

*Dear Urbanists, Technologists, Entrepreneurs and Visionaries,*

Over the last five years, we have met with and worked with many of you to explore and pilot “smart city” and “internet of things” technologies in Boston. Over that time, this field has matured as we progress from cool concepts to meaningful in-the-ground projects.

Now, we want to take the next step.

This winter, we are updating our strategy for deploying smart, connected technology in the public right of way. We are identifying (1) which improved services can be delivered with (2) what smart technology that is deployed on (3) which City assets, (4) funded by what business models.

Building this strategy starts by having a conversation with you.

We invite you to respond to this Request for Information. It will help us develop our strategy and future investment plans. To be very clear, your participation -- or lack thereof -- in this does not help or hurt your chances of partnering with us in the future.

We value your input, however; and we welcome your response. If you have any questions, please feel free to contact Jackie Lender, 617 635 0053 or [jacqueline.lender@boston.gov](mailto:jacqueline.lender@boston.gov).

Sincerely,

*The City of Boston*



## OUR GOALS

There is no shortage of possibilities in the smart and connected world. Here, however, are some of the areas we are most focused on right now:

1. *Increase Digital Access & Equity*  
We want to help more people more easily connect with the digital world by doing things such as providing ubiquitous, high quality public wi-fi.
2. *Improve the Flow of People Through Our City*  
We want to reduce the reliance on single-occupancy vehicles, increase the safety of walking and biking and enhance the connections to the wealth of opportunities in this region.
3. *Create Accessible, Practical and Delightful Public Spaces and 3rd Spaces*  
We want to build spaces that work for people, that provide good way-finding, and that are vibrant places for people to come together.
4. *Deliver Exceptional City Services*  
We want to deliver the basics better than anyone, from picking up trash to plowing snow to keeping our streets well lit.
5. *Expand Constituent Engagement*  
We want to engage our residents and visitors on our streets, providing timely information when needed, connecting people with services in new ways, and getting good feedback on how our City can be even better.
6. *Spark Business Growth*  
We want to put in place infrastructure that helps new and existing businesses expand services and reach new customers.
7. *Build A Platform for Learning*  
We want to establish a network that helps rapidly design, deployment and improve sensors that deliver civic value.

Across all seven of these goals is the overarching interest in delivering *public value*. We want to hear from you how we can do just that. Consider them, but don't be limited by our goals.

## **OUR ASSETS:**

We have tens of [thousands of assets](#) in the public right of way that could potentially become connected and smart.

Some of those assets are both easier to access and a higher focus for us in our exploration. Those are described in Appendix C and include things like street lights and fire alarm boxes.

Some are harder to access, fewer in number or are less of a focus for us. Those are described in Appendix D and include things like parking meters and benches.

## **OUR STREETS:**

As we think about adding devices to our streets and sidewalks, please know that we consider our streets and sidewalks a precious asset. Our residents tend to like them clean, uncluttered, and in good repair, and our team works incredibly hard to make them that way.

With our streets and sidewalks covering, however, roughly 9 of Boston's 48 square miles, there is some space to use, especially for those projects that add to the beauty and utility of the public right of way, without reducing individual privacy or increasing commercialization.

## **OUR PERSPECTIVE:**

A quick note about us: we pride ourselves in pushing the envelope to improve constituents' lives; and, we partner and invest accordingly. We have a globally replicated civic innovation group; we have teams creating cutting edge digital tools and data analyses; we are a leader in shaping autonomous vehicle policies for cities.

And, we are also skeptics about much of the current "smart city" rhetoric. You can read more on this in our [Smart City Playbook](#).

Now, while we may be skeptical about some of the rhetoric, we are - like you - very bullish about the potential. We want to be clear about this because we want you to understand your audience. We are not looking for pitches that oversell products; we are looking for partners who have good ideas on how to solve hard problems. Please respond in this spirit.

## **OUR RESOURCES:**

As a city, our budget is constrained. Moreover, it's challenging to fund new initiatives when the return is not clear and the civic value is undefined. We're open to public/private partnerships, and interesting, new ways to fund infrastructure. We also recognize that alternative revenue streams have tradeoffs (eg. outdoor advertising impacts the public realm). Let us know the strategies you are proposing as well as any tradeoffs you see and how you would mitigate those tradeoffs.

**YOUR MOVE:**

As we said at the start, this next step starts with you! We want to create a thriving, 21st century city for all, and we can only get there with partners. These sorts of collaborations will enable us to explore how to best turn data, design and tech into *public value*. So, we want to hear your ideas on how to do this.

Given all the various resources and assets we have at street-level in Boston, let us know how you would re-design, augment or replace to create the next generation streetscape. Tell us if you are looking to test or ready to scale.

Please no more than 10 typed pages; we will allow up to 5 additional pages for illustrations, diagrams and photographs. If you have multiple ideas, we will accept multiple submissions.

Appendix A outlines the questions we have, and Appendix B outlines the timeline and process. Appendix E contains important information you should know.

## APPENDIX A: YOUR RESPONSE

Any response to this RFI should be no longer than 10 pages. A response may include, but is not limited to, the following items listed below:

### *Project Overview*

Please describe the idea and the value it creates. Provide designs that help us understand how it would work in the public right of way. Note examples of where this idea has already been implemented - if it has been - and what the results have been. Furthermore, please detail the scale and scope of your project; let us know if the project is in beta, or has already been rolled out for deployment.

### *Stage of Development*

Let us know what stage of development your idea is. Is this a new idea that has been tried before? Is this a product in the lab that you want to pilot on a block? Has this been piloted and you want to take it to scale? Has it been taken to scale elsewhere and you want to bring it to Boston?

### *Deployment Plan*

Please let us know what assets or infrastructure this technology would need. Tell us if you think there are areas of the city this would work particularly well in and why.

### *Technical Specifications*

Provide technical specifications for the project, including power and communication technology. Describe how data ownership, security, and privacy is addressed.

### *Business Model*

If one exists, describe any business model for funding this idea including any commercial services offered, other revenue generating mechanisms, or partner vendors. If there is no business plan, please help us understand the level of resources your idea would take to pilot or scale. In either case, please provide a general timetable for design and construction.

### *Evaluation*

Please provide an evaluation of your ideas strengths and weaknesses. Describe how you could work with researchers and universities to critically analyze the data you produce and the civic value of the project.

### *Legal Framework*

If applicable, please address how the proposal fits into the current legal and regulatory parameters, and what changes might better facilitate the project. If your project involves electronic signage, describe how your proposal will comply with electronic signage requirements that can be found in the Google Folder [here](#).

## APPENDIX B: TIMELINE & PROCESS

### *Timeline for Submission*

12/07/16	The RFI will be made available
12/31/16	Questions on the RFI must be submitted to jacqueline.lender@boston.gov
1/15/16	The City will post a consolidated Q&A, if needed, at <a href="http://boston.gov/procurement">boston.gov/procurement</a>
1/29/17	Submissions due to jacqueline.lender@boston.gov

### *Timeline for Follow Up*

02/13/17	The City may request for you to come in for an interview
02/18/17	The City will publicly post next steps

## APPENDIX C: PRIORITY ASSETS

Do not contact any departments directly; email Jackie Lender at [jacqueline.lender@boston.gov](mailto:jacqueline.lender@boston.gov)

### 1. Streetlights

Boston's street lights can be broken into three main parts: the LED light bulb, the pole and, if applicable, the telecommunications equipment. The City of Boston has retrofitted approximately 49,000 of the 64,000 street lights with LED bulbs. In addition to lighting the way, street light poles can be used to affix technology such as DAS and small cells, public wi-fi access points, cameras, sensors, and more. Between [telecom companies and neutral hosts](#) there are more than 4 major players in this ecosystem: we expect this number to grow. More information can be found [here](#).

### 2. Shadow Conduit

The City of Boston has created a publicly available map which displays city-owned fiber assets. This map displays the location of 'shadow conduit' and City-owned fiber that might be utilized by public and private entities wishing to create fiber links. Boston wants to make its broadband infrastructure assets publicly known and accessible to further our vision for a competitive broadband marketplace in which fast, affordable, and reliable broadband service is available to all. The fiber asset map is available to the public on the the City's [BostonMaps website](#).

### 3. Trash Barrels

Residential trash pickup is managed by PWD's Waste Reduction Division, but executed by contract vehicles and personnel. Public trash barrels are maintained by PWD's Highway Division, Litter Baskets Section, and are serviced by City vehicles and personnel. At this point in time, the City purchases barrels from Big Belly and Victor Stanley. Vector Media manages advertisements on the Big Belly barrels: more information can be found [here](#) (this link will take you to a Google Folder, wherein the actual documents are stored; if the link does not work, email [jacqueline.lender@boston.gov](mailto:jacqueline.lender@boston.gov)).

### 4. Fireboxes

More information about Boston's fireboxes can be found [here](#). Any amendments to fire hydrants will need to go through Boston Fire Department and BWSC. The fireboxes operate on a telegraph based system and are located intermittently on poles throughout the city.

## APPENDIX D: SECONDARY ASSETS

Do not contact any departments directly; email Jackie Lender at [jacqueline.lender@boston.gov](mailto:jacqueline.lender@boston.gov)

### 1. *Parking Meters*

The Boston Transportation Department is responsible for the upkeep and placement of parking meters. The City is trending towards replacing individual parking meters with multi-space meters that cover a larger parking area.

### 2. *Traffic Signal Boxes and Accompanying Structures*

There are two main components to the traffic signal structures: (1) the physical poles and overhead structures and (2) the traffic signal control boxes. Changing the equipment inside of the traffic signal box necessitates approval by the Commonwealth of Massachusetts. For more information about the physical attributes of the posts, [click here](#). For other technical specifications, [click here](#).

### 3. *Manholes and handholes*

Manholes, and their smaller counterpart, handholes, are comprised of (1) the above ground cover and (2) the underground structure that houses cables and pipes. Moreover, to work with, or affix a structure to a manhole or handhole, the utility owner may need to grant permission. The City of Boston may also need to permit an amended grant on location.

### 4. *Sewer Drains and Grates*

Any attachments or changes to sewer drains and grates will need to go through Boston Water and Sewer Commission. An ArcGIS map of sewer drains and grates does exist, but can only be accessed in person at the Boston Water and Sewer Commission headquarters. For a public map, [click here](#).

### 5. *Kiosks, Shelters, Benches*

The Property Management Department maintains a small number of benches throughout the City of Boston. Benches located in bus shelters in the city are owned and maintained by JCDecaux under an advertising agreement.

### 4. *Fire Hydrants*

Any attachments or changes to fire hydrants will need to go through the Boston Fire Department and BWSC. Specifications on fire hydrants in Boston can be found [here](#).

Boston Water and Sewer Commission oversees all of the hydrants on public property. City hydrants, in general, have black and yellow tops; city hydrants downtown are high pressure and are denoted with black and red tops. The existing color scheme cannot be changed.



## 6. City Buildings and Properties

There are many City properties in Boston that fall under the purview of Property Management. These locations include, but are not limited to, properties and buildings owned by Boston Public Schools, Boston Public Libraries, the Boston Fire Department, the Boston Police Department, Boston Public Works' Lots/Garages, the Parks department, field houses, maintenance yards, Boston Centers for Youth and Family (BCYF) and the Department of Neighborhood Development properties.

## 7. BPDA and EDIC Owned Properties

Combined, [these](#) 18 city owned properties have a total square footage of 3.1 M sq ft. To further explore the potential of working with a BRA owned property, read more [here](#).

Please note that the BPDA also has access to 27 Fleet Hub Vehicles that can be reserved for use by BPDA staff under the attached Memorandum of Agreement ("[MOA](#)") with the COB Central Fleet Division. This MOA also provides for the maintenance and repair of the BPDA Fleet Vehicles, as well as provisioning for gas/diesel, car washing, towing and the like.

## 8. Boston Public Health Commission

BPHC has properties throughout the city: some are owned by BPHC (ex. Long Island), while others are leases (1010 Mass Ave). Furthermore some BPHC properties have spaces in them to provide services, such as School Based Health Centers. A list of BPHC properties can be found [here](#).

BPHC has 73 non-emergency vehicles including passenger vans, pickup trucks, dump trucks, trailers, and passenger cars. They also have 126 emergency vehicles for EMS including ambulances, SUVs, trailers, and Gators; additionally they have a bicycle unit for EMS.

## 10. Boston Water and Sewer Commission

BWSC is in charge of its own manholes, catch basins, water valve covers within the roadways, etc. They also oversee 1500 miles of sewers and drains. Furthermore, they operate a wireless collector system throughout the city for collecting meter data. BWSC uses AVL on all of their vehicles.

## 11. Non Emergency Fleet Vehicles

The City of Boston has ~1,027 vehicles in its non-emergency vehicle fleet. The types of vehicles range from sedans, pickup trucks, vans, dump trucks, tow trucks, SUVs, tow behind trailers, wood chippers, street sweepers, etc. Moreover, the City of Boston performs the majority of vehicle maintenance in-house. The City also has its own fuel tanks to service diesel, gas, etc.

Below is a breakdown of non-emergency vehicles by department:

Assessing: 2  
Boston Center for Youth and Families: 43  
Boston Public Schools Administrative Vehicles: 114  
Boston Transportation Department: 160  
Department of Neighborhood Development: 2  
Elderly Commission: 31  
Elections Department: 9  
Inspectional Services Department: 38  
Law Department: 1  
Mayor's Office: 12  
Office of Neighborhood Services: 1  
Office of the Treasury: 1  
Parks Department: 171  
Property Management: 41  
Public Facilities Department: 6  
Public Works Department: 395

12. *Boston Public Schools' Busses*

The fleet of 752 buses is owned by the School Department/City of Boston and operated under contract with Transdev, North America Inc. The Department currently schedules 652 vehicles to operate on a daily basis. An additional 100 are used for spare busses, athletic trips and extracurricular activities. The school bus fleet will travel approximately 8.5 million miles in FY16 and perform over 600,000 school trips providing over 16.6 million pupil trips. Each bus already has cameras to monitor the inside of the vehicles and GPS to navigate.

13. *Emergency Fleet Vehicles*

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**Boston Police Department:**

The Boston Police Department has a fleet of approximately 1,100 vehicles comprised of cars, boats, trailers, motorcycles, etc. All repairs are done in-house, including warranty repairs.

**Boston Fire Department:**

The Boston Fire Department has a fleet of approximately 145 vehicles comprised of trucks, engines, ladders, towers, and fire prevention and investigation cars.

\*\*If your idea does not fit into the scope of the assets we mentioned, please fill out this [Google Form](#) to let us know what we missed.

## **APPENDIX E**

This RFI is for information and planning purposes only and shall not be construed as a solicitation or as an obligation on the part of the City to issue any competitive procurement or award a contract.

The City will not award a contract on the basis of responses to this RFI nor otherwise pay for the preparation of any information submitted, for any vendor presentation, or the City's use of such information.

All responses to this RFI will be public record under the Massachusetts' Public Records Law, Mass. Gen. L. ch. 66 s. 10, regardless of confidentiality notices to the contrary.