanks will be slightly sloped so that rain water will be directed to storm drains which will then route the rain water to the bioretention area. A bioretention area is an engineered solution for treating water runoff – it naturally filters stormwater and reduces peak runoff from the site to Sausal Creek. The bioretention area is being integrated into the site design, consistent with Regional Water Quality Control Board regulations with the goal of reducing stormwater pollution from developed areas. The bioretention area will include plants that can survive wet conditions in the winter and dry conditions in the summer and, therefore, the bioretention area will not require irrigation.

Project Cost

10) **Is this project cost effective? Will the cost of the project be passed onto residents? Will the project increase water rates?**

This project was selected based on its cost effectiveness and lower overall impacts to the community. There will not be a separate assessment imposed on the current customers who benefit from the new reservoir. The revenue collected from water sales funds EBMUD's operating and capital costs throughout EBMUD without geographic restrictions. Customers throughout EBMUD share in the operating, maintenance, rehabilitation/replacement cost of each facility through water rates. In setting the water rates, EBMUD anticipates the capital improvement needs for rehabilitating and rehabilitation/replacement capital projects, which will be repaid from future water sales revenue from all customers. As EBMUD's infrastructure continues to age, spending may increase on facility rehabilitation/replacement, which will require EBMUD to increase overall water rates to all customers to fund these projects.

Easement between Sheffield and Central Reservoir Recreation Area

11) **What consideration has been given to the easement between Central Reservoir Recreation Area and the homes on Sheffield Avenue? How will this easement be maintained?**

The fenced off area between the Central Reservoir Recreation Area and the homes on Sheffield Avenue is owned by the City of Oakland and therefore the City of Oakland is responsible for addressing concerns about maintenance and security. The City of Oakland has asked that inquiries related to the fenced off area be directed to their general number, 510-615-5566.

EBMUD does have an easement within the fenced off area to access monitoring wells and we will consider abandoning these wells and relinquishing the easement to the City of Oakland in later planning stages of the project.

Tank Color

12) What color will the tanks be?

The tank color will be one of EBMUD's two standard tank colors, a gray green or olive green. The standard federal color numbers are FS 14159. EBMUD maintenance crews keep paint in their vehicles for handling graffiti and other issues at 167 reservoirs, and hundreds of other pumping plants, treatment plants and other facilities. Standardized paint colors are necessary to minimize maintenance costs and improve the ability to respond to maintenance issues. The EBMUD greens are used on tanks because it closely matches the color of native trees.

Architectural Treatments and Screening

13) Several of the questions from the community meetings have asked that the site design focus on screening the new tanks using earthen berms, trees, shrubs, decorative walls, walls with artistic murals, and trellises with and without climbing plants. Other questions are focused on making the tanks look more attractive using artistic murals, architectural treatments, lights, or water fountains.

In response to questions received from the community, the site design strategy is to screen the tanks from public views rather than using architectural and artistic methods. The site design incorporates a mixture of green painted tanks, earthen berms, trees, shrubs and groundcover to create a natural setting and minimize views of the tanks.

EBMUD has incorporated natural landscaping as a way to direct the eye toward the natural setting at the perimeter of the site. Landscaping at the perimeter of the site, closest to public views, is the most effective way to screen the tanks because the landscaping at this location appears very large relative to the tanks. EBMUD has a successful history of using landscaping as for screening of its 167 tanks requiring minimal maintenance, and has maintenance crews that are trained and equipped to maintain the landscaping when needed. Once the landscaping matures and fills in, usually 5-10 years after construction, the tanks will be mostly hidden and any architectural treatments to the tank would not be visible from public viewpoints and architectural features along the property line would be redundant.

Architectural treatments on the tank, such as trellises, murals, and decorative walls have not been incorporated into the site design. Architectural treatments and murals on tanks are difficult to maintain and require special skills, tools, and materials to repair if damaged or vandalized. EBMUD's maintenance crews do not have the ability to repair architectural treatments or murals. Also, architectural treatments and murals would need to be removed and replaced when EBMUD performs maintenance on the walls of the tanks in the future.

Perimeter walls create complete visual barriers to the site, and therefore introduce a security and safety risk because complete visual barriers provide a hiding location for individuals with nefarious intent. Therefore EBMUD's standard security fencing is made of partially transparent wire mesh, allowing for the community and EBMUD staff to see into the site.

EBMUD explored an architectural trellis concept along Ardley Avenue that would be located between the security fence and the property line. However, the trellis concept was eliminated when the security fence was moved to the property line because the trellis would then be placed on top of the security

fence, providing potential intruders a means of scaling the security fence. The security fence was moved to the property line along Ardley Ave in response to feedback from the community and the City of Oakland who were concerned about trash and homeless encampments.

EBMUD presented several visual simulations of the project from prominent public views around the site at the second community meeting held on February 13, 2018. The visual simulations can be found on the project website at www.ebmud.com/central

Timing of Landscaped Growth

- 14) **Several of the questions from the community meetings have asked that the site design include larger trees, fast growing shrubs, planting trees before demolition, temporary architectural treatments or murals on the tanks, and wildflowers to improve the aesthetics of the site immediately after construction, rather than wait until landscaping matures.**

EBMUD is considering several strategies to create landscaped visual screens in the near-term, immediately following construction. First, EBMUD may plant a range of tree sizes, some larger and more mature that will provide immediate screening, and some smaller that will complement and blend it with the larger ones and become larger tree over time. Such an approach is based on the fact that younger and smaller plants are better able to adapt to new sites. Second, EBMUD may plant a series of fast growing trees and shrubs throughout the site together with a mix of slower and longer lived trees. Faster growing trees may have shorter overall lives, but would provide for more immediate screening. Trees and shrubs cannot be planted prior to construction because the trees would have to be removed due to the earthwork or may be damaged during construction because they are immediately adjacent to the earthwork footprint.

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Fence Along Ardley

- 15) **Several questions from the community were related to the configuration and design of the fencing along Ardley Avenue. Specific questions were related to the distance between the sidewalk and the fence, how the area would be maintained, how homeless encampments would be discouraged, whether or not EBMUD could plant vines on the fence, and if the fence could be combined with a trellis.**

Several of the site design concepts presented to the community in September 2017 showed the security fence located away from the property line by as much as 30-feet. Several requests were received at the first community meeting to locate the fence on the property line as it is today in order to discourage trash accumulation and to minimize homeless encampments. After considering the community's input and discussion with EBMUD maintenance staff, EBMUD decided to keep the fence line along its current location because EBMUD does not have the resources to clean trash or move homeless encampments. EBMUD also discussed the issue with the City of Oakland, and the City does not have the resources to maintain additional open space around the Central Reservoir site. The final site plan presented to the

community in February 2018 shows the fence adjacent to the property line with a 3 foot gap at some locations in order to preserve existing trees along Ardley Avenue.

A trellis along Ardley was initially considered in one of the concepts presented at the first community meeting in September 2017. However, the trellis concept was only possible if the fence can be set back from the property line by 6 or more feet so that potential intruders cannot scale the trellis to get over the fence. As discussed above, the fence will be located at the property line and, therefore, a trellis is no longer a viable option.

Vines or other shrubbery would not be planted on the security fence. Vegetation on fencing becomes a visual barrier and site security concern. A complete visual barrier would impede EBMUD's ability to see into the site and the public's ability to alert EBMUD of intruders and it can hide holes in the fence that can be used for intruders to easily access the site.

The security fence will be metal with a black vinyl coating. The fine mesh makes it difficult to climb whereas vegetation on the fence can make climbing easier.

Maintenance

16) How will the property be maintained (how will trash, debris, graffiti, and weeds be addressed)?

EBMUD is responsible for maintaining the site within the property boundaries. EBMUD will remove graffiti and trash as quickly as crews can respond to it where it is within the property boundaries. Weeds will be controlled through implementation of EBMUD's Integrated Pest Management Program. Trash and vandalism that occurs outside of the property boundaries including the Central Reservoir Recreation Area are the responsibility of the property owner or the City of Oakland. EBMUD has discussed the community's concerns about trash around Central Reservoir with the City of Oakland. In response to input from the community and from the City of Oakland, the site has been configured to minimize the potential for trash accumulation by locating the fence line on the property line.

Landscaping Considerations

17) Would the mulch be replenished every six months?

The mulch would be replenished as needed, approximately every 2- 3 years. The sun and rain break-down the wood chips and turn them into smaller and smaller pieces. After about 2-3 years, the pieces of mulch are so small that the mulch loses its efficacy as an erosion control and moisture retention tool.

18) Are some of the trees shown for the replanting deciduous trees? Why include deciduous trees?

Native deciduous and perennial trees are being considered for the basin to provide a well-rounded planting palette. Deciduous trees are not being considered for the perimeter "screening" trees.

19) Will EBMUD consider planting more redwood trees?

Redwoods are not considered part of the planting palette because compared to oak trees, redwoods are not as drought-tolerant, grow slower, and have thinner foliage.

20) Is there a plan to have any watering systems in the plants?

A drip irrigation system will be installed to water new trees and shrubs until the trees have matured.

Viewpoints

- 21) **Several comments and questions received at the community meetings were related to the aesthetics of the project (e.g., how the site would change with the proposed new tanks and how views would be affected).**

Aesthetic impacts to the surrounding neighborhood have been a key consideration during the planning phase of the project. For example, concrete tanks were selected over steel tanks because of the low profile of the concrete roof (among other advantages). The landscaping, including earthen berm, has been designed to minimize views of the future tanks.

EBMUD considered all public views when planning the project. EBMUD presented several visual simulations of the project from the most prominent public views around the site at the second community meeting held on February 13, 2018. The visual simulations can be found on the project website at www.ebmud.com/central. The project's effect on the existing visual character will be addressed in the Aesthetics section of the Draft Environmental Impact Report scheduled to be released for public review and comment in Summer 2019.

Public Space

- 22) **Several questions were received asking whether a portion of EBMUD's Central Reservoir property can be used as a public park and/or if EBMUD can create a path through the property.**

EBMUD will not build a park or sell property to build a park at the Central Reservoir site. The basin area will be used for a storm water retention area, access roads, pipeline, drainage facilities, the Central Rate Control Station, and to allow space to properly maintain those facilities. Additional space is reserved for EBMUD infrastructure, if needed, in the future. A portion of the Central Reservoir site was sold to the City of Oakland in the past, which is now the Central Reservoir Recreation Area which is open to the public and located immediately adjacent to Central Reservoir.

Consistent with EBMUD's practice at other facilities with respect to community access, EBMUD will not provide access through the site or adjacent to private properties. Based on EBMUD's experience at other project sites, neighbors immediately adjacent to reservoir sites are often concerned about an increase in noise, crime, trash, vandalism, and loss of privacy that may be associated with greater public access behind their homes. Furthermore, Central Reservoir is critical infrastructure and it is EBMUD's policy is to maintain a level of security sufficient to provide safe and reliable water supply as well as a safe place for operation and maintenance staff who periodically visit the reservoir. A path through the site introduces a threat to the security of the site because the path would not be completely visible to the community or EBMUD staff entering the site. Finally, increasing public access to the site would require additional improvements including fencing and paving to ensure safe public path and EBMUD and the City of Oakland do not have sufficient staffing to maintain the path.

Environmental Impacts

- 23) **How will EBMUD deal with any hazardous materials during construction?**

EBMUD will address hazardous materials in the Draft Environmental Impact Report scheduled to be released for public review and comment in Summer 2019.

24) What will happen to the wall along I-580 on the north end of the site?

The project will remove the wall at the north end of the site. The wall is part of the roof support structure for the existing reservoir and will be unnecessary after the existing reservoir is demolished. The Environmental Impact Report will consider the potential impact of removing the wall, including the resulting noise impacts, if any, to the surrounding neighborhood.

25) How are construction trucks going to get to the site?

EBMUD will address potential construction impacts in the Draft Environmental Impact Report scheduled to be released for public review and comment in Summer 2019.

26) How will the Project affect local geology?

EBMUD will address hydrology, geology, and soil related hazards in the Draft Environmental Impact Report scheduled to be released for public review and comment in Summer 2019.

27) Will any of the existing trees be removed? If so, what types of trees will be removed?

The goal is to keep as many existing trees as possible. As part of the project, trees that are in poor condition or trees located within the proposed construction area will be removed. The number and extent of tree removal will be addressed in the Draft Environmental Impact Report scheduled to be released for public review and comment in Summer 2019.

Other/General Questions

28) Please provide the names of individuals involved in project.

The presentations from Community Meeting #1 and #2 include the names of the EBMUD project team members and consultants. The presentations are posted on EBMUD's website, www.ebmud.com/central

29) Can EBMUD put solar panels at the site?

EBMUD is committed to sustainability and alternative energy. EBMUD spends \$200,000 per year on alternative energy projects including solar power and looks at all opportunities to utilize alternative energy where it is most cost effective. EBMUD considered solar panels at the Central Reservoir site; however, there is very little electricity demand at the site and the solar energy generated would go mostly unused resulting in the solar panels being economically unviable; therefore, solar panels will not be installed at the site.

30) Can we comment on anything before June 2019?

Written comments can be emailed to centralreservoir@ebmud.com or mailed to:

Laura Luong, EBMUD
375 11th Street,
MS 802, Oakland, CA 94607

31) When is the next project meeting?

The next project meeting will be scheduled in Summer 2019 when the Draft Environmental Impact Report is released for public review and comment. A notification will be emailed to individuals who supplied their contact information at the September 2017 and February 2018 community meetings. A notification will also be mailed to nearby residences a couple weeks in advance of the meeting.