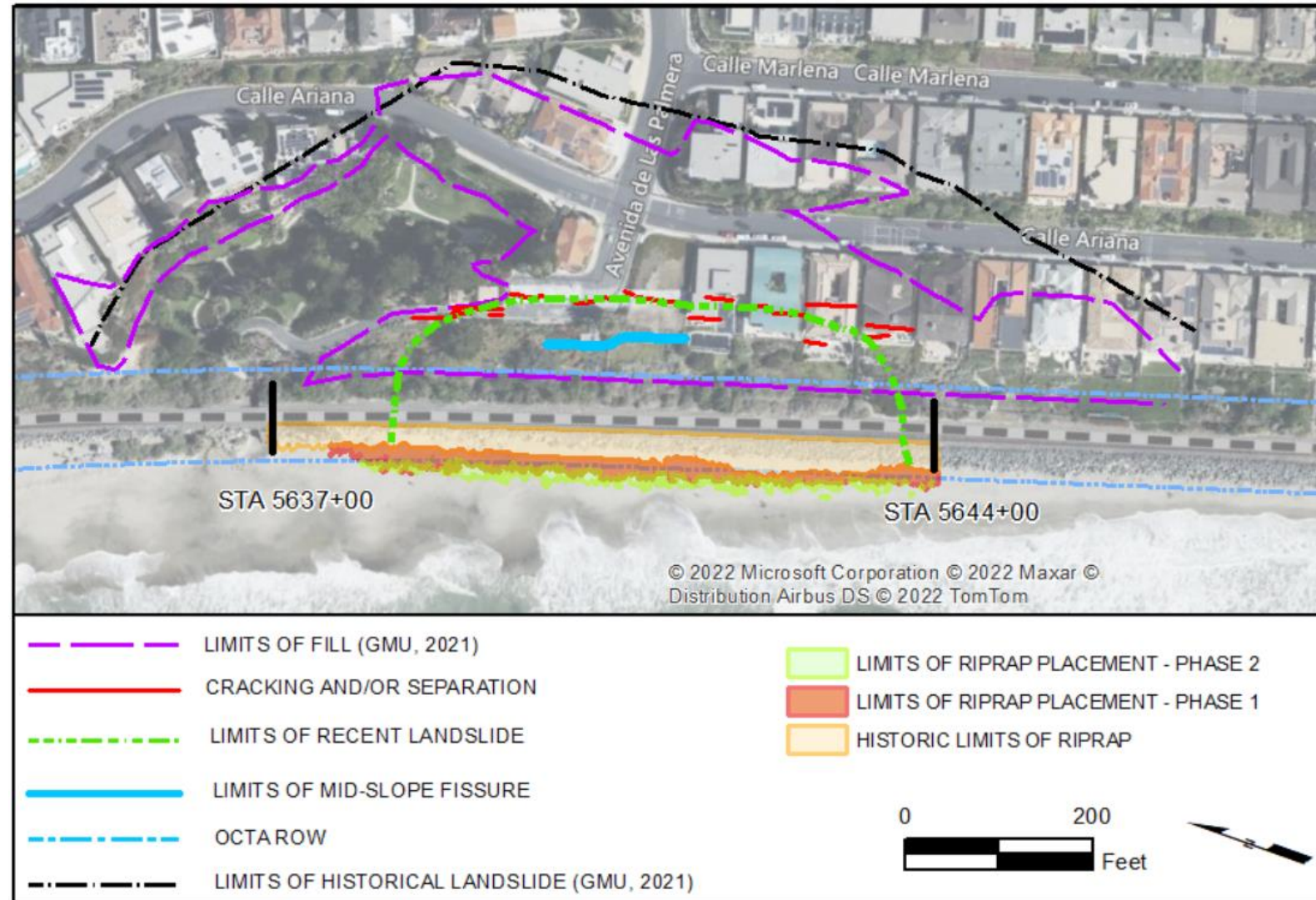




# Landslide Background

- September 2021
  - Significant beach erosion activated historical landslide
  - Tracks moved +28-inches laterally toward ocean
  - Passenger train service suspended to stabilize tracks
  - Placed +18,000 tons of riprap along 700 feet of track (counteracts mass of slide)
  - Monitoring track and slope movement
- September 2022
  - Additional slope movement due to high tides, waves, and storm surge
  - Placed more riprap
  - Operating speed reductions
  - Assessment of slope movement indicates larger mass of historic slide is beginning to move
  - Passenger train service suspended due to continued incremental movement
  - Assessed alternatives to stop slide movement

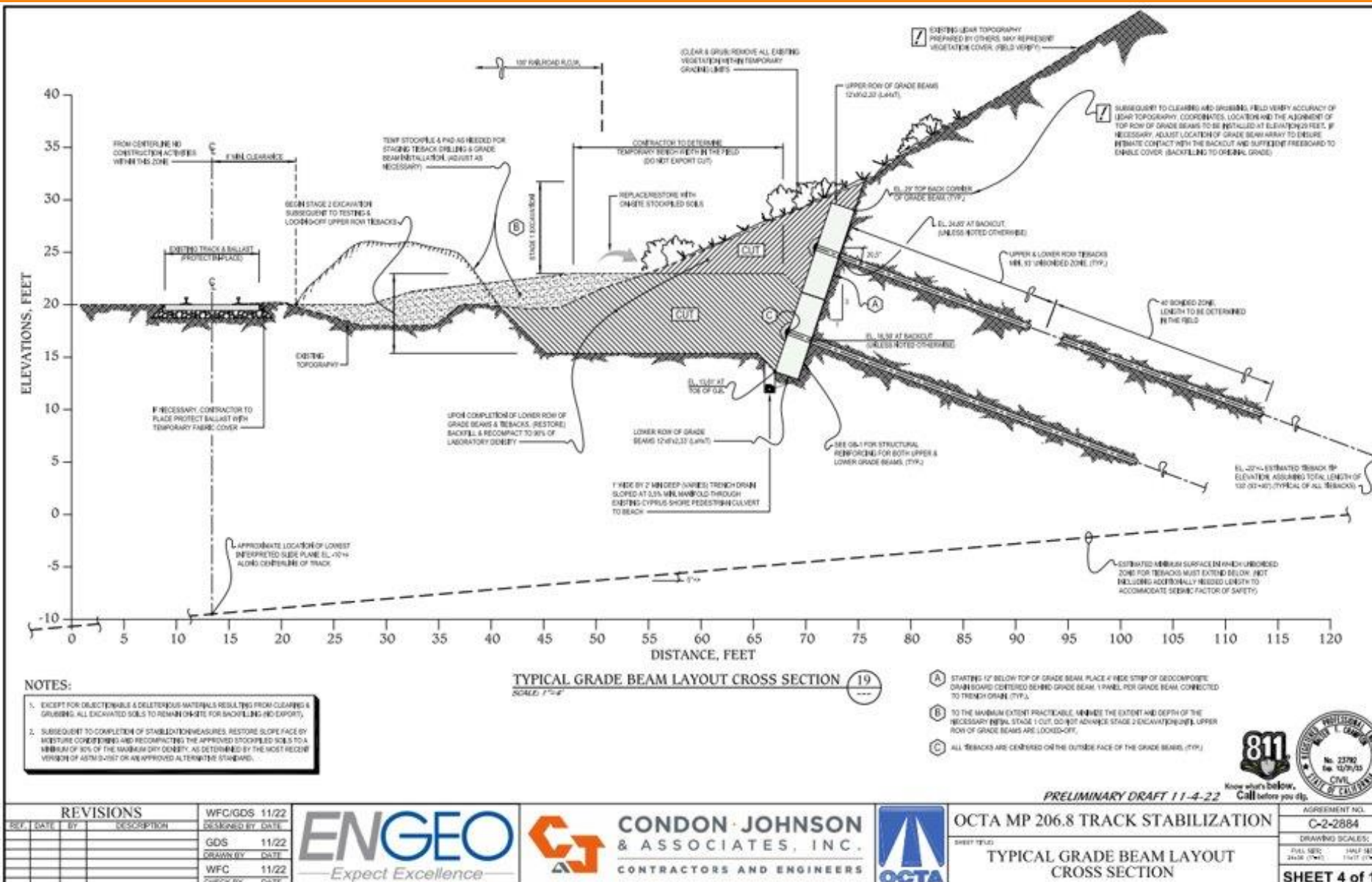


# Actions To Date

- October 3, 2022
  - OCTA Board of Directors adopted Resolution No. 2022-075 and authorized the Chief Executive Officer to take all necessary actions to address the emergency need for railroad track stabilization.
  - Executed contract with Leighton Consulting to provide third-party independent geotechnical engineering review of stabilization plan and tieback system design.
- October 14, 2022
  - Executed contract with Condon-Johnson & Associates (CJ) for design and construction of a tieback system to stabilize the slope. CJ began early mobilization and ordered tieback material.
- October 24, 2022
  - All possession and use agreements with private property owners executed for immediate access to and possession of certain surface and subsurface portions of the effected properties where construction will occur.
- November 4, 2022
  - CJ completed clearing and grubbing of tieback construction area. Constructed grade beam test panels in Basilone yard.
- November 10, 2022
  - Began excavation of slope where upper row of grade beam panels and drilling will take place (expected to take up to a week).
- November 11, 2022
  - Final design of tieback system reviewed and approved.
- January 23, 2023
  - Recommendation to restore weekend passenger rail service.
  - Amtrak Pacific Surfliner weekend service resumed February 4, 2023.



# Tiebacks/Grade Beam Section and Elevation



- 220 Tiebacks
- 110 Grade Beam Panels

# Completed and Upcoming Activities

Activity	Estimated *
Excavate for 1st level anchors (Completed)	November 15, 2022
Construct 1st level grade beam panels (Completed)	November 15 – December 30, 2022
Install 1st level tiebacks (Completed)	November 21 – December 23, 2022
Test 1st level tiebacks (Completed)	December 2, 2022 – January 17, 2023
Excavate for 2nd level anchors	January 18 – February 13, 2023
Construct 2nd level grade beam panels	January 31 – March 3, 2023
Install 2nd level tiebacks	February 10 – February 27, 2023
Test 2nd level tiebacks	February 16 – March 22, 2023
Slope Restoration	March 20 – March 31, 2023
Construction closeout	April to August 2023
Regulatory permitting	Ongoing

*\*Dates are preliminary and subject to change*

# Costs Update

- CJ Design-Build base contract: \$6,440,000
  - Construction Change Order (CCO) #1: \$700,602
    - Clear and grub operations, Stormwater Pollution Prevention Plan and implementation, spoils export, water source, permit, use and pipeline, construction survey, temporary construction access, temporary fencing and signage
  - Other CCO's: \$2,446,000
    - Additional design, testing, and monitoring: \$700,000 through March 2023
    - Extended tieback lengths and additional strands: \$1,350,000
    - Soil Nail wall shoring: \$135,000
    - Resequencing and reduced productivity around caissons: \$261,000
- Metrolink: \$1,500,000 for flagging and rail operations support
- Leighton Consulting: \$50,000 for third-party independent geotechnical engineering review
- HDR Engineering: \$1,340,000 for project/construction management contract amendment through closeout

*Current estimate of known costs: \$12,476,602*

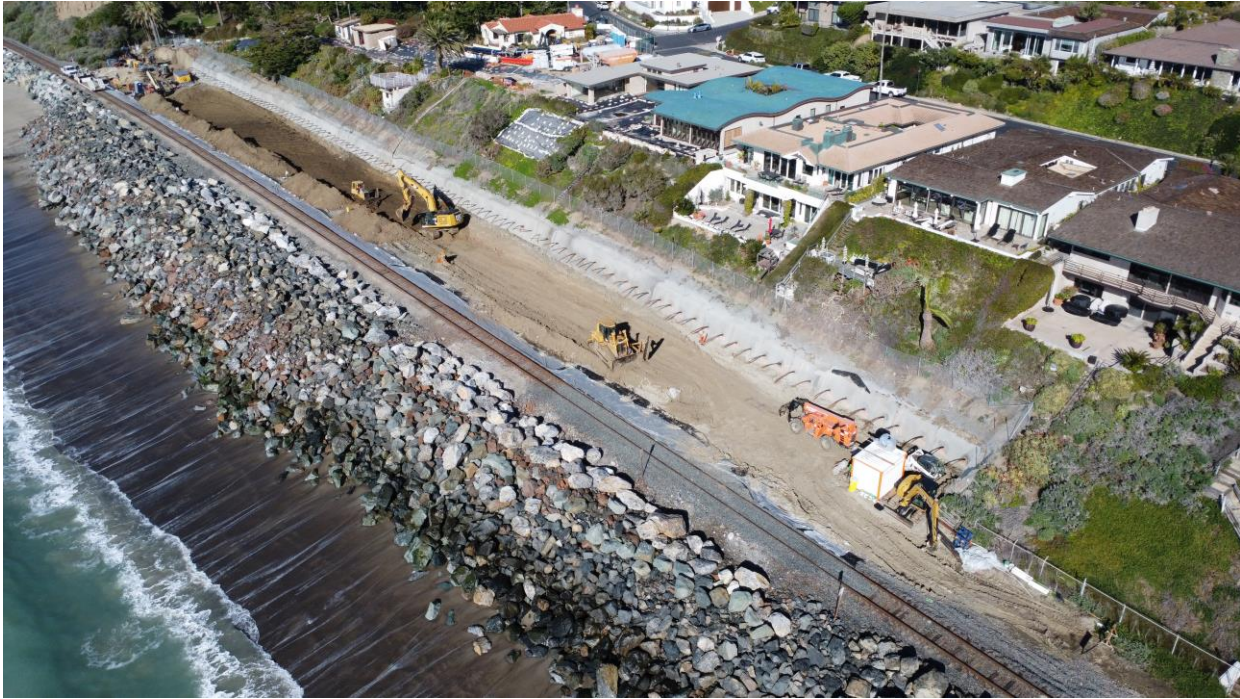
- Construction contingency: \$1,150,000

*Forecast at Completion: \$13,700,600*

- Costs to-be-determined
  - ROW acquisition (permanent easements)
  - Coastal development permit fees and mitigation costs



# Second Level Excavation



**January 24, 2023**



**January 25, 2023**



# Second Level Grade Beams Construction



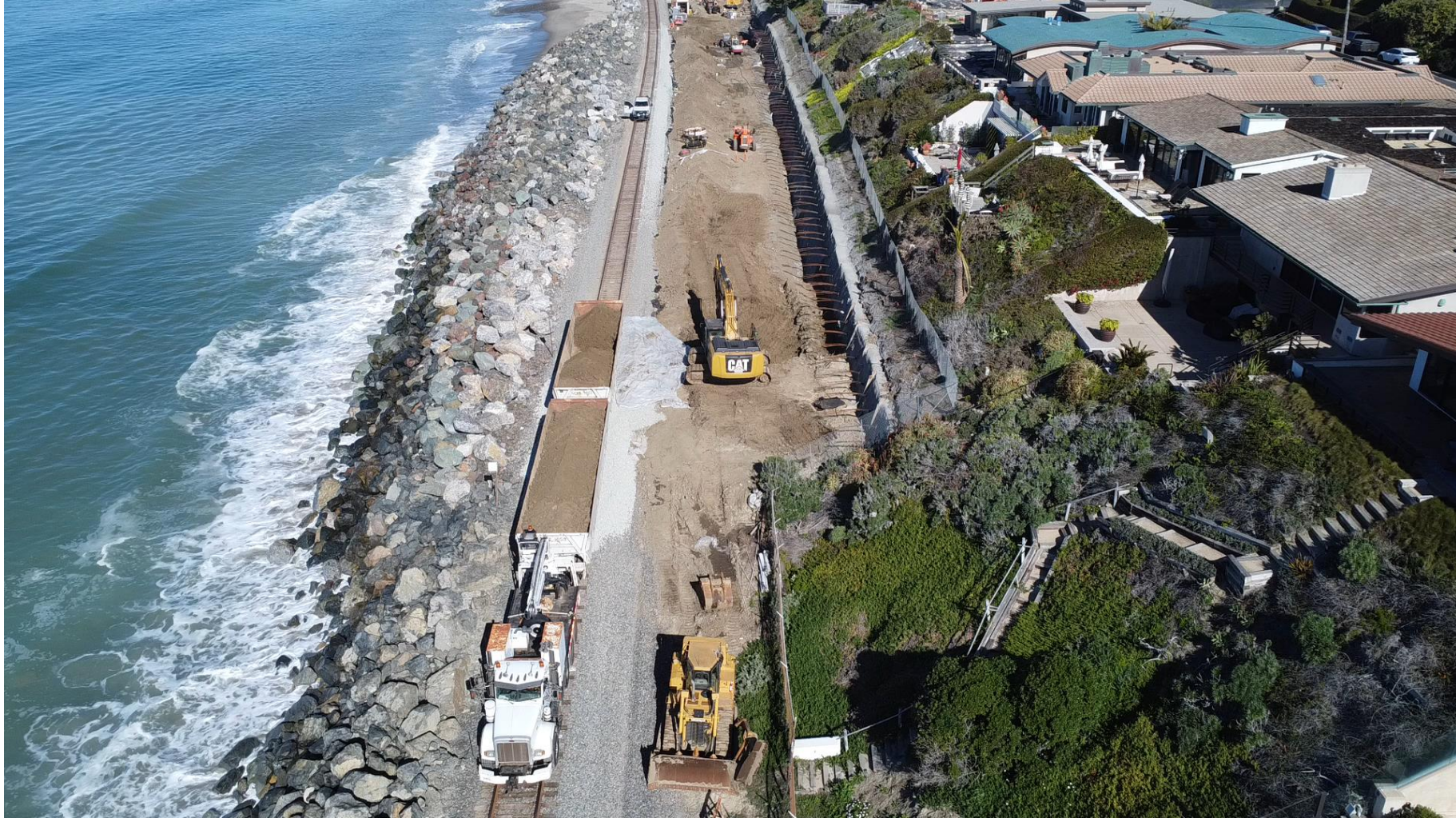
**January 31, 2023**



**February 8, 2023**



# Video – February 9, 2023



# Recommendation

- Reaffirm Resolution No. 2022-075 authorizing the Chief Executive Officer to take all necessary actions to address the emergency need for railroad track stabilization in the vicinity of Mile Post 206.8 on the Orange Subdivision, and to return to the Board of Directors, as required, to report on the status thereof.



# Historical Conditions

