



# Popple Dungeon Road Culvert Replacement Alternatives Presentation Meeting



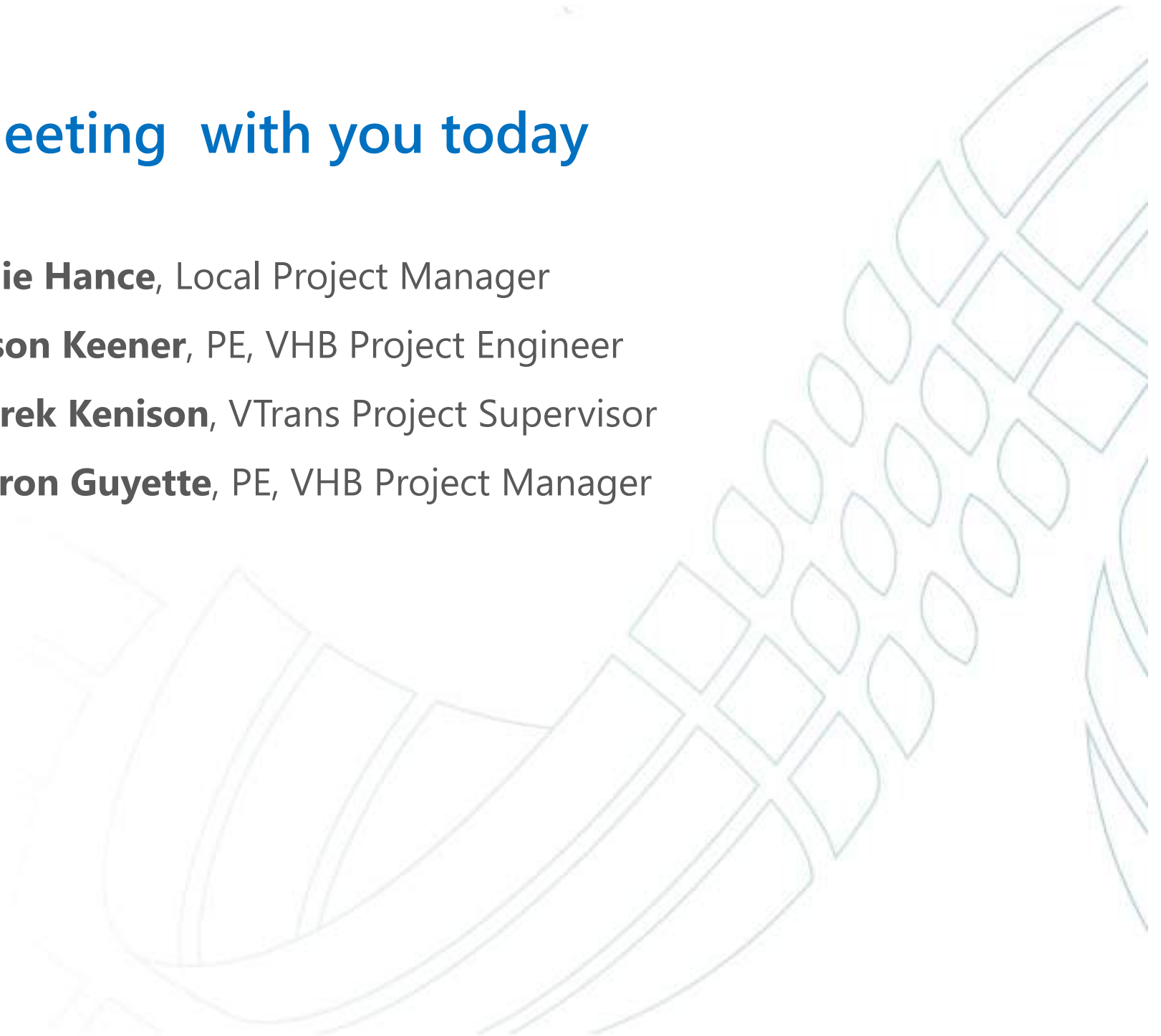
*Presented To*  
**Town of Chester, VT**

*Presented by*  
**VHB**

*January 16, 2019*

# Meeting with you today

- **Julie Hance**, Local Project Manager
- **Jason Keener**, PE, VHB Project Engineer
- **Derek Kenison**, VTrans Project Supervisor
- **Aaron Guyette**, PE, VHB Project Manager





# Project Update & Status

- Project being funded with 2 Transportation Alternatives Program Grants through VTrans Municipal Assistance Program
  - \$300,000 grants (each) with a 20% local match (\$75,000 each)
  - \$750,000 Total
- Local Concerns & Alternatives Presentations
  - 40 Foot Span Cast-In-Place bridge set on driven pile substructure
  - Temporary Bridge and onsite detour for traffic
  - Estimated Cost of \$700,00
- Preliminary Plans
  - 45 Foot Span Precast bridge
  - Driven piles requiring pre-excavation (auguring)
  - Estimated Cost of \$955,000

# Foundation Alternatives

- Driven Piles with Pile Caps
  - Difficult due to existing soil conditions
  - Approximately \$130,000 additional cost
  - Provide excellent scour protection

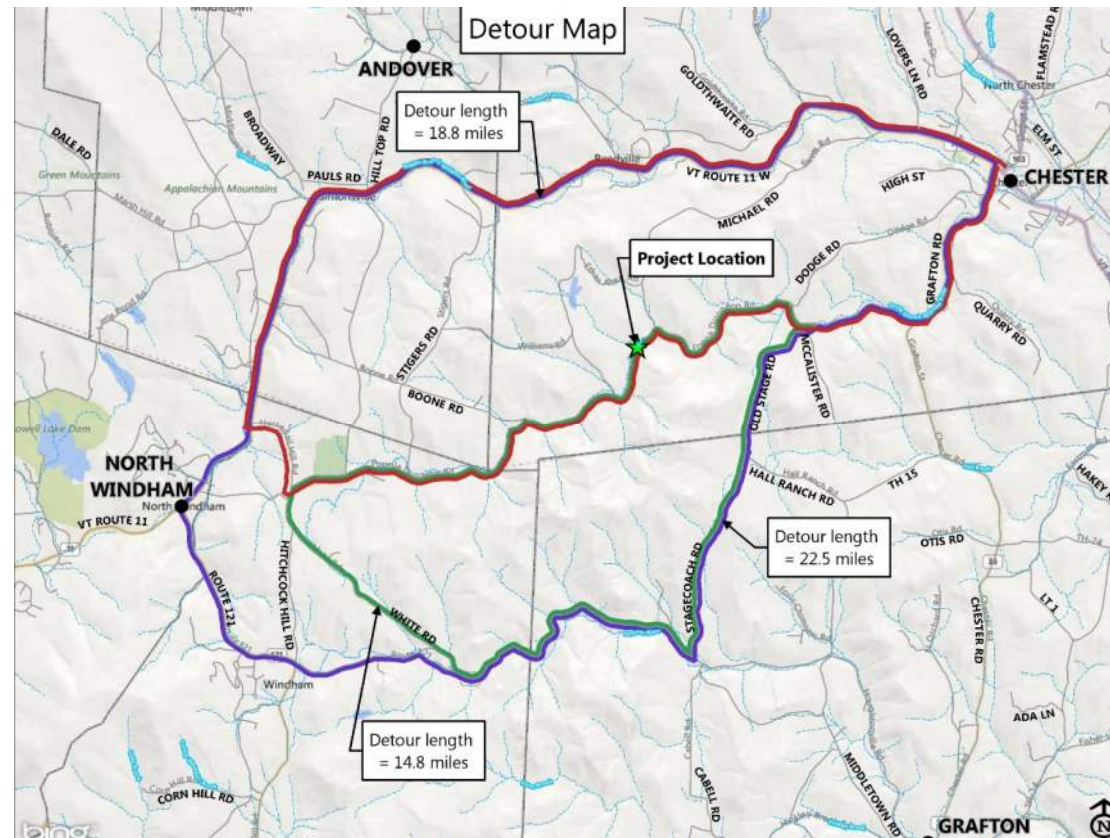


- Spread Footing Abutments
  - Greater overall excavation
  - Scour Protection from
    - Increased Hydraulic Opening
    - Footings placed 6ft below streambed
    - Appropriately sized span
    - Appropriately sized material
    - Use of cross vanes



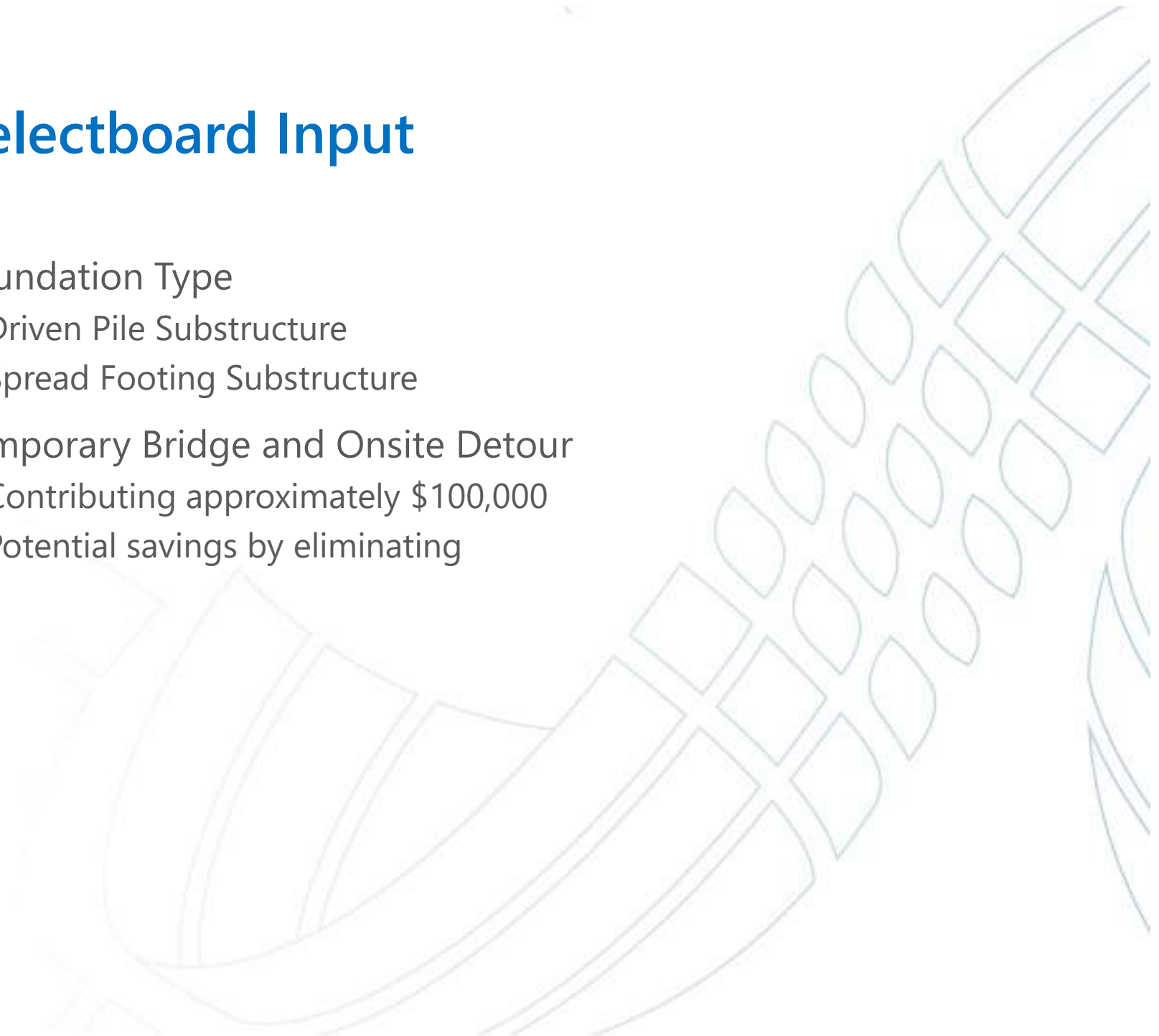
# Temporary Bridge/On-site Detour

- Lengthy Detour for Both Residential and Emergency Services
  - Possibility of an agreement with Windham Emergency Services
  - Residential detour of up to 15 miles, 25-30 minutes
- Potential Cost & Construction Schedule Savings
  - Estimated cost of \$100,000



# Selectboard Input

- Foundation Type
  - Driven Pile Substructure
  - Spread Footing Substructure
- Temporary Bridge and Onsite Detour
  - Contributing approximately \$100,000
  - Potential savings by eliminating



# Selectboard Input

<b>Driven Piles w/ Onsite Detour</b>	<b>Spread Footing w/ Onsite Detour</b>
\$955,000	\$810,000
Minimal Impact to Residents	Minimal Impacts to Residents
Greatest Flood Resiliency	High Flood Resiliency
Highest Cost	Savings from Eliminating Piles
<b>Driven Piles w/ Offsite Detour</b>	<b>Spread Footing w/ Offsite Detour</b>
\$855,000	\$710,000
Requires lengthy detour	Requires lengthy detour
Greatest Flood Resiliency	High Flood Resiliency
Savings from eliminating onsite detour	Lowest Cost



# Questions

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