

WSA Board Meeting – August 2, 2016

Opening Remarks

Good Morning Commissioners, my name is David Pettijohn, Director of Water Resources and with me today is Delon Kwan, Manager of Resources Development.

We are here today for Item 20, the water supply assessment for the Crossroads Project.

What are the State Law Requirements for WSAs

The Water Code requires that a WSA determine if there are adequate supplies to meet the Project's demand over the next 20 years, and requires LADWP to make this determination based on LADWP's currently adopted UWMP.

LADWP prepares all WSAs in compliance with these Water Code requirements. The Board of Water and Power Commissioners is required, under Water Code Section 10910 (g), to consider approval of the WSA at its regular or a special meeting.

What Role Does the LA Department of City Planning have in the WSA Process

The Lead Agency (Planning) is responsible for managing the City's development growth, and determining if the development conforms to the use and intensity of development permitted by the City's General Plan or if General Plan Amendments are required. The Lead Agency must also verify that the development is or will be required to be consistent with the forecasts for population growth from the Southern California Association of Governments (SCAG).

What is the Basis of Staff's Recommendation to the Board for WSA Approval

The Water Code requires that the WSA determine if there are adequate supplies to meet the Project's demand over the next 20 years, and requires that LADWP make this determination based on the LADWP's currently adopted UWMP.

The 2015 UMWP, through its service reliability assessment, concluded that LADWP's total projected water supplies will be able to meet the City's projected demands during normal, single-dry, and multiple-dry years, through the year 2040. Developments that are consistent with the most recent SCAG projections are determined to have been captured in the City's UWMP demand forecast projections, and therefore, based on these projections LADWP can determine if there are adequate supplies to meet the Project's and City's future water demand needs.

Did Staff Consider the Effects of Projected Climate Change Impacts on Supplies

LADWP completed a study in 2011 to analyze the operational and water supply impacts of potential shifts in the timing and quantity of runoff along the LAA system due to effects of climate change in the 21st Century.

Climate change and its potential impacts on the City's water supply were discussed and considered in the **2015 UWMP**. A service reliability assessment was performed in the UWMP for a variety of hydrologic scenarios, and in all cases, future water demands are projected to be met by available supplies. Hydrologic conditions:

average year (50- year average hydrology from FY 1961/62 to 2010/11);

single dry year (such as a repeat of the FY 2014/15 drought); 5% increase from median

multi-dry year period (such as a repeat of FY1988/89 to FY1992/93).

Increased above the forecasted median demands by the following percentages: 1st year – 4 percent, 2nd year – 5 percent, 3rd year – 6 percent, 4th year – 0 percent, and 5th year – 2 percent.

Projected changes in climate are expected to alter hydrologic patterns in the LAA's Eastern Sierra Nevada watershed through changes in precipitation, snowmelt, relative ratios of rain and snow, winter storm patterns, and evapotranspiration. In summary, the following are results from the study:

- Up to 8.1 °F increased mean atmospheric temperature in the Eastern Sierra watershed over the next 100 years
- Decrease of up to 10% in precipitation
- Greater rain to snow precipitation ratio
- Earlier snowmelt in the season (2 months)
- Earlier timing of the peak snow water equivalent (SWE, water in snowpack), 12-20 days

Based on the 2011 study's findings, future LAA supplies were estimated to decrease at a rate of about 0.1652 percent per year on average due to effects of projected climate change. This reduction was incorporated into the 2015 UWMP LAA supply projections.

Looking at last 80 years (1935 – 2015) runoff data from Owens Valley, observing about 13% reduction over this time period.

What are the Water Conservation Efforts by the Project to Offset Demands

In order to achieve the maximum possible water conservation commitment for a proposed Project, LADWP holds a conservation commitment meeting with the Lead Agency and developer during the WSA process. During this meeting, LADWP staff encourages the developer to implement additional conservation measures to maximize water use efficiency for the project.

The updated City's Water Efficiency Ordinance No. 184248 (effective June 2016) requires new developments to meet certain indoor water use efficiency standards for plumbing fixtures and appliances. Examples of current ordinance requirements include:

- 1.2 gallons per minute (gpm) residential lavatory faucets;
- 1.5 gpm residential kitchen faucets;
- 1.8 gpm residential showerheads;
- 1.28 gallons per flush (gpf) water closets; and
- 0.125 gpf urinals

Water demand for outdoor irrigation is estimated in accordance with the California Code of Regulations Title 23 Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO). MWELO sets the maximum (outdoor watering) allotment through the Maximum Applied Water Allowance (MAWA) and takes into consideration the water needs for specific plant types while considering the efficiency of proposed irrigation systems.

The Developer also is required to comply with the City of Los Angeles' Low Impact Development Ordinance (City Ordinance No. 181899) and to implement Best Management Practices that have stormwater recharge or reuse benefits, which may include any of the following:

- Infiltration Basin to capture first-flush stormwater, removes particulate pollutants and some soluble pollutants, and contributes toward recharging groundwater;
- Infiltration Trench similar to infiltration basin but used for smaller drainage areas to capture an infiltrate rainwater;
- Catch Basin Insert in an existing catch basin to provide some level of runoff contaminant removal;
- Catch Basin Screens;
- Pervious Pavements, and

- Cisterns

Total required ordinance savings on average help to reduce demand by about 20%.

Additional Voluntary Savings represent conservation measures committed to by the developer that are more stringent than the City's current Water Efficiency Ordinance and MWELO requirements. These types of measures go above and beyond current requirements and typically include many of the following:

- Waterless urinals;
- High Efficiency Toilets with flush volume of 1.0 gallons of water per flush;
- High percentage of drought tolerant landscape;
- High Efficiency clothes washers; and
- Drip/ Subsurface Irrigation (Micro-Irrigation)

Additional voluntary measures have resulted on average indoor/outdoor combined savings of about 1.7 percent. LADWP constantly seeks new means and methods to achieve and maximize the water use efficiency potential for each new development for which LADWP prepares a WSA.

How can the Board Continue to Approve WSAs During the Current Drought

State law requires the LADWP have plans in place to manage supply and demand during water shortages. These plans are adopted by the Board of Commissioners as part of the LADWP's UWMP to balance the City's supplies and demands, including contingency plans or managing through the multi-year drought like the current one California is experiencing. Multi-year droughts are expected and planned for in our water supply / demand planning efforts. We are implementing those drought contingency plans and they are working, which supports the LADWP staff recommendation that WSA's continue to be approved by the Board.

The Mayor's Executive Directive No. 5 water use reduction goals are also helping to maintain demands within available supplies. With the Governor's Executive Order to reduce statewide water consumption goal, we are projecting demands trends to be even lower.

To meet these demand goals for the current fiscal year, we currently have access to adequate supplies.

All agencies within MWD's service area (including LADWP) have been managing within their WSAP allocation, and this has slowed the rate at which MWD has been drawing on

their supplies from storage. This will allow for potentially additional water to remain in storage to go into meeting demands for the following year in case the drought continues.

When Would Staff Recommend Against Approval of a WSA?

There may be certain unforeseen supply conditions in the future that may affect the City's ability to meet demands. Section 10911 of the Water Code addresses this potential scenario that if the City were to determine that supplies are not sufficient to accommodate the City's needs, the Water Code allows us to include this finding in our WSA as the basis for disapproval.

The cause of the shortfall in supply could include any of the following (some we'll see coming and some will be unexpected):

- Permanent loss of supply(s) (e.g. unforeseen condition);
- Catastrophic disruption of the conveyance system (e.g. earthquake severs aqueduct);
- Natural disaster (e.g. Delta levee failure);
- Regulatory / Environmental restrictions (e.g. endangered species); or
- Drought year supply shortfall, in which current demands for water can no longer be met with available supplies

Demand Forecast Model

- Regression model is developed in-house by staff and is run and updated by staff.
- 95% confidence level, R sq of 0.85, mean absolute % error of about 5%. Fairly accurate model, however, artificial factors (ED 5, Governors EO, etc.) cause changes to projections, but if we modeled those artificial factors, model projects demand fairly accurately.
- Main factors in model include: demographic projections for single and multi-family housing, employment (from SCAG), projected conservation (passive / active), historical average, normal, dry, wet, cool and warm weather.
- Historical weather variability ranges about +/- 5 percent in demands.

Submetering

- Building and Safety is lead on developing code / ordinance changes. DWP is assisting in the process.
- Part of Mayor's Executive Directive #5.

- (Private) submetering is a potential option to achieving additional conservation savings. Helps individuals see water use, change behavior and identify leaks. Focus still needs to be on high efficient plumbing devices (toilets, clothes washer)
- We do not currently offer rebates for (private) submeters.
- Obstacle is pipe infrastructure required for switching to sub-metering. Older apartments are not piped properly and cost to retrofit can be expensive.
- B&S evaluating implementation of submeter as part of major retrofit projects for commercial and residential (3 stories or less). Install for individual units and common areas, cooling water.

Conclusion

LADWP currently has plans in place to meet the City's growing demands for water over the next 20 years, including implementing the contingency plans for managing through the current multi-year droughts like the one we are currently experiencing now.

Accordingly, Staff has prepared all WSAs in compliance with the Water Code in its determination that there are adequate supplies to meet the Project's demand over the next 20 years and have based that determination on the City's UWMP as required by the code.

If in the future our plans are no longer effective and the City's demand for water exceeds available supplies, we will at that point likely recommend to your Board that WSAs not be approved until the supply and demand imbalances can be successfully addressed.

The current drought does not rise to that occasion where we have an imbalance, and the contingency plans that have been implemented are working and we believe we have and will continue to have access to adequate supplies to meet the City's demands.