SUSTAINABILITY WHITE PAPER

## Iteris is ushering in an era of smarter, more sustainable transportation and mobility

As a global leader in smart mobility infrastructure management, Iteris is working with public and private-sector partners to decarbonize mobility.

iteris

February 2022

### Our commitment:

Beyond providing mobility solutions that directly contribute to an overall reduction in carbon emissions from road traffic, the company's Environmental Policy Statement, which was formally adopted by Iteris' Board of Directors in July 2020, describes the company's commitment to reducing its impact on the environment associated with its operations. We strive to promote sustainability and environmental awareness at all levels of the company, as well as improve our environmental performance over time and initiate projects and activities designed to further reduce our impacts on the environment.

#### We are committed to, among other initiatives:

- Support the environmental goals of the United Nations Global Compact;
- Comply with all applicable environmental legislation;
- Prevent pollution and reduce consumption of resources through waste management strategies, such as re-use, recover, and recycling, as appropriate and whenever possible;

- Incorporate energy efficiency measures into the company's facilities and promote efficient energy use in all areas of business activity;
- Promote and continue to invest in technologies that provide alternatives to unnecessary business travel;
- Educate our staff about the environmental impacts of their work activities and encourage and empower them to contribute and participate in projects and activities to minimize those impacts; and
- Implement a program of continuous improvement over time by striving to measure our environmental impacts and by setting goals to reduce these impacts each year.



# Over 92% of all the energy used in the

transportation sector comes from gasoline and diesel fuels.

According to the U.S. Energy Information Administration, transportation accounts for about one third of the world's and one quarter of the United States' total energy consumption. Today, gasoline and diesel fuel provide over 92% of all energy used for transportation. During the next few decades, the number of vehicle miles traveled in the U.S. is forecast to increase more than 20%, which will increase fossil fuel consumption and associated air pollution, even with the growth in electric vehicles. This is likely to be particularly problematic for large urban areas, which continue to be magnets for population growth and economic activity, and therefore experience high levels of congestion and carbon emissions.

Because it will take multiple decades to fully decarbonize mobility, public and privatesector stakeholders must pursue broad-based, multidimensional opportunities to minimize carbon emissions. Yet, many of the most practical and effective opportunities are overlooked, underutilized or suboptimized due to a lack of public education and industry collaboration.

Iteris is committed to a cleaner, healthier and more sustainable future. To that end, our multi-disciplinary experts continuously identify, develop and implement state-of-the-art approaches that maximize the environmental benefits of often misunderstood or overlooked sustainability opportunities, while also advancing the transition to carbon-free mobility.

### **These opportunities include:**

Sustainability Opportunity		Description
1000 000	Optimize traffic signal timing	Method of timing groups of traffic signals along an arterial street to provide for smooth movement of traffic with minimal stops, thereby reducing delays, which results in a better flow of traffic, and minimizes fuel consumption and carbon emissions
A	Mitigate construction- related pollution	Process of establishing a work zone, providing related transportation management and temporary traffic control on street and highway rights of way that maximize safety, while minimizing congestion, fuel consumption and air pollution
	Reduce transit vehicle emissions	Set of operational improvements that minimizes dwell time and fuel consumption at traffic signals for transit vehicles
	Manage transportation corridors as multimodal systems	Methods and technologies to reduce congestion and fuel consumption, as well as improve safety, by appropriately diverting traffic to parallel routes containing unused capacity
	Automate commercial vehicle inspection and enforcement	Methods and technologies to monitor and ensure compliance with various requirements related to the operation of commercial vehicles, including fuel leaks, weight restrictions, tire inflation, mechanical fitness, and other factors that impact fuel consumption and carbon emissions

### Iteris' commitment to a more sustainable future

Iteris **(NASDAQ: ITI)** is the global leader in smart mobility infrastructure management. Our mission is to make mobility safe, efficient and sustainable for everyone. Our industryleading portfolio of smart mobility infrastructure management solutions help communities across the United States reduce their carbon footprint.

Iteris is currently engaged in traffic signal synchronization programs in four of the top 10 metropolitan areas in the US.

### **Optimize traffic signal**

Because traffic patterns change over time, cities tend to conduct traffic signal synchronization programs every three to five years. These programs involve a study of current traffic patterns, the development of alternative synchronization models and the implementation of improvement opportunities. These opportunities include reductions in travel times, gas consumption and particulate emissions, as well as improvements in vehicle, bicycle and pedestrian traffic. While traffic signal synchronization programs produce significant economic, environmental and safety benefits, these benefits can degrade shortly after the completion of a program due to changes in population, economic activity, land use and even weather patterns that impact traffic flow.

To maximize the short and long-term benefits of traffic signal synchronization, Iteris is unique in our ability to apply specialized traffic engineering approaches, cloud-based software and process virtualization for continuous traffic signal synchronization. Consistent with traditional traffic signal synchronization programs, we start with traffic timing studies to establish traffic congestion and carbon emissions baselines, and then construct simulation models to determine optimal signal phase and timing plans. Then, after implementing the initial traffic signal synchronization improvements, our traffic engineers remotely monitor the traffic signal performance 24x7 from our captive traffic operations centers using the signal performance measurement capabilities of our ClearGuide<sup>®</sup> mobility intelligence software-asa-service (SaaS) solution. Based on this monitoring, we make continuous adjustments to traffic signal synchronization to minimize fuel consumption, carbon emissions and particulate matter between traffic signal synchronization programs.

Due to our innovative approach, Iteris has become a national thought leader and market-share leader in traffic signal synchronization. We have completed more than 3,000 traffic signal timing, coordination or synchronization projects, covering over 27,000 intersections across 20 states that are used to control traffic flow for 7,500+ road miles. We have a particularly strong presence in major metropolitan areas that represent some of the most congested roadways in the nation. In fact, Iteris is currently engaged in traffic signal synchronization programs in four of the top 10 metropolitan areas in the US.



#### City of Orange, California

Our work includes a traffic signal synchronization program for the City of Orange, California. This program, which is funded by Orange County Transportation Authority (OCTA), advances OCTA's goals to reduce countywide travel time, fuel consumption and greenhouse gas emissions, while improving safety and mobility, and improving the overall travel experience for all road users, including vehicles, buses, bicycles and pedestrians. Since launch, this traffic signal synchronization program has resulted in a 13% reduction in travel time, a 52-million-gallon reduction in fuel consumption and an 885-million-pound reduction in greenhouse gas emissions, according to OCTA.

885m

3

THE

pounds in greenhouse gas reduction

**52m** 

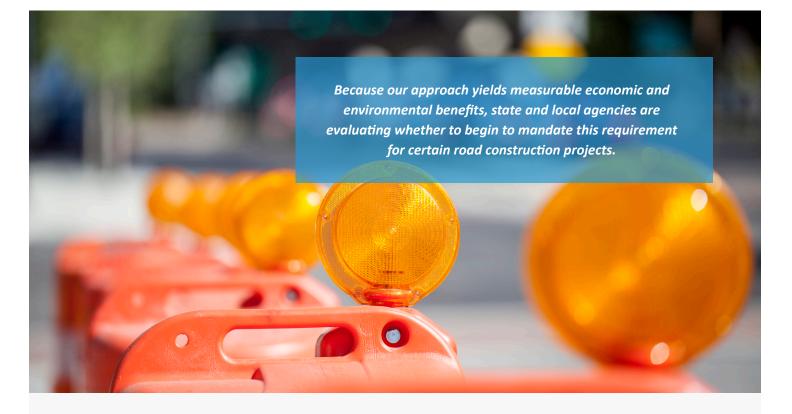
gallons in fuel consumption use reduction

19%

better travel experience with reduced travel times, stops and delays allow more time spent with family and friends

13% reduction in travel time

SOURCE: OCTA



### Mitigate construction-related pollution

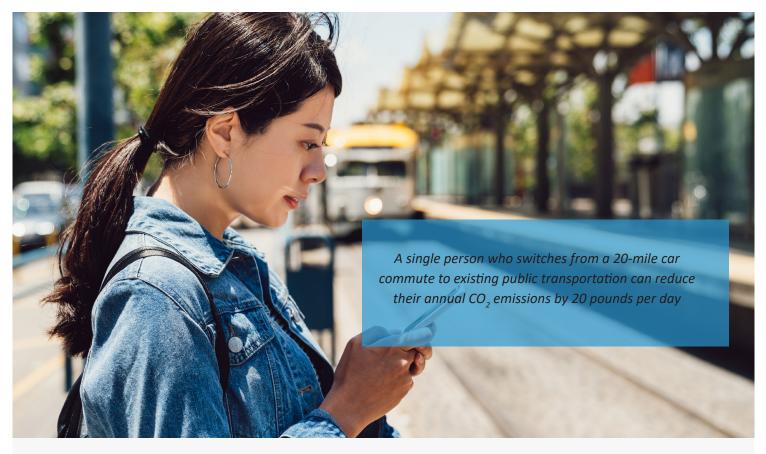
Road construction and repair generate significant air, water, soil and noise pollution. The primary sources of air pollution are carbon emissions from construction machinery, carbon emissions from traffic congestion around the construction site, and airborne particulate matter and volatile compounds that spread by wind. These sources of air pollution tend to exhibit interdependencies that have been difficult to optimize, since approaches to reduce the number of days of construction activity tend to increase the amount of machinery use and the level of traffic congestion around the construction site. Given the degree of environmental impact and the availability of new data sets to address this optimization problem, Iteris has introduced unique approaches to maintenance of traffic and construction planning that mitigate air pollution, in particular, during road construction and repair.

Like our innovations in traffic signal synchronization, Iteris combines traffic engineering domain expertise, cloud-based software, data science, and process virtualization to reduce the environmental impact of road construction and repair. More specifically, we provide a managed service that combines our traffic planning expertise and our mobility intelligence software, ClearGuide, to advise contractors on how best to reduce the total amount of construction time, while minimizing the amount of traffic disruptions (e.g., traffic congestion at the construction site and movement of traffic to adjacent arterial roads that often has a disproportionate impact in underrepresented areas). Because our approach yields measurable economic and environmental benefits, state and local agencies are evaluating whether to begin to mandate this requirement for certain road construction projects.



At this time, Iteris is providing this managed service to the joint-venture partners responsible for two of the largest road construction projects in the nation – the I-405 Improvement Project in southern California and the I-10 Broadway Curve Reconstruction Project in Phoenix, Arizona.

The I-405 Improvement Project is a \$2.2 billion, multi-year initiative led by OC405 Partners, a joint venture composed of five global engineering and construction firms. The project is funded by OCTA in cooperation with the California Department of Transportation. The initiative will widen 16 miles of highway through one of the country's most densely populated areas, add a tolled express lane in each direction, add various auxiliary lanes, and reconfigure numerous ramps and bridges. In addition to managing the maintenance of traffic plan and providing critical input to the overall project schedule, Iteris has led the freeway intelligent transportation system (ITS) and 405 Express Lanes infrastructure design and deployment. Iteris utilizes ClearGuide to perform detailed traffic analysis to support and monitor the project's maintenance of traffic activities. More specifically, our traffic management team uses ClearGuide to identify and mitigate bottlenecks, analyze events to optimize response plans, and produce historical trend reports and dynamic congestion charts to track travel time reliability and support planning of project detour routes as the construction efforts evolve. These data enable the construction team to optimize the construction schedule and maximize work zone limits, while minimizing the overall traffic impact and meeting the project's performancebased requirements and associated environmental requirements. The data-based and strategic implementation of detour routes and optimized signal operations allow the team to minimize the overall work zone related congestion and traffic stops, which leads to overall fuel savings and decreased vehicle emissions.



#### Reduce transit vehicle emissions

According to the American Public Transportation Association (APTA), US public transportation saves 37 million metric tons of CO2 annually, equivalent to the emissions generated to provide electricity to 4.9 million households or every household in Washington DC, New York City, Atlanta, Denver and Los Angeles combined. Of course, to sustain these environmental benefits, public transportation systems must maintain high ridership levels through efficient and reliable operations that compare favorably to travel by private passenger vehicles.

Transit signal priority systems leverage WiFi or cellular vehicle-to-everything (V2X) communication devices to geolocate transit vehicles, relay that location information to the signal controller and process a priority request to minimize dwell time at signalized intersections. In addition to total reductions in traffic congestion and improvements in traffic safety, transit signal priority systems improve transportation vehicle capacity optimization, fuel economy, ridership growth and customer loyalty. These factors produce meaningful environmental benefits, given that a single person who switches from a 20-mile car commute to existing public transportation can reduce their annual CO2 emissions by 20 pounds per day, or more than 4,800 pounds in a year. That is equal to a 10% reduction in all greenhouse gases produced by a typical two-adult, two-car household.



#### East San Fernando Valley Light Rail Project

Iteris provides traffic operations analysis and traffic engineering services for public transportation agencies across the country. For example, Iteris is providing design services for a new light rail transit system in Los Angeles County, covering more than 60 signalized intersections as part of the \$1.3 billion East San Fernando Valley Light Rail Project. Additionally, Iteris is responsible for deploying and managing transit signal priority systems for some of the country's largest public transportation agencies.

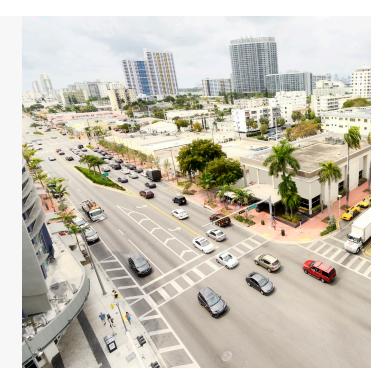
Iteris has been responsible for the deployment and management of the Los Angeles County Metropolitan

Transportation Authority (Metro) transit signal priority system for over a decade, enhancing services for nearly 10 million Metro riders a year, covering 83 square miles of LA County communities. The system leverages existing on-bus priority request systems that incorporate GPS-based automatic vehicle location equipment, wireless communications and advanced intersection traffic controller technologies that provide intersection-based priority granting capabilities. Iteris' bus signal priority solutions are currently deployed at over 600 signalized intersections in southern California.

### Other environmental benefits from mobility infrastructure management innovations

### Manage transportation corridors as multimodal systems

According to the U.S. Department of Transportation's Intelligent Transportation Systems Joint Program Office, the vision of integrated corridor management is that transportation networks will realize significant improvements in the efficient movement of people and goods through institutional collaboration and aggressive, proactive integration of existing infrastructure along major corridors. By employing a holistic integrated corridor management approach, corridors are managed as a multimodal system and operational decisions are made for the benefit of the corridor as a whole.



#### The Florida Department of

**Transportation's** integrated corridor management program with Iteris, for example, supports its goals of reducing fuel consumption and greenhouse gas emissions, while improving overall travel experience for all road users, including vehicles, buses, bicycles and pedestrians. By maintaining travel time reliability, and reducing delays and stops on key corridors, the project will help reduce CO2 emissions and fuel consumption.



### Automate commercial vehicle inspection and enforcement

With current deployments of Iteris' commercial vehicle operations (CVO) solutions in 22 states as well as two electronic screening providers, serving more than half of the country, Iteris is the largest provider of CVO solutions nationwide.



#### The New Hampshire Department of Safety, Division of State Police,

for example, uses Iteris' Inspect SaaS solution to aggregate and automate its roadside inspection process for commercial vehicles. Iteris Inspect, which is powered by Iteris' CVIEW-Plus data services, reduces the time to conduct inspections by up to 50%. Less time roadside improves safety for both drivers and enforcement personnel, and less time idling, and stopping and starting results in significant reductions in emissions and fuel consumption for some of the nation's heaviest-emitting commercial freight vehicles.



# Making an impact where it matters most

Although Iteris operates across North America, our strategic markets include the region's largest and most congested metropolitan areas, which produce a disproportionate share of greenhouse gas emissions.

#### 27.4 vehi 14.9 mile 116, truc 412, fron cong 40.9 in 20

#### San Francisco, CA

27.4 million freeway daily vehicle miles traveled in 2020

14.9 million arterial daily vehicle miles traveled in 2020

116,000 tons of extra CO2 from trucks in 2020 due to congestion

412,000 tons of extra CO2 from all vehicles in 2020 due to congestion

40.9 million gallons fuel wasted in 2020 due to congestion

#### Los Angeles, CA

107.5 million freeway daily vehicle miles traveled in 2020

86.7 million arterial daily vehicle miles traveled in 2020

256,000 tons of extra CO2 from trucks in 2020 due to congestion

1.3 million tons of extra CO2 from all vehicles in 2020 due to congestion

132.6 million gallons fuel wasted in 2020 due to congestion

#### Chicago, IL

45.6 million freeway daily vehicle miles traveled in 2020

60.7 million arterial daily vehicle miles traveled in 2020

200,000 tons of extra CO2 from trucks in 2020 due to congestion

717,000 tons of extra CO2 from all vehicles in 2020 due to congestion

71.3 million gallons fuel wasted in 2020 due to congestion

#### Houston, TX

53.2 million freeway daily vehicle miles traveled in 2020

44.2 million arterial daily vehicle miles traveled in 2020

193,000 tons of extra CO2 from trucks in 2020 due to congestion

681,000 tons of extra CO2 from all vehicles in 2020 due to congestion

68.2 million gallons fuel wasted in 2020 due to congestion

Source: Texas A&M Transportation Institute – Mobility Division

https://mobility.tamu.edu/umr/congestion-data



Iteris is proud to help city and state transportation agencies across the country improve the sustainability of their transportation systems with innovative smart mobility solutions that both make immediate improvements in the environment and set the foundation for long-term reductions in emissions due to the infrastructure-level nature of the solutions.

With the company's core strategic geographies of California, Texas, Florida and the Midwest also representing some of the most congested, highestpolluting urban centers in the country, Iteris is positioned to make a sustainable impact in the regions where it matters the most. Based on data from the Texas A&M Transportation Institute's Mobility Division, drivers in Los Angeles, CA – one of the most congested cities in the nation – emitted 1.3 million tons of extra  $CO_2$  in 2020 due to congestion, with truck drivers alone representing 256,000 tons of that total. In that same period, drivers wasted 132.6 million gallons of fuel due to congestion in a city that sees daily vehicle miles traveled along freeways and arterials of 107.5 million miles and 86.7 million miles respectively. San Francisco, Chicago, Houston and Miami saw similarly staggering negative impacts from congestion, which is one of the key reasons Iteris has identified these areas as strategic markets.

# What's next?

**Emerging areas of focus for a more sustainable future** 

#### Freight signal priority pilot with the Port of San Diego and State of California Energy Commission

Iteris is constantly investigating new, innovative and scalable applications that build upon its existing solutions – as is the case with the company's recent freight signal priority pilot program, which leverages its expertise in transit signal priority systems, infrastructure-to-vehicle integration and mobility intelligence to accelerate goods movement and reduce carbon emissions for typically heavy-emitting freight vehicles.

In collaboration with Denso International, and with funding from the Port of San Diego and the State of California Energy Commission, Iteris deployed connected vehicle roadside unit sensors along a transportation corridor adjacent to San Diego port, and equipped a series of freight vehicles with onboard units. The project tracked wait times, speeds and goods movement through the major corridor to identify and implement ways to improve the flow of goods, including the use of freight signal prioritization to reduce dwell times at intersections for heavyemitting vehicles.

The Bureau of Transportation Statistics estimates that passenger cars emit 2.81 grams per mile carbon monoxide, whereas 17.14 grams per mile carbon monoxide are emitted by heavy-duty vehicles such as trucks.

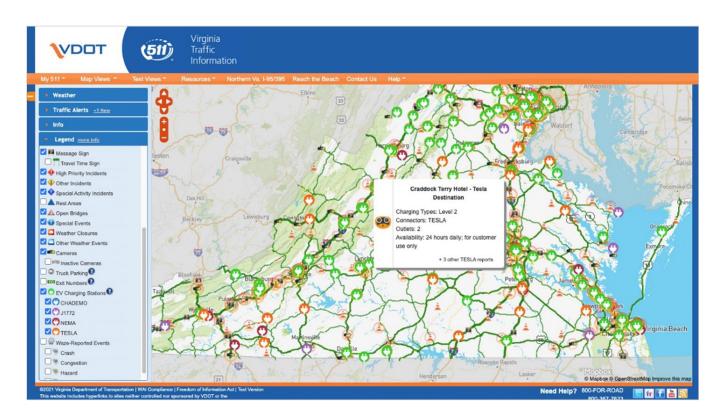
According to a research paper from the Transportation Research Board, freight signal priority systems can "effectively mitigate the environmental impact of trucks by reducing the frequency of stop-andgo driving and idling duration." The results of an evaluation of a two-mile section of San Pablo Avenue in Berkeley, California showed a consistent reduction in fuel consumption and emissions for both the typical 2% truck traffic percentage and the 20% truck traffic experienced during a diversion\*, at a reduction rate of 17% and 35% respectively.

 $\ast$  2% and 20% are relative to the total percentage of vehicles on the road.

The Bureau of Transportation Statistics estimates that passenger cars emit 2.81 grams per mile carbon monoxide, whereas 17.14 grams per mile carbon monoxide are emitted by heavy-duty vehicles such as trucks.

### Electric vehicle charging station layer on Virginia Department of Transportation's 511 mobile app & website

The Virginia Department of Transportation (VDOT) recently launched an electric vehicle (EV) charging station overlay on its 511 Virginia mobile app and website, enabling users to locate charging stations along their planned routes. Virginia's 511 service is built on ClearRoute<sup>™</sup>, Iteris' next-generation traveler information system services solution, which powers 11 state and regional transportation agencies across the U.S. with multimodal traveler information via mobile apps, websites and IVR systems, supporting over 39 million combined interactions in 2020. Such new information and mapping features contribute to the wider adoption and use of electric vehicles.



#### Smart mobility infrastructure management

offers a vision of seamless, integrated urban transport, with the added benefits of efficient resource management, greater cost savings and better air quality, and Iteris is leading the way.

By reducing delays and stops as part of traffic signal timing projects, improving the efficiency of public transit via signal priority programs, reducing time spent roadside for heavy-emitting commercial freight vehicles during inspection, to name just a few examples, Iteris' industryleading portfolio of smart mobility infrastructure management solutions is currently helping cities and states to reduce their carbon footprint.

Moreover, Iteris' flexible delivery models – including SaaS, cloudenabled managed services, data as a service and platform as a service – uniquely position the company to scale those positive impacts over the medium and long term to achieve our mission of making mobility safe, efficient and sustainable for everyone.

as of 12/31/2021

# About Iteris

Iteris is the global leader in smart mobility infrastructure management – the foundation for a new era of mobility. We apply cloud computing, artificial intelligence, advanced sensors, advisory services and managed services to achieve safe, efficient and sustainable mobility. Our end-toend solutions monitor, visualize and optimize mobility infrastructure around the world to help ensure that roads are safe, travel is efficient, and communities thrive.

public agency and commercial customers	200k+ sensors installed	<b>2bn+</b> detections per day
petabytes of data processed annually	<b>32</b> patents	<b>440</b> industry, technical and domain experts
<b>\$131m</b> TTM total revenue	15% year-over-year TTM revenue growth	25% current ARR as % of total revenue

### **Supporting the United Nations Global Compact**

Iteris is proud that our Board of Directors has formalized the company's commitment to support the environmental goals of the United Nations Global Compact, the world's largest global corporate sustainability initiative, in our Environmental Policy Statement.

As part of our alignment with these universal sustainability principles, and the strategic and operational activities we engage in for the customers and communities we serve, Iteris is helping to contribute to the achievement of the five United Nations Sustainable Development Goals illustrated on this page.



Industry, Innovation and Infrastructure





Sustainable cities and communities



**Climate action** 



Partnerships for goals

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