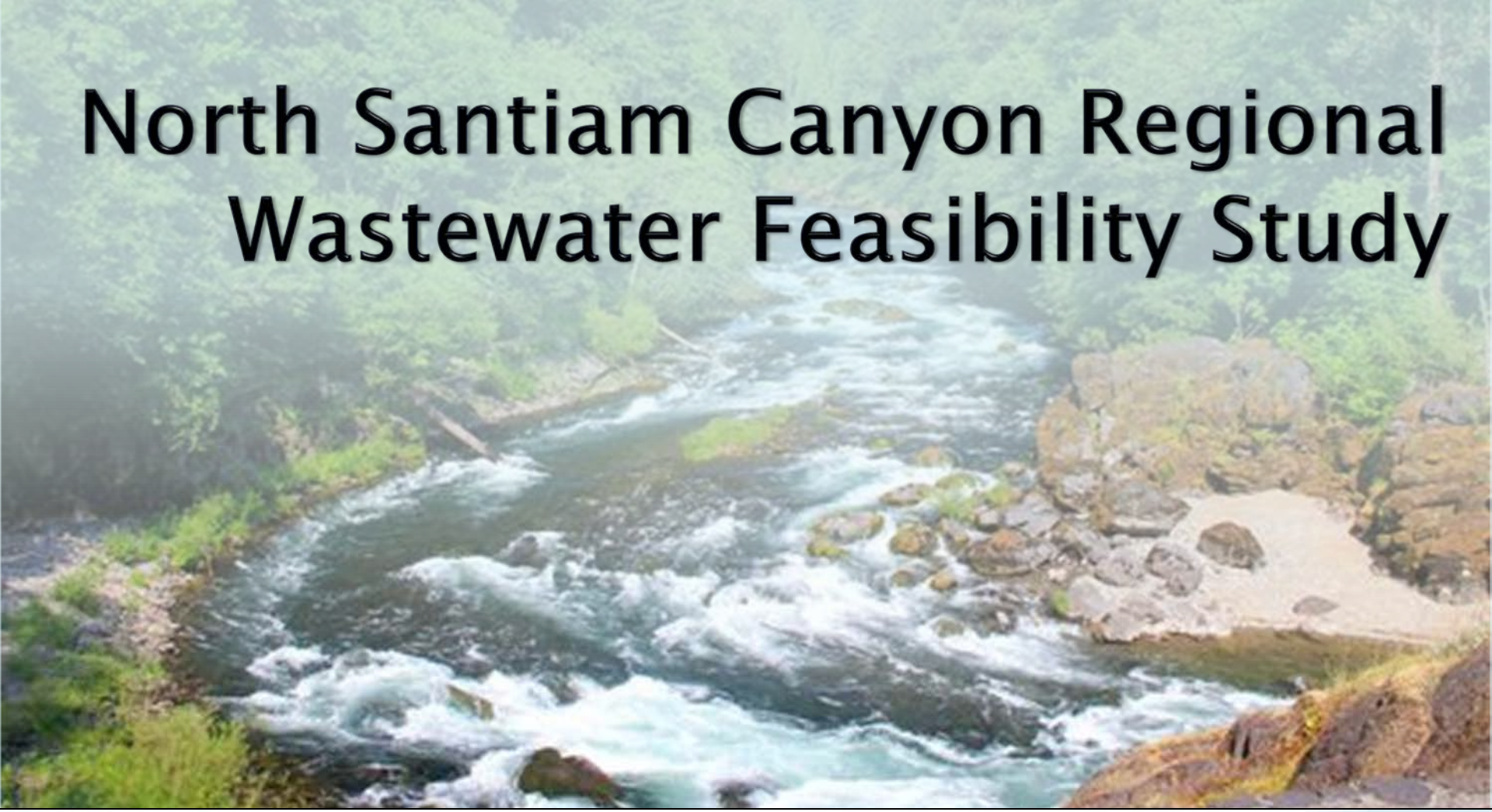
North Santiam Canyon Regional Wastewater Feasibility Study

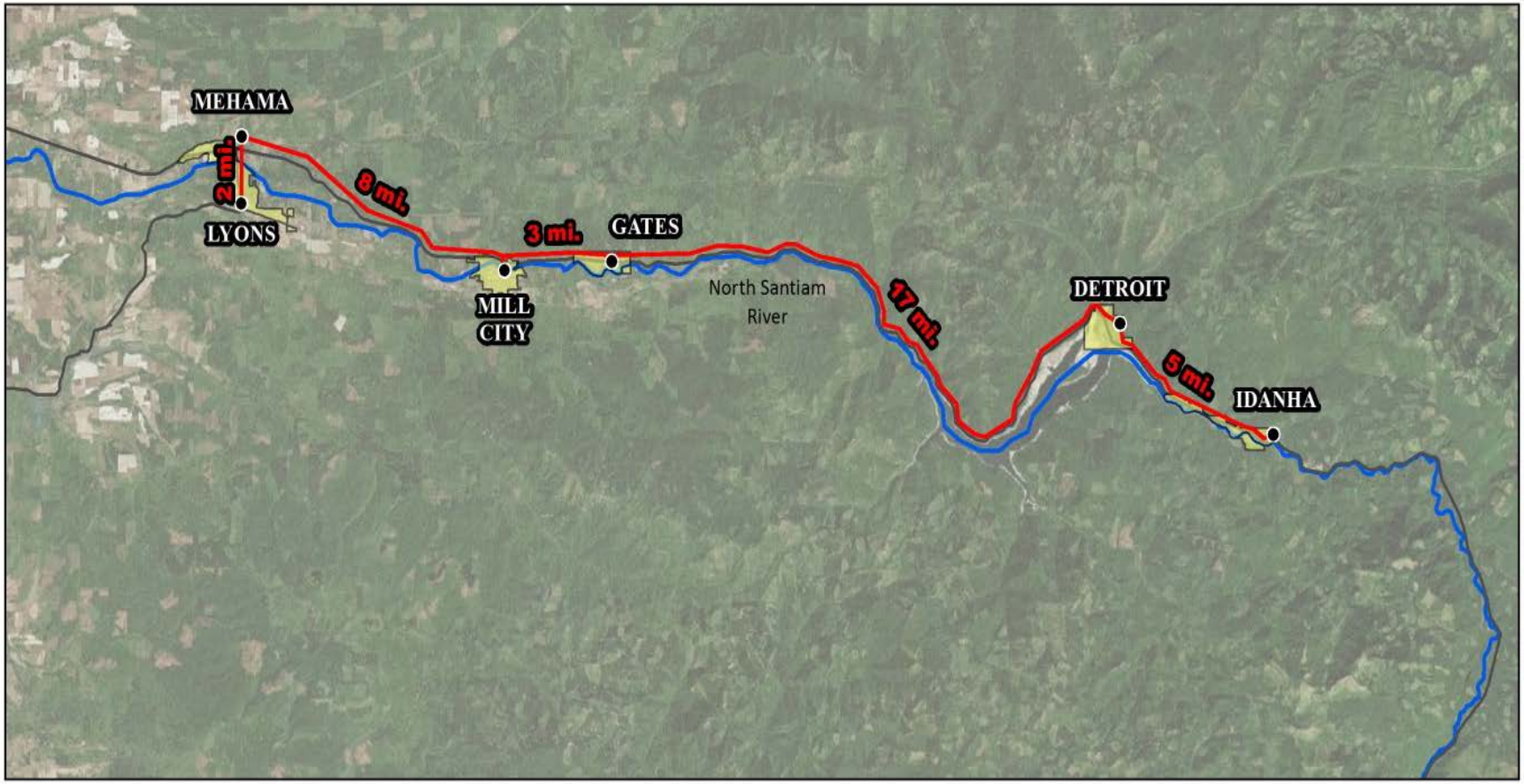


Get there!
KELLER associates

business oregon
IFA Infrastructure Finance Authority

Peter Olsen, PE
Dave Kinney
Community Feedback Session

North Santiam Canyon Study Area



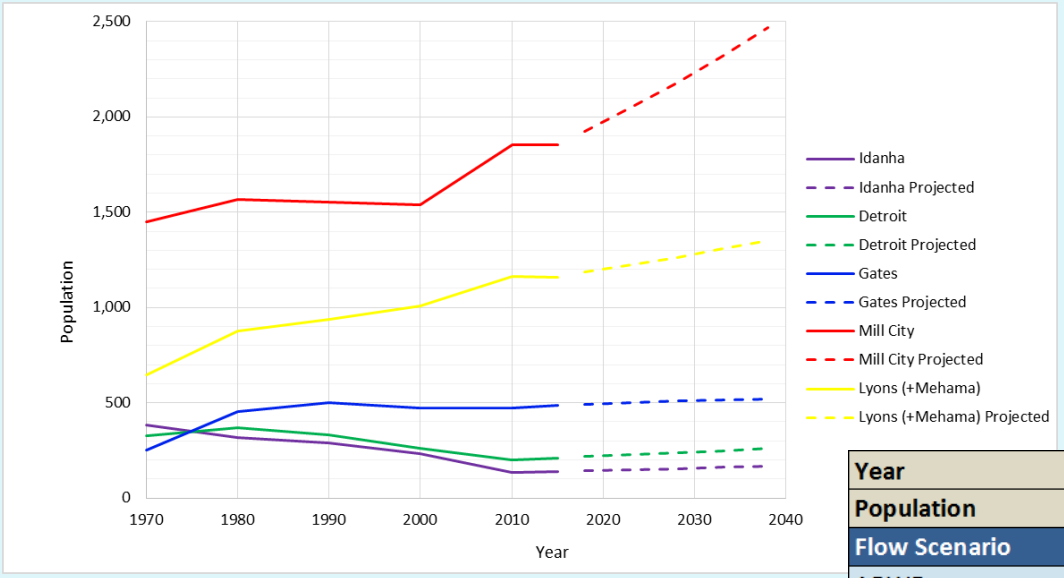
Purpose

- Define design criteria with Three Basin Rule
- Existing wastewater facilities
- Define alternatives
- Find best possible solution and estimate costs
- Recommend phasing

Three Basin Rule

- Can issue WPCF if:
  - No waste discharge to surface water
  - Groundwater requirements met
  - Environmental Quality Commission (EQC) finds it is preferable means of disposal compared to current means of disposal
    - Significant number of failing individual systems
    - Impact of individual systems is greater than impact of new facility
    - If social and economic benefits outweigh possible environmental impacts
- Can seek for modification to Three Basin Rule

Design Criteria



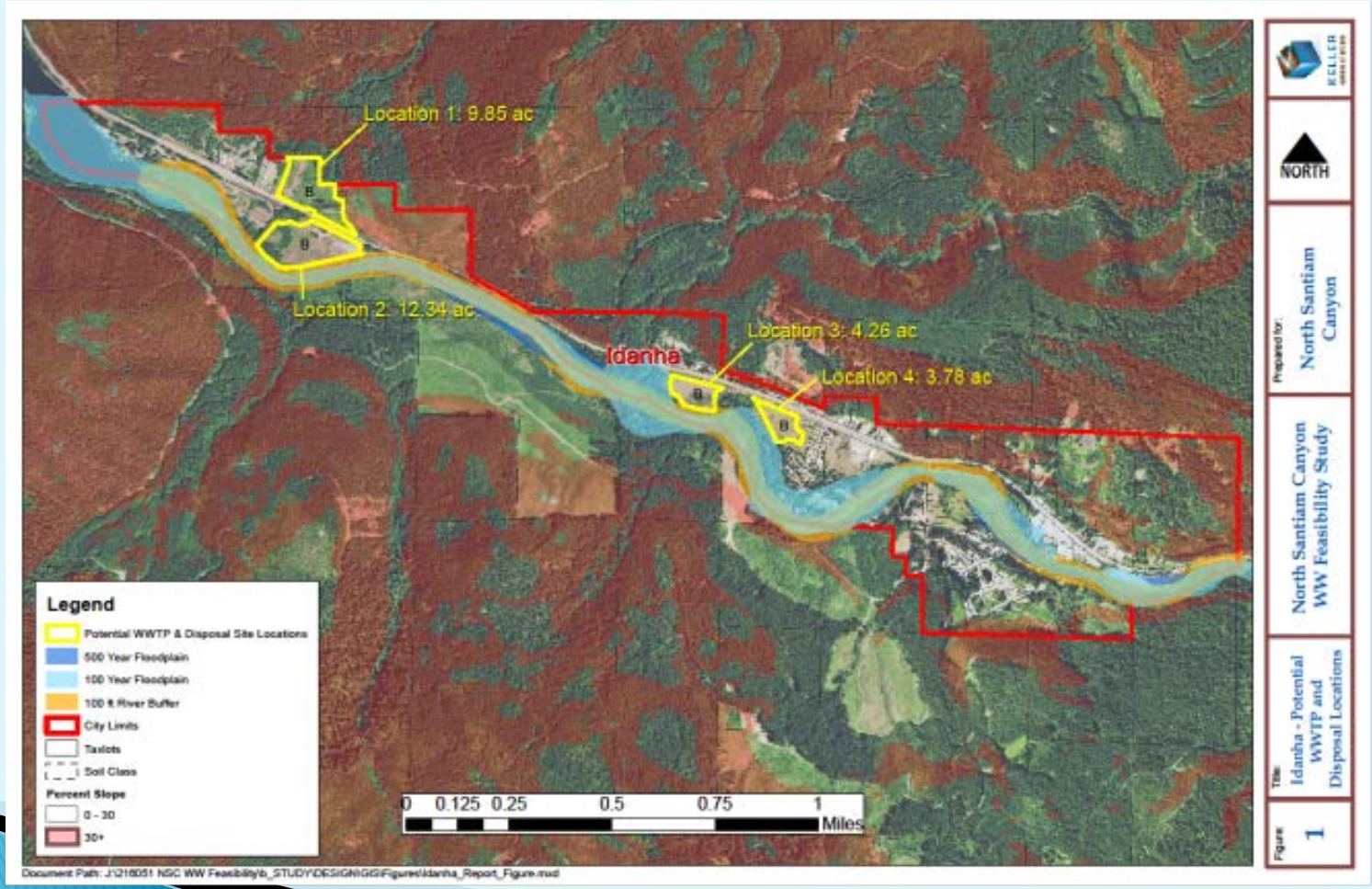
Year	2018	2023	2028	2033	2038
Population	3964	4148	4341	4550	4771
Flow Scenario	Projected Design Flows (gpd)				
ADWF	305,000	328,000	351,000	374,000	404,000
$MMDWF_{10}$	394,000	421,000	448,000	476,000	513,000
AADF	342,000	366,000	389,000	415,000	448,000
AWWF	376,000	403,000	429,000	457,000	492,000
$MMWWF_5$	460,000	491,000	521,000	554,000	597,000
PWkF	553,000	590,000	626,000	666,000	714,000
$PDAF_5$	780,000	832,000	882,000	939,000	1,007,000
PIF_5	1,076,000	1,143,000	1,211,000	1,285,000	1,376,000
Loading Rates	Projected Design Loading Rate (lbs/day)				
BOD_5	767	819	869	924	996
TSS	748	799	847	901	971
TKN	134	143	152	162	174

Design Criteria

- Treatment and Disposal Method
  - Class A treatment with root zone disposal
  - Other methods considered
    - Class B and C recycled water
    - Land application
  - Reasons for recommended method
    - Class A recycled water is more protective of the groundwater than other categories of recycled water
    - Fewer restrictions
    - Small footprint
    - Effluent storage not needed

Treatment Disposal Sites

- Idanha

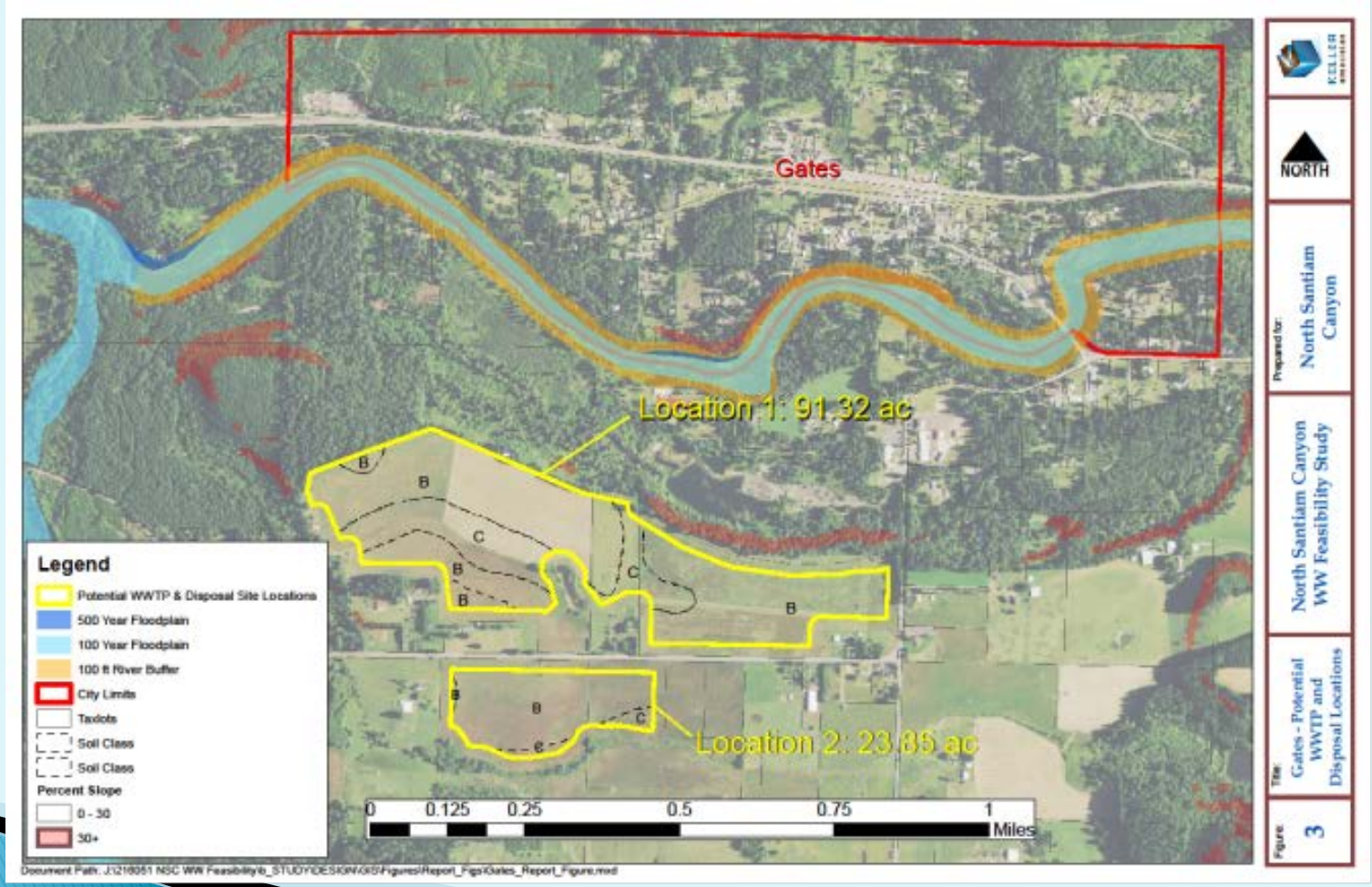


Treatment Disposal Sites

- Detroit

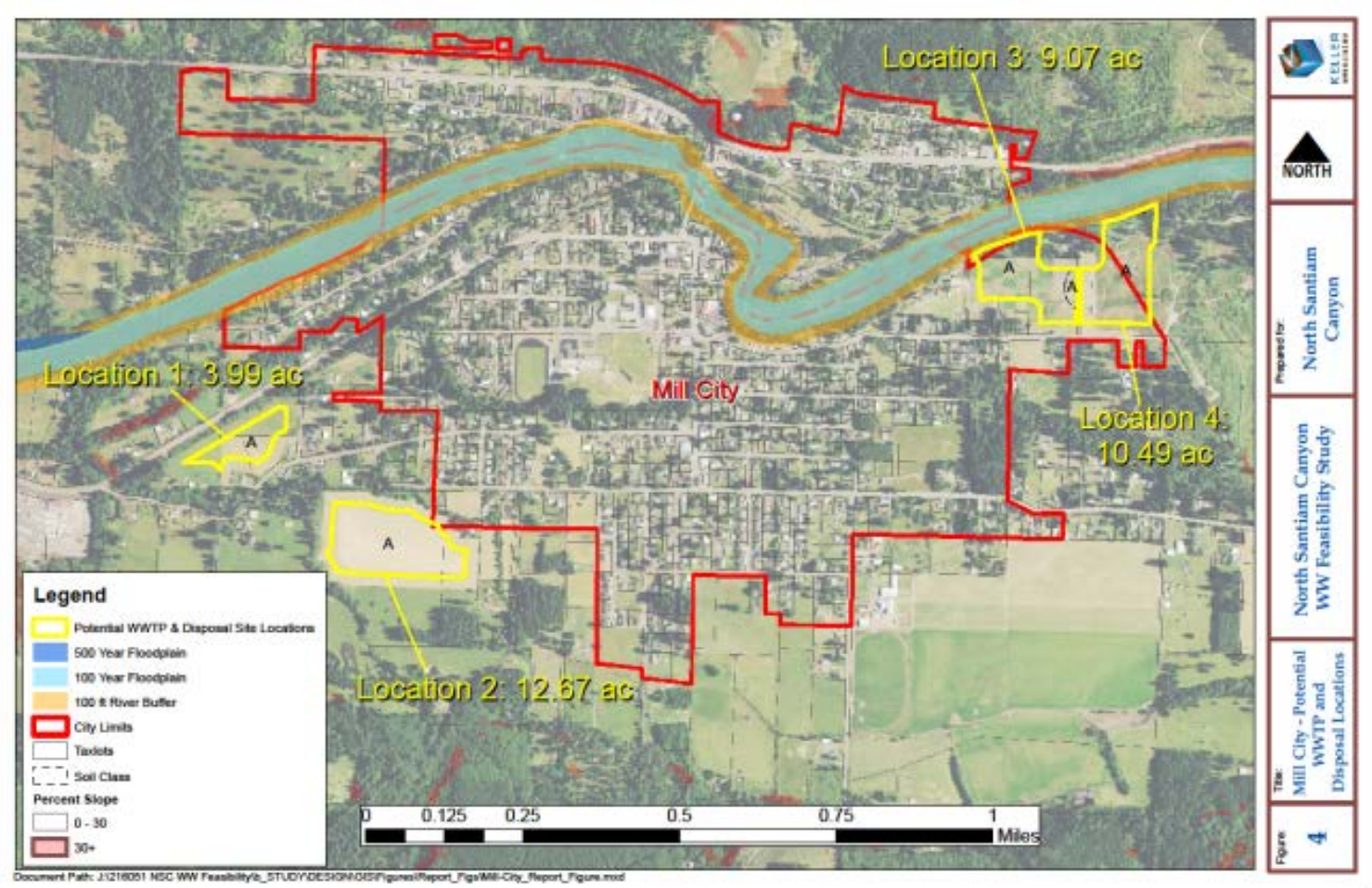
Treatment Disposal Sites

- Gates



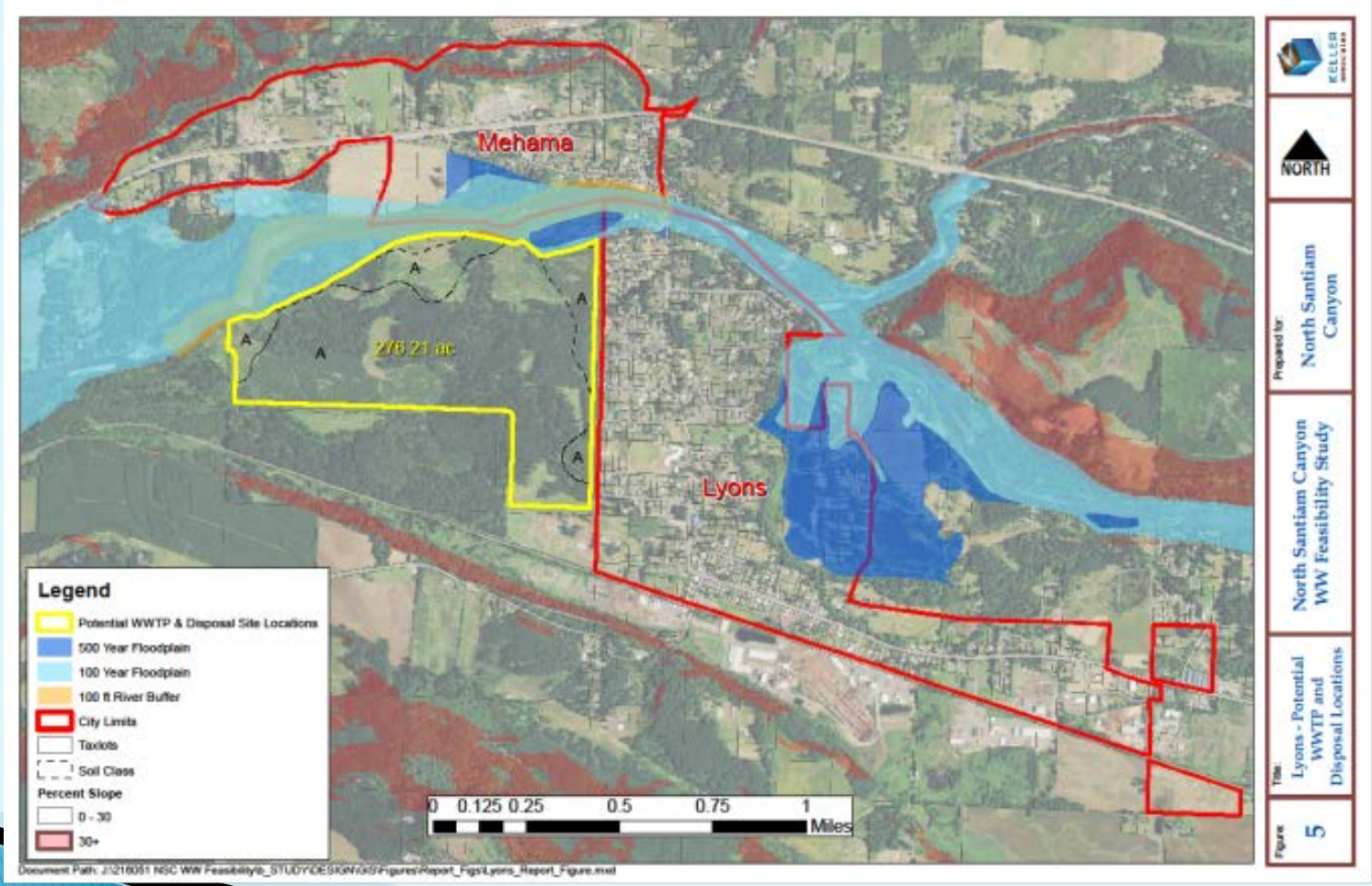
Treatment Disposal Sites

- Mill City



Treatment Disposal Sites

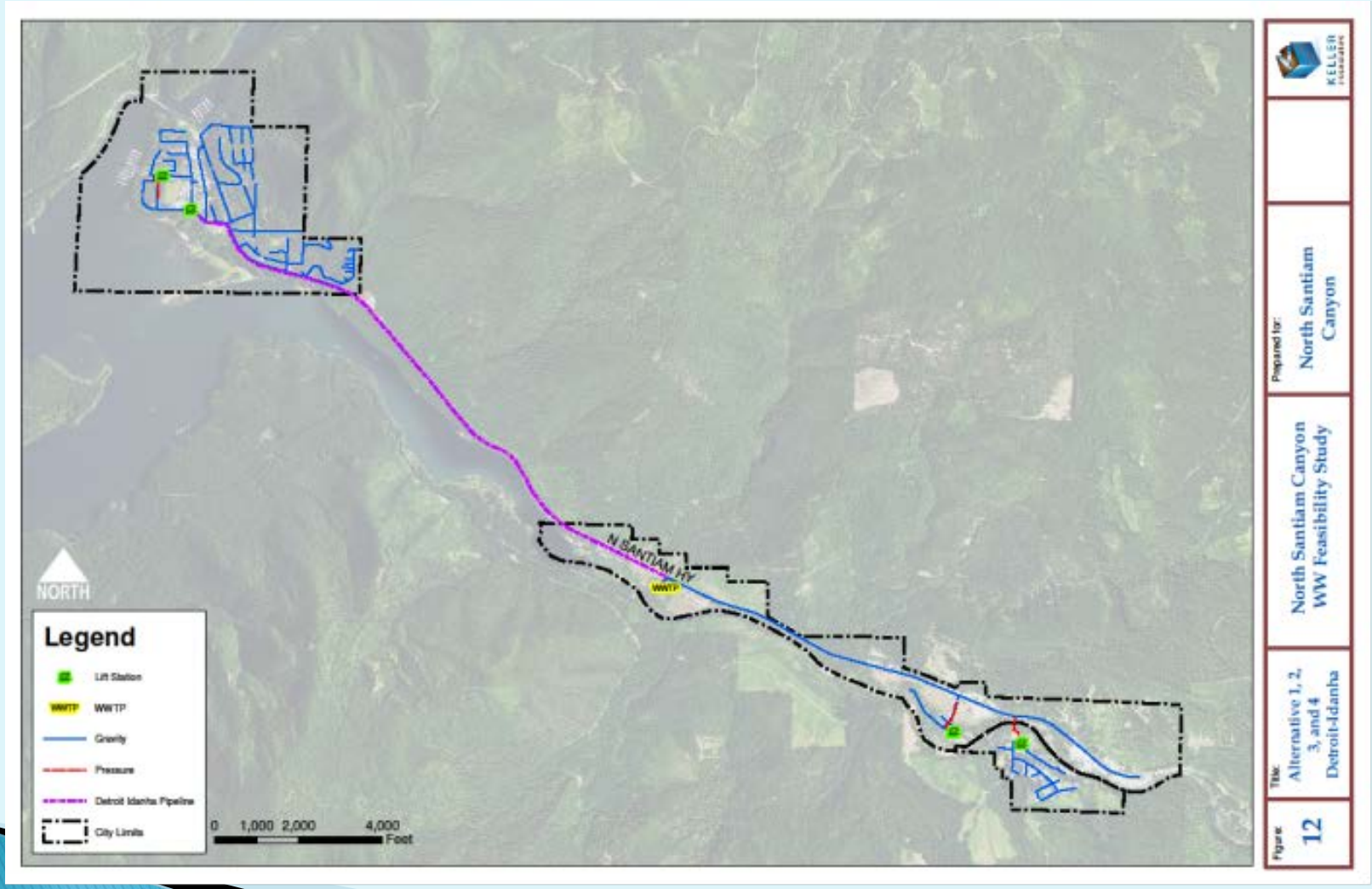
- Lyons



Alternatives

- Alternative 1 (5 plants)
  - Individual treatment
- Alternative 2 (4 plants)
  - Combined: Detroit-Idanha
  - Individual: Gates, Mill City, Lyons

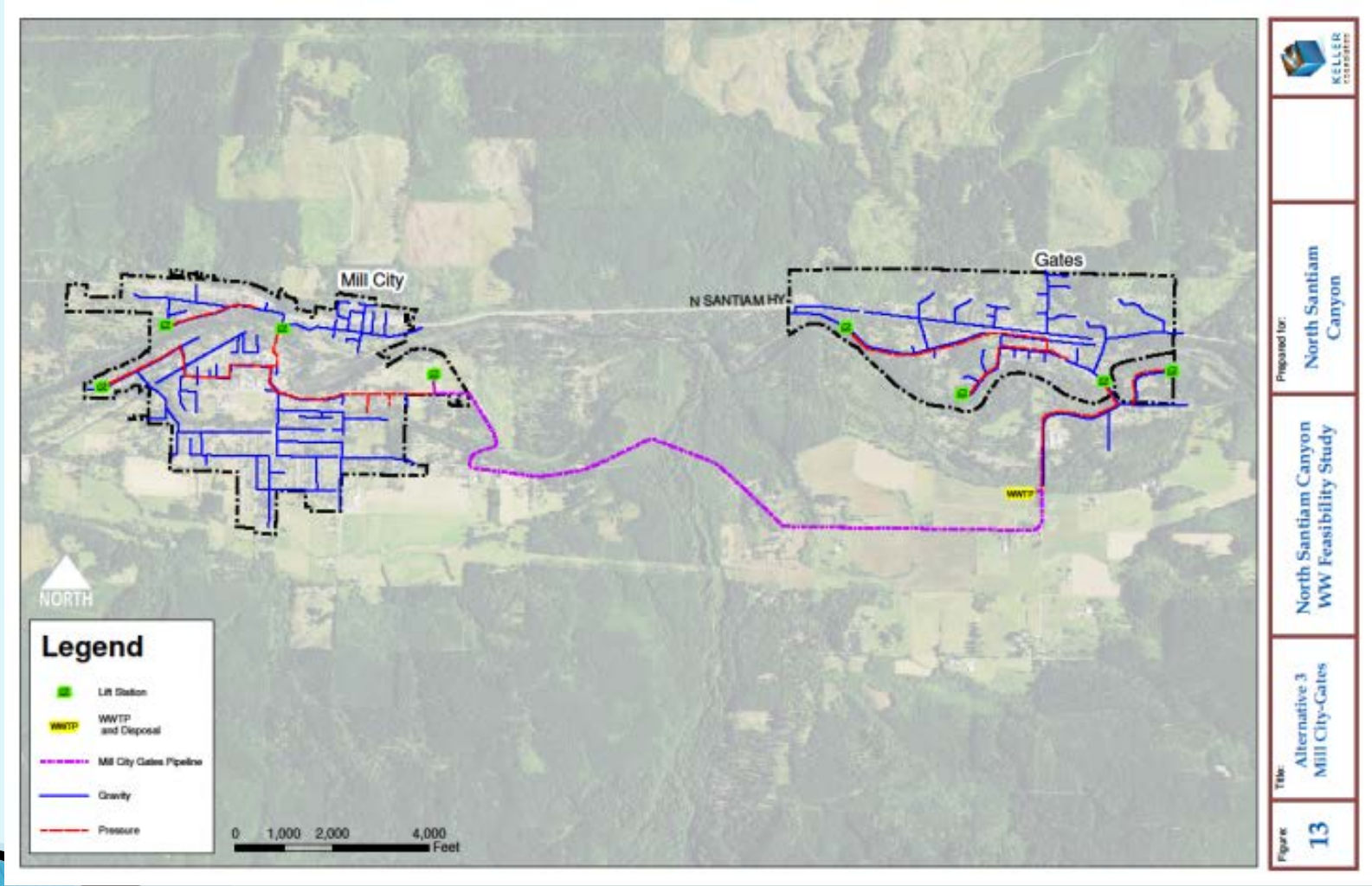
Alternatives



Alternatives

- Alternative 3 (3 plants)
  - Combined: Detroit-Idanha, Gates-Mill City
  - Individual: Lyons

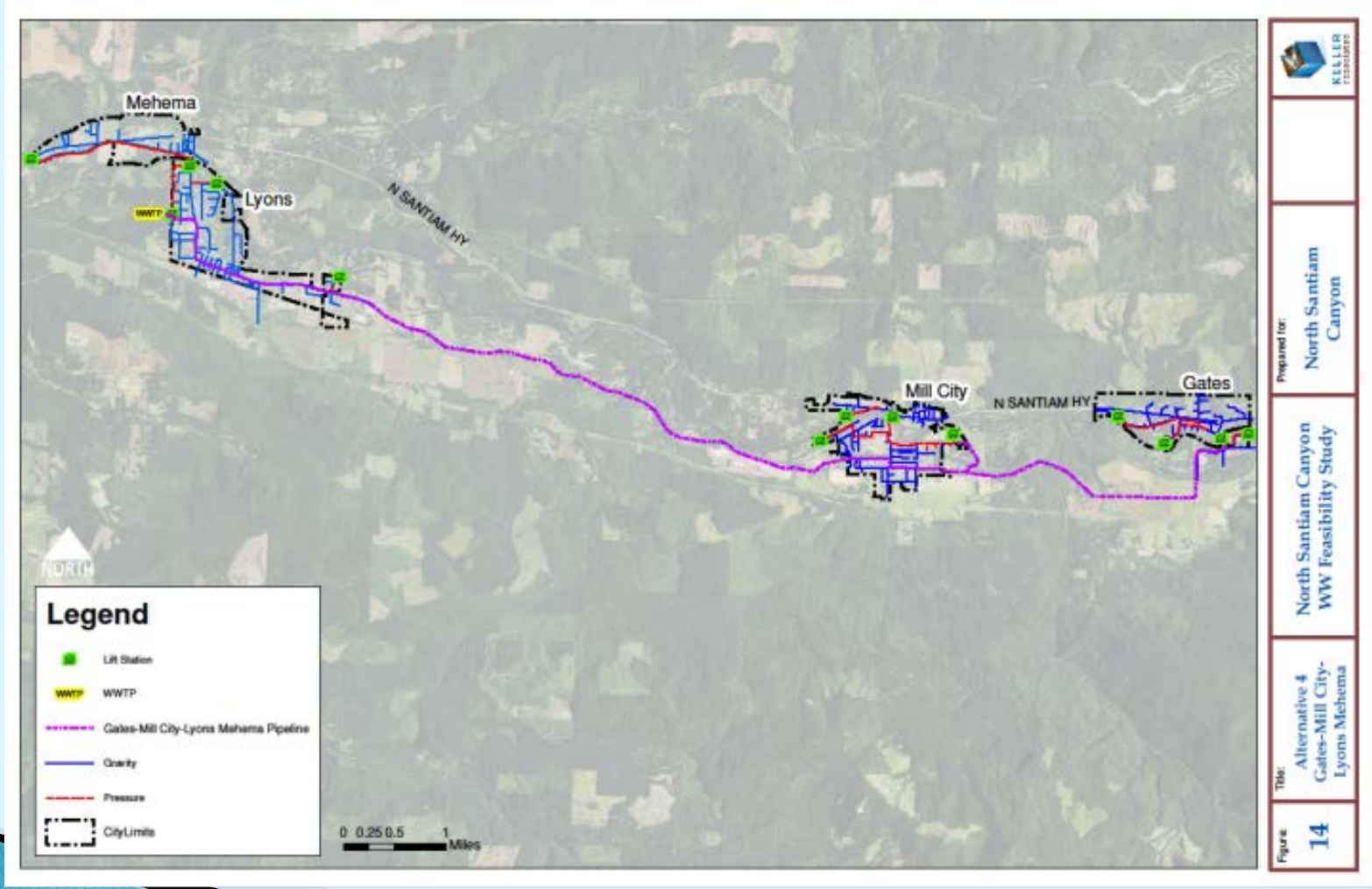
Alternatives



Alternatives

- Alternative 4 (2 plants)
  - Combined: Detroit-Idanha, Gates-Mill City-Lyons

Alternatives



Alternatives

- Evaluation
  - Alternative1 – $101.8M
  - Alternative 2 – $98.2M
  - Alternative 3 – $97.3M
  - Alternative 4 – $100.2M

Summary of Recommendations

- Alternative 3
  - Start with Detroit/Idanha, and Gates systems
  - Combine Mill City to Gates when expansion is required
  - Develop Lyons when local community is driving the need
- Move forward with request for modification to Three Basin Rule