Regional Connector Transit Project
United States

Client: Los Angeles County Metropolitan Transportation Authority
DB Contractor: Regional Connector Constructors, a Skanska-Traylor JV
Design-builder’s designer: (Hatch) Mott MacDonald
Owner’s designer: WSP
Owner’s PM assistance: Arcadis and EPC Consultants

Presented by: Christophe Bragard, PE, Tunnel Manager
The “CONNECTOR” of

- 3 metro lines
- SW and NE cities
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- SW and NE cities
A Utility Maze
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Delays in previous contract (utility relocation):
• Coordination Owner-Contractor
• Extensive re-sequencing to minimize schedule impacts
• Change order incorporating utility work and regaining schedule

Unexpected obstructions led to TBM damage:
• Real time collaboration between the Owner and contractor
• Timely joint key decisions to airfreight replacement elements
• Minimized delays (incl. no delay on machine re-assembly)

Others:
• MEP improvement using TBM temporary shaft
• Innovative monitoring joint plan for TBM launch
• Joint risk management review
• Integrated third party coordination
Deepest Station in LA
(120 ft deep)
LA Times Underpinning: Creative Solution

Miami, USA 18th November 2019

Christophe Bragard, PE, Tunnel Manager
Tie-Back Removal Shaft and Adit: Diverse Techniques for Risk Mitigation

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Christophe Bragard, PE, Tunnel Manager
EPB-TBM Launch

- Very low cover
- Under buildings

Christophe Bragard, PE, Tunnel Manager
Finely Tuned PLC Controls and Monitoring
Innovative Monitoring Program

(a) Slight heave of SAA
(b) Settlement along the shield
(c) Effect of grout
(d) Stabilisation

- Building Monitoring (liquid level at surface)
- SAA_111 (ground movement 1 m above the TBM)

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Unexpected Obstructions

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Unexpected Obstructions (cont.)
Automatic Conditioning System and High Performance

- Best day: 190 ft
- Best week (5 days): 750 ft
- Best TBM advance time: 18 min.
- Best TBM ring build time: 10 min.
- 1 Mile in 3.5 months
Post Obstructions
Schedule Recovery

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Christophe Bragard, PE, Tunnel Manager
Semi-Mechanized Cross Passage Tunnel Support

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SEM Cross Passage

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SEM Cavern

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2014 – to date Safety Stats

> 3,100,000 manhours
Recordable rate 0.96
Lost time incident rate 0.00
Thank you!