ENVIRONMENTAL ADVISORY COMMISSION MEMORANDUM

To: Pasadena Water and Power

From: Environmental Advisory Commission

Date: November 20, 2020

Subject: Draft Water System Resources Plan

The Environmental Advisory Commission (EAC) received a presentation from Pasadena Water and Power (PWP) on October 27, 2020 regarding the Draft Water System Resources Plan (WSRP). EAC ad hoc members also reviewed additional information to better understand water conditions including a 2018 report entitled *Raymond Basin Assessment* prepared by Zanjero. The EAC recommends that final plan address the comments below.

Respectfully submitted,

Daniel Rossman, Chair
The Environmental Advisory Commission

Attachment 1: EAC Comments on the Draft WSRP

Attachment 2: Declining Groundwater Levels in Pasadena

Attachment 1: EAC Comments on the Draft WSRP

Pasadena is in a water crisis evidenced by decades of declining groundwater levels in the Raymond Basin. The figure provided in Attachment 2 illustrates the historic water level measurements from a basin well. The water level has dropped approximately 300 feet as a result of the withdrawal of more water from the basin than is replenished. In a report entitled *Raymond Basin Assessment* (December 17, 2018), Zanjero concluded:

> *The Raymond Basin is not managed in a sustainable manner as evidence by the decrease in basin groundwater levels over the last 118 years, and is under threat of spreading contamination.* ***PWP and RBMB must change its course and take action to prevent permanent failure of the basin****.*

However, the Draft Water System Resources Plan (WSRP) does not present analyses required for basin replenishment or how it can be achieved. The WSRP does not evaluate potential impacts of climate change or a decrease in water supplied by Metropolitan Water District (MWD) and how these events could further deplete the basin. Furthermore, the selected WSRP Portfolio F, Maximize Value of Groundwater/Non-Potable Supplies with moderate water conservation is likely not appropriate for maintaining sustainable water supply. Consequently, prior to presenting the WSRP to the Municipal Services Committee (MSC), the Environmental Advisory Commission (EAC) recommends conducting engineering analyses to ensure a wholistic approach to managing Pasadena's water supply and replenishing the basin to provide a more resilient and flexible water plan. The recommended analyses are described below.

1. Engineering analysis of the groundwater basin

Slide 4 of PWP's WSRP PowerPoint presented to the EAC indicates that the primary goal is to "develop and manage sustainable water supplies" and the stated objectives are: to improve the health of the Raymond Basin, efficiently use available supplies, adapt to a changing climate, and enhance local supplies and support regional water supply programs.

However, there is a lack of information on how basin replenishment will be achieved and there is no determination of the volume of water needed to raise the level of groundwater in the basin. Basin replenishment is critical to protect water quality, prevent land subsidence, withstand drought and potential reduction of supply from MWD, and provide a reliable water supply in an emergency.

2. Thorough analysis of water conservation

An estimated sixty percent of water is used for residential irrigation. Calculations should be conducted for reducing household irrigation by 10%, 20%, 30%, 40%, and 50%, and the volume of saved water for each percentage of water reduction and the corresponding impact to the Raymond Basin groundwater level.

The stated goal of 10% outdoor conservation with 18% by 2030 is not supported by a thorough evaluation as to what this may accomplish and may be underachieving what is required to meet a sustainable water system.

PWP's WaterSmart indicates that the average household uses 343 gallons per day (GPD) with three occupants. Thus, the average water use is 114 GPD per person. Using a population of 70,500 that live in single-family households (Pasadena's population of 141,000 with 50% living in multifamily dwellings), yields 8,037,000 GPD, which equals approximately 2.9 billion gallons per year. Implementing a 30

percent conservation measure, would result in saving 870,000,000 gallons (2,670 acre-feet) per year, excluding apartment dwellers.

EAC believes more aggressive conservation measures should be evaluated to combat continued basin depletion and to support long term water resilience. Conservation methods and water savings should be presented and implemented to reduce demand for imported water and to reduce basin water withdrawal.

3. Evaluation of the best use of water with elevated nitrate

The WSRP recommends using water with elevated nitrate levels for irrigation of municipal property. However, a cost benefit analysis is not clearly presented to justify that this is the best and most cost-effective use of the water.

4. Evaluation of the Arroyo Seco stream

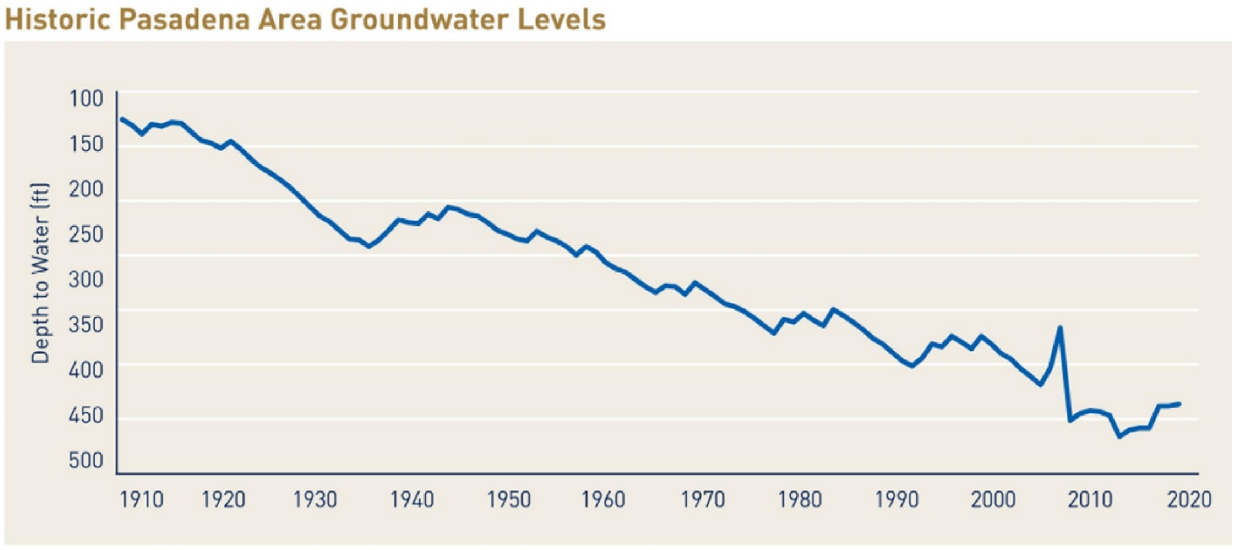
An evaluation of the Arroyo Seco natural stream and the quantity of water needed to sustain the native fish and natural resources should be conducted. Alternatives that provide environmental benefits to the stream and spread the water to percolate into the Raymond Basin beneath Pasadena should be fully evaluated and presented.

5. Evaluation of stormwater capture

Stormwater capture is an opportunity to provide water to the Pasadena's system that would otherwise flow through the city. The state, county, and CalTrans provide funds for such projects (e.g., Proposition 1 and Measure W). PWP should work closely with the Department of Public Works to incorporate a stormwater capture program into the WSRP for long term resilience.

Attachment 2: Declining Groundwater Levels in Pasadena

Declining Groundwater Levels



Source: RMBM, Draft Opportunities to Enhance Groundwater Levels in Pasadena Subarea.

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