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Total Phosphorus Mass Balance Model – Lower Boise River, Ada and Canyon Counties, Idaho

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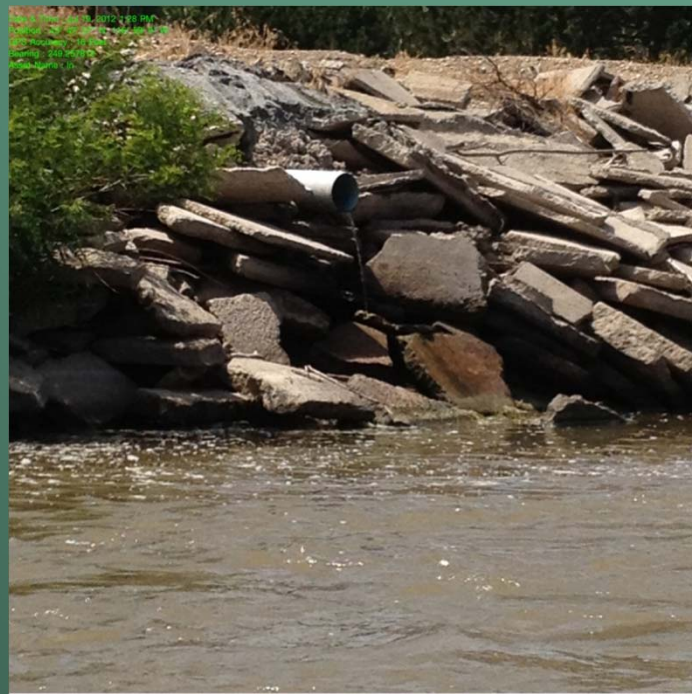
Modeling Scenarios

1. Reduce Point Sources
2. Reduce Nonpoint Sources
3. Reduce Point & Nonpoint Sources



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Scenario 1 – Reduce Point Sources

- All WWTPs = 0.10 mg/L
  - Lander, West Boise, Middleton, Caldwell
- Indian, 15mile, Dixie = 0.10 mg/L
- GW = back-calc TP
- No account for ∆TP in diversions

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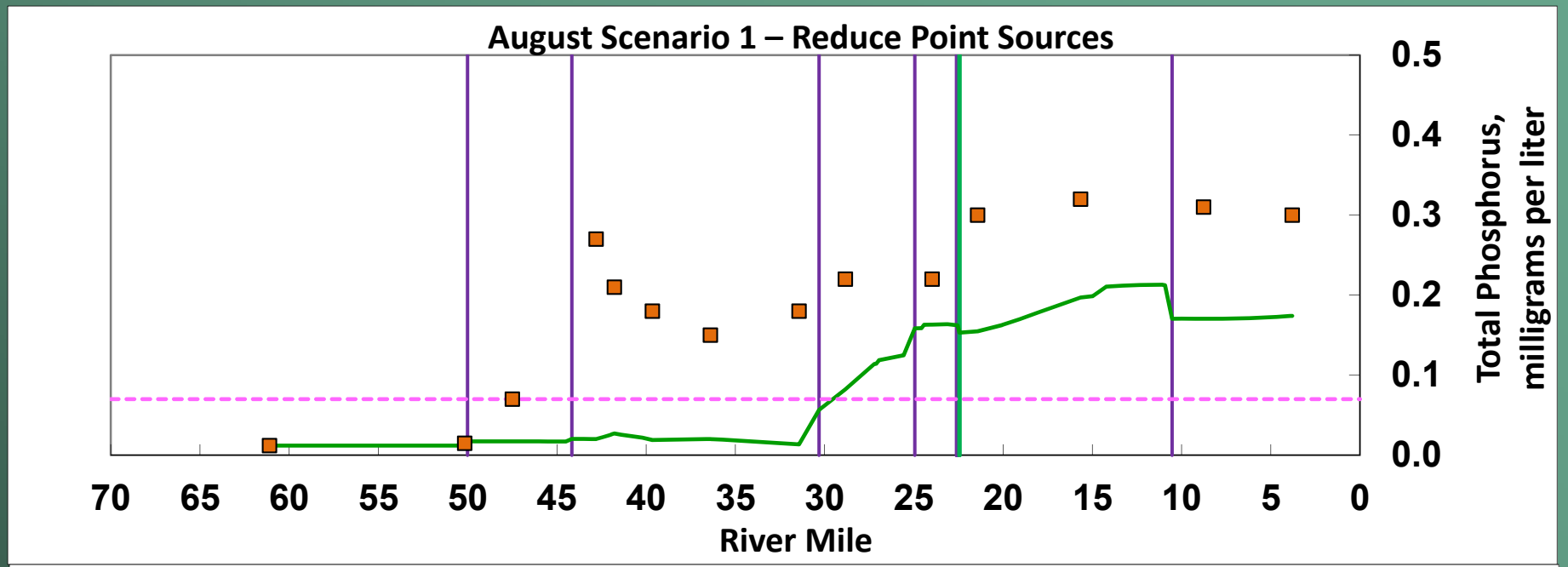

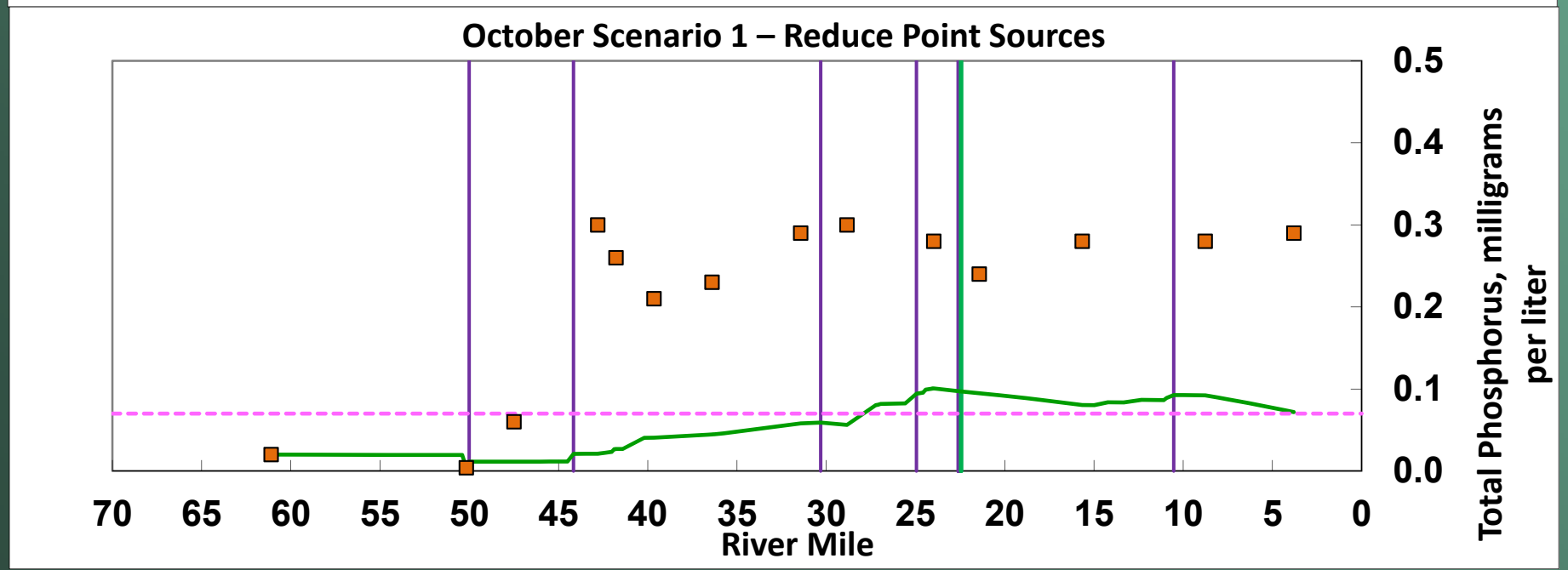

Provisional – Subject to Peer Review

Results: Reduce Point Sources

August

- 0.17 mg/L at mouth
  - 43% load reduction
- Riverside = 0.16 mg/L
- Nyssa = 0.07 mg/L

October

- 0.07 mg/L at mouth
  - 76% load reduction
- Riverside = 0.10 mg/L
- Nyssa = 0.04 mg/L

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Scenario 2– Reduce Nonpoint Sources

- Major tribs = 0.10 mg/L
  - Mason Crk & Slough, Hartley, Conway, Willow, Mill, 2 Unnamed drains, Dixie
- GW = 0.10 mg/L
- Indian & 15mile unchanged

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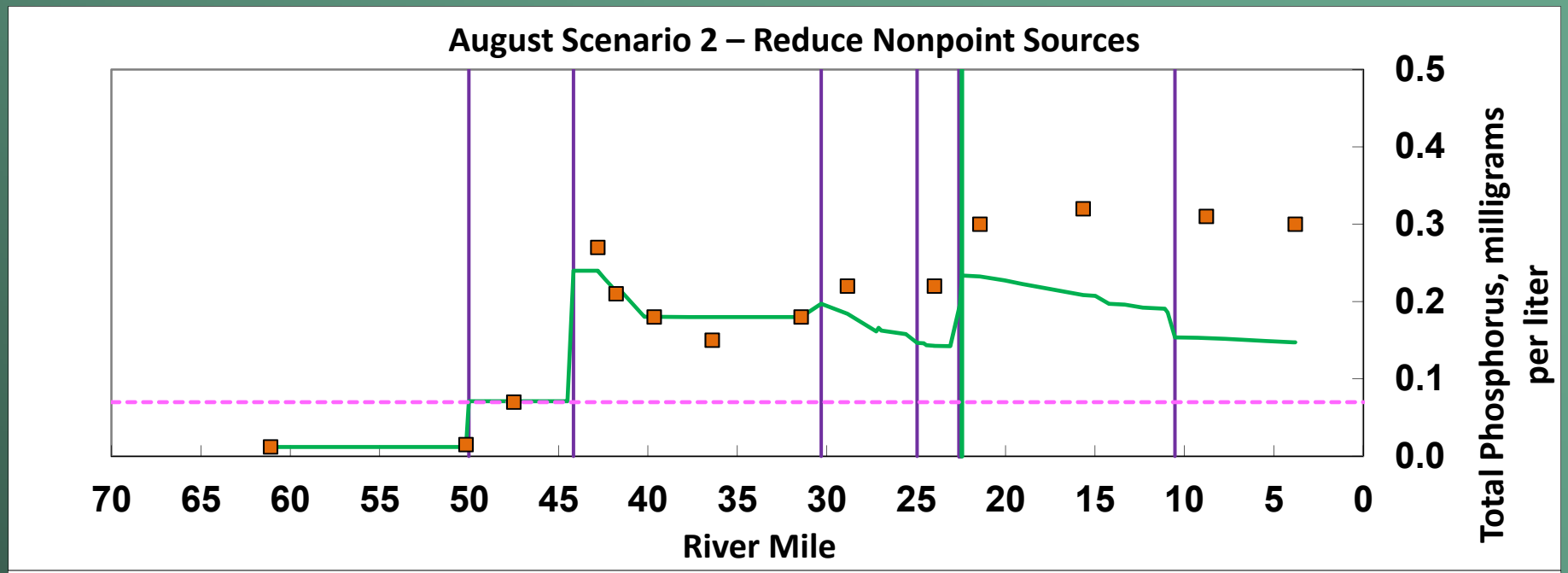

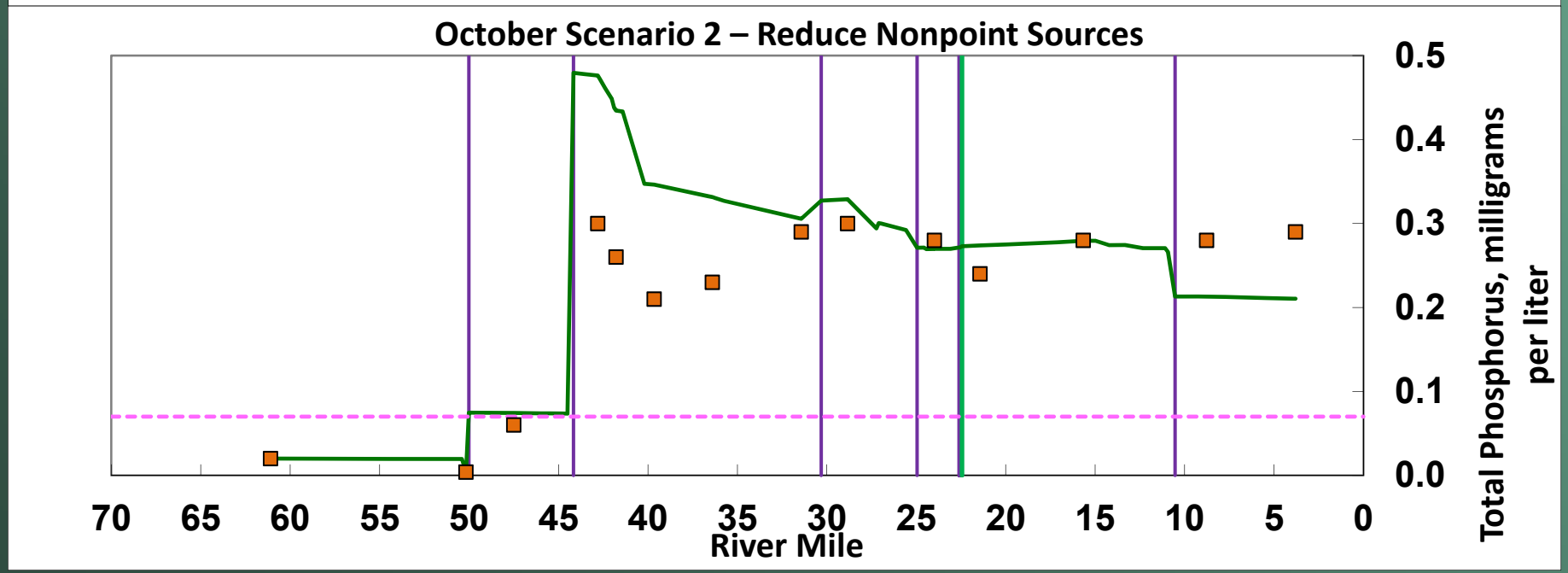

Provisional – Subject to Peer Review

Results: Reduce Nonpoint Sources

August

- 0.15 mg/L at mouth
  - 50% load reduction
- Riverside = 0.15 mg/L
- Nyssa = 0.07 mg/L

October

- 0.21 mg/L at mouth
  - 28% load reduction
- Riverside = 0.26 mg/L
- Nyssa = 0.05 mg/L

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Scenario 3 – Reduce Point & Nonpoint Sources

- All WWTPs = 0.10 mg/L
  - Lander, West Boise, Middleton, Caldwell
- All major tribs = 0.10 mg/L
  - Mason Crk & Slough, Hartley, Conway, 15mile, Willow, Mill, 2 Unnamed drains
- Indian Q = 0, Dixie = 0.07 mg/L
- GW = 0.10 mg/L

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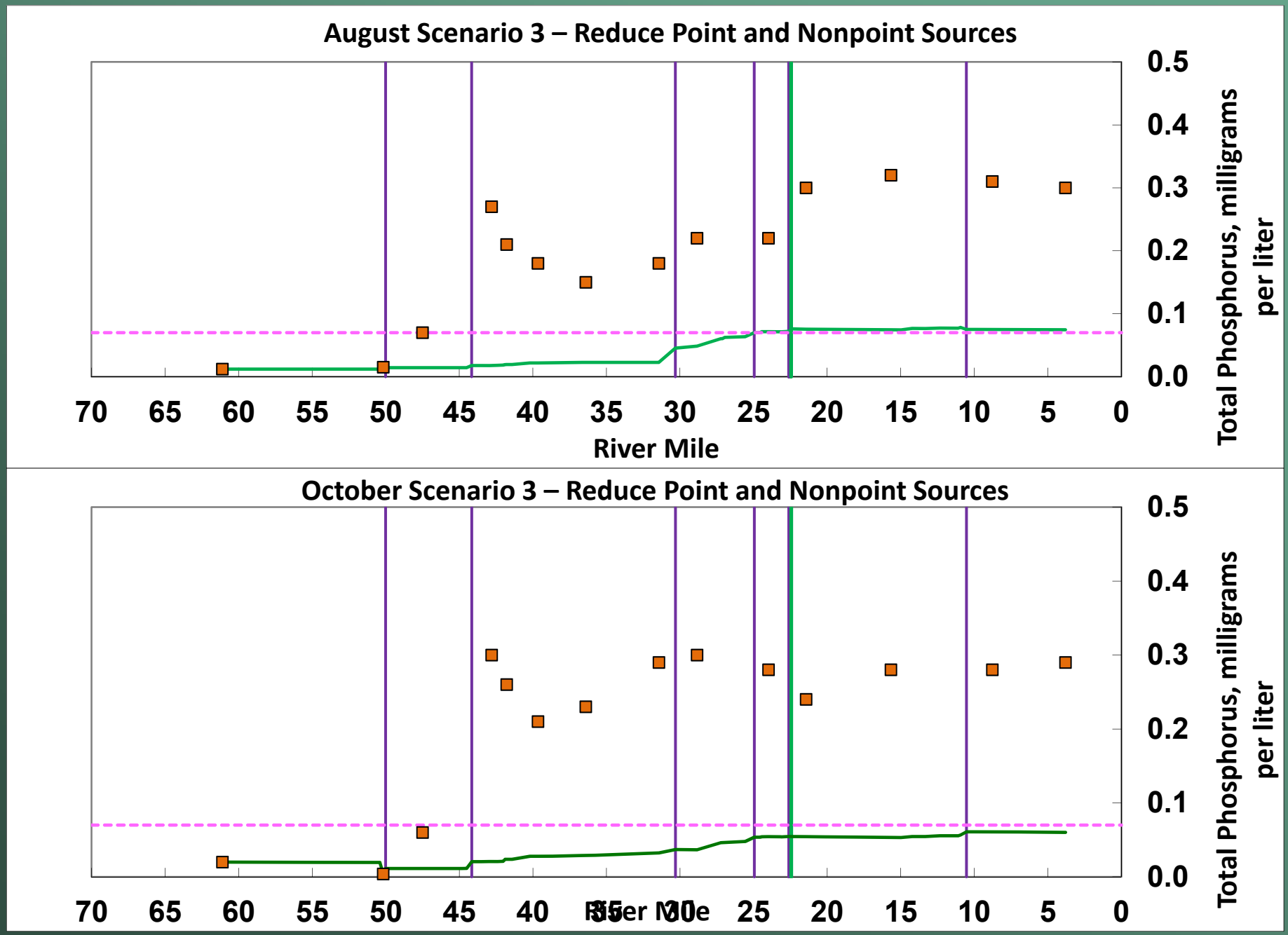

Provisional – Subject to Peer Review

Results: Reduce Point & Nonpoint Sources

August

- 0.07 mg/L at mouth
  - 76% load reduction
- Riverside = 0.07 mg/L
- Nyssa = 0.06 mg/L

October

- 0.06 mg/L at mouth
  - 79% load reduction
- Riverside = 0.05 mg/L
- Nyssa = 0.03 mg/L

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Modeling Results Summary

- Both models – useful to evaluate BMP scenarios during specific season
- Both point and non-point sources impact TP in August
- Point sources more significant in late October
- More unexplained loss of mass in October

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