Leon Creek WRC Interconnect Aerial Crossing Impact Analysis

September 20, 2012

TFMA Fall 2012

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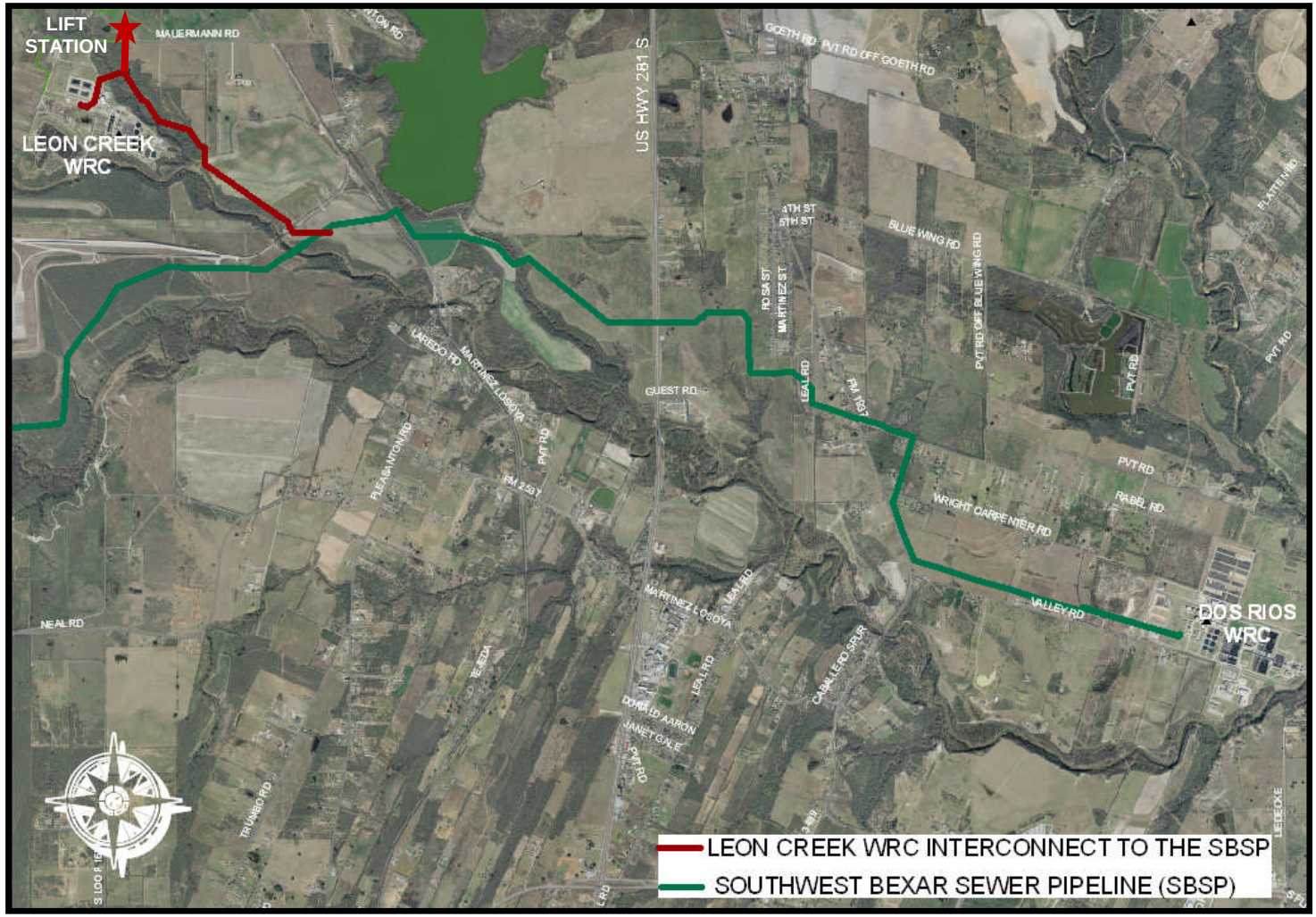
Agenda

- Project purpose and overview
- Hydraulic Results
- Impact Analysis
- Conclusions

Project Purpose

- Divert flows from SAWS' Leon Creek Water Recycling Center (WRC) to SAWS' Dos Rios WRC via the Southwest Bexar Sewer Pipeline
- Eliminate a sewage lift station currently serving Texas A&M-San Antonio

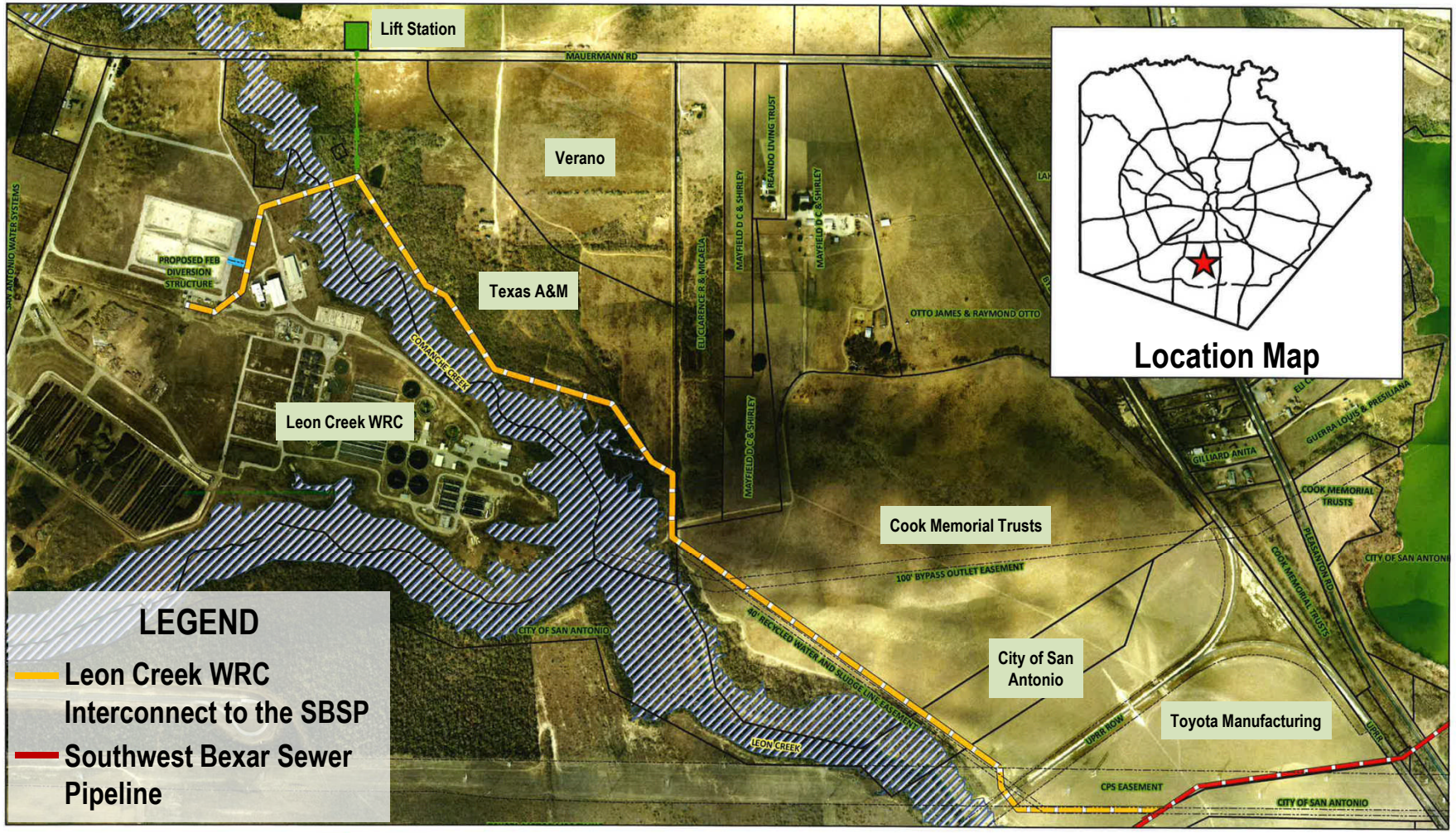
Project Overview



Project Benefits

- Eliminates the need for a costly expansion of the Leon Creek WRC
- Elimination of lift station reduces potential for odors near Texas A&M-San Antonio
- Accommodates future flows from the Texas A&M and Verano developments

Proposed Pipeline Alignment



Siphon Crossing Disadvantages

- Odor from septic conditions during periods of no-flow and low-flow
- Hydrogen sulfide gas creating a more corrosive environment inside the structure
- Solids settlement within the siphon
- Excavation or boring required

Diversion Solution with Aerial Crossing

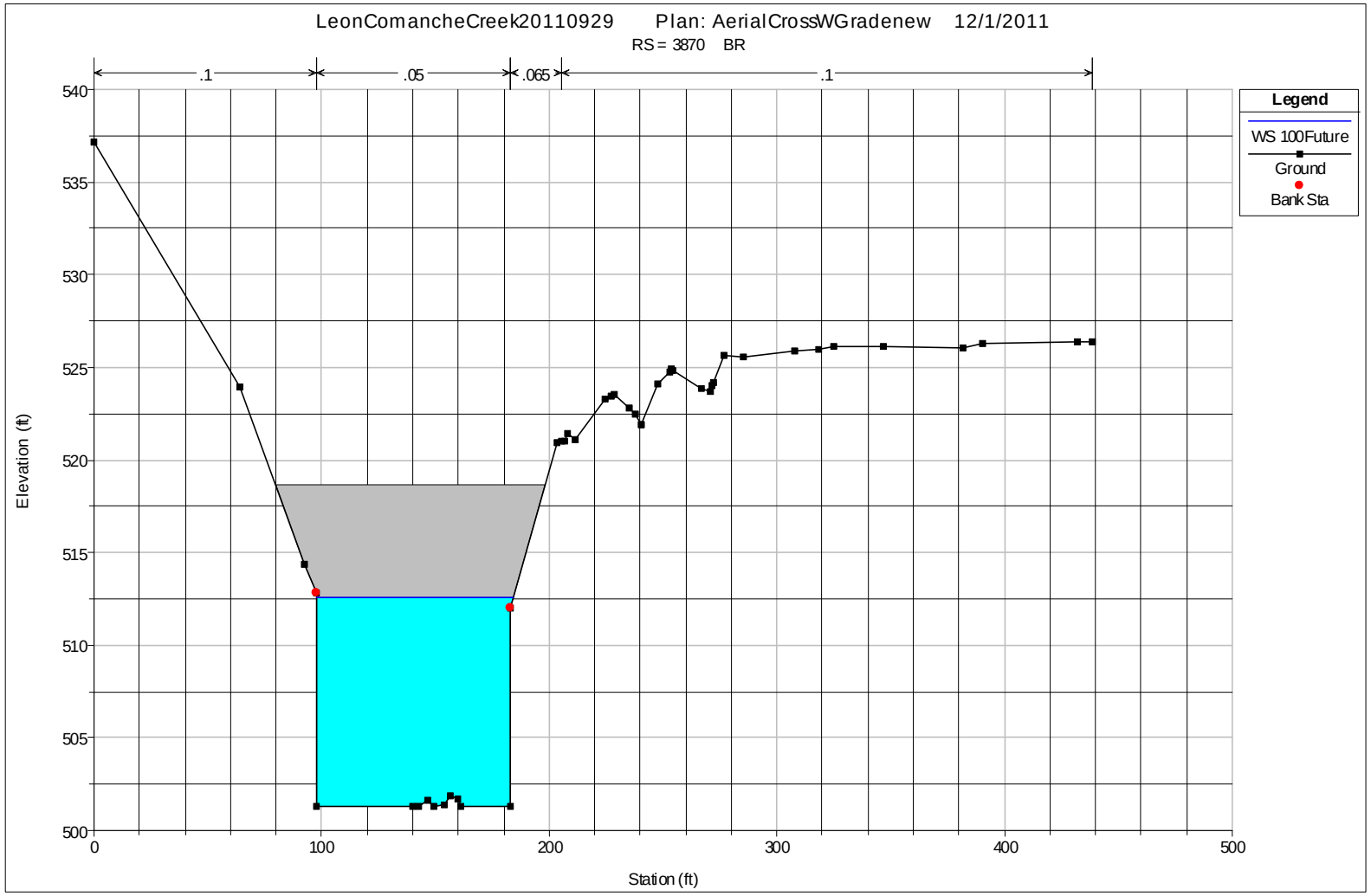
- Simplified configuration
- Reduced structural improvements
- Minimal mechanical requirements
- No additional bar screens
- Grit removal not required
- Reduced capital and O&M costs

Design Mitigation Actions

- 72-inch diameter steel carrier pipe that is ¾-inch thick
- 60-inch glass fiber reinforced plastic (FRP) wastewater pipeline
- Annular space between steel carrier pipe and FRP pipe filled with high density polyurethane foam grout to distribute impact forces
- Concrete footings set 15-ft deep on 60-inch drilled shaft substructures into clay stone
- Each footing will be supported by a 24-inch concrete cradle to hold the carrier pipe


5688
5415
5354
5266
4612
4514
4373
4191
4012
3961
3882
3847
3770
3654

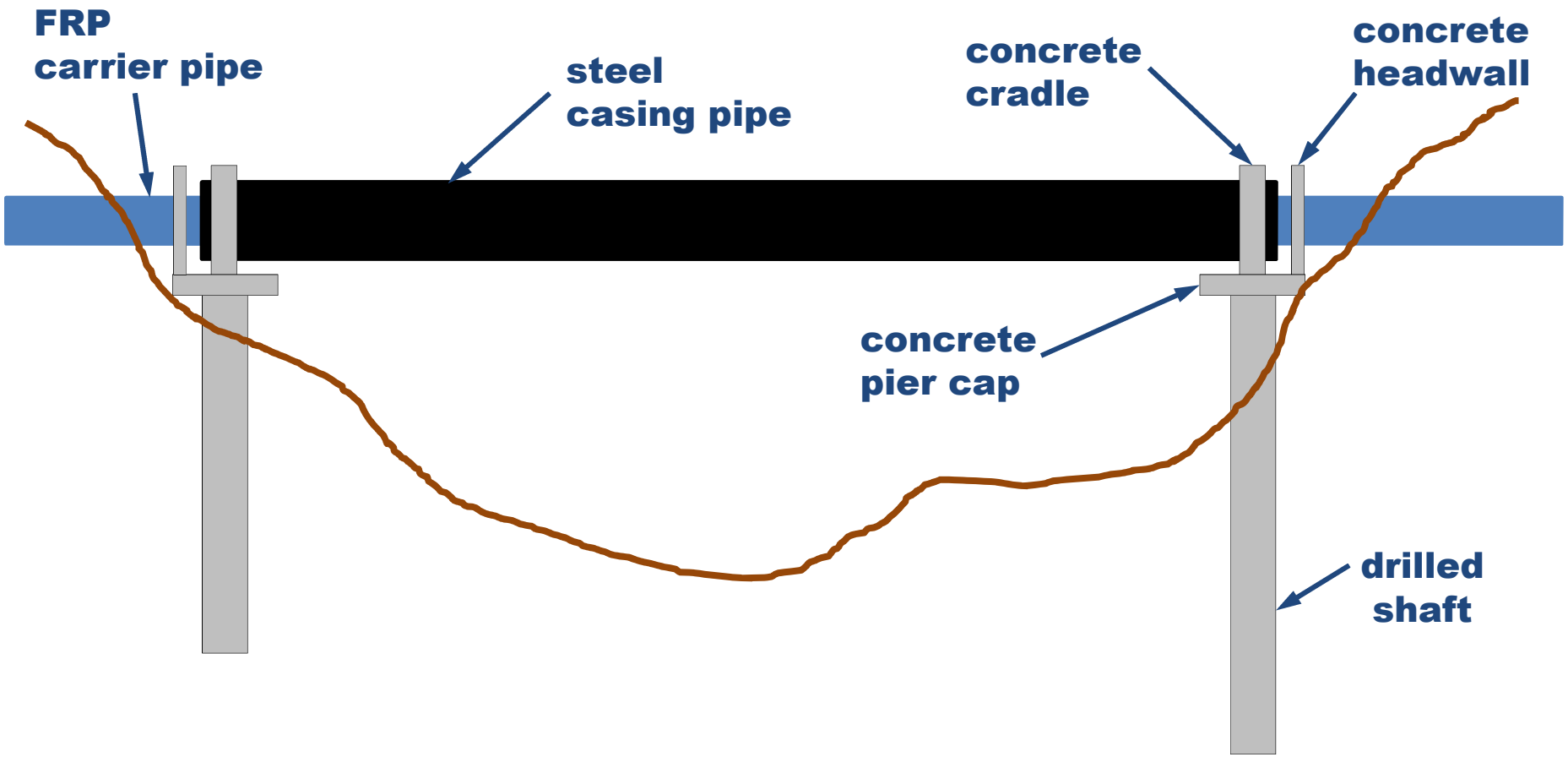
Pipeline Crossing Hydraulics

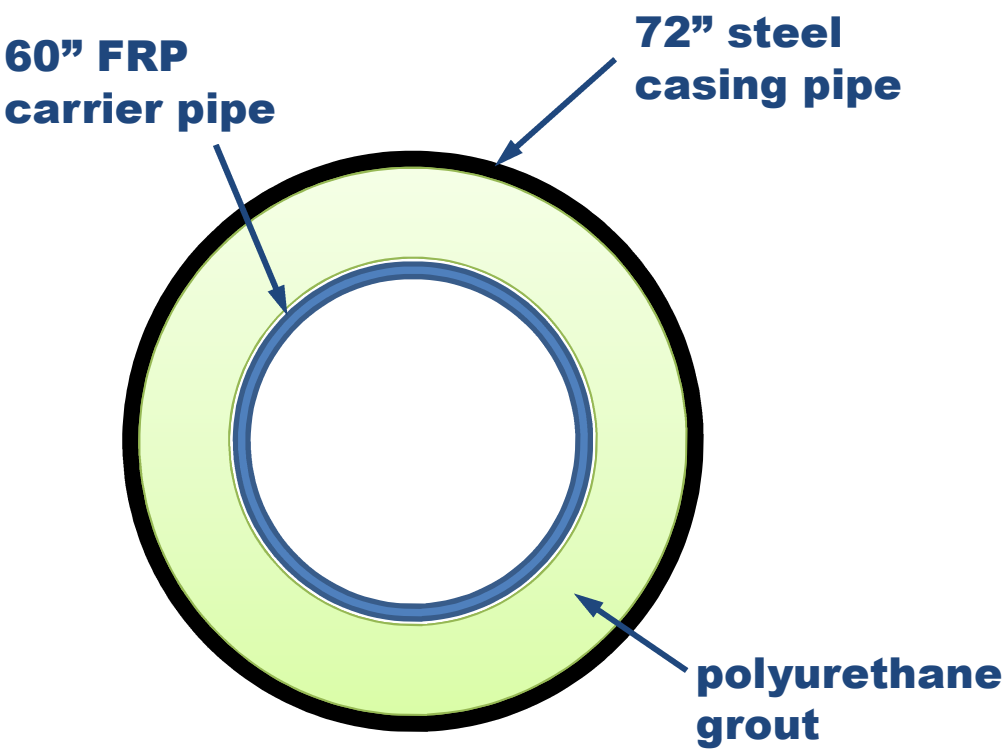


Hydraulic Study Results

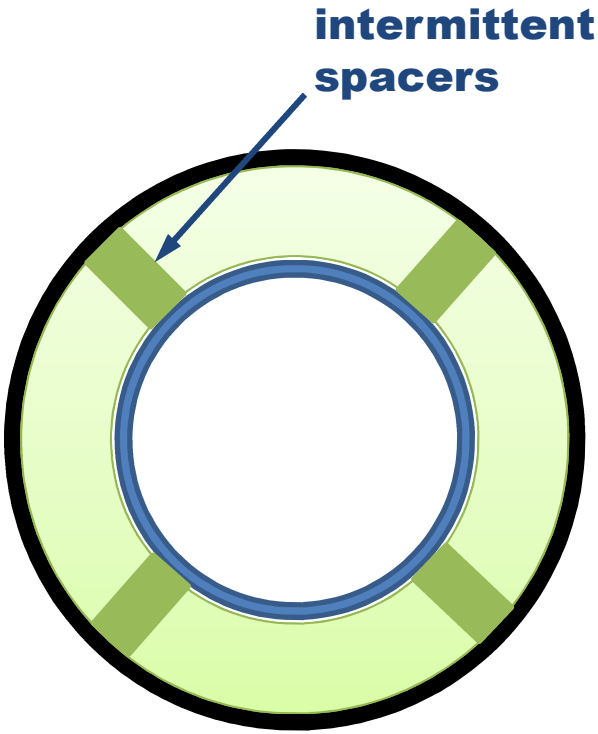
- Pipeline modeled as a bridge deck
- 100-Year Flood WSELs Impinge on the Carrier Pipe
- Increases in WSELs mitigated by channel shaping at the crossing
- Pipeline is approximately 1000-ft downstream of Mauermann Road
- Big Question – What if an SUV washed off Mauermann?

Aerial Crossing





Typical Cross Section



At Spacers