



A Tradition of Stewardship
A Commitment to Service

Hydrology

- Outline:
 - 1) Overview of site hydrology
 - 2) Three concern categories
 - 3) Mitigation for each concern category

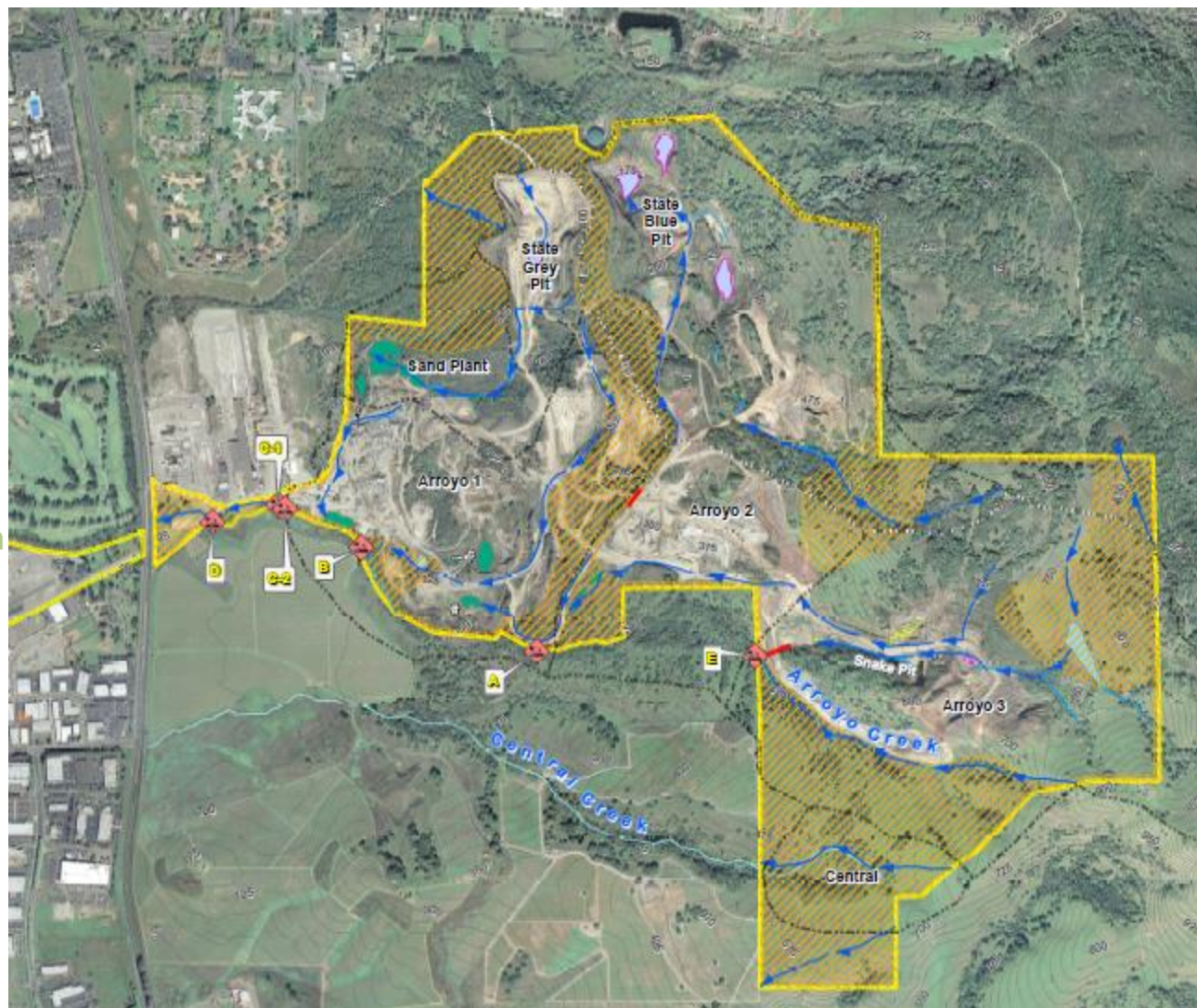


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Hydrology – Overview

- **Current Site Conditions:**

- Groundwater supplies administrative buildings and production facilities
- Surface discharge through control points with sediment settling in ponds
- Recharge occurs through surface flow and pond infiltration
- Groundwater flow generally follows surface water flow
- MST groundwater basin is located to the west and north





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Hydrology – Comment Summary

- Water Related Comments to Draft EIR covered three general topics:
 - 1) Volume of Water Use Concerns
 - 2) Recharge and Runoff Control Concerns
 - 3) Aquifer Protection and Adjoining Groundwater Concerns



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Hydrology – Water Use Protection

- Volume of Water Use Concern:
 - Concern summary: *groundwater use will increase*



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Hydrology – Water Use Protection

- Water Volume Comparison:
 - Selection of 2009 for baseline a condition of the CEQA process
 - Baseline year of comparison is determined by year of filing for Notice of Intent for project
 - 2009 water use was determined by a combination of measurement and calculations of water use during the production process



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Hydrology – Water Use Protection

- **Water Use For Baseline Year:**
 - Study for water use based on metering at wells, counting water trucks filling at ponds, and well pump operation records
 - Saleable material production in 2009 was 810,000 tons – 141 acre ft/yr of water use for:
 - Water for dust suppression of active areas on roads, rip rap plant, aggregate piles – majority of water use
 - Water for material production (sand, rip rap, drain rock, aggregate base, and asphalt) – small volume of water use



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Hydrology – Water Use Protection

- Project is Mitigated to Baseline Water Demand:
 - Water use at 2009 levels - 810,000 tons used approx. 141 acre ft/yr (4.6 million gallons/yr)
- Mitigation Related to Water Use Volume:
 - No increase over 2009 baseline (approx. 141 acre ft/yr) – mitigates impacts related to potential increase in water use
 - Annual reporting required – mitigates impacts related to compliance
 - Any increase in production requires more efficient use of water resource and/or new water source (i.e., recycled import or recycling onsite)



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Hydrology – Recharge Protection

- Recharge and Runoff Control Concerns
 - Concern summary: *recharge will be disrupted and/or sediment will enter creeks*

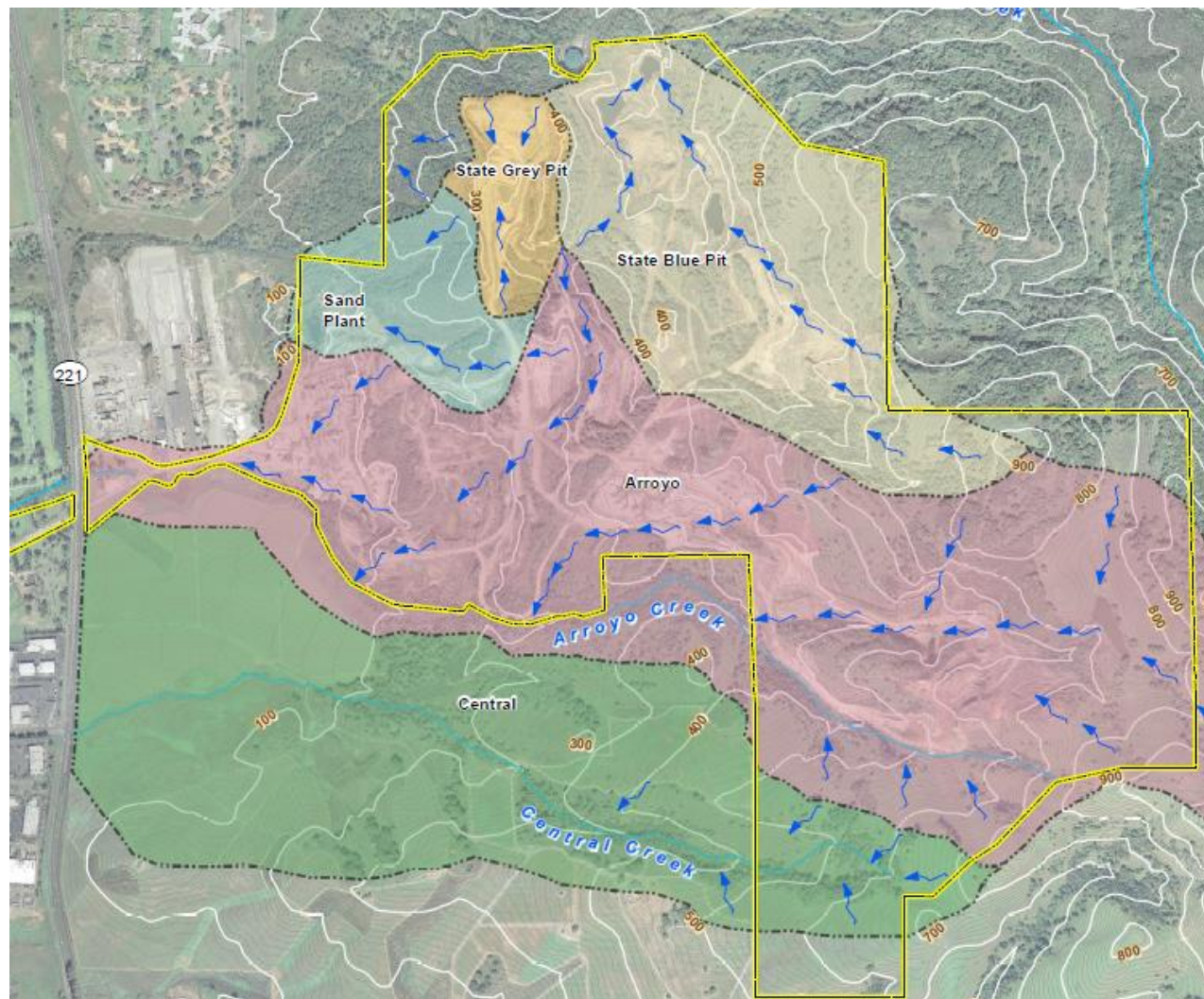


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Hydrology – Recharge Protection

- Five Watersheds In Project Area:

- Two are closed to surface outflow with infiltration only (State Blue and Grey Pits)
- Two have silt removal ponds with surface outflow (Sand Plant and Arroyo Creek)
- One has upland catchment routed south of project (Central Creek)
- All surface flow goes either north or west
- Groundwater flow goes either north or west



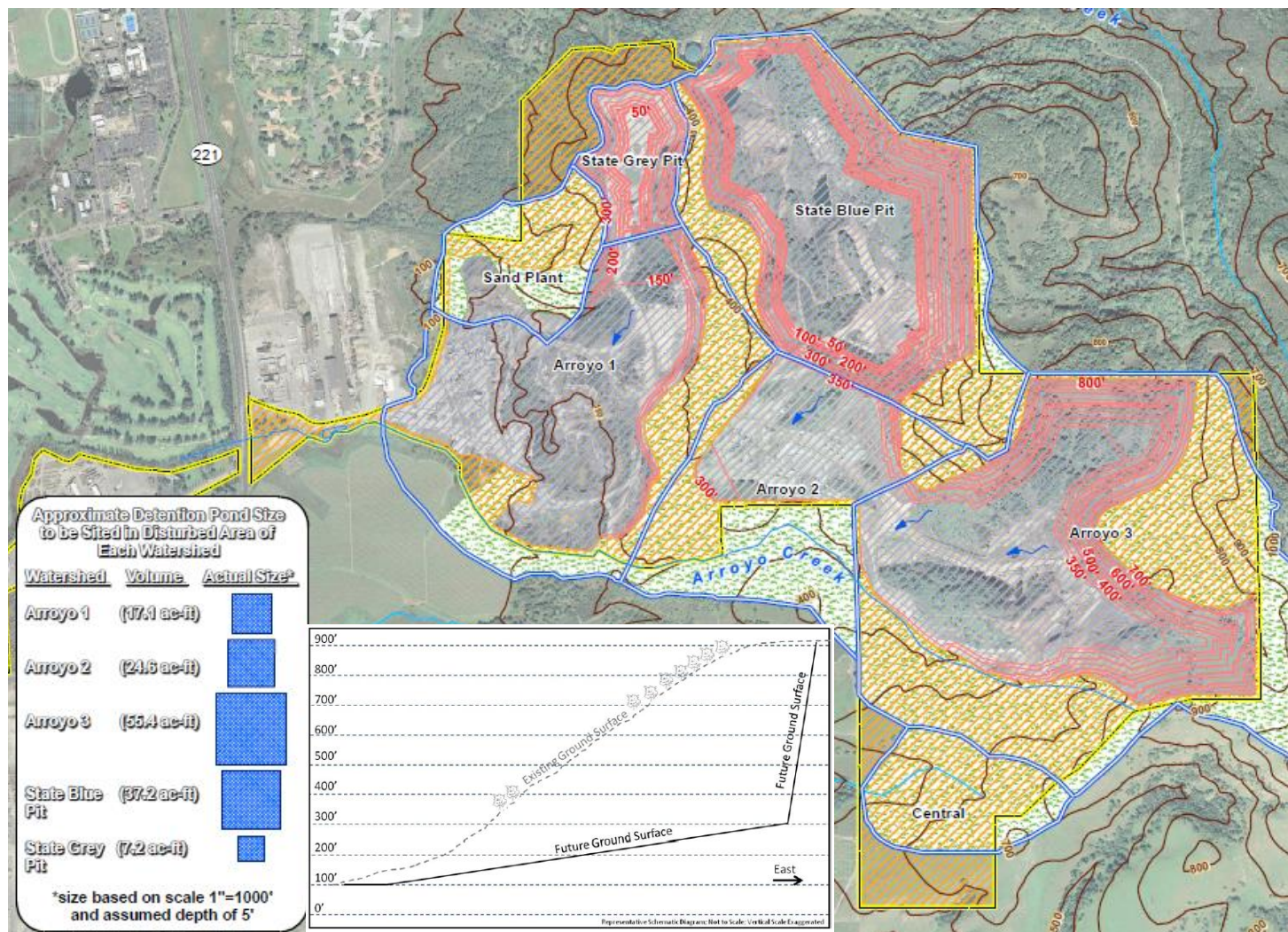


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Hydrology – Recharge Protection

• Mitigation to Protect Surface Water:

- Surface flow to be maintained in existing watersheds
- Grading to be performed to modulate surface runoff flow rate to allow for infiltration
- Detention ponds to be constructed to retain surface water to maintain groundwater recharge





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Hydrology – Groundwater Protection

- Aquifer Protection and Adjoining Groundwater Concerns
 - Concern summary: *aquifer material or flow will be disrupted*



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Hydrology – Groundwater Protection

• Mitigation to Protect Groundwater:

- Annual groundwater monitoring and elevation reporting
- Drilling confirmation required when ground surface is within 50 feet of reported groundwater elevation
- No removal of rock or soil within 10 feet of groundwater elevation
- Project depth restricted by mitigation

