

Recycled Water Customer Conversions

OC WaterReuse Meeting

Presented By:

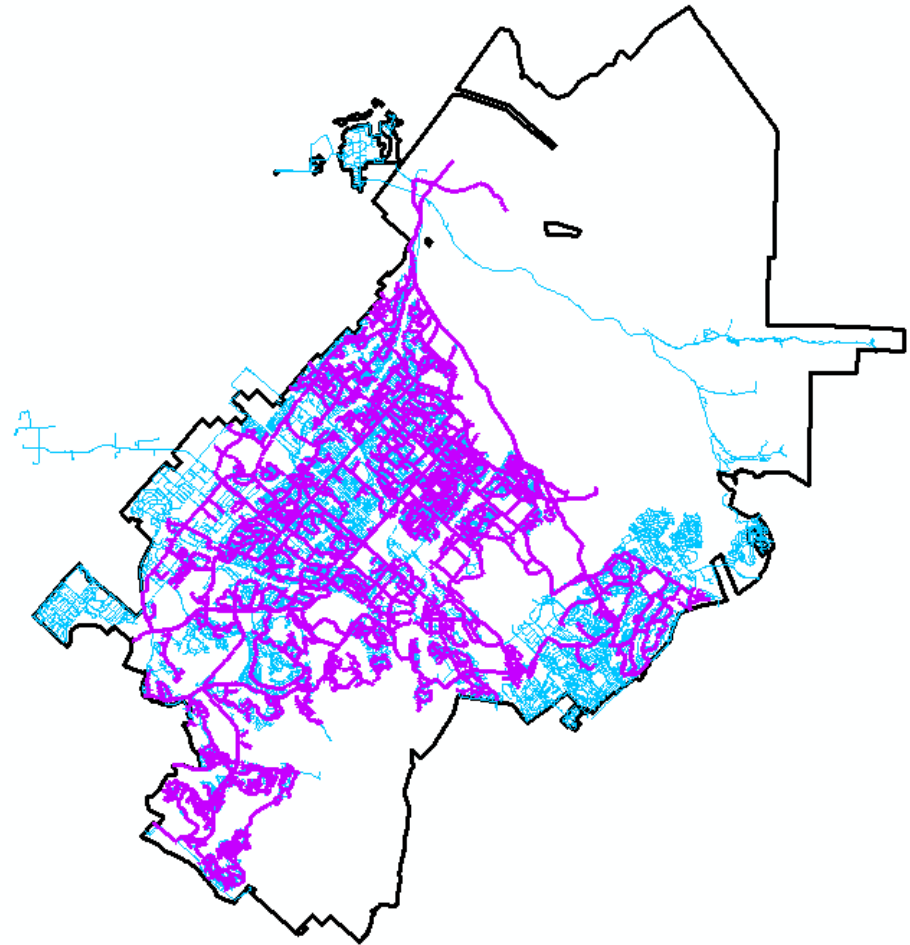
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June 15, 2017






Project Background – IRWD Recycled Water System

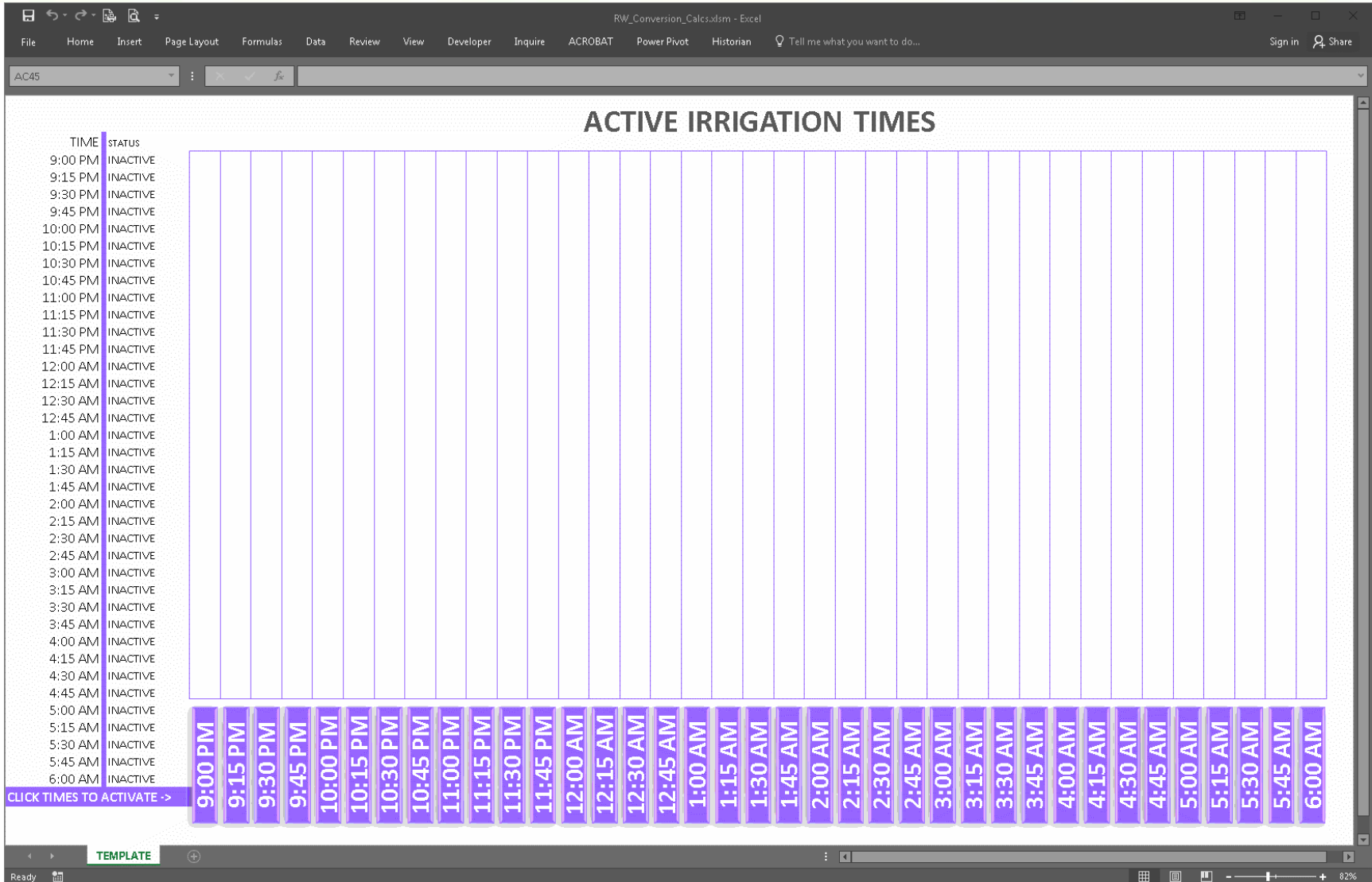
- 50 Years of Recycled Water!
- Recycled System Summary
 - 540 miles of recycled pipes
 - 26 BPS
 - 17 Tanks & Reservoirs
- 1,810 miles of potable pipes
- ~30% of total demand is supplied by recycled water



Project Background – Purpose & Goals

- Why hydraulic modeling?
- ***Developing*** versus ***Developed*** recycled water system
- Weighing Customer and IRWD priorities
 - Customers:  or 
 - IRWD: psi, velocities, tanks, pumps, PRVs... 
- Need to determine:
 1. What impacts will adding a customer have?
 2. Are the impacts within IRWD criteria?
 3. Are there system improvements needed?

Customer Demands Usage Patterns



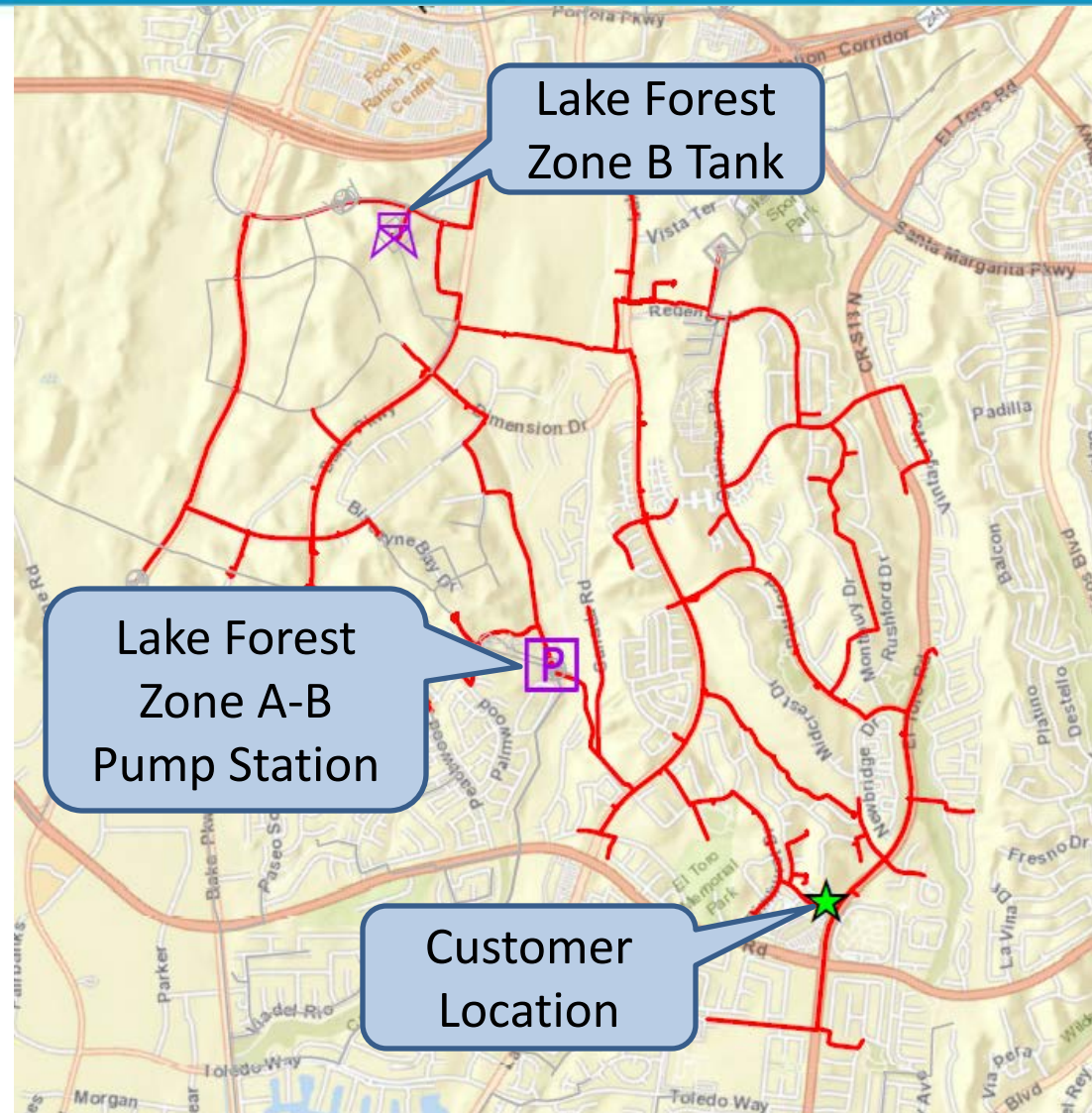
Darrin Park Recycled Water Conversion Customer Characteristics

Customer Characteristics

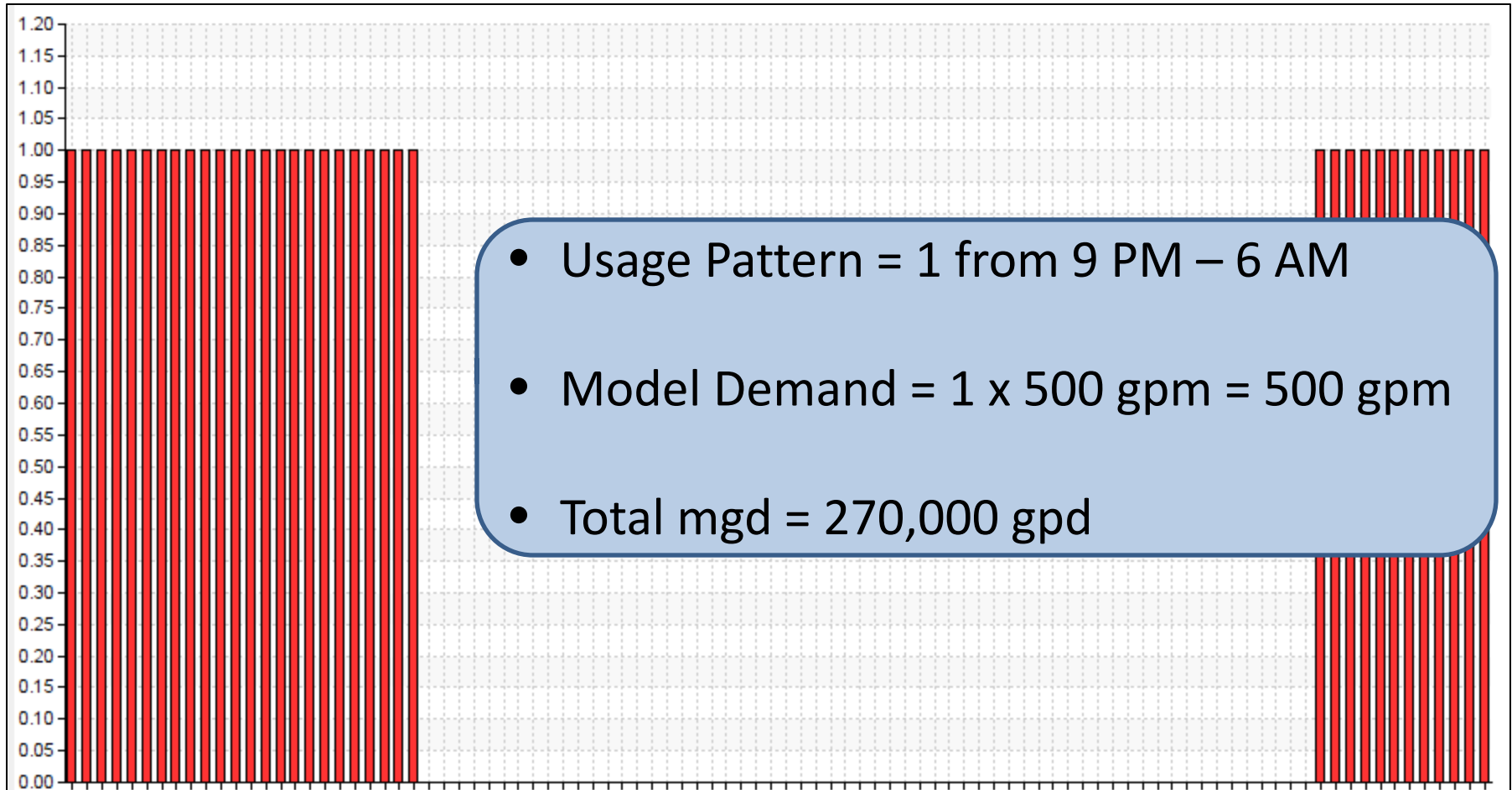
- Located in Lake Forest Zone B
- Usage = 12.6 AFY
- Two 2" Turbo Meters with 250 gpm capacity each (500 gpm total)
- Active during peak hours from 9PM – 6AM

System Verification

- Dynamic Pressures > 40 psi
- Pipe Velocity < 8 fps MDD
- Tank Levels
- Pump Modifications



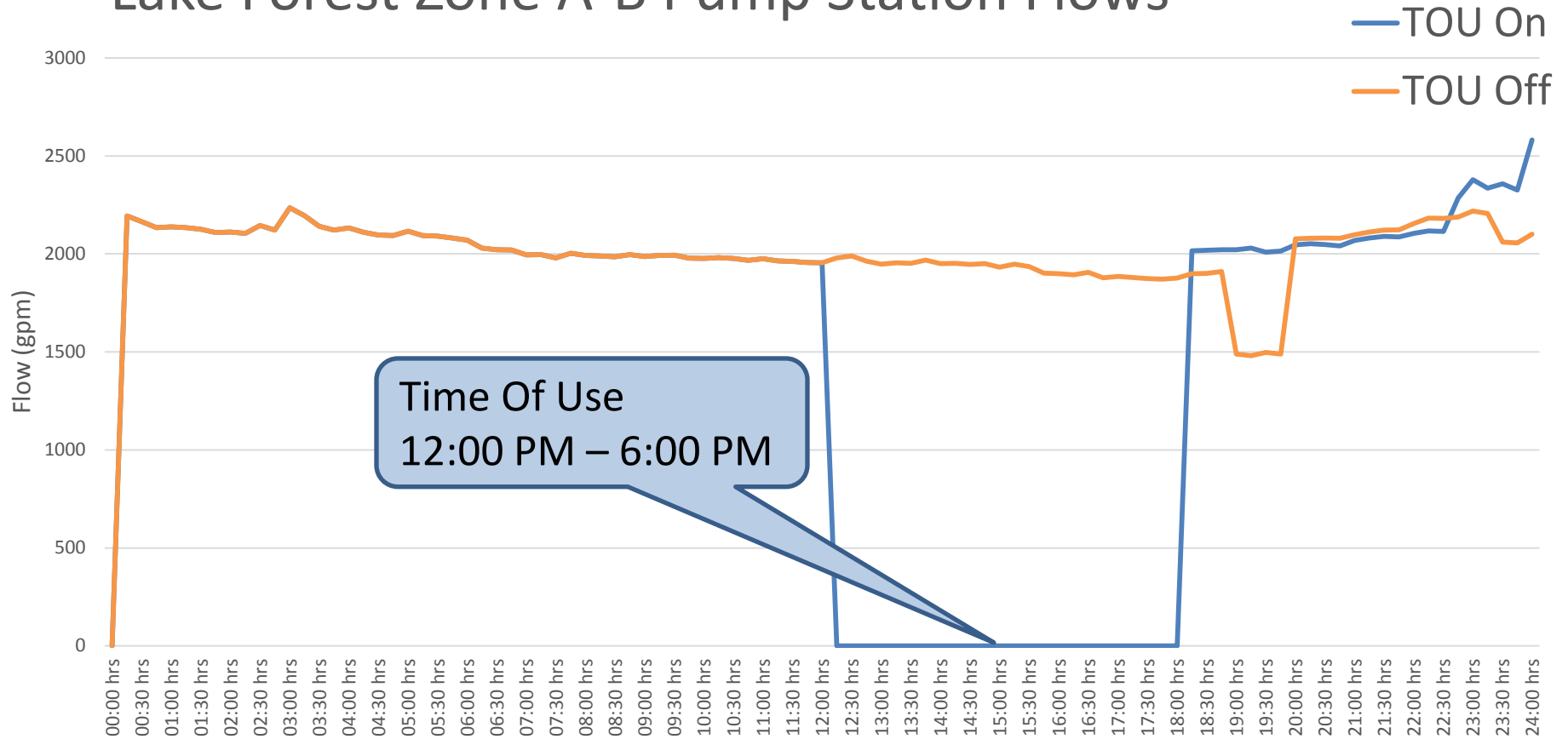
Usage Pattern



Lake Forest Zone A-B Pump Station Flows

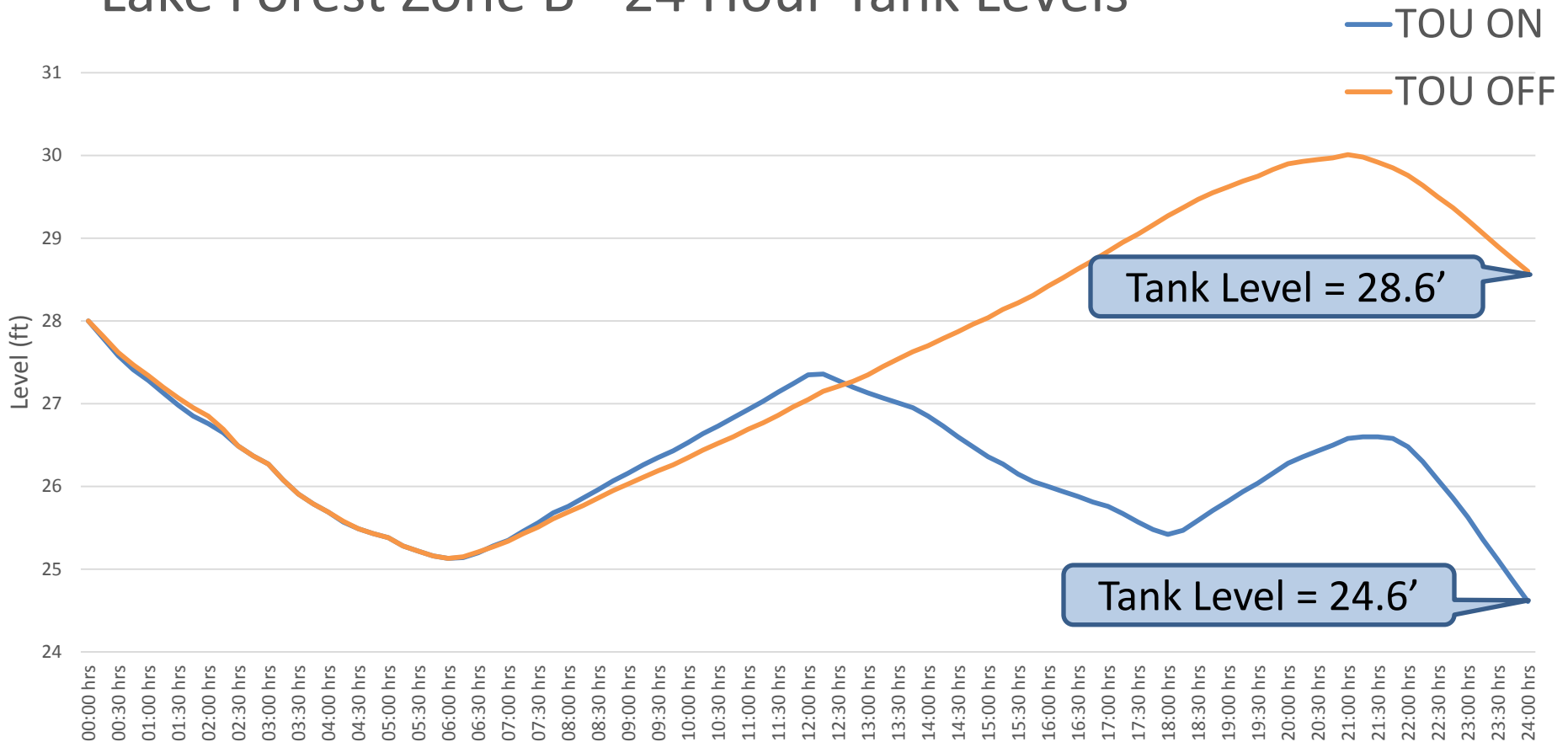
Time Of Use On / Off

Future Maximum Day Demand:
Lake Forest Zone A-B Pump Station Flows



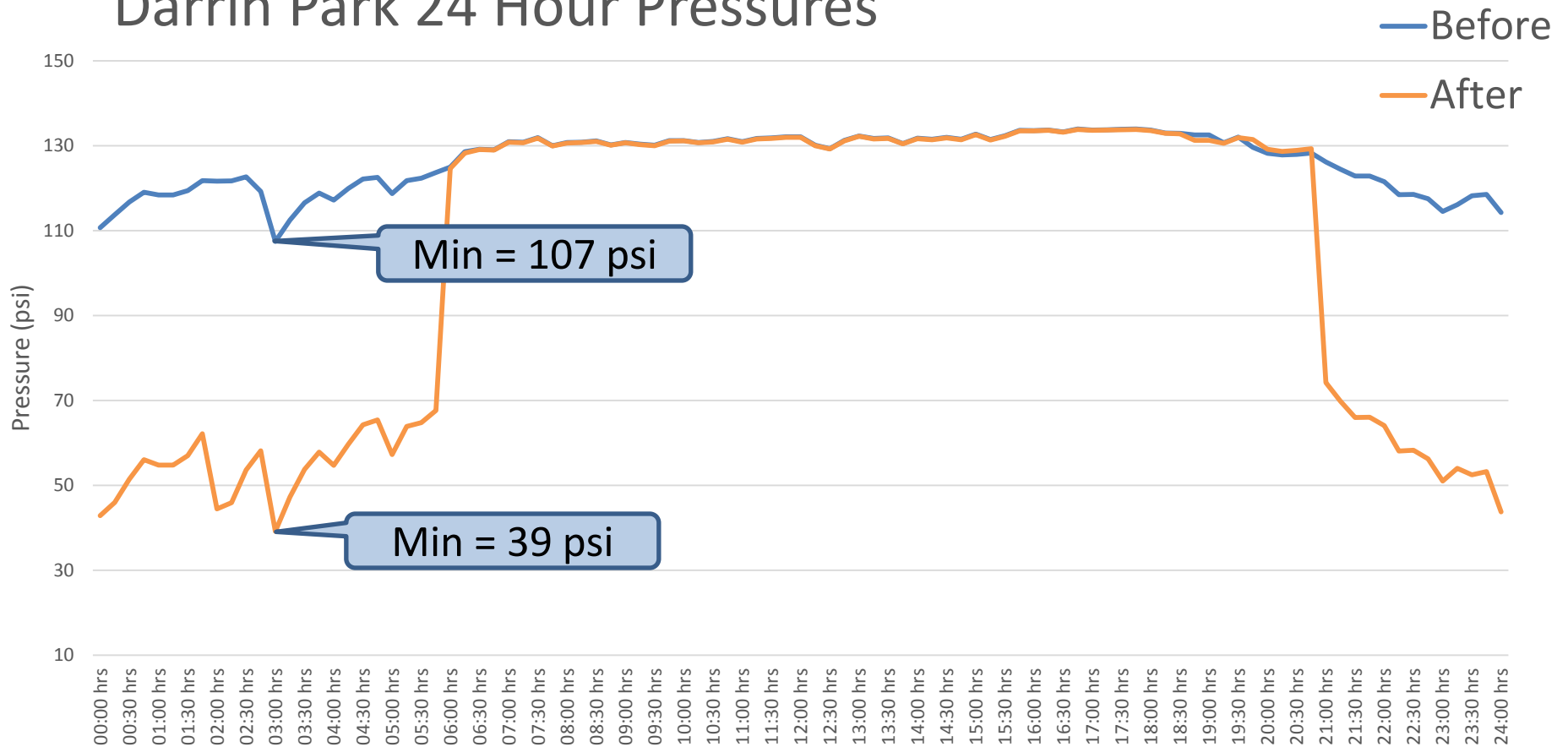
Lake Forest Zone B Tank Recovery

Future Maximum Day Demand: Lake Forest Zone B - 24 Hour Tank Levels

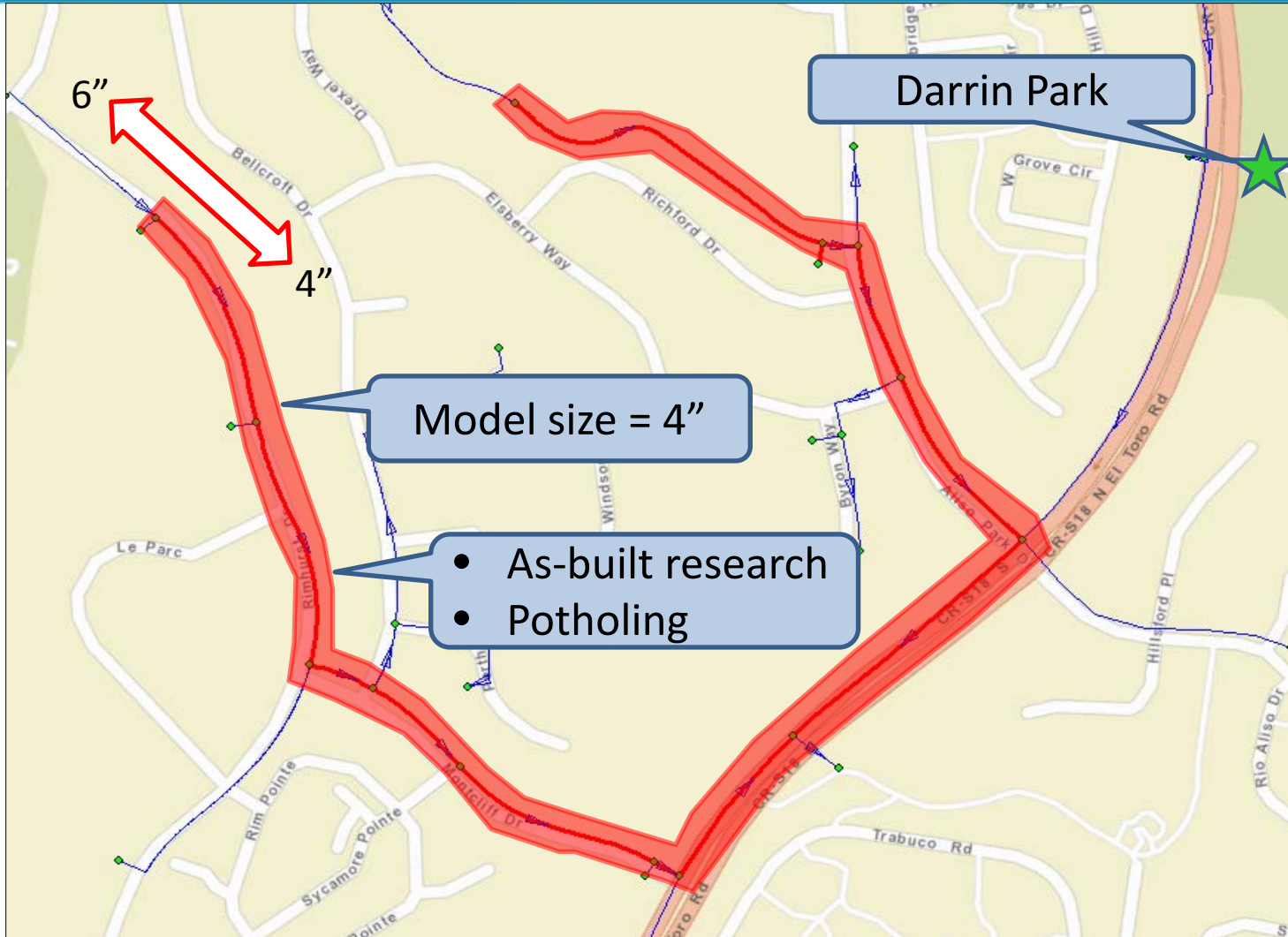


Darrin Park Pressures Before and After Conversion

Future Maximum Day Demand: Darrin Park 24 Hour Pressures



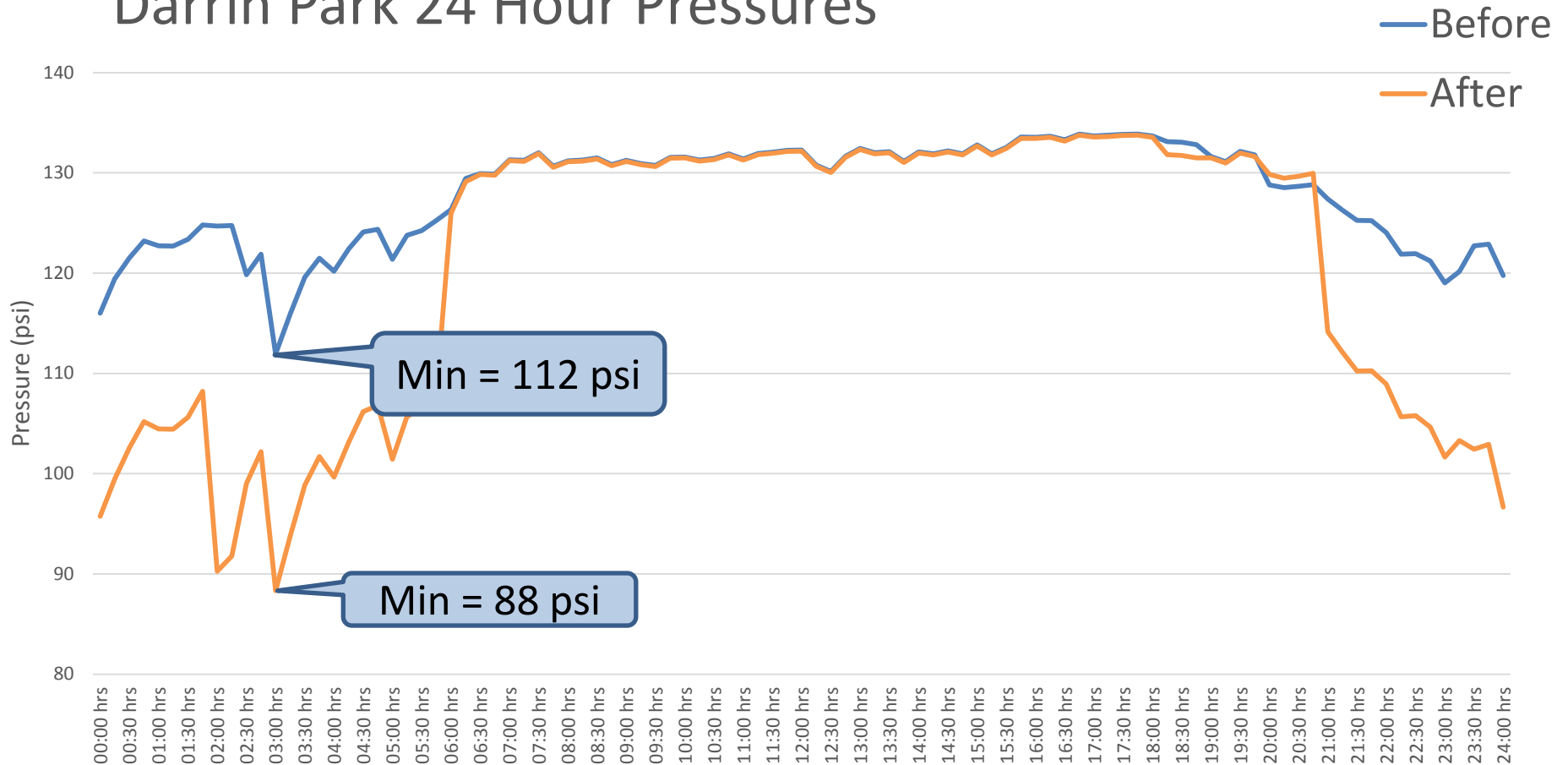
Model System Verification



Darrin Park Pressures



Pipe Diameters Increase from 4" to 6"

Future Maximum Day Demand:
Darrin Park 24 Hour Pressures



Conclusions / Recommendations

1. Lake Forest Zone A-B PS – Additional run time through TOU to maintain Lake Forest Zone B Tank Levels at 28’.

2. Verify pipe sizes near Darrin Park
 - 4-inch pipes near Darrin Park = 39 psi 
 - Increase booster pump supply
 - Upsize system pipes
 - 6-inch pipes near Darrin Park = 88 psi 
 - Increase booster pump supply