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#### **Title**

City of Hesperia Lift Station Design

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#### **Publication Date**

2014-03-15

Peer reviewed

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# City of Hesperia Lift Station Design

Anteater & Associates (Water Group 3)

Project Manager: Karl Reichmuth

Project Engineers: Gurleen Bhatia, Tatsiana Bondar, Tyler Cruickshank, Juan Moral,  
Vanessa Paneto, Chad Whittington, Heidi Wilson

Faculty Mentor: Brett Sanders



### Project Description

Anteater and Associates has been contracted by HDR Engineering Inc. to construct a two-phase wastewater pump station for a residential community in Hesperia, California.



### Project Goal

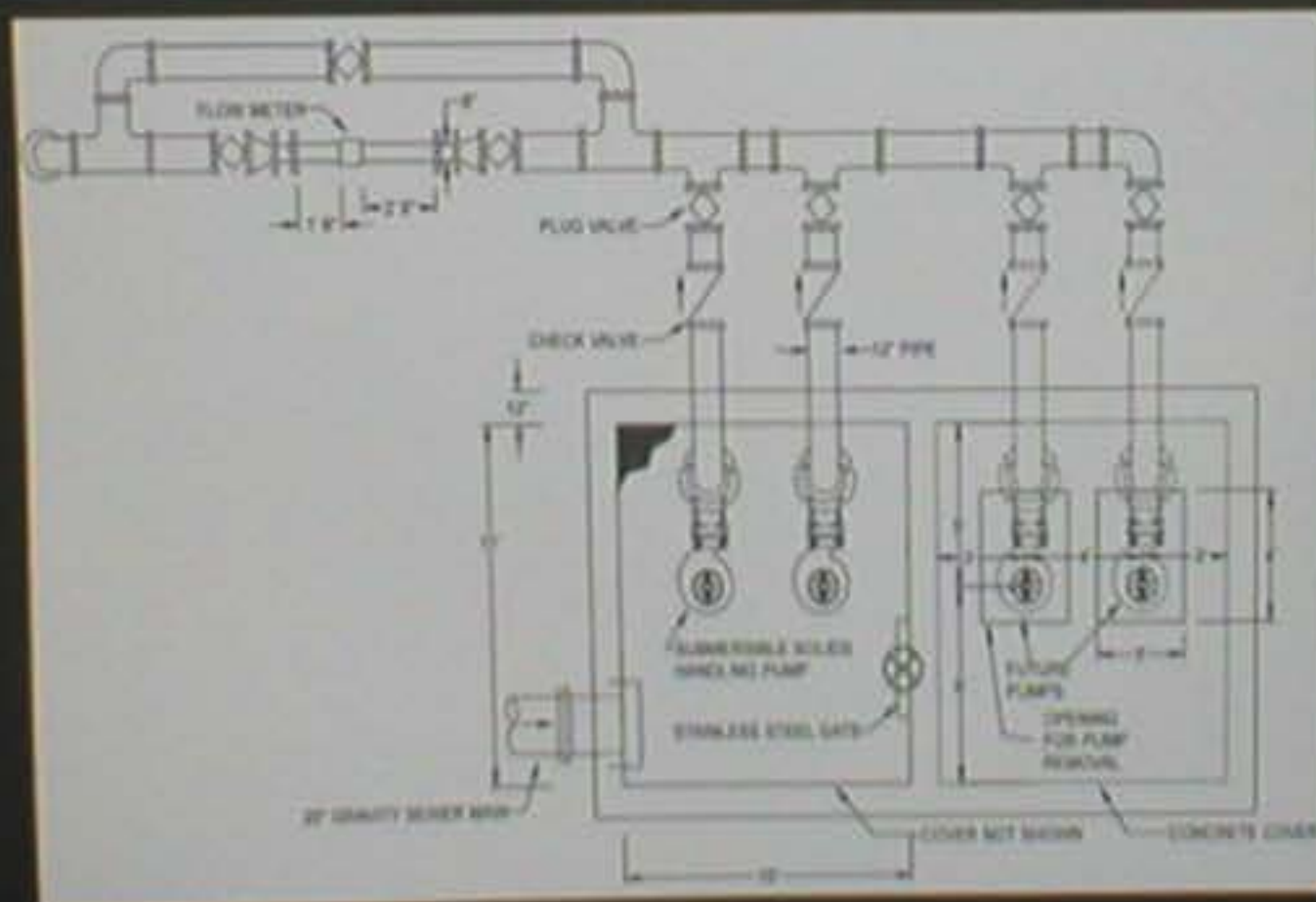
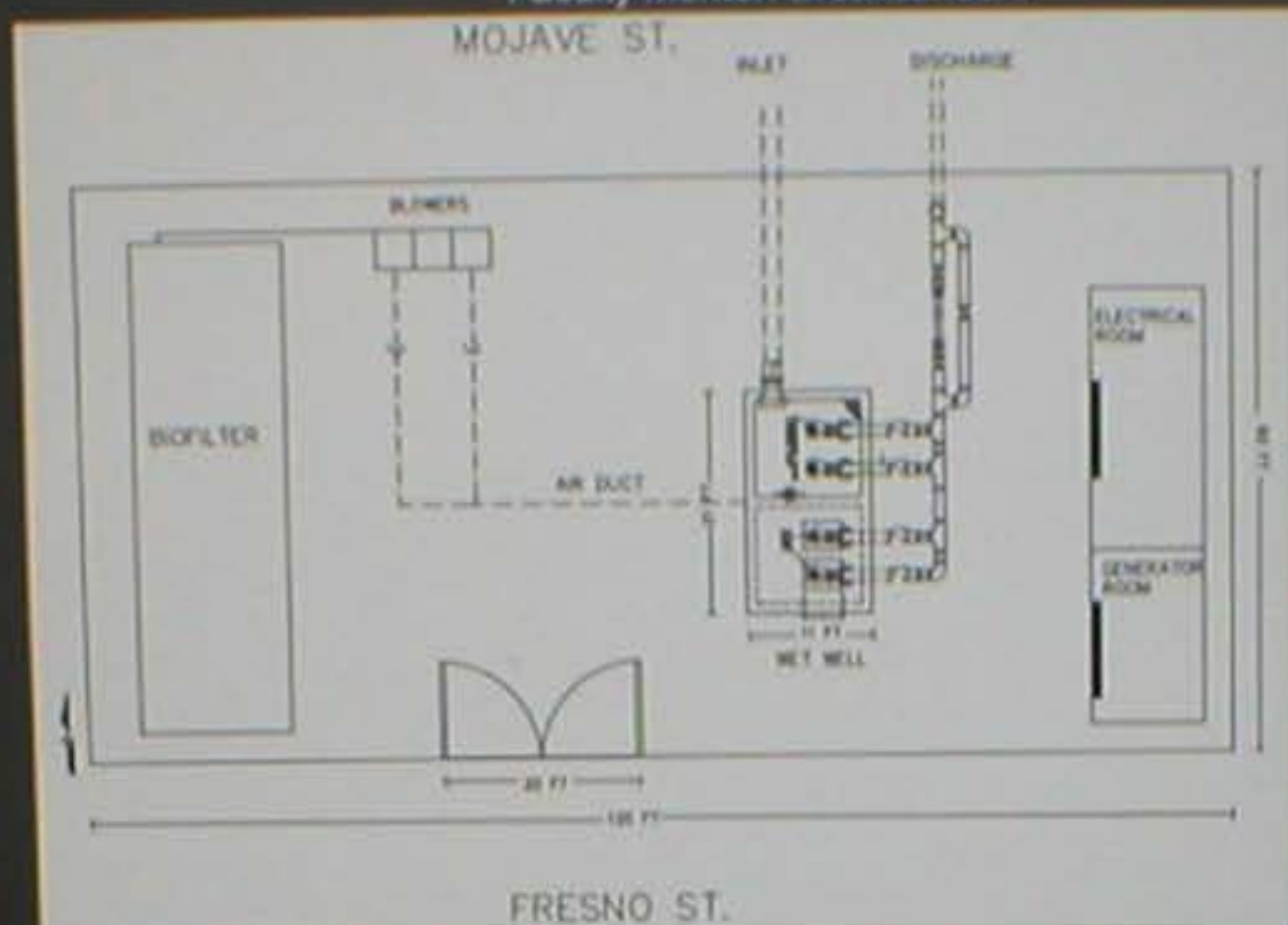
The project goal is to develop a pump station that will accommodate for an increase in wastewater production from a new residential track of homes that will soon be built in the area. The pump station will be implemented in two-phases to ensure that as the residential communities grow the station will be able to handle the increased loading on the system.

### Project Parameters

	Average Flow Rate (MGD)	Peak Flow Rate (MGD)
Phase 1	1	1.5
Phase 2	2	3

### Design Approach

Anteater and Associates designed the pump station by first reviewing the local codes and regulations for the site. Then calculations had to be done to ensure that the materials and equipment selected were properly sized. From there the layout of the design could be created.



Alternative Analysis	Alternative 1	Alternative 2	Alternative 3
Inlet Pipe	VCP	PVC ✓	ABS
Discharge Pipe	DIP	PVC ✓	N/A
Pumps	Submersible Centrifugal ✓	Vertical Turbine Machines	Dry Centrifugal
Wet Well	Cast In Place ✓	Precast	N/A
Odor Control	Chemical Scrubber	Carbon Filter	Bio Filter ✓

Sizing of EQUIPMENT	Units
Inlet Pipe Diameter	20 inches
Discharge Pipe Diameter	12 inches
Wet Well Size (2 Chambers)	21' x 11' x 15' (L x W x H)
Phase 1 pumps (1 Duty, 1 Standby)	1.5 MGD
Phase 2 pumps (2 Duty, 2 Standby)	3 MGD

### Design Deliverables

- Overall process design
- Calculations for equipment sizing
- AutoCAD Drawings
- Preliminary Design Report
- Mechanical layouts including plan and section drawings
- Odor control facilities design
- Final Design Report

### Preliminary Cost Estimate and Schedule

- Cost will be at \$1.23 million
- This estimation does not include biofilter
- Project Timeline is approximately 1.8 year

### Upcoming Deliverables

- Finalize Mechanical Layout
- Finalize Biofilter
- Drawings of Biofilter
- Total Cost Estimation

### Contact Information

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