# ALTERNATIVES PRESENTATION MEETING

DEPOT STREET BRIDGE
JAMAICA BO 1442(42)
TH 19, BRIDGE NO. 32 OVER WEST RIVER

HOYLE TANNER

# PRESENTATION OUTLINE

- Introductions
- Purpose of Meeting
- Location Map
- VTrans Project Development Process
- Existing Conditions
- Design Criteria and Considerations
- Alternatives Considered
- Recommended Alternative
- Preliminary Project Schedule
- Questions

# INTRODUCTIONS

- Gary Laroche, P.E.
  - VTrans  Project Manager
- Sean James, P.E.
  - Hoyle Tanner Project Manager
- Megan Ooms, P.E.
  - Hoyle Tanner Senior Structural Engineer

# PURPOSE OF MEETING

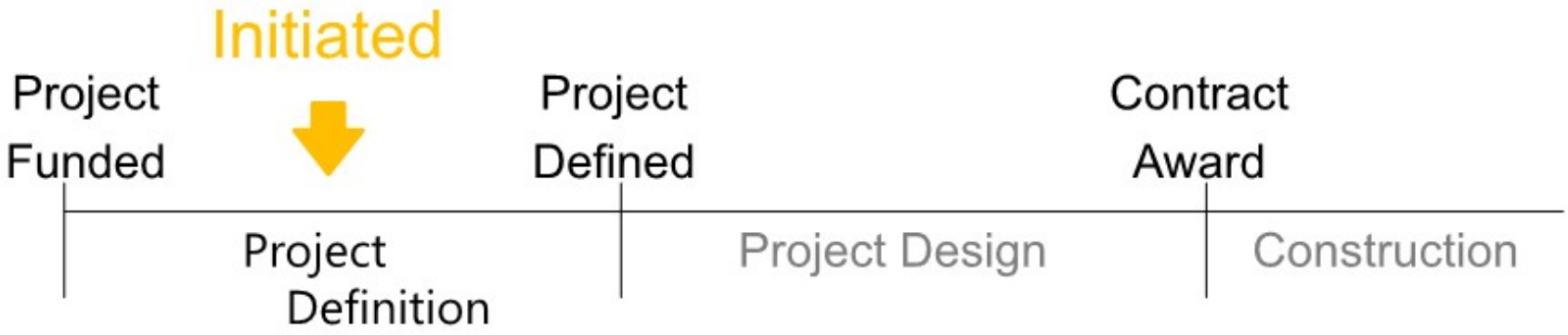
- Provide an Update of Project Status
- Provide an Update of Project Constraints
- Discuss Updated Recommended Alternative
- Provide an Opportunity to Ask Questions and Voice Concerns

# LOCATION MAP


Vermont Agency of Transportation
Jamaica BO 1442(42)

Trusted Experts | Innovative Results

# VTRANS PROJECT DEVELOPMENT PROCESS




- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications
- Right-of-Way process if necessary

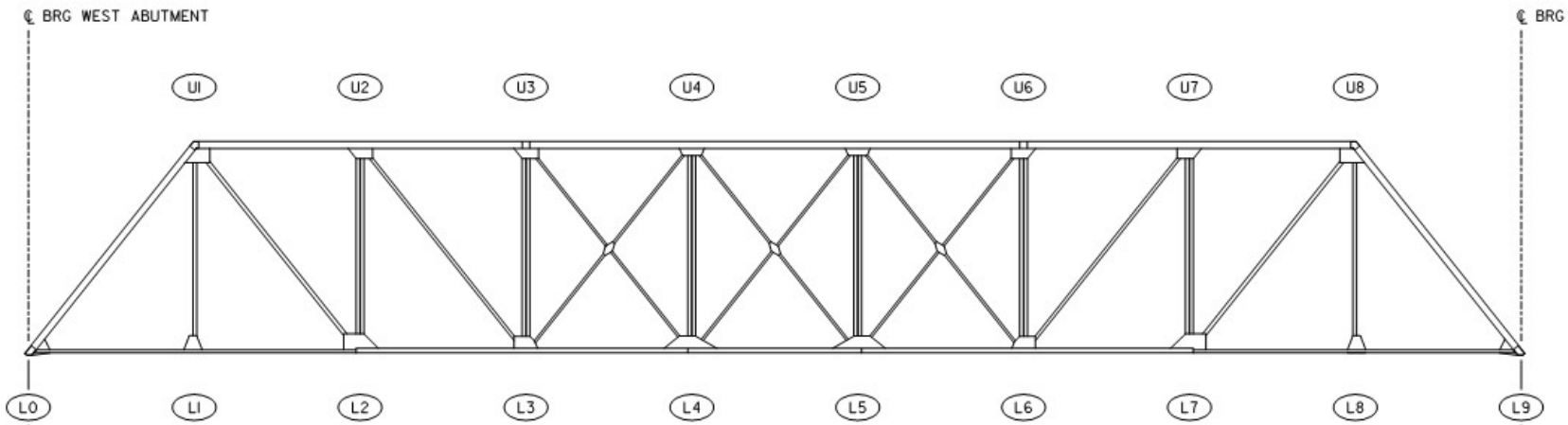
# EXISTING BRIDGE INFORMATION

- Bridge No. 32 constructed in 1926
- Fabricated by the Berlin Construction Company
- Kittredge Bridge Company as the contractor
- Pratt Through-Truss
  - 165’ Total Span Length
  - 15’-4” On Center, 13’-6” Between Curbs
  - 14’-7” Vertical Clearance
  - Posted Weight: 8 Tons

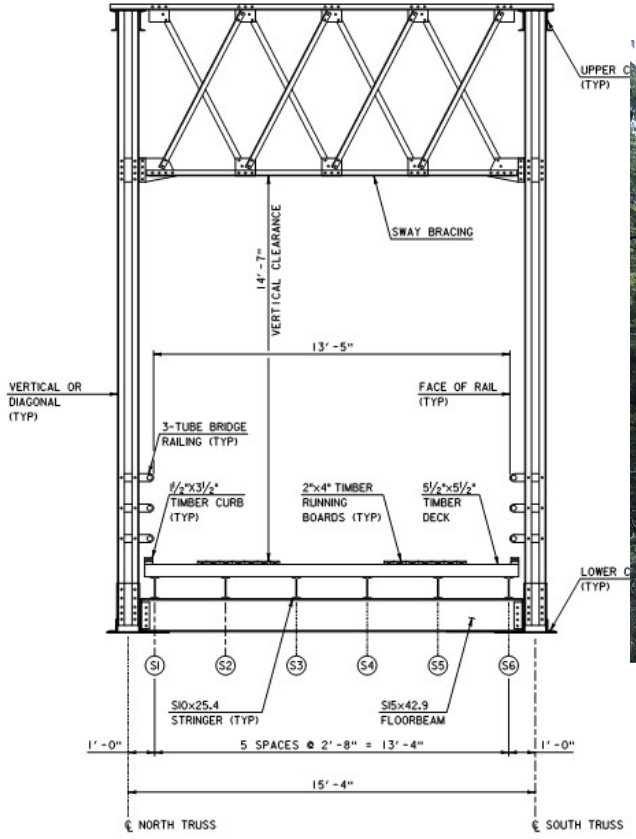
# EXISTING BRIDGE INFORMATION

- Precursor to post-1927 standardized Pratt Trusses
- Utilizes built up members rather than rolled I-beams
- Meets registration requirements for inclusion in the National Register of Historic Places (NRHP).
- 1998 Vtrans Historic Bridge Programmatic Agreement
  - Listed as Category A for a limited highway use
  - Change of use would require additional review and agreements
- Substructures: dry-laid stone masonry

# ELEVATION VIEW




# TYPICAL SECTION




EXISTING BRIDGE SECTION

# INSPECTION FINDINGS

- National Bridge Inspection Standard Condition Ratings
  - 9 = Excellent
  - 0 = Failed Condition – Closed
- Overall bridge condition was rated a 6 or satisfactory
  - Deck condition is rated a 6 or satisfactory
  - Superstructure condition is rated a 6 or satisfactory
  - Substructure condition is rated a 6 or satisfactory
  - Channel condition is rated 8 or very good.
- Anticipated Inspection: October 2025

# ENVIORNMENTAL RESOURCES

- Resource ID Completed in October 2019 by Others

**Table 1. Resource ID Summary Table**

| TOWN | STRUCTURE ID | WETLANDS | SURFACE WATERS | FLOODPLAIN / FLOODWAY | SIGNIFICANT HABITAT | RTE SPECIES | FARMLAND SOILS | INVASIVE SPECIES |
|---|---|---|---|---|---|---|---|---|
| JAMAICA | BRIDGE 32 | X | X | X | X | X | X | X |

# DESIGN CRITERIA AND CONSIDERATIONS

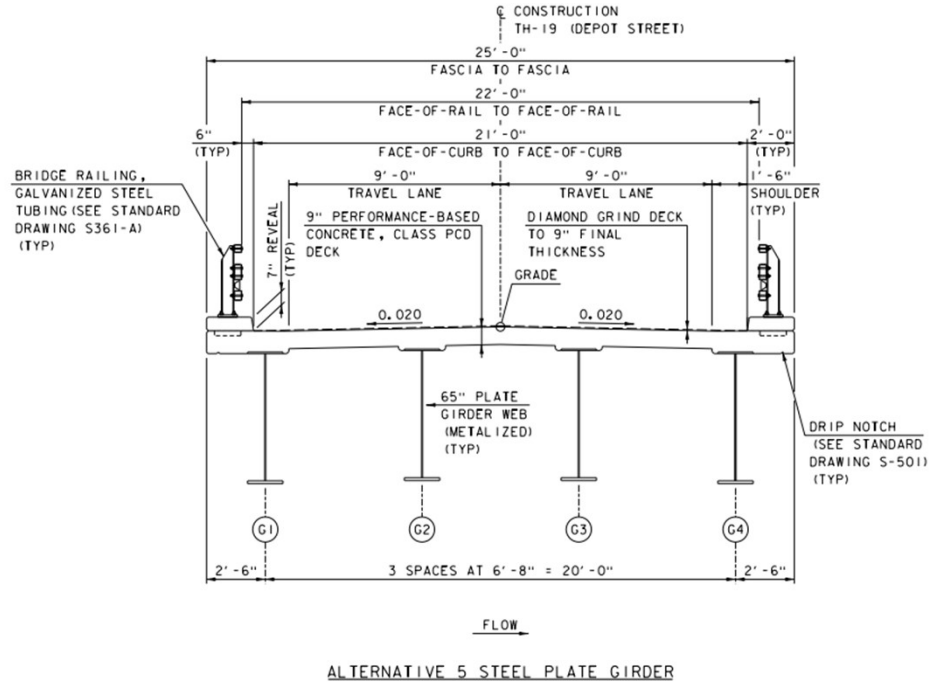
- Updated Purpose and Need
  - US Army Corps of Engineers
    - Access to Ball Mountain Dam for Construction and Maintenance
  - State Parks and Department of Forest
    - Access to Jamaica State Park for Construction
- Time-of-Year and In-Water Work Restrictions
  - June 1-October 1
  - Resulted from Resource Identification

# DESIGN CRITERIA AND CONSIDERATIONS

- Average Daily Traffic
  - 2023- 260; 5.8% Trucks
  - 2043- 280; 8.6% Trucks
- Constructability
  - East Side Access
  - Temporary Bridge Construction
  - Demolition of Existing Bridge
  - Construction of Alternative

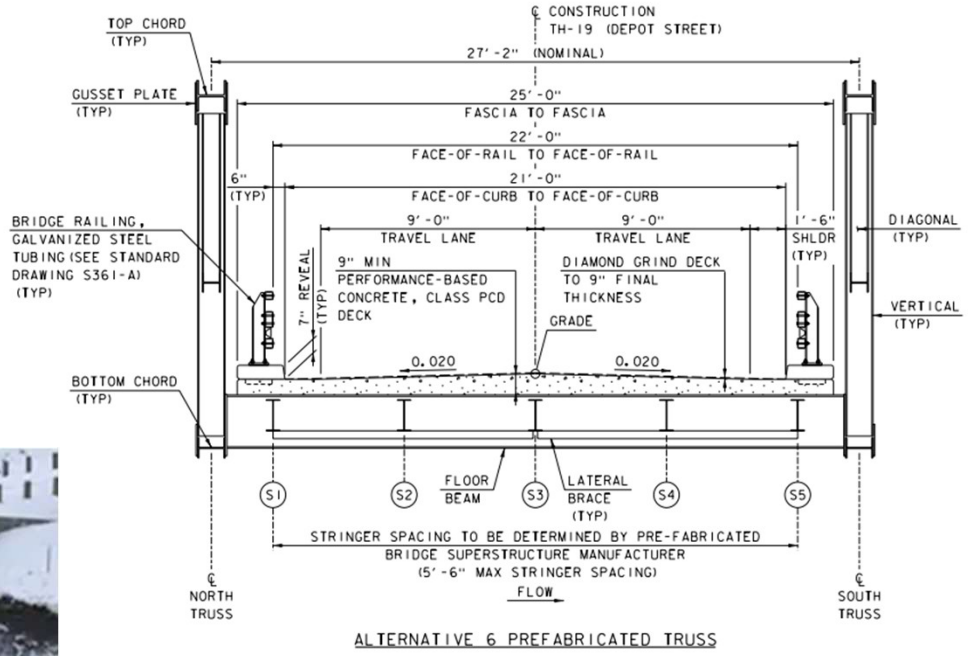
# ALTERNATIVES ANALYSIS UPDATE

- Alternative 5: Replace Bridge with New Steel Girder Bridge
  - Temporary Bridge Off-Line
  - Requires Crane/Equipment on West Side to Set Steel
  - HL-93 Design Vehicle



# ALTERNATIVES ANALYSIS UPDATE

- Alternative 6: Replace Bridge with New Truss Bridge
  - Temporary Bridge Off-Line
  - Requires Temporary Support on West Side to Launch
  - Requires Large Laydown Area to Assemble Trusses
  - HL-93 Design Vehicle



ALTERNATIVE 6 PREFABRICATED TRUSS

# ALTERNATIVE ANALYSIS UPDATE

- Existing Truss to be Removed for both Alternatives
  - Preserve and Remove to New Location
    - Becomes Property of the Town
    - New Location Needs to be Determined
    - All Costs of Bridge Become 100% Town Responsibility
  - Document and Destroy
    - Document for Historic Purposes
    - Truss to be Demolished by Contractor and Removed from Site

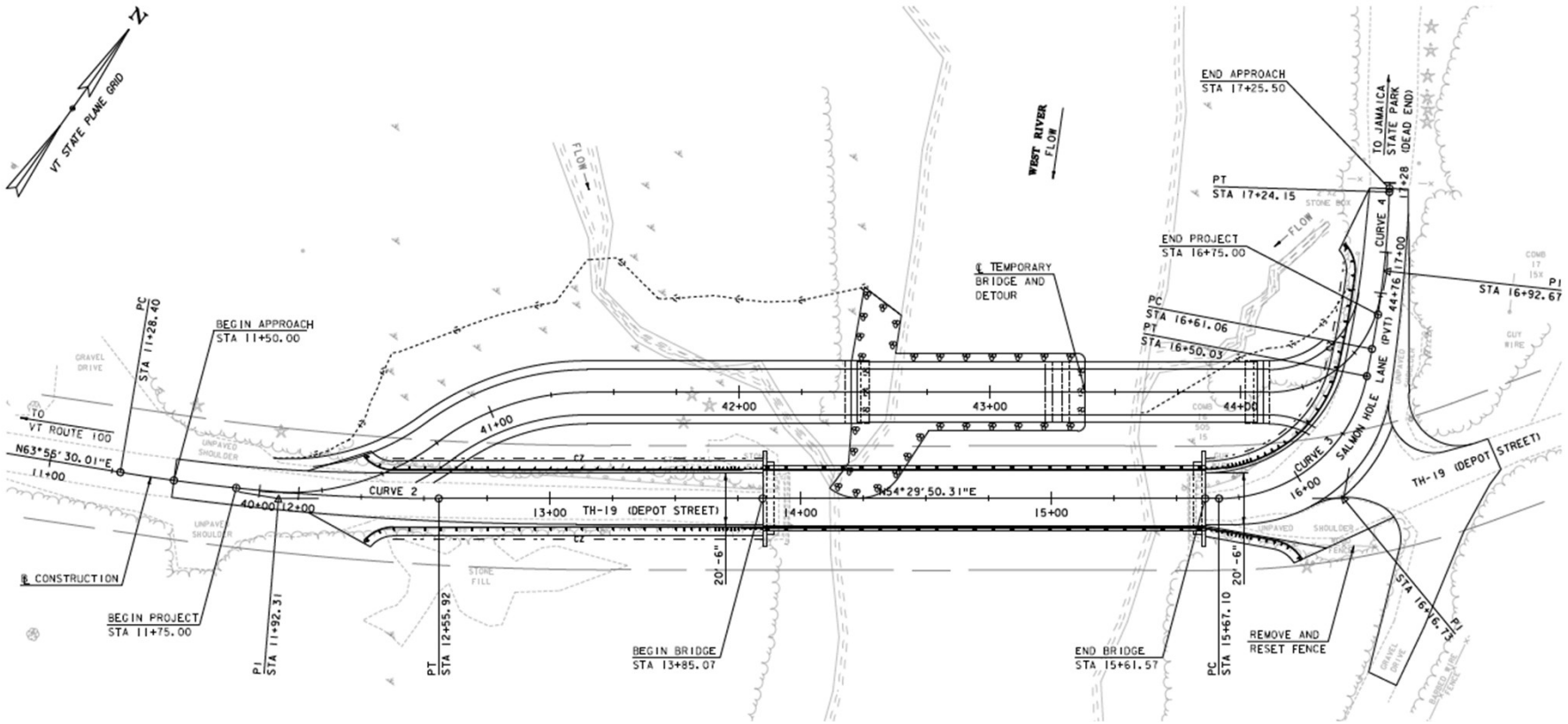
# COST MATRIX

| Jamaica BO 1442(42) | | Alternative 5<br>New Steel Girder Bridge On-Alignment with Temporary Bridge | Alternative 6<br>New Steel Truss Bridge On-Alignment with Temporary Bridge |
|---|---|---|---|
| COST | Bridge Cost | $3,231,000 | $4,173,000 |
| | Removal of Structure | $650,000 | $650,000 |
| | Roadway | $450,000 | $450,000 |
| | Maintenance of Traffic | $692,000 | $692,000 |
| | Construction Costs | $5,023,000 | $5,965,000 |
| | Construction Engineering & Contingencies | $1,015,000 | $1,015,000 |
| | Accelerated Premium | $0 | $0 |
| | Total Construction Costs w CEC | $6,038,000 | $6,980,000 |
| | Preliminary Engineering | $1,522,000 | $1,370,000 |
| | Right of Way | $10,000 | $10,000 |
| | Total Project Costs | $7,560,000 | $8,360,000 |
| | Annualized Costs | $100,800 | $111,470 |
| TOWN SHARE | | $153,000 + Maintenance Cost | $138,000 + Maintenance Cost |
| TOWN %<br>Preliminary Engineering<br>Right-of-Way<br>Construction Cost w CE & Contingency<br>Maintenance Cost | | <br>10%<br>10%<br>0%<br>100% | <br>10%<br>10%<br>0%<br>100% |

# RECOMMENDED ALTERNATIVE

- Alternative 5: New Steel Girder Bridge
  - Cost
    - Less Expensive
    - More Fabricator Options offer More Competitive Pricing
  - Maintenance of Traffic
    - Less Staging Space Required On-Site
    - More Space Between Structures to Aid in Construction
    - Provides same level of service as Truss Bridge
    - Temporary Bridge Off-Line

# RECOMMENDED ALTERNATIVE



# PRELIMINARY PROJECT SCHEDULE

- Construction Start- 2027
  - Total Project Cost Estimate - $7,560,000
    - Town Share - $153,200

# FINANCE & MAINTENANCE AGREEMENT

The Finance and Maintenance Agreement is an overarching project agreement required for all municipally owned assets to define responsibilities and for VTrans to perform activities on behalf of the Town. E.g. Acquire Right-of-Way.

**Bridge Rehabilitation: (Executed Agreement)**

- Scoping / Preliminary Engineering
  - (80% Fed, 15% State, 5% Town)
- Right-of-Way
  - (80% Fed, 15% State, 5% Town)
- Construction Cost
  - (100% Fed, 0% State, 0% Town)

**Bridge Replacement: (Amendment Required)**

- Scoping / Preliminary Engineering
  - (80% Fed, 10% State, 10% Town)
- Right-of-Way
  - (80% Fed, 10% State, 10% Town)
- Construction Cost
  - (100% Fed, 0% State, 0% Town)

# PROJECT COST ESIMATE

| | Estimated Cost | Town Share | | Town Estimate Cost |
|---|---|---|---|---|
| Preliminary Engineering | $1,522,000 | 10% | = | $152,200 |
| Right-of-Way | $10,000 | 10% | = | $1,000 |
| Construction, CE, 5% Contingency | $6,038,000 | 0% | = | $0 |
| **Total** | $7,570,000 | | | $153,200 |

The estimated cost, as shown in the table above, is the current estimate including construction engineering and construction contingency. While developing each construction estimate, the most recent bid data is utilized and compared to the items in this project.

Please note, price escalations have been impacting project costs across the country. Also, unknown inflationary pressures and the competitive bidding climate cannot be accounted for. Construction cost estimate may fluctuate from this design phase **(Scoping)** to the next **(Preliminary).**

# Questions?

HOYLE TANNER

THANK YOU