
BWRR
BALTIMORE WASHINGTON RAPID RAIL
TNEM
THE NORTHEAST MAGLEV

SCMAGLEV Team

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BALTIMORE WASHINGTON RAPID RAIL

Baltimore Washington Rapid Rail (BWRR)
Maryland-based franchise railroad developing the Superconducting Maglev (SCMAGLEV) train

TNEM
THE NORTHEAST MAGLEV

The Northeast Maglev (TNEM)
American company formed to support the deployment of SCMAGLEV in the Northeast Corridor

JR-CENTRAL

Central Japan Railway Company (JR Central)
Licensing SCMAGLEV technology for US deployment
Operator of “bullet train” since 1964


OUR VISION:
THE FASTEST TRAIN IN THE WORLD
Express
Local
Future Service to Boston
EWR
New York
Philadelphia
PHL
Wilmington
Baltimore
BWI
Washington
DC TO NEW YORK
in
ONE HOUR
at
311 MPH

Economic Benefits

Economic impact of constructing the Baltimore-Washington SCMAGLEV Project

Job Creation

NATIONWIDE	MARYLAND	BALTIMORE	WASHINGTON DC
205,000 from construction	**74,000** from construction	**6,400** from construction	**3,000** from construction
+14,600 ANNUALLY after opening	**+1,500** ANNUALLY after opening	**+1,500** ANNUALLY after opening	**+2,500** ANNUALLY after opening

GDP Increase

NATIONWIDE	MARYLAND	BALTIMORE	WASHINGTON DC
$22.5 BILLION from construction	**$6.5** BILLION from construction	**$560** MILLION from construction	**$300** MILLION from construction
+$594 MILLION ANNUALLY after opening	**+$268** MILLION ANNUALLY after opening	**+$166** MILLION ANNUALLY after opening	**+$24** MILLION ANNUALLY after opening

Environmental Benefits

Yearly reduction of air emissions associated with decreased vehicle miles traveled (VMT)

- **2,000,000** TONS Greenhouse Gases
- **76,000** TONS Carbon Monoxide
- **15,000** TONS Nitrogen Oxides
- **4,000** TONS VOCs

Preparing Our Youth for Jobs

Setting up programs and training for emerging technology careers

ANNE ARUNDEL COMMUNITY COLLEGE

BALTIMORE CITY COMMUNITY COLLEGE

BOWIE STATE UNIVERSITY 1865

1867 HOWARD UNIVERSITY

JOHNS HOPKINS UNIVERSITY

MORGAN STATE UNIVERSITY

PRINCE GEORGE'S COMMUNITY COLLEGE

UMBC AN HONORS UNIVERSITY IN MARYLAND

TOWSON UNIVERSITY

ub UNIVERSITY OF BALTIMORE

UNIVERSITY OF MARYLAND 1856

UNIVERSITY OF THE DISTRICT OF COLUMBIA 1851

Regional Job Opportunities

Construction and operation of the SCMAGLEV will result in increased demand for jobs in a variety of sectors

Construction
Logistics
Assembly
Planning & Supervision

Engineering
Software
Electrical & Mechanical
Fire, Life, Safety

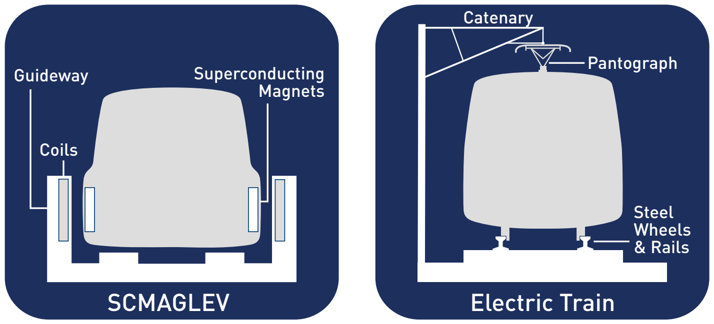
Maintenance
Inspection
Infrastructure
Testing

Operations
Operators
On-Board Services
Systems Analysis

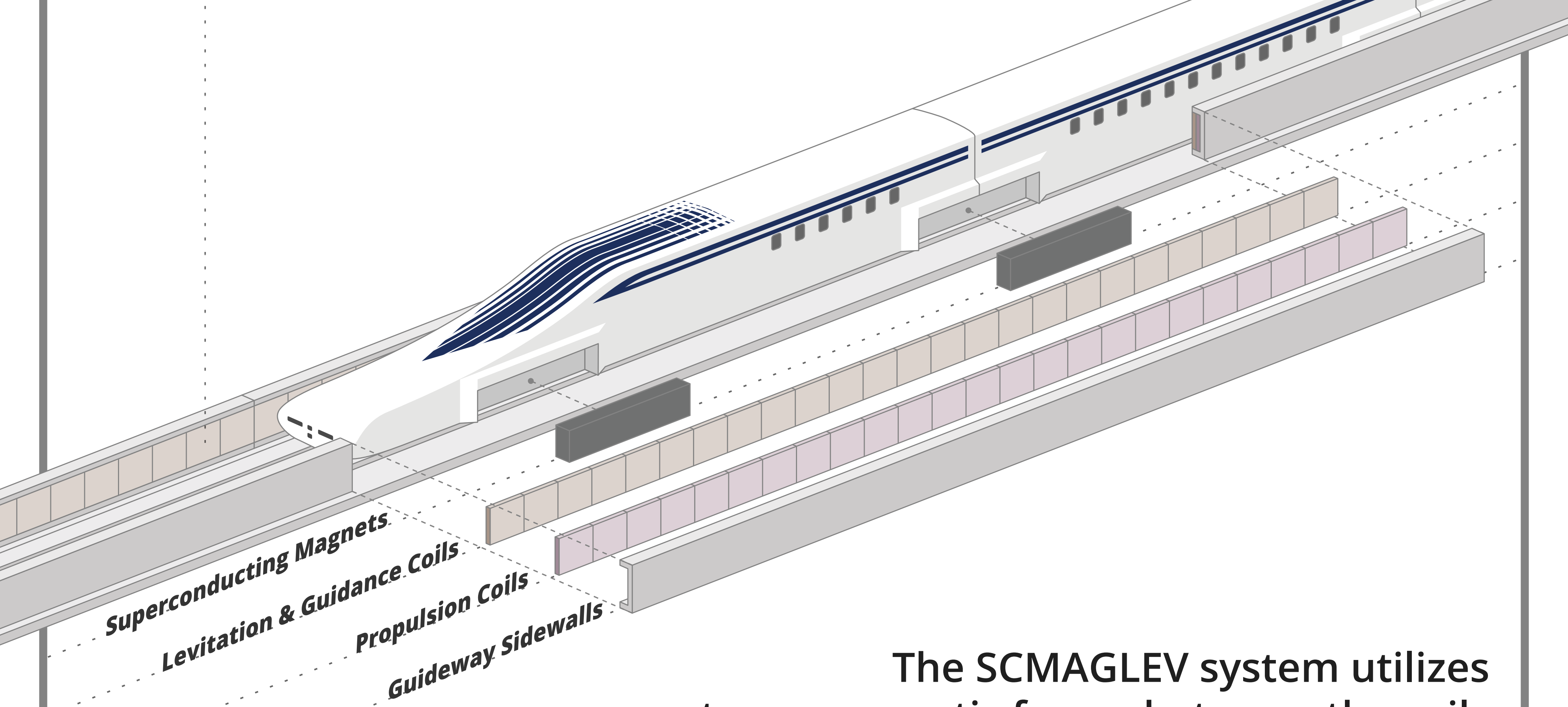
Stations
Ticketing
Cleaning
Security

Facilities
Yard Management
Rail Control Center
Vehicle Maintenance

How the SCMAGLEV Works



Instead of running on standard railroad tracks, SCMAGLEV trains levitate between the walls of a U-shaped guideway containing coils



The SCMAGLEV system utilizes strong magnetic forces between the coils in the guideway and superconducting magnets on the train for all aspects of operation, including acceleration, deceleration, guidance and levitation

Environmental Impacts

NOISE

At high speeds, SCMAGLEV trains makes no contact with the guideway, so the only noise a passing train makes is from displaced air

No steel wheels grinding on rails

At high speeds, SCMAGLEV trains levitate and make no contact with the guideway

No squealing brakes

Instead of physical braking systems, magnetic forces are used to decelerate.

No diesel engines

The SCMAGLEV system is powered by incredibly efficient superconducting magnets

At 311 mph, an SCMAGLEV train passes by in a matter of **seconds**

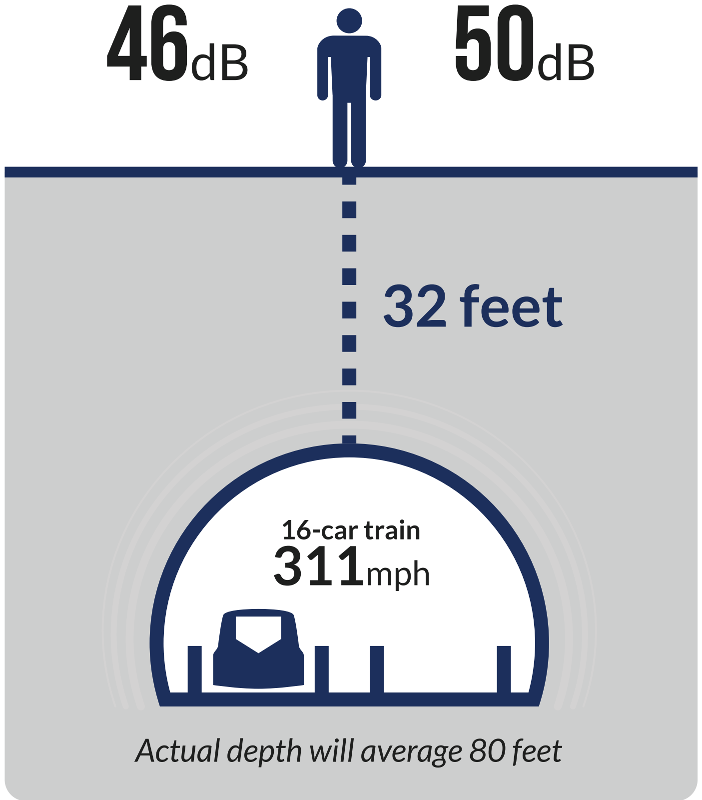
Environmental Impacts

VIBRATION

Ground vibration generated by SCMAGLEV trains was measured at levels below the threshold perceptible to humans

Recorded Vibration:

Perceptible Vibration:

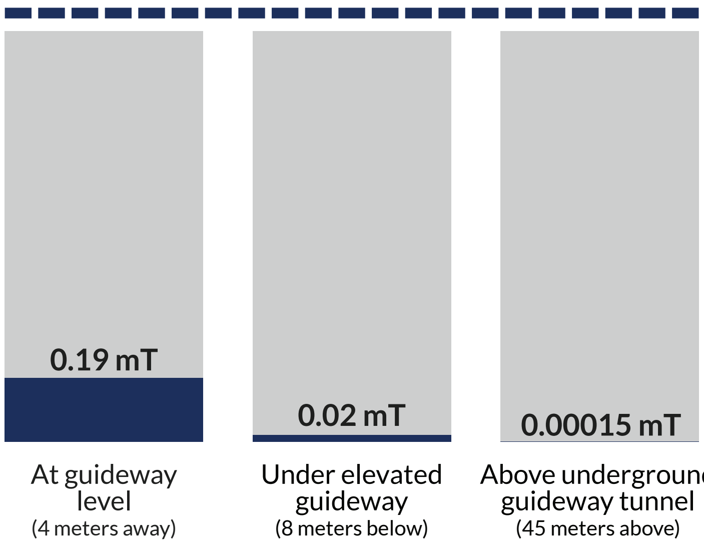


Measurements conducted in Japan as part of Chuo Shinkansen Environmental Impact Analysis

EMF

SCMAGLEV system meets all electromagntic field exposure guidelines recommended by the World Health Organization

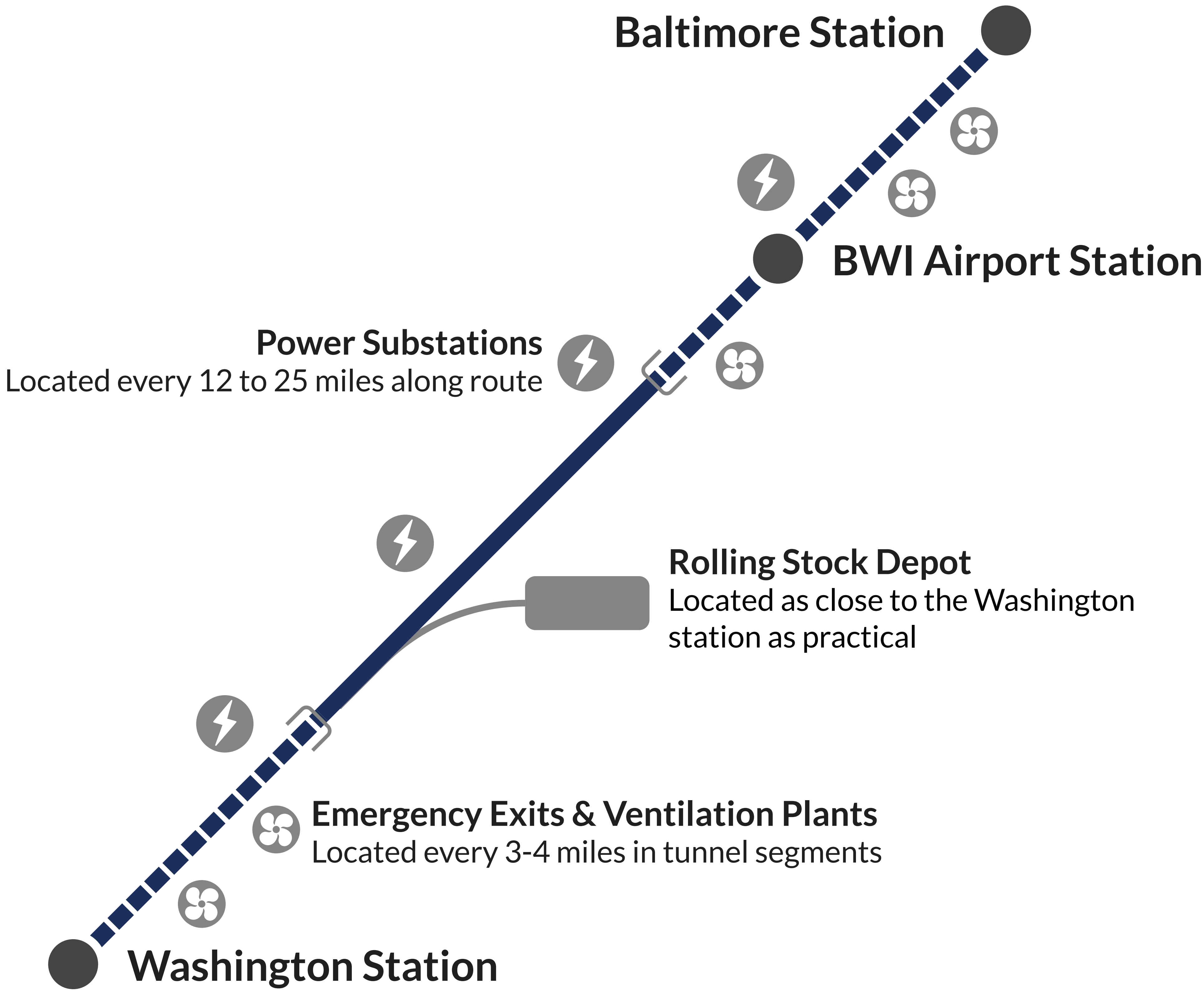
Maximum: **1.22 mT**



EMF guidelines from the International Commission on Non-Ionizing Radiation Protection

SCMAGLEV Facilities

Simplified route for illustrative purposes only. Final facility numbers and locations are to be determined.



Stations

All three planned SCMAGLEV stations will be underground, with entrances from the street or within buildings, similar to a subway. The platforms will be about 1000 ft long and 80 to 130 ft deep. Escalators, elevators and stairs will provide vertical circulation. The stations will be located convenient to multimodal connections.

Example: 2nd Ave Subway Station, New York

Tunnels

More than half of the route will likely be in tunnel. These segments contain a single tunnel with a diameter of approximately 43 ft carrying two guideways. The tunnel sections will be constructed using a tunnel boring machine at a depth of 80 to 170 ft. The lower portion of the tunnel below the guideways is intended to serve as an emergency evacuation route as

Example: SCMAGLEV tunnel under construction in Japan

Emergency Exits / Ventilation Plants

Ventilation plants are required for the safe ventilation of smoke in the event of a fire, and often house emergency evacuation stairs. They are typically spaced every 3 to 4 miles along tunnel segments, enclosed in above-ground buildings or built underground. The sites can be as large as 1.5 acres when co-located with other support facilities.

Example: Rendering of size of ventilation plant (smaller building) and support facilities in Japan

Tunnel Portals

Tunnel portals are areas where the alignment emerges from a tunnel and rises to form an elevated viaduct. The portal length can vary from less than 330 ft to 1600 ft or more. The train emerges from the tunnel in an area with walls on either side, transitions to an area where the guideway is supported on retaining walls, and then rises up to structural spans on piers.

Example: Rail tunnel portal in Japan

Elevated Viaduct

At least one portion of the alignment is planned to be on an elevated viaduct above ground. The viaduct carries two guideways with a width of approximately 46 ft and a height above ground of at least 18 ft. The area below the viaduct can be used for roadways, cycle and walking paths, and more. During construction, the contractor occupies a width of around 72 ft.

Example: Rendering of an elevated SCMAGLEV line

Power Substations

Substations provide power to the system, including facility requirements such as lighting, and ventilation. They can be built above or below ground, or possibly combined with other facilities. Three or four will be required for the project, with space required varying from 1.5 acres or larger, depending on what other functions are incorporated at the site.

Example: Power substation in Washington DC

Rolling Stock Depot

The Rolling Stock Depot (RSD) stores the trains at night and during off-peak periods. The site will have several buildings, the largest being the maintenance facility where a rigorous maintenance and repair program is implemented. The facility will employ engineers, technicians, and other personnel at a site that has an area of approximately 160 acres.

Example: Denver commuter fail maintenance facility

Maintenance of Way Facility

The Maintenance of Way (MOW) Facility houses workers and equipment for maintaining the system's infrastructure. The site is similar to a municipal public works yard, with one or two buildings and a parking area for vehicles. There will be one facility 5 to 7 acres in size located adjacent to a viaduct section of the alignment, likely at the RSD or a substation.

Example: Existing SCMAGLEV MOW Facility in Japan

Operations Control Center

The Operations Control Center is the central facility that manages all operations related to the SCMAGLEV system. It is staffed 24/7 and directs train movement, manages safety and emergency activities, monitors power usage, and generally ensures that the system is operating to plan. The main facility is typically located at a station or the Rolling Stock Depot.

Example: New Jersey rail control center

Other Facilities

Additional smaller facilities will be located along the route for power distribution, communications, guideway drainage and other minor functions. These facilities are generally contained within the right-of-way of the elevated viaduct, adjacent to a guideway tunnel, or in a small surface building above a tunnel, possibly co-located with other facilities.