US EPA
Dixie Drain Story
May, 2017

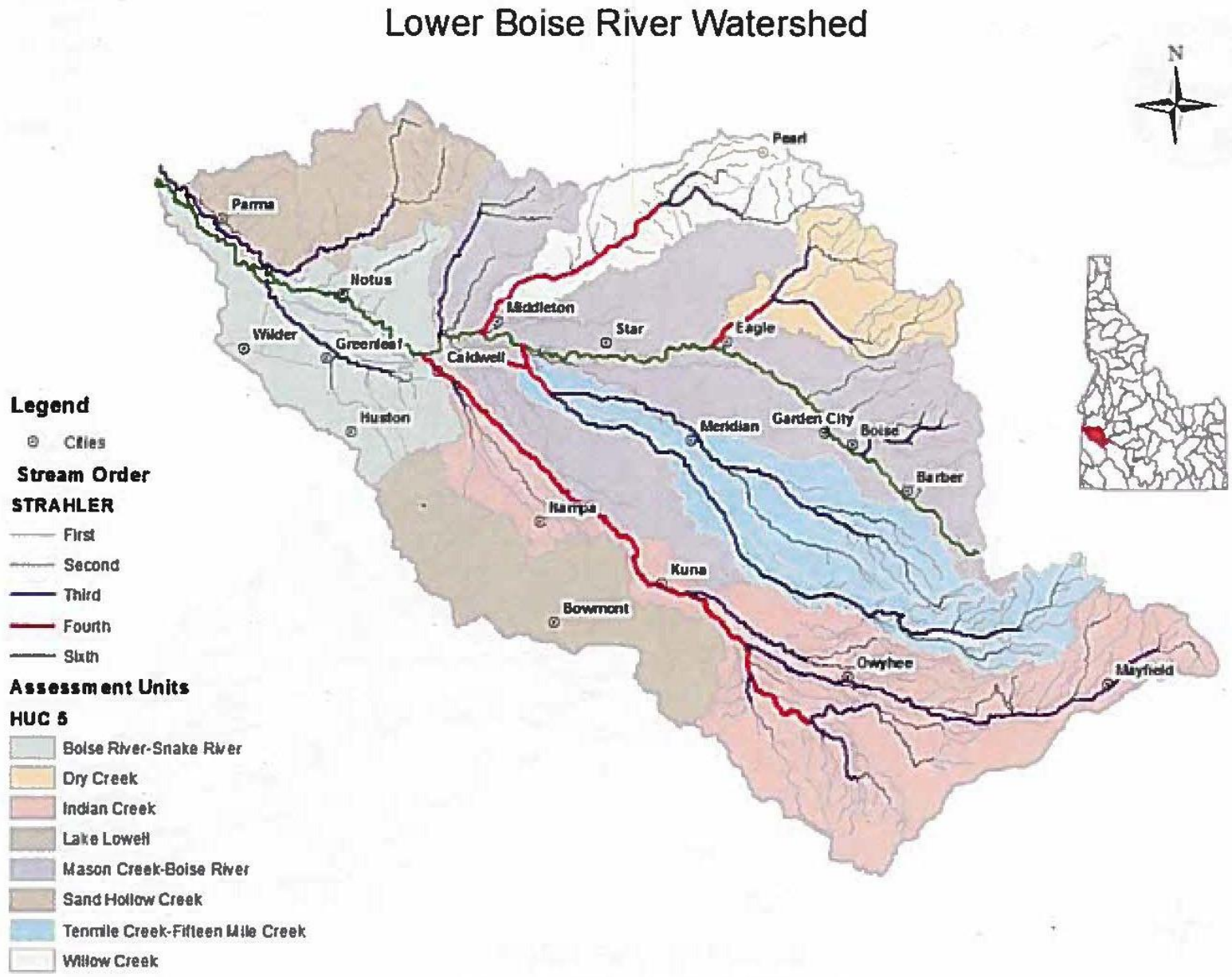


Figure 1. The Lower Boise River subbasin and delineation of subwatersheds (DEQ 2009b).

PHOSPHORUS…


STARTER
FERTILIZER
• Establishes new grass plants faster, reducing water requirements
• Patented timed-release formula feeds new grass plants as they develop without burning*
• Safe to use on any grass type
• Scotts All-in-One Particles technology ensures even, consistent seeding
20-27-5
NET WEIGHT 17.78 lb (8.06 kg)
Scotts STARTER

OBJECTIVES

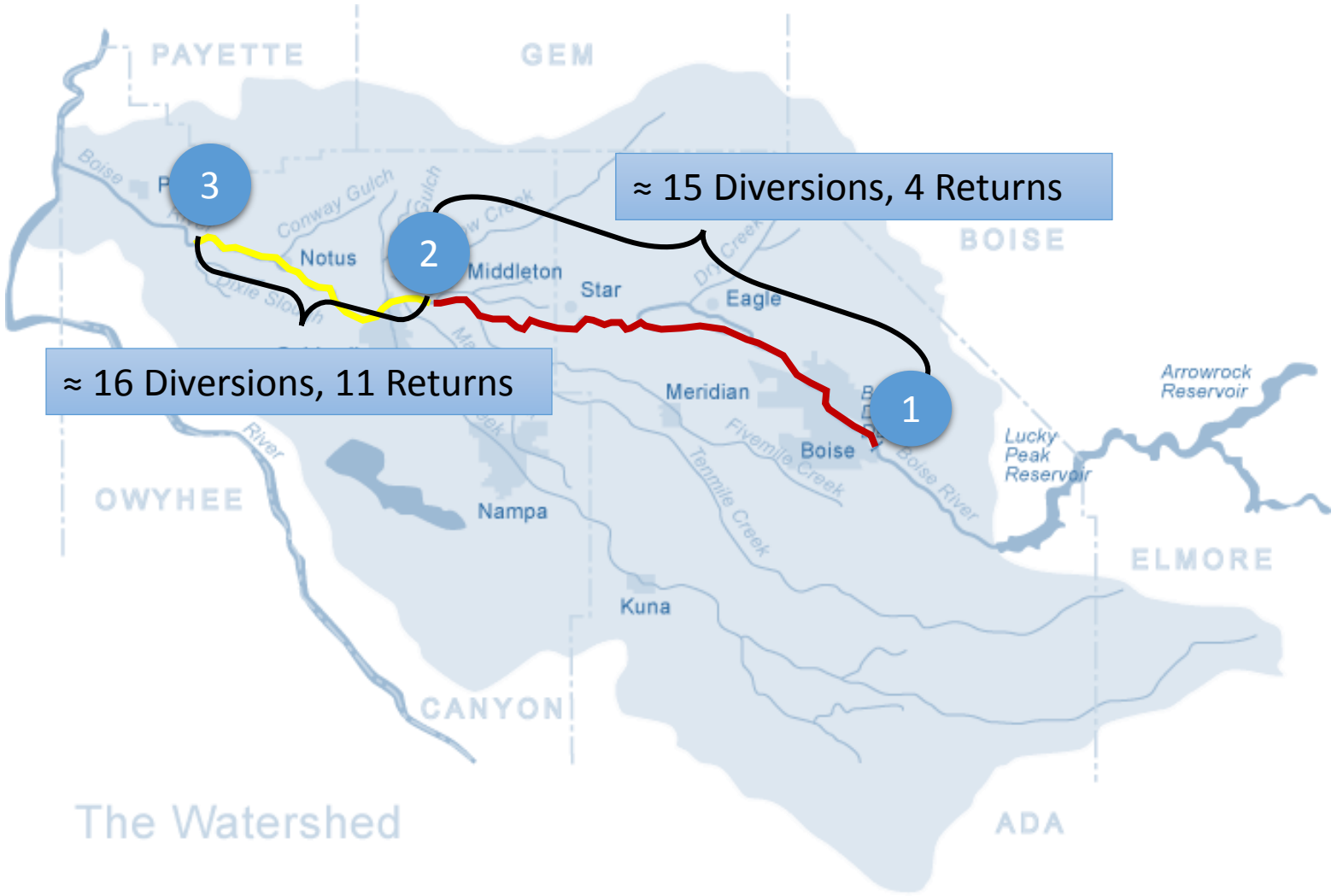
- Project Drivers
- City of Boise Phosphorus Compliance Strategy
  - Dixie Drain Phosphorus Removal Facility
    - Description
    - Treatment process
    - Performance

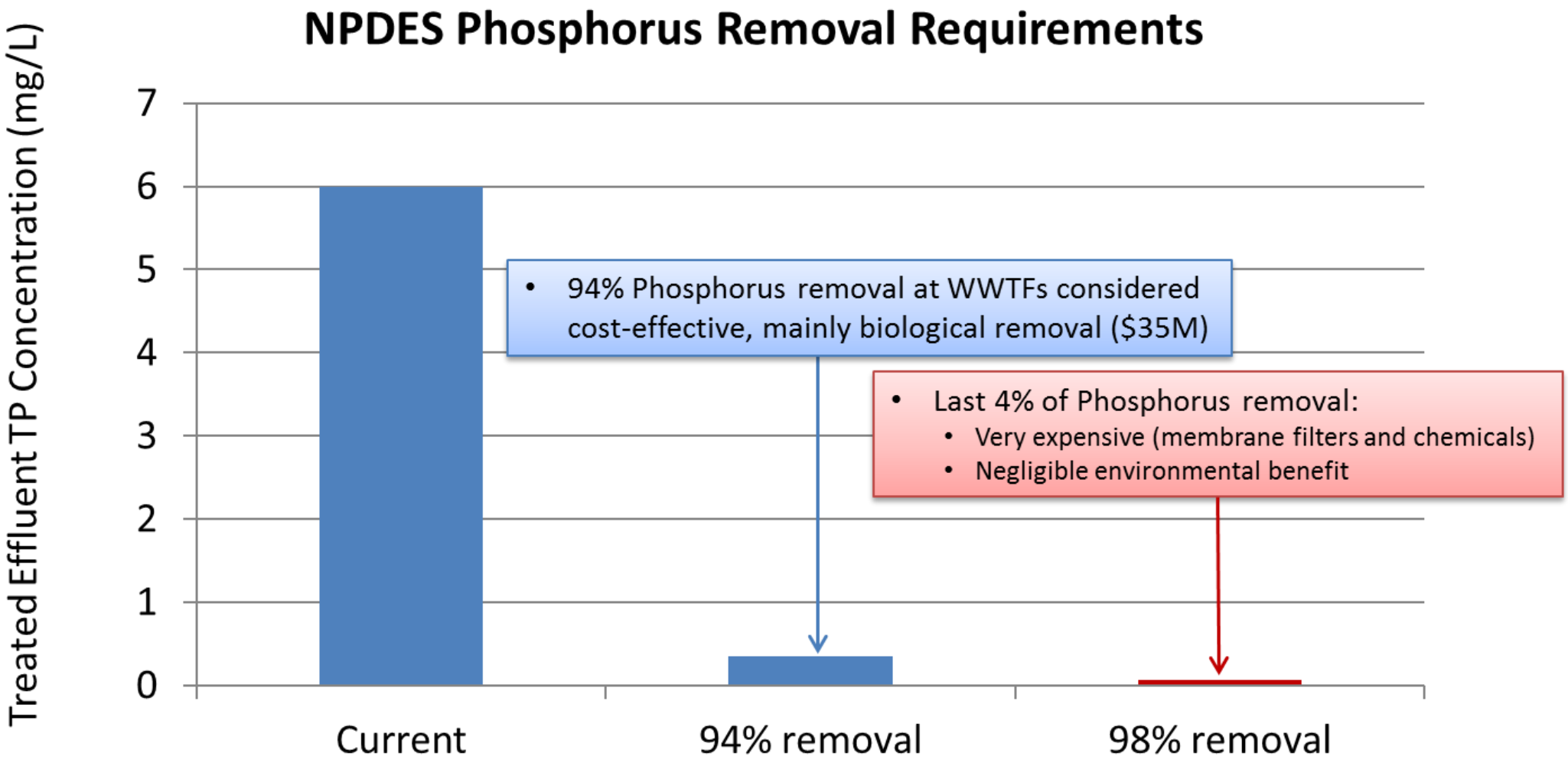
PROJECT DRIVERS

- NPDES permits issued in 2012 contained final effluent total phosphorus limits of 0.07 mg/L.
  - 10 year schedule of compliance

- Lower Boise River Total Phosphorus TMDL

BOISE RIVER WATERSHED

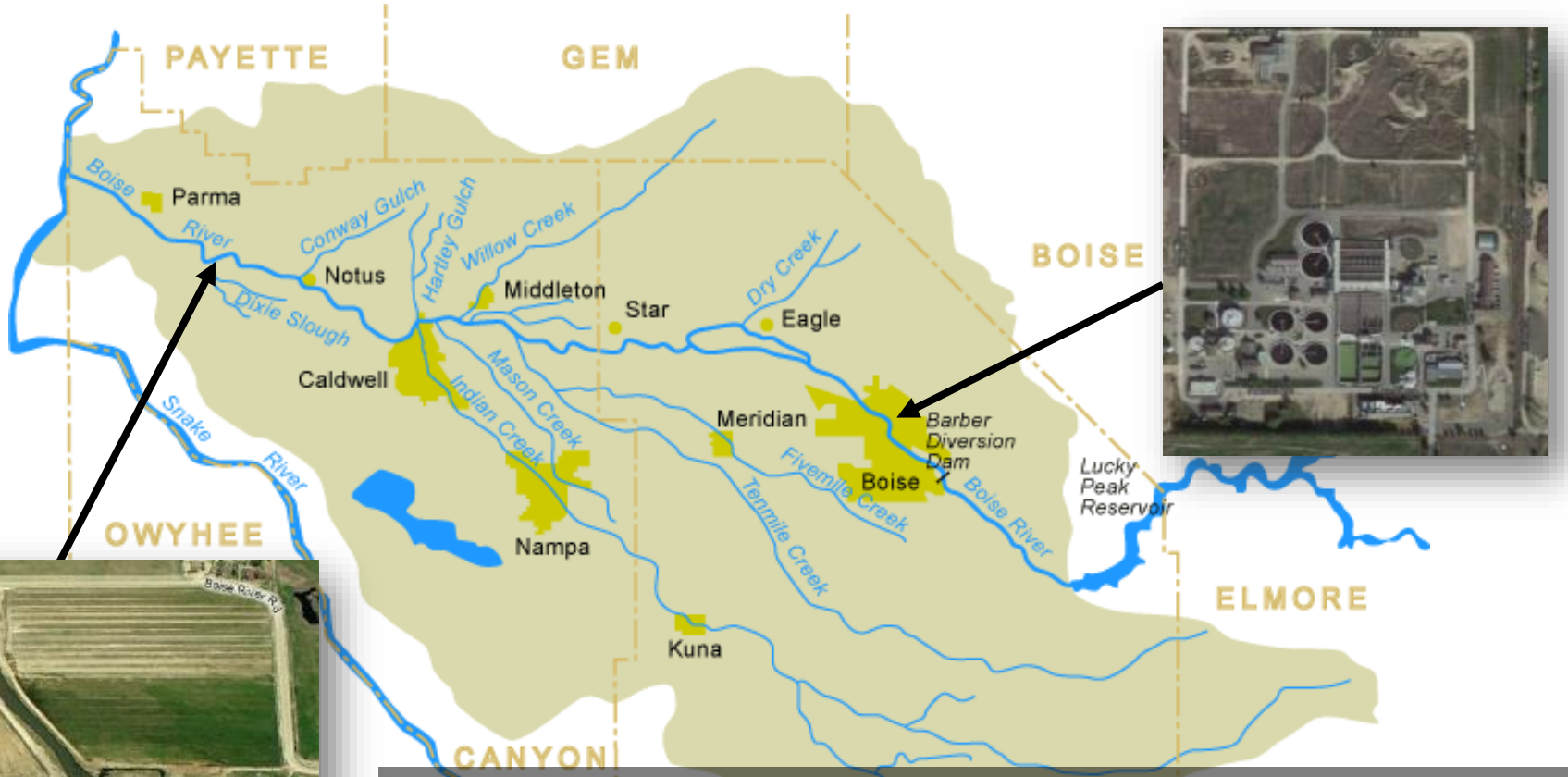



NPDES Phosphorus Removal Requirements
Treated Effluent TP Concentration (mg/L)
7
6
5
4
3
2
1
0
• 94% Phosphorus removal at WWTFs considered cost-effective, mainly biological removal ($35M)
• Last 4% of Phosphorus removal:
• Very expensive (membrane filters and chemicals)
• Negligible environmental benefit
Current
94% removal
98% removal

CITY OF BOISE PHOSPHORUS STRATEGY

- WRF upgrades + sidestream treatment + nonpoint source improvement

LOWER BOISE WATERSHED



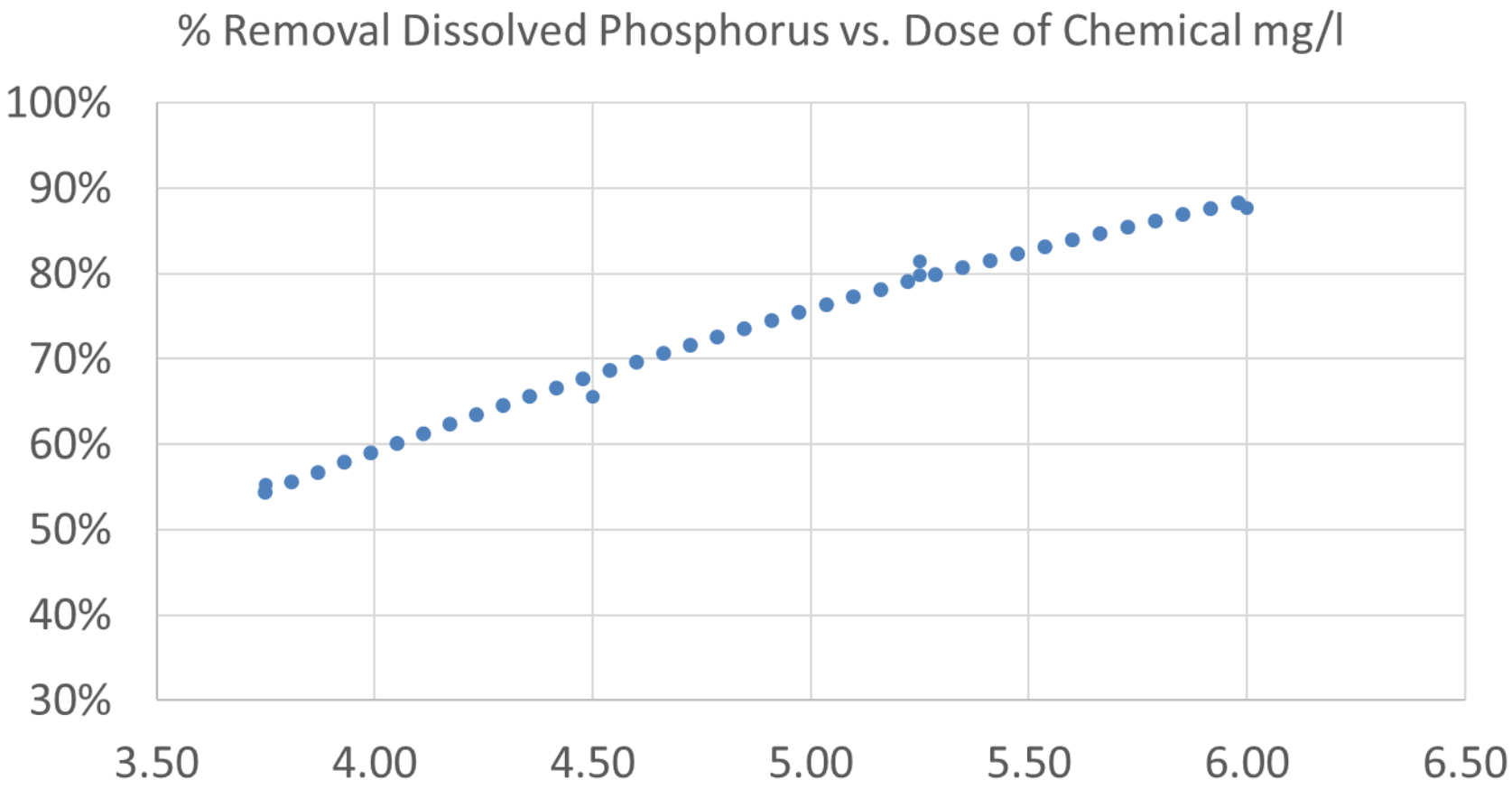
- Dixie Drain is an agricultural drain high in flow and TP
- Potential to remove TP cost effectively with a smaller carbon footprint and greater environmental benefit

SIGNIFICANT UNDERTAKING

DIXIE DRAIN ELEMENTS

MIXING AND OPERATIONS CENTER

2016 – FIRST YEAR OF OPERATION



Dixie Phosphorus Removal Facility outflow and confluence with Dixie Drain

Positive Outcomes

- Without doing nutrient removal from the large ag drains on the Boise River, the water quality targets for the river (TMDL) will not be achieved. Boise has made the first attempt to do this with success.
- This project resulted in a much improved relationship between the City of Boise and EPA.
- This project stimulated the development of a long delayed Lower Boise TMDL.
- Very innovative project with national interest.