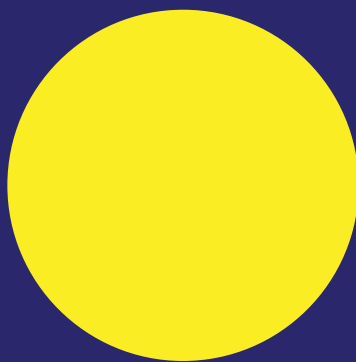


BEYOND TRAFFIC:

DENVER

THE SMART CITY

CHALLENGE



FEBRUARY 4, 2016
PART 1

THE CITY AND
COUNTY OF DENVER



February 4, 2016

The Honorable Anthony Foxx
Secretary of Transportation

**RE: Beyond Traffic: The Smart City Challenge, Funding Opportunity Number
DTFH6116RA00002, DFDA Number 20.200 Highway Research & Development**

Dear Mr. Secretary and Members of the Selection Committee:

The USDOT has a strong vision for America's future – one of Smart Cities that work together holistically through an integrated approach to improve surface transportation performance. With our available infrastructure, strong and cohesive team, and commitment to Smart Cities concepts, the City and County of Denver is the clear choice to move your vision forward.

Our team is anchored by four foundational partners – Denver, the Regional Transportation District, the Colorado Department of Transportation, and the State of Colorado. We are bolstered by 50+ strategic partners ranging from government to automakers, telecom to academia, and non-profits to think tanks. This powerhouse team is prepared to provide the USDOT the most comprehensive Smart City approach through an integrated program composed of a data management platform and three strategic mobility components. **Our ultimate vision for this grant is to create a replicable, adaptable, and scalable world-class Smart City Program that connects every user with flexible, affordable, and accessible multimodal options.**

Denver's Smart City Program can be summed up in one simple phrase – **connect more with less**. We believe that users benefit from a better-connected multimodal system that demands less of our time and energy, requires less money, reduces our reliance on cars, and ultimately asks for less of our space. By connecting users, systems, and infrastructure with technology and information, our Smart City Program will generate fewer emissions, with fewer injuries and fatalities, and provide more transportation options and a higher quality of life.

Our collaborative, adaptable Smart City Program includes a SMART Council that will embrace the four finalist cities, allowing for a truly comprehensive program that has significant impact on a national scale. With a meaningful local match, Denver will demonstrate its commitment to this grant, and stands ready to lead the nation, and turn this vision into reality.

With full support of our foundational partners, as signed below, the City and County of Denver enthusiastically submits this grant application for your review and consideration.

Respectfully,

Michael B. Hancock
Mayor
of Denver

John Hickenlooper
Governor
of Colorado

Shailen P. Bhatt
Executive Director
of CDOT

David A. Genova
Interim General Manager
and CEO of RTD

DENVER

TABLE OF CONTENTS

1	Denver's Vision of Our Smart City	Page	1
2	Population Alignment	Page	5
3	Smart City Alignment	Page	6
4	Preliminary Site Map	Page	7
5	Approach Alignment	Page	8
6	Risk Identification and Mitigation	Page	18
7	Governance and Partnership	Page	19
8	Transportation Infrastructure	Page	21
9	Collection of Data	Page	22
10	Approach to Existing Standards	Page	24
11	Measurable Goals and Objectives	Page	26
12	Evidence of Capacity	Page	28
13	Leveraging Federal Resources	Page	29
APPENDIX: Letters of Commitment			

DENVER

LIST OF TABLES

TABLE 1	How Denver’s Smart City Program Achieves the Vision Elements	Page	9
----------------	--	------	---

TABLE 2	Risk Identification and Mitigation	Page	18
----------------	------------------------------------	------	----

TABLE 3	Smart City Data Integration Opportunities	Page	23
----------------	---	------	----

1: DENVER'S VISION OF OUR SMART CITY

*Denver's Smart City Program can be summed up in one simple phrase – **connect more with less**. We believe that users benefit from a better-connected multimodal system that demands less of our time and energy, requires less money, reduces our reliance on cars, and ultimately asks for less of our space. By connecting users, systems, and infrastructure with technology and information, our Smart City Program will generate fewer emissions, with fewer injuries and fatalities, and provide more transportation options and a higher quality of life.*

A Smart City is composed of people who are aware and engaged, putting aside egos and agendas, and who are willing to compromise for the benefit of all. The Denver Smart City (DSC) Team is already engaged and working together to move our City forward. With a culture and mindset of continuously shrinking our footprint, reducing pollution, and optimizing precious resources – *especially time and space* – a Smart City must address ever-evolving technologies while remaining affordable and accessible.

We will move forward together, paying particular attention to the under-served.

Denver proudly boasts a long history of innovative thinking, especially when it comes to mobility and economic vitality. We have seen incredible leaps in progress when we have invested in our transportation system. In the late 1800s, a group of visionaries formed the Denver Chamber of Commerce with the express purpose of raising the funds necessary to ensure the railroad came to Colorado. This entrepreneurial mindset forever changed the landscape of Denver. More recently, metro Denver civic leaders and voters embarked on two leaps of commitment

and ingenuity. The first was replacing our aging, outdated Stapleton International Airport. Denver International Airport, at a cost of \$5B, is now considered Denver's gateway to the world, with an annual economic impact in excess of \$26B.

The second was the voter-approved, multi-billion dollar FasTracks program in 2004, the metro-wide light rail, commuter rail, and bus rapid transit system that is reshaping our transportation landscape and changing how we choose to travel. Whether it has been our forward thinking installation of more than two million lineal feet of modern fiber optics, or upcoming investments in new technologies like connected vehicles, mobility platforms, or literally an entire smart city-development, Denver continues to make new and visionary investments in our city.

We have a vision for the full \$50M grant (with the \$10M Vulcan Foundation investment) that begins with an aggressive approach to the Smart City Program composed of three strategic components built on a robust data platform. Our plan incorporates a meaningful local match and includes the active involvement of our community, (see www.denvergov.org/smartcitychallenge), and 50+ world class, signature partners (from energy to transportation and information technology) many of whom are exclusive to Denver on this grant pursuit. Our proactive operating structure includes a SMART Council – an advisory body including the other four finalist cities to encourage collaboration and transferability of Smart City concepts.

We stand ready to lead the nation and turn this vision into reality.



DENVER'S SMART CITY VISION

Create a replicable, scalable, world-class Smart City Program that provides ALL users flexible, affordable, and accessible multimodal options.

DENVER'S SMART CITY PROGRAM MISSION

Provide the bridge between the people, services, goods, travel choices, information, and technology, allowing for engagement, accessibility, adoptability, and adaptability while being flexible enough to continually evolve, learn, and get 'smarter'.



Denver will leverage existing investment, infrastructure, and the grant to advance new technologies and connect our users.

DENVER WILL GIVE USDOT MOMENTUM

Denver is a hotbed of innovation and opportunity, and the grant will have the most impact in this type of environment.

- Denver is the overall “Best City for Public Transportation” - *USNews.com*, 2013
- Denver is first for “Best places for business and careers” - *Forbes*, 2015
- Metro Denver ranks first among big cities in economic and job growth - *Area Development*, 2015
- Colorado has the nation’s third-best economy, based on economic performance in the past year - *Business Insider*, 2015
- Denver is the #4 “Boomtown” heading for at least a decade of strong economy - *Forbes*, 2016

With the full political and programmatic support and alignment of our major partners – Colorado Department of Transportation (CDOT), Regional Transportation District (RTD), the State of Colorado, National Renewable Energy Lab (NREL), Panasonic, Xerox, Rocky Mountain Institute (RMI), and West Safety

Services – our team embodies the aspirational Spirit of the West and a winning mentality. Our partners have assisted the City in creating this Smart City Program from the very beginning. Support and alignment for this program includes Denver’s Mayor Hancock, currently starting his second term, who campaigned on mobility and won reelection with 80% of the vote. It extends to Denver’s City Council, whose priorities for the 2016 budget include five mobility-centric items, and to Colorado’s Governor Hickenlooper, who has demonstrated his support and alignment by signing our cover letter for this grant application.

CHALLENGES & OPPORTUNITIES

Denver is a city of challenges and opportunities, and therefore perfectly situated to serve as USDOT’s Smart City collaborator. We are one of the most sought after, youngest, fastest growing cities in the nation, yet our infrastructure is extremely strained. With some of the worst air pollution in the U.S., we also have the highest quality of life in the country. Similar to other mid-sized cities, our list of challenges is long:

- Changing mobility patterns, particularly for millennials and baby boomers
- Accessibility for under-served populations
- Aging and degraded infrastructure serving an ever increasing and evolving population
- Technology and cybersecurity demands

While tackling these challenges can be daunting from a transportation/mobility perspective, our solutions are summed up in our Smart City Program. Our proposal addresses all twelve of the Vision Element requirements and will achieve the three expected outcomes relative to Safety, Mobility, and Climate Change. Our program consists of an Enterprise Data Management (EDM) Platform and three individual components:

1. Mobility on Demand Enterprise (MODE)
2. Transportation Electrification
3. Intelligent Vehicles.

DENVER'S SMART CITY PROGRAM

3 COMPONENTS

SEE SECTIONS 4 AND 5



1: Mobility on Demand Enterprise – MODE will become Denver's bridge to mobility options by reducing the barriers to access and bringing it to our fingertips through apps and interactive kiosks, in collaboration with Xerox and Panasonic (exclusive partners). Denver's existing two million lineal feet of fiber is available and will be harnessed for this initiative.



2: Transportation Electrification – This component will enable an infant vehicle electrification market to mature and expand while addressing critical safety concerns and providing solutions in coordination with the sharing economy to enhance the rider experience. This work will leverage voter-approved decarbonization efforts through the state's renewable energy mandate.



3: Intelligent Vehicles – Denver will build a foundation in intelligent vehicles through connectivity by partnering with CDOT to expand its connected vehicle program into the urban environment. We will unleash the true potential of automated vehicles by building a connected automation environment that systematically aligns the needs of users and businesses with the transportation network for a safer, smarter, and more environmentally friendly Denver.

ENTERPRISE DATA MANAGEMENT (EDM) PLATFORM

Denver will create a holistic, functional Smart City Enterprise Data Management Platform that supports the three components and connects all of the disparate data sets for safety, mobility, transportation, freight, and weather in one place, allowing for predictive analytics and timely decision-making. The platform will be adaptable, scalable, and expandable to other cities.

IMPROVE SAFETY

USDOT's *Beyond Traffic 2045* identifies "three distinct but related streams of change and development occurring simultaneously: in-vehicle crash avoidance systems that provide warnings and/or automated control of safety functions; connected vehicle technologies – vehicle-to-vehicle (V2V) and vehicle to infrastructure (V2I) communications that support various crash avoidance applications; and self-driving vehicles." Denver's EDM Platform will integrate real-time data and analytics with state-of-the-art information processing to facilitate intelligent vehicle performance, fostering a greater ability to operate and move effectively and with much higher levels of safety.

Denver's Smart City Program will also align with West Safety Services' Emergency Aware Services (EAS), which is an existing emergency response

Smart City data platform based on industry standards, that improves safety and enhances mobility in Denver. EAS is an open, standards-based platform that securely connects disparate data sources across multiple organizations (public and private), allowing for unsurpassed collaboration between users and public safety leadership.

MARK SAVAGE, LIEUTENANT COLONEL, COLORADO STATE PATROL, AND USDOT NATIONAL FREIGHT ADVISORY COMMITTEE MEMBER

"Denver's Smart City Program will allow the Colorado State Patrol to perform predictive analytics on high-risk traffic areas, giving public safety professionals the ability to more effectively allocate resources working to reduce the number of crashes across the City."

OPTIMIZING FREIGHT MOVEMENT

As outlined in *Beyond Traffic 2045*, Denver will leverage the EDM Platform to provide the analytics to optimize the movement of goods and freight within the Denver Metro area and support the transition to connected and automated trucks and freight vehicles.

Additionally, our team will engage with the Department of Homeland Security and its *Securing the Cities* program to provide valuable and accurate support for timely decision-making to mitigate or respond to safety hazards.

ENHANCE MOBILITY

Denver boasts a robust and healthy sharing economy made up of one bike, three ride, and five car sharing companies in addition to RTD's \$5B transit expansion program providing service throughout the metro area. The Denver Smart City Program presents an innovative approach to effectively link these heavily-utilized transportation options, further working to improve and expand alternative mobility choices and reducing reliance on traditional travel modes.

Denver's Smart City Program will leverage these mobility services to enhance first mile/last mile (FMLM) connections. For example, the City stands to benefit from the experience and lessons learned from the nearby City of Centennial, which recently launched a partnership program with a ride-sharing service provider to enhance its on-demand FMLM connections to light rail services. The program provides the opportunity to simulate an Automated Vehicle (AV) business model. The program will work to harness the power of the ride sharing economy as an essential element in bridging connectivity gaps for all residents.

ADDRESS CLIMATE CHANGE

Construction and infrastructure spending isn't the only way Denver proves its innovative spirit. As climate change rose to the forefront, we became an early leader among American cities. We were among the first cities to sign onto the Climate Protection Agreement of the U.S. Conference of Mayors and were the first city to win an award for our implementation efforts under that Agreement. Denver was the first city among those eligible for the USDOT Smart City Challenge Grant to sign onto the Mayor's National Climate Action Agenda. Denver has reduced per capita greenhouse gas emissions below 1990 levels and is on course to reduce total community emissions (currently at 23.7 metric tons per person) in absolute terms by 2020. These reductions have come despite a 25 percent increase in population since 1990.

Increased ride sharing, bike access and usage, and car sharing will result in significant economic savings for Denver users. In accordance with *Smart Mobility, Reducing Congestion and Fostering faster, greener and cheaper transportation options*, by Deloitte University Press, we anticipate a societal savings of reduced CO₂ emission of \$37/metric ton.

Denver will leverage the USDOT grant to further decarbonize the electric grid through the rapid and efficient transition from fossil-fuel powered vehicles to electric vehicles whose energy will come from a wide range of sources, including renewables.

LEVERAGING OUR FIBER OPTIC NETWORK

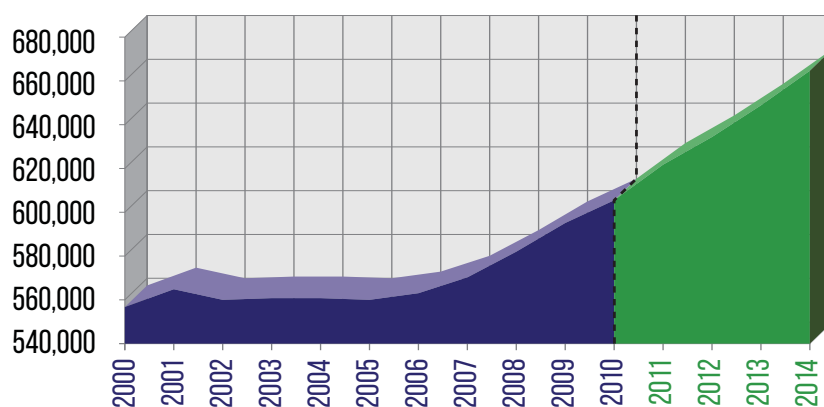
Beginning in the 1980s, the City of Denver began creating an expansive fiber optic network. Through massive expansion over the last three decades, the network now includes more than two million lineal feet (378 miles), providing fiber optic coverage throughout the city. The network has nearly 80 percent availability, providing plenty of capacity to support the grant.

2: POPULATION ALIGNMENT

Denver is a perfect candidate for the USDOT Smart City Challenge. In the 2010 Census, Denver had 600,158 residents, sitting at the midrange of the preferred population statistics sought through this grant. Our dense urban population represents 25 percent of our total urbanized area.

POPULATION GROWTH

Denver has seen its population grow from 467,610 in 1990 to 600,158 in 2010 – an increase of more than 28 percent in 20 years. According to the state demographer's office, Denver reached 664,220 in 2014, an additional 10 percent in just four years.



600,158 *population in 2010*

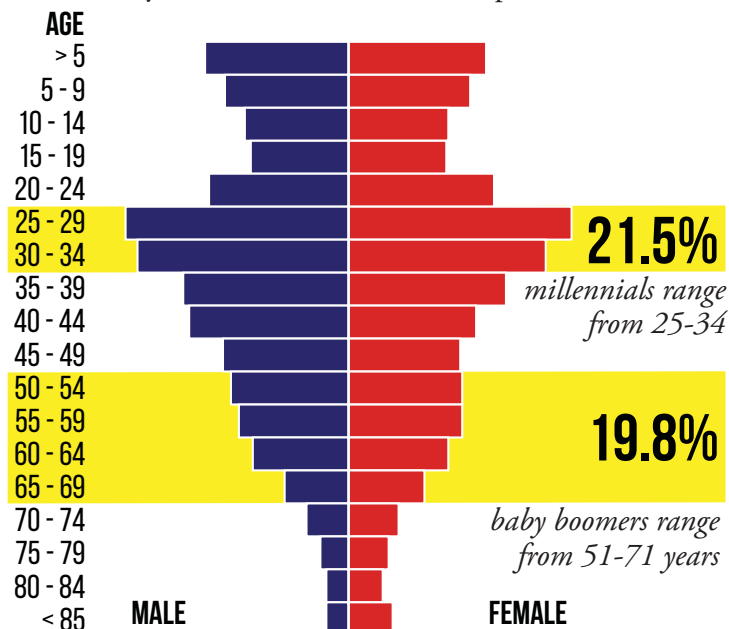
DOWNTOWN DENVER CORE

142%
increase in the number of residents since 2000

65,974
residents living in downtown Denver and the surrounding historic neighborhoods

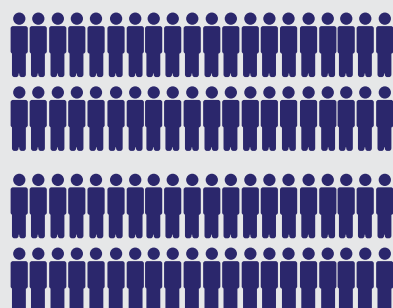
DENVER EMBRACES MULTI GENERATIONS

Denver is one of the youngest cities in the country, with millennials accounting for more than 21.5 percent of the city population. Baby boomers account for 19.8 percent.



DENSE URBAN POPULATION

DENVER REPRESENTS 25%
of the population of the local urbanized area



3: SMART CITY ALIGNMENT

EXISTING PUBLIC TRANSIT SYSTEM

RTD is metro Denver's transit agency, serving more than 2.8 million residents. With an annual budget of \$460M, RTD carried more than 104 million passengers in 2014, an agency record. RTD's bus network includes more than 1,000 vehicles on 138 routes, 9,750 bus stops, and 77 Park-n-Rides. RTD operates 48 miles of light rail servicing 46 stations. An additional 10.5 miles of light rail and 50 miles of commuter rail are under construction as part of the \$5B FasTracks program.

CONDUCTIVE ENVIRONMENT

Over the last 20 years, Denver has been involved in projects that total over \$14B. This investment exhibits the City's progressive and forward thinking mentality when it comes to instituting and approving projects that change transportation. The City has led multiple regional coalitions that helped execute the projects included in the timeline below.

CONTINUITY OF LEADERSHIP

Denver has shown a dedication to innovation and progressive investment in public projects for over 30 years, beginning in the 1980s. Then-Mayor Federico Peña led the City through massive public investment resulting in a complete revitalization of Denver's

economy. Successive mayoral administrations have continued leading the City in new public infrastructure investments, including a new airport, three professional sports stadiums, and highway and rail construction.

INTEGRATING WITH THE SHARING ECONOMY

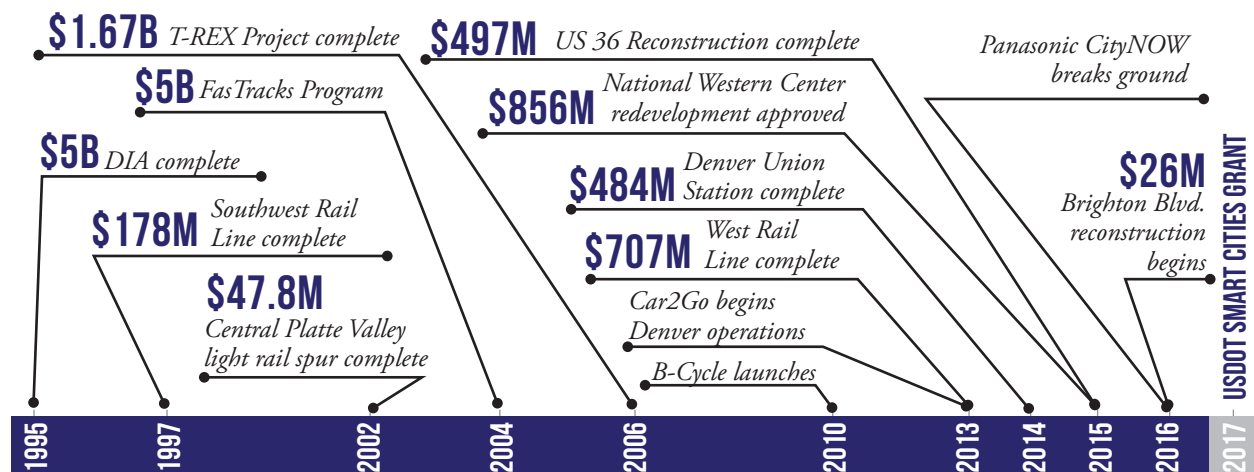
The State Legislature became the first in the country to legally authorize ride sharing in 2014, and Denver's City Council soon followed suit by forming a Sharing Economy Task Force.

Denver has very positive working relationships with several ride and car sharing services, which operate throughout the city, including B-Cycle, Car2Go, eGo CarShare, Uber, and Lyft. Denver is also one of two test sites for partnership between Uber and Enterprise Rent-a-Car, thanks in large part to the City's progressive regulatory environment which encourages innovation.

BEST PRACTICES IN OPEN DATA

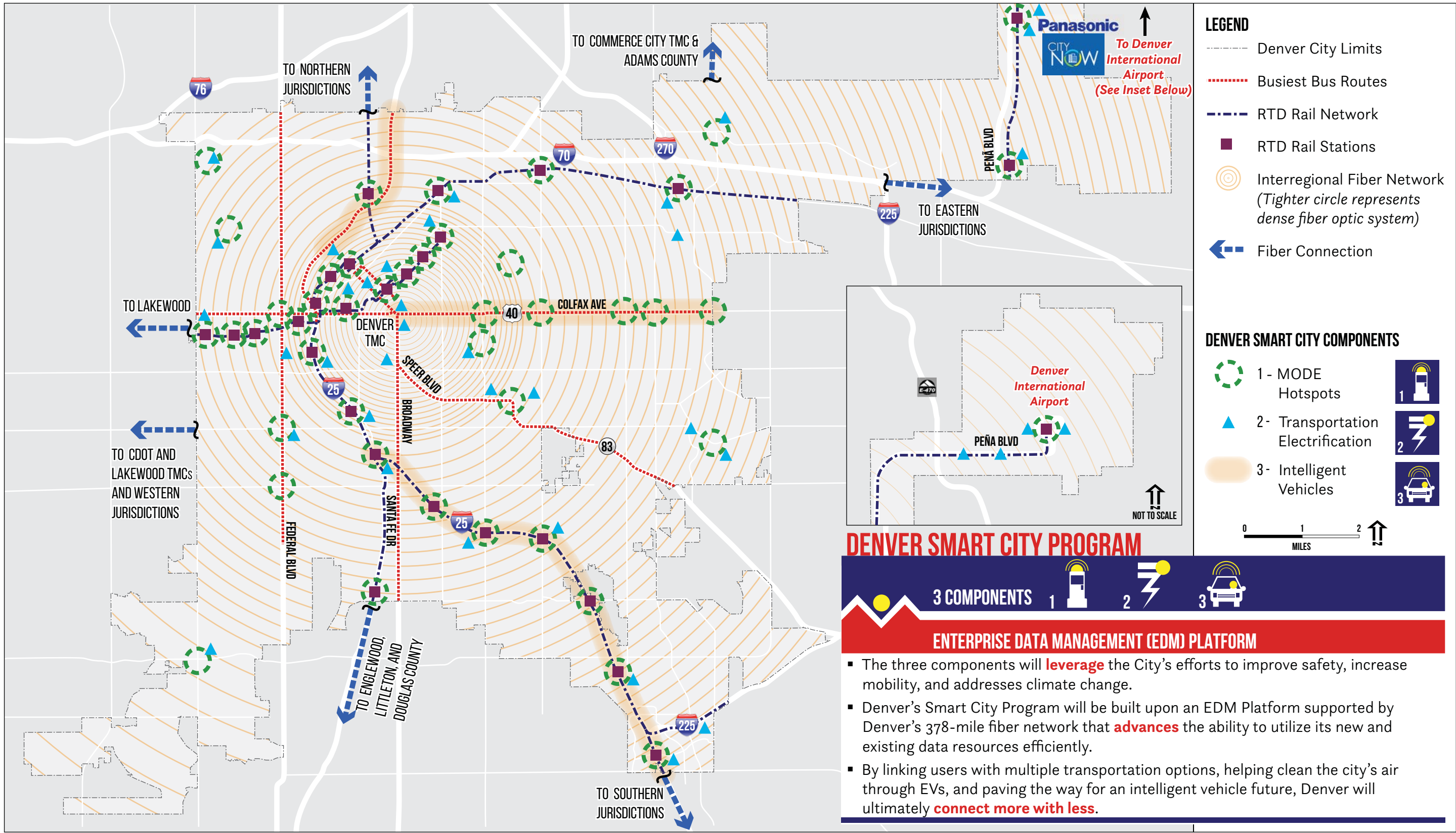
Bloomberg Philanthropies selected Denver to participate in its *What Works Cities* program, which provides support to revamp open data policies and build an analytics curriculum that will provide machine-readable data to the public. Denver is committed to ensuring that data is accessible, discoverable, and usable.

Both RTD and CDOT also provide open data to encourage innovation and information sharing among consumers.



Twenty years of public infrastructure investment demonstrate our readiness to move forward with Smart City efforts.

4: PRELIMINARY SITE MAP



5: APPROACH ALIGNMENT

Our approach is to connect users with technology, as well as educate and engage the public to accelerate the adoption of programs that align with USDOT's 12 Vision Elements. The end result will be a program that improves safety, enhances mobility, and addresses climate change, and that can be replicated by other cities.

SMART CITY PROGRAM OVERVIEW

Denver will create a replicable Smart City Program that weaves together three main components, built upon a robust EDM platform. The platform will help facilitate traveler choice and knowledge, and enable informed decision-making at the City level. The common theme in all components of our program is that we will **leverage** existing infrastructure and business practices, **advance** new technologies and business models, and **connect** users. The three main components are:

1. **Mobility on Demand Enterprise (MODE)** – Provide enhanced mobility choices and technologies to users.
2. **Transportation Electrification** – Improve electrification access for users while creating smart grid integration opportunities and drive rapid electrification through innovative business models, financing, and improved infrastructure.

3. **Intelligent Vehicles** – Build a foundation for intelligent vehicles through connectivity by partnering with CDOT to expand its connected vehicle (CV) program into the urban environment. We will unleash the true potential of automated vehicles (AV) by building a connected automation environment that systematically aligns the needs of users and businesses with the transportation network for a safer, smarter, more environmentally friendly Denver.

The future is not an either/or decision about how to travel, such as transit versus personal vehicle, but instead one that facilitates engaged, informed decision-making and improved options for all users. Improved options include those that leave little or no footprint. For traffic to reach “beyond 2045,” it is critical to focus on how enhanced mobility will also lessen the impact of all transportation modes on our communities.

DENVER SMART CITY PROGRAM

3 COMPONENTS



12 VISION ELEMENTS



These icons represent USDOT's twelve Vision Elements. Our program features three core components built on the foundation of an EDM platform. The table on the next page provides an overview of how each Vision Element is specifically addressed. Further discussion of EDM and the three components follow.

Table 1 - How Denver's Smart City Program Achieves the Vision Elements

	Urban Automation ▪ Leverages City of Centennial's FMLM pilot and validates AV's role in Mobility on Demand while analyzing a new business model ▪ Addresses barriers to widespread AV adoption by testing performance in the snow and other harsh weather conditions ▪ Works with technology partners to automate particular features of transit and City fleet vehicles
	Connected Vehicles ▪ Tracks AV simulation vehicles in real-time and integrates data into the user application and provides information about traffic flows ▪ Collects data via the EDM platform to be aggregated and analyzed to improve safety and increase mobility ▪ Integrates CVs into the current Intelligent Transportation Systems (ITS) infrastructure, including the Traffic Management Center (TMC), to deliver cellular, satellite, and dedicated short range communication (DSRC) based applications
	Intelligent, Sensor-Based Infrastructure ▪ MODE component collects, analyzes, and disseminates real-time, on-demand, sensor-based data to improve overall effectiveness of transportation network ▪ Receives sensor information via V2V and V2I communication
	Urban Analytics ▪ EDM platform collects, compiles, organizes, and analyzes data from multiple sources throughout the City, informing future operations of the transportation network
	User-Focused Mobility Services and Choices ▪ Optimizes RTD routes in dense urban areas to improve travel times and reliability, attracts riders for short trips, reduces overall vehicle miles traveled, and provides better and more frequent service to underserved areas ▪ Empowers all users to make transportation choices based on their personal preferences by linking the sharing economy and transit
	Urban Delivery and Logistics ▪ Improves the movement of freight by partnering with suppliers to target viable CV applications along key corridors that will share real-time road information
	Strategic Business Models and Partnering Opportunities ▪ Partners with 50+ public and private entities, including research institutions and Non-Governmental Organizations (NGOs) ▪ Connects Mountain Plains Consortium, Colorado School of Mines, and NREL to lead research efforts into vehicle electrification infrastructure opportunities ▪ Partners with firms such as Panasonic and Xerox to develop Mobility on Demand applications to improve mobility ▪ Leverages ongoing work from initiatives including Funding Advancements for Surface Transportation and Economic Recovery (FASTER), FasTracks, and CDOT RoadX
	Smart Grid, Roadway Electrification, and Electric Vehicles ▪ Focuses on electrifying buses, taxi fleets, and sharing economy ▪ Leverages Panasonic's CityNOW transit-oriented development near Denver International Airport ▪ Grows the electrification infrastructure footprint by increasing the accessibility of charging stations ▪ Increases municipal fleet vehicle electrification by 2025
	Connected, Involved Citizens ▪ EDM platform includes a framework for users to engage in crowdsourcing data ▪ Xerox app utilizes real-time transit data to enable commuter secure transportation
	Architecture and Standards ▪ Builds an EDM platform that is adaptable, scalable, and expandable ▪ Leverages available architecture standards and work completed by USDOT for CV concepts and coordinate with national standards stakeholders on lessons learned
	Low-Cost, Efficient, Secure, and Resilient Information and Communications Technology ▪ EDM includes a functional storage platform, comprehensive data model, and robust infrastructure capable of information sharing across systems and enhancing data connections governed by stakeholder requirements and well-documented policies that utilize existing standards and architectures
	Smart Land Use ▪ Allows for update and refining of land use plans to support and enhance mobility



ENTERPRISE DATA MANAGEMENT PLATFORM

A challenge for many cities is the ability to efficiently define, integrate, and retrieve data for both internal applications and external communication. Our EDM platform will help Denver overcome these challenges.



PURPOSE

With data as the core of a Smart City, a key first step in our approach is to create an EDM platform upon which our three program components will be built. The EDM platform will allow Denver to use data it already has for its existing operations while serving as the foundation for the expansion of future services. The platform will also be expandable to accommodate other data systems, ensuring scalability for ready adoption by other cities around the country.

Denver currently collects, manages, and shares data quite effectively. However, our challenge is that many of our systems are constrained by the “silo effect,” which means that any data sharing and analytics across systems must happen manually. This is time-intensive and impedes our ability to use data resources efficiently. The EDM platform will help to remove organizational barriers and conflicts by implementing a structured data delivery strategy – from data producer to data consumer.

KEY TASKS

STEP 1: FRAMEWORK

We will build a framework that addresses the hallmarks of EDM – data quality, master data management, metadata management, data warehousing, and data integration. We will utilize an open data protocol in existing data formats or standards coordinated regionally to maximize the usability of the platform design and resulting data, encouraging partnerships and innovation. We will also focus on privacy and security in the development of the EDM platform, recognizing that data sharing without proper policies and procedures can compromise sensitive information.

STEP 2: DATA SHARING

Data sharing standards and agreements will set expectations and clearly define roles and responsibilities. The City has evaluated existing data sharing efforts within Colorado and has identified three partners that have set the stage for additional information sharing.

1. **OpenColorado** is a volunteer-run, nonprofit organization that currently hosts 1,503 data sets from 12 entities across Colorado.
2. **The Colorado Information Sharing Consortium (CISC)** is making statewide data sharing and analytics possible.
3. **Denver Regional Council of Governments (DRCOG)** is the custodian of federal funds for ITS and maintains the Denver Regional ITS Strategic Plan.

We will explore existing internal and external data sharing agreements and identify potential data connections. The goal is to identify barriers that keep connections from happening and understand the barriers that are preventing data sharing. We will evaluate the willingness of our partners to share datasets through enhanced data sharing agreements and the development of policies and procedures.

STEP 3: ANALYTICS ENGINE

The analytics engine will serve as the data processor to either deliver user needs-driven applications to the City or provide well-defined interfaces and data schema to empower data consumers. We will also leverage the analytics engine to establish critical system monitoring and report data-driven performance measures. This reporting functionality will cut across the available data stores and provide key performance indicators to decision makers.

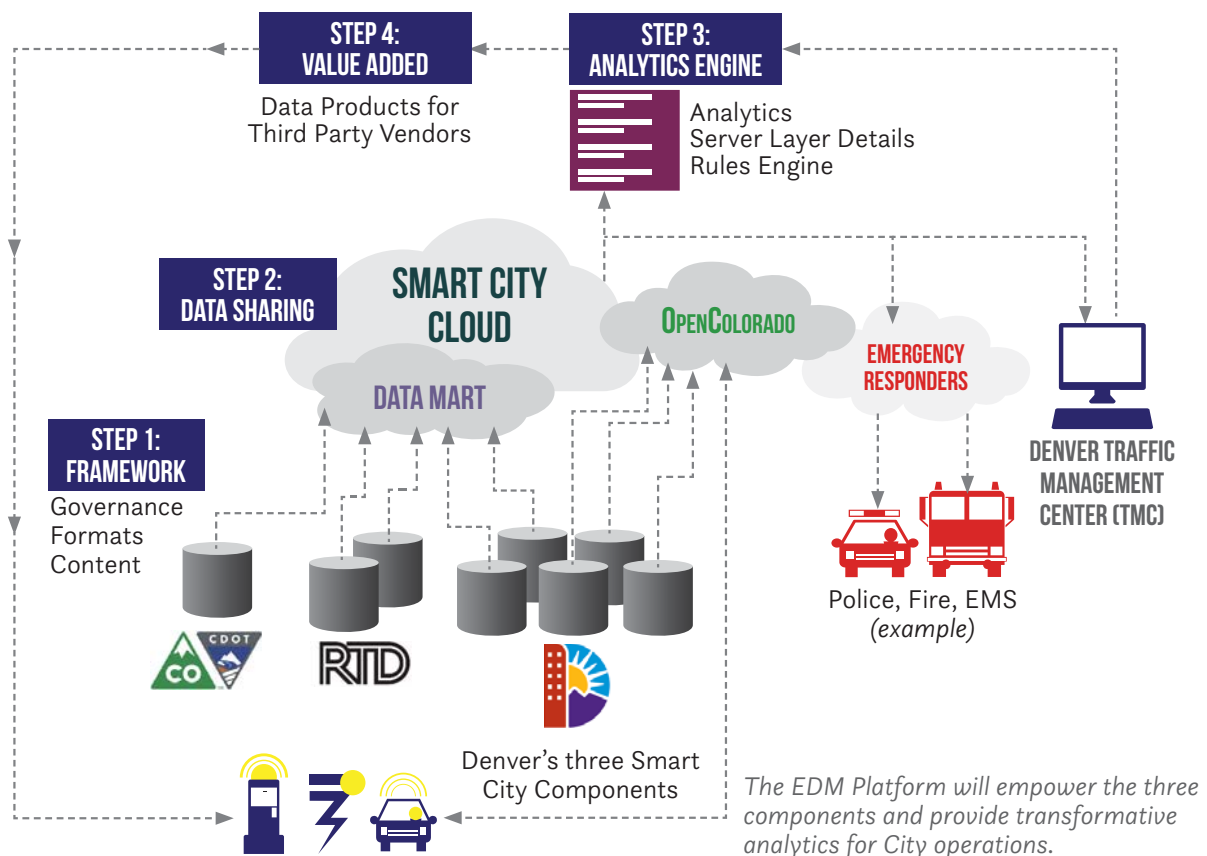
STEP 4: VALUE-ADDED DATA PRODUCTS

Building off our analytics engine, third party developers will be able to integrate our open data with their various programs and applications to deliver improved real-time solutions.

BENEFITS

The EDM platform will integrate, disseminate, and manage data for all existing and future Denver Smart City applications, processes, and entities. It will deliver clear and cohesive information to internal users, external stakeholders, and the public. The City currently has numerous data stores that support various functions. Similarly, other agencies outside the City (RTD, CDOT, etc.) have their own data stores which support their operations while also influencing City operations, and vice versa. Many of these data stores are currently sharing data through existing open data sharing efforts, but organizational barriers still exist. An EDM platform will help us overcome these barriers, allowing us to:

- **Leverage** existing infrastructure and business practices:
 - » Optimize Denver's 378-mile fiber optic network (80 percent available) as the backbone for network communications.
 - » Expand existing open data sharing efforts by identifying high-value datasets and working with data owners related to security, privacy, and performance.
 - » Facilitate conversations among data owners, data managers, and data consumers to understand the business case for collaboration, data sharing, and prioritization.
- **Advance** from managing data to generating information and value through data analysis, data integration, and data interfaces that provide data in formats that benefit the community.
- **Connect** data sources within and outside the city by delivering a framework that enables expanded data sharing through a data governance structure that will break down barriers.





COMPONENT 1: MOBILITY ON DEMAND ENTERPRISE (MODE)

This component will enable users to benefit from seamless multimodal travel across Denver. Combining choice and technology together will serve to advance multiple modes of “on demand” services, and make significant progress toward the goals of Beyond Traffic 2045.



PURPOSE

This component is focused on changing behavior around travel mode use, creating new options for mobility services that didn't exist previously, and building both virtual and physical platforms that connect supply and demand. A host of supporting technologies will empower users to determine their “best” service and allow them to engage and pay for that service. It will also monitor the travel situation so that if “best” changes, the traveler has the ability to modify their trip. Many related initiatives are currently underway, and MODE will link these initiatives under one enterprise mobility service.

KEY TASKS

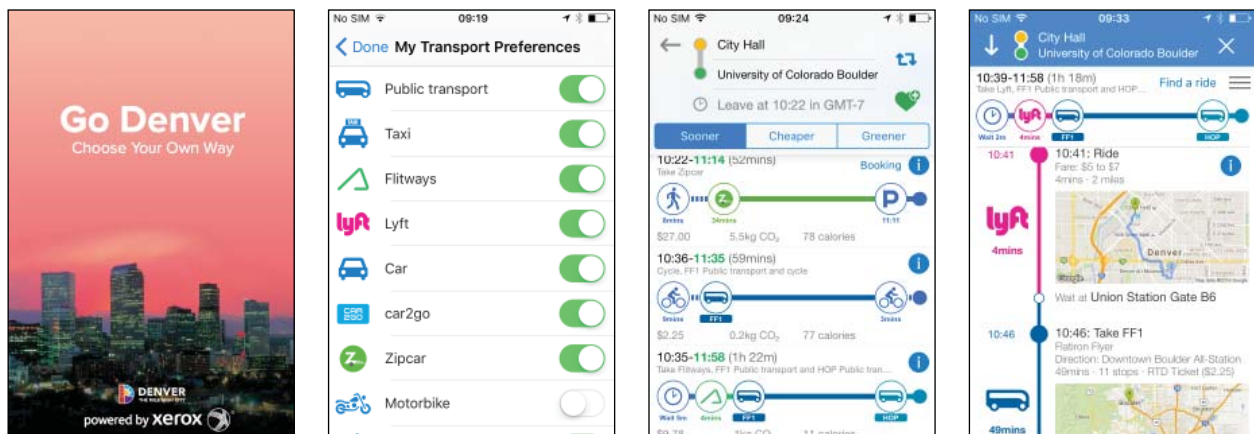
Mobility Options at Your Fingertips

Denver, with our partner Xerox, will launch a mobile application called Go Denver in early 2016 that will allow users to select, reserve, and estimate cost for multiple modes of transportation and parking options in the

Denver metropolitan area. Suggestions are provided to the user based on their preferences for the fastest, most cost effective, or healthiest transportation options. Panasonic also will be providing mobility services in Denver through its cloud data platform. In addition, Denver plans to use grant funding to create the MODE Cloud to share data inputs in a common, open environment.

The MODE Cloud

With increased data volume and velocity key concerns, the MODE Cloud will be scalable, replicable, and extensible geographically and applicable to other dimensions of the EDM platform. We also plan to integrate MODE with existing built infrastructure and fiber optic networks to provide travelers easily accessible multimodal transportation options. MODE will enable Denver to leverage the \$14B in major infrastructure projects made over the last 20 years.



Xerox Go Denver mobile app provides mobility options at users' fingertips.

Improving Mobility with Information Services

MODE will design and implement next-generation mobility hubs where all modes are easily accessible. The focus is to maximize use of the existing transit system with an initial focus on the Colfax Avenue, US 36, and I-25 corridors. Using grant funding, we plan to expand on that concept by installing ruggedized interactive MODE kiosks strategically located throughout Denver and connected to our existing fiber system. This will engage a greater percentage of our population that either does not have a smartphone (16 percent) or is intimidated by technology. These MODE kiosks will provide important information about the area and “push” information to wireless devices to satisfy users’ transportation needs.

Improving Mobility with FMLM Services

The City of Centennial, Denver Metro Chamber of Commerce, and RTD are partnering on a Bloomberg Philanthropy grant to explore supplement Call-n-Ride RTD (on-call transit) service with a ride-sharing service. This project will work to increase transit ridership and reduce automobile dependence by creating an FMLM connection for some of the 130,000 employees in the Denver Tech Center. Following the Centennial pilot program, we will evaluate lessons learned and possible expansion into Denver. The ultimate goal is to expand on-call ride sharing services to RTD stations where applicable and useful throughout the city.

Transit Priority Corridors

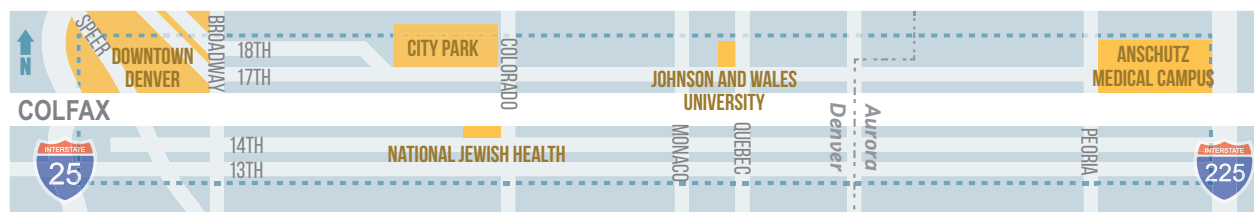
We are leading efforts to improve the transit capacity of East Colfax Avenue in Denver. A congested urban arterial, East Colfax is a state-owned asset operated by the City that enjoys 22,000 daily bus boardings. The Colfax Corridor Connection Study proposes the City’s first urban bus rapid transit (BRT) corridor

capable of moving upwards of 50,000 people without increasing the roadway footprint. Users will benefit from the incorporation of MODE kiosks and mobility hubs which will share real-time, FMLM connection, trip planning, and other information. The trip will be optimized by intelligent sensor-based infrastructure that will also be sharing data with the user through MODE. This includes traffic signal controllers that transmit information to buses via V2I communication, enabling transit signal priority (TSP).

BENEFITS

Improved mobility is not something that can only be obtained from one’s personal vehicle, but can also be accessed via interconnected information, transportation, and financial services. Denver will integrate MODE into the fabric of how we live and move. We will:

- **Leverage** existing infrastructure and business practices:
 - » Optimize RTD’s bus fleet of more than 1,000 vehicles, 77 Park-n-Rides, 9,750 bus stops, and four new rail corridors opening in 2016 (nearly 50 miles of additional fixed guideway transit)
 - » Bolster the existing bike, car, and ride sharing economy
- **Advance** new pilots that demonstrate Mobility on Demand, electric and automated vehicle technology, and integrated corridors that pull it all together.
- **Connect** people to more choices and information. The more information at their fingertips and the more that the barriers are removed to access different transportation modes, the more the demand for such services will increase.



East Colfax will serve as a prototype for urban BRT and mobility options throughout the City.



COMPONENT 2 - TRANSPORTATION ELECTRIFICATION

Denver is perfectly positioned for expansive growth in transportation electrification. This component will build upon an existing foundation of strong policy, committed advocacy, and state-wide environmental awareness, to implement a multi-faceted strategy to expand vehicle electrification infrastructure and accelerate EV adoption.



PURPOSE

According to the Environmental Protection Agency, Denver is located in an ozone and carbon dioxide non-attainment area. This designation poses a serious public health concern for residents with respiratory illnesses. This component will allow Denver to harness the power of renewable energy for EV usage. Colorado voters approved a statewide renewable energy mandate in 2004, which has since been increased to 30%. The mandate requires energy utilities to either generate renewable energy themselves or purchase that energy from other sources. This component will support decarbonization efforts underway through the mandate, while working to harness the environmental benefits of EV technology. This effort will put the City at the forefront of evolving charging technologies while providing an example for other cities around the country to improve poor air quality conditions.

KEY TASKS

Expanding EV Infrastructure

Denver will work with its partners to expand EV charging stations across the city to further support an increase in market penetration for EVs. The City currently boasts 36 City-owned EV charging stations with an additional 34 available for public use. Grant funds will be used to evaluate and implement expansion of EV charging stations for public use (City-owned or otherwise) while also working with our technology and energy partners to further research rapid charging stations, allowing for charging in less time. The City will evaluate deploying fast-charging EV stations to strategic

locations across Denver, including RTD Park-n-Rides. The City will work with regional partners such as the Regional Air Quality Council (RAQC) to provide incentives for companies to adopt EV charging stations at workplaces, thereby increasing the convenience of EVs.

Regulatory barriers currently hamper EV infrastructure deployment at multi-unit housing sites across the country. Denver will work to remove these barriers to further expand EV infrastructure and provide an example for other cities across the country on how to tackle obstacles that hinder EV market penetration.

Increasing EV Market Penetration

Electrification for high-mileage vehicle operations, such as taxis, offers a great opportunity to demonstrate the immediate benefits of EV adoption. EVs will stand as visible banners of health and vitality throughout the city. Long-term viability depends on both long-range and fast-charging capabilities with a target of providing both. Next-generation batteries are also poised to provide pivotal assistance in the widespread adoption of EVs. The City will work with partners to increase high-mileage fleet electrification efforts to increase EV market penetration while creating a test bed in the city for battery technology.

Denver International Airport (DIA) has also expressed an interest in the deployment of EV shuttle buses to travel between the main terminal and rental car sites. These new shuttles would replace gas-powered shuttles in operation today and work to further City-led efforts to decarbonize the grid while working to improve air quality across the city. DIA will also work

HON. KEN SALAZAR, FORMER U.S. SECRETARY OF THE INTERIOR

"[Denver's] attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies."

with project partners to evaluate the best ways to expand EV charging station operations at the airport. DIA currently has 20 publicly available and popular charging stations and will evaluate expansion efforts in the future, including the adoption of quick-charging technology.

Colorado's \$6,000 alternative fuel vehicle tax refund is one of the highest incentives in the nation for purchasing an EV and supports increasing EV market penetration. The City will work with legislative partners to ensure that the existing tax refund is maintained while also evaluating opportunities for complementary incentives such as access to high-occupancy vehicle (HOV) lanes.

Wireless Charging Technology Adoption

RTD has purchased 36 new electric buses for operation along the 16th Street Mall in downtown Denver. The shuttles will be delivered in late 2016/early 2017. RTD has expressed an interest in evaluating wireless charging technology. NREL and other energy and technology partners will build on existing research efforts to evaluate wireless power transfer systems for use along the 16th Street Mall as well as expand research into technology utilization for other light- and heavy-duty applications. The City and RTD will work together to evaluate deployment and adoption of wireless charging technology at strategic locations across the city, including public parking lots and garages. There are more than 10,000 City-owned parking spaces throughout Denver, providing an opportunity to further test wireless charging at public parking facilities.

Smartgrid and Microgrid Expansion Efforts

Panasonic's CityNOW project near DIA will harness the power of smartgrid and microgrid

technology to help deliver a true smart city development. Panasonic is partnering with Xcel Energy and DIA to build a microgrid that will demonstrate the use of solar photovoltaic and lithium ion storage batteries working together. The microgrid will represent the most comprehensive project of this type in the state and the first with actual customer participation in a real-world environment. The City will work with Panasonic to share lessons learned on their deployment efforts while evaluating expansion efforts at strategic locations across the city. We will focus on leveraging smartgrid and microgrid technology to make Denver a national leader in energy efficiency efforts while harnessing the research already underway by a wide range of program partners.

BENEFITS

Vehicle electrification benefits are ripe in multiple market segments, including transit. The City will raise the bar in all sectors through key, focused expansion efforts. We will:

- **Leverage** existing investment in vehicle technology and research opportunities to further implementation in real-world environments while also harnessing Colorado's renewable energy mandate to further incentivize adoption.
- **Advance** market penetration of EVs by increasing the availability, accessibility, and convenience of charging technology.
- **Connect** vehicle manufacturers and drivers to the clean future of EVs.



Wireless is one of several charging options Denver is exploring. Image courtesy of Josh Bauer, NREL.



COMPONENT 3 - INTELLIGENT VEHICLES

Denver, in cooperation with CDOT and industry technology leaders, will leverage ongoing work in CVs to establish the technical, physical, legislative, and social infrastructure necessary for AVs.



PURPOSE

Advancements in telecommunications and sensor technology are transforming travel into a new age of CVs and AVs that can deliver powerful data on the movement of people, goods, and services to City operators and the traveling public. CV technology enables a transportation network to truly operate as an integrated system with V2V, V2I, and vehicle-to-device (V2X) applications. Vehicle automation offers an endless range of benefits such as improving safety with fewer crashes, reducing the costs of travel time and congestion, increasing fuel efficiency, and providing better access to transportation for the young, elderly, and disabled.

According to analysis by RMI, a Denver Smart City partner, the cost of time lost to traffic each year in Denver is nearly \$4.5B, impacting both the movement of people and freight through the city. To unleash the true potential of CV and AV, we envision establishing a connected automation environment that systematically aligns the needs of users and businesses with the transportation network for a safer, smarter, more environmentally friendly Denver.

TASKS

Building a Foundation in CV

Denver is partnered with CDOT on a \$20M fast-paced enterprise program called RoadX. Under this effort, CDOT has invested \$10M on a CV deployment project along the I-70 Mountain Corridor, west of Denver, representing one of the nation's first real-world implementations of CV technology. The City will work closely with CDOT to expand its CV deployment into the urban environment and

stands to benefit significantly from CDOT's investments and lessons learned in CV design and implementation. To integrate CV with our current ITS infrastructure, we have engaged our regional partners to update the Regional ITS Architecture to deliver cellular, satellite, and dedicated short range communication (DSRC)-based applications. With two million lineal feet of fiber and an advanced Traffic Management Center (TMC), we are already equipped to support a large scale DSRC infrastructure of roadside units (RSUs) and the backhaul necessary to support connected vehicle applications that improve safety, mobility, and reliability and reduce environmental impact. The City is committed to equipping our own vehicle fleet (e.g., parking enforcement, snow plows, and waste management) with DSRC onboard units (OBUs) to lead by example as we engage private, university, and commercial vehicle fleets and users that can benefit from CV technology.

To improve the movement of people, the City will prioritize safety by focusing on urban safety applications such as Red Light Violation Warning, Reduced Speed/Work Zone Warning, and Spot Weather Impact Warning to provide motorist advisories and warnings throughout the city. As Denver continues to experience record breaking population growth, it is also essential to prioritize mobility on our most congested arterials and city streets, which are the lifeline to regional highways for commuters and freight movement. The City will start by leveraging CDOT's \$7M Managed Motorways investment to improve interstate traffic flow with advanced sensors and enhanced ramp metering on I-25, one of the most congested corridors connecting

downtown Denver to its north and south suburbs. The improvements and lessons learned from Managed Motorways will pave the way for deploying advanced CV applications on our City's critical thoroughways, targeting USDOT developed dynamic mobility application bundles such as INFLO and EnableATIS to deliver speed harmonization and enhanced traveler information. Denver is the northern end of the Ports to Plains corridor: local shipments for businesses in the area depend on the reliability of the local roadway system in Denver. We have partnered with our major suppliers such as FedEx to target viable freight CV applications along key corridors to deliver V2I applications that share real-time road information about congestion, traffic, accidents, or weather conditions and allow truckers to re-route their CV for efficient, reliable delivery.

Launching AV Corridors for Mobility on Demand

AV technology could significantly reduce the costs of congestion by helping commuters recapture productive time with AV-enabled transportation models such as mobility on demand. Income inequality, cost of living, and equity access to all that Denver has to offer are growing concerns as the economy continues to expand and the cost of living increases. AV mobility on demand can also provide improved access to jobs for those who live in low-income and underserved transit areas.

Denver stands to benefit from Centennial's on-demand FMLM pilot. The program provides the opportunity to simulate the business model of enhancing ride sharing with an AV service. Studies have shown the driver is the single largest cost in the mobility on demand equation, and the potential exists for electric AV mobility on demand to cost less than half that of individually owned vehicles. Electric AV mobility on demand can improve reliable access to transportation for low-income, disabled, and elderly people, who spend a significant portion of their income on transportation. Partnering with RTD, the City will identify critical travel routes and corridors where an AV mobility on demand service could enhance FMLM services and transportation access for disadvantaged users.

Transit and City Fleet Vehicle Automation

We will work with technology partners to automate particular features of our transit and fleet vehicles. Automation features will be explored to help introduce improvements in safety and efficiency. Safety features such as the Mobileye Shield+ will help alert RTD bus operators of pedestrians and bicyclists in their blind spots while creating a safer environment for everyone. Lane keeping or platooning applications will improve the efficiency of City fleet vehicle operations such as snow plowing.

BENEFITS

Establishing a Future in Connected Automation

With our EDM platform, we will have laid the groundwork necessary to immediately benefit from the data-rich environment created by the deployment of CV and AV technologies. Our efforts to establish a foundation in connectivity will further advance the role and opportunity for AVs and secure the future of a transportation network driven by connected automation. Our efforts will:

- **Leverage** upcoming projects to build on the lessons learned about new technology, including CV deployment, advanced traffic management, and AV business models.
- **Advance** the movement of people and freight through the city by building a foundation in connectivity and experience with automation.
- **Connect** drivers to a transportation network with a future in connected automation.



CV technology enables drivers to maintain constant communication between other vehicles and infrastructure.

6: RISK IDENTIFICATION AND MITIGATION

Full realization of a Smart City Program requires a strong foundation that is rooted in data analytics, secure systems, and a robust infrastructure. Equally important is the need to continuously identify the associated risks and mitigation strategies required to maintain this bold new open data type of platform. As a part of our Smart City Program Management Plan (PMP) we will have a Risk Management Plan, which will become the source for risk-based decision-making. While there are many risks associated with deploying a Smart City Program, the table below identifies our top ten identified key risk categories with an associated mitigation strategy.

Table 2 - Risk Identification and Mitigation

Risk Category	Risk	Mitigation Strategy	Impact
Technical	Managing the complexity of a Smart City system	Establish an experienced team of systems engineers prepared to handle the multilayered task of integrating multiple system inputs for a large, complex deployment	Medium
	Prioritizing Smart City solutions	Build a cross-discipline stakeholder group representative of the users of the system	Medium
	Addressing system security and data privacy	Prioritize security and privacy using national and regional standards to guide the design of the EDM platform and ensure all data in and data out of the Smart City system is properly managed	High
	Addressing data quality and integrity issues	Avoid the “trash-in, trash-out” problem by establishing data quality standards and checking data quality before, during, and after implementation	Medium
	Matching the pace and availability of emerging technology	Institute a user-needs approach to implementing technology. Allow the needs and availability of technology to drive the solutions rather than select and implement a technology without a defined goal	Low
Policy	USDOT drops commitment to Smart City implementation	Leverage other federal funds and seek additional local resources to implement as many of the Smart City Program elements as possible	Low
Institutional	Cost overruns/ scope creep	Develop and implement a meaningful and actionable PMP to help control costs and ensure minimal scope creep while continuing to allow for changes to the Program that maintain alignment with the grant’s goals	Medium
	Lack of (or reductions in) stakeholder support	Reinforce stakeholder support prior to project kick-off and maintain positive working relationships and open communication with all stakeholders	Medium
	Inability to reach agreement among project partners	Reinforce agreements with project partners prior to beginning of Program, and require adherence to the PMP throughout the life of the project	Low
	Lacking financial sustainability to continue program	Ensure partners’ long term commitment to Program components and institutionalize those elements moving forward	Low

7: GOVERNANCE AND PARTNERSHIP

Denver has a long history when it comes to developing and maintaining partnerships on major projects. In 2004, voters approved RTD's \$5B FasTracks program, which is delivering more than 120 miles of new fixed-guideway transit across the Denver metro area. Denver's then-mayor, now Governor John Hickenlooper, led an effort to assure support from all 64 municipalities within the RTD taxing district. This unified front helped FasTracks pass by an 18 percent margin.

The City isn't the only entity on our team with a history of collaboration and partnership. In 2001, CDOT and RTD partnered to reconstruct I-25 between downtown Denver and the Denver Tech Center, and to construct 19 miles of light rail. The Transportation Expansion Project (T-REX) was executed under one design-build contract with CDOT and RTD working together to seamlessly deliver this \$1.7B project 22 months ahead of schedule and more than \$50M under budget. It is viewed as one of the best examples of intergovernmental cooperation ever undertaken.

CITY ROLE IN GOVERNANCE

The deputy chief of staff for Mayor Hancock and the director of transportation for the City will lead a Denver Smart City Team and an Executive Oversight Committee. The City will lead coordination among all partners (listed in the appendix) with support from agency staff and consultants. Task forces, each including a City representative, will be formed for the Denver Smart City Program and each component.

CITY ROLE IN PARTNERSHIPS

The City will lead the DSC Team and manage all partners involved in implementation. In addition to our four foundational partners, the team includes strategically selected members of government, academia, automakers, energy, policy, technology, safety, telecom, transportation and professional organizations. As the EDM Platform expands over time, additional strategic partnerships will be secured. Our history of regional collaboration and partnership provides a legacy of strong and well-established networks to facilitate Denver's Smart City Program, platform, and components.

DSC TEAM PARTNERS

The DSC Team includes four foundational partners who ensure interagency coordination, technical innovation and user representation essential to all Smart City investments. These partners are:

- Denver
- CDOT
- RTD
- The State of Colorado

Each of the foundational partners brings a wealth of resources to support platform development through research, personnel, and project execution assistance. In addition, based on our “future readiness,” Denver has been fortunate to be selected by a number of organizations for strategic investments that will complement and broaden our Smart City Program:

Bloomberg Grant - *What Works Cities* – an initiative to provide technical support, access to expertise, and peer-to-peer learning to cities and their mayors, with the goal of better utilizing data and evidence to engage the public, improve services, evaluate progress, and fund “what works.”

Uber/Enterprise Rent-A-Car Pilot - a program to rent cars to potential Uber drivers to facilitate those without acceptable vehicles to work with Uber.

Additional strategic partners, including universities, non-profits, think-tanks and corporations, will provide direct technical expertise, research assistance, infrastructure installation capabilities, project execution, and other benefits directly related to the grant itself. In particular, the DSC Team includes

the Mountain Plains Consortium University Transportation Center, led by North Dakota State University, and the Electric Power Research Institute.

CITY ROLE IN DEVELOPMENT

Denver's sustainability and chief information officers will participate and assist in development of problem statements, solution workshops, creation of scaling models, and protection of proprietary information and confidentiality of project participants.

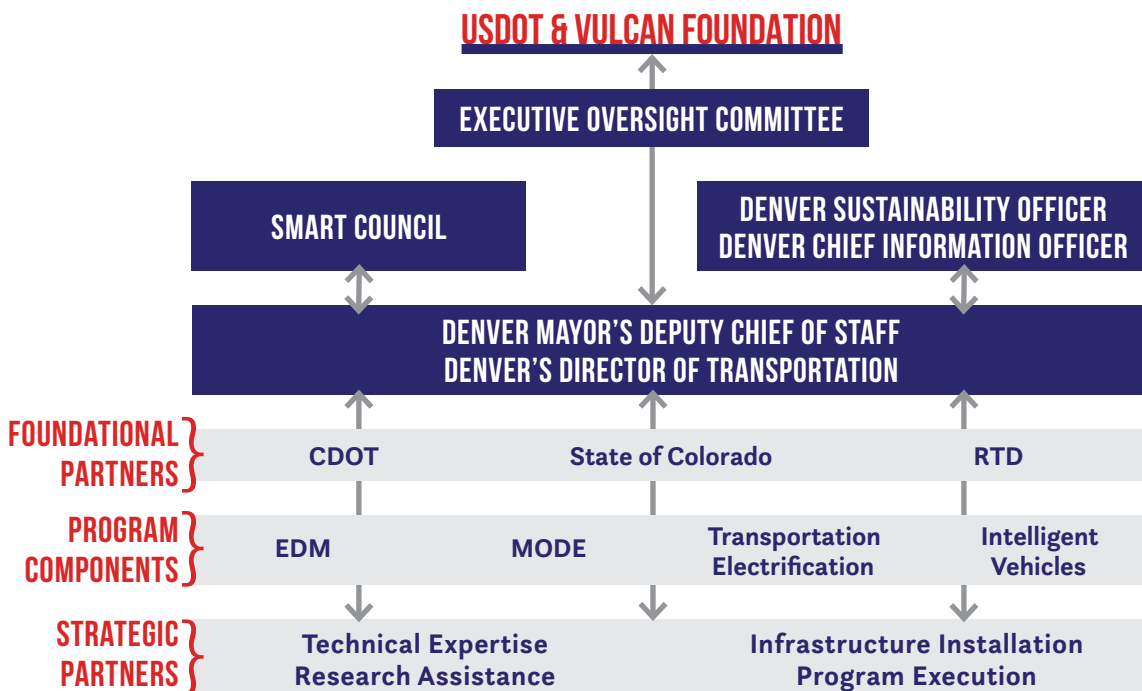
CITY ROLE IN SMART CITY PROGRAM

Denver will play a pivotal role in execution of the Smart City Program. Responsibilities will include providing access to and the use of City assets and data, determining and providing access to pilot-supported locations, managing conflicts among City entities and project partners, securing strategic partnerships, coordinating interagency participation and communication within the City and the DSC Team, supporting project implementation, and reviewing outcomes.

The City will lead the creation of a "Lessons Learned" Report following completion of the Smart City Program. This report will help other municipalities learn from Denver's experience.

SMART COUNCIL INTERACTION WITH OTHER CHALLENGE FINALISTS

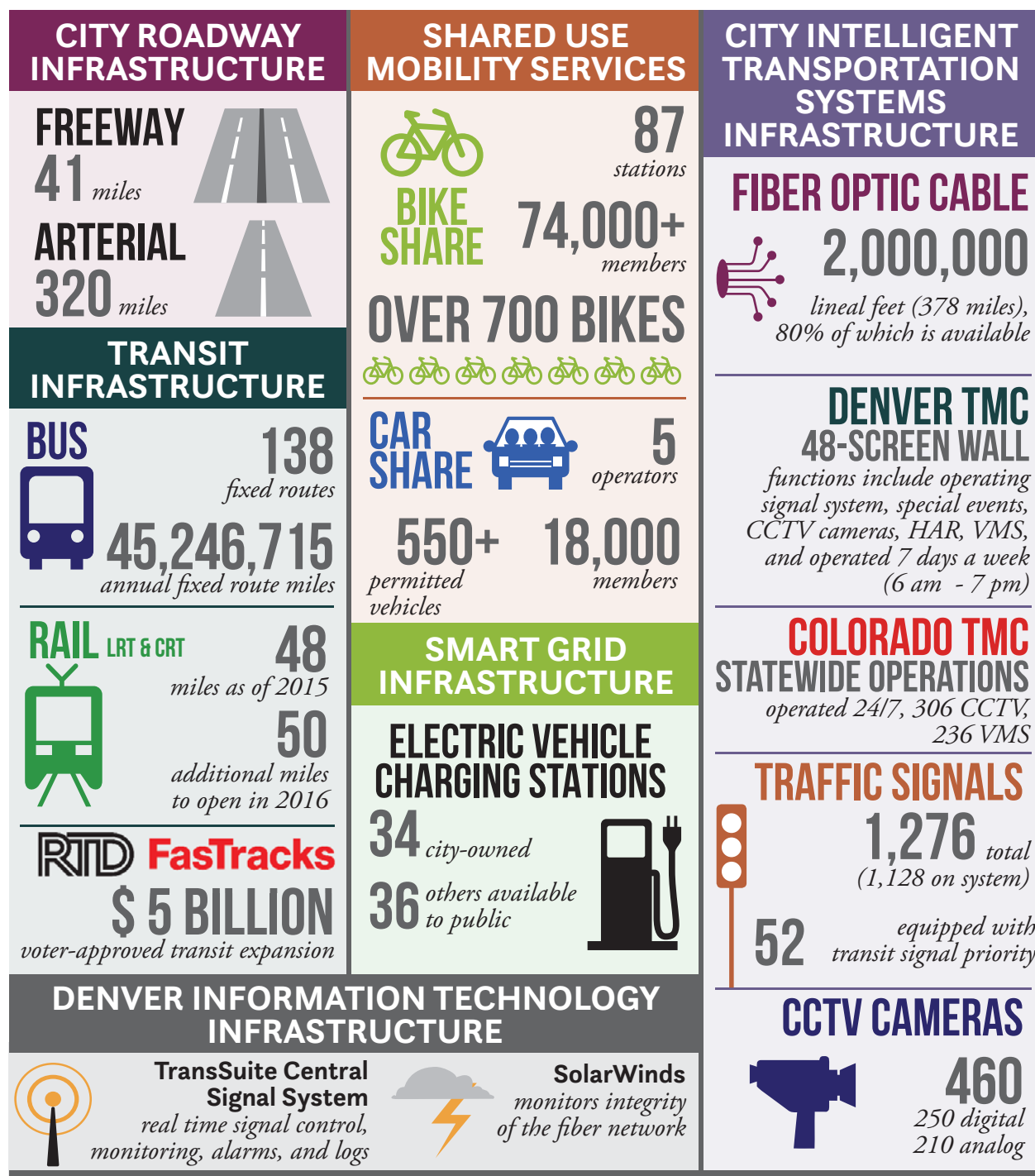
Denver is dedicated to creating a replicable and scalable Smart City Program that can be adopted by other jurisdictions looking to create efficiencies, solve long-standing problems, and improve the lives of their users through technology. If the Smart City Challenge Grant is awarded to Denver, the finalist cities will be invited to join a Supportive Municipalities Advocating for Revolutionary Technology (SMART) Council. This Council will be a place where Denver and the other finalist cities can share ideas and help spread Smart City technology around the nation and the world. We recognize partnering is essential and the Council will bring the best and brightest minds to the table and ensure that the Smart City Program reaps optimal benefits for Denver and other municipal participants.



Our flexible organization and communication framework allows Denver to work seamlessly with foundational and strategic partners, the SMART Council and key Denver Smart City program members.

8: TRANSPORTATION INFRASTRUCTURE

Denver is ready and poised to implement a Smart City Program, including the EDM platform and its three components. As a fast growing city, Denver will maintain its status as the best city to in the west to live in and a magnet for millennials. The following represents existing roadway, ITS, signal systems, transit, rail, and smart grid infrastructure for Denver, RTD, and CDOT.



9: COLLECTION OF DATA

In December 2015, Denver was selected to participate in Bloomberg Philanthropies' What Works Cities, one of the largest-ever philanthropic efforts to enhance the use of data and evidence in the public sector. As part of the announcement, Denver Mayor Hancock emphasized Denver's commitment to "transforming city government to make data-based decisions," thereby solidifying efforts for data collection and open data sharing started years previously, including involvement in OpenColorado.org.

OpenColorado's mission is to 1) enable open access to government information and 2) host, organize, and partner with others to educate governments and users on how to create more transparent, participatory, and collaborative communities. Denver shares 193 datasets through its Open Data Catalog program created in partnership with OpenColorado, such as:

- Intelligent traffic system devices
- Parking meters
- Budgets, including detailed information about estimated revenues and expenditures
- Bike rack locations
- Sidewalk conditions
- Traffic signals

In addition to Denver's data collection and sharing efforts, RTD and CDOT also have extensive data collection, data warehousing, analytics, and reporting capabilities, such as:

- Automatic vehicle location
- Automatic passenger counting
- General transit feed specification data (real time data is coming Q1 2016)
- Geographic Information Systems

In 2008, the City embarked on an exciting initiative to understand and address our current and future transportation needs by developing a Strategic Transportation Plan (STP). The STP considers future growth and transportation system demands, and balances these demands with community-identified needs. Within the STP, we identified the seven key challenges for Denver as they relate to the transportation system and reliance on motor vehicles: Urban Sprawl, Traffic Congestion, Number and Length of Automobile Trips, Consumption of Land

for Parking and Roadways, Safety Concerns, Community and Environmental Health Impacts, and Health Issues (including respiratory illnesses, obesity, and mental health).

With these challenges in mind, we established a vision for a safer, more efficient, and more environmentally friendly transportation system in Denver by identifying five primary areas as guidance to the City in the consideration and prioritization of future transportation improvements.

Table 3 on the following page clearly demonstrates that partnerships and collaboration with local and regional stakeholders are central to the data integration opportunities enabled by our Smart City vision. Denver has a long track record of innovative, cross-discipline partnerships that are the driving force behind our continued top rankings in economic and job growth. RTD, CDOT, and DRCOG are key partners for the advancement of Denver's connected city data capabilities. The Smart City Program will reaffirm the open lines of communication that have existed for years between these key agencies. For example, DRCOG's Denver ITS Strategic Plan identified opportunities for CDOT and Denver to coordinate their separate ITS maintenance and construction systems in order to minimize the impact on road and lane closures. It is not always intuitive how a certain roadway is maintained by multiple transportation agencies, and it can be frustrating to users when construction and maintenance information is inconsistent or incomplete. The three agencies work closely to identify the important data sources, harmonize data formats, and establish a connection to share information, resulting in the delivery of more seamless information to users. Smart City concepts will

clearly define data needs and provide added inspiration for breaking down any institutional barriers and for continued collaboration.

We will work closely with our partners to clearly establish the expectations, roles, and responsibilities through data sharing agreements.

Policies and operating procedures resulting from bringing the Smart City vision to life will be documented, maintained, and regularly evaluated to prioritize the security and integrity of the data shared by all partners.

Table 3 - Smart City Data Integration Opportunities

Denver Smart City Vision Area	Data Integration Opportunities	Data Sources
A MULTIMODAL Transportation System - Safe pedestrian connections - Comprehensive bicycle system - Dependable transit options - Efficient and well-maintained infrastructure	Denver and our partners aim to transform the City into a world leader in demand responsive transit. We already have a wealth of existing data, data collection initiatives, and data sharing efforts will be accelerated through the Smart City Challenge by connecting data from available modes and sharing mode options and real-time data back to users.	- Denver ped and bike maps - Denver B-Cycle - RTD AVL & APC Denver - Denver Public Works - Xerox app GoDenver
A SAFE, EFFICIENT & RELIABLE Transportation System - Connected multimodal system - Safe transportation network - Manage congestion - Accessible to all	Denver's TMC gathers local road conditions from sensors and video and uses it for local traffic management. We also share information with the statewide, 24-hour Colorado TMC. Denver will work closely with CDOT to further integrate traffic information, safety analysis of incidents, multimodal information, and deliver this information to users in a safe, useful format.	- RTD GTFS - Denver Safety Analysis - Denver TMC data - Denver pocketgov data (mobile app) - CDOT TMC data
A CONNECTED Transportation System - Link land use and transportation - Enhance modal connections - Offer transportation choices	We envision a connected transportation system that integrates data from all of the services that we offer to our users: transportation, public safety, emergency services, public services, health and human services, environment, and financial. We recognize transportation as the lifeline of our City and want to connect these resources in order to provide the most efficient, useful transportation options possible.	- Denver Public Works - RTD data - CDOT TMC data - Denver TMC data - Denver public safety data - Denver emergency services data
A GREEN & SUSTAINABLE Transportation System - Limit roadway footprint - Align with <i>Greenprint Denver</i> - Promote alternative public transit modes - Improve air and water quality - Provide alternatives to fossil fuel	Denver has convened a cross-discipline steering committee including our Department of Environmental Health, Office of Sustainability, Public Works, and Traffic & Parking to identify private and public partners to share data and deliver analytics that directly measure and influence the environmental impact of the City's transportation system.	- Denver TMC data - Denver GIS data - Denver air quality data - Denver energy use data
A Transportation System that supports a HEALTHY, LIVABLE COMMUNITY - Mixed-use streets support great neighborhoods - Provide transportation choices that improve community health and well-being - Integrate land use and transportation choices	We have established relationships with local businesses, medical centers, and AARP to make more informed planning and transportation decisions for healthy, livable communities. The City has prioritized community well-being and will identify data sharing opportunities with our partners to achieve this vision.	- Denver GIS data - Denver real estate data - Denver TMC data - Denver public safety data - Denver public health data

10: APPROACH TO EXISTING STANDARDS

In 2008, Denver embarked on an exciting initiative to understand and address its current and future transportation needs by developing a Strategic Transportation Plan (STP). The STP considers future growth and transportation system demands, and balances these demands with community-identified needs. The result: a comprehensive approach to investing city resources wisely on the right projects – and the right solutions.

Intelligent Transportation Systems (ITS) consist of the application of all types of technology, sensors, communications, and data management for effectively and efficiently managing the transportation system. From Denver's perspective, Smart City and CV technologies provide an exciting opportunity to revitalize the transportation network with transformative data analytics and powerful applications, and are another form of ITS that should adhere to the national and regional vision for ITS architecture, standards, and certification processes.

Denver named its 2008 STP *Moving People* in coordination with important planning efforts in the region. In 2007, Denver participated in the DRCOG and CDOT effort to develop a Regional ITS Architecture for the Denver Regional Area. This Architecture now provides a framework for ensuring institutional agreement and technical integration for the implementation of ITS projects. It was developed based on the National ITS Architecture in conformance with federal regulations. Denver is home to the largest local Transportation Management Center (TMC) in the metro area. It shares information via physical fiber optic connection with the statewide, 24-hour Colorado TMC – making Denver a key adopter of the Architecture for the successful implementation and management of ITS assets in the region.

As a regional stakeholder, Denver has engaged DRCOG and CDOT to adopt the Regional ITS Architecture and track the status of existing standards as it moves forward with the deployment of Smart City, connected vehicle, and ITS applications. The ITS Architecture for the Denver regional area consists of two items:

- **Turbo Architecture Database version 4.0:** The Turbo Architecture database is the key element describing the ITS architecture.

- **ITS Architecture Document:** The document entitled *ITS Architecture for the Denver Regional Area* (November 2007) reflects the information contained in Turbo Architecture Database version 4.0 in a more user-friendly format.

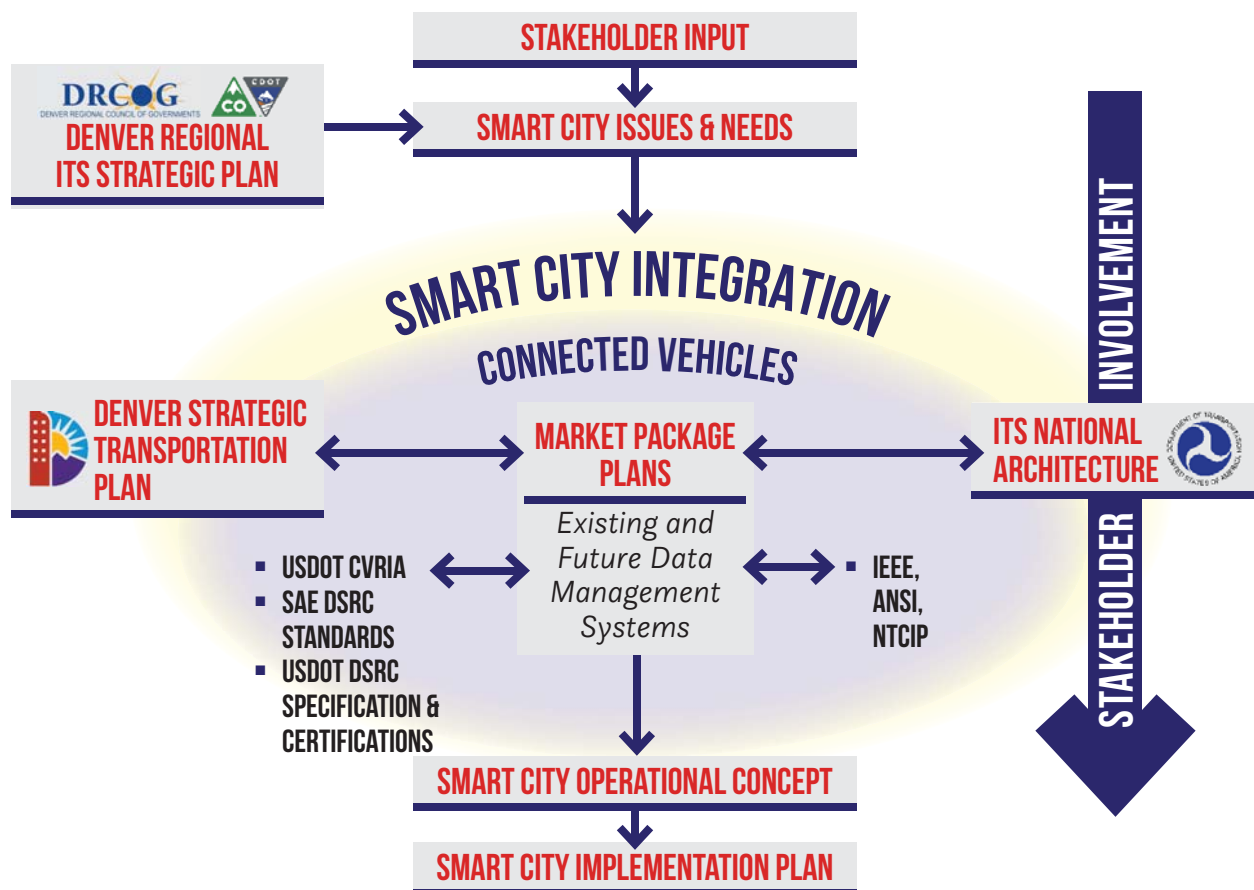
Denver will work closely with DRCOG and CDOT to evaluate the feasibility and suitability of adopting available standards as they relate to the regional architecture. This is the initial step in an on-going process to identify and adopt National ITS Standards and CDOT Regional ITS Standards. The Architecture document describes the processes and procedures for maintaining the Architecture for the Denver regional area, which will require updates as ITS projects are implemented and regional needs and priorities change.

In this same vein, we understand that we are targeting innovative and transformational concepts that are not currently defined or proposed in the existing Architecture. The Smart City initiative provides an exciting opportunity for our City to serve as a leader in working closely with DRCOG and CDOT to expand the Architecture and establish the framework for Smart City and connected vehicle concepts to be implemented across the Denver regional area, positioning the entire region as an agent of change and benchmark for the nation. A Denver-led update to the Architecture will be jumpstarted by leveraging the available architecture and standards work completed by the USDOT for connected vehicle concepts. The USDOT's Connected Vehicle Reference Implementation Architecture (CVRIA) provides the physical, functional, communications, and enterprise architecture viewpoints as guidance for implementing connected vehicle applications. More importantly, the CVRIA was built to

ensure connected vehicle deployments fit into the greater National ITS Architecture, enabling a standards-based implementation that will ensure the new system can be seamlessly integrated into existing transportation management and ITS systems for the region.

Where architecture and standards gaps exist for Smart City or connected vehicle concepts, Denver will engage and coordinate with national standards stakeholders such as Institute of Electrical and Electronics Engineers (IEEE),

Society of Automotive Engineers (SAE), National Transportation Communications for ITS Protocol (NTCIP), and/or American National Standards Institute (ANSI) to be sure future deployments benefit from the experiences and lessons learned of the Denver implementation. The image below showcases how Denver will approach and coordinate the use of and updates to architectures and standards throughout the Smart City deployment.



Denver will integrate its Smart City Program into the existing regional ITS Architecture process, utilize existing USDOT and SAE standards, and engage the appropriate stakeholders for new Smart City concepts.

11: MEASURABLE GOALS AND OBJECTIVES

Our measurable goals and objectives for this ambitious program are far-reaching, impactful, and scalable to other cities across the U.S. Denver's Smart City Program will allow us to meet the USDOT goals of mobility, safety, efficiency, sustainability, and climate change.

SMART CITY GOALS

Ensure that Denver's transportation system accommodates the mobility needs of all users. Denver's Smart City EDM platform and all three components outlined in Section 5 reinforce our commitment to the mobility needs of all users. We are creating this Smart City Program in such a way that it can be adopted in other cities across the U.S.

Make all Denver Smart City data public and machine-readable. We believe in providing data that is public and machine-readable, enabling the public to easily consume the data and aid in civic innovation. Denver's Smart City EDM platform will achieve this goal.

Improve Denver Smart City data analytics capabilities for major mobility systems. Denver's EDM Platform integrates the data with user-generated information to comprehensively and continually assess Denver's transportation environment and specific urban mobility challenges.

Create a regulatory/policy environment that enables the successful introduction of Automated Vehicles to Denver streets. A key area of focus for Denver is to ensure that the barriers for AVs are being removed appropriately so that we can bring them to Denver.

Improve infrastructure and mobility service options. Denver's MODE platform will promote efficient, dependable transportation for people and property throughout the city. MODE can also be mobilized to other cities across the U.S.

Support the expansion of Electric Vehicles. As described in Section 5, Component 2, Denver supports the expansion of EVs, and is committed to expanding the required infrastructure for this to become a reality.

SMART CITY OBJECTIVES

USDOT's grant will help Denver advance Smart City data by:

- Increasing transportation-related open data sets
- Producing real-time transportation open data sets available to the public by 2018, aligning with the USDOT's grant timing
- Creating public-private-partnerships around data sharing, and integrating crowd-sourced data into both the open data catalog and privately created apps
- Reducing data integrity issues and increasing public utilization of transportation-related data

Mobility Objectives (Section 5, Component 1):

- Achieve a combined 15 percent walk/bike commute mode share by 2020
- Pursue Platinum Status as a Pedestrian Friendly City (Walk Friendly Communities)
- Achieve Gold status as a bicycle friendly community (League of American Bicyclists)
- Ensure every household is within a quarter mile of a high ease-of-use bicycle facility, such as a protected bike lane
- Implement 15 additional miles of bicycle lanes and/or sharrows per year
- Reduce single occupancy vehicle commutes to less than 60% mode-share by 2020

SMART CITY OBJECTIVES

Automated Vehicle Objectives (Section 5, Component 3):

- Create legislative and policy environment that invites AV operations in the state
- Enhance existing infrastructure to support AV operations
- Work with automaker and technology partners to place an AV fleet in the City by 2020
- Increase education and public awareness of AVs

Electrification Objectives (Section 5, Component 2):

- 10x increase in EV miles traveled (taxi electrification, consumer adoption, city fleet, RTD) by 2020
- 10x increase in capacity of charge infrastructure and 5x increase in # of stations by 2020
- 20 percent of municipal fleet vehicles operated by the City will be electric by 2025
- Increase virtual and physical visibility of charge infrastructure and availability by 2020

Safety Objectives (All Components):

- Launch comprehensive Vision Zero program in 2016 to significantly reduce and ultimately eliminate vehicle related crashes, injuries, and fatalities.

Sustainability Objectives (All Components):

Denver has an existing set of sustainability goals that the City is working to achieve by 2020; several of these tie directly into our Smart City Program and are aligned with USDOT's 12 Vision Elements:

- **Air Quality:** Attain all National Ambient Air Quality Standards
- **Climate:** Reduce greenhouse gas emissions 80 percent below 2005 levels by 2050
- **Energy:** Hold energy use below 2012 levels, while cutting fossil fuel use 50 percent
- **Land Use:** Move Denver's Walk Friendly rating from Gold to Platinum
- **Mobility:** Reduce trips in single-occupant vehicles to less than 60 percent of commuting trips

MONITORING OF PROGRESS

Our team will monitor progress toward each initiative and their combined impact on mobility, safety, efficiency, sustainability, and climate change by collecting clean, accurate, machine-readable data on the objective metrics listed above. Data will be made publicly available in the City's open data catalog as well as on a tracking dashboard, which will visualize progress toward the defined targets. Through regular meetings, agency and organization leaders will review these data and progress towards goals.

We have relationships with multiple outside auditing and evaluation firms who can validate performance data, evaluate goals, processes, and outcomes, and provide recommendations for program improvements. City departments and leaders are used to working with outside evaluators and will provide these consultants with access to sites, staff, and data systems.

12: EVIDENCE OF CAPACITY

Multiple agencies across a wide range of specialties have successfully leveraged federal resources throughout the City, ranging from highway and transit construction to renewable energy and multimodal transit. Residents and public officials in Denver have long supported significant civic investments that make Denver the world-class city it is today. From outstanding parks and recreation system to our myriad cultural facilities, each generation continues to contribute to this investment.

CITY OF DENVER

Currently, Denver invests over \$150M annually on capital improvements, including critical maintenance and rehabilitation projects, high priority capital investments, and leveraging state and federal dollars.

In November 2007, the residents of Denver passed eight ballot measures to develop new or improve existing infrastructure and facilities. These measures addressed major street and transportation improvements, health and human services, safety, and cultural facilities, libraries, and parks. The program included over 380 projects, with a budget of \$575M that was leveraged to over \$700M by public and private

contributions. \$200M was dedicated to major transportation projects.

CDOT

CDOT has a long record of successfully securing and completing federal grants and is in good standing with the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). CDOT has received Transportation Investment Generating Economic Recovery (TIGER) funds for a variety of projects including the US 36 Managed Lanes Project – for which CDOT was able to leverage a \$10M TIGER grant into a \$497M project.

CDOT worked with Congress on language in the FAST Act to make V2I communication equipment an eligible expenditure, and worked to provide grants to develop model deployment sites for large scale installation and operation of advanced transportation technologies.

RTD

With a staff of more than 2,600 and an annual budget exceeding \$460M, RTD transported a record 104 million riders in 2014. RTD is a direct recipient of 5307 Formula Funds, and more than \$400M in federal grants ranging from New Starts, TIGER, Bus & Bus Facilities, and Transit Infrastructure Finance and Innovation Act (TIFIA) funding programs.

DIA

DIA averages receipt of approximately \$20 million annually in FAA Airport Improvement Program (AIP) grants to fund runway and taxiway rehabilitation, airfield lighting, aircraft rescue and firefighting vehicles, and expenditures to enhance the overall safety of the airfield.



13: LEVERAGING FEDERAL RESOURCES

Grants Awarded - Denver Public Works has received nearly \$90M in grant funding over the last three years, nearly half of which came from the federal government. The other half was split among DRCOG, CDOT, RTD, and other sources.

FASTER PROGRAM

The Colorado State Legislature passed the Funding Advancements for Surface Transportation and Economic Recovery (FASTER) Act in 2009. FASTER generates about \$200M annually through a range of vehicle registration fees and new or increased fines. It enables the State to improve roadway safety, repair deteriorating bridges, and support and expand transit.

FASTER funds have improved the mobility and safety of Colorado's transportation system through hundreds of projects across the state. FASTER does not sunset; the uncertainties in federal transportation funding and the continued decline in the purchasing power of the gas tax will make FASTER funding ever more important in coming years.

FASTRACKS

In 2004, metro Denver voters approved RTD's FasTracks program, at a cost of \$5B, to construct 122 miles of new fixed guideway rail and 18 miles of bus rapid transit, and to redevelop historic Denver Union Station into a multimodal hub. The FasTracks program has been awarded more than \$1.5B in federal grants and loans. The FasTracks sales tax will not sunset and will transition to help pay for operations and maintenance of the expanded transit network.

The FasTracks program saw three commuter rail corridors and a new commuter rail maintenance facility constructed through one Design-Build-Finance-Operate-Maintain (DBFOM) contract. The three corridors will open for revenue service in 2016.

CDOT ROADX

CDOT created its Transportation Systems Management and Operations (TSM&O) Division in 2013 to align core functional

business areas and to "systemically improve travel time reliability and safety on Colorado highways through technology, innovative programs and strategies, targeted traffic management activities, and safety improvements to maximize the return on investment of transportation funds."

The RoadX Program typifies TSM&O's mission: using technology to improve the safety, mobility, and efficiency of the transportation system. The RoadX vision is to make transportation in Colorado crash-free, injury-free, delay-free, and technologically advanced. CDOT is committing \$20M in funding in 2016 to obtain congestion relief and safety improvements through the deployment of technology to kick-start RoadX. CDOT is currently adjusting its policies so funding categories further align with the integration of technology in transportation and mobility.

PANASONIC

Panasonic is partnering with Denver and a number of local private entities to enhance community engagement, energy efficiency, water conservation, public safety, healthcare, and other public services. Panasonic's application of smart technologies to the city's infrastructure, including in and around DIA, is expected to provide people effortless access to information about services, including utilities and mass transit. In addition, this responsive infrastructure will transform smart urban infrastructure like street lighting and energy systems to dynamically sense and respond to the presence of people and deliver services as needed.

XEROX

Denver is one of two pilot cities for Xerox's mobility marketplace app, Go Denver, which enables all mobility participants to share information and find matches between mobility supply and demand.

APPENDIX

LETTERS OF COMMITMENT

LETTERS OF COMMITMENT

In this section, you will find letters from all DSC Team partners. Together our partners provide platform development through research, personnel, and project execution assistance; our strategic partners will provide technical expertise, research assistance, infrastructure installation capabilities, project execution, and other benefits.

FOUNDATIONAL PARTNERS

- City & County of Denver
- Colorado Department of Transportation
- Regional Transportation District
- State of Colorado

ENGINEERING

- Jacobs Engineering

NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

- Center for New Energy Economy
- Denver Metro Chamber of Commerce
- Denver Regional Council of Governments (DRCOG)
- Mile High Connects
- National Renewable Energy Lab (NREL)
- Rocky Mountain Institute (RMI)
- United Way

LOCAL GOVERNMENT PARTNERS

- City of Centennial

RESEARCH

- Colorado School of Mines
- Colorado State University
- Mountain Plains Consortium (MPC)/North Dakota State University
- University of Colorado Denver

AUTOMAKERS

- BYD Coach and Bus
- Ford
- General Motors
- Via Motors
- Volkswagen

ENERGY

- ABB
- Momentum Dynamics
- NRG EVgo
- Xcel Energy

TECHNOLOGY

- Bishop Consulting
- Bosch
- Eaton
- E-RIVE
- HERE North America
- IBI Group
- INRIX
- Lockheed Martin
- MTS Systems Corporation
- Panasonic
- Peloton Technology
- Quanergy Systems
- reVision, Inc.
- TomTom
- Xerox

POLICY

- 1776
- Conservation Colorado
- Environmental Defense Fund
- Society of Automotive Engineers (SAE)
- Transportation for America

SAFETY

- Tyco International
- West Safety Services

TELECOM

- AT&T
- Verizon

TRANSPORTATION

- B-Cycle
- Car2Go
- eGo CarShare
- Lyft
- TransDev

POLITICAL

- Hon. Federico Peña
- Sen. Irene Aguilar (D-32)
- Rep. Crisanta Duran (D-05)
- Rep. Alec Garnett (D-02)
- Sen. Michael Johnston (D-33)
- Rep. Susan Lontine (D-01)
- Rep. Beth McCann (D-08)
- Rep. Daniel R. Pabon (D-04)
- Rep. Paul Rosenthal (D-09)
- Sen. Pat Steadman (D-31)
- Rep. Angela Williams (D-07)
- Sen. Michael Bennett (D-CO)
- Rep. Diana DeGette (D-CO)
- Sen. Cory Gardner (R-CO)

PROCLAMATION



City and County of Denver

Proclamation No. CP16-0055 In Support of the United States Department of Transportation Smart City Grant

WHEREAS, the United States Department of Transportation (USDOT) has made available \$40 million to the city which can most effectively demonstrate how advanced data and intelligent transportation systems (ITS) technologies and applications can be used to reduce congestion, keep travelers safe, protect the environment, respond to climate change, connect underserved communities, and support economic vitality; and

WHEREAS, the City will align with the Colorado Department of Transportation (CDOT), Regional Transportation District (RTD), and the National Renewable Energy Laboratory (NREL) as foundation partners in this effort and have affirmed their shared vision of deploying technology and innovative solutions to help make Denver smart and sustainable, particularly through transportation; and

WHEREAS, the City affirms its commitment to the execution of the grant programs, as described therein, throughout the life of the funding award; and

WHEREAS, the opportunity exists for a new model of Smart Cities project execution by which Denver and other stakeholders can develop and implement ground-breaking solutions to challenges facing the City and the region.

NOW THEREFORE, BE IT PROCLAIMED BY THE COUNCIL OF THE CITY AND COUNTY OF DENVER:

Section 1. That the Council of the City and County of Denver directs all city agencies to supply assistance and resources, wherever requested and beneficial, to coordinate in the implementation of the four priority initiatives included within the Denver Smart Cities Challenge grant application, being (1) Data Integration and Management, (2) Multi-Modal Integration, (3) Vehicle Electrification and Smart-Grid Efforts, and (4) Autonomous Vehicles Foundation Building. These projects are intended to benefit all visitors, citizens, and businesses across the city and help further economic growth and prosperity.

Section 2. That the Council of the City and County of Denver directs various department leaders to pursue public-private partnerships (P3s), where reasonable, to implement components of the Smart Cities Challenge. The City will draw knowledge from our foundation and other project partners in the development of these various agreements and procurements. All procurements instigated and pursued as part of the Smart Cities Challenge will be compliant with the City Charter and Code.

Section 3. That the Clerk of the City and County of Denver shall attest and affix the seal of the City and County of Denver to this proclamation and that a copy be transmitted to Crissy Fanganello, Director of Transportation, Denver Public Works.



PASSED BY THE COUNCIL January 25, 2016

PRESIDENT PRO-TEM



COLORADO

Department of Transportation

Office of the Executive Director
4201 East Arkansas Ave, Suite 262
Denver, CO 80222

February 1, 2016

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Secretary Foxx:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application.

The Colorado Department of Transportation (CDOT) has a longstanding mutually beneficial working relationship with the City and County of Denver and together we have partnered to build some incredible projects. Our shared vision of a multi-modal and smart city dates back decades and is best exemplified by the multi-billion dollar FasTracks Program initiated in 2004. Under this Program, the foundation of a Smart City was established via the metro-wide light rail, commuter rail and bus rapid transit system that is reshaping our transportation landscape.

Since that time we have continued to partner on important projects, and we are about one year away for starting the \$1.2 billion dollar, Central 70 Project that will replace a 50-year old viaduct with a partially covered lowered highway.

This mutually beneficial relationship continues into CDOT's RoadX Program that you were so gracious to help us kick-off in October 2015, and that will be a framework from which Denver's vision of a Smart City can grow.

The concepts and ideas that will build our Connected Vehicle Project and Managed Motorway Project will be expanded upon and translated from highways to arterials. CDOT and the City and County of Denver understand that our roads make a system and that together, when we embrace connected vehicle technology and building a foundation for autonomous vehicles we can increase safety, improve mobility, and address climate change.

The Colorado Department of Transportation strongly supports the City and County of Denver's Smart Cities Challenge grant application and looks forward to partnering with the City and County of Denver in this exciting endeavor.

Sincerely,

Shailen P. Bhatt
Executive Director





The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

February 1, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I/we write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application.

The Regional Transportation District (RTD) has served the Denver metro area since the District's creation in 1969. RTD currently operates a fleet of more than 1,000 transit buses serving more than 9,750 bus stops across the District as well as a fleet of approximately 375 paratransit vehicles providing both ADA paratransit and general public paratransit services throughout the District. RTD also operates a fleet of over 175 Light Rail vehicles serving 6 LRT lines in the District with several new light rail and commuter rail lines scheduled to open in 2016.

Denver is one of the nation's fastest growing cities, adding more than 40,000 residents in just the last five years. Mobility concerns from across the city are a constant challenge for both the city and RTD and the components included within Denver's Smart Cities Challenge Grant application will benefit all residents from across the city, regardless of where in the city they reside.

Both RTD and Denver have reaped tangible and meaningful benefits from decades of close cooperation on multiple projects, including the 16th Street Mall, Transportation Expansion (T-REX) Project, and the FasTracks transit capital expansion program. Denver's grant application contains multiple components that are of direct benefit to RTD including the possibility of mobile ticketing through Mobility on Demand Enterprise (MODE) and passenger vehicle charging through the Transportation Electrification component.

Recent advancements in technology provide numerous new avenues to improve mobility in the Denver metro area. Smart cities are the future of the modern city and RTD is dedicated to ensuring benefits through the program benefit everyone in the city – including those in underserved communities. RTD introduced smart card technology for our business to business pass programs two years ago and recently expanded our smart fare media program to include stored value for our community's transit riders. In addition, RTD also recently launched a mobile transit app to help residents track RTD provided fixed route services and has recently placed an order for the District's first fully electric vehicles to operate on Denver's 16th Street mall. These activities represent just the beginning of advancements to mobility that are enabled by our expanded focus on technology.



RTD looks forward to continuing our partnership with Denver to increase safety, improve mobility, and address climate change through the execution of additional innovative projects. RTD strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Genova', written over a light blue rectangular background.

David A. Genova
Interim General Manager and CEO



February 1, 2016

Crissy Fanganello
Director of Transportation
Denver Public Works
City and County of Denver
201 West Colfax Avenue
Denver, CO 80202

RE: Denver's Smart Cities Challenge Grant Application

Dear Ms. Fanganello:

I write in support of the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap the benefits from Smart City endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart Cities are the future of the modern city, and Jacobs is dedicated in our commitment to Denver. The capabilities of a smart safety system moves Denver beyond the traditional reactive mode to a predictive and preemptive model to better protect people, property, and environment.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Jacobs strongly supports this grant application and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in blue ink, appearing to read "Julie Skeen", is written over a faint, larger blue outline of the same signature.

Julie Skeen
Division Vice President
Rocky Mountain Operations Manager
Jacobs Engineering

707 17th Street, Suite 2400
Denver, Colorado 80202-5131
United States
T +1.303.820.5240
F +1.303.820.2402
www.jacobs.com



January 22, 2016

Secretary Anthony Foxx
US Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Secretary Foxx,

I am writing in support for the City and County of Denver's Smart Cities Challenge grant application to the US Department of Transportation. I believe the City and County of Denver has the vision, the team and the follow through to build a model for other cities with this funding.

Colorado has the highest tax credit for new electric vehicle purchases of any state in the country – a key factor driving the state's leadership in this area. A large portion of these purchases are second vehicles that are charged at night, at home. At the same time, advances in vehicle technology are driving the electric vehicle market past the early adopters. In many ways, electrification of the transportation sector is an area where public policy has significantly lagged behind vehicle R&D and consumer action.

In order to fully realize electrification of the transportation sector, state and local governments need to make strides in financing charging infrastructure, developing utility policies that enable electrification and promoting broad adoption of new modes of transportation.

The Center for the New Energy Economy strongly supports this project. My team and I look forward to partnering with the City and County of Denver and other project partners in this endeavor.

Sincerely,

Bill Ritter, Jr.
Former Governor of Colorado
Director of the Center for the New Energy Economy
Colorado State University



United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 28, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

The Denver Metro Chamber of Commerce represents over 3,000 diverse Colorado businesses and over 300,000 workers in Colorado. On behalf of Colorado's business community, we write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies. In addition, Denver's dedication to implementing both connected vehicle technology while building an autonomous vehicle foundation will lay the groundwork for a technologically-based transformation of transportation in Denver.

Smart cities are the future of the modern city and the Denver Metro Chamber of Commerce (Chamber) is dedicated to ensuring benefits through the program benefit everyone in the city – including those in underserved communities. We are committed to finding innovative ways to alleviate congestion in our city. Technology is changing the way we look at mobility and the Chamber is embracing this new approach to planning for connected mobility in the metro Denver area. We must act now in order to prevent growth and congestion from working against us economically, and to continue attracting tomorrow's good paying jobs and talent.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. The Denver Metro Chamber of Commerce strongly support this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink that reads "Kelly Brough". The signature is written in a cursive, flowing style.

Kelly Brough
President and CEO
Denver Metro Chamber of Commerce

Board Officers

Jackie Millet, Chair
Elise Jones, Vice Chair
Bob Roth, Secretary
Herb Atchison, Treasurer
Jennifer Schaufele, Executive Director

The Honorable Anthony Foxx
Secretary
U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590

RE: Denver's Smart City Challenge Grant Application

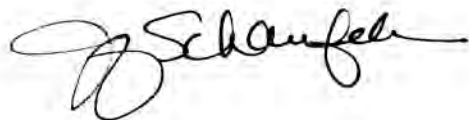
Dear Secretary Foxx:

As Executive Director of the Denver region's Metropolitan Planning Organization (MPO), the Denver Regional Council of Governments (DRCOG), I am pleased to express support for the City and County of Denver's U.S. Department of Transportation's Smart City Challenge Grant application. This proposal has the potential to advance metro Denver's reputation for new and innovative ways of approaching transportation and related issues.

One of the region's efforts is to encourage efficient interconnections of the transportation system within and among different modes. The proposal for Mobility on Demand Enterprise (MODE) should help facilitate that within our largest community. The Enterprise Data Management System proposes to make the best use of existing and future transportation facilities by implementing measures that actively manage and integrate systems to optimize system performance, another regional objective. The focus on Vehicle Electrification should assist the region in moving closer to achieving the air quality goals identified in our region's long range plan and vision document, Metro Vision 2035. The Connected Automated Vehicle Foundation helps address our goals for safety and congestion mitigation.

This Smart City Challenge Grant proposes to improve mobility, increase safety and address air quality issues through a series of innovative projects. DRCOG has been supportive of past efforts to improve deployment of electric and alternative-fuel vehicles and strongly supports this endeavor. We look forward to working with the City and County of Denver and the other project partners. I encourage your favorable consideration of this proposal. Thank you for your commitment to demonstrating how technology and innovation can improve transportation.

Sincerely,



Jennifer Schaufele
Executive Director
Denver Regional Council of Governments





United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 29, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I am writing in strong support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. This proposal will enable the Denver metro area reap benefits from Smart Cities endeavors and further the region's reputation as a place of innovation and experimentation, particularly around use of data, multi-sector coordination and use of new technologies to solve for social issues.

Mile High Connects is a multi-sector collaborative working to ensure that the Metro Denver regional transit system fosters communities that offer all residents the opportunity for a high quality of life. The partnership was formed in 2011 to ensure that FasTracks the region's \$7.8 billion transit build-out, benefits low-income communities and communities of color by connecting them to affordable housing, healthy environments, quality education and good-paying jobs.

Through our participation as a partner in this effort, Mile High Connects will make sure that the benefits of the innovations accrue to all residents, including those from disadvantaged communities. Our expertise in meaningful resident engagement, coupled with a deep on-the-ground knowledge of Denver's neighborhoods is an important complement to the skillsets of the many other partners in this proposal.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Mile High Connects supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

Dace West
Executive Director, Mile High Connects



Secretary Anthony Foxx
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 28, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's U.S. Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's proposal will accelerate the future of advanced transportation with engaged users and industry partners. The project will build on metro Denver's reputation for new thought leadership and technology innovation. The four aspects of the project include data integration, multi-modal accessibility, electrification, and connected automation and are poised to address the USDOT's grant objectives. The announced investments of Panasonic and Colorado Department of Transportation (CDOT) are making strides toward change while the USDOT Smart Cities Challenge funding will catalyze these and other efforts such that Denver will lead the nation to our transportation future.

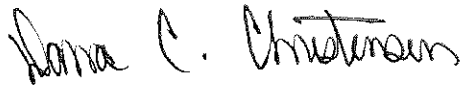
At the National Renewable Energy Laboratory (NREL) we have been leaders in technology development for our Nation's energy future and NREL is a leader in advanced transportation research, development and deployment. Our close proximity to Denver enables NREL to share our expertise with the City and County of Denver to successfully implement this work. NREL is core to the U.S. Department of Energy's mission of clean, reliable, and cost effective energy for every next generation urban area. As such, the laboratory staff is fully engaged and pleased to be a member of the Denver Smart Cities Challenge proposal. Our team of engineers is eager to design, develop, and deploy tools and resources that engage people to use the most efficient and advanced transportation network in the county as a result of the USDOT grant.

NREL is DOE's leader in commercialization and industry partnerships in the renewable energy and energy efficiency space. As such, we bring these skills and connections to the Denver proposal. Our strong ties to the electric vehicle and auto industry strengthen the proposal through engagements with partners including, Ford, BMW, NRG Energy, BYD, Momentum Dynamics, Verizon, and many others. We understand that technology needs to be both convenient and financially viable to serve consumers and businesses. Finally, the recently formed partnership between NREL and CDOT toward RoadX will be leveraged to ensure that systems deployed for

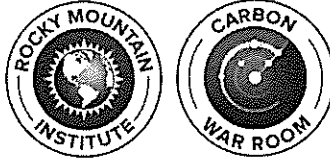
the Denver grant award apply across Colorado and the nation. You might recall that we both gave talks at the plenary session where NREL's MOU with CDOT was signed.

With support from NREL and numerous other industry partners, it is recommended that USDOT select the Denver Smart Cities Challenge proposal to proceed to project execution.

Sincerely,



Dr. Dana Christensen
Deputy Lab Director, Science & Technology
National Renewable Energy Laboratory
15013 Denver West Parkway
Golden, CO 80401



United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 28th, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

Rocky Mountain Institute (RMI) is writing to express its full-fledged support for the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. After a nationwide search, RMI selected Denver to be our lead scaling partner for our Mobility Transformation Program. This is a 3-5 year, multi-million dollar engagement with Denver focusing on interoperable, real-time transit data, fleet electrification, Mobility as a Service, mobility oriented development and autonomous vehicle acceleration. The criteria used for our search included representative demographics to ensure scalability, vibrant entrepreneurial environment, strong political support, available alternative transportation and level of current traffic "pain". Denver scores well on all of these points making it a prime candidate for accelerated transition from Individually owned, individually driven, gas powered vehicles to shared, electric and eventually autonomous mobility as a service.

RMI and the City and County of Denver have entered into a formal agreement defining to this program. Additionally, RMI has already developed an extensive stakeholder group encompassing local and state government, RTD, regional economic development groups, major local employers and global technology leaders. The existence of the RMI/Denver mobility transformation program means that the DOT Smart Cities funding will leverage our efforts in a city that has a running start.

As a non-aligned, non-profit, RMI's mission is to reduce carbon emissions through economically viable solutions. We bring technical expertise, business model development and analysis, stakeholder engagement, and facilitation to the team. RMI has a long history with advancing disruptive change and is excited to be engaged with Denver to drive toward the future of mobility.

Denver's robust history of collaboration was a significant factor in our partnering with them and the world-class team they have assembled for this proposal effort is further evidence of this. We have no doubt that Denver is poised for dramatic success and the DOT Smart Cities grant will significantly accelerate Denver's progress.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Weiland', with a large, stylized circular flourish at the end.

Jerry Weiland
Managing Director
Rocky Mountain Institute



Mile High United Way

Chairman of the Board
David Eves, Xcel Energy

President and CEO
Christine Beniero

Anthony Foxx
Secretary of Transportation
US Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

Based upon our mission of uniting people, ideas, and resources to advance the common good, Mile High United Way is delighted to support the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. We believe this grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking which is essential to creating opportunities for everyone. This is especially true with innovation directed at improving transportation for the highest need communities.

Mile High United Way has designed a community focused strategy to help individuals and families reach economic success and brings a unique and necessary set of capabilities to this application. These capabilities include and are not limited to community engagement, system policy and advocacy, evaluation and learning, and the 211 resource and referral system.

Community Engagement. As a partner with the City and County of Denver, Mile High United Way has a track record of convening citizens, community leaders, nonprofit agencies and partners, political leaders and the business community. By utilizing an ability to identify and bring the right people together, we can help ensure a high level of engagement with the Smart Cities application.

System Policy and Advocacy. The ability to identify and advocate for vital changes is a critical function of the Mile High United Way. Working with state and local policy makers, Mile High United Way has a demonstrated track record of leading and facilitating significant public policy changes spanning homelessness, early childhood education, K-12 reform, and basic needs and services. This capability allows the City and County of Denver to have a partner capable of advocating statewide and even nationally to address transportation policies which currently may be barriers for high need communities.

LIVE UNITED
Give. Advocate. Volunteer.

Evaluation and Learning. Mile High United Way believes in challenging the system to identify new and innovative strategies to improve the level of community impact. With a dedicated team, this will help the City and County of Denver identify and optimize the business functions outlined within the application.

211 Resource and Referral. Mile High United Way's 2-1-1 is a free and confidential community referral service that connects callers with resources which provide food, shelter, rent assistance, clothing, child care options and other types of community assistance. Trained referral specialists are multi-lingual and available to help individuals with real-time resources in our community. This capability can be strategically useful in supporting outreach and referrals for the City and County of Denver as well as provide data which can be used for the design and development of the application.

In addition to these core capabilities, Mile High United Way brings significant expertise and depth in understanding the Denver Metro Region and, more importantly, how to mobilize people and resources to address and solve some of the more complex issues facing our community.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Mile High United Way naturally supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in cursive script that reads "Christine Benero".

Christine Benero
President and CEO



February 4, 2016

Secretary Anthony Foxx
USDOT Secretary of Transportation

Submitted via email: SmartCityChallenge@dot.gov

RE: Letter of Support for the City and County of Denver's grant proposal for;

Beyond Traffic: The Smart City Challenge, Funding Opportunity Number DTFH6116RA00002, DFDA Number 20.200 Highway Research and Development

Dear Mr. Secretary Foxx and Members of the Selection Committee:

I am writing on behalf of the City Council of the City of Centennial in support of the City and County of Denver's *Smart City Challenge* grant proposal. As Denver's southern neighbor, Centennial benefits from inclusion and involvement in the metro area's strong economic development strategy, but, like Denver, we too bear the negative effects of increasing traffic congestion and the associated spillover. We believe that in supporting Denver in this endeavor, Centennial - a southern anchor of the I-25 and Southeast light rail corridors - will contribute to the overall effectiveness of the program. We look forward to working with Denver to find solutions to the ever-evolving transportation issues facing our region.

As part of a Bloomberg Philanthropies grant, Centennial received funding to embed and accelerate innovation in government. The City's Innovation Team (i-team) is discovering innovative ways to enhance mobility which will only elevate the success of Denver's efforts. In collaboration with Centennial's Public Works Department, the i-team has already begun building a partnership with Denver, as well as the Colorado Department of Transportation (CDOT) and Regional Transportation District (RTD), to work on solutions along this heavily-traveled and congested travel corridor. Interstate 25 is the only north and south highway connecting the state's major employment centers, resulting in thousands of daily commuters in a state of day-to-day gridlock and economic inefficiency that is only getting worse. As the hub of one of the fastest growing regions in the U.S., Denver, through its *Smart City* vision, helps support the goals of Centennial and all of the other municipalities, organizations and businesses that call this area home.

Thank you for your consideration and please do not hesitate to contact me with any additional questions.

Best regards,

Mayor Cathy Noon

City of Centennial



COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

Alexandra M. Newman, Professor
Telephone: 303.273.3688
Fax: 303.273.3416
E-mail: newman@mines.edu
<http://inside.mines.edu/~anewman>

Director,
Operations Research with Engineering PhD Program
Department of Mechanical Engineering
Colorado School of Mines
Golden, CO 80401-1887, USA

January 13, 2016

Re: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking.

The Colorado School of Mines is dedicated to providing our technical knowledge, insight, and research capabilities to this grant endeavor. Specifically, we have expertise in big data management, statistical analysis, optimization methodology and its applications, engineering design, automation, and sensor networks. These areas of expertise can assist in challenges regarding urban automation, sensor-based infrastructure, urban analytics, urban delivery and logistics, strategic business models, and smart grid, among others.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. The Colorado School of Mines strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

Alexandra M. Newman



College of Engineering
Fort Collins, Colorado 80523

Tuesday, January 26, 2016

Secretary Anthony Foxx
Secretary of Transportation
United States Department of Transportation

Re: Colorado State University Letter of Support for City of Denver Smart Cities Response to
Notice of Funding Opportunity #DTFH6116RA00002

Anthony Foxx:

I write this letter in support of City of Denver's and Colorado State University's grant application to the US Department of Transportation Smart Cities Program. This proposal represents an extraordinary strategic development program to demonstrate and advance the state of the art in data systems, advanced mobility, transportation electrification and vehicle autonomy. In each of these Smart City Initiatives, Colorado State University has developed the world-class expertise, technologies, scholarship, and workforce to support the program described in this proposal.

As Colorado's land grant university and the flagship campus of the Colorado State University System, Colorado State University has a regional, national and international role to perform education, research, and service. We provide a transformative education that equips our graduates to become leaders and innovators. We conduct research that provides solutions to not just the grand challenges of today, but those of tomorrow. We provide service to society that translates ideas into reality and spurs economic development. These values, as embodied in our Land-Grant University Mission, are the foundation for what we do.

Collaborations to support this proposal have been developed within the College of Engineering from technical experts in the fields of Smart/Connected/Electrified Transportation. These researchers will work with policy, economics, and social science innovators and experts from across the University. Coordination of the proposed tasks at Colorado State University will be performed through its Energy Institute. The Energy Institute serves as a nucleus of research, education, and outreach for the faculty, staff, and students of CSU. The Institute aims to grow the impact, reach, and reputation of energy research and education at Colorado State

University by increasing collaboration with industry and governmental partners, creating new research and educational opportunities for CSU faculty and students, and accelerating the dissemination of CSU solutions. The Energy Institute coordinates the efforts of over 160 faculty from across the University, including many of CSU's internationally recognized experts in energy and mobility policy, technology, assessment, and development.

Colorado State University has worked with the City of Denver and its partners to develop this innovative program. Our shared objective is to improve the safety, mobility, and climate change robustness of our region and the US.

Sincerely,



Thomas H. Bradley, PhD
Assoc. Professor, Mechanical Engineering
Associate Director, Systems Engineering
Colorado State University



Bryan Willson, PhD
Professor, Mechanical Engineering
Executive Director, Energy Institute
Colorado State University



Anthony Maciejewski, PhD
Professor and Head, Electrical and Computer Engineering
Colorado State University

NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

January 26, 2016

Re: City and County of Denver's Smart Cities Challenge Grant Application

Dear Secretary Foxx:

It is with great enthusiasm that I write this letter of support for the City and County of Denver's grant application to the U.S. Department of Transportation's Smart Cities Challenge.

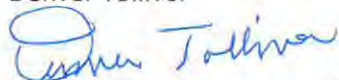
The Denver metropolitan region provides a unique opportunity for demonstrating the benefits of integrated land use/transportation planning, empowered by a host of emerging technologies. Collectively, the City and County of Denver enjoy a well-earned reputation for innovation in transportation planning and have demonstrated the continuity and commitment in leadership necessary to implement and sustain the Smart Cities vision. Moreover, together with their partners, the City and County of Denver have the baseline resources and capabilities to succeed in this challenging endeavor. Some of the region's advantages include: a second-generation light rail transit system, an innovative regional bus system, a state-of-the-art airport terminal, an innovative land-use planning process that is linked to the public transportation system, and a growing and diverse population.

North Dakota State University's Upper Great Plains Transportation Institute (UGPTI) and the Mountain-Plains Consortium (MPC) are excited to bring their collective expertise, research, and outreach capabilities to this effort. In addition to leading NDSU's interdisciplinary Transportation and Logistics education program, UGPTI has established research centers in Advanced Traffic Analysis; Agriculture, Energy, and Industrial Freight; Small Urban and Rural Transit; Transportation Safety Systems; and Surface Mobility Applications and Real-time Simulation environments. The latter focuses on advancements in low-power sensing, wireless communications, and mobile computing to support multi-modal transportation system efficiencies, responsiveness, reliability, sustainability, safety, and security.

In addition, NDSU is the lead university of the Mountain-Plains Consortium—a competitively selected regional university transportation center sponsored by the U.S. Department of Transportation. The consortium includes Colorado State University, South Dakota State University, University of Colorado Denver, University of Denver, University of Utah, University of Wyoming, and Utah State University, in addition to NDSU. Collectively, the MPC universities offer a wide-range of capabilities to address the research, technology transfer, and workforce development needs of this grand challenge.

NDSU and MPC look forward to working with the City and County of Denver and other partners on this ground-breaking and potentially transformative effort.

Denver Tolliver



Director, Upper Great Plains Transportation Institute
Director, Mountain-Plains Consortium

January 15, 2016

RE: City & County of Denver's Smart Cities Challenge Grant Application

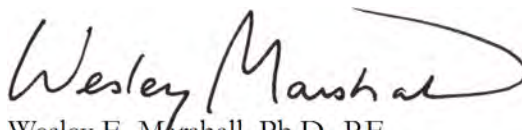
Dear Secretary Foxx:

It is my pleasure to be able to provide this letter of support for the City & County of Denver's Federal U.S. Department of Transportation (USDOT) Smart Cities Challenge grant application. This opportunity will help the entire Denver metropolitan area the benefits of Smart Cities and further metro Denver's reputation for novel innovations in transportation and technology. I believe these efforts will be particularly useful in Denver, as Denver is a region that is in the midst of its shift from long-standing auto-dependence towards a multi-modal future. With a second-generation mass transit light rail system, a burgeoning active transportation infrastructure system, and numerous transportation options beyond the traditional modes, Denver represents a useful model for other cities that have a hard time comparing themselves with cities such as New York City, Boston, or Portland, OR.

We applaud this application's attention to improving vehicle charging capabilities and vehicle electrification and hope to see it help the City & County of Denver further embrace electric vehicle technology. The University of Colorado Denver is also excited to bring our expertise, technical knowledge, insight, and research capabilities on multi-modal integration and big data networks to this grant endeavor.

We at the University of Colorado Denver see that this Smart Cities Challenge Grant as fantastic opportunity for Denver to challenge itself with innovative projects that can directly lead to gains in safety, mobility, and accessibility. We look forward to working with the City & County of Denver and other project partners on these efforts. Thank you for the chance to write this support letter.

Sincerely,



Wesley E. Marshall, Ph.D., P.E.
Associate Professor
University of Colorado Denver





January 23, 2016

US Department of Transportation (USDOT)
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and BYD Coach and Bus is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle , micro-grid, smart-grid, and battery technology efforts to this grant endeavor. This will include our advances in vehicle to grid technology as well as Energy Storage Systems. We will also be leveraging our expertise as the Worlds largest manufacturer of rechargeable batteries to demonstrate recyclable non flammable, long life batteries for both vehicles and stationary storage.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. BYD Coach and Bus has already been selected as Denver RTD's supplier for 36 Zero Emission battery electric buses for the Mall Service and we are dedicated to being a good partner to The City and County of Denver and therefore we strongly support this project and look forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Macy Neshati", written in a cursive style.

Macy Neshati
Vice President,
BYD Coach and Bus



Brad Simmons
Director
Government and Stakeholder Relations

One American Road
Room 1000-A1
Dearborn, MI 48126

January 29, 2016

The Honorable Michael B. Hancock, Mayor
1437 Bannock Street
Suite 350
Denver, CO 80202

Dear Mayor Hancock:

I am writing this letter on behalf of Ford Motor Company in support of Denver's application to the United States Department of Transportation's (USDOT) Smart City Challenge grant. Our company embraces the City's vision to make its citizens' lives better by improving safety, enhancing mobility, and addressing environmental concerns, consistent with the Smart City Challenge's core goals. Some of the ways we envision doing so include:

- Expanding the use of driver-assisted technologies to potentially make driving safer, provide a more convenient driving experience, and ease traffic congestion;
- Developing new ways to connect vehicles and infrastructure with other vehicles to help prevent crashes, improve vehicle flow on freeways, and minimize fuel consumption;
- Pursuing electric powertrains and battery systems that allow us to offer electrification on more than 40 percent of our vehicle lineup by 2020;
- Pioneering technologies -- like our new on-demand Dynamic Shuttle service being piloted for employees based on our headquarters campus in Dearborn, Michigan -- to make public transit more accessible for all and reduce congestion;
- Developing commercial and personal electric bicycle applications to deliver faster and easier daily commutes and help businesses operating in urban areas; and
- Continuing to engage in partnerships with others working on similar initiatives.

Ford Motor Company supports initiatives designed to advance the goals of the Smart City Challenge and has significant practical experience in similar partnerships with other cities. Given the impact your Smart City Challenge proposal could have on the future of mobility and its alignment with Ford's goals in that area, we look forward to the opportunity to partner with Denver moving forward.

Please convey Ford Motor Company's support for Denver's Smart City Challenge grant application. If we can be of further assistance, please contact me at (313) 390-9880 or by e-mail at bsimmon1@ford.com.

Sincerely,

A handwritten signature in blue ink that reads "Brad Simmons".

January 28, 2016

General Motors Global Headquarters
MC: 482-C30-B36
300 Renaissance Center
Detroit, MI 48265-3000

Ms. Crissy Fanganello
Director of Transportation
City and County of Denver, Department of Public Works
201 W. Colfax Avenue
Denver, CO 80202

RE: Smart City Challenge Grant

Dear Director Fanganello:

We are writing in support of the city of Denver's application for the Smart City Challenge grant. General Motors has worked cooperatively with the city of Denver on many initiatives centered on alternative energy and we are now interested in exploring efforts in the areas of multi-modality, car-sharing and dedicated short range communications (DSRC).

We see Denver as an excellent city to receive the Smart City Challenge grant as it will accelerate the introduction of new technologies and supporting business models. The city of Denver has been progressive in managing growth and incorporating systems to enhance the lives of citizens living in and near Denver.

Denver is one of the fastest growing cities in the United States and is an ideal location to demonstrate first mile and last mile multi-modal transportation options.

For all of the above reasons we see Denver as a natural leader to demonstrate a true connected city.

Sincerely,



Daniel A. Turton
Vice President, Federal
and Administrative Affairs



Michael F. Ableson
Vice President, Strategy and
Global Portfolio Planning



John G. Smyth
Executive Director, Global
Research and Development



GENERAL MOTORS



United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 28, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

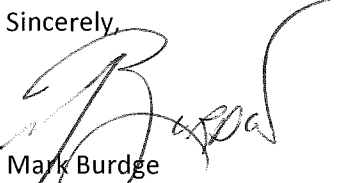
I/we write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies. In addition, Denver's dedication to implementing both connected vehicle technology while building an autonomous vehicle foundation will lay the groundwork for a technologically-based transformation of transportation in Denver.

VIA Motors has developed the most advanced medium duty vehicle electrification technology available commercially. VIA's lineup of pickups and vans fills an extremely large gap in EV products on the market. America's best selling vehicles for decades have been pick up trucks. This is an American vehicle. It is the most widely used vehicle by individuals and fleets alike and represents one of the largest contributors to air pollution in the country. Smart cities are the future of the modern city and VIA is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle, micro-grid, smart-grid, and battery technology efforts to this grant endeavor. VIA has proven this commitment with recent advances in V2G (Vehicle to Grid) technology currently deployed at Los Angeles Air Force Base and currently in development at several other sites.

In addition to our commitment to V2G capable vehicles, VIA is developing connected vehicle systems to allow our vehicles to communicate with owners, managers, service techs and incorporate applications to assist drivers with connectivity.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. VIA Motors strongly support this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,


Mark Burdge
Vice President, Sales & Govt. Programs
VIA Motors, Inc.

VOLKSWAGEN

GROUP OF AMERICA

Crissy Fanganello
Director of Transportation
Denver Public Works
City and County of Denver
201 W. Colfax Ave.
Denver, CO 80202

Anna-Maria Schneider
Vice President
Industry and Government Relations
+1 703 364 7211
+1 703 364 7082
anna.schneider@vw.com

NAME
TITLE
DEPARTMENT
PHONE
FAX
E-MAIL

January 29, 2016

DATE

Dear Ms. Fanganello:

The purpose of this letter is to express Volkswagen Group of America Incorporated (VWGoA) interest to support the development of the City and County of Denver's Smart City Challenge application in the event the city is selected as one of the five cities chosen by the USDOT in the initial selection round. Furthermore, if the City and County of Denver are selected as the ultimate winner of the Smart City Challenge VWGoA will work with the city to support the deployment of agreed upon concepts involving connectivity, automation, and automotive electrification.

VOLKSWAGEN GROUP OF AMERICA, INC.
2200 FERDINAND PORSCHE DRIVE
HERNDON, VA 20171
PHONE +1 703 364 7000

VWGoA will work with the city to leverage VW and Audi's expertise and capabilities in the area of connectivity, automation, and automotive electrification to develop a concept to achieve mutually agreeable safety, mobility, and environmental targets set within the project.

In the event Denver is awarded, we will work with the city to reach and put in place a mutually agreeable contract and fitting budget with the likely necessary DOT flow-down provisions.

In closing, we are excited about the opportunity to work with Denver in the important areas of vehicle safety, electrification, and automation. Deployment of these advanced technologies will help to realize enhanced safety, mobility, and environmental benefits for Denver. We look forward to working together on the Smart City Challenge.

Please contact us if you have further questions.

Best regards,



Anna Schneider



February 1, 2016

US Department of Transportation
Attn: Secretary Anthony Foxx
1200 New Jersey Ave. SE
Washington, DC 20590

RE: ABB Letter of Support for City/County of Denver – USDOT Smart Cities Challenge Grant

Dear Mr. Secretary:

This letter serves as support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

As the global leader in DC fast charging of electric vehicles, ABB brings over five years of specific experience with thousands of DC fast chargers across multiple standards and continents, atop the over 100 years of power and automation history. ABB is the leading electric vehicle supply equipment (EVSE) provider in the US for dual-standard DC chargers. With the small but well-utilized base already installed in the Denver area, ABB sees the demand for additional strategic efforts to grow the technology.

ABB also has the strongest, most flexible IT platform for connected services, in addition to exceptional local physical support within the USA. Smart cities are the future of the modern city and ABB is dedicated to providing our expansive technical knowledge and insight, and capabilities related to electrified vehicles, micro-grid, smart-grid, and battery technology efforts to this grant endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. ABB strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

Andy Bartosh
Director - EV Charging Infrastructure
ABB Inc
3201 E. Harbour Drive
Phoenix, AZ 85034
Cell: 262-527-3719
Email: andy.j.bartosh@us.abb.com

Cc: None



Momentum Dynamics Corporation
3 Pennsylvania Avenue
Malvern, PA 19355

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speaks volumes to the City's dedication to embracing electric vehicle technologies.

Momentum Dynamics Corporation (Momentum or MD) is a Delaware corporation that has been engaged in the business of developing wireless (or inductive) charging technology for electric vehicles since 2009. Momentum has developed the critical set of technologies that are required to safely operate wireless power vehicle charging. The Momentum® Charging System is compatible with any type of electric vehicle. We look forward to working with Denver on their proposed Electrons for Mobility project, specifically their focus on wireless charging. Smart cities represents the future of the modern city and Momentum Dynamics is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle, micro-grid, smart-grid, and battery technology efforts to this grant endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Momentum Dynamics strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Ali Cleveland", is written over the word "Sincerely,".

Ali Cleveland
Vice President, Government Affairs
Momentum Dynamics



211 Carnegie Center
Princeton, NJ 08550
609-524-4647

January 29, 2016

Secretary Anthony Foxx
USDOT Secretary of Transportation

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

NRG EVgo ("EVgo") owns and operates the nation's largest electric vehicle fast charging network, with over 500 high speed charging stations in 25 metropolitan areas, including our network of seven stations currently in metro Denver. EVgo has national relationships with leading electric vehicle manufacturers, including BMW, Nissan and Ford, which give drivers low cost access to our network.

Our charging stations provide a full charge to the current generation of electric vehicles in less than 30 minutes. As vehicle battery capacity increases, we are committed to working with our automotive manufacturer partners to roll out higher-power stations that can charge this new generation of vehicles even more quickly. Because of the higher electrical capacities required to serve these charging stations, cooperation with city planners, utilities, host locations, and other stakeholders is critical.

In building our Denver network, we have been particularly impressed by the cooperation we have received to date from the metro Denver community. Based on this experience, we have no doubt that Denver is particularly capable of implementing the kind of smart city programs, policies and technologies envisioned in this grant.

We believe that smart cities are the future of the modern city and EVgo is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle electrification efforts to this grant endeavor. Although we have built out network in 25 major cities across the U.S., we believe Denver has a particularly thoughtful and thorough approach. NRG EVgo strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Fisher".

Scott Fisher
Director, NRG EVgo



RESPONSIBLE BY NATURE™

Hollie Velasquez-Horvath
Director
Community Relations
Xcel Energy

Secretary Anthony Foxx
US Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and Xcel Energy is dedicated to providing our technical knowledge, insight, and expertise related to electric vehicles, micro-grid, smart-grid, and battery technology efforts.

This Smart Cities Challenge Grant will help metro Denver work toward increased safety, improved mobility, and reduced transportation costs through innovative projects. Xcel Energy strongly supports this project and, in the event of receiving the funding award, looks forward to partnering with the City & County of Denver, and other project partners.

Sincerely,

A handwritten signature in black ink, appearing to read 'Hollie Velasquez-Horvath', with a long horizontal flourish extending to the right.

Hollie Velasquez-Horvath
Xcel Energy | Responsible By Nature
Director, Community Relations
1800 Larimer Street, Suite 1400, Denver, CO 80202



7400 Mink Hollow Rd
Highland, MD 20777

January 25, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

This support will derive from BC's extensive experience and relationships in the connected automated vehicle industry for the past 25 years. These activities include research strategy, policy development, industry analysis, and support of new partnerships in areas such as car/truck automation and cybersecurity. Based on these relationships and experience, BC can play a significant role in formulating specific practical approaches and bringing together the right organizations for successful implementation.

Smart cities are the future of the modern city and Bishop Consulting is dedicated to providing our technical knowledge, insight, research capabilities, and professional relationships related to vehicle automation.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Bishop Consulting strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Bishop'. The signature is fluid and cursive, with a large, stylized 'R' and 'B'.

Richard Bishop
Principal, Bishop Consulting



BOSCH

January 27, 2016

The Honorable Anthony Foxx
Secretary, U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington DC 20590

Robert Bosch LLC
38000 Hills Tech Dr.
Farmington Hills, MI 48331
Telephone +1(248)553-9000
www.Bosch.us

Re: City of Denver's Smart City Challenge Proposal

Dear Secretary Foxx,

It was a pleasure meeting with you on January 7, 2016, at the Consumer Electronics Show (CES) regarding the Smart City Challenge. I am writing to inform you that Bosch has agreed to partner with the City of Denver to deliver mobility innovations and technology integration solutions should it be awarded the Department of Transportation (DoT) Smart Cities Challenge grant.

Denver's vision for a smarter approach to mobility addresses emerging transportation technologies, data, and applications. Bosch's expertise in multiple DoT Vision Elements, alongside Denver's proposed solutions, offer unique, data-driven ideas to improve lives by making all modes of transportation safer, easier, and more reliable.

The development of this preliminary proposal with the input of Bosch and other leading industry and academic organizations makes this proposal worthy of consideration for inclusion in the final five cities that will compete for DoT's award. DoT's groundbreaking initiative will be an excellent platform to accelerate the development and adoption of these technologies and solutions in forward-thinking communities such as Denver.

Yours sincerely,

Mike Mansuetti
President

February 1, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation Smart Cities Challenge grant application. Smart Cities are the future of the modern city. Eaton is committed to Denver and its efforts to move beyond the traditional reactive energy management mode to a predictive and preemptive model to better protect people, property and environment.

The grant will help the entire Denver metro area bolster its reputation as an energy innovator. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the region's dedication to embracing electric vehicle technologies.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and reduce carbon emissions through innovative projects. Eaton strongly supports this project and looks forward to collaborating with the City and County of Denver and other project partners.

Eaton is a power management company with approximately 97,000 employees. The company provides energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton sells products to customers in more than 175 countries.

Sincerely,



John P. Stampfel
Vice President and General Manager

United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

02/01/2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies. In addition, Denver's dedication to implementing both connected vehicle technology while building an autonomous vehicle foundation will lay the groundwork for a technologically-based transformation of transportation in Denver.

Smart cities are the future of the modern city and E-RIVE is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle, micro-grid, smart-grid, and battery technology efforts to this grant endeavor.

E-RIVE Car Sharing is a transportation services company that rents electric vehicles to UBER Partners/Drivers on a per shift basis. The vehicles in this program are highly utilized resulting in fewer emissions in densely populated areas. Due to the high mileage applications, the environmental, human health, and financial impacts are some of the strongest in the electric vehicle industry. E-RIVE has also integrated renewable power such as solar photovoltaic to help offset a portion of the electricity the vehicles consume.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. E-RIVE strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

Doug Snower

Doug Snower
E-RIVE

here

The Honorable Anthony Foxx
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 22, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Secretary Foxx:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and HERE is dedicated to bringing several key capabilities to the team:

Cutting edge technologies for Connected & Automated Driving. HD maps, real-time traffic & dynamic data, cloud connectivity, data analytics, multi-modal in-dash & mobile traveler applications, APIs and SDKs for application building.

Proven experience. 30 years of industry firsts - developing and commercializing transportation innovations at a world-wide scale for automotive, consumer, fleet and government.

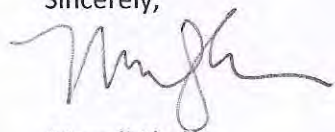
Extensive reach to travelers. Unmatched reach across devices inside and outside the vehicle. HERE data powers 9 out of 10 vehicles in the US. The top 20 JD Powers' ranked in-dash navigation systems in the US use HERE maps and traffic. HERE supports Garmin, Samsung, Microsoft, Amazon and many others.

Scalable and sustainable business models. HERE's interoperable model for working across automotive, trucking, telematics, consumer, and government markets is backed by decades of growth and success. The ability to scale the building and monetization of location data and software is critical to the success of connected vehicles at scale. HERE has played an instrumental role in setting standards and global specifications for both map and traffic data.

HERE is investing heavily in Connected and Automated Vehicle technologies that will power Smart Cities of the future. Our involvement in this Smart City project will help accelerate the development and adoption of these technologies by the traveling public.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. [Company] strongly support this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,



Monali Shah

Head of ITS, HERE North America, LLC
monali.shah@here.com 312-894-7244



IBI GROUP
1401 17th Street—Suite 610
Denver CO 80202 USA
tel 303 713 1013 fax 303 713 1014
ibigroup.com

January 22, 2016

Dear Mr. Secretary:

DENVER'S SMART CITIES CHALLENGE GRANT APPLICATION

We write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from data driven Smart City endeavors to address the growing demands on the transportation infrastructure and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving electric vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies and protecting the environment.

IBI Group is a world leader in Smart Cities. We believe that the Smart City is all about connecting the pieces rather than individual systems. Our experience with intelligent transportation systems from telecommunications to public transport and mobility using big data and connected vehicle technologies puts us in a position to assist the team in realizing the goals of the Smart City Challenge in the Denver region. Smart cities are the future of the modern city and IBI Group is dedicated to providing our technical knowledge, insight, research capabilities related to connected vehicle, micro-grid, smart-grid, and battery technology efforts to this grant endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. IBI Group strongly support this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Yours very truly,
IBI GROUP

Peter Zurawel
Deputy Regional Director US West
pzurawel@ibigroup.com



January 22, 2016

INRIX, Inc.
10210 NE Points Drive, Suite 400
Kirkland, WA 98033

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies. INRIX, a world leader in providing real time and archival traffic data to the public sector, can assist the City in winning this important grant by providing the experience, data and analytical tools to separate themselves from the competition:

Experience: **For more than a decade, INRIX has been focused on supporting smarter cities.** Examples include assisting London in managing travel during the Olympic games, assisting the Bay Area in improving travel information, performance measurement and project planning, helping Dubai as it prepares for Expo 2020, and identifying transit alternatives for BMW i3 customers in the US and Europe to avoid congestion and optimize routing.

Capabilities: **INRIX has many smart city components live in operation today or on-the-shelf ready for use.** Real-time traffic, routing and parking services are live in Denver, as is roadway performance and trip/OD analytics. INRIX currently powers more connected vehicles than anyone else in the US. Also, traffic avoidance and parking apps, widgets, and SDKs are readily available for adaptation to enhance the City's smart city vision. Finally, INRIX's unmatched ecosystem of partners and customers offers solution possibilities no single company can provide alone.

Creativity: **INRIX has thrived at practical creativity – pushing the boundaries to offer advanced solutions that are deployable, scalable, affordable and commercially sustainable.** Our direct experience across areas including connected vehicles, traffic management, traveler information, planning, parking, public safety, crowd control, event management, fleets, mobile apps, crowd sourcing, and electric vehicles offers opportunities for unique solutions others cannot imagine or create.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects and services. INRIX strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor. Please do not hesitate to contact me at (425) 495-5476 or via email at gary.carlin@inrix.com if you have any further questions.

Sincerely,

A handwritten signature in blue ink that reads "Gary L. Carlin". The signature is fluid and cursive, with the first and last names being more prominent.

Gary Carlin, PMP, PE, PTP
Director of Business Development, Public Sector

Lockheed Martin
Missiles and Fire Control
Autonomous Systems
12395 N. Mead Way
Littleton, CO 80125

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

We are writing in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Lockheed Martin brings world class expertise as the nation's number one defense contractor in the areas of cybersecurity for military and government systems, micro grids, video analytics, vehicle-to-vehicle connectivity and active safety capabilities, vehicle autonomy in complex and demanding environments for military, commercial, and industrial applications, and systems integration of complex systems across multiple domains to the Denver Smart Cities team. Smart cities are the future of the modern city and Lockheed Martin is dedicated to providing our technical knowledge, insight, research and systems integration capabilities to this endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Lockheed Martin strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Jamie Adams", with a stylized flourish at the end.

Jamie Adams
Sr. Program Manager
Lockheed Martin, Missiles and Fire Control Company
Autonomous Systems



MTS Systems Corporation
14000 Technology Drive
Eden Prairie, MN 55344-2290
Telephone 952-937-4000
Fax 952-937-4515

26 January 2016

United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and MTS Systems Corporation is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle, advanced driver assist systems efforts to this grant endeavor. MTS and the University of Minnesota, the supplier of the first 10 Driver Assist Systems used since 2010 by the Minnesota Valley Transit Authority (MVTA), have executed a technology license by which MTS will commercialize Driver Assist Systems for transit, snowplow, and other specialty vehicle applications. MTS has invested in this Driver Assist System technology, has made substantial improvements, is currently working to deliver additional systems and is prepared to supply and support these systems.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. MTS Systems Corporation strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Meyers", written in a cursive style.

Richard L. Meyers
Business Development Manager
| MTS Systems Corporation

The Honorable Anthony Foxx, United States Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 27th, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

On behalf of Panasonic Corporation of North America ("Panasonic"), I am writing in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. Approval of the City & County of Denver's grant application will help people across the entire Denver metro area reap the benefits of Smart Cities technologies and further enhance metro Denver's reputation for leadership in urban innovation and sustainability. The application's focus on improving vehicle charging capabilities and vehicle electrification efforts attests to the City's commitment to embracing electric vehicle technologies and encouraging their adoption. In addition, Denver's early-adopter approach to connected vehicle technology and infrastructure will lay the groundwork for deployment of autonomously driven vehicles and set the stage for a technology-based transformation of transportation and traffic safety in Denver.

Panasonic has committed to introduce and implement transformational V2V, V2I, and V2X technology, using advanced DSRC solutions along the I-70 and I-25 corridors, establishing Colorado as a world leader in connected vehicles. Pilots will begin in 2016. Additionally, Panasonic will focus on other areas of transportation including digital signage along interstates and highways that provide real-time information on train arrival/departure times, parking spaces available and other services that increase ridership. Panasonic will introduce technologies that increase the functionality and connectivity of mobile devices related to mass transit. Smart, interactive kiosks, bus shelters, and train stations with immediate and direct access to parking availability, train, bus, and airport schedules will be deployed in 2016. Moreover, Panasonic's On4Care Remote Health Care solution will enable the commercial and residential population to access fitness and health-related education, traditional healthcare and alternative medicine services. Patients with chronic conditions will also be able to benefit from in-home remote patient monitoring and real-time, patient-doctor interactions while in their own homes. Panasonic's own On4Care solution has potential transformational implications for the delivery of health care services as a mobility alternative in an urban environment. The result being significant healthcare cost savings through the reduction of hospital readmissions for post-acute chronic care patients, while allowing doctor-patient interaction within the home.

By leveraging these technologies and related expertise in connected vehicles, autonomous driving, real-time information, connected devices, and remote healthcare, Panasonic expects to be able to contribute significantly to making Denver a more sustainable smart city, increased mass transit use, enhanced community engagement, improved energy efficiency, heightened public safety, with more accessibility to healthcare and a wider range of mobility solutions for residents.

Panasonic also plans to develop smart technologies for the city's infrastructure, including in and around Denver International Airport, to put more real-time information on city services in the hands of the people of the community. Smart technologies embedded in the city's infrastructure will give people

easy access to diverse information about services, including utilities and mass transit schedules. In addition, this responsive infrastructure will transform smart urban infrastructure like street lighting and energy systems to dynamically sense and respond to the presence of people and deliver services as needed.

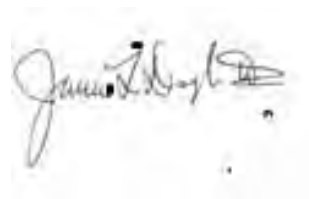
Panasonic is also working with Aviation Station North Metropolitan District No. 1, developer Fulenwider, Inc. and Denver International Airport to pilot a system of smart LED-based street lighting at the Peña Station NEXT development district near the Panasonic Enterprise Solutions hub that is now under construction. The system is designed to save energy, optimize usage and bring video analytics technology to streets to support and enhance parking management, traffic analysis, security, and other future services.

Reduced energy consumption and lower operating costs will also be realized through renewable energy systems and advanced energy storage solutions. Towards this goal, Xcel Energy has presented a project to build a microgrid with contributions from Panasonic and Denver International Airport to demonstrate the use of Solar Photovoltaic panels and Lithium Ion storage batteries working together. The Microgrid, made up of a 1.3MW AC Solar Carport System and a 1MW/2MWh Battery Storage System, if approved, will be "the most comprehensive project of this type in Colorado history and the first with actual customer participation in a real-world environment," according to Alice K. Jackson, regional vice president at Xcel Energy.

Smart city technologies hold out the promise of enabling a sustainable future for the world's cities. Panasonic plans to put its technical knowhow and R&D capabilities toward connected vehicles, micro-grids, smart-grids, and storage battery technologies at the service of the city in support of this grant application.

This Smart Cities Challenge Grant will help metro Denver reinforce public safety, improve mobility, and address climate change through an array of innovative projects. Panasonic strongly support the goals of this project and looks forward to partnering with the City & County of Denver and the other partners to play a role to help Denver make a strategic investment in its future.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jim Doyle", with a stylized flourish at the end.

Jim Doyle
President
Panasonic Enterprise Solution Company



Peloton Technology
1060 La Avenida Street
Mountain View, CA 94043
650.395.7356

www.peloton-tech.com

January 26, 2016

To:

Re: Letter Supporting the City of Denver Smart City Challenge Proposal

Dear ,

On behalf of Peloton Technology, I am pleased to submit this letter of support for the Smart City Challenge proposal submitted by the City of Denver. The City's vision of new mobility technologies and services is exciting and it is our pleasure to contribute support, resources, and the viewpoints of Peloton to this vision.

Our company and innovation partners will benefit from this project as it provides a cohesive framework within which to develop the full potential of a number of current R&D and product deployment initiatives.

Peloton is a leader in the development and deployment of truck platooning systems that improve the safety, efficiency and analysis of freight transportation. Peloton-equipped vehicles are at the frontiers of truck automation, collision avoidance, V2X connectivity and cloud-based fleet management. In order to integrate these technologies for commercial deployment, we have collaborated with innovation partners including Lockheed Martin, Volvo, Denso, UPS, and Intel; state DOTs and business development agencies, government, industry and academic researchers; and major for-hire and private trucking fleets.

In line with our commitment to integrating intelligent vehicles and infrastructure in urban and intermodal environments, we would welcome the opportunity to assist the City of Denver in formulating and implementing its response to USDOT's Smart City Challenge. Of the 12 Vision Elements that USDOT encourages applicants to consider, Peloton's prospective contributions fit clearly under the three "highest priority" elements of *Urban Automation*, *Connected Vehicles*, and *Intelligent, Sensor-Based Infrastructure*. Specific urban freight solutions that Peloton can offer to the Smart City Challenge are:

- freight signal priority with automated speed control
- automated traffic jam assist
- automated truck queuing, parking and docking
- improved intermodal coordination via cloud-based networks
- expanded data collection and analysis enabled by real-time V2X communications

Each of these solutions promises to improve the safety, efficiency and mobility of transportation within the City of Denver. Collectively, they have the potential to make the City a model for automated urban freight transportation.

We are proud to be a part of this exciting vision for the region. If you have any questions, feel free to contact me.

Sincerely,



Peloton Technology
1060 La Avenida Street
Mountain View, CA 94043
650.395.7356

www.peloton-tech.com

A handwritten signature in blue ink, appearing to read "S. Boyd", written over a light blue rectangular background.

Steve Boyd
VP – External Affairs



January 25, 2016

Quanergy Systems, Inc.
482 Mercury Drive
Sunnyvale, CA 94085

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Quanergy Systems aims to support the Smart City Challenge proposal by offering technology to substantially increase situational awareness at intersections and rail crossings, as described below. In addition, our technology can be used to enhance security for critical infrastructure such as power plants, tunnels, etc. Quanergy is a privately held, Silicon-Valley-based technology company specialized in developing high performing LiDAR (laser radar) based 3D sensing and perception systems at low cost. Quanergy disrupted the smart sensing space by becoming the first company in the world to offer low cost 3D sensing devices to enable the development of self driving cars, make crash avoidance capabilities more ubiquitous, make the usage of LiDAR possible for 3D Mapping, and provide object detection in several industries including security and road transportation. Quanergy continues to be the world's leader in LiDAR sensing by developing the world's first solid state LiDAR, which can be manufactured at much lower cost than previous industry solutions based on mechanical LiDAR.

Quanergy's offering for the Smart City Challenge fits within USDOT's Vision Element #3: Intelligent, Sensor-Based Infrastructure. Within the Denver proposal, Quanergy technology will support Initiative #4: Connected Vehicle Deployment and Autonomous Vehicle Foundation. Quanergy can provide high-resolution sensors and object detection software and work with other technology integrators on the Denver Smart City team to implement an unprecedented level of situation awareness for intersection signal controllers, rail crossings, and transportation management in general.

Regardless of rain, snow, darkness, etc., the Quanergy sensor can provide detailed tracking of all vehicle, pedestrian, and bicycle movements. As urbanization increases and more and more Millennials are walking and cycling, the safety of these vulnerable road users has become a concern. Intersections need to evolve to be aware of and accommodate all road users as complexity of the road environment increases. At rail crossings in particular, rapidly moving bicyclists in particular can be sensed at long range and warned of a fast-moving commuter train approaching. Further, data collected by Sensor-Based Infrastructure can be fed to connected and automated vehicles to improve their safety and driving robustness.



Quanergy offers the following products:

- Quanergy's M8-1 LiDAR Sensor which offers a 360° field of view, a measurement range of 500 ft, fine resolution, high reliability, and low power consumption in a compact size. It sees by day or night and filters out false returns caused by dust, mist, rain, or snow. Available now, this sensor can be applied to a variety of platforms to enable rapid 3D detection, measurement, identification, tracking, and classification of items.
- Quanergy's S3 Solid State LiDAR Sensor, which is ready for pre-order to be shipped in early 2017, is compact, contains no moving parts for the highest level of reliability and longest lifetime. Its low cost makes it the fundamental component necessary for the emergence of autonomous vehicles and can be used in any application that can benefit from smart, capable, always-aware perceptive vision.

Quanergy's innovations, covered by more than 8 patent applications, address the needs in various markets for LiDAR-based 3D sensing systems. Key markets include Transportation (passenger vehicles, corporate / commercial / municipal fleets, rail systems, transportation infrastructure), Mapping and Surveying (mobile and aerial surveying, archaeology), Security, and Industrial applications (manufacturing, logistics, warehouse automation, robotics, construction / agriculture / mining vehicles).

Quanergy delivers robust and intelligent real-time 3D sensing solutions that work day and night, rain or shine, while performing object detection, tracking, identification, and classification. In the automotive space, affordable LiDAR sensors enable broad deployment of advanced driver assistance systems (ADAS) and automated driving systems – 80% of transportation accidents are avoidable with this technology, and Quanergy is bringing it to the masses. Quanergy's leadership in such a critical domain as the automated vehicle industry makes it a valuable partner in the Smart City Initiative.

Quanergy has global partners and customers in key markets. Most of the names of our partners and customers are confidential at this point; however, public partners include Mercedes-Benz, Hyundai-Kia, Renault-Nissan, and Delphi Automotive.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Quanergy Systems strongly supports this project and looks forward to partnering with the City and County of Denver and other project partners in this exciting endeavor.

Sincerely,

Dr. Louay Eldada, CEO
Quanergy Systems, Inc.



reVision, Inc.
Reengineering & Technology for a New Vision
1332 East 22nd Avenue | Denver, Colorado | 80205

January 25, 2016

RE: reVision's Support for Denver's Smart City Challenge Grant Application

Dear Mr. Secretary:

I am writing you to demonstrate reVision's support for the City and County of Denver's United States Department of Transportation (USDOT) Smart City Challenge grant application. The City & County of Denver is an innovative community both in terms of our legislative policies and our commitment to cutting edge technologies. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

As an economic partner, a locally owned and Denver-headquartered technology consulting firm, and constituent in Denver's great community, we are honored to partner with Mayor Hancock, his innovative staff, and the diverse partners they have assembled to submit and support this application. reVision is proud to provide Denver and the partners joined in this application some of our core IT capabilities and services that include(s): data architecture, IT infrastructure, data governance & modeling, analytics and data visualization tools & training. Our cyber-security practice ensures delivery of BI (Business Intelligence) in a safe, secure manner. Additionally, we are prepared to support CCD leadership with detailed governance planning, strategic planning, IT service management, IT program management to support the delivery of BI through the lifecycle of this grant.

Smart Cities are the future of the modern city and reVision is dedicated to providing our technical knowledge, insight, research capabilities related to vehicle, micro-grid, smart-grid, and battery technology efforts to this grant endeavor. reVision also recognizes the need to provide this future Smart City in a safe manner that protects citizen and business data. Our experience designing, implementing, and maintaining BI infrastructures, analytics engines, reporting environments, and data visualization tools will benefit our leadership to plan, achieve, and track measureable improvements in safety, mobility, and addressing climate change as part of the Smart City Challenge grant.

reVision strongly supports this project and looks forward to partnering with the City & County of Denver and our fellow project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Scotty Martin".

Scotty Martin, Senior Vice President

reVision, Inc.
Phone – 303.669.6866
Email – scotty.martin@revisioninc.com



United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 29, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I/we write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies. In addition, Denver's dedication to implementing both connected vehicle technology while building an autonomous vehicle foundation will lay the groundwork for a technologically-based transformation of transportation in Denver.

Smart cities are the future of the modern city and TomTom is dedicated to providing our technical knowledge, insight, and research capabilities related to mapping for Highly Automated Driving (HAD), traffic, and safety technology efforts to this grant endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. TomTom strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink that reads "NDCohn".

Nick Cohn
TomTom



David Cummins
Senior Vice President

Xerox State & Local Solutions, Inc.
12410 Milestone Center Dr.
Germantown, MD 20876

David.Cummins@Xerox.com
tel 301-807-5775

February 4th, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Xerox will provide specific resources through PARC and XRX research science expertise, proposal writers, and over thirty years of mobility, transportation, and parking expertise. Xerox is dedicated to providing our technical knowledge, insight, research capabilities and graphic arts support related to our mobility marketplace, parking, merge, transportation, and big data platforms for any efforts to support this grant endeavor.]

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Xerox strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in blue ink, appearing to read "D.Cummins", with a stylized flourish at the end.

David Cummins

Senior Vice-President



WHERE REVOLUTIONS BEGIN



January 29, 2016

The Honorable Anthony Foxx
Secretary
United States Department of Transportation
1200 New Jersey Ave S.E.
Washington, D.C. 20590

Dear Secretary Foxx:

I am writing on behalf of 1776 Inc., PBC (hereafter '1776') to support the City and County of Denver's Smart City Challenge application. 1776 is a national incubator and seed fund that helps engineer the success of startups in highly regulated industries, including transportation and smart cities. The several thousand startups in our network have developed highly-scalable technologies that can quadruple the number of electric vehicles charged at one station, display customizable real-time transit information on screens at transportation hubs, allow drivers to find parking with the touch of a button and much more.

1776 is headquartered in Washington, D.C. in order to take advantage of the city's unique and combination of industry and regulatory experts, but our reach is national. We recruit the country's best startups to become a part of our network through our annual Challenge Cup competition, which allows startups to compete for over \$1 million in prizes. This year, the Challenge Cup is taking place in over fifty cities, including Denver.

As a result of the Challenge Cup and our growing global network, we work with hundreds of transportation and smart cities entrepreneurs each year and are uniquely positioned to connect Denver to the United States' best transportation and smart cities startups. Should Denver be the winner of the Smart City Challenge, 1776 could select the startups in its network that best fit the needs of Denver's plan and work with city officials to incorporate those startups' technologies into Denver's implementation.

The vision laid out in Denver's Smart City Challenge application is extremely startup friendly. The innovative ways in which Denver plans to deploy big data sharing, mobility on demand, vehicle electrification infrastructure and autonomous vehicles open up many new and exciting opportunities for startups in Denver and around the country. We particularly commend Denver's plan to build a data sharing platform that will integrate large streams of data from multiple agencies across the city and county. This project will create opportunities for startups operating ridesharing, bikesharing and wayfinding services.

1776's startups are ready to scale and looking for opportunities to do so. 1776 helps direct these startups towards growth opportunities that they might not find, such as opportunities stemming from the Smart City Challenge. Thus, should the Department select Denver as its Smart City Challenge champion, the Department would be supporting some of the country's most innovative small businesses and entrepreneurs and bringing them to a market they might otherwise overlook.

I urge that every consideration be given to the City and County of Denver's Smart City Challenge application, which the 1776 startup community strongly supports.

Sincerely,

A handwritten signature in black ink, appearing to read "David Zipper", with a stylized flourish at the end.

David Zipper
Managing Director, 1776 Inc., PBC



The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

February 2, 2016
RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

Conservation Colorado is the largest state-based environmental nonprofit organization in the state of Colorado. With over 8,000 members and offices throughout the state, including a staff presence of 31 in downtown Denver, we work to protect Colorado's environment and quality of life by mobilizing people and supporting conservation-minded policymakers.

On behalf of our members in Denver and the State of Colorado, I would like to express enthusiastic support for the City and County of Denver's Smart Cities Challenge grant application.

Global climate change is, in our view, the defining public policy issue of the day. We believe that smart, strategic, aggressive action is required to protect the well-being of the residents of Denver, our state, and the world. We are thrilled that the City of Denver is pursuing a Smart Cities grant that will help the entire Denver metro area address the environmental, public health and economic challenges posed by climate change.

The transportation sector is a leading source of greenhouse gas emissions in the United States and here in Colorado. We have taken notice and are impressed by the work that other leading cities in America have undertaken to improve vehicle charging capabilities and vehicle fleet electrification efforts and look forward to all Denver will do in this realm. A successful grant application will allow Denver to make important progress in reducing the climate impact of transportation.

We were pleased and impressed with Mayor Hancock's public commitment last December to cut greenhouse gas emissions 80% by 2050. It is through city policies and initiatives such as those set forth in their grant application that Denver will meet its ambitious and laudable goal.

Conservation Colorado is pleased to support Denver's grant application and we look forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

Pete Maysmith
Executive Director, Conservation Colorado



Date: January 11, 2016

Emily Hauber
Deputy Legislative Director, Office of the Mayor
City and County of Denver
1437 Bannock Street, Room 350
Denver, CO 80202

SAE International (SAE) is seeking participation in the U.S. Department of Transportation Beyond Traffic: The Smart City Challenge as a strategic partner to a city or local government in concert with other stakeholder groups such as universities needed to advance smart city solutions.

SAE International is interested in supporting Denver should you choose to participate in the USDOT Smart City Challenge. SAE can assist in developing proposals and has developed the attached Capability Statement to provide an overview of SAE's capabilities and experience in similar initiatives.

SAE is engaged in many of the vision elements for a smart city and will work closely with a city and local government and strategic partners to meet the project objectives within the specified schedule and milestones. The USDOT Smart City Challenge will require strong relationships and coordination between public sector infrastructure operators and private sector providers (e.g., public safety and emergency response community, transit agencies, suppliers, automakers, application providers, systems suppliers, commercial vehicles, etc.). SAE has a long history of bringing together key stakeholders such as these to work cooperatively to advance technologies.

Please feel free to forward this letter and SAE Capability Statement to city and or local governments for consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew Smart", written over a light blue horizontal line.

Andrew Smart
Director
SAE INTERNATIONAL

*"Society for Automotive Engineers" (SAE)
1000 North 17th Street
Warren, MI 48090-1300*

cc: Jack Pokrzywa
Keith Wilson
Bill Gouse

Transdev On Demand d/b/a Denver Yellow Cab
7500 E. 41st Ave.
Denver, CO 80216

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and Transdev On Demand – through our Denver Yellow Cab operation – is dedicated to providing our technical knowledge, insight, and data-gathering capabilities related to the technological and operational aspects of this endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Transdev On Demand and Denver Yellow Cab strongly support this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carl Allen', with a large, stylized 'C' at the beginning.

Carl Allen
Regional Vice President, Colorado
Transdev On Demand

The Honorable Anthony Foxx
Secretary
U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590

February 1, 2016

Dear Mr. Secretary:

Transportation for America (T4A) is pleased to support of the City and County of Denver's application for the United States Department of Transportation's (USDOT) Smart City Challenge grant. As the leading voice in advancing smart and home-grown transportation solutions that meet the future needs of communities nationwide, T4A works with local civic, business, elected and academic leaders to overcome the policy and regulatory challenges that impede these solutions.

Denver's application lays out a vision, which will help the entire Denver metro area reap the benefits of Smart City endeavors and further Denver's reputation for new and innovative ways of thinking. The application's attention to achieving the pressing economic, equity and environmental policy concerns faced by cities speaks volumes to Denver's commitment to improving the quality of life for all of the Denver metro areas residents and visitors. It's commitment to leveraging local, state and federal partners (including T4A) to align technology solutions like vehicle charging capabilities and vehicle electrification efforts speak volumes to the Denver's dedication to embracing electric vehicle technologies.

We commend USDOT for recognizing the need for a program like the Smart City Challenge and for its leadership on this important issue. Transportation for America is dedicated to providing our expertise and nationwide network of elected, business, civic and academic leaders to create and advocate for innovative policy and planning solutions that position communities as leaders in the smart transportation field. In addition, T4A stands ready to help Denver replicate their innovations nationwide through our extensive network of grasstops leaders and grassroots supporters.

This Smart City Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Transportation for America strongly supports this project and looks forward to partnering with the City and County of Denver and the other project partners in this exciting endeavor.

Sincerely,



James Corless, Director
Transportation for America



The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

February 2, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

Environmental Defense Fund is a nonprofit, nonpartisan organization of over 750,000 members that combines law, policy, science, and economics to find solutions to today's most pressing environmental problems. On behalf of our members in Denver and the State of Colorado, I would like to express enthusiastic support for the City and County of Denver's Smart Cities Challenge grant application.

If awarded, Denver's Smart Cities grant will help the entire Denver metro area address the environmental, public health and economic challenges posed by global climate change and demonstrate the power of innovation in solving complex problems.

The transportation sector is a leading source of greenhouse gas emissions in the United States and here in Colorado. Denver's grant application's attention to improving vehicle charging capabilities and vehicle electrification efforts will make important progress in reducing the climate impact of transportation within this important economic center.

Mayor Hancock and the City and County of Denver have demonstrated a serious commitment to addressing climate change through city policies and initiatives such as those set forth in their grant application. EDF enthusiastically supports Denver's grant application and we look forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

Dan Grossman
Rocky Mountain Regional Director



Tyco International
9 Roszel Road
Princeton, NJ 08540

January 26, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities play an important role in our future and Tyco International is dedicated to providing our technical knowledge, insight, research capabilities related to our work helping cities become safer, smarter and more livable. As an industry partner to this venture, Tyco International proposes to provide:

- Market-leading technical expertise in urban traffic control and intelligent transportation systems
- Advanced sensing and video expertise for data integration and transit optimization
- Expertise in transit focused smart city public/private partnerships utilizing big data analytics
- Access to Tyco fleet vehicles and our Denver area local employee base for pilot projects

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Tyco International strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to be "CB", with a stylized flourish extending from the bottom right.

Chris Brown
Vice President, Strategy
Tyco International

West Safety Services
1601 Dry Creek Dr.
Longmont, CO
80503

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap the benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and West Corporation is dedicated to providing our technical knowledge, insight, research capabilities related to the Emergency Aware ServicesSM (EAS) platform to improve safety and enhance mobility. EAS is an open, standards-based platform that overcomes the "silo effect" by securely connecting disparate data sources across multiple organizations (public and private), thus allowing for integration and interoperability. The end result is unsurpassed collaboration between and among citizens and public safety.

To that end, EAS:

- Collects large quantities of data/information from a range of sources
- Processes, analyzes and predicts using that information
- Disseminates the results and provides target information based on the predictions to enable informed decision-making by communities

The capabilities of a smart safety system moves Denver beyond the traditional reactive mode to a predictive and preemptive model to better protect people, property and environment.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. West Corporation strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,



Kevin Coyne
VP Product Marketing
West Corporation
www.west.com/safety-services/



AT&T Smart Cities
Matt Foreman
1025 Lenox Park Blvd NE
Atlanta, GA 30319

T +1.770.241.2361
matthew.foreman@att.com
att.com

February 2016

Dear Department of Transportation Smart City Challenge Review Committee,

AT&T is pleased to submit this letter of support to Denver, CO for inclusion in their application to the U.S. Department of Transportation Smart City Challenge. AT&T has a longstanding relationship with Denver and our connections across numerous departments uniquely position AT&T to execute complex projects for the city. AT&T has extensive experience in serving the US transportation market. Ultimately, a city's ability to realize the true potential of Smart Cities is driven by its skill in effectively using their connectivity resources and the information that comes from them. As a communications and Internet of Things (IoT) leader, AT&T has the experience and skills to assist Denver in its deployment of integrated Smart City solutions. Below are some key facts about AT&T:

- **Smart Cities:** Our dedicated Smart Cities team will play an impactful role in connecting the projected 50 billion connected devices by 2020. We have the resources, the networks, the platforms and the people with the best IoT experience to bring to life truly connected communities and cities – in transportation, utilities, infrastructure, public safety and citizen engagement.
- **Network:** AT&T owns its entire US network and data center technical infrastructure. This ownership ensures our products and services are delivered consistently, and has enabled AT&T to build an intelligent and robust network that covers nearly 310 million people in the US, with more than 100.4 petabytes of data traffic utilizing our network on an average business day.
- **Connectivity:** AT&T is the preeminent global telecommunications company. Our portfolio of connectivity solutions include everything needed for a dynamic Smart City deployment, including cellular, satellite, Wi-Fi, fiber, and more.
- **The Internet of Things:** AT&T has been investing in machine-to-machine technology for several years. As a result, we've become a leader in the IoT. Today we have more than 25 million connected devices on our network.
- **Connected Car (AT&T Drive):** AT&T has announced relationships with 10 major automotive OEMs to provide embedded solutions, resulting in AT&T connecting over 5.8 million vehicles on the road today. This uniquely positions AT&T to deliver compelling traffic management solutions and positions us to help in the deployment of next generation road safety service solutions.
- **Fleet Management:** AT&T's fleet management solutions combine real-time global tracking and vehicle telemetry with a wide variety of innovative, value-add services to save thousands, even millions, of dollars in unnecessary maintenance, fines, and insurance expenses. AT&T connects over 1.9M fleet vehicles today.
- **Big Data Analytics:** AT&T has extensive experience in big data analytics. Beginning with our security platforms, we have been analyzing and scrubbing large data sets from our backbone network for more than 12 years.
- **Security:** AT&T protects the largest network in the world and has the expertise to help customers prevent, detect, and respond to vulnerabilities.
- **AT&T's Innovation Leadership:** In 2015, Fortune named AT&T as the World's Most Admired Company in Telecom and number one in Innovation among telecoms. AT&T facilitates innovation through the AT&T Foundry, AT&T Labs, and The Innovation Pipeline.

A comprehensive proposal will require collaboration by multiple solution providers. A collaboration with AT&T Smart Cities extends beyond the capabilities of AT&T. For the purposes of the DoT Smart Cities Challenge, AT&T considers **Ericsson** and **IBM** as key strategic allies. Together with AT&T's additional vendors and relationships, we will be able to help Denver deliver and execute upon a comprehensive Smart City solution. A Smart City deployment led by AT&T, with assistance from Ericsson, IBM, and AT&T's other Smart City suppliers, inherently increases the repeatability of solution elements across the U.S., due to our longstanding city relationships, national network presence, and proven capabilities to execute complex projects.

Sincerely,

Matt Foreman

Matt Foreman
Market Development
Smart Cities, AT&T
matthew.foreman@att.com

Beverly Rider

Beverly Rider
Vice President
Enterprise IOT & Smart Cities, Ericsson
Beverly.rider@ericsson.com

Cate Richards

Cate Richards
North America Leader
Smart Cities, IBM
caterich1@us.ibm.com



February 1, 2016

Verizon
One Verizon Way
Basking Ridge, NJ 07920

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I am writing this letter in support of The City and County of Denver (the "City's") application to the United States Department of Transportation's (USDOT's) Smart City Challenge grant.

Verizon has long supported initiatives designed to strengthen cities by helping improve livability for constituents, sustainability with renewable resources and resiliency to major events. We have been providing condition-based monitoring solutions, the cornerstone of today's M2M and IoT products, to government and commercial partners for over 15 years with proven results.

Verizon has built a strong foundation of Smart Cities solutions to help you turn near real-time information into valuable decisions to help improve the efficiency and safety concerns of your city.

Verizon Smart Cities' solutions can help you:

- Engage people to improve and deliver services.
- Create more efficient and economical environments.
- Safeguard citizens, city personnel, data and infrastructures.
- Reduce traffic congestion and improve road safety.

All our solutions can integrate with Thing Space, our solution platform, to offer reporting, analytics and the ability to share actionable data across all data inputs through a robust set of customizable APIs. Our solutions can support and facilitate your diverse connectivity initiatives for buildings and venues, energy and utilities, government and transportation. And our Smart Cities experts can help you develop tailored plans to use natural resources more efficiently, improve public safety, increase non-tax revenue, easily engage residents and advance urban renewal efforts.

Verizon Intelligent Traffic Management solutions allow cities to better manage the flow of traffic, in addition to understanding how traffic is performing along roadways, collecting various types of data and analyzing against industry metrics. The solution can provide basic information such as travel times and origin/destination details, up to more complex details such as red light violations and adaptive signaling. Data can also assist urban planners to locate new facilities and transit hubs, or to reduce the number of stops and improve speeds along busy corridors. Data can be used to facilitate signal optimization, a proven method to reduce congestion, emissions and ultimately improve air quality.

Verizon Intelligent Lighting solutions can integrate, based on the City's needs, LED lighting, digital signage, audio, video and safety sensors to help reduce energy cost, outages and outage duration, along with improving public safety. Digital signage and audio features give municipalities the opportunity to generate non-tax revenue through media content delivery/advertising. From a public safety standpoint, these features can be used to improve smart transportation by providing way finding, traffic direction, civic information, alerts and announcements in case of emergencies (e.g., evacuation). Environmental sensors can trigger alerts based on light, sound and moisture level (e.g., icy road-condition announcements). All these benefits are applicable for lights on streets, parking lots, stadiums, universities, parks, healthcare systems, office campuses and transit stops.

Verizon Intelligent Video makes it possible to get eyes on-site, without investing significant time and resources on streaming video. Cameras record high-quality video, suitable for evidentiary purposes, while data is stored locally instead of streaming, on storage devices sized for short-term needs. Edge analytics, co-located with the camera, spot unusual or abnormal behaviors and trigger alerts to provide actionable information and a more efficient use of backhaul and long-term storage resources. Cameras can also be a valuable tool in public safety by providing insight into transportation infrastructure.

Verizon brings together all the assets to deliver results and be a trusted partner. As the provider of the nation's largest and most reliable 4G LTE network, our accolades do not stop there. Our MPLS network is considered the most connected wireline global infrastructure with more than 70% of internet traffic traversing our public IP network. Leveraging our expertise with Cybertrust, Verizon is a top-rated managed security services provider, per Gartner. Verizon offers FISMA compliant, and FedRamp certified, cloud solutions, meeting strict government requirements.

Our unique set of expertise in IoT, wireline and data security and wireless make Verizon a solid partner to enable The City and County of Denver to realize its Smart City goals, both now and in the future. We look forward to working with you and addressing the demographic and economic trends, as well as changes in technology, governance, and how our climate is affecting how people and goods travel. Please convey Verizon's support for the Smart City Challenge grant. If I can be of further assistance, feel free to contact me at (562) 237-1172.

Sincerely,



Daniel C Feldman

Director, Verizon Smart Cities
Product and New Business Innovation
Verizon

United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

January 29, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I am writing in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking.

BCycle is a bike share equipment and service provider based in Waterloo, WI. In 2010, BCycle partnered with Denver Bike Share and the City of Denver to install Denver B-cycle, the first large-scale public bike share system in the United States. In the six years of operation since its launch, Denver B-cycle has transformed the way residents and visitors get around Denver. The application's attention to improving coordination with the sharing economy and increasing mode share will reap benefits for residents and businesses alike as more people adopt a less car-dependent lifestyle while improving their personal health.

BCycle supports bike share systems in over forty US cities, and in the bike share industry, we are leading efforts to integrate bike share with transit and other forms of transportation, including car-share. Smart cities are the future of the modern city and BCycle is dedicated to ensuring benefits through the program benefit everyone in the city – including those in underserved communities. Already, Denver B-cycle has taken great efforts to expand bike share access to low-income communities, and participation in the Smart Cities Challenge could help extend the reach of these efforts, as well as better connect the existing bike share system with other forms of transportation.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. BCycle strongly supports this project and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read 'Brian Conger'.

Brian Conger
Director of Operations, BCycle LLC
bconger@bcycle.com

car2go N.A., LLC
2045 Curtis St.
Denver, CO 80205

January 25, 2016

RE: Denver's Smart Cities Challenge Grant Application

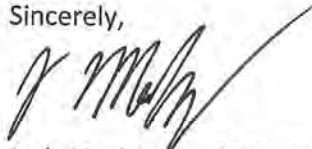
Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving mobility on demand, vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing new transportation technology and offerings.

As the largest car share company in the world, car2go can provide insight into all 4 initiatives of data sharing, mobility on demand, vehicle electrification, and autonomous vehicles. For Denver specifically, we have over 37,000 members utilizing our fleet of 350 vehicles to move across the City with quick access to parking at iconic venues and several RTD stations. car2go is a piece of the overall transportation infrastructure in Denver and we look to further the exploration for innovative ways to better serve the community.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. We at car2go strongly support this project and look forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Moskowitz", with a long, sweeping horizontal line extending to the right.

Josh Moskowitz, Regional Director
car2go N.A., LLC



January 26, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I am writing to support the City and County of Denver's Federal United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking.

Our organization is particularly excited about the transportation aggregator app that is part of this proposed project. As more and more transportation options become available to residents, employees, and visitors in the Denver metro area, it becomes increasingly valuable for people to have access to a user-friendly app at their finger tips to quickly and easily determine which transportation option is the best fit for them for any given trip. Transportation aggregator apps serve as a vital way to link all the mode and transportation options and maximize the investments that have already been made in our local transportation infrastructure such as public transit, car sharing, bike sharing, and ride sharing.

The application's attention to improving vehicle charging capabilities and vehicle electrification efforts also demonstrates the City's dedication to embracing vital electric vehicle technologies.

Smart cities are the future of the modern city and eGo CarShare is dedicated to providing our technical knowledge, insight, and experience related to carsharing, EV's, and multi-modal transportation options to this grant endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. eGo CarShare strongly supports this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in dark ink that reads 'Karen Worminghaus'.

Karen Worminghaus
Executive Director
eGo CarShare

eGo CarShare · 1536 Wynkoop St. Suite 101 Denver, CO 80202
www.carshare.org · 303.720.1185 · 501(c)(3) organization · EIN 84-1472528

eGo CarShare's mission is to provide and promote alternatives to individual car ownership, thereby reducing the environmental and social impacts associated with motor vehicle use.



Anthony R. Foxx, Secretary
U. S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

February 1, 2016

RE: Denver's Smart City Challenge Grant Application

Dear Mr. Secretary:

I write in enthusiastic support of the City and County of Denver's U.S. Department of Transportation (USDOT) Smart City Challenge grant application. The proposed plan will leverage cutting-edge transportation technologies to expand mobility for all, reduce congestion and emissions, and improve vehicle safety.

In particular, we commend Denver's attention to improving electric charging infrastructure and expanding electrification of the vehicle fleet. Should Denver be selected for the Smart City grant, Lyft is prepared to help accelerate the deployment and use of electric vehicles in the city through our rapidly growing driver community. As part of our recently-announced long-term partnership with General Motors, Lyft plans to use GM vehicle rental hubs as a way to distribute Chevrolet Bolts and other GM EVs to drivers on the Lyft platform, helping to decarbonize the miles traveled by our passengers. Lyft is also collaborating with experts at the Rocky Mountain Institute, a nationally renowned environmental policy institute based near Denver, on analyzing ways Lyft can expand EV use while achieving cost savings for drivers. Denver would be an outstanding testing ground for implementation of this concept.

In addition, we support Denver's proposal to implement connected vehicle technology while preparing for the arrival of fully automated vehicles. Lyft and GM have announced plans to co-develop, test, and deploy an on-demand network of shared automated vehicles over the next ten years, and we looking forward to working with the city to lay the groundwork for this network in Denver.

Finally, Denver's submission also wisely promotes seamless, multi-modal travel behavior by proposing to aggregate public transit with other shared modes through a smartphone app. By enabling people to easily plan, book, and pay for trips in one place, Denver's proposal would remove the frictions commonly associated with multi-modal travel. Taking transit in conjunction with bikeshare, carshare, or a rideshare like Lyft becomes a more appealing alternative to driving alone when the process is simplified via such an app integrating real-time information from the Lyft API. By giving people convenient and affordable alternatives to single occupant vehicles in this way, Denver could cut traffic, improve air quality, and reduce reliance and expenditure on personal vehicle ownership. This project would help extend the reach of transit through first-mile and last-mile solutions, improving mobility for historically underserved communities.

This Smart City Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Lyft strongly support this proposal and looks forward to partnering with the City & County of Denver and the other project partners in this exciting endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read "Emily Castor".

Emily Castor
Director of Transportation Policy
Lyft

Transdev On Demand d/b/a Denver Yellow Cab
7500 E. 41st Ave.
Denver, CO 80216

January 20, 2016

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

I write in support of the City and County of Denver's United States Department of Transportation (USDOT) Smart Cities Challenge grant application. The City & County of Denver's grant application will help the entire Denver metro area reap benefits from Smart Cities endeavors and further metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle charging capabilities and vehicle electrification efforts speak volumes to the City's dedication to embracing electric vehicle technologies.

Smart cities are the future of the modern city and Transdev On Demand – through our Denver Yellow Cab operation – is dedicated to providing our technical knowledge, insight, and data-gathering capabilities related to the technological and operational aspects of this endeavor.

This Smart Cities Challenge Grant will help metro Denver increase safety, improve mobility, and address climate change through innovative projects. Transdev On Demand and Denver Yellow Cab strongly support this project and looks forward to partnering with the City & County of Denver and other project partners in this endeavor.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carl Allen', with a large, stylized 'C' at the beginning.

Carl Allen
Regional Vice President, Colorado
Transdev On Demand

FEDERICO PEÑA
1555 Blake St., #200
Denver, CO 80202

January 22, 2016

The Honorable Anthony Foxx
Secretary of the U.S. Department of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

RE: Denver's Smart Cities Challenge Grant Application

Dear Mr. Secretary:

As a former Mayor of Denver who had to grapple with transportation issues, and as a former Secretary of the Department of Transportation who fully embraced technology in making our systems more efficient, I write in support of the City & County of Denver's Smart Cities Challenge grant application. The full build-out of our light rail system (including the new commuter rail that will connect Downtown Denver to Denver International Airport) together with massive redevelopment of I-70 in North Denver requires new ideas and smart strategies. Compounding our challenge is the extraordinary traffic resulting from our booming economy.

The City & County of Denver's grant application will help Denver's entire metro area reap benefits from Smart Cities endeavors and further Metro Denver's reputation for new and innovative ways of thinking. The application's attention to improving vehicle-charging capabilities and vehicle-electrification efforts reflects the City's dedication to embracing electric-vehicle technologies.

Smart cities are the future of the modern city. In support of this grand project, a number of local companies are dedicated to providing technical knowledge, insight, research capabilities related to vehicle, micro-grid, smart-grid, and battery technology efforts.

This Smart Cities Challenge Grant will help Metro Denver increase safety, improve mobility, and address climate change through innovative projects. I strongly support this project and look forward to advising and supporting the City & County of Denver and other project partners in this endeavor.

Sincerely,



Federico Peña
Senior Advisor
Vestar Capital Partners
Colorado Impact Fund

/crh

State Representative
CRISANTA DURAN
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2348
crisanta.duran.house@state.co.us



MAJORITY LEADER
Member:
Executive Committee of Legislative
Council
Legislative Council

COLORADO
HOUSE OF REPRESENTATIVES

January 26, 2016

STATE CAPITOL
DENVER
80203

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

Dear Honorable Anthony R. Foxx,

I Majority Leader Crisanta Duran am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant DTFH6116RA00002.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

Crisanta Duran
Colorado House Majority Leader

State Representative
ALEC GARNETT
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Office: 303-866-2911
Cell: 720-840-8132
alec.garnett.house@state.co.us



Member:
Business Affairs & Labor
Committee
Education Committee
Finance Committee

COLORADO
HOUSE OF REPRESENTATIVES
STATE CAPITOL
DENVER
80203

January 26, 2016

Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Mr. Foxx:

I am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant # DTFH6116RA00002, DFDA #20.200.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Alec Garnett', with a long, sweeping horizontal line extending to the right.

Alec Garnett
State Representative
House District 2

State Representative
SUSAN LONTINE
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2966
susan.lontine.house@state.co.us



Vice-Chair:
State, Veterans & Military
Affairs Committee
Member:
Health, Insurance &
Environment Committee

COLORADO
HOUSE OF REPRESENTATIVES
State Capitol
Denver
80203

February 1, 2016

Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Secretary Foxx:

As a Colorado State Representative, I am writing to express my strong support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant [Funding Opportunity # DTFH6116RA00002, DFDA Number 20.200 Highway Research & Development].

Denver's proposal seeks to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. This is a bold plan that, if implemented, would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

This application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Furthermore, this plan is easily exportable and implementable in cities across the nation.

Thus, Denver's Smart City Challenge Grant application has my enthusiastic endorsement.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Susan Lontine", is written over a light gray rectangular background.

Susan Lontine
State Representative
House District 1

State Representative
ELIZABETH (BETH) MCCANN
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2959
beth.mccann.house@state.co.us



Chair:
Health, Insurance, &
Environment Committee
Vice Chair:
Legal Services Committee
Member:
Appropriations Committee

COLORADO
HOUSE OF REPRESENTATIVES
STATE CAPITOL
DENVER
80203

January 27, 2016

Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Secretary Foxx:

I, Representative Beth McCann, am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant number **DTFH6116RA00002, DFDA Number 20.200 Highway Research & Development.**

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

Beth McCann
State Representative
House District 8

State Representative
DANIEL R. PABON
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2954
Home: 303-378-8658
E-mail: dan.pabon.house@state.co.us



SPEAKER PRO TEMPORE

Member:
Appropriations Committee
Finance Committee
Business Affairs & Labor
Committee

COLORADO HOUSE OF REPRESENTATIVES

February 1, 2016

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Secretary Foxx,

I, Representative Daniel Pabon, am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant [DTFH6116RA00002 DFDA #20.200].

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

State Representative
DANIEL R. PABON
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2954
Home: 303-378-8658
E-mail: dan.pabon.house@state.co.us



SPEAKER PRO TEMPORE

Member:
Appropriations Committee
Finance Committee
Business Affairs & Labor
Committee

COLORADO
HOUSE OF REPRESENTATIVES

A handwritten signature in cursive script that reads "Dan Pabon".

Daniel R. Pabon
Speaker Pro Tempore
Colorado House of Representatives
House District 4

State Representative
PAUL ROSENTHAL
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Office: 303-866-2910
Home: 720-529-9787
paul.rosenthal.house@state.co.us



Member:
Business Affairs & Labor
Committee
Local Government Committee

COLORADO
HOUSE OF REPRESENTATIVES
STATE CAPITOL
DENVER
80203

January 26, 2016

Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Mr. Foxx:

I am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant # DTFH6116RA00002, DFDA #20.200.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Rep. Paul Rosenthal". The signature is written in a cursive, flowing style.

Paul Rosenthal
State Representative
House District 9

State Representative
ANGELA WILLIAMS
Colorado State Capitol
200 East Colfax Avenue, Room 307
Denver, Colorado 80203
Capitol: 303-866-2909
Email: angela.williams.house@state.co.us



MAJORITY CAUCUS CHAIR

Chair:
Business Affairs & Labor
Committee
Member:
Legislative Council Committee

COLORADO
HOUSE OF REPRESENTATIVES
State Capitol
Denver
80203

February 1, 2016
The Honorable Anthony R. Foxx
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

Dear Mr. Foxx,

I, State Representative Angela Williams, am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant DTHFH6116RA00002.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

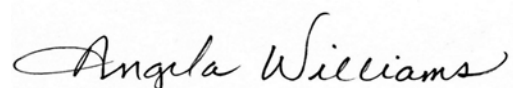
Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Angela Williams". The signature is written in a cursive style with a large, stylized 'A' and 'W'.

Angela Williams
State Representative
District 7



**SENATE
STATE OF COLORADO
DENVER**

January 25, 2016

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant
Funding Opportunity Number DTFH6116RA00002, DFDA Number 20.200

Dear Mr. Foxx,

I am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant Funding Opportunity Number DTFH6116RA00002, DFDA Number 20.200.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

Senator Irene Aguilar
Senate District 32



MICHAEL JOHNSTON**State Senator**

200 E. Colfax Avenue
Denver, Colorado 80203
Capitol: 303-866-4864
FAX: 303-866-4543
Email: mike@mikejohnston.org
Senate District 33

Senate Chamber State of Colorado

COMMITTEES

Member: Finance Committee

Member: Education Committee

January 29, 2016

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Honorable Anthony R. Foxx,

I, Micheal Johnston, am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant DTFH6116RA00002.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

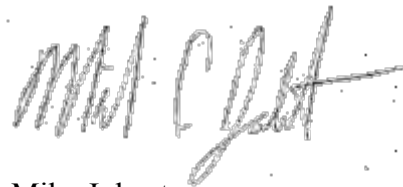
Denver's application is the product of a broad coalition of local, regional and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read "Mike Johnston", with a stylized flourish at the end.

Mike Johnston
Colorado State Senator
District 33 – Denver

PAT STEADMAN

STATE SENATOR
SENATE DISTRICT 31
200 E. COLFAX AVENUE
DENVER, COLORADO 80203
CAPITOL: 303-866-4861

E-mail:sen.steadman@gmail.com



COMMITTEES

JOINT BUDGET COMMITTEE

LEGAL SERVICES COMMITTEE

APPROPRIATIONS

Senate Chamber
State of Colorado
Denver

1/26/16

The Honorable Anthony R. Foxx
1200 New Jersey Avenue SE, 9th Floor
Washington, DC 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant

Dear Honorable Anthony Foxx,

I am writing to express my support for the City and County of Denver's pursuit of the U.S. Department of Transportation Smart City Challenge grant #DTFH6116RA0002.

I have received the City's proposal and believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is an innovation, energy, technology and transportation leader. Time and time again, Denver has proven its ability to creatively solve challenges, forge regional partnerships and prepare its residents and businesses for the future. This grant application embodies the very best of those qualities.

Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. If funded, Denver's plan would improve mobility, safety and climate by focusing on four project areas: Data Integration & Engagement; Autonomous Vehicle Foundation; Multi-Modal Integration and Electrification.

What makes this application so extraordinary is that Denver and its partners have the talent, the expertise and the courage to set a new standard for transportation in the digital age. Denver's plan is easily exportable and implementable in cities across the nation.

I enthusiastically support Denver's Smart City Challenge Grant application. Without question, Denver has prepared a winning application.

Thank you for your consideration.

Sincerely,

Sincerely,


Pat Steadman
State Senator, District 31

Congress of the United States
Washington, DC 20515

February 3, 2016

The Honorable Anthony R. Foxx
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590-9898

RE: City and County of Denver Application, Smart City Challenge Grant [DTFH6116RA000002]

Dear Secretary Foxx:

We write to ask that you give full and fair consideration for the City and County of Denver's application for the U.S. Department of Transportation Smart City Challenge grant.

We believe Denver is the perfect candidate for this grant. As the anchor of the Rocky Mountain West, Denver is a leader in innovation, energy, technology, and transportation. Denver has proven its ability to creatively solve challenges, forge regional partnerships, and prepare its residents and businesses for the future. Their grant application embodies the very best of these qualities.

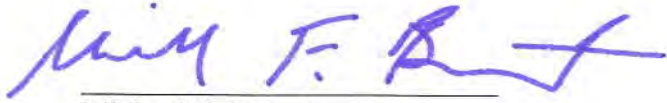
Denver's proposal is a bold plan to integrate emerging technologies, data-delivery applications, and advanced information systems with existing infrastructure to create a multi-modal transportation network for the future. The Smart City grant would enable Denver to improve mobility, increase safety, and reduce emissions by focusing on four project areas: Data Integration & Engagement, Autonomous Vehicle Foundation, Multi-Modal Integration, and Electrification.

Denver's application is the product of a broad coalition of local, regional, and state partners from both the public and private sectors. Partners include the Colorado Department of Transportation, Regional Transportation District, Denver Regional Council of Governments and private-sector entities such as Panasonic Enterprise Solutions Co., Xerox Corporation and the Rocky Mountain Institute.

Denver and its partners have the ability to set a new standard for transportation in the digital age. More significantly, we believe Denver's proposal could set the standard for transportation infrastructure in cities across the nation.

Thank you in advance for your consideration.

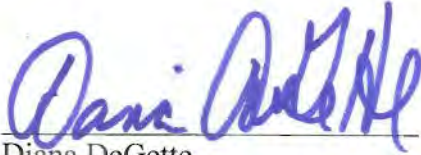
Sincerely,

A handwritten signature in blue ink, appearing to read "Michael F. Bennet", written over a horizontal line.

Michael F. Bennet
U.S. Senator

A handwritten signature in blue ink, appearing to read "Cory Gardner", written over a horizontal line.

Cory Gardner
U.S. Senator

A handwritten signature in blue ink, appearing to read "Diana DeGette", written over a horizontal line.

Diana DeGette
Member of Congress