Preliminary Outline
Agricultural Reuse:
Wastewater and Drain Water

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Hydrologic Cycle

Regulatory Framework

- Water quality standards
  - Surface water: e.g., protect recreation
  - Groundwater: e.g., protect water supply
- Permitting Programs
  - Recycle: e.g., apply to crops
  - Discharge: e.g., to rivers or streams

Disposal ???
Agriculture as “Treatment”

<table>
<thead>
<tr>
<th>Irrigated land</th>
<th>10000 ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphorus used</td>
<td>20 lb/acre</td>
</tr>
<tr>
<td>Irrigation period</td>
<td>200 days</td>
</tr>
<tr>
<td>Total</td>
<td>200000</td>
</tr>
<tr>
<td>P Load used</td>
<td>1000 lb/day</td>
</tr>
</tbody>
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Balance: P load in (inflow and fertilizer) with crop uptake
...to lower TP out (outflow and seepage)

Example Reuse Projects and Studies

- Farmer’s Coop Pipeline
- Middleton WW Reuse and Discharge Feasibility Study
- Avimore WW Reuse and Rapid Infiltration
- Riverside / IPC Operational Improvement
- Greenleaf WW Reuse and Discharge
- ACHD 15-mile Water Quality Study

Map by USGS, MacCoy 2004
Ex: Greenleaf WW Reuse and Discharge

V Winter Discharge
to West End Drain
- Non "critical period"
- Minor summer discharges (P-limited)

V Summer Reuse
on 61 acres
During May to October "critical period"
per Snake River-Hells Canyon TMDL

Boise River Valley Irrigation and Cities
Lower Boise River
Irrigation [Drain] Waste Water Reuse
Assessment (USBR 1994)

Ex: Sand Hollow Pipeline

- Sand Hollow Pipeline Project
  - 36-in buried pipeline
  - Over 3000 feet length
  - Diverts about 30 cfs to Sebree Canal
Ex: Riverside Operational Water Quality Improvement Program

Questions on Agricultural Reuse