2023 ITS Deployment Tracking Survey

Freeway, arterial, and transit management agencies nationwide were surveyed about their Intelligent Transportation Systems (ITS) deployment. For the first time, the 2023 ITS Deployment Tracking Survey measures ITS deployment in smaller urban and rural areas in addition to large metropolitan areas.[1]

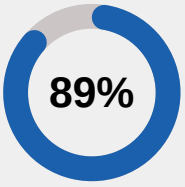
Overall Survey Response Rate

- 78% (311 Freeway Agencies)
- 78% (276 Arterial: State DOT Districts)
- 47% (423 Arterial: Local Agencies)
- 63% (464 Transit Agencies)

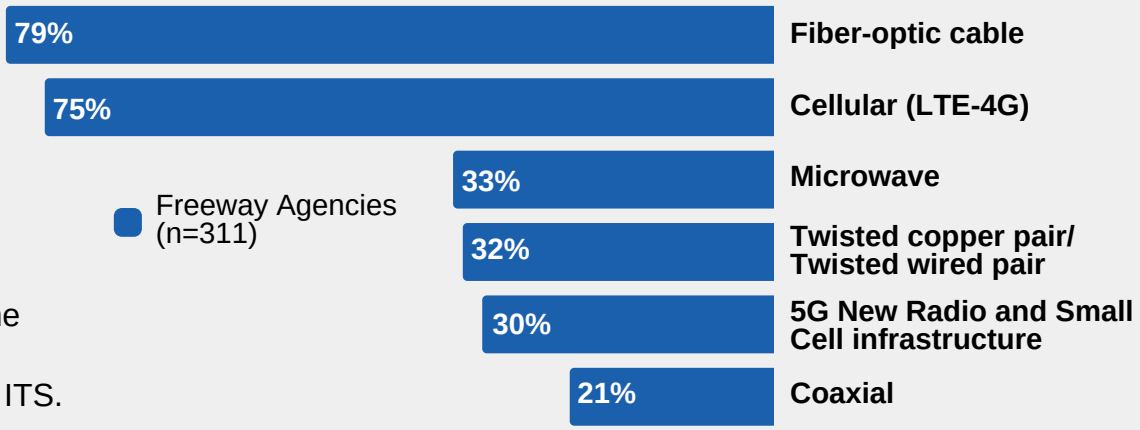
Telecommunications to Enable ITS Technologies:
Freeway, Arterial, and Transit Management Agencies

The 2023 ITS Deployment Tracking Survey asked all agencies about their use of telecommunications (both wired and wireless) to enable ITS technologies.[2]

Freeway Management Agencies



A large majority of **freeway agencies** (89%) use at least one telecommunications technology to enable ITS.



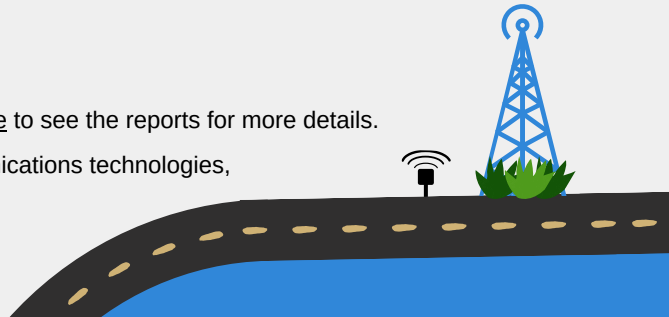
Fiber-optic cable and **cellular (LTE-4G)** are the most common telecommunications technologies used by freeway agencies to enable ITS, followed by **microwave**, **Twisted copper pair/Twisted wired pair**, **5G New Radio and small cell infrastructure**, and **coaxial**. The other eight surveyed telecommunications technologies were each reported by 16% or fewer freeway agencies.

Survey respondents were asked how their agency uses telecommunications technologies to enable ITS.[3] Majorities of the 233 freeway agencies using cellular (LTE-4G) use it to enable ITS for **traffic management** (74%), **traveler information** (64%), and **weather** (58%). Over half of the 93 freeway agencies using 5G New Radio and small cell infrastructure use it to enable ITS for **traffic management** (58%) and **traveler information** (54%).

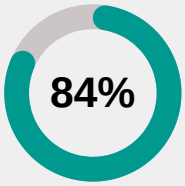
[1] Click here for more about the change in survey methodology.

[2] All data for local agencies (arterial) and transit agencies are weighted. Click here to see the reports for more details.

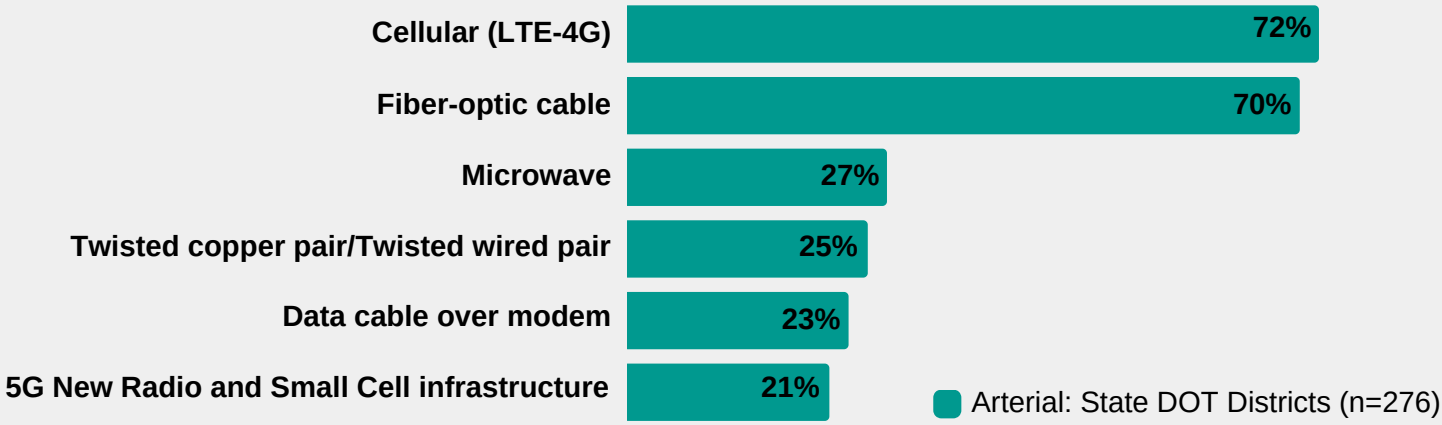
[3] This follow-up question was new in 2023 and applied to a subset of telecommunications technologies, including cellular (LTE-4G) and 5G New Radio and small cell infrastructure.



State DOT Districts Managing Arterials



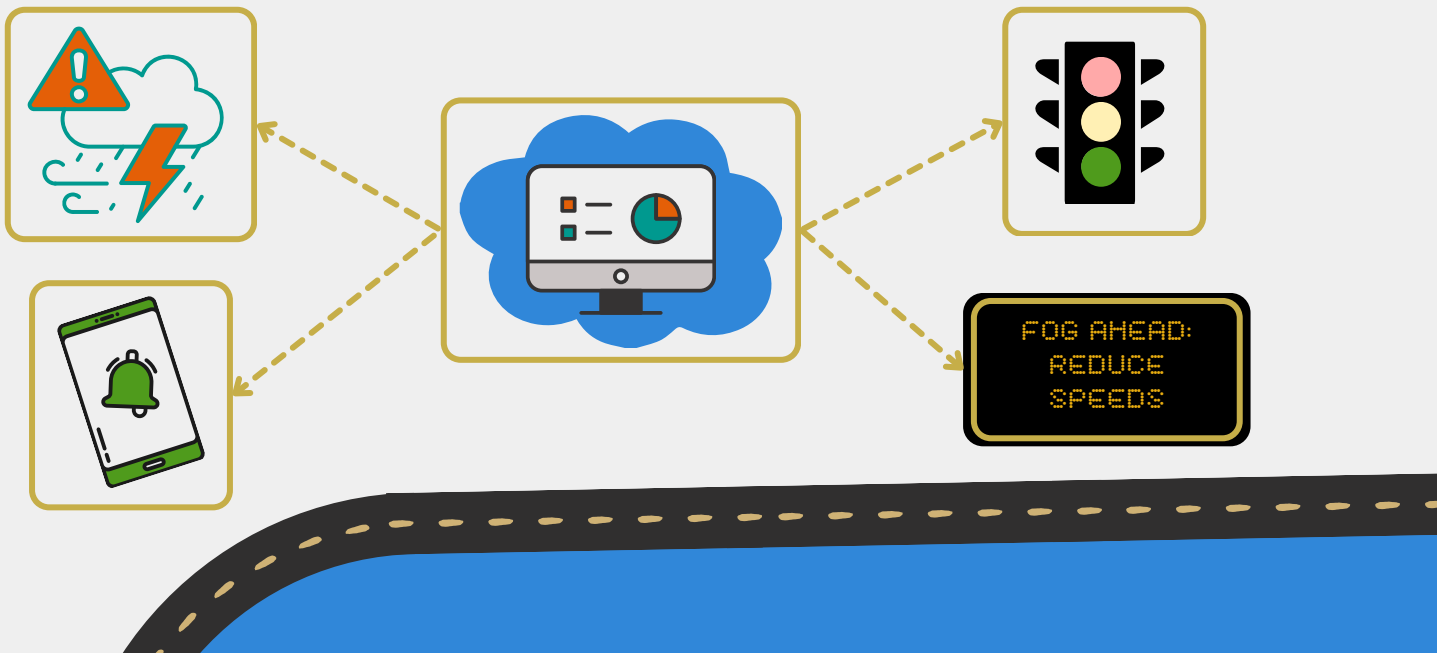
A large majority of **State DOT districts managing arterials** (84%) use at least one telecommunications technology to enable ITS.



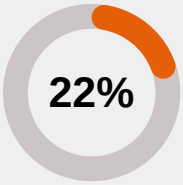
Cellular (LTE-4G) and **fiber-optic cable** are the most common telecommunications technologies used by State DOT districts managing arterials to enable ITS. **Microwave**, **twisted copper pair/twisted wired pair**, **data cable over modem**, and **5G New Radio and small cell infrastructure** are each used by about one fourth of these districts. The other eight surveyed telecommunications technologies were each reported by 16% or fewer State DOT districts managing arterials.

About three fourths of the 200 State DOT districts that reported using cellular (LTE-4G) on arterials use this technology to enable ITS for **traffic management** (73%), and a majority use it to enable ITS for **traveler information** (55%).

About half of the 57 State DOT districts that reported using 5G New Radio and small cell infrastructure use this technology to enable ITS for **traffic management** (51%) and **traveler information** (49%).

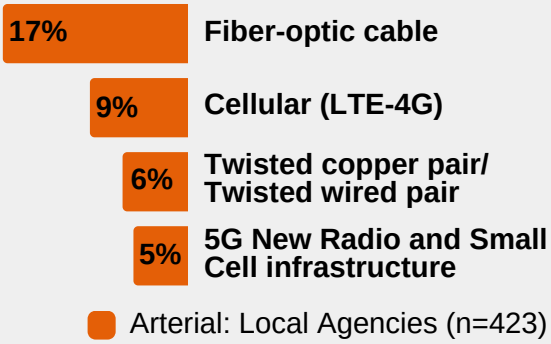


Local Arterial Management Agencies

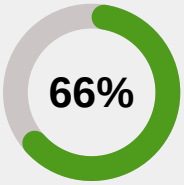


Relative to other agency types, significantly fewer **local arterial management agencies** reported deploying one or more telecommunications technologies to enable ITS (22%). Local agencies were significantly more likely to respond **don't know** (41%), **no telecommunications used to enable ITS on arterials** (20%), or **no ITS infrastructure or devices deployed** (17%).

Although their overall deployment of telecommunications technologies to enable ITS is limited, **fiber-optic cable** and **cellular (LTE-4G)** are the most deployed technologies by local agencies, followed by **twisted copper pair/twisted wired pair** and **5G New Radio and small cell infrastructure**. The other ten surveyed telecommunication technologies were each reported by fewer than 5% of local arterial agencies.

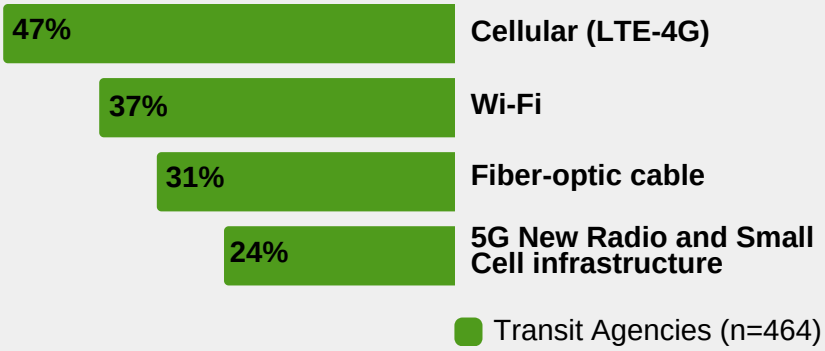


Transit Management Agencies



Two thirds of **transit agencies** (66%) use at least one telecommunications technology to enable ITS.

Nearly one half of transit agencies deploy **cellular (LTE-4G)**, followed by **Wi-Fi**, **fiber-optic cable,** and **5G new radio and small cell infrastructure**. The other ten surveyed telecommunications technologies were each reported by 11% or fewer transit agencies.



About two thirds of the 220 transit agencies using cellular (LTE-4G) use it to enable ITS for **public transportation** (67%), and nearly half use it for **data management** (45%).

About two thirds of the 171 transit agencies that use Wi-Fi use it to enable ITS for **public transportation** (67%), and over half reported using it for **data management** (57%).

Reports, data, and more available now!
Go to: www.itskrs.its.dot.gov/deployment/2023DTS.

U.S Department of Transportation
Intelligent Transportation Systems
Joint Program Office
ITS Deployment Tracking Survey