Montesano Wastewater Treatment Plant

I. Problem

II. Options and Solution

III. Methods

IV. Results

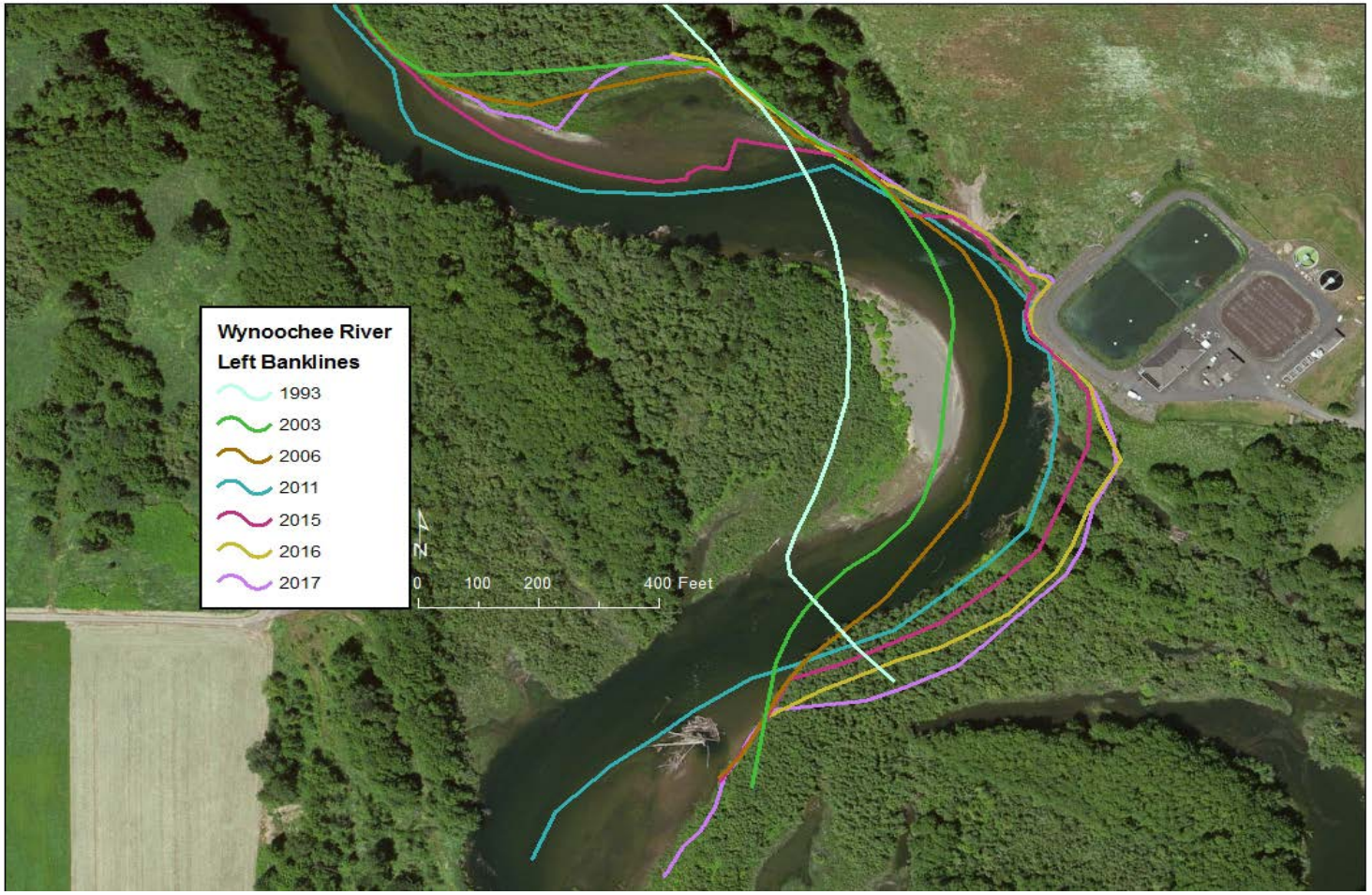
- March 8, 2017 to October 21, 2020
- Two phases
- Few options

CHEHALIS RIVER BASIN FLOOD AUTHORITY

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

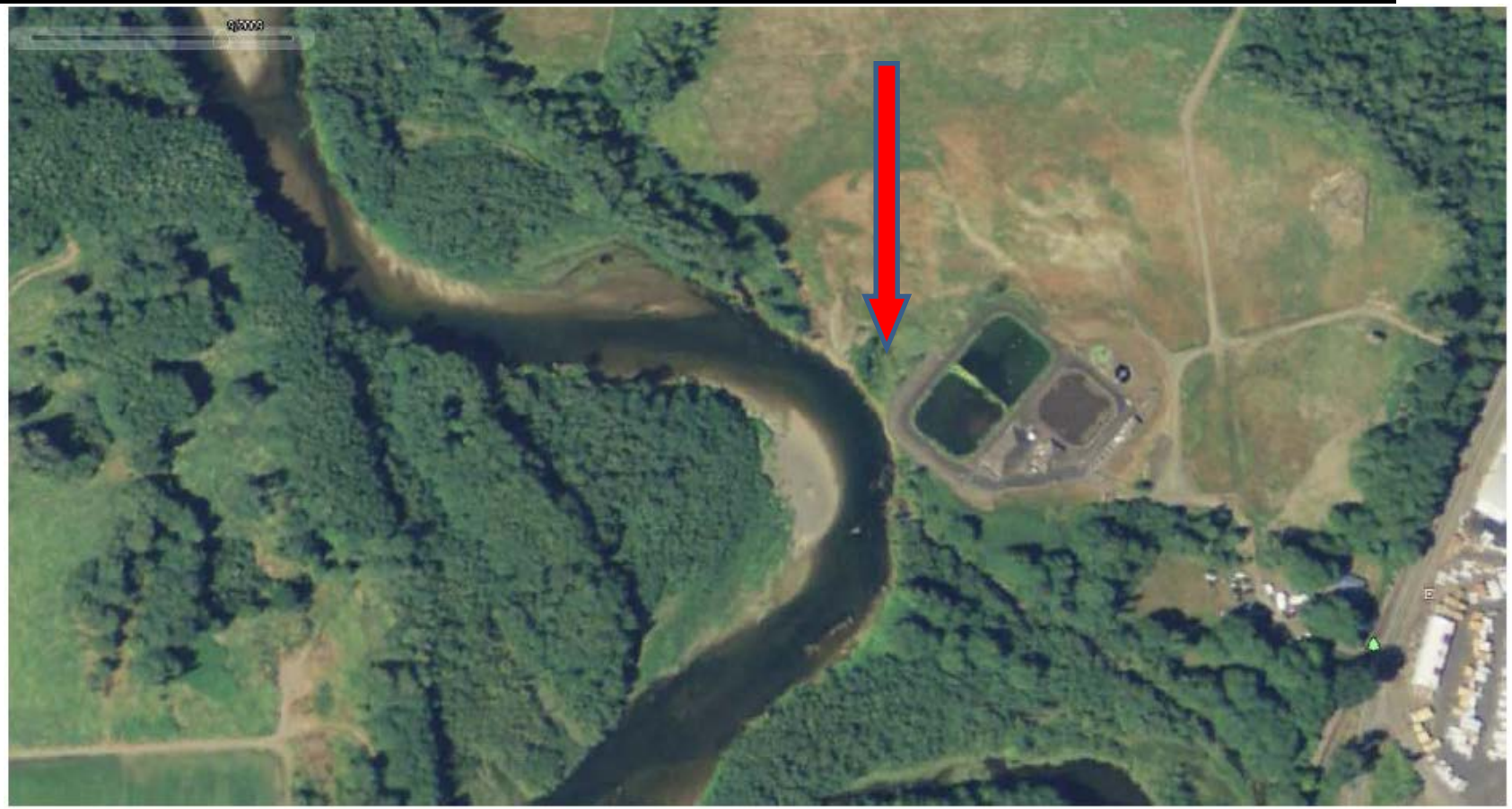
City of Montesano
Home of the Tree Farm

I. Problem -- Wynoochee River Migration

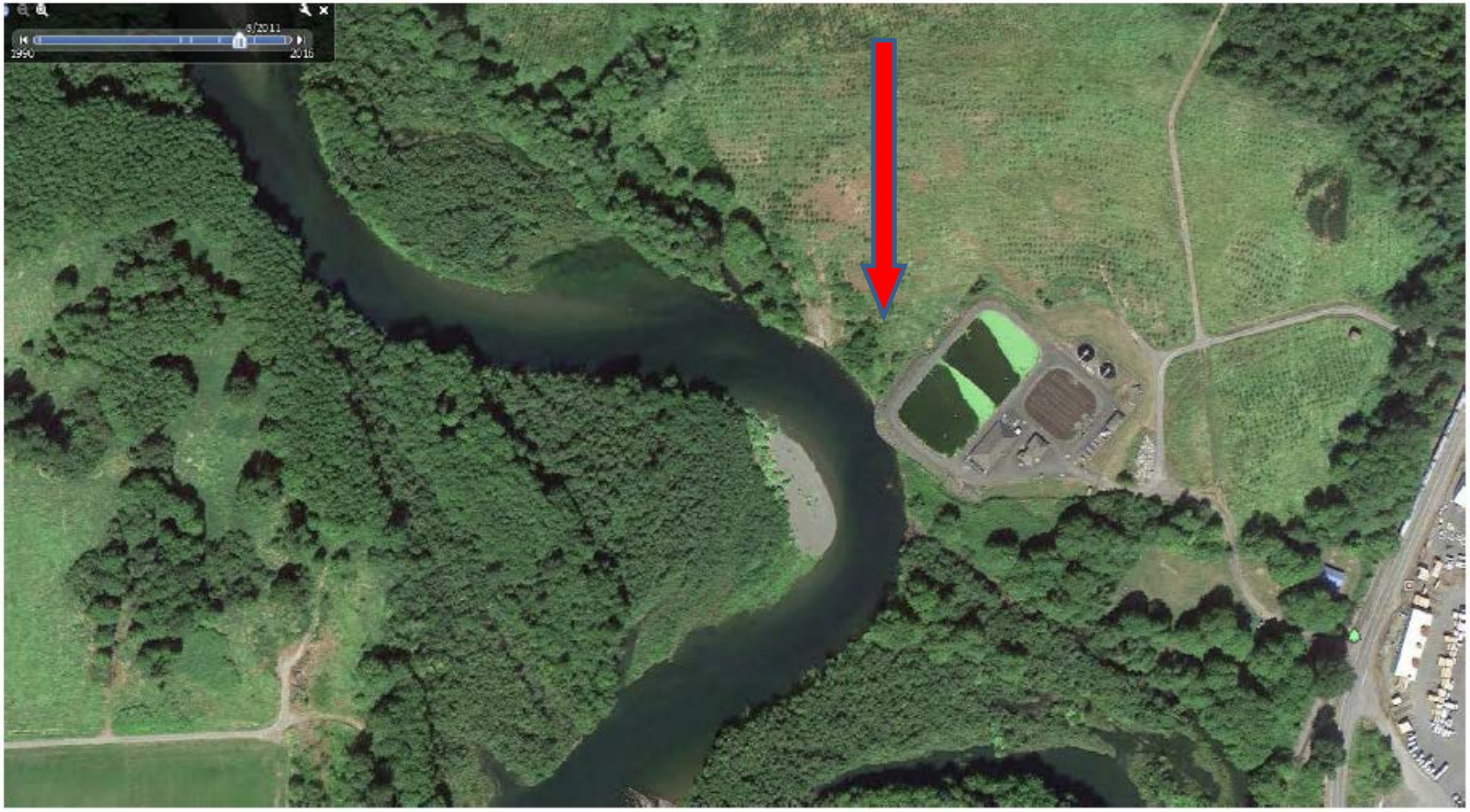


I. Problem -- July 2006

I. Problem -- September 2009



I. Problem -- August 2011



I. Problem -- May 2013

I. Problem -- August 2016

I. Problem -- March 2017

I. Problem -- March 2017

I. Problem -- March 2017

Eastward Migration of Wynoochee River -- ~ 17 feet/year; erosion and scouring threatening WWTP.

I. Problem -- March 2017

Scouring and Outward Movement of Existing Sheet Pile Wall – Existing bank line sheet pile wall designed for scour depth of 25 feet. Actual scour depth upwards of 35 feet (and increasing). Continued scouring and outward movement pose significant risk to WWTP.

2017

2018

I. Problem -- March 2017

Overarching Concern – Potential environmental, economic, public health disaster.

II. Options and Solution

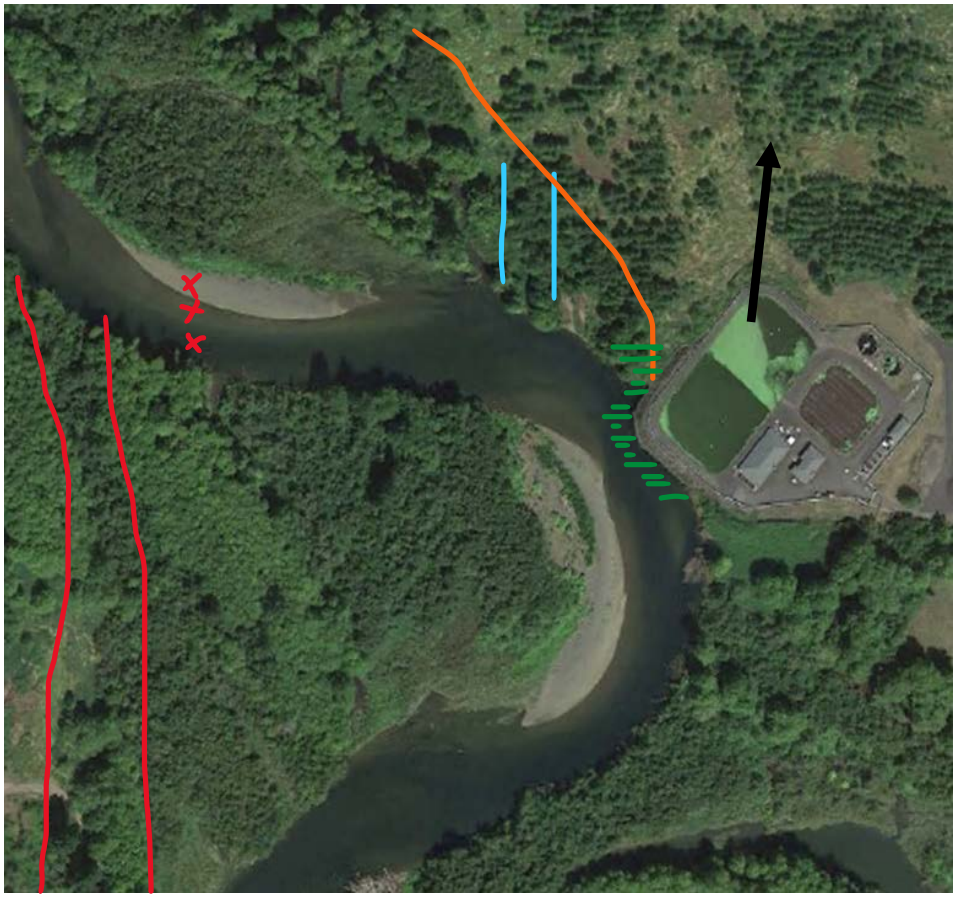
1. Relocate WWTP
   → 3-5 years / $30M / Effective

2. Extend Sheet Pile with Plant Upgrades
   → 2-3 years / $8-10M / Not effective

3. Bank Deflectors with Plant Upgrades
   → 1-2 years / $4-5M / Not effective

4. Relic Channel, In-River Jams/Deflectors
   → 3-4 years / $5-6M / Effective

5. Log Jacks with Plant Upgrades (Phase I & II)
   → 1-2 years / $5M / **Most Effective**



II. Options and Solution

Phase I

II. Options and Solution

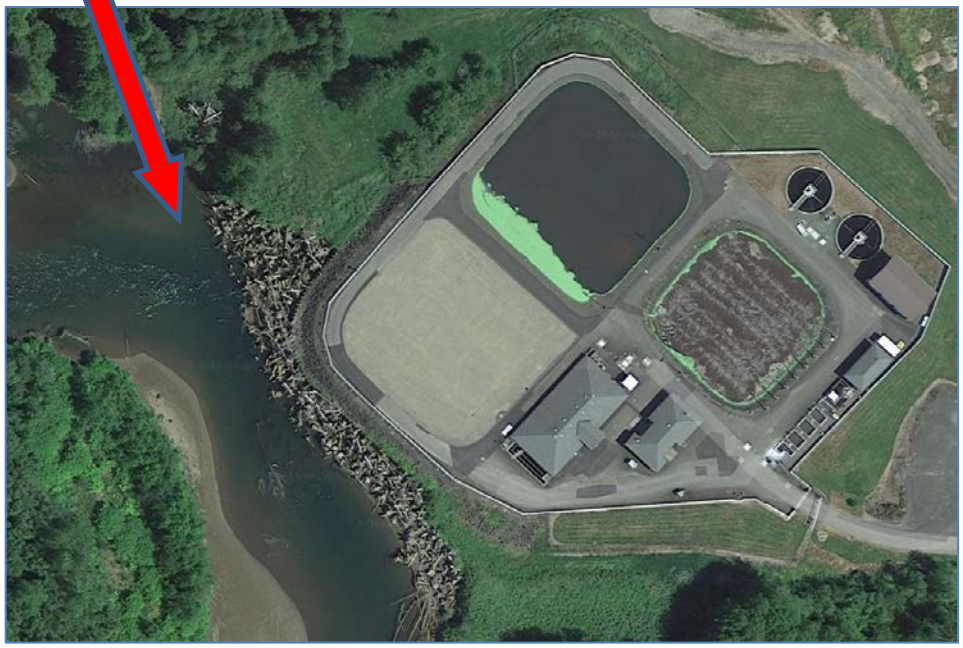
Phase I

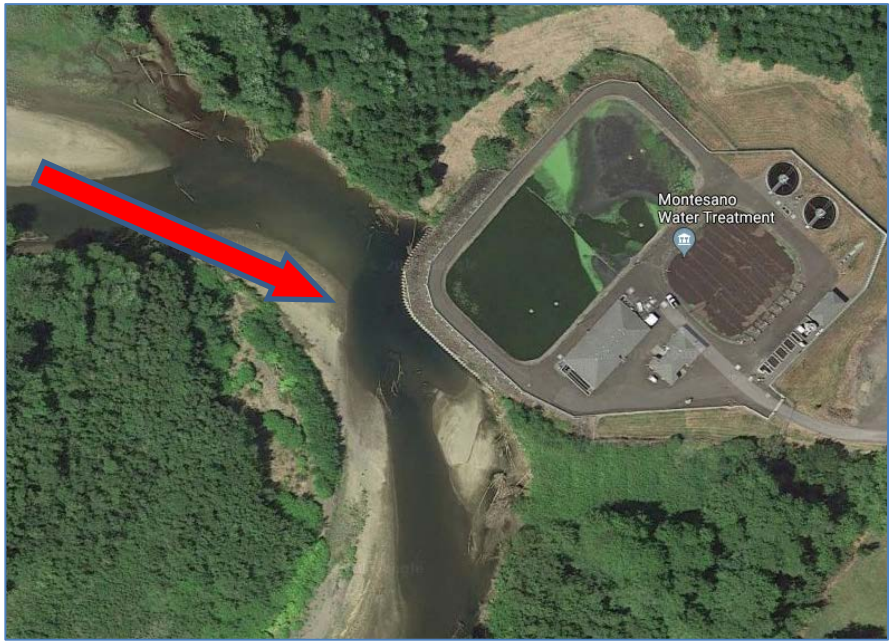
II. Options and Solution

III. Methods

IV. Results

Project End





Project Start

https://www.google.com/maps/@46.9678637,-123.6077821,197m/data=!3m1!1e3

IV. Results

- ✓ Phase I Project Cost (On-bank Log Jacks)= $557K

- ✓ Phase II Project Cost = $4.7M
  - Remove/Consolidate Biosolids Lagoon/WWTP Improvements = $3.2M
  - In-water Log Jacks = $1.5M

- ✓ ROI = Substantial.
  - o New WWTP = $30M; Temporary Treatment = >$1M
  - o Environmental Clean-up and Natural Resource Damage Impacts = $MMs

- ✓ WWTP Longevity increase = ~15-30 years

- ✓ January 2022 and March 2022 High-water events = No adverse effect on WWTP

- ✓ River (and its thalweg) migrating westward away from WWTP; Log Jacks accumulating wood, sediment, and rebuilding bank!

EXTRA -- Drone, Video, Pictures, Webcam

Drone:

- 3-25-2017 -- https://youtu.be/UUN2-YsMy3Y

- 1-07-2020 -- https://www.dropbox.com/s/l43pqay1pwifh4s/DJI_0008.MOV?dl=0
- 1-07-2020 -- https://www.dropbox.com/s/03iyjvhddxjvjvd/DJI_0024.MOV?dl=0

- 1-10-2022 -- https://www.dropbox.com/s/d352wbwlal534w0/DJI_0021.MOV?dl=0

Video:

- Example Log Jack installation (from Lower Satsop Right Bank Conservation Project) https://www.dropbox.com/s/4ps3ny80n8uru0q/DJI_0275.MP4?dl=0

Pictures:

- 1-07-2020 -- https://www.dropbox.com/sh/98v0eyss9fmhxto/AABYscwWmBp21Cr-jdnpwAlPa?dl=0

Webcam:

- https://chehalis.onerain.com/dashboard/?dashboard=4a77124f-3311-4f07-963f-a3f302bf8335

Thank You!

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