

NOHL CANYON WATER STORAGE TANK

Questions & Answers

Updated 9/10/2007

PROJECT BACKGROUND

From 1961 until its closure in 1999, the Olive Hills Reservoir was a critical supply facility in the operation of Anaheim's water system and from time to time has provided emergency and supplemental water to our neighbors in the City of Orange. It was drained and has remained out of service since February 1999 at the order of the court. In November 1999, the Department completed a comprehensive master plan of the water system, which included among its major recommendations, the construction of 20-million gallons (MG) of useable storage capacity at the Olive Hills Reservoir site. The plan cited the need for storage to meet peak hour demands, fire flows, short-term power outage flows and to provide redundancy to survive a 7-day outage of Metropolitan Water District (MWD) of Southern California, the region's supplier of imported water. Instead of rehabilitating Olive Hills Reservoir, Anaheim Public Utilities staff evaluated other reservoir alternatives and, in 2003, moved forward with a plan to abandon the existing 60 MG open reservoir at Olive Hills and construct a 20 MG concrete water storage tank on a portion of the same site.

Department staff held a community meeting on November 23, 2004, to present the project concept and receive comprehensive feedback, where the community expressed a number of concerns. Over the past two years, in response to community concerns, Department staff developed and evaluated an option that will maximize off-site facility improvements and modify the storage project at the Olive Hills site to include a down-scaled 10 MG above ground tank to meet the remaining operational, fire, and emergency water system needs. This new water storage facility is now known as the **Nohl Canyon Water Storage Tank Project**.

PROJECT QUESTIONS & ANSWERS

1. What is the Nohl Canyon Water Storage Tank project?

The proposed Nohl Canyon Water Storage Tank project will include:

- Removal of the existing aged and inactive Olive Hills Reservoir
- Lowering the existing dam
- Improving natural aesthetic appeal of the area
- Regrading the site and rebuilding the slopes to increase stability
- Building a 10 million gallon above-ground water storage tank

2. Why is this project needed?

This project, along with other improvements, will give Anaheim's water system the ability to meet peak water demands, fire flows, and emergency demands in the area. A water storage tank at this elevation also helps maintain adequate water pressure to deliver water to central Anaheim by gravity. It provides critical short-term redundancy that assures continued service when MWD's supply source is interrupted.

3. How have water needs been met in the absence of water being stored in the old Olive Hills Reservoir?

The Anaheim Public Utilities has a connection to an MWD imported water pipeline on Tustin Avenue near the junction of the 55 and 91 freeways. Due to the temporary outage of the Olive Hills Reservoir, we have been able to use this connection to bring water into our system "on demand" on a short-term basis.

"On-demand" means water flows into our system as needed to meet fluctuating water demands. MWD does not normally allow this method of operation, however, MWD allowed Anaheim to temporarily use this arrangement because our water storage facility was out of service. MWD has recently made a formal request of Anaheim to discontinue this arrangement. Fortunately, Anaheim has not encountered a significant emergency water outage situation in the area since Olive Hills Reservoir was out of service. A significant amount of emergency water supply will be met by the proposed Nohl Canyon Water Storage Tank.

4. Why can't the storage tank be built elsewhere?

The city's water system was built around this site as a major water storage facility to serve much of central Anaheim. The elevation of this site is critical for maintaining reliable water service and system pressures. There are no other sites at this elevation that can accommodate a water storage tank of this size, without requiring condemnation of private property.

5. Why can't you leave the site the way it is?

Even if a new storage tank were not built on the site, for safety reasons the State Division of Safety of Dams requires grading of the site to lower the dam and water storage needs would still have to be addressed. If the city were to find an alternate site for the storage tank, the existing site would likely be auctioned off to a public agency first, and if there were no interest, then to the general public (e.g. private developer).

6. Did the city look at other project alternatives?

One of our earlier options included refurbishment of the existing reservoir to make it more manageable from a water quality standpoint, but it did not make economic or operational sense. Staff also looked at the "no project" option and found that, without a water storage tank at this elevation, the reliability of our water system would be severely impacted. Lastly, staff looked at the 10 million gallon and 20 million gallon tank options. In addition, staff analyzed possible locations of the tank, both within the project site, as well as offsite locations. Different tank materials were also compared. It was determined that the proposed project was the most feasible based on community input, sound engineering principles and aesthetic appeal to the community.

7. *What is the benefit of the project to City of Orange residents?*

The City of Anaheim maintains several interconnections with the City of Orange, where water can be supplied between both cities. The Nohl Canyon Water Storage Tank project will significantly enhance Anaheim's water reliability in the area, thus increasing the likelihood that Anaheim can provide additional water to Orange residents during an emergency.

8. *What reassurances can you offer that the construction process and completed project will be stable?*

Anaheim Public Utilities is committed to designing and building a safe project. The city has and will continue to expend the effort and funding necessary to ensure the safety of the project. Two outside geotechnical experts have conducted extensive geotechnical tests, which have undergone review by a third highly rated geotechnical firm. Based on these studies, the project is feasible from a geotechnical perspective with the following recommendations implemented:

- a. Install facilities to monitor groundwater levels and ground movement, including deep underground movement – The slopes and surrounding groundwater levels will be monitored before, during and after construction.
- b. Improve the stability of the existing steep slopes by constructing 2 (horizontal) to 1 (vertical) slopes – The slopes will be constructed from the bottom up, which will ensure project slope stability throughout the construction process.
- c. Intercept groundwater encountered as result of construction – The intercepted groundwater will be monitored and routed to a storm drain system. In addition, the contractor will be required to de-water the site during construction to further ensure a safe site.
- d. Install a leak detection system – A monitoring system under the tank will ensure that water is not leaking from the tank.
- e. The city will offer video surveys of neighbors' homes including foundations, driveways, fences, walls, etc. – before, during and after construction – to record existing conditions and monitor for any changes.
- f. The contractor will be required to put systems in place for excavation such as sheeting and shoring to ensure that existing slopes remain stable during excavation.
- g. Implement specific site grading procedures which include the presence of a soils engineer on site during all grading activities.

9. *Are there other tanks that have recently been constructed, similar to the Nohl Canyon Water Storage Tank project?*

The city has constructed five (5) of their nine (9) water storage tanks as prestressed concrete tanks, most of which are in uneven terrain. More than 600 prestressed concrete tanks have been constructed to store water in the last 40 years. In the last 10 years, more than 60 prestressed concrete tanks have been constructed to store water within Southern California, alone.

Visit www.dyk.com for a summary and pictures of similar existing tanks.

10. *What is the environmental review process for this project?*

In California, most large construction projects must comply with the California Environmental Quality Act, also known as, CEQA. During the CEQA process, potential environmental impacts are analyzed and documented. The CEQA document includes a comprehensive evaluation of

potential impacts, including impacts to air, traffic, noise, geologic conditions and other environmental concerns.

Anaheim will utilize the services of a professional environmental consulting firm to prepare the CEQA document. The public and government agencies will have the opportunity to review the draft document and provide comments. The City of Anaheim Planning Department will respond to the comments, and these will be included in the final document. Once finalized, the Anaheim City Council will vote on whether to adopt the CEQA document.

11. How long will construction take place?

The demolition and site grading will take approximately six months. The tank construction will take approximately 20 months. Landscaping and site improvements will take an additional four months. This time frame is approximate and may change due to weather conditions.

12. What are the potential impacts from construction and how will you mitigate those impacts?

The City of Anaheim recognizes that construction may be an inconvenience to neighbors. Therefore, the city will require mitigation of anticipated construction impacts for this project. A full time city inspector or resident engineer will be assigned to this project during construction. Throughout the duration of the project, the city will provide neighbors with project updates. Below are some of the potential impacts and the proposed mitigation measures:

Noise

- During project construction, the contractor will comply with all city noise ordinances. A sign will be placed at the entrance to the project site that will provide neighbors with a contact number where they can report any perceived noise ordinance violations.
- Trucks and heavy equipment will have mufflers and silencers on them to reduce noise.
- All staging areas will be located as far away as possible from existing homes.
- Normal construction and grading operations will be limited to 7 a.m.-5 p.m., Monday through Friday. There will be no weekend work permitted.
- After the project is completed, you will experience the same level of noise that you hear today.

Dust

The contractor will use dust control measures, such as frequent watering down of the site and street sweepers to keep the local streets clean. The contractor will not be allowed to do earth moving activities during high (Santa Ana) winds. The contractor will also keep truck and equipment idling to a minimum and not idle equipment in front of homes. The contractor will also use special fuel and filters for all trucks and equipment on this project.

Trucks/Construction Traffic

During construction there will be truck traffic. We recognize that there is a public elementary school, private school and church in the neighborhood and that this is a residential area, so we will make sure construction traffic follows the approved construction specifications. Some of those requirements will include:

- Construction traffic will be required to follow the approved truck route.
- Trucks will not be allowed to access the construction site during peak school drop-off and pick-up hours at Nohl Canyon Elementary School.
- When necessary, flagmen may be used to ensure safe right turns by larger construction trucks from Nohl Ranch Road to Nohl Canyon Road (adjacent to the school).

Parking

For safety reasons, public parking will be restricted during certain time periods along Nohl Canyon Road during construction. To accommodate visitors to the Nohl Canyon Elementary School during construction, an arrangement has been made to expand the parking area on school grounds.

Alarms

There will be no alarms sounding at night at the site.

Nighttime Lighting

Minimal nighttime lighting at the site is anticipated, and will be used only as needed for security purposes. Any outdoor lighting will be equipped with shields to direct the light downward.

Wildlife

The construction is expected to have minimal impact on wildlife; however, as part of the environmental review process, a biological survey will be conducted. This will include an analysis of potential impacts to endangered species, animal migration and other issues. In addition, the city will include an analysis of the potential impacts for displaced rodents to affect nearby residents. If necessary, a vector control component will be incorporated into the project.

13. What will the tank and surrounding area look like?

The tank will be partially above-ground (approximately 30-feet), with the remaining area graded to a flat pad. Landscaping is planned to consist of trees and shrubs to beautify the area and to provide for additional soil stabilization. Anaheim Public Utilities intends to involve the community on landscaping preferences during the design process.

14. Why can't the storage tank be buried?

The volume of on-site soil materials is inadequate to both regrade the slopes and to fully bury the storage tank. If we use some of the soil to increase stability of the slopes, there will only be enough material to partially bury the tank. The tank will be backfilled as much as possible, which will be about 10-feet, or 25 percent, of its height (total of 40-feet). If we were to fully bury the

tank (and regrade the slopes) it would require an additional 16,000 trucks (minimum) to enter the site to import backfill material.

15. Who will maintain the property and landscape?

Anaheim Public Utilities maintains all its water facilities and has a service contract with the Community Services Department for landscape maintenance of water facility sites.

16. How much will the project cost?

The estimated total project cost is \$18 million, including construction and associated costs (such as geotechnical studies, project design, environmental permits, surveying, and inspection services).

17. Will this project affect my water rates?

Anaheim consumer's water bills will not increase as a result of this project. As part of the Water System's long-term capital improvement program, this project has been included in the proposed budget. Anaheim Utilities Department is a "not for profit operation" and our fees are determined by the actual costs to deliver water to our customers and to maintain our water infrastructure.

18. What alternatives were considered for construction access for the project; what was the final recommendation and why?

There were three alternatives considered for construction traffic into and out of the project site. One was to build a road from Nohl Ranch Road, through the area around the tennis courts, to the project site. A second alternative was via an easement the City holds from Villa Real to the site, within which the City has 8" and 12" water pipeline. Next to that easement is a high-pressure gas pipeline owned by the "Four Corners Gas Company." The third alternative is Nohl Canyon Road, which runs from Nohl Ranch Road to the existing Olive Hills reservoir and pumping station site, the current project location. Geologic conditions, safety considerations and the large risk/liability exposure make the first two alternatives undesirable. The third alternative was selected, with a series of proposed mitigation measures. It incorporates an existing road, which provides safe and satisfactory grade and cornering room for the variety of construction trucks and trailers that will be moving in and out of the site during the construction period..

19. What mitigation efforts will be incorporated into the project to offset the inconvenience and safety concerns of those residents impacted by construction traffic?

- a. The project design has reduced the tank size from 20 million gallons to 10 million gallons to curtail the amount of construction traffic.
- b. Demolition debris and asphalt will be ground on-site and used for fill to reduce the amount of truck traffic that would have otherwise been required to haul away demolition debris.
- c. A parking lot is proposed to be built to expand school parking to permanently minimize, or possibly eliminate, parking along the east side of Nohl Canyon Road.
- d. A limit to the maximum levels of truck traffic per day will be incorporated into the construction documents.
- e. The City will fund an extra school crossing guard during the construction period.
- f. A camera is proposed to be installed to monitor truck activity at the Nohl Ranch/ Nohl Canyon Road intersection.

- g. Parking and stopping will be prohibited on the East side of Nohl Canyon Road during acceptable truck delivery times.
- h. The City has agreed to accommodate special events the school may schedule as well as graduations, birthday parties, wedding receptions, etc., that residents may have during the project by temporarily suspending construction traffic if given adequate notice.
- i. Although not a mitigation effort, the City will restore and completely slurry-seal the length of Nohl Canyon Road at the end of project.
- j. Restrict construction traffic around the school during pick-up and drop-off times.

20. *Will rodent migrations into surrounding neighborhoods be a problem during construction?*

Construction projects inherently displace the indigenous animal populations in the area. Since such a large area is now covered by asphalt, it is anticipated that displacement of animals may not be as noticeable as in other construction projects. While our vector control practices have been increased in preparation for this project, we want to make sure that the local population of owls, hawks and other raptors are not deprived of their food source. If rodent migration becomes problematic during construction, the City will increase vector control actions even more, as necessary.

21. *Existing landscaping appears very dry and shows lack of maintenance. What is the City's plan to prevent this in the new landscaping layout?*

Because the reservoir has been out of service for several years, the area received little maintenance and the area not covered by asphalt was allowed to return to a "natural" state. With the new project, plants have been selected that are "California friendly" - requiring minimal watering, but still have the ability to retain water and color. An irrigation system will be installed, but its main purpose will be to establish the ground cover after planting. Watering after the plants have become established will be consistent with the City of Anaheim's water conservation practices.

22. *If I have complaints or concerns during the project, who should I contact?*

Anaheim Public Utilities' project manager Bill Moorhead will be available by phone throughout the construction process. In addition, there will be an on-site construction inspector who will be available at the site. Anaheim will also keep its project Web site updated (www.anaheim.net/utilities/nohlcanyon) and maintain a link for sending e-mail to the project manager. We may also include a newsletter, regular meetings, a telephone hotline or a combination of these and other methods, depending on the preference of the concerned residents near the project.

23. What will the project look like when completed, and do residents have any input on the final appearance?

In the continuing development of the project, we are soliciting input from the surrounding community, specifically those who have a direct view of the project. With this input and several evening meetings, a landscape plan was designed that reflected this input. The plan may be viewed in various formats on the project Web site at www.anaheim.net/utilities/nohlcanyon under “Project Information Links.”

[Planting Concept - Design Plan](#)

[Planting Concept - Materials](#)

24. Who do we contact if we have additional questions or comments regarding the Nohl Canyon Water Storage Tank project?

Please feel free to contact Bill Moorhead, project manager, at (714) 765-4165 or by e-mail at bmoorhead@anaheim.net.