# 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]
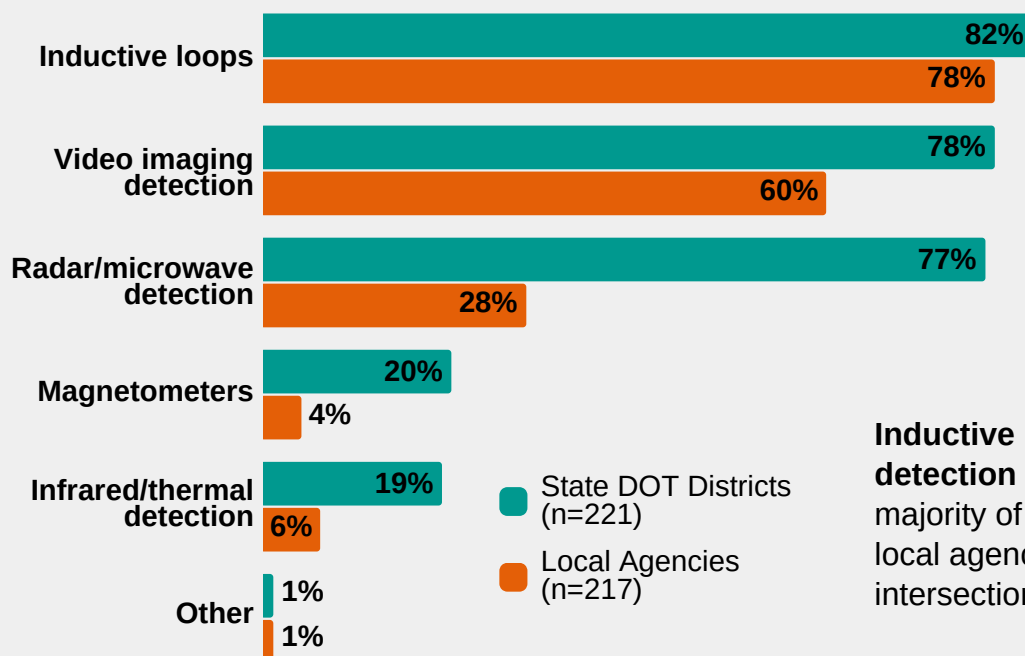
Overall Survey Response Rate

78% (276 Arterial: State DOT Districts)
47% (423 Arterial: Local Agencies)
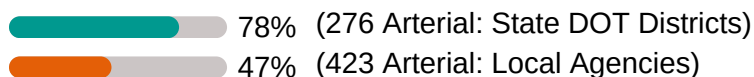
ITS Technologies at Signalized Intersections:
Arterial Management Agencies

In 2023, a large majority of surveyed State Department of Transportation (DOT) districts managing arterials (221, or 80%) and about half of local agencies (217, or 51%) reported operating signalized intersections in the 2023 ITS Deployment Tracking Survey. These arterial management agencies were then asked about ITS deployed at signalized intersections.[2]

ITS Detection Technologies at Signalized Intersections

Inductive loops — 82% (State DOT Districts), 78% (Local Agencies)
Video imaging detection — 78% (State DOT Districts), 60% (Local Agencies)
Radar/microwave detection — 77% (State DOT Districts), 28% (Local Agencies)
Magnetometers — 20% (State DOT Districts), 4% (Local Agencies)
Infrared/thermal detection — 19% (State DOT Districts), 6% (Local Agencies)
Other — 1% (State DOT Districts), 1% (Local Agencies)

State DOT Districts (n=221)
Local Agencies (n=217)

Nearly all **State DOT districts managing arterials** (98 percent) and **local agencies** (94 percent) that manage signalized intersections deploy one or more ITS detection technology at intersections.

Inductive loops and **video imaging detection** are each deployed by a large majority of both State DOT districts and local agencies operating signalized intersections.

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

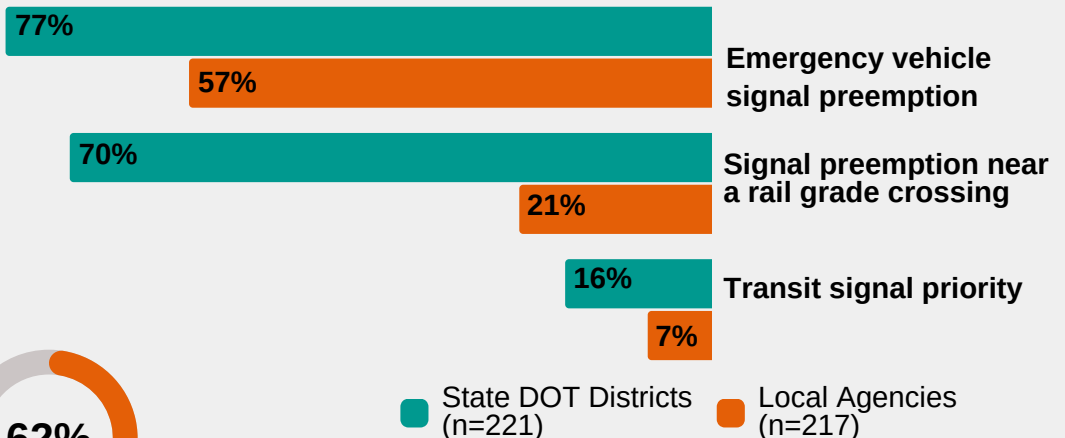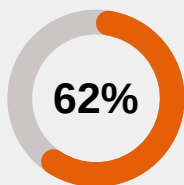[2] All data for local arterial agencies are weighted. Click here to see the reports for more details.
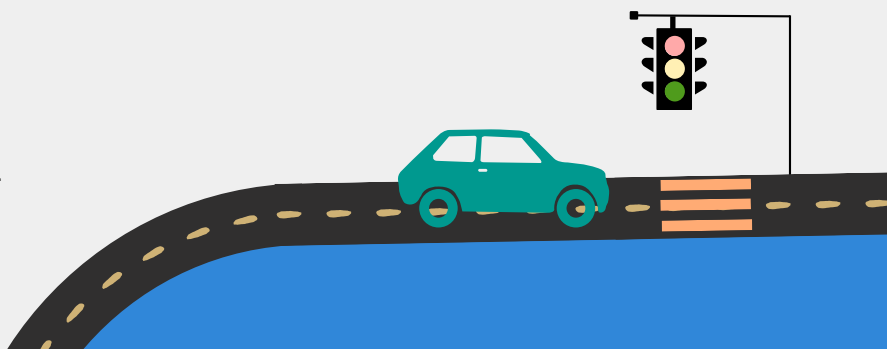
Preemption and Priority ITS Technologies at Signalized Intersections

91%
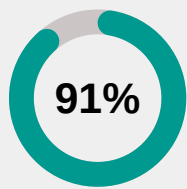
Nearly all **State DOT districts managing arterials** operating signalized intersections deploy at least one preemption or priority technology at signalized intersections (91%), as do a majority of **local agencies** operating signalized intersections (62%).
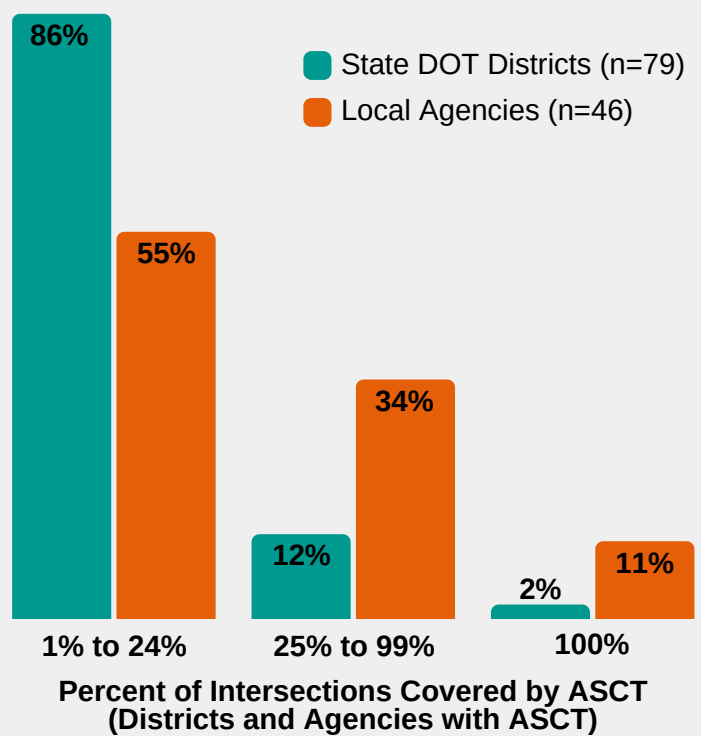
62%

77% / **57%** — **Emergency vehicle signal preemption**

70% / **21%** — **Signal preemption near a rail grade crossing**

16% / **7%** — **Transit signal priority**

State DOT Districts (n=221)   Local Agencies (n=217)

Emergency vehicle signal preemption and **signal preemption near rail grade crossing** are the most deployed preemption technologies by both State DOT districts and local agencies operating signalized intersections.

Note: Response options reported by 2% or fewer of both arterial management agency types are not shown, including maintenance and construction signal priority, truck (or freight) signal priority, and other.

Adaptive Signal Control Technology

Over one third of **State DOT districts** (36%) and one fifth of **local agencies** (21%) operating signalized intersections use adaptive signal control technologies (ASCT) to enable operational strategies for improving coordinated signal timing.

Among those using ASCT, a large majority of State DOT districts and about half of local agencies deploy ASCT at **1% to 24% of intersections**. Notably, 11% of **local agencies** deploy at **100% of intersections**.

State DOT Districts (n=79)   Local Agencies (n=46)

Percent of Intersections	State DOT Districts	Local Agencies
1% to 24%	86%	55%
25% to 99%	12%	34%
100%	2%	11%

Percent of Intersections Covered by ASCT (Districts and Agencies with ASCT)