



# SUSTAINABILITY & MULTIMODAL PLANNING WORKSHOP

#APTAsmp19





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**Julie Montgomery**  
Director of Architecture & Art  
Sound Transit

**Iman Rejaie**  
Practice Leader  
HNTB Corporation



# Overview



- Sound Transit Sustainability Plan
- Lynnwood Link Extension
- Trees and Transit



# Sound Transit Sustainability Program

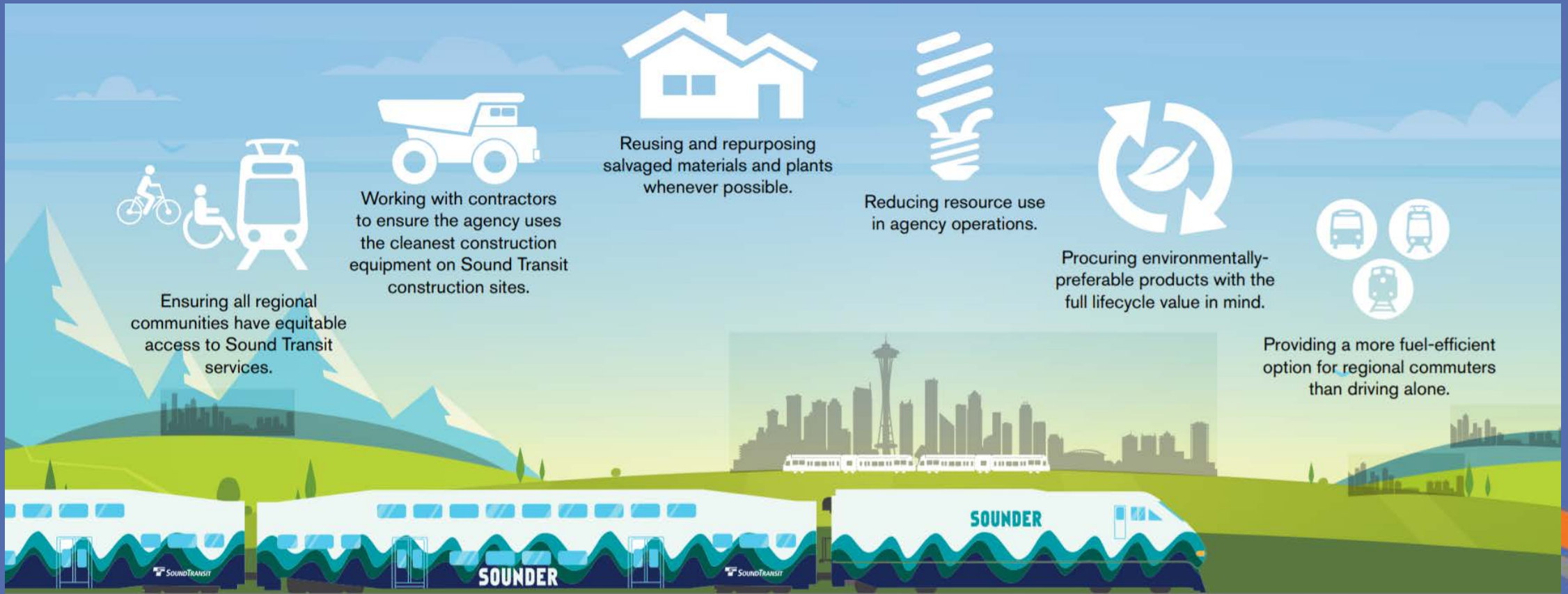


- Sustainability Initiative 2007
- Sustainability Plan issued 2011 with updates in 2015 & 2019
- Sustainability efforts strategically flow from agency business plan, goals and milestones
- Continually improving
- Goals organized by People, Planet, Prosperity



# Sound Transit Sustainability Program

## Selected Focus Areas



# Sound Transit Sustainability Program

Tons of greenhouse gas emissions diverted

In 2017	By 2041
425,000	793,000

Carbon equal to number of seedlings growing for 10 years

In 2017	By 2041
11 Million	20.5 Million

Gallons of gasoline saved

In 2017	By 2041
48 Million	89 Million

Number of homes worth of electricity saved

In 2017	By 2041
63,000	117,000



# Sound Transit Capital Expansion Programs



- Capital expansion programs approved in 2006 & 2017
- Sustainability in Capital Programs:
  - Envision pilots
  - LEED Silver required for facilities & stations with conditioned space
  - Piloting LEED for Transit



## Balancing Act



When building Capital Projects and focusing on sustainability, there are trade-offs

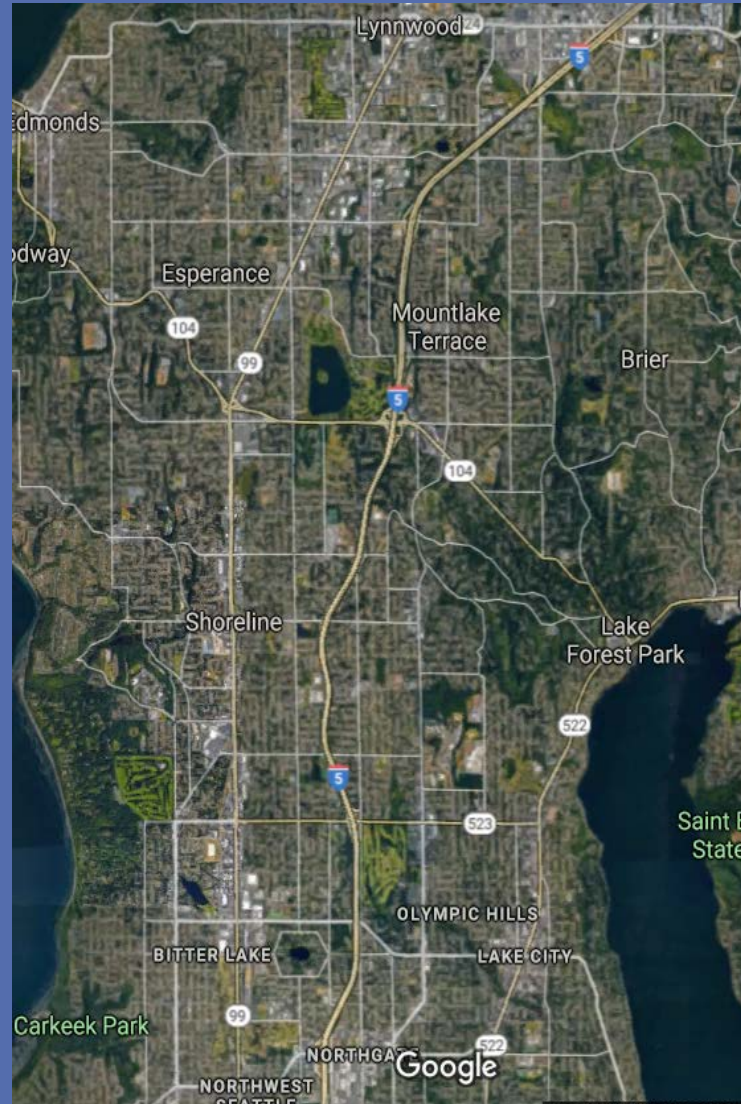
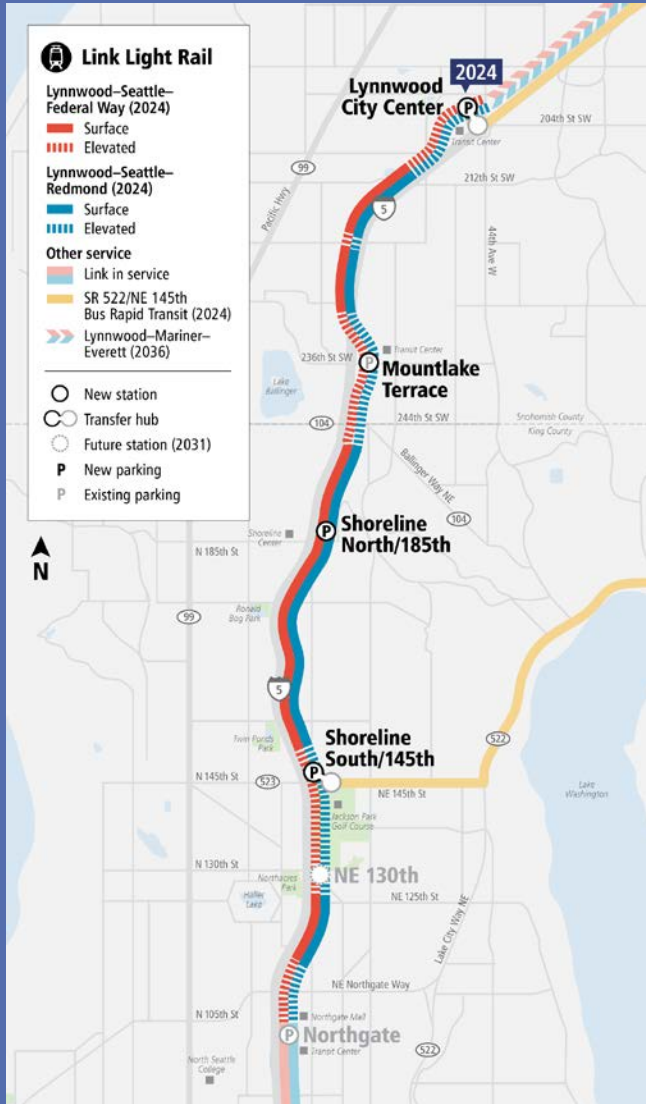
Case Study:

Lynnwood Link Extension and trees along the corridor



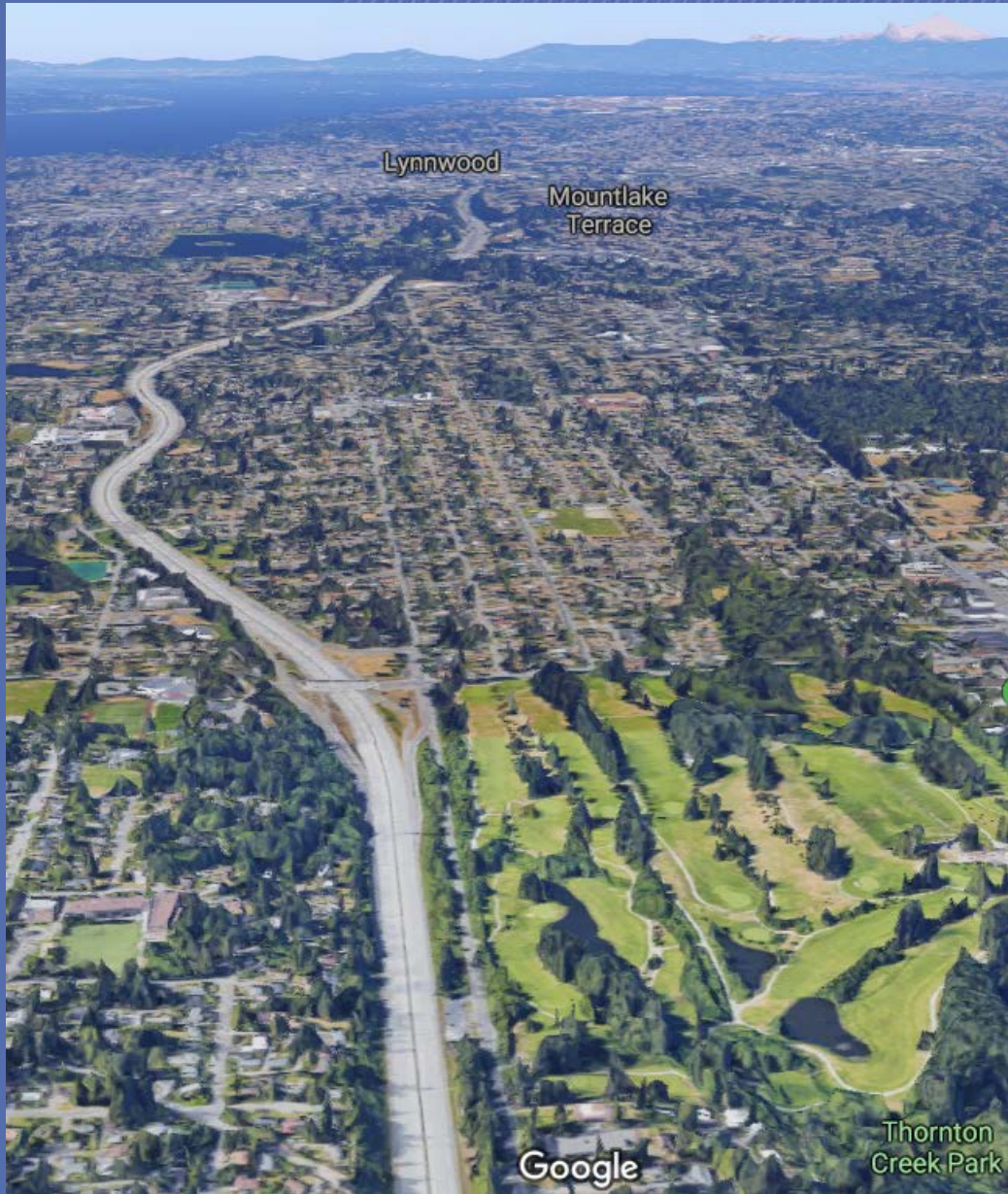


# Lynnwood Link Extension



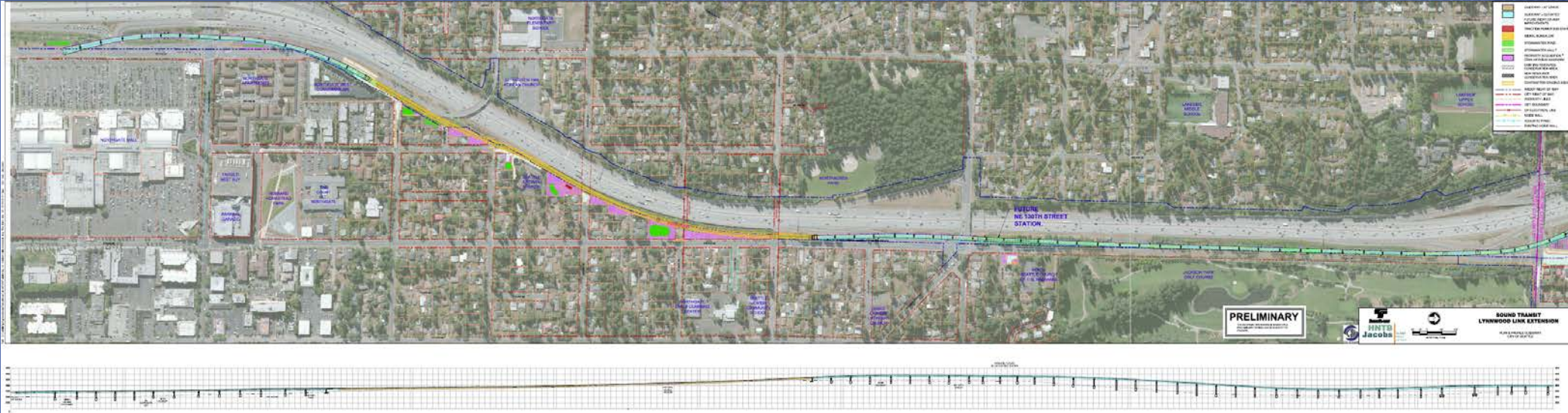
- 8.5 miles
- 4 light rail stations
- 4-6 minute headways
- 28 minutes from downtown Seattle to Lynnwood City Center
- Opening 2024
- Highway 99 versus I-5





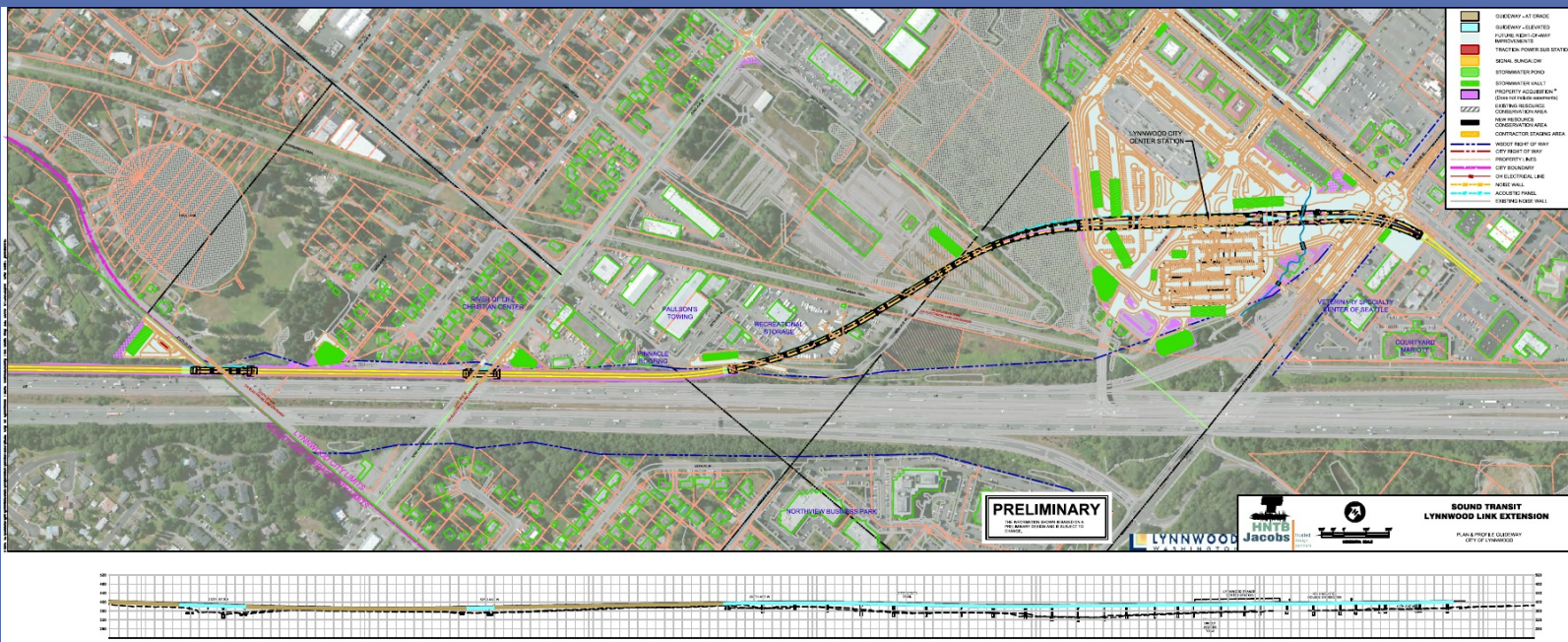
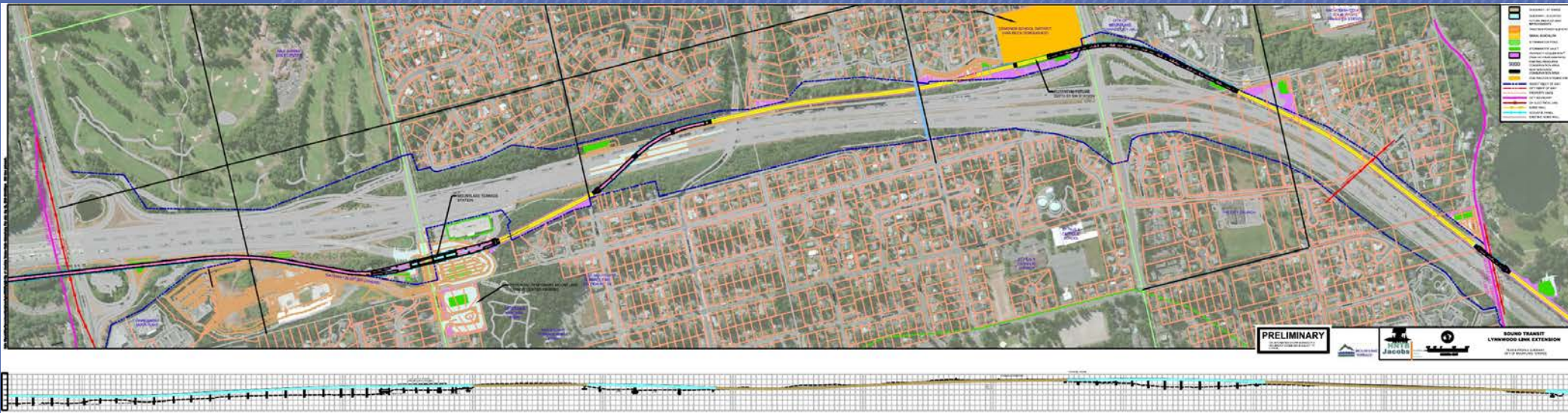
- Alignment follows I-5
- Displaces landscaping established 50 years ago
- Tall evergreens





- Alignment follows I-5
- Displaces landscaping established 50 years ago





# Challenges

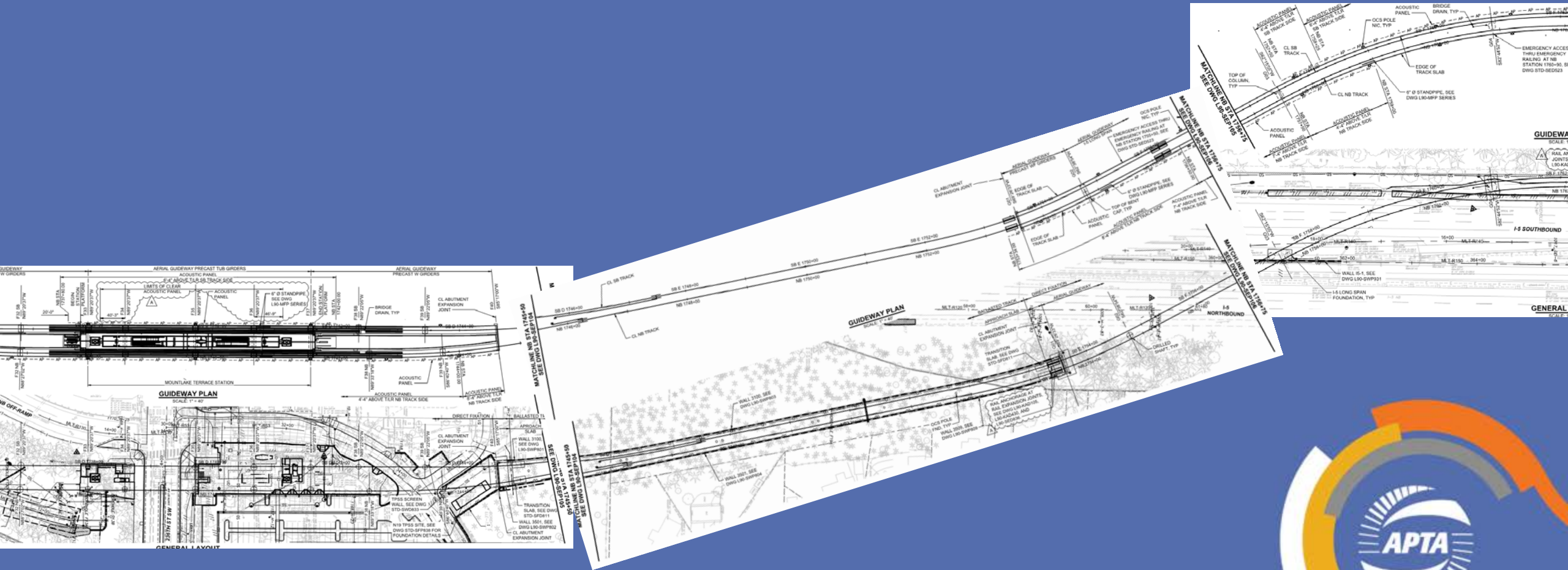


- Design Elements
- Multiple Jurisdictions
- Community History

[https://www.youtube.com/watch?v=vdERb7Tw\\_MQ](https://www.youtube.com/watch?v=vdERb7Tw_MQ)



# Challenges



## Outreach & Press

Work to remove over 5,000 trees for Lynnwood light rail begins

Landscape changed by Sound Transit tree cutting

TreeSisters plan vigil for 5,300 trees being felled by Sound Transit



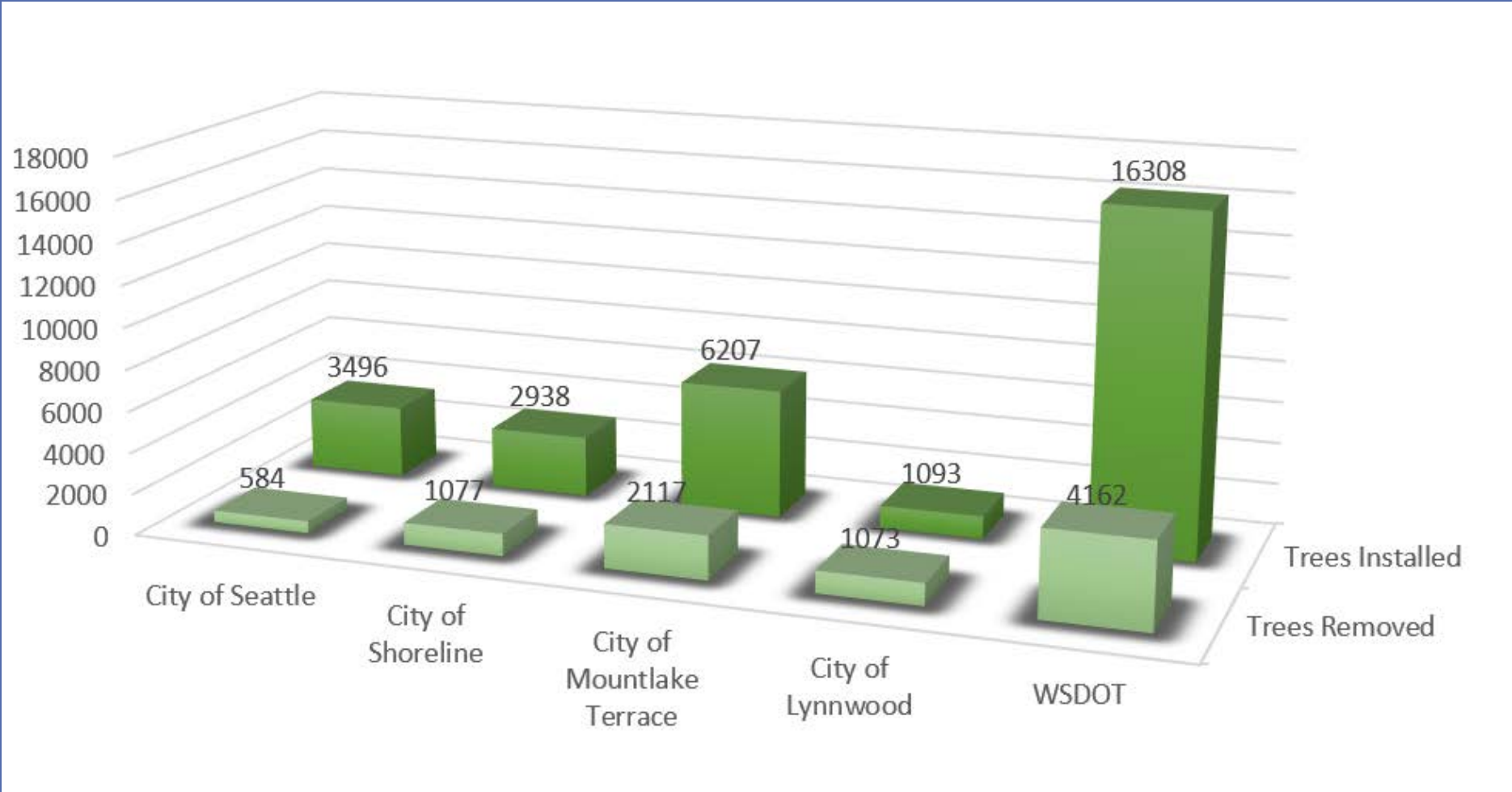
## Tree Replacement Program

- 5 different jurisdictions including 4 cities and Washington State Department of Transportation (WSDOT)
- Largest number of trees to be replaced in WSDOT
- Sound Transit worked with WSDOT on tree replacement requirements
- WSDOT tree replacement based upon caliper of removed tree
- Increased establishment period from 3 to 13 years
- Increased size of replacement trees for overall decrease in number of trees
- Tree planting opportunities were maximized within the project footprint
- WSDOT identified additional roadside locations for planting

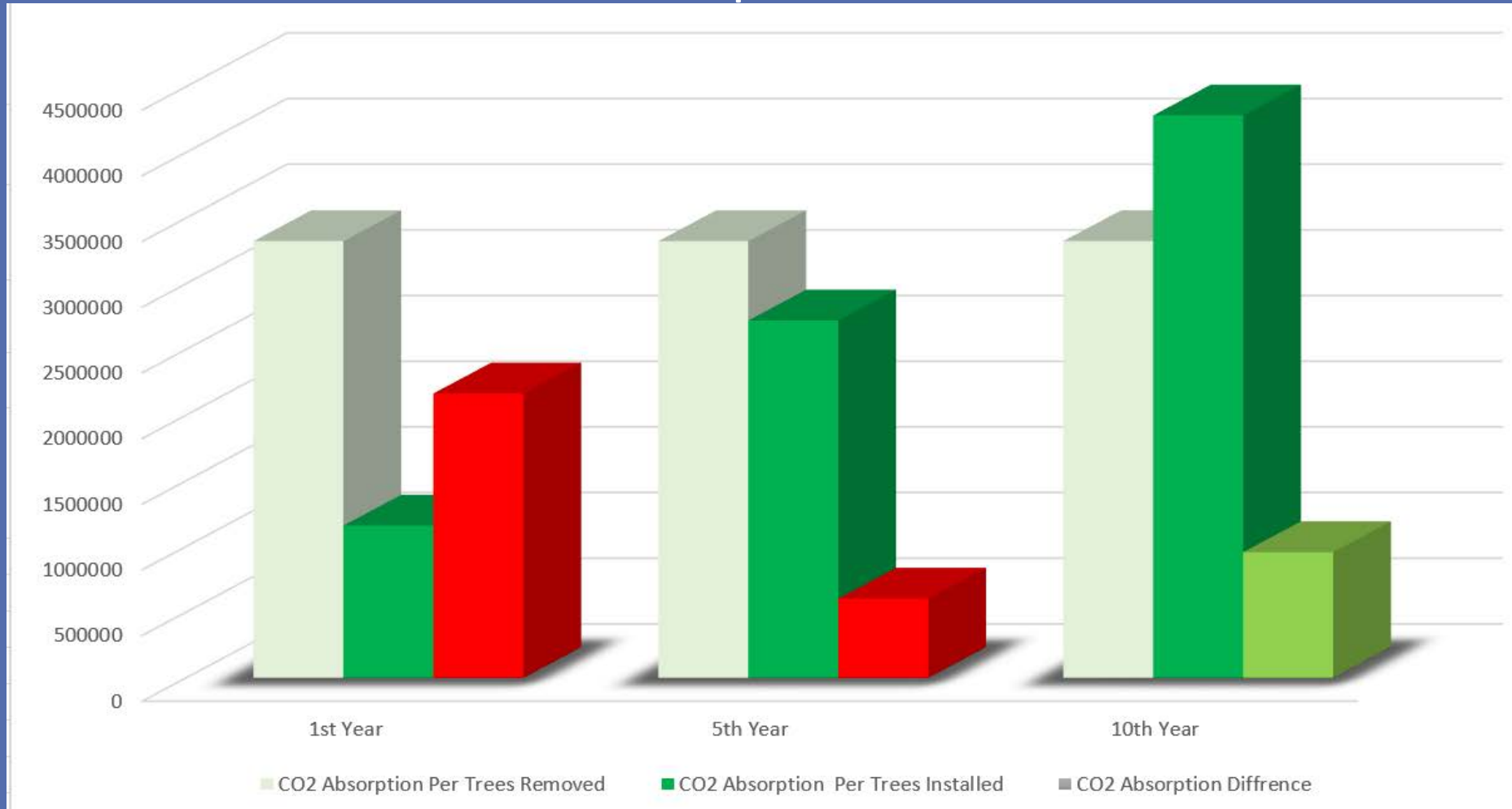




# Post Design Analysis



# CO2 Absorption - Tree

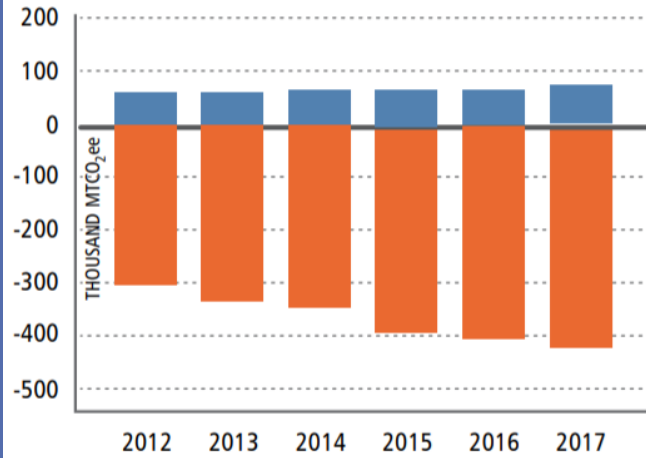


- Young trees absorb CO2 at a rate of 13 pounds per tree each year. Trees reach their most productive stage of carbon storage at about 10 years at which point they are estimated to absorb 48 pounds of CO2 per year.
- Numbers are pounds per tree each year
- <http://urbanforestrynetwork.org>



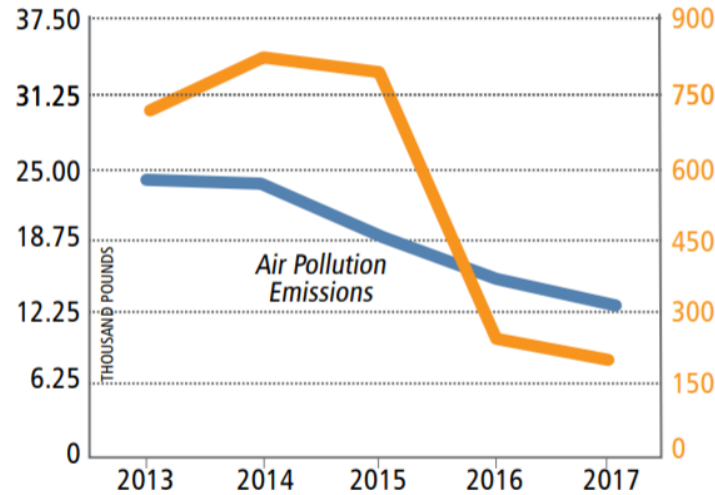
# CO2 Absorption – Public Transit

### Greenhouse gas emissions



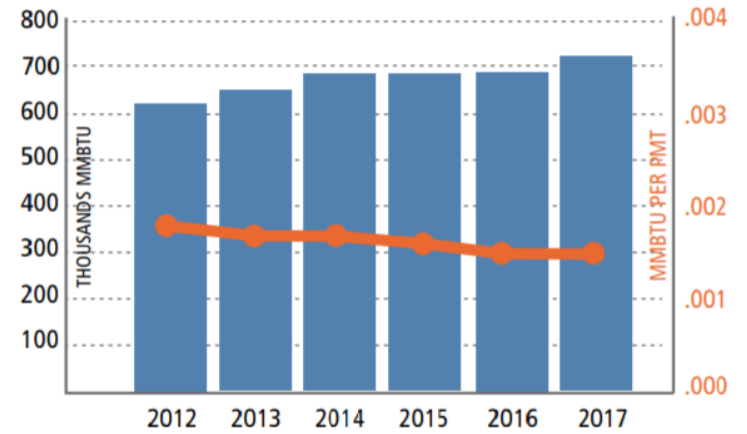
- Agency emissions from operations
- Regional emissions avoided when residents take transit

### ST Express and Sounder air pollution reduction



- PM10
- Carbon Monoxide

### Revenue fleet energy use



- Total energy use
- Energy use per passenger-mile traveled



## Final Thoughts

- The inherent nature of Capital Projects require that something must be displaced to bring new transit services.
- Landscape restoration can be considered in determining the overall benefits of new transit service but it can take time.
- One mature tree releases enough oxygen back into the atmosphere to support two human beings.

Thank you!

