

March 26, 2015



City of Manteca
Reclaimed Water Facilities Master Plan
Public Meeting No. 1



Meeting Agenda

- Introduction
- What is Recycled Water?
- Goals of Recycled Water Use
- Master Planning Process
- Progress on the Master Plan
- Question and Answer Session

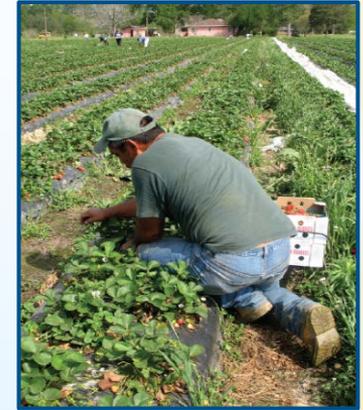
What is Recycled Water?

Recycled water is highly-treated wastewater that has been purified through multiple levels of treatment so that the water can be reused for a variety of non-drinking uses.



Recycled Water is Widely Used

- 11 states, more than 1,600 sites
- 160+ cities in California
- Used for agricultural irrigation in Manteca now
- Track record of safety
 - No reported cases of illness or allergies as a result of its use for landscape irrigation or agricultural uses



Recycled Water - Standards

- State Regulations (Title 22) identify rules for treatment and recycled water quality
 - Defines allowable uses
 - Establishes requirements for keeping the public safe through design, construction, and management practices
 - Rules for avoiding and identifying cross-connections
 - Signage requirements
 - Management Practices: Don't over-water, don't spray drinking fountains

TITLE 22 CODE OF REGULATIONS

Chapter 3. Water Recycling Criteria

§60301. Definitions.

§60301.220. Disinfected secondary-2.2 recycled water.

"Disinfected secondary-2.2 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.



Regulations Defining Recycled Water - Title 17

- Defines Responsibilities for Protection of Public Water Systems
- Requires User Supervisor
- Identifies Location and Type of Backflow Protection based on degree of risk
 - Air-Gap
 - Reduced Pressure Principle Device (RP)
 - Double Check Valve Assembly (DC)



Approved Uses of Disinfected Tertiary Recycled Water

Pasture for milk animals for human consumption

Food crops where recycled water contacts the edible portion of the crop, including all root crops

Structural fire fighting

Consolidation of backfill material around potable water pipelines

Mixing concrete

Soil compaction

Residential landscaping

Cleaning roads, sidewalks and outdoor work areas

Parks and playgrounds

School yards

Flushing toilets and urinals

Flushing sanitary sewers

Decorative fountains

Cemeteries

Commercial laundries

Landscape impoundments

Artificial snow making

Freeway landscaping

Industrial or commercial cooling or air conditioning

**Groundwater Recharge
(additional rules apply)**

Dust control on roads and streets

Manteca Recycled Water Quality

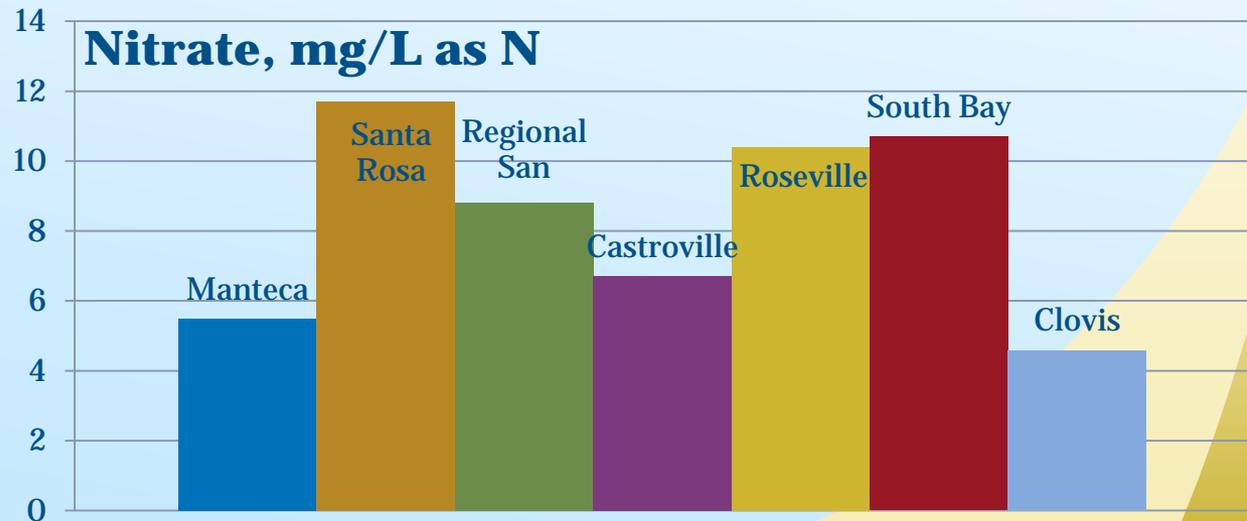
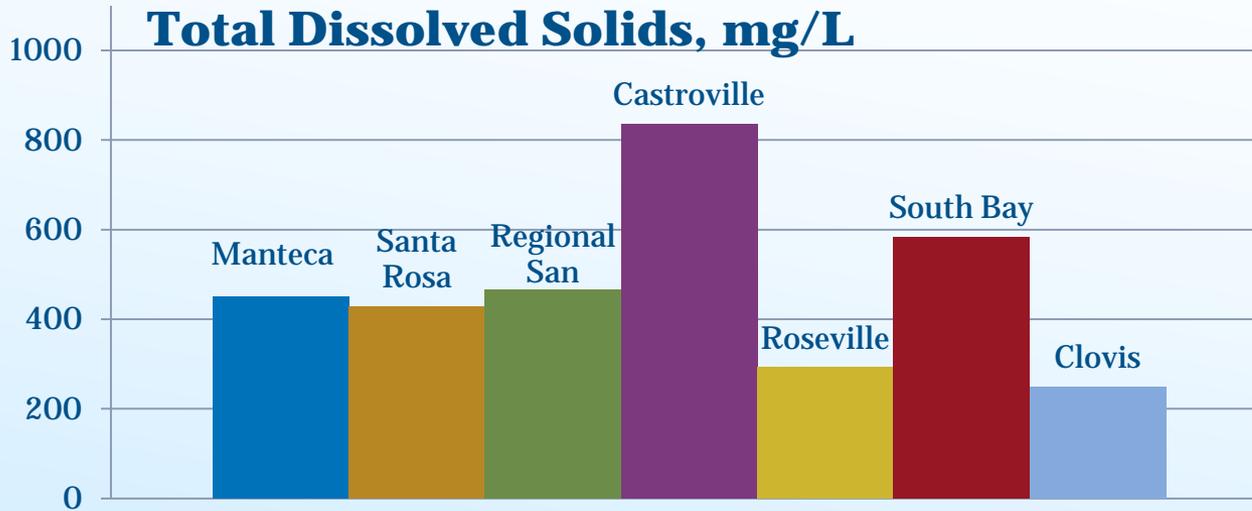
- Disinfected tertiary recycled water for discharge to the San Joaquin River
- No additional treatment is needed
 - Residual chlorine would be added to maintain disinfection
- Suitable for non-potable unrestricted reuse
- Manteca's water quality is comparable to other recycled water in use

Program Examples



Project	Inception Date	Capacity (MGD)
Santa Rosa	1968	22
Castroville (Monterey Regional Water Pollution Control Agency)	1990	18.5
Roseville	1997	3.6
South Bay Water Recycling	1998	110
Regional San (Sacramento)	2003	5
Clovis	2009	8.4
Manteca	2016+	Up to 9.85 MGD

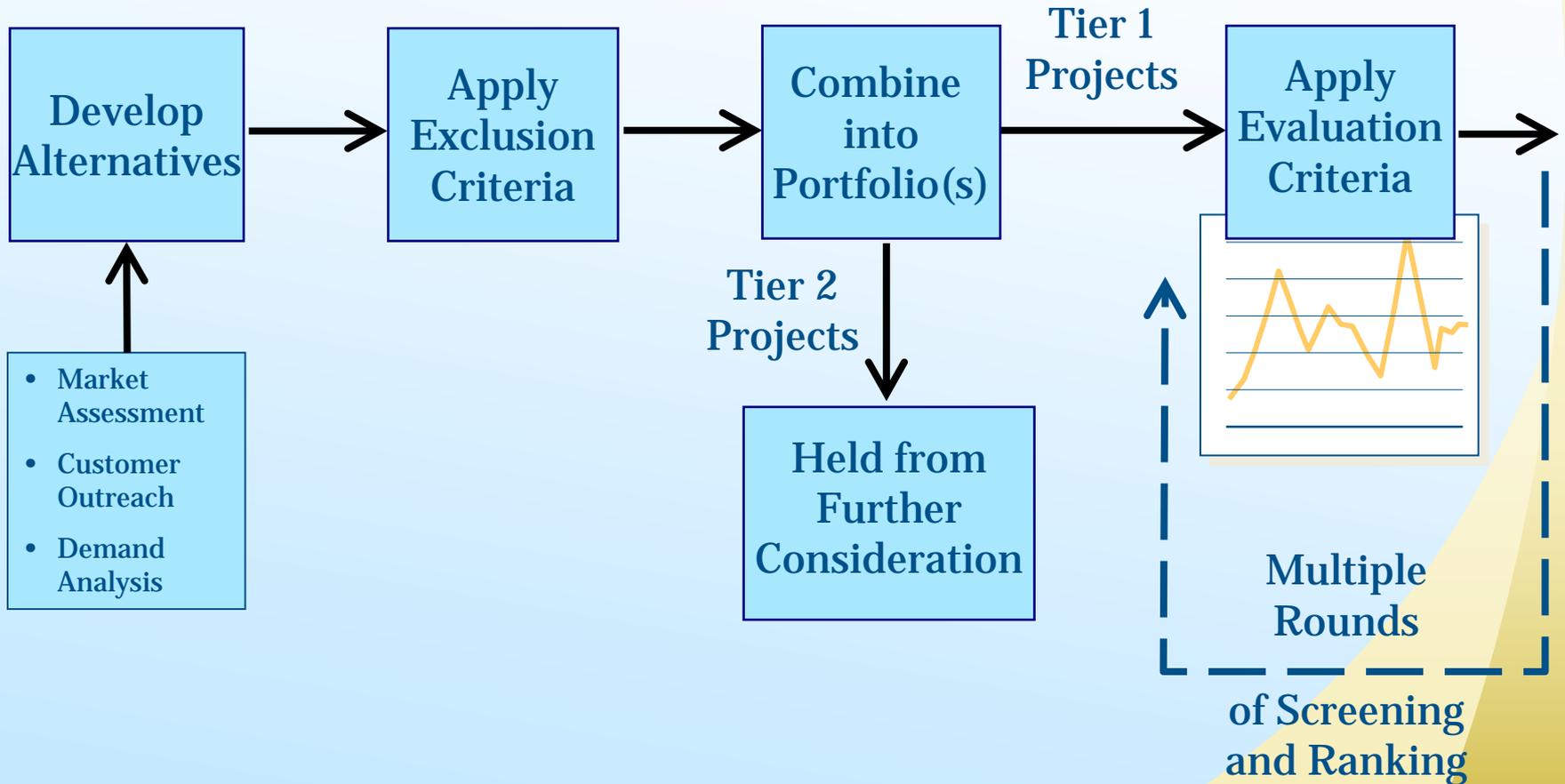
Manteca's Recycled Water Quality is Similar to Other Successful Programs



Goals of Recycled Water Use

- Use water to its highest beneficial use
- Improve water supply reliability for Manteca and the region
- Reduce groundwater overdrafting in the Basin

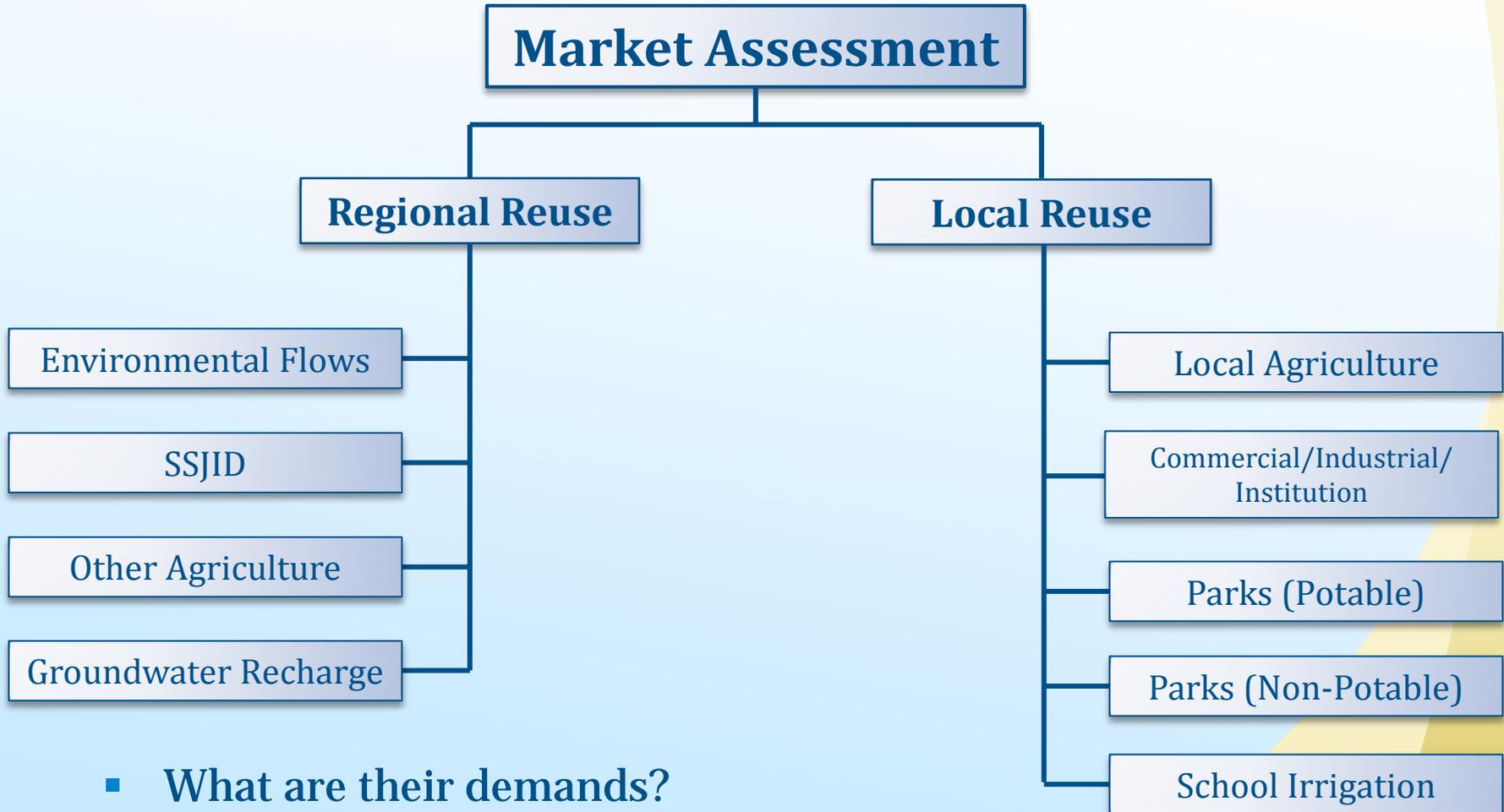
Master Planning Process



Process of Master Plan

- Evaluate potential for recycled water use within the City limits and with regional partners
- Develop concepts for storage and distribution of recycled water
- Identify and evaluate alternatives
- Develop Implementation Plan

Who is a Potential Customer?



- What are their demands?
- What are their water quality needs?

Evaluate Alternatives

- Develop alternatives to supply customers
- Identify economically-viable alternatives
- Maximize use of resource
- Offset potable use, if possible

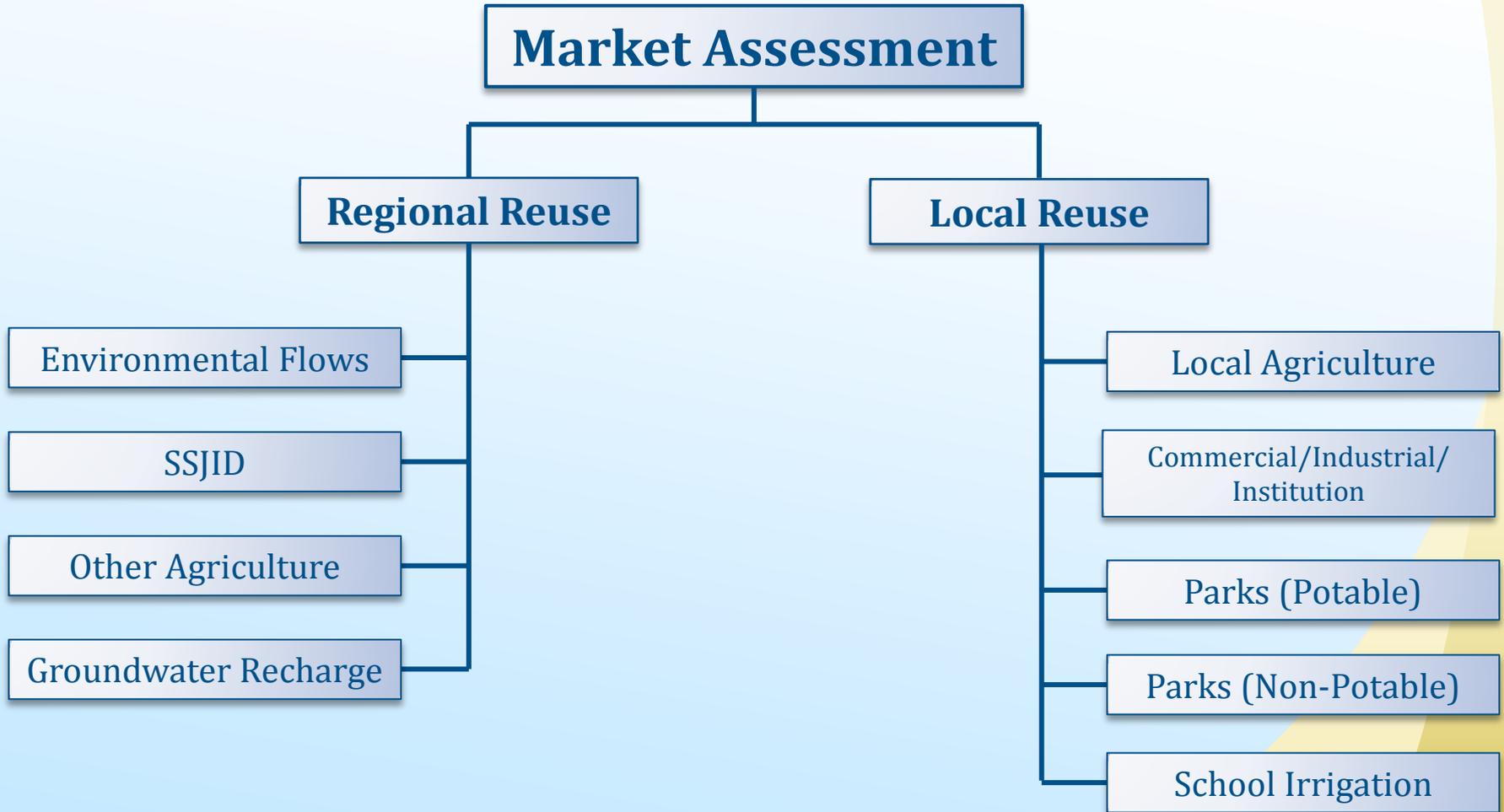
Implementation Plan

- Present recommended alternative(s)
- Develop timeline for selected alternative(s)
- Identify potential funding mechanisms
- Identify permitting requirements and timing
- Identify institutional requirements

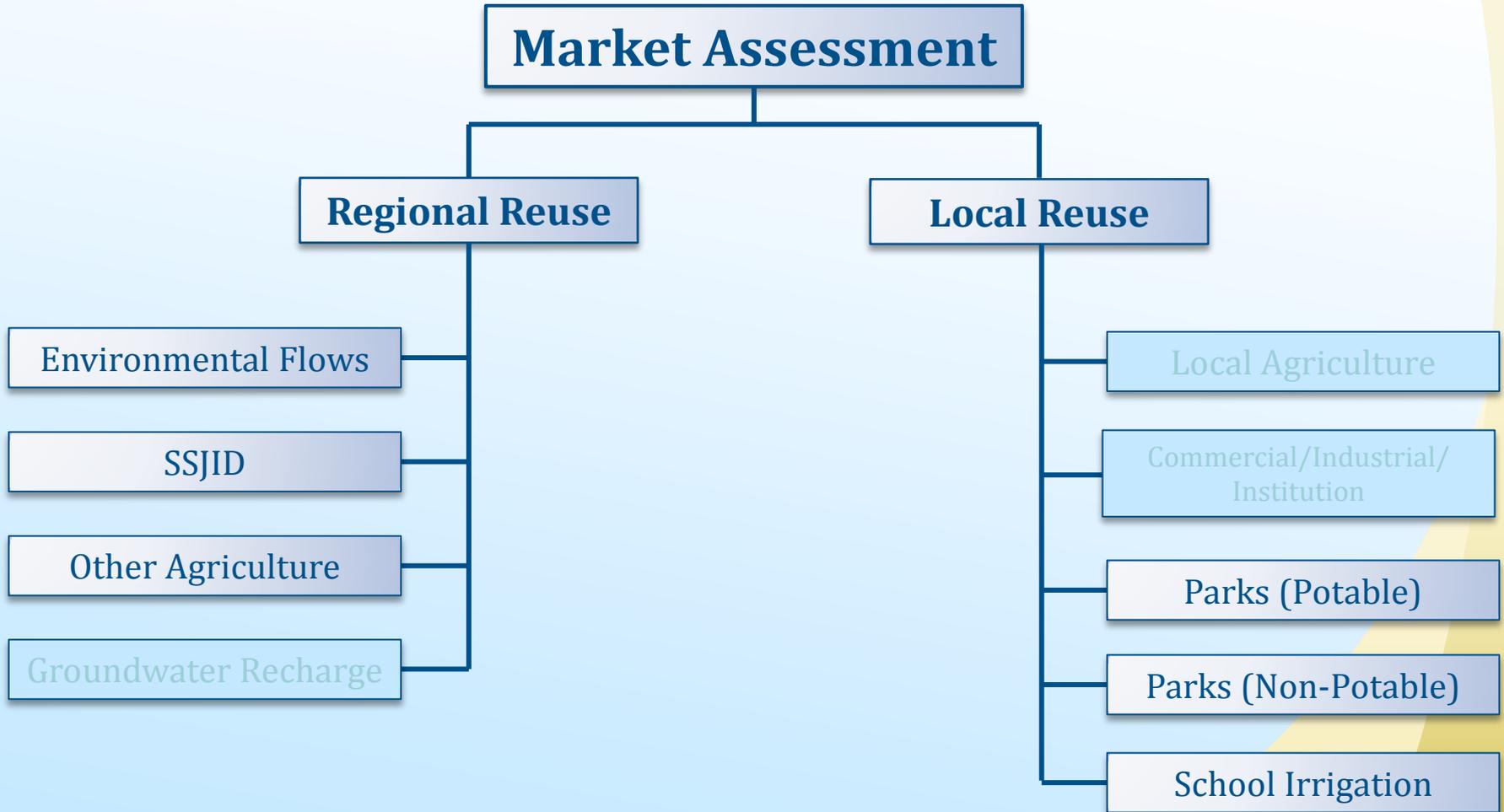
Progress to Date

- Met with representatives from MUSD and Parks & Rec Department to discuss recycled water use
- Gathered available irrigation and water use and water quality data
- Reviewed development plans
- Located potential customers
- Developed demand estimates

Uses to be Considered



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- **Local Irrigation**
 - MUSD fields
 - Manteca Golf Course
 - Athletic fields (Big League Dreams)
 - City Parks
- **Regional Users**
 - Irrigation Districts
 - Environmental Flows



Local Demands

Legend

 City of Manteca

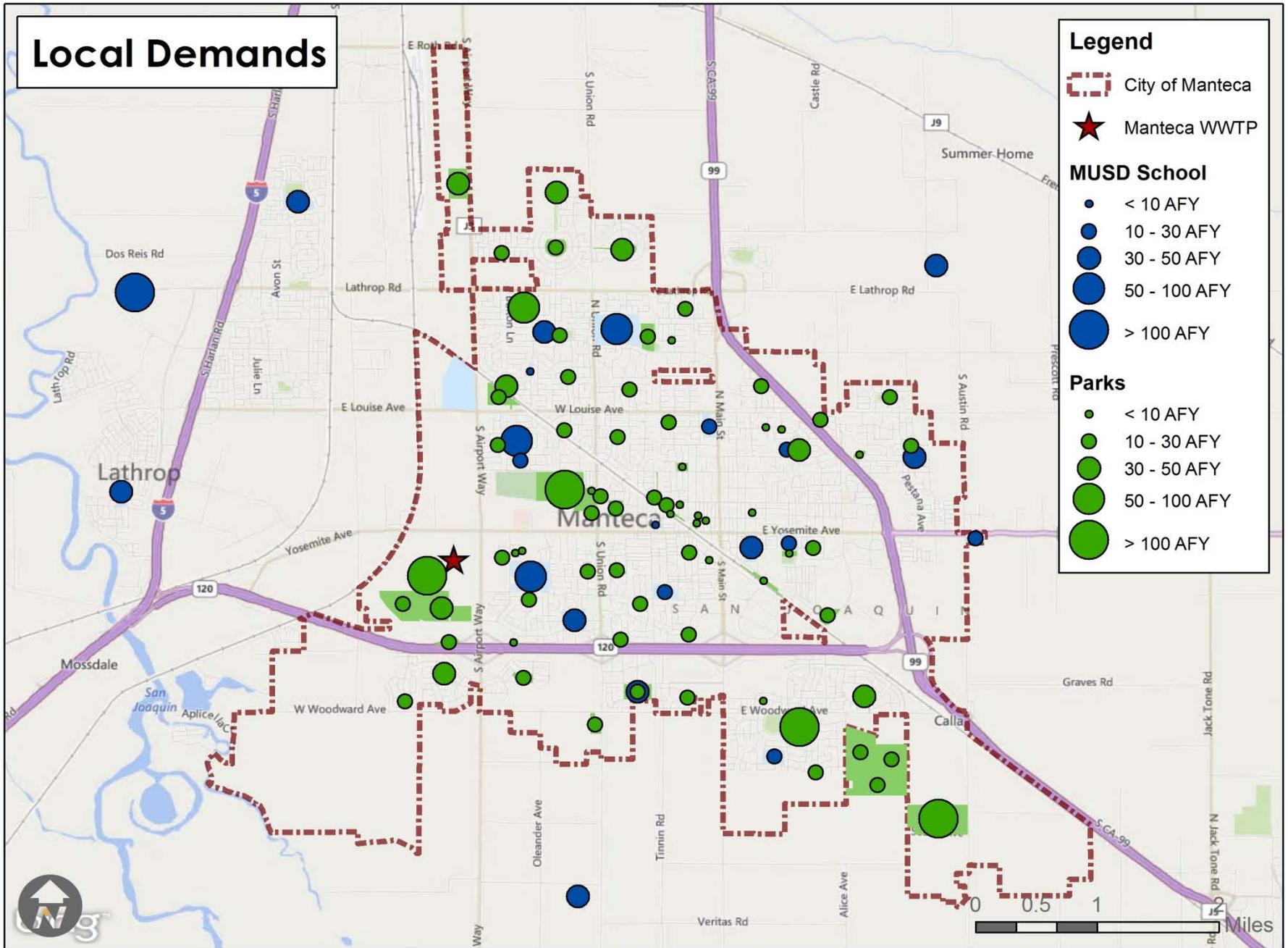
 Manteca WWTP

MUSD School

-  < 10 AFY
-  10 - 30 AFY
-  30 - 50 AFY
-  50 - 100 AFY
-  > 100 AFY

Parks

-  < 10 AFY
-  10 - 30 AFY
-  30 - 50 AFY
-  50 - 100 AFY
-  > 100 AFY



Next Steps

- Meet with potential regional customers
- Develop project alternatives
- Get potential customer and public input/feedback
- Continue public outreach

Next Set of Work Items



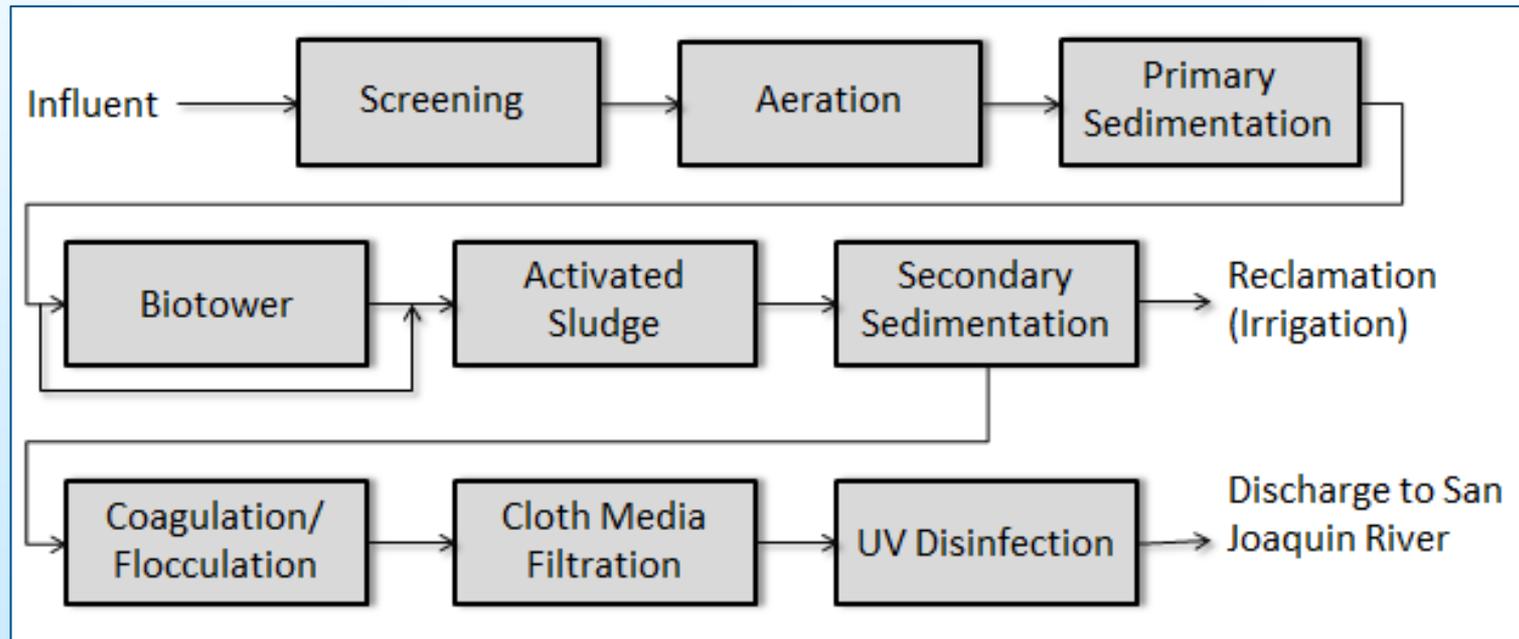
Questions??

Additional Slides

Recycled Water - Standards

- Title 17: requirements for protection of drinking water system from cross-connections and backflow protection.
 - Defines Responsibilities for Protection of Public Water Systems
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Manteca's Treatment System



Putting the Risk into Perspective

Number of years of exposure to recycled water to equal conventional dose.

0 4,000 6,000 8,000 10,000 12,000 14,000 16,000 20,000 40,000 60,000 80,000 100,000 150,000 200,000 250,000



KEY: Four common scenarios where people may come into contact with recycled water.



Child at Play



Ag Worker



Landscaper



Golfer

Questions and Answers

- We have specific answers to Neighbors United questions...