

Reliable and effective tunnel systems

Tunnel Ventilation

The world's growing demand for fast, safe and environmentally friendly transportation has prompted the adaptation of numerous existing tunnels as well as the construction of many new tunnels.

Our Tunnel Ventilation Group has a long history of designing and building tunnel and underground ventilation systems across North America and abroad. Throughout our growth, we have assimilated an integrated team of experts who bring unrivaled technical ability and experience to the planning, design, construction, management and operation of all types of tunnel ventilation systems.

Fire Life Safety (FLS)

Expert FLS systems and evacuation planning services that include:

- National Fire Protection Agency (NFPA) Compliance
- NFPA 130 and NFPA 502 Standard Reviews and Evaluations
- Evacuation and egress modeling using Steps, Legion, NFPA 130 methodology and Pathfinder
- Design of fire protection systems

Mechanical and Electrical (M&E) Systems Design

Broad M&E expertise and services to deliver peak system performance.

- New York City Transit Authority, Second Ave Subway - Preliminary engineering (PE) and final design
- Los Angeles Regional Connector - PE and design services during construction (DSDC)
- Ottawa Stage2 LRT - PE, DSDC
- Central Puget Sound Regional Transit Authority, University Link - PE, DSDC
- Dulles Corridor Metrorail Project Tysons Tunnel - PE, DSDC

Subway environment simulation (SES), computational fluid dynamics (CFD) and egress simulation

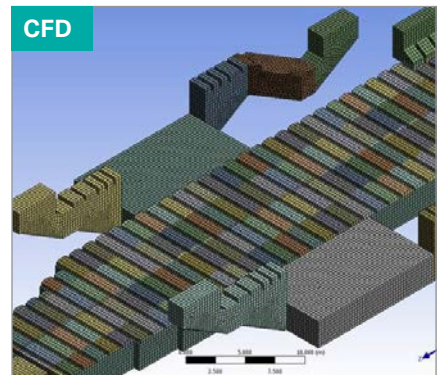
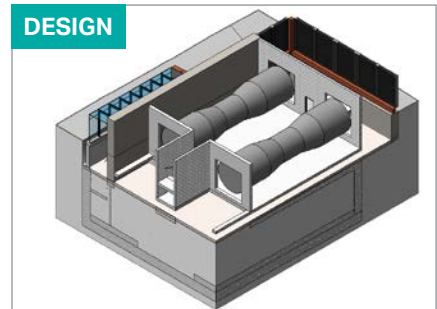
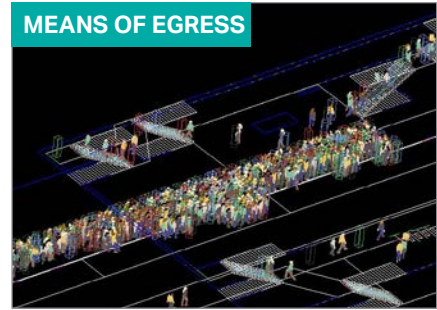
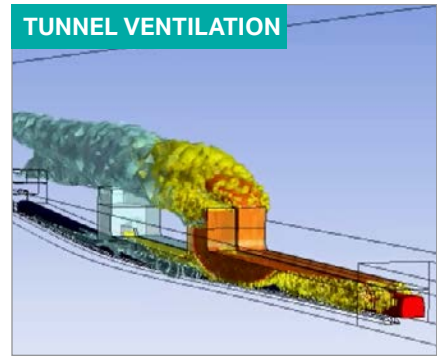
Expertise in the use of analysis tools and programs for rail transit tunnel and underground station ventilation projects.

- New York City Transit Authority, Second Ave Subway (SES)
- Los Angeles Regional Connector (CFD, SES)
- Ottawa Stage 2 LRT (SES)
- Edmonton Churchill LRT (CFD, SES)
- New York City Transit Authority, PSD Study (CFD, SES, EVAC-STEPS)
- Central Puget Sound Regional Transit Authority, University Link (SES, CFD)
- Dulles Corridor Metrorail Project Tysons Tunnel (SES)

Inspection and Commissioning

Testing and commissioning of underground stations and tunnel emergency ventilation systems.

- Central Puget Sound Regional Transit Authority, University Link
- Dulles Corridor Metrorail Project Tysons Tunnel
- Virginia Department of Transportation Big Walker Mountain Tunnel NTIS Tunnel Inspection





Ottawa Stage 2 Light Rail Transit, Ottawa, Canada

- Developed ventilation and fire life safety design criteria and ventilation design



WMATA, Washington D.C., U.S.

- Developed system-wide Emergency Operations SOP Playbook and provided training based on system-wide tunnel ventilation evaluation and analysis, with recommendations for improved performance



Baltimore Metro System, Baltimore, Maryland, U.S.

- System-wide tunnel ventilation evaluation and analysis



Regional Connector Transit Corridor, Los Angeles, California, U.S.

- Analysis and design for three new underground stations connecting the Blue Line, Gold Line and Union Station



Southwest LRT, Minneapolis, Minnesota, U.S.

- Analysis and evaluation for proposed FLS including ventilation and passenger egress modeling and tunnel door pressure analysis



Edmonton LRT – Churchill Station, Edmonton, Alberta, Canada

- Engineering analysis for mitigation of cold temperature control issues



Wacker Drive Viaduct Ventilation, Chicago, Illinois, U.S.

- Provided air flow modeling and preparation of plans and specifications for mechanical, electrical, instrumentation and controls facilities



Caldecott Improvement Project, Alameda and Contra Costa Counties, California, U.S.

- Provided tunnel ventilation analysis and design based on CFD, SES and TUNVEN for additional 1 km long fourth bore to existing three-bore highway tunnel system
- Conducted evacuation modelling based on STEPS software



K Street, Massachusetts Avenue and H Street Bridge, Rehab and Air-Rights Tunnel, Washington, D.C., U.S.

- Rehabilitation including demolition and replacement of mechanical and electrical systems, layout and installation of equipment, replacement of switchgear, removal and replacement of fire hydrants and deluge valves

About AECOM

AECOM is the global infrastructure leader, committed to delivering a better world. As a trusted professional services firm powered by deep technical abilities, we solve our clients' complex challenges in water, environment, energy, transportation and buildings. Our teams partner with public- and private-sector clients to create innovative, sustainable and resilient solutions throughout the project lifecycle — from advisory, planning, design and engineering to program and construction management. AECOM is a Fortune 500 firm that had revenue of \$16.1 billion in fiscal year 2025. Learn more at [aecom.com](https://www.aecom.com).