



• Rain • Fog • Snow • Lighting

- Built to VDOT & FHWA standards
- Closed test beds
- Highly adaptable
- Secure: monitored 24/7 via a control room
- Advanced infrastructure & communication systems

The Virginia Smart Roads are a suite of controlled test tracks designed for intelligent transportation systems, human factors, and safety research. The Virginia Smart Roads are built to Virginia Department of Transportation (VDOT) and Federal Highway Administration (FHWA) standards and are managed by VTTI in cooperation with VDOT. With more than 12 lane-miles of paved roadbed, these research facilities feature weather-making, lighting capabilities, advanced sensors, traffic intersections, and varying pavement types, enabling VTTI to conduct vehicle evaluations and driver safety testing for its partners in a secure location.

VTTI Smart Road facilities offer a secure and controlled environment for automation, advanced driver assistance systems, and advanced sensor testing. These facilities combined with VTTI's expertise allow Government agencies, original equipment manufacturers, and industry partners to bridge the gap between development and real-world operation.

Rain

- 75 towers configured for rain
- Rain cycle can run indefinitely
- Various intensity & droplet sizes
- Visibility – 500 feet & less
- Rain rates available: 0.8 to 2.5 inches per hour (limited offering of 0.1 to 0.2 inches per hour)



Fog

- One third of weather section accommodates fog
- Duration relies on ambient weather conditions
- Ideal time to utilize fog is early morning hours
- Typical visibility of 0 to 200 feet
- Available May to October



Think our facilities could be a good fit for your next project?

Contact us: • 540-231-1500 • www.vtti.vt.edu • inquiries@vtti.vt.edu



Snow

- Suitable weather conditions facilitate production of up to 4 inches per hour
- <28 °F typically when snow transitions wet to dry
- Lower temperature & humidity facilitate drier snow & can facilitate higher flow rates
- Water storage may be chilled to facilitate a drier snow



Lighting

- Configurable to real-world roadway lighting conditions
- Variable pole spacing & heights replicate 95% of national highway systems
- Multiple luminaire heads, including light-emitting diode (LED) modules
- Highway light section is approximately .75 miles with a configurable intersection



Control Room

The Control Room schedules & oversees on-site research. Controllers monitor the Smart Roads from a computer-equipped control center. Researchers can observe traffic and driver performance via multiple video monitors and engineers can manipulate the lighting on the Highway section from the Control Room.



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For 35 years, VTTI has been conducting research to save lives, time, and money and protect the environment. In our world-class facilities, we investigate, invent, design, develop, refine and test transportation systems of the future. As one of seven premier research institutes created by Virginia Tech to answer national challenges, VTTI is continually advancing transportation through innovation and has affected public policy on national and international levels.

Advancing Transportation Through Innovation