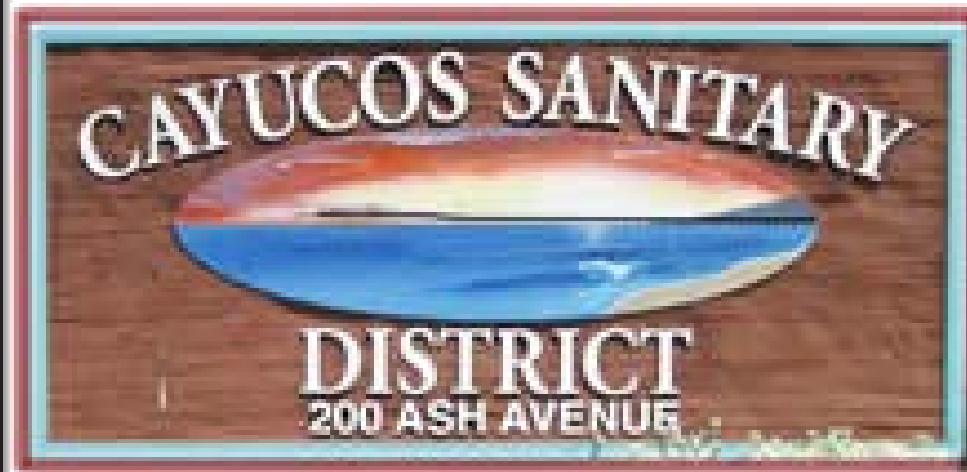


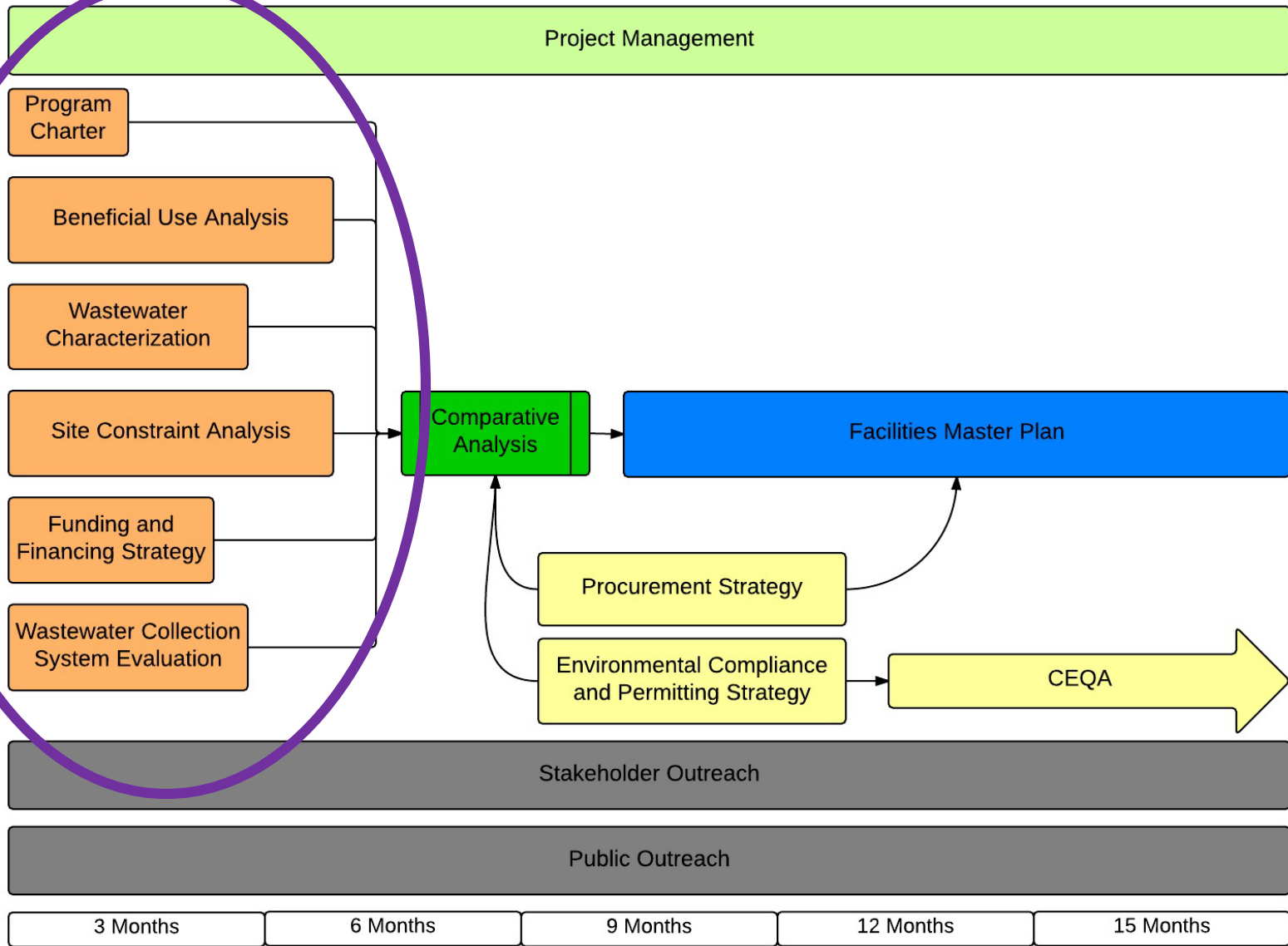
Status update presentation #1 for  
the Cayucos Sustainable  
Water Project



# Presentation

- Phase 1 Overview
- Cayucos Sanitary District  
Wastewater Characterization
- Treatment & Regulatory  
Overview
- Funding & Financing Evaluation
- Next Steps

# Phase 1 Work Plan



# Introduction

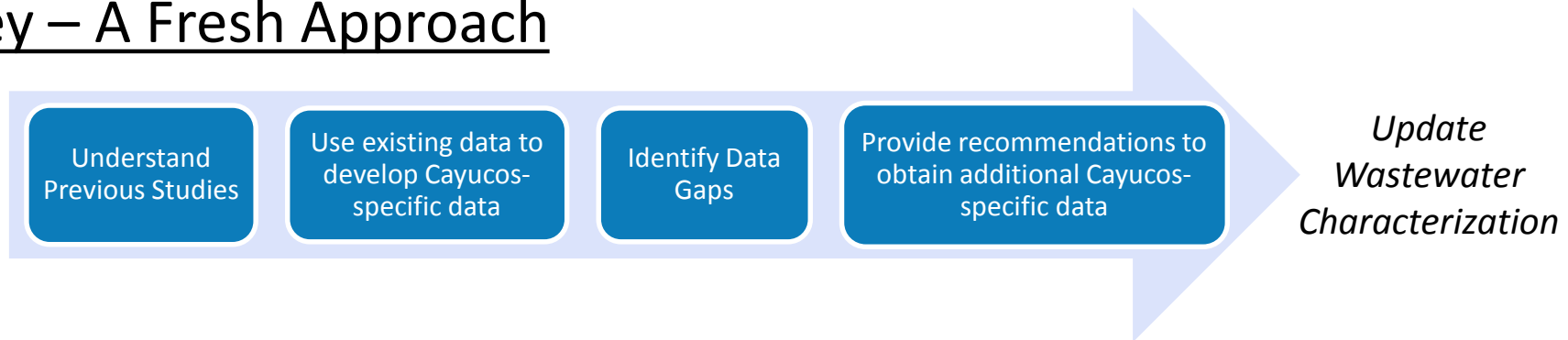
## Scope

- Determine historical and projected flows and constituent loadings for the District's wastewater

## Purpose

- Select design flowrates and mass loadings
  - Evaluate flow equalization opportunities
  - Determine size of unit processes

## Key – A Fresh Approach

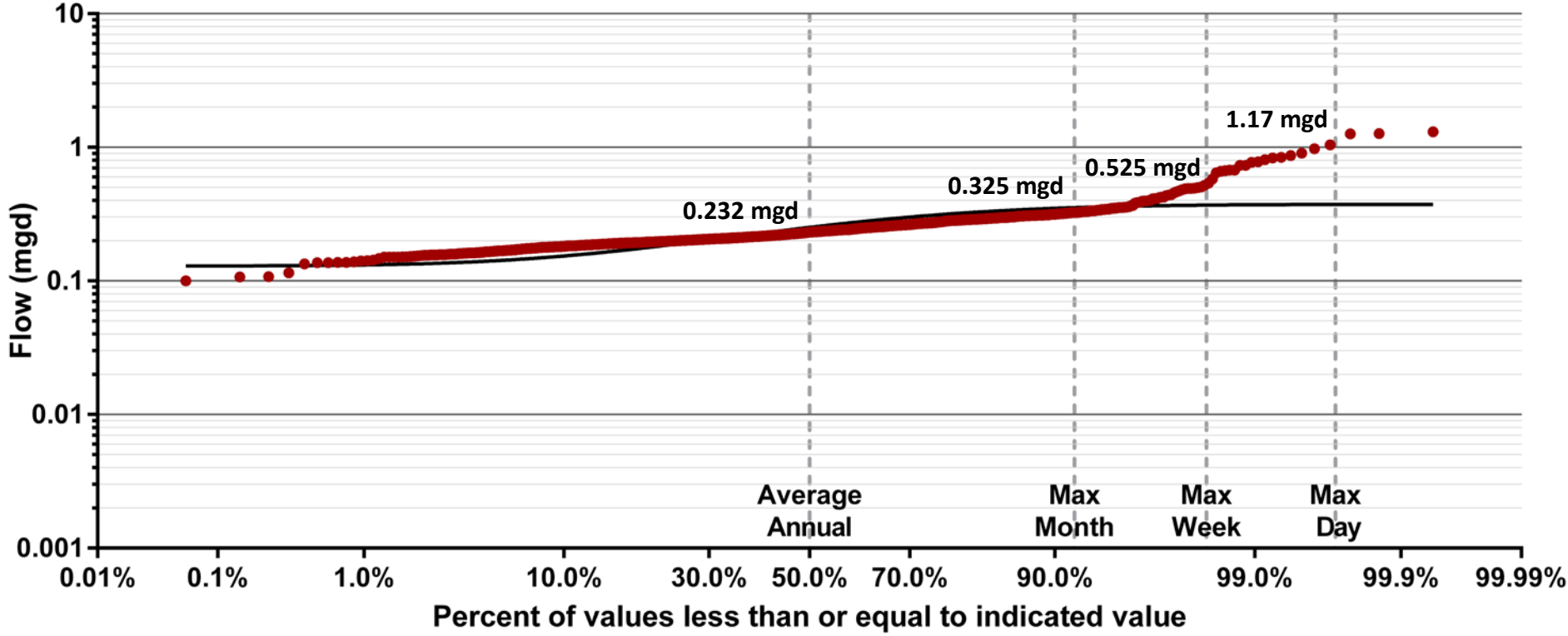


# Characterization Approach

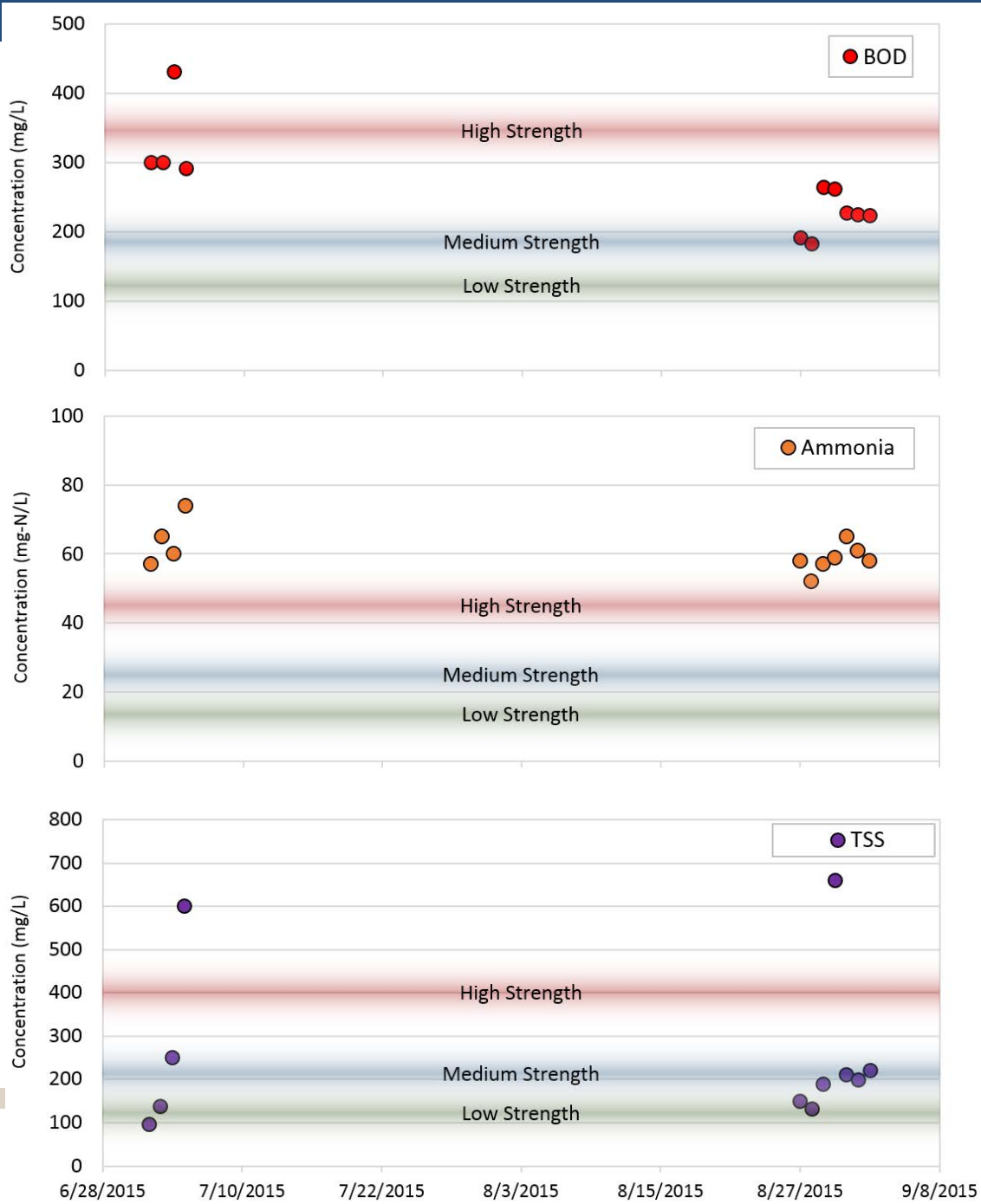
Components of Wastewater Characterization Analysis			
	Wastewater Flows	Water Quality	Service Area Growth
Purpose	To develop conceptual process flow designs	To determine operational characteristics of treatment facilities	To determine future increases in flows and loads
Data Source	Lift Station 5 Daily Flow Data	Sampling events from July & August 2015	2010 Census & Historical Service Connections
Output	Historical and Projected Flows	Historical and Projected Constituent Loadings	Current and Future Wastewater Generation Rates

# Historic Flows

Combined Flows (2008-2014)



# Wastewater Characterization Water Quality Analysis



# Sampling Plan

## Flow Monitoring and Water Quality Sampling Program

- Strengthen results of preliminary wastewater characterization
- Preliminary data updated after each phase
  - Phase 1: November 2015 – March 2016
  - Phase 2: April 2016 – June 2016
  - Phase 3: July 2016 – August 2016

## Flow Monitoring

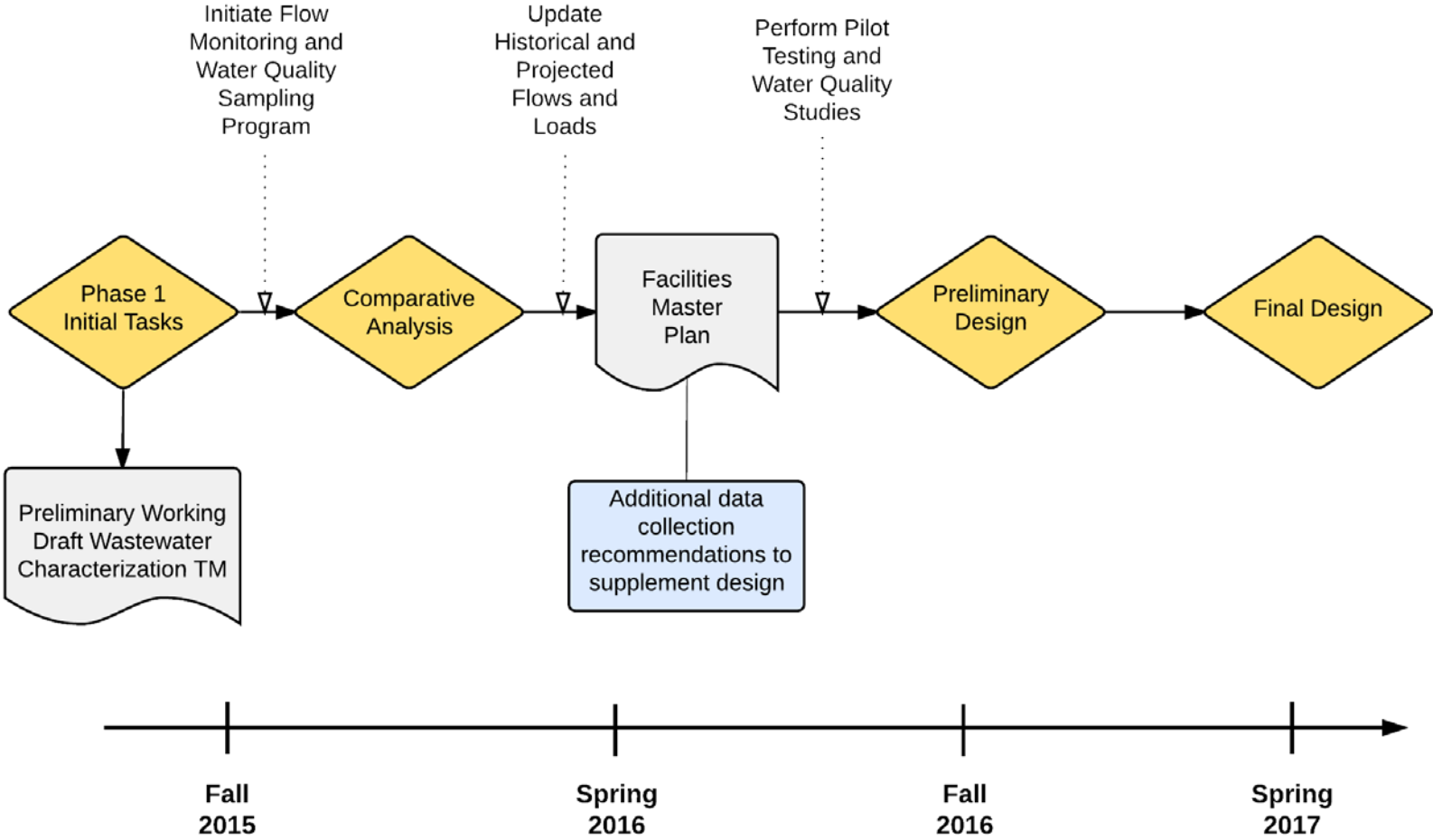
- Continuous instantaneous flow monitoring
- Flow meters located at manholes upstream of Lift Station 2 and Lift Station 5

## Water Quality Sampling

- Composite sampling upstream of Lift Station 5
- Minimum of one (1) 7-day sampling event per month
- TSS, BOD, COD, Nitrogen, TDS



# Characterization Next Steps



# Treatment and Regulatory Overview

- Recycled water beneficial use alternatives
- Treatment process overview
- Regulatory and permitting requirements
- Public outreach and stakeholder support

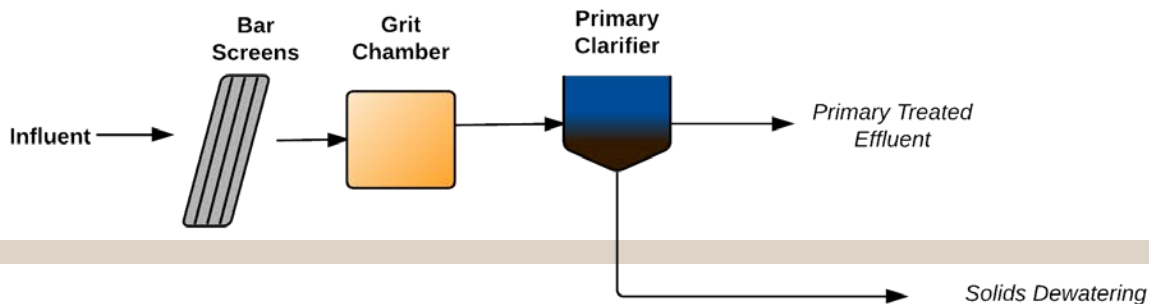
# Recycled Water Beneficial Use Alternatives

Beneficial Use Alternatives			
	Unrestricted Irrigation	Indirect Potable Reuse (IPR)	Direct Potable Reuse (DPR)
Beneficial Uses	Unrestricted Landscape Irrigation	Title 22 IPR - Groundwater Replenishment Reuse Project (GRRP)	DPR
	Spray Irrigation of Food Crops		
	Industrial and Other Uses	IPR - Surface Water Augmentation	
	Unrestricted Recreational Impoundment		
Treatment Level	Tertiary Treatment	Full Advanced Treatment	Full Advanced Treatment

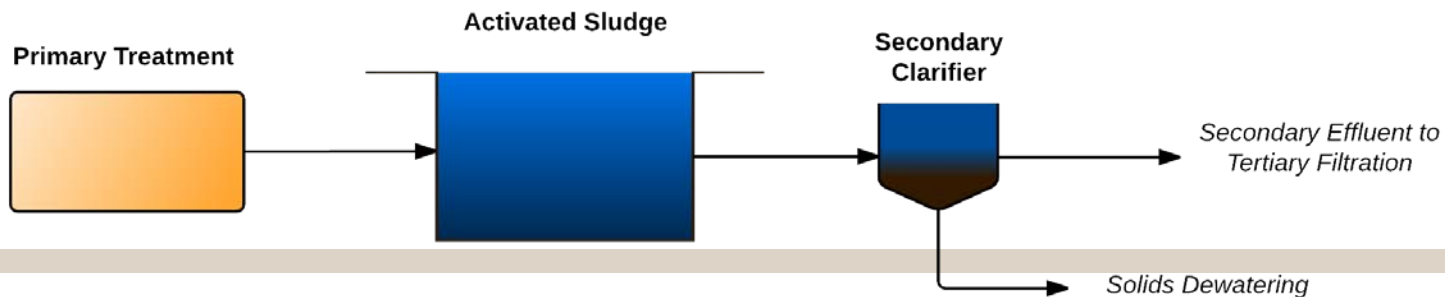
# Primary Treatment



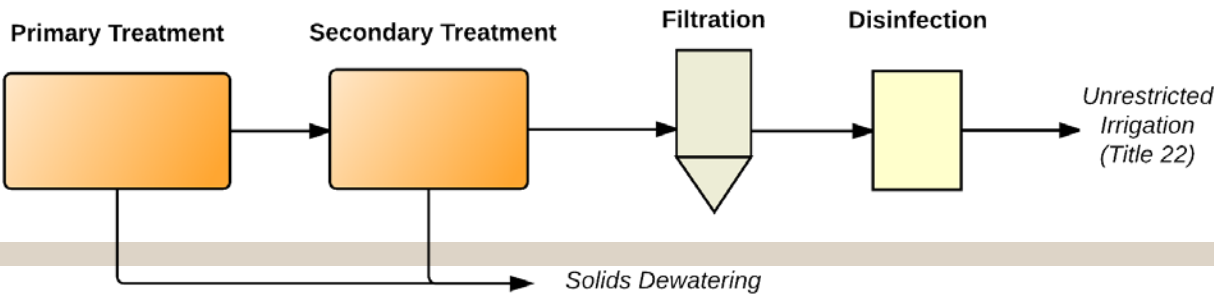
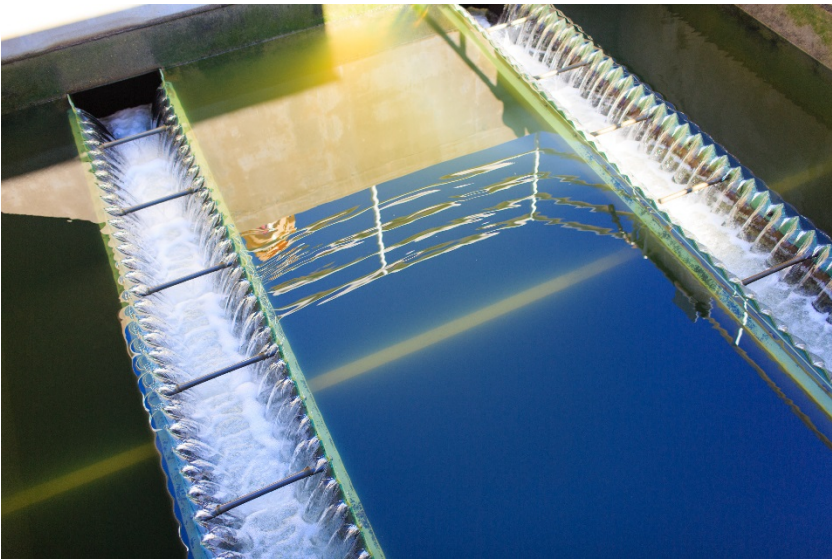
- Includes headworks for large material and grit removal
- Followed by primary clarification or settling



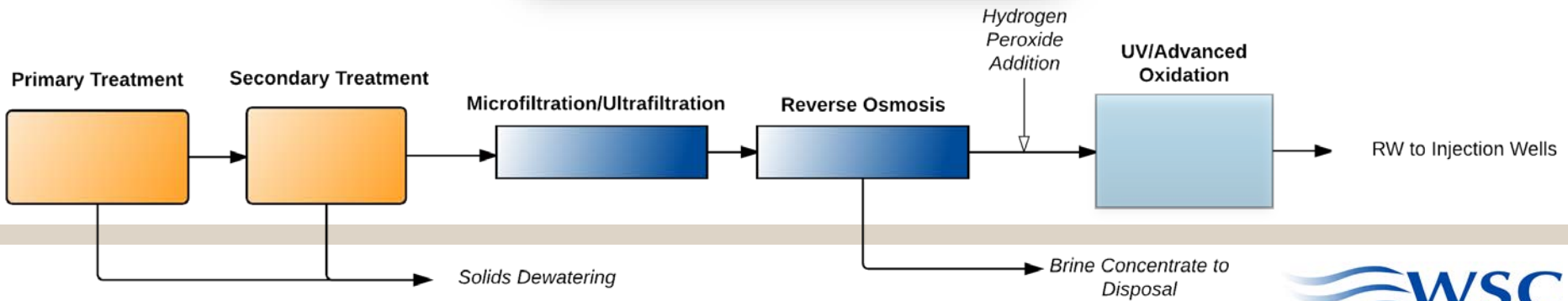
# Secondary Treatment



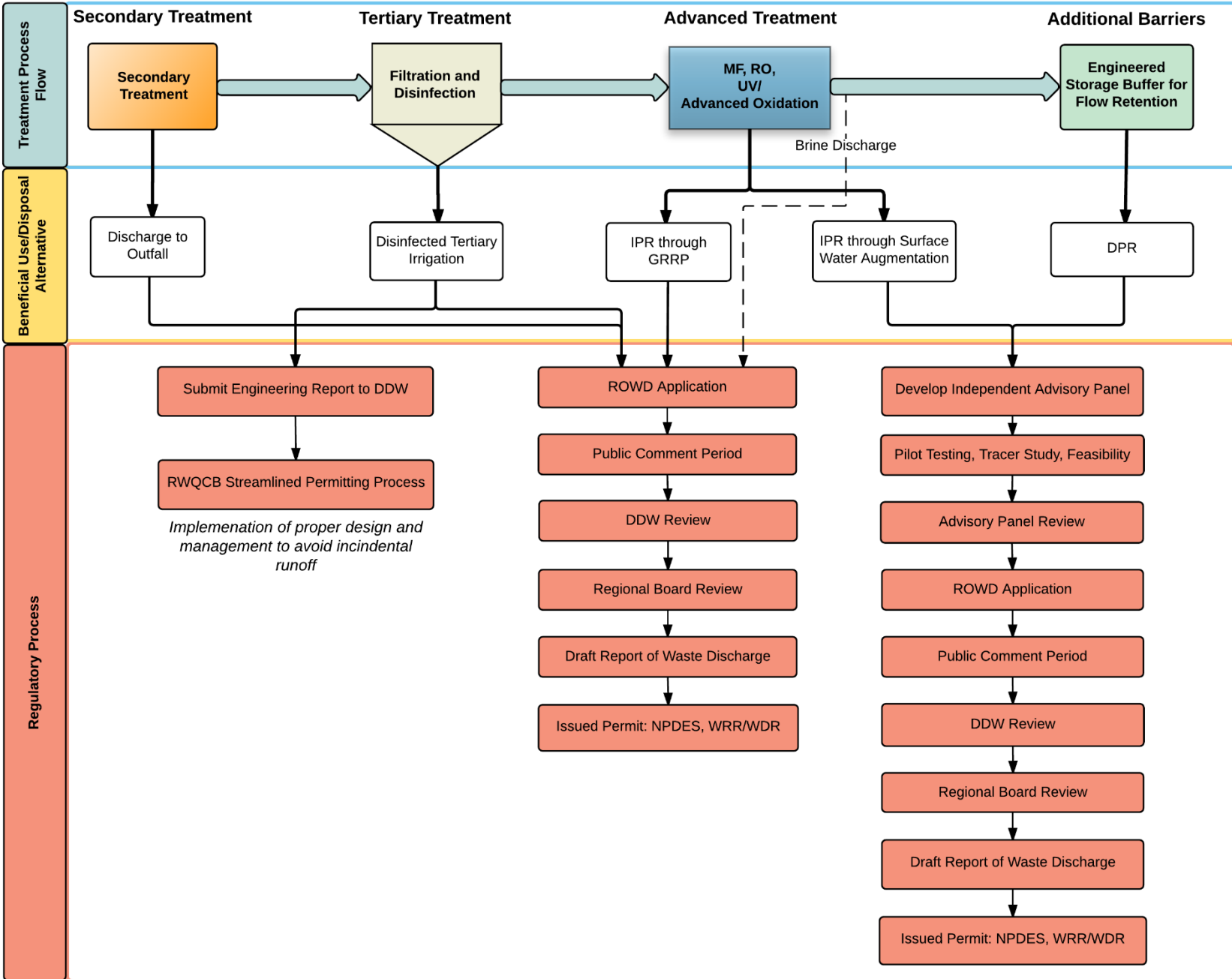
# Tertiary Treatment



# Full Advanced Treatment



# Treatment and Regulatory Overview





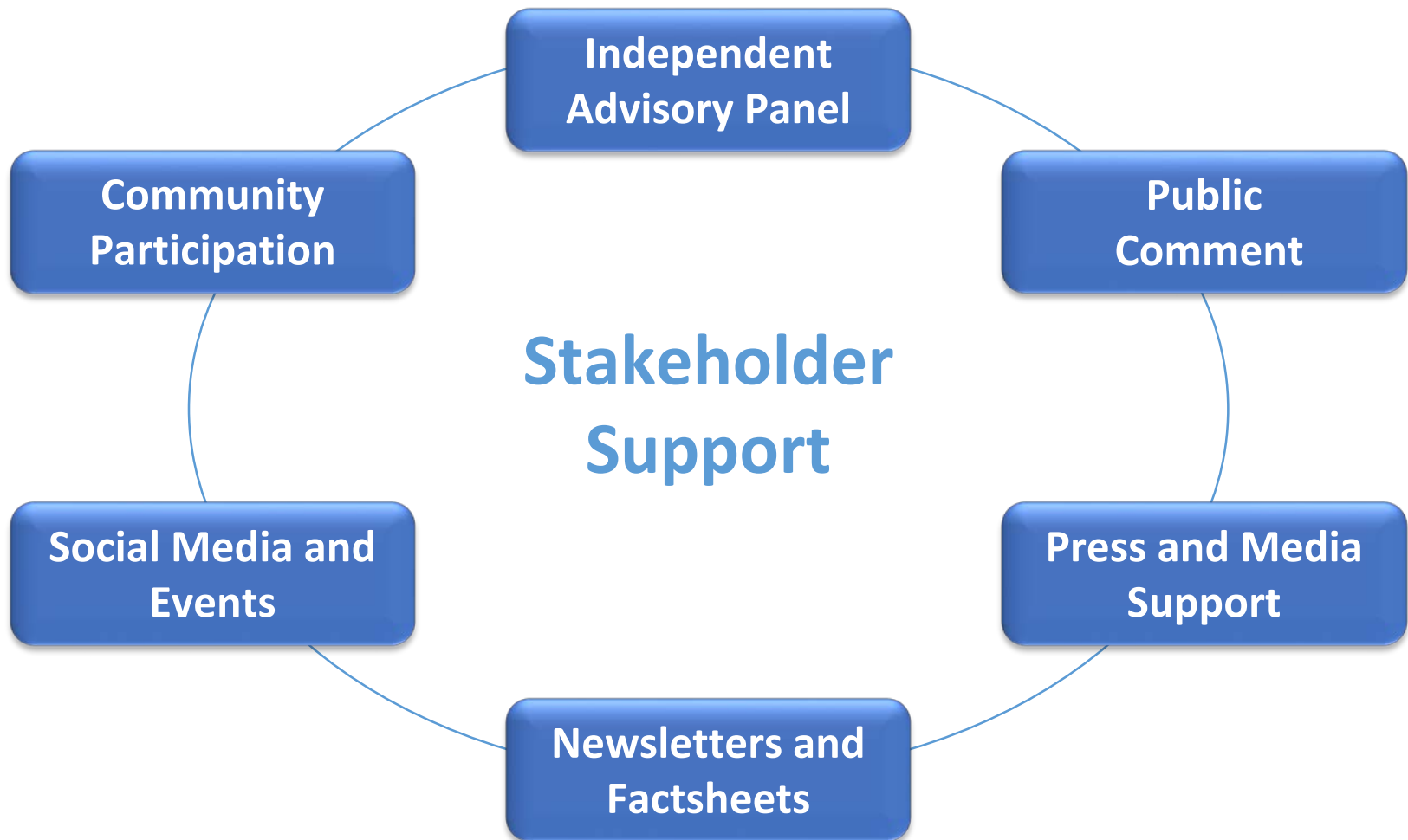
# Potential Outfall Discharge Requirements

Anticipated NDPEs Discharge Requirements <sup>1</sup>		
Parameter	BOD	TSS
Average Monthly (mg/L)	30	30
Average Weekly (mg/L)	45	45
30-Day Average Percent Removal (%)	>85%	>85%

- California Ocean Plan identifies for brine discharge receiving water limit of 2 ppt above natural background (no greater than 100 meters from discharge point)
  - Recycled water system brine concentrations are significantly lower than the salinity of seawater and thus should easily comply with this requirement

<sup>1</sup>Morro Bay Cayucos Facilities Master Plan Amendment 2 (MWH 2010), Clean Water Act (133.102)

# Public Outreach for Beneficial Reuse





# Funding & Financing Strategy

Identify Available Funding Opportunities



Screen for Programs Relevant to Project



Prepare Capture Plan



Submit Funding Application

- Water Recycling Funding Program (WRFP)
- Clean Water State Revolving Fund (CWSRF) Grants and Financing
- U.S. Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant
- U.S. Bureau of Reclamation Title XVI Water Reclamation and Reuse Program
- Integrated Regional Water Management (IRWM) Grants
- Prop 1

Track additional financing and funding opportunities continuously

# Funding and Financing Opportunities

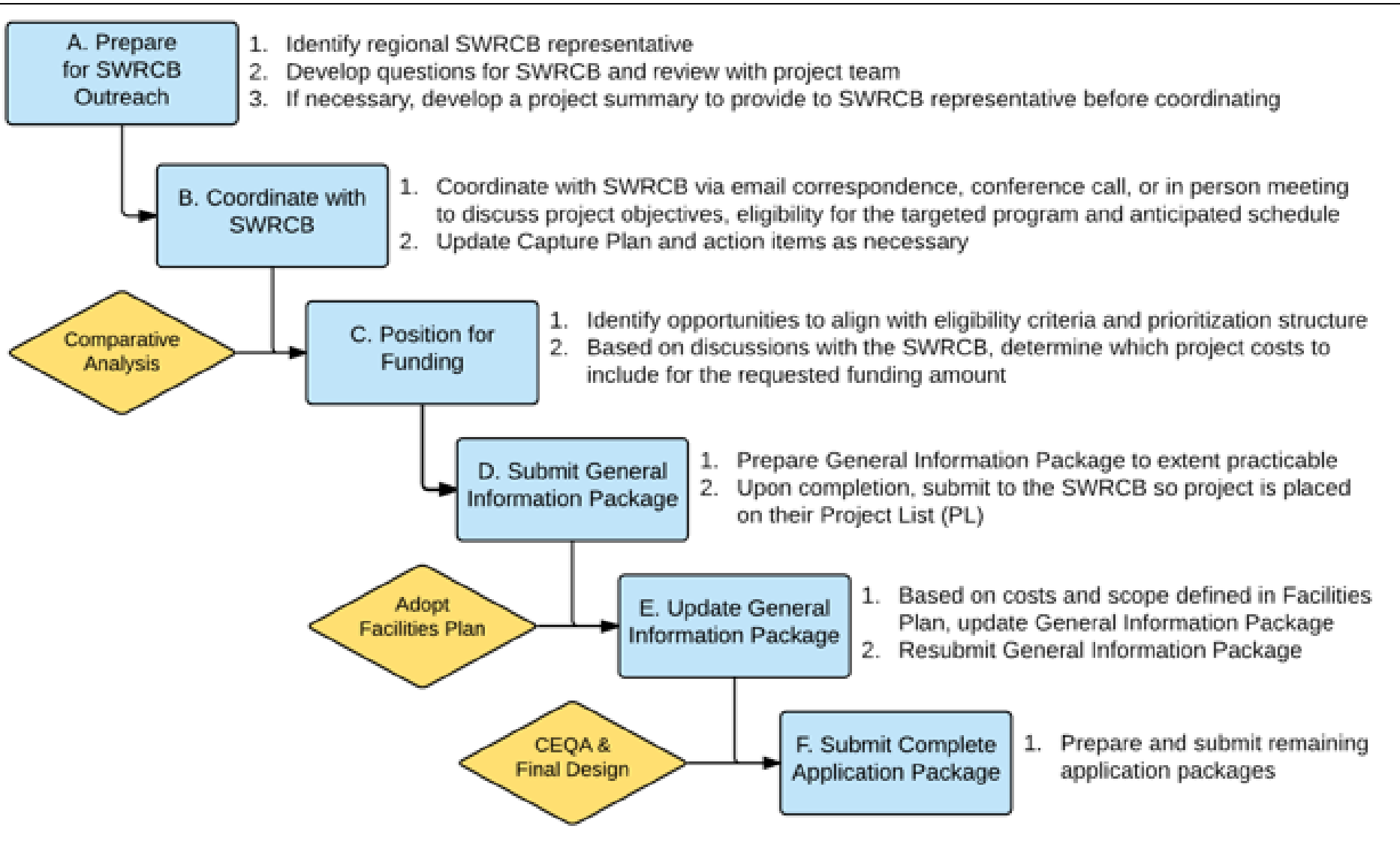
Funding Opportunity	Grant/ Loan	Funding Availability	Schedule/ Deadlines
WRFP Construction Funding Program	Grant and low-interest Financing	Available grant funds limited to the lesser of 35% of eligible construction costs or \$5 million. 20 year financing term at interest rate set to half of the most recent General Obligation (GO) bond rate.	Continuous Application Process
Clean Water State Revolving Fund (CWSRF)	Low-interest financing	No funding limit. 20 year financing term at interest rate set to half of the most recent GO bond rate.	Continuous Application Process
USBR WaterSMART Water and Energy Efficiency Grant	Grant	Funding Group I: Up to \$300,000 (project completed within 2 years) Funding Group II: Up to \$1,000,000 (project completed within 3 years) No more than \$500,000 in Federal funds provided to one applicant in a given Federal fiscal year.	FY 2016 Applications due January 20, 2016
USBR Title XVI Feasibility Studies	Grant	Funding Group I: Up to \$150,000 Funding Group II: Up to \$450,000 Maximum Federal cost share of 50%	FY 2016 Applications due December 10, 2016
USBR Title XVI Construction and Implementation		Lesser of 25% of project costs or \$4 million	
Integrated Regional Water Management Plan	Grant	Dependent on amount of Prop 84 money available for funding area (\$4.94 million remaining for the Central Coast Funding Area).	Applications typically due in summer.

\*Prop 1 funds anticipated to be available through CWSRF and WRFP programs

# Sample Capture Plan

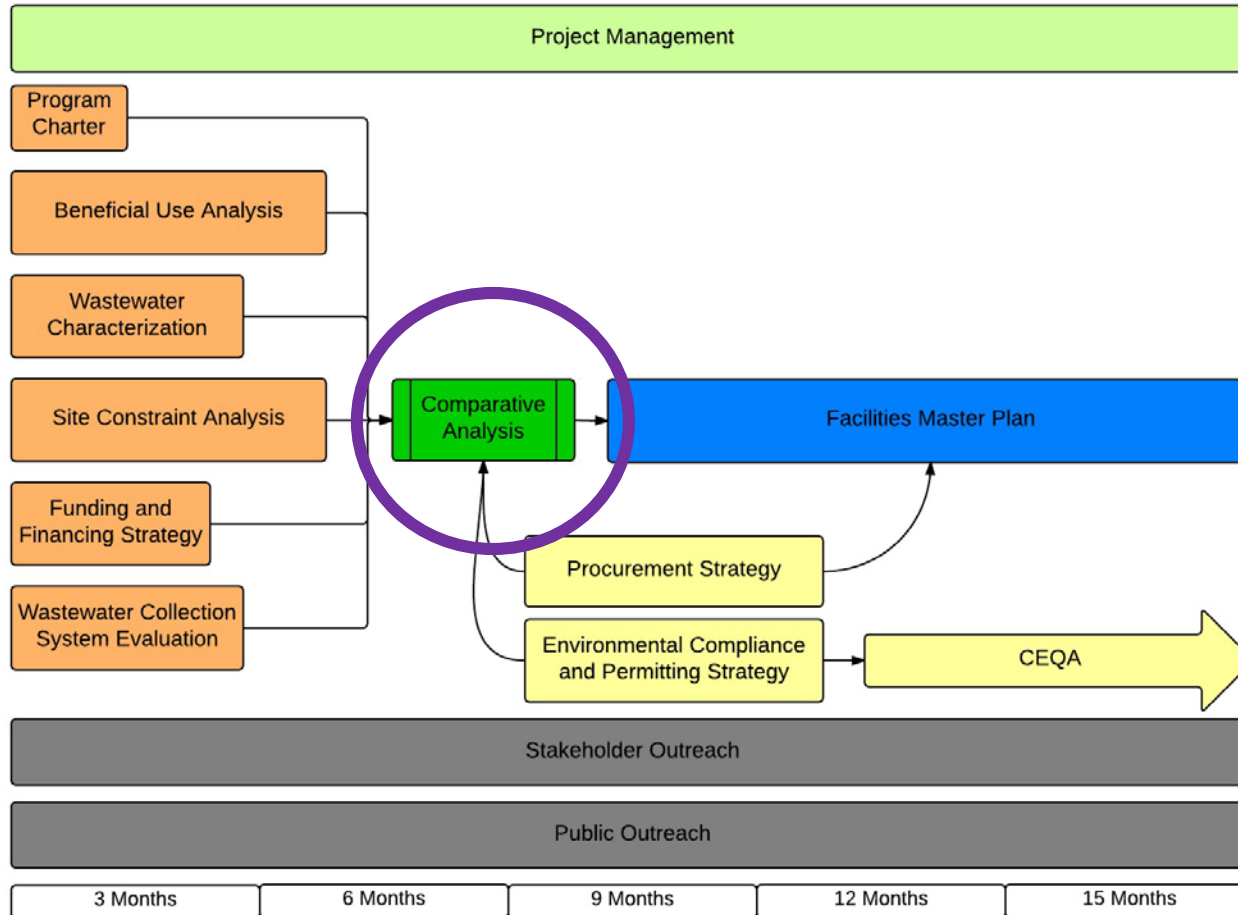
<b>WATER RECYCLING FUNDING PROGRAM (WRFP)</b>	
<b>AGENCY</b>	State Water Resources Control Board
<b>FUNDING TYPE AND RATES</b>	Grants, low interest financing, and 20-yr loans at ½ GO bond rate
<b>FUNDING LIMITS</b>	Grants limited to lesser of 35% or \$15M, CWSRF loans have no limit
<b>CONTACT(S)</b>	Jody Hack, (916) 341-5811, <a href="mailto:jody.hack@waterboards.ca.gov">jody.hack@waterboards.ca.gov</a>
<b>ACTIVITY</b>	<b>TARGET DATE</b>
A. Prepare for SWRCB Outreach	November 16, 2015
B. Coordinate with SWRCB	January 11, 2016
C. Position for Funding	Immediately following Activity B
D. Submit General Information Package	March 25, 2016
E. Update General Information Package	January 11, 2017
F. Submit Technical, Environmental and Financial Security Packages	February 15, 2017
<b>STRATEGY</b>	
<b>ALIGNING WITH PROGRAM</b>	Key Project Driver: “potable water offset through recycled water production and beneficial reuse”
<b>POTENTIAL PROJECT COMPONENTS FOR FUNDING</b>	Materials and construction for preliminary, primary, secondary and tertiary treatment processes
<b>FUNDING REQUEST AMOUNT</b>	To be determined
<b>NOTES</b>	CWSRF funding application will be integrated with the WRFP construction funding application

# Sample Capture Plan



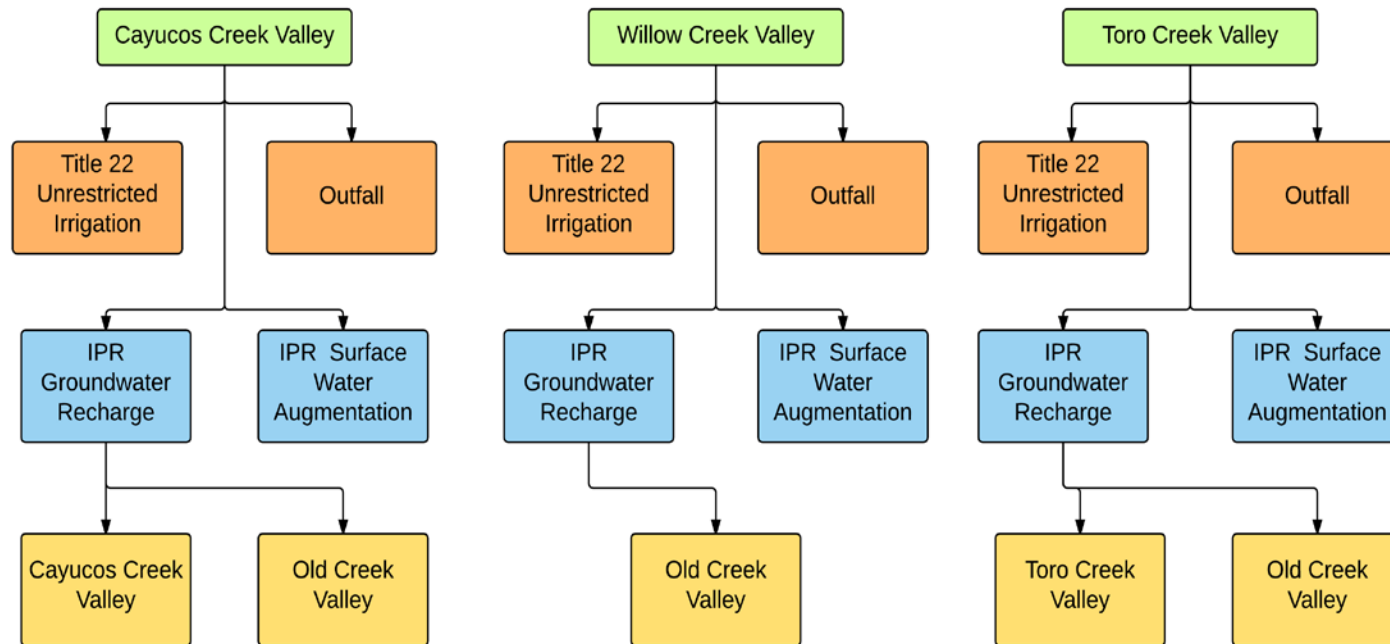
# Next Steps

## Phase 1 Work Plan



# Comparative Analysis

- Engineering, Environmental and Permitting evaluation of conceptual WRRF locations and beneficial use alternatives





# Upcoming Presentation

- December 3<sup>rd</sup> BOD Presentation
  - Water Resource Recovery Facility (WRRF) Siting Evaluation
    - Site Evaluation
      - Archeological
      - Biological
      - Geologic
    - Collection System Re-configuration Alternatives

Questions?

# Wastewater Treatment and Reuse

## Process Flow

