

Pittsburgh's Smart City proposal combines data, energy and transportation

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By Ed Blazina / Pittsburgh Post-Gazette

Pittsburgh's application for the \$50 million Smart City Challenge grant calls for a series of transportation spines, traffic signals that give priority to transit and freight vehicles, and an "electric avenue" between Downtown and Hazelwood for driverless vehicles charged at solar power stations.

And to oversee the massive series of transportation projects, the city is proposing what it calls the SmartPGH Consortium, a coalition of government, education, transportation, foundation, utility and major freight operators.

Pittsburgh and six other cities will make their final presentations today to U.S. Department of Transportation officials in Washington, D.C., for the grant. Officials from the cities — Pittsburgh; Austin, Texas; Columbus, Ohio; Denver; Kansas City, Mo.; Portland, Ore.; and San Francisco — met with technical personnel Wednesday about their applications.

The initial applications of the finalists, filed in February, were posted online Wednesday by one of the private companies involved in helping them refine their final presentations. Mayor Bill Peduto is leading a team of local officials to offer Pittsburgh's three-minute video and seven-minute oral presentation today. A winner will be announced by the end of the month.

Pittsburgh's 30-page initial proposal envisions a triangular platform that uses data collection and a series of electricity microgrids to push transportation improvements. In addition to better traffic movement, the city says its proposal would produce side benefits such as a reduction of air pollution in poor neighborhoods that could easily be replicated in other cities.

The city said the Smart City grant would give it "an opportunity to begin to create the next generation of public infrastructure: an adaptive, living communication and data platform that allows the City of Pittsburgh to respond to the transportation and energy needs of residents efficiently and equitably."

Although it's not part of the initial proposal, Mr. Peduto has said he foresees the Pittsburgh region also becoming the hub for manufacturing the sensors, circuits and other technology needed to accomplish the Smart City goals.

A key element of the Pittsburgh proposal would be a "smart spine system" on six streets that feed into the Golden Triangle: Penn, Liberty, Fifth, Forbes and Second avenues, and Bigelow Boulevard.

The system would use the Western Pennsylvania Regional Data Center, a collaborative led by Pittsburgh

and Allegheny County and operated by the University of Pittsburgh, to collect location data from various sources along those spines. The sources would include personal, public transit, government and freight-hauling vehicles; street and traffic lights; and social media.

That information would be used to monitor traffic and control traffic lights on those streets, a much larger version of the Surtrac signal control system developed by Carnegie Mellon University and used in East Liberty and Larimer. As part of the system, traffic lights would use sensors to identify transit and freight vehicles and allow them to move through the signals quicker.

That eventually would be expanded throughout the city to all traffic signals.

The information also would be distributed to the public on mobile devices and include suggestions for avoiding congested areas.

In addition, the consortium would work with the freight-hauling industry to coordinate deliveries during off-peak hours.

The proposal claims those steps would substantially reduce air pollution caused by idling vehicles in those spines, which pass by many disadvantaged neighborhoods that receive a disproportionate amount of pollutants and have higher rates of breathing problems such as asthma.

The city also proposes using Second Avenue to demonstrate the use of self-driving electric transit vehicles that could be charged using power from a solar canopy set up at the Second Avenue parking plaza. The so-called "clean energy transportation corridor" would run from Downtown past the Pittsburgh Technology Center to the 170-acre Almono development in Hazelwood.

The challenge grant includes \$40 million from the Department of Transportation; \$10 million from Paul G. Allen's Vulcan Inc.; \$1 million in cloud service credits from Amazon Web Service; and additional money from Mobileye, Autodesk and Alphabet's Sidewalk Labs. Federal officials say they will work with all of the cities to find funding for good ideas even if they don't win.

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