

RTD CAPITAL PROGRAMS

Jyotsna Vishwakarma
Chief Engineer



About me..

- Working Engineer with 30 years of experience
- Bachelors Degree in Engineering – BITS, Pilani, India
- Community Development
- Masters Degree in Engineering – UT Austin
- Land Development Consultant
- With RTD Since 2010
- Married with one kid

My Lessons Learned

- **DELIVER VALUE!**
- Try and understand what other people want
- Plan and Execute.
- Engineering should not be in the news
- You are just an engineer....



Our role as the Landlord-

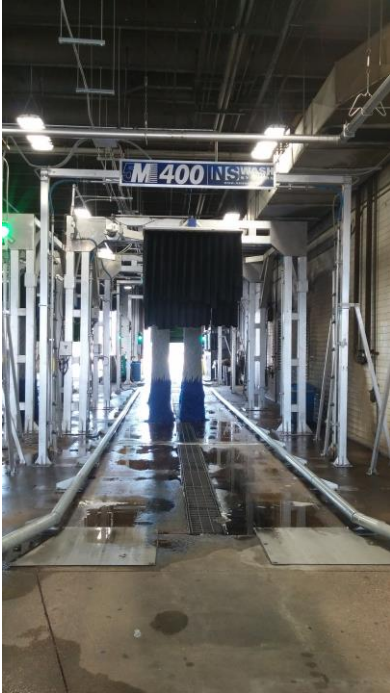
- We look after everything that does not move.(Except Elevators)
 - ✓ Concept Development
 - ✓ Design
 - ✓ Construction
 - ✓ Integration
 - ✓ Renewals
 - ✓ Real Property
 - ✓ Maintenance



Engineering

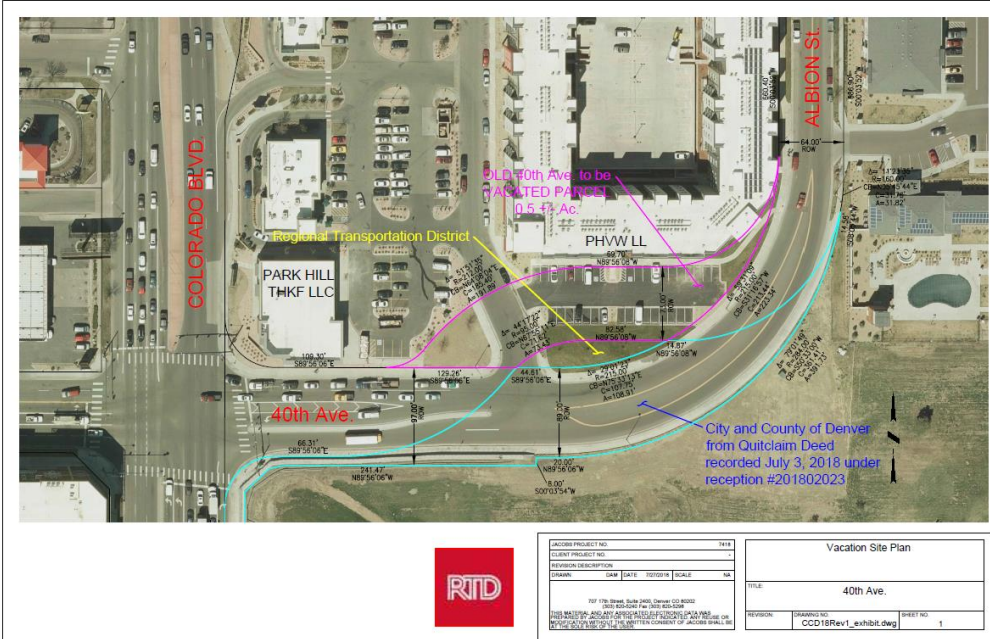


Facilities



Real Property

- Property and Easement Acquisition and Disposal
- Facility Use Permits
- Leases
- Licensing

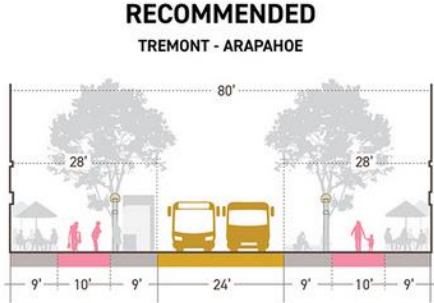
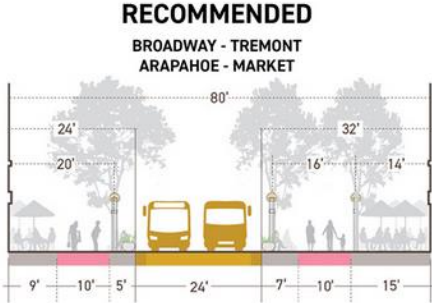
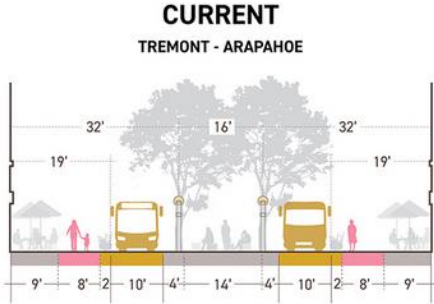
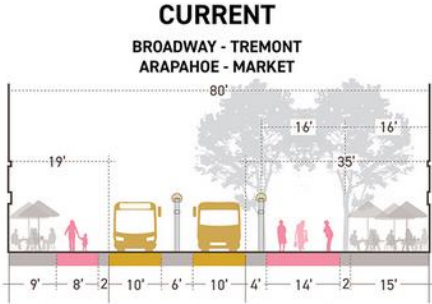


Systems Engineering

- Traction Power
- Train Control System (Signals)
- Overhead Contact System (OCS)
- Communications
- System wide Electrical (Ductbank)
- Light and Commuter Rail Vehicles
- Stray Current Control
- Ticket Vending Machines
- Operations Control Centers
- Rail Activation
- Integrated Testing



Repairs and Renewals - Reconstructing 16th Street Mall

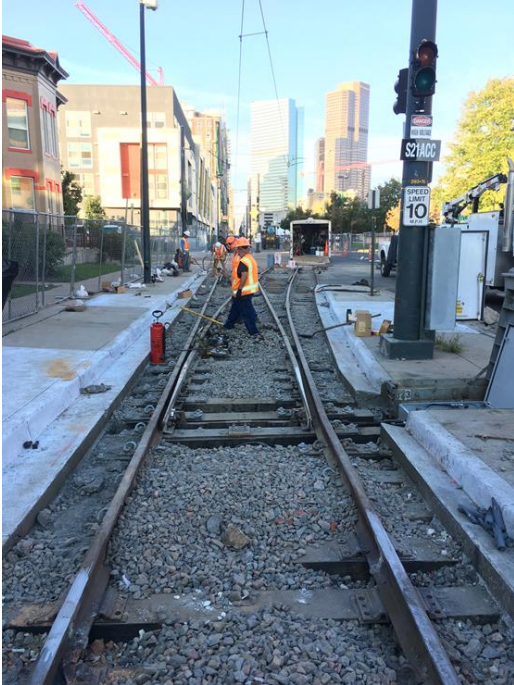


City and County of Denver Project with RTD Partnership

~ \$100M Plus

Construction start expected by 2020

Repairs and Renewals

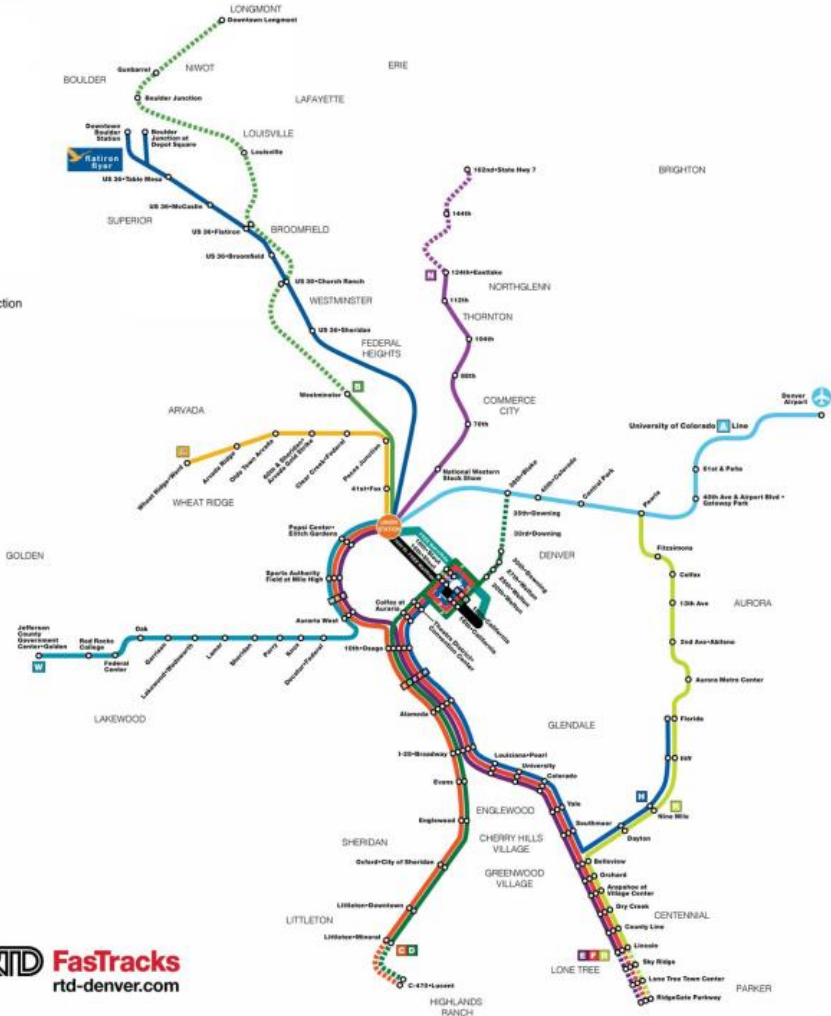


FasTracks

- Current Lines**
- University of Colorado A Line
 - B Line
 - C Line
 - D Line
 - E Line
 - F Line
 - H Line
 - R Line – I-225 Rail Line
 - W Line
 - Flatiron Flyer (Bus Rapid Transit)
 - Free MallRide
 - Free MetroRide

- Future Lines**
- G Line – Gold Line
 - N Line – North Metro Rail Line
 - E, F, R Extension

- Future Construction
- Station
- Union Station



FasTracks Summary Status

| Corridor Project | Description/ Delivery Method | Cost (millions) | Opening Date | Status |
|----------------------|---|---------------------|---------------|--|
| West Rail | 12.1 Mile Light Rail/ Construction Manager General Contractor | \$707 | April 2013 | Project complete |
| Denver Union Station | Multimodal Terminal/ Design Build | \$500 | May 2014 | Project Complete |
| US 36 – Phase I | 11 Mile Bus Rapid/ Transit/Managed Lane with CDOT Design Build | \$312 | January 2015 | Project Complete |
| US36 – Phase II | 5 Mile Bus Rapid Transit/Managed Lane with CDOT/ Design Build/PPP | \$109 | End of 2015 | Project Complete |
| Eagle P3 | 36 Mile Electrified Commuter Rail/ Design Build Operate Maintain/PPP | \$2,100 | Through 2016 | A and B Lines Complete G Line under testing |
| I-225 | 10.5 Mile Light Rail/ Design Build | \$687 | February 2017 | Project Complete |
| North Metro | 18.5 mile Electrified Commuter Rail (13 Miles to 124 th as a first phase) Design Build | \$708.3 (inclusive) | TBD | 80% Complete |
| Southeast Extension | 2.3 Miles/ TBD | \$205 | 2019 | Under Construction |

Program Management & Quality Assurance



Quality Activity

| Environmental Mitigations | | | | | | |
|---------------------------|-----|------|------|------|----------|--------------------|
| # Closed | | | | | | |
| 53 | | | | | | |
| Management Plan Reviews | | | | | | |
| # Reviews | C | NC-1 | NC-2 | NC-3 | Comments | Total Observations |
| 37 | 599 | 0 | 5 | 124 | 78 | 808 |
| Design Review | | | | | | |

Our Teams

- Comprehensive Organization of over 125 Professionals and 150 maintenance workers
- Agency Wide Resources
- Consultant/Agency Mix
- Support at Other Agencies
- Professional Development

Organization & Management

- Appropriate Program Wide Controls
- Push Decision-making Down to Proper Level in Organization
- Project-based Teams
- Different delivery methods – P3, CMGC, Design-Build

Focus in 2019

- Open G Line and SERE
- Support Commuter Rail Stand up – N line
- Configuration Management – Managing System Changes Going Forward





Questions?

Contact:

Jyotsna.Vishwakarma@RTD-Denver.com

303-299-2889