Arroyo Seco Canyon Project
Areas 2 and 3

Final EIR and Modification to CUP #6222

July 19, 2021

Objective of the Public Hearing

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- Approve FEIR and CUP for the Arroyo Seco Canyon Project Areas 2 and 3
- Requirements of California Environmental Quality Act (CEQA)
  - Importance of understanding baseline conditions
  - Describe the project
  - Highlight project benefits

Mod to Conditional Use Permit #6222

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Background:

- EIR prepared in accordance with the Writ of Mandate by the Los Angeles Superior Court stemming from a lawsuit filed in 2015.
- PWP submitted a Modification to Conditional Use Permit #6222, to allow the elements set aside by City Council in July 2017, to proceed.
- The Modification to CUP #6222 was considered at the January 6, 2021 Hearing Officer meeting, and the project was approved.
- The Appellants appealed the Hearing Officer's decision and was considered at the March 18, 2021 Board of Zoning Appeals meeting. The project was approved with additional conditions.

Area 2: Baseline Condition

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- Pasadena has pre-1914 surface water rights of 25 cfs from Arroyo Seco
- Water diverted continuously for over 100 years
- The current condition of the structure limits ability to capture runoff
- No fish passage or protection at intake

Area 2: Proposed Project

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Area 2 - New diversion weir and intake structure

- Removal of fixed dam
- Operable gate that can be lowered to manage sediment
- New fish screen and elements for fish passage
- Design to operate during large storm events

Proposed Project: Roughened Channel

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Example of restoration project using ESM

CALIFORNIA SALMONID STREAM
HABITAT RESTORATION MANUAL

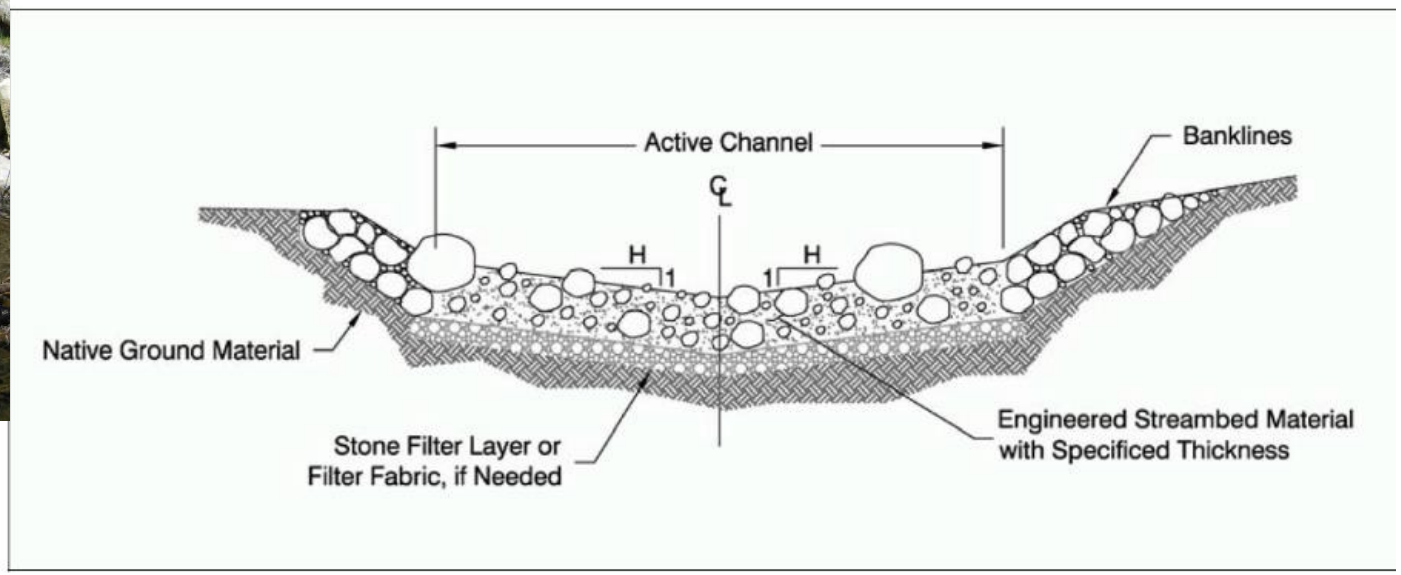

Figure XII-22. Typical cross section of a roughened channel with engineered streambed material and banklines.

Fish Presence

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- EIR reflects research and site surveys by City, Fish & Wildlife, and NOAA concluding no fish presence in the Arroyo since the Station Fire
- Since then Fish & Wildlife has translocated fish to the Arroyo in an effort to save them from the San Gabriel River following the Bobcat Fire
- Regardless, the project is designed for the protection of fish
- After EIR certification, permitting with Fish & Wildlife

Area 3: Existing and Proposed

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Existing basins and previously paved JPL parking lot

> 8 acres of pavement removed in 2016

Area 3: Naturalized Infiltration Basins

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1 LANDSCAPE PLAN

2 SECTION A

NOT TO SCALE

- Additional 3 acres for infiltrating water
- Managing sediment
- Engineered natural system (Alt B)
- New native vegetation & trails

Project Conditions

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- Project will capture large storm runoff
  - ✓ Capture up to 25 cfs water rights
  - ✓ Currently diverting 2,045 AFY
  - ✓ Designed for additional 1,035 AFY
- Existing conditions do not change:
  - ✓ Small storm and dry weather flows
  - ✓ Pump a portion of the recharge as prescribed by RBMB

Raymond Basin Judgment

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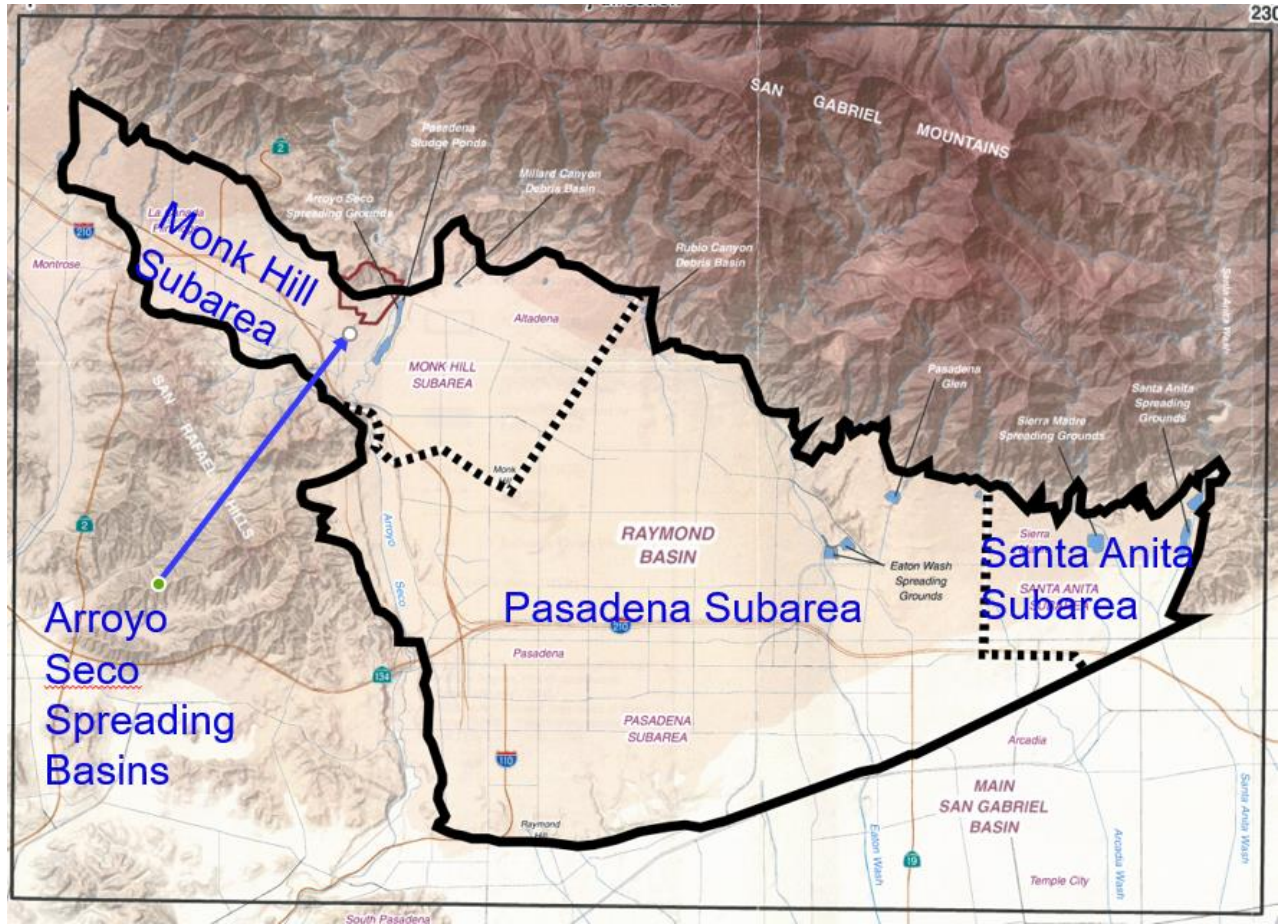
- Raymond Basin Judgment decrees groundwater right of 12,807 AFY (reduced to 10,304 AFY)
- Judgment also allows recharge of the basin with surface water rights
- Pumping credit 60% to 80% of recharge
- In turn, 20% to 40% contributes to the basin



Water Supply Benefits

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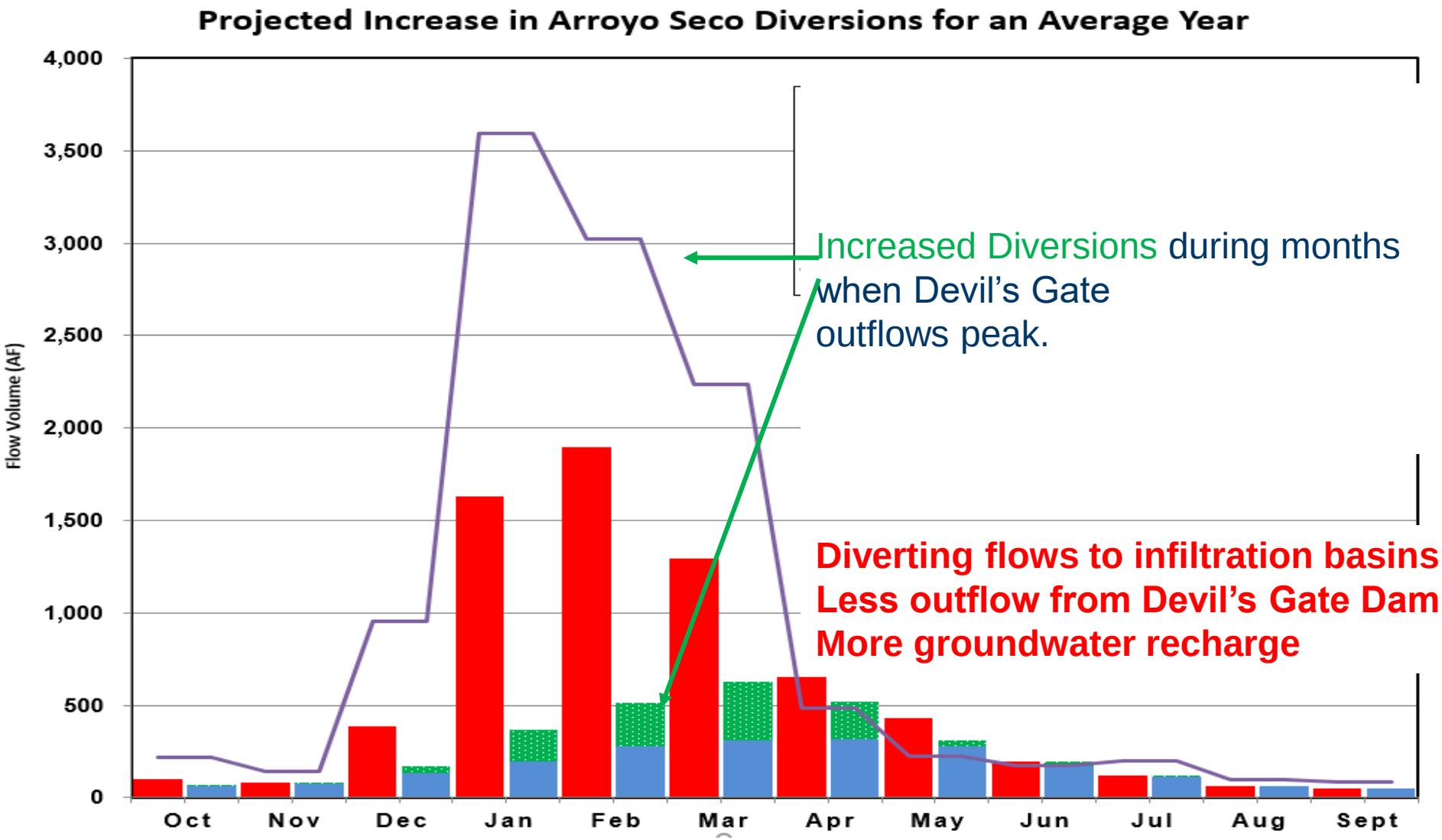

- ✓ No change in existing/baseline condition during dry months
- ✓ Incremental volume of stream flow captured with the project shown in **green**
- ✓ The ASCP is a stormwater capture project - primary benefits will occur during the wet months of the year

Flows in the Arroyo Seco

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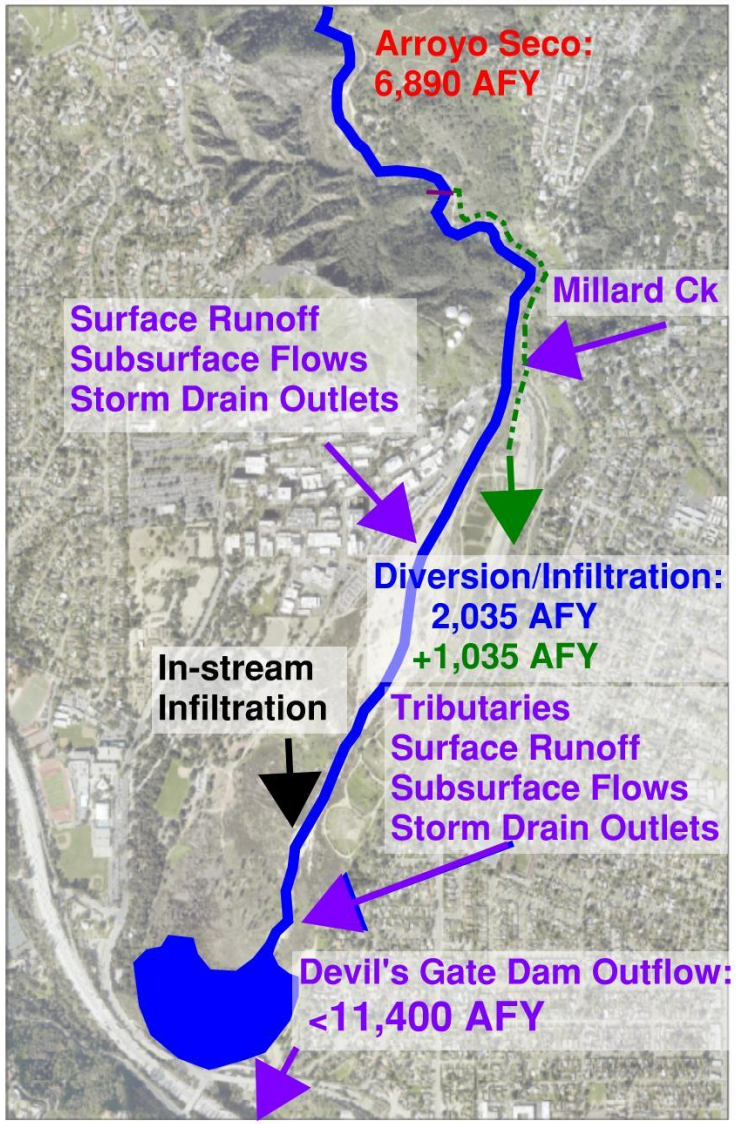

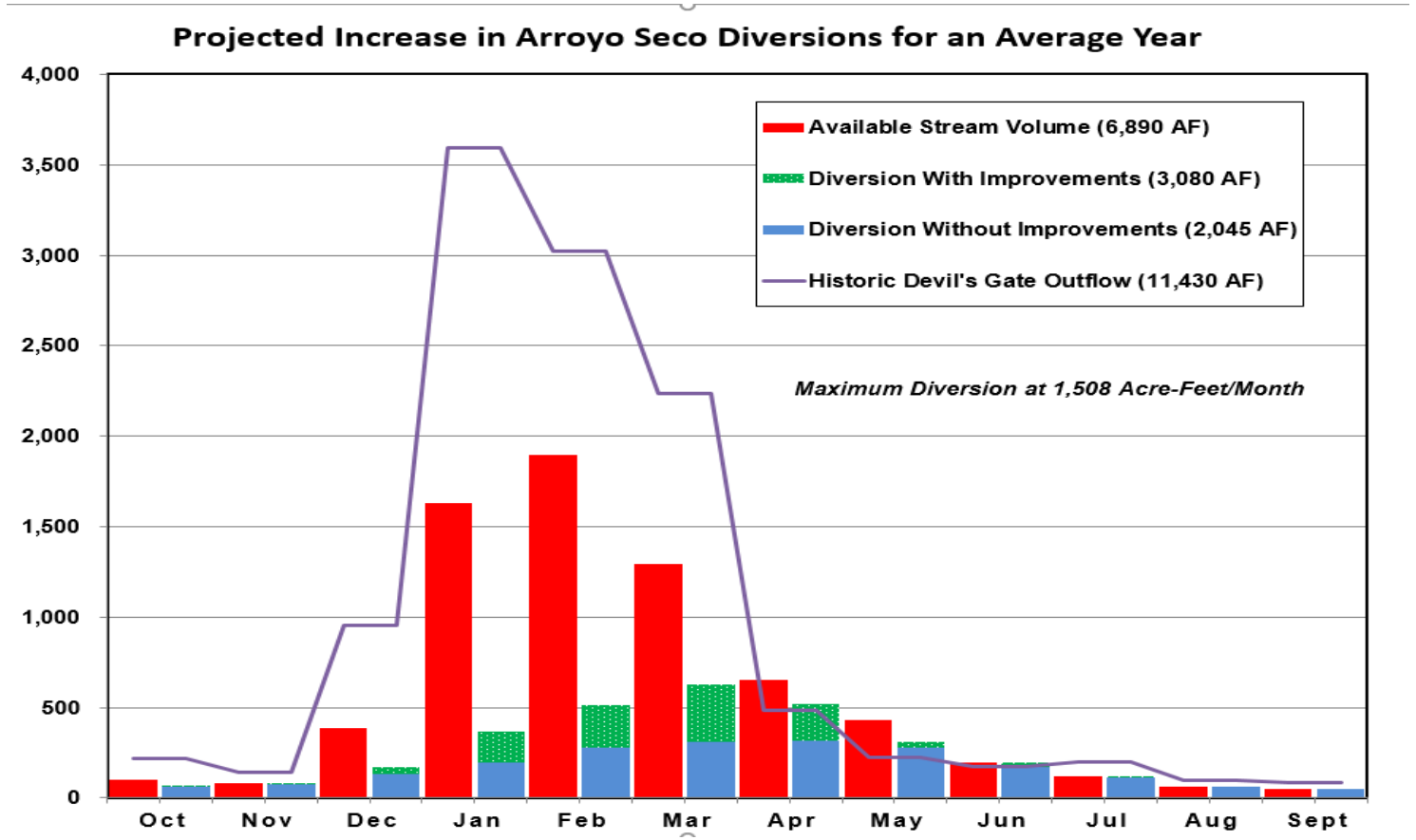

Summary of Project Improvements

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Functions and Features	Existing	New Project
Diversion of low/moderate stream flows	☑	☑
Capture of runoff from large storms	☐	☑
Fish screen to protect fish/aquatic species	☐	☑
Removes barrier and adds fish passage features	☐	☑
Ability to manage sediment during diversions	☐	☑
Areas of new vegetation	☐	☑
Compliance with current regulatory requirements	☐	☑
Other Benefits		
Conserves more water with a net increase to groundwater recharge	☐	☑

Appellant's Latest Proposal

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- Does not comply with CEQA
  - Baseline conditions cannot be changed
- Requests unnecessary and irrelevant studies
  - Percolation rates are not important during high storm flows
  - Erroneous hydrologic basis
- May be in conflict with California Dept. of Fish and Wildlife requirements

Responses to Appeal

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- Coordination with Fish & Wildlife for compliance with Fish and Game code
- Project will result in net ***increase*** to groundwater
- Suggestion for minimum flow during dry periods relates to baseline condition
- Stream has limited capacity for percolating runoff; spreading basins supplement percolation & adding acres
- Bio Impact Modeling concluded no significant impact to habitat from increased Project diversions

Environmental Impact Report

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- EIR focuses on issues with potentially significant impacts:
  - > Air Quality
  - > Biological Resources
  - > Cultural Resources
  - > Noise
  - > Recreation
  - > Transportation
  - > Greenhouse Gas Emissions
  - > Hydrology & Water Quality
  - > Tribal Cultural Resources
- All potentially significant impacts can be reduced to a less than significant level with applicable mitigation measures, except impact to cultural resources (Bridge 3).

Project Alternatives

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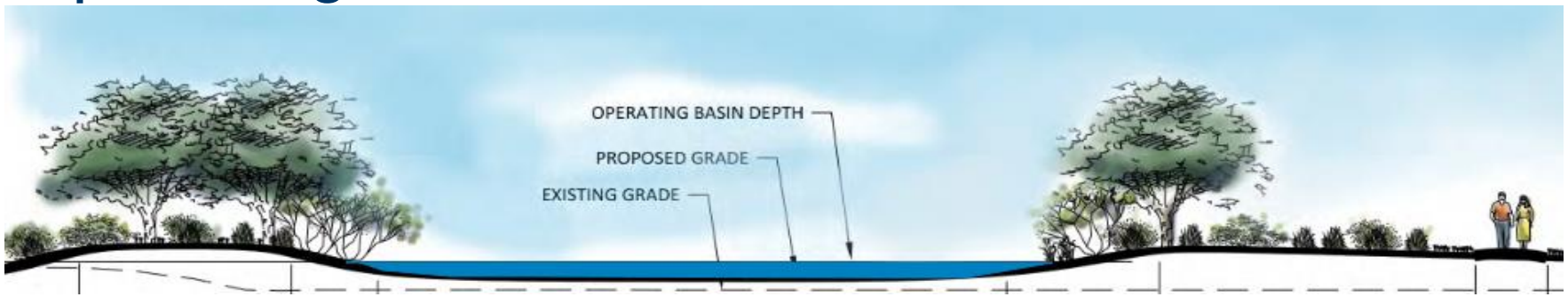
- Alt. A - No project/No action
  - > No increased diversions or infiltration to Raymond Basin
  - > Runoff from large storms wasted to ocean
  - > More impactful to biological resources due to lack of fish protections
- Alt. B - Redesigned Spreading Basins
  - > Preferred – Similar impacts with more natural design



- Alt. C – Historic Bridge Preservation
  - > Environmentally superior - only alternative to eliminate significant impact to cultural resource.

Statement of Overriding Considerations

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- The City selected Alternative B (redesigned basins)
- A SOC is required for approval of the Project - Alternative B
- Project benefits considered to outweigh impacts include:
  - > Groundwater recharge for sustainable local water supply
  - > Capture water that would otherwise be released to the ocean
  - > Improved conditions for fish
  - > Convert dirt lot to meaningful infiltration basins

Conclusion

The Arroyo Seco Canyon Project is Pasadena's **best** opportunity for capturing significant amounts of stormwater and a great first step in **healing the basin**.

Mod to Conditional Use Permit #6222

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Staff Recommendation:

- Adopt a Resolution certifying the Final Environmental Impact Report (SCH #2014101022) adopting findings and the Mitigation Monitoring and Reporting Program (Attachment C);
- Adopt a Resolution adopting a Statement of Overriding Considerations for the project (Attachment D); and
- Approve Modification to Conditional Use Permit #6222 with the findings in Attachment A and the Conditions of Approval in Attachment B.

Mod to Conditional Use Permit #6222

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Project Proposal:

Modification to Conditional Use Permit #6222: To allow the repair and replacement of City's water infrastructure facilities within the Upper Arroyo Seco that were damaged by debris flows caused by storms following the 2009 Station Fire. Damage to these structures has greatly reduced the City's capacity to divert water from the Arroyo Seco for spreading and pumping credits. The proposed improvements would allow for increased utilization of the City's pre-1914 surface water rights from the Arroyo Seco. A Conditional Use Permit is required for any improvements within the Open Space (OS) Zoning District.

Conditions for Fish

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- Downstream fish bypass structure is not proposed until connectivity is restored
- Suitable habitat exists, but current conditions are unfavorable to fish and their survivability
- Several barriers to fish passage exist
- Flows less than 1 cfs about 35% of the time (4 months of the year) - inadequate for fish survival
- Zero flow occurs 24% of August, 26% of September
- Periods of low or no flow cannot be prevented, regardless of diversion

Bridge 3 with Structural Overlay

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Right – Bridge 3 and structural overlay

Below - Bridge 3 structural damage

Current Arroyo Seco Stream

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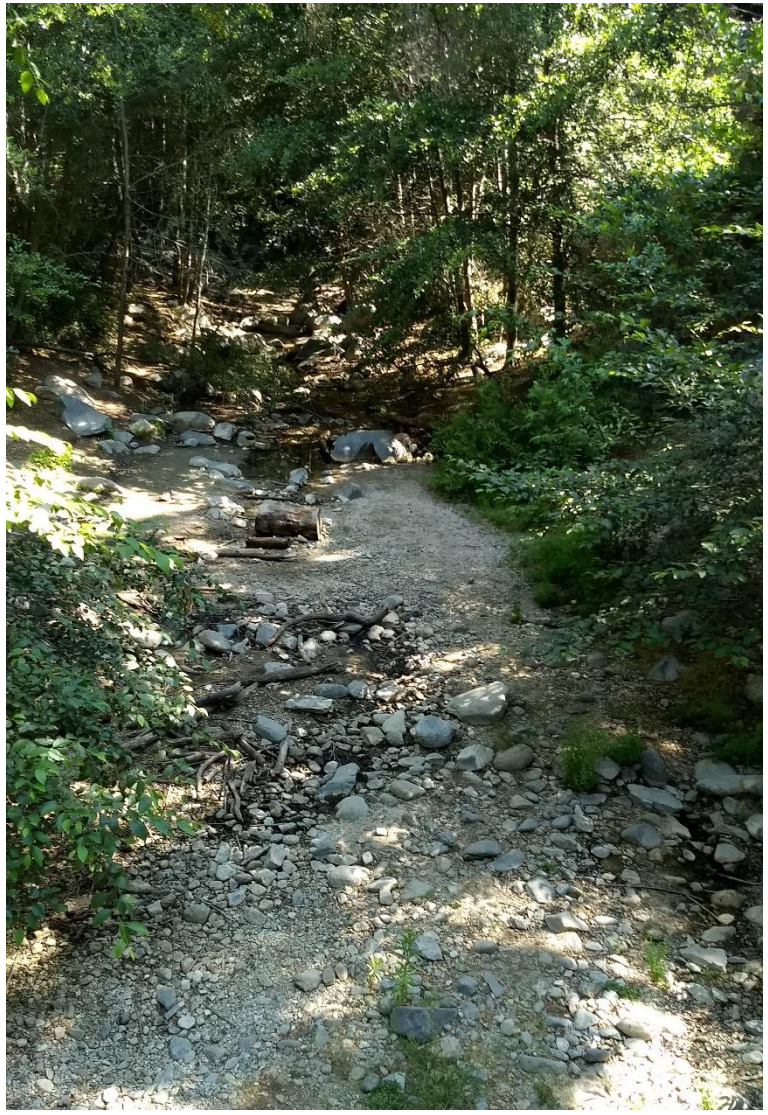

Current Stream at Intake Structure

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Hahamongna Watershed Park Master Plan

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Correcting the Appellant's Analysis

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Note: Stream flows > 25 cfs occur only 7% of the yr.

Existing condition = 25 cfs diversion (not 18 cfs)

Number is off by multiples. Does not account for Millard Creek, several major storm drain outlets. surface runoff and subsurface flow into the Arroyo

Assumed percolation (not measured) during dry conditions.

20 cfs outflow (not 0.5 cfs)

The analysis does not represent actual watershed conditions:

No accounting for other sources of flow, some of which will percolate in the streambed.

No accounting for dam outflows that don't percolate in the streambed.

Inaccurately assumes all water left in the streambed will percolate.

FALSE - The ASCP will net recharge to the basin with water that would be otherwise released from the dam.

Analysis of Appellant's Model

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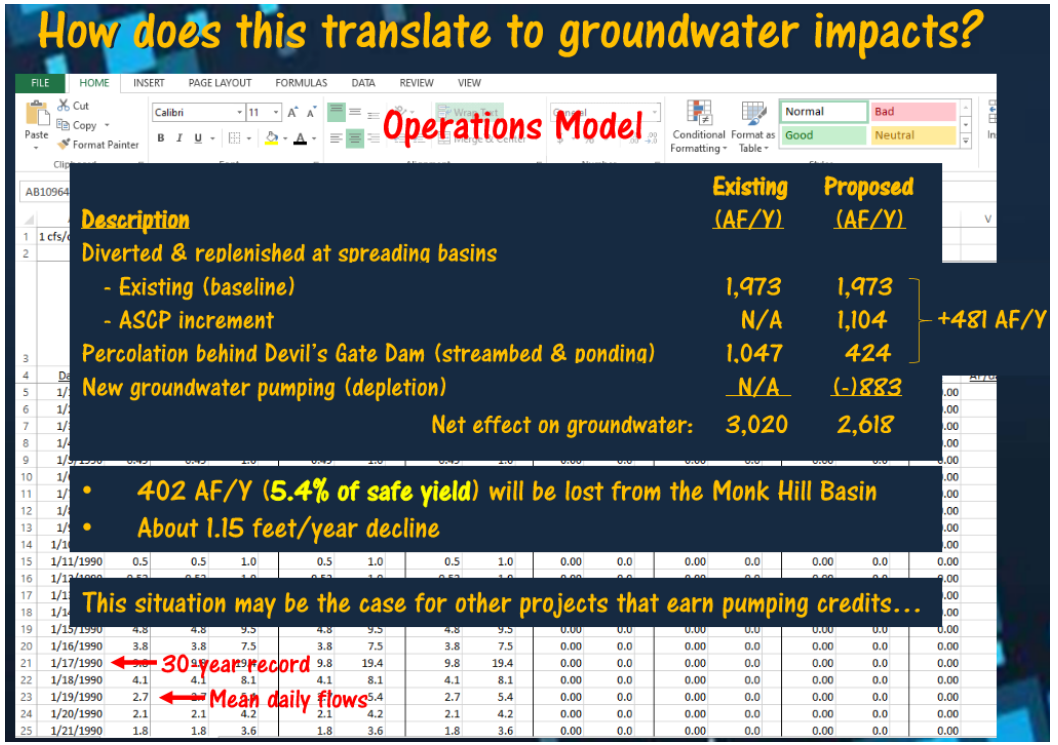
- PWP also uses 30-year record for analysis of project benefits.
- Model not reflective of true watershed conditions:
  - Assumes water left in stream during large storms will percolate
  - No accounting for significant volume that does not percolate/released as outflow



Community Responses

Planning & Community Development Department

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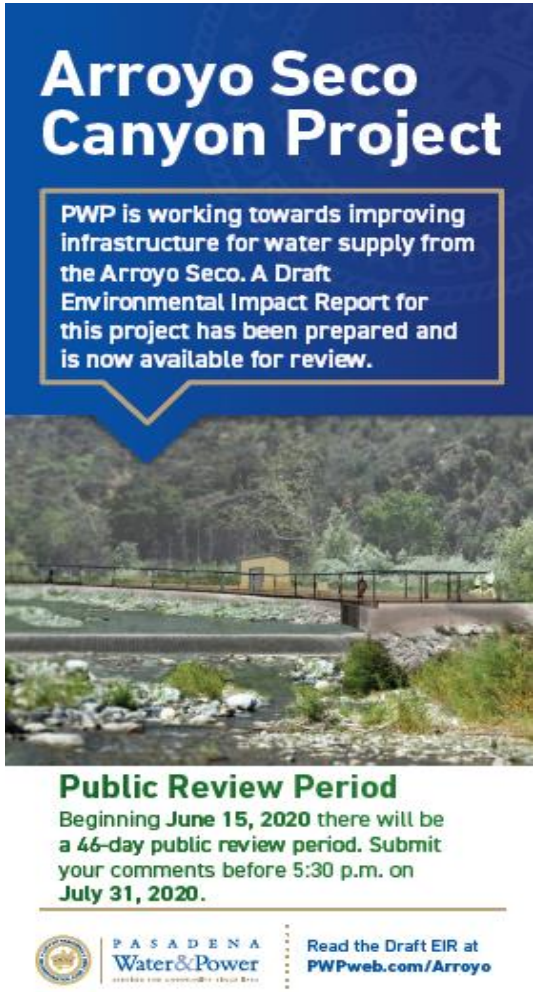
Subject: Response to calculations in Ken Kules' December 31, 2020 letter

In a comment letter on the Arroyo Seco Canyon Project (ASCP) dated December 31, 2020, Pasadena resident and licensed engineer Ken Kules claims that the ASCP will have a detrimental effect upon groundwater recharge in the Raymond Basin. Mr. Kules argues that were it not for the increase in diversions proposed by the Project, this water would largely percolate in the natural stream bed and in the ponding behind Devil's Gate Dam. Included in his letter, Mr. Kules has provided calculations based off of historic stream flow data at the Arroyo Seco stream gage (USGS 110980) to attempt to show that the ASCP recharge and proportional extraction of surface water will result in less groundwater recharge than were the water left to flow in its natural stream bed.

To make this argument, Mr. Kules makes several assumptions:

- Streambed percolation rate of 5 cubic feet per second (cfs) per mile – This is based off of a Phillip Williams & Associates (PWA) 2000 study that made assumptions from observations and not actual measurements of the rate of pond leakage into the stream, distances, and heterogeneity of the watershed. Additionally, the presumption of a constant percolation rate overlooks any effects of soil moisture or pore saturation. On January 18, 1999 when this estimate was made, no significant rainfall had occurred for more than a month. Streambed materials would have been dry and more receptive to percolation than under saturated conditions when pore spaces are filled.

- Devils Gate Percolation between 24 cfs and 29 cfs – This assumption, estimated in the same PWA 2000 study, extrapolates the PWP spreading basin percolation rates to the full Devil's Gate Reservoir. Again, this presumption overlooks the effects of pore saturation. Additionally, this estimation equates percolation in the PWP basins which have historically received no more than 25 cfs of diversion flow, with that of Devil's Gate Reservoir which received flows as high as 4,300 cfs in the year prior to this assumption. Such high flows would carry a heavy sediment load which would be ponded behind Devil's Gate Dam and could significantly lower percolation rates through siltation sealing off infiltration paths. The PWA Study quotes the Los Angeles County Department of Public Works (LACDPW) as noting "...that while it is possible to control the level of sediment entering the existing Arroyo Seco Spreading Grounds by only diverting during times of relatively sediment-free flow, there is no way to control the level of sediment carried by flows that eventually pond at the dam." Even though LACDPW, as operator of the Devil's Gate Dam and Reservoir, plans regular maintenance to avoid large-scale sediment removal projects in the future, the purpose of this removal is for flood control and not for any expected increase in percolation. It should be noted that the LACDPW assigns a value of 0 cfs for groundwater infiltration behind Devil's Gate Dam in its Devil's Gate Stormwater Capture Model. As LACDPW has determined percolation behind the dam to be ineffective, this model is currently being used to size the facilities proposed to pump water out of Devil's Gate Reservoir to infiltration basins so that it may percolate to the underlying aquifer.



ARROYO SECO CANYON PROJECT - AREAS 2 AND 3 DRAFT EIR AVAILABLE FOR PUBLIC REVIEW

The Arroyo Seco Canyon Project takes a multi-benefit approach to improving PWP's water resources by addressing the shortcomings of its existing infrastructure, while also enhancing the natural habitat and the recreational experience for visitors of the local trail system into the Angeles National Forest.

Currently, PWP is working towards improving infrastructure for water supply from the Arroyo Seco. A Draft Environmental Impact Report, for Areas 2 and 3 of this project, has been prepared and is now available for review. Beginning June 15, 2020 there will be a 46-day public review period. All comments must be submitted by mail or email before 5:30 p.m. on July 31, 2020.

To read the Draft Environmental Impact Report, and learn more about this project – visit us online or click the "Learn More" button below.

LEARN MORE

Rebuttal

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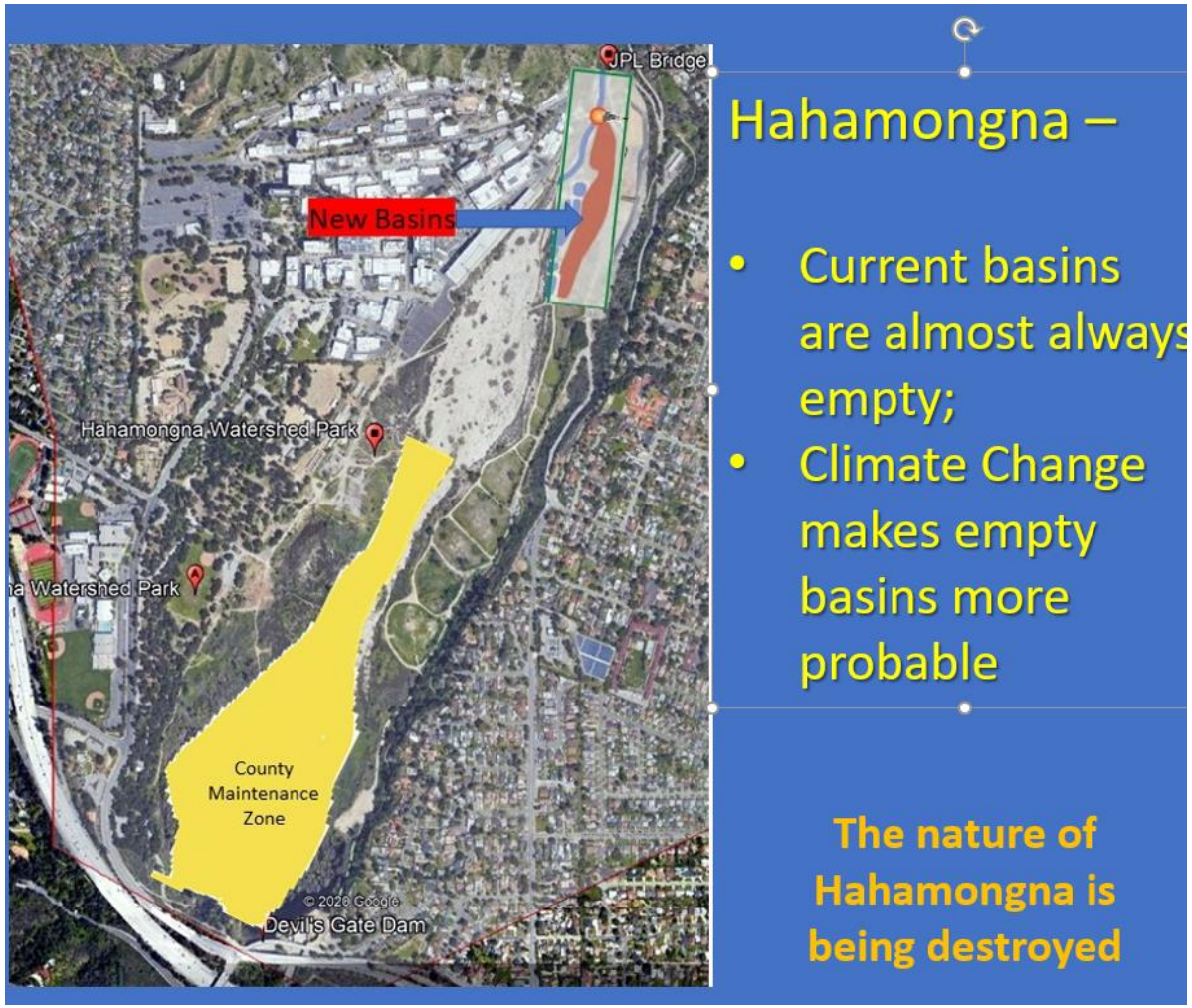

- Yes, the basins will be empty most of the time – more critical to capture stormwater
- Only Areas 2 and 3 are affected by Project – Hahamongna not being destroyed
- Streamzone and basins will be infiltrating during high storm flows