



City of Boston Public Works

Request for Information

Sidewalk Repair Materials, Technologies, and Techniques
July 3, 2018



City of Boston
Mayor Martin J. Walsh

THE MAYOR'S OFFICE OF
**NEW URBAN
MECHANICS** 

Dear Thinkers and Doers,

We love our sidewalks here in Boston. They are essential to the well-being of our residents, and make up the fabric of our city by helping to connect people and neighborhoods. We want to do everything we can to continually improve them so that Boston continues to be America's Walking City. However, we've got some big challenges in doing so.

The primary challenge is that there are a lot of areas that require replacements and repairs, and conditions vary from neighborhood to neighborhood. While we spend approximately \$11M annually on maintenance and improvements, our sidewalks span nearly 1,600 miles, and it would cost much more than that to eliminate our repair backlog across the city using our current approach.

Another challenge is that we rely on requests through our 311 constituent services system to determine replacement and repair locations. Some Boston neighborhoods use 311 up to twice as frequently as others, which means those areas are sometimes being prioritized for repairs even though they aren't necessarily the areas with the worst sidewalk conditions.

To address these issues, we are designing a new approach to sidewalk replacements and repairs called *StreetCaster*. Through the program, the City will strengthen networks of sidewalks in areas that need them most, while simultaneously improving the way that resident requests for repairs through the 311 system are addressed.

In order to meet the need of responding quickly and effectively to sidewalk repair requests, we would like to learn more about materials, technologies, and techniques that we may not currently be using. That's where you come in! Please share your ideas for using materials, technologies, and techniques for sidewalk repairs that may help us improve the way we currently work. These ideas may be approaches that your organization is currently using, has been researching, or is just starting to think about.

Sincerely,
The City of Boston Public Works Department

[Goals for New Materials, Technologies, and Techniques]

We hope that by using creative/innovative materials, technologies, and techniques, we will be able to provide repairs that are long-lasting, and do those repairs efficiently. This will allow us to focus more of our efforts on strengthening our networks of sidewalks, while still doing the repairs necessary to keep our sidewalks safe and our residents happy. When doing sidewalk repairs, here are the things that we care about most:

1. Safety
2. Quality and Durability
3. Aesthetics
4. Cost
5. Time and Efficiency

[Boston Sidewalk Conditions]

Sidewalk conditions vary throughout the city (see map in Appendix E), but most neighborhoods face similar challenges with regards to types of sidewalk issues. We have compiled a list of those issues below, which was excerpted (with minor additions and edits) from the U.S Department of Transportation Federal Highway Administration's *Designing Sidewalks and Trails for Access* guide. We hope that the materials, technologies, and techniques that you recommend can address some or all of these issues, on sidewalks that are made of concrete, brick, and/or asphalt.

1. *Step separation*
 - *A vertical displacement of .25 inches or greater at any point on the walkway that could cause pedestrians to trip or prevent the wheels of a wheelchair or stroller from rolling smoothly;*
2. *Cracked concrete*
 - *Holes and rough spots ranging from hairline cracks to indentations wider than .25 inches;*
3. *Spalled areas*
 - *Fragments of concrete or other building material detached from larger structures;*
4. *Settled areas that trap water*
 - *Sidewalk segments with depressions, reverse cross slopes, or other indentations that make the sidewalk path lower than the curb. These depressions trap silt and water on the sidewalk and reduce the slip resistant nature of the surface;*
5. *Tree heaves*

- Roots from trees growing in adjacent landscaping that cause the walkway surface to buckle and crack;
6. Displaced bricks
- Bricks that are no longer set, or have crumbled.

(Source:

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks210.cfm)

[Our Perspective and Plans]

As mentioned in the introductory letter, this Request for Information (RFI) is being issued as part of the City's StreetCaster program, which is described in more detail here:

The City of Boston Public Works Department (PWD) and City of Boston Mayor's Office of New Urban Mechanics (MONUM) are working together, and in collaboration with other City agencies and community partners, to develop a new program called StreetCaster, which will be a more equitable approach to allocating resources for infrastructure, starting with sidewalk replacements and repairs. Through the program, the City will strengthen our networks of sidewalks in areas that need them most, while simultaneously improving the way that resident requests for repairs through the City's 311 system are addressed.

The program is currently a finalist in the Bloomberg Philanthropies 2018 Mayors Challenge, and the program team is prototyping and testing aspects of the program throughout the spring and summer of 2018. The workstreams include: How We Plan Infrastructure Work; How We Do Infrastructure Work; and Resident Experience and Communication.

We think there is an opportunity to improve the way that needed repairs are addressed through testing the innovative solutions that you recommend. We are excited about this program and the ways that it can meaningfully benefit Boston residents, and look forward to hearing your responses!

[Appendix A: Format for Responses]

Introduce Yourself and Your Ideas (up to 2 pages)

Please tell us more about your organization and why you are submitting a proposal.

Proposal for New Materials, Technologies, and Techniques (up to 4 pages, with images)

Please provide detailed information on the materials, technologies, and techniques that you think may help the City of Boston, explaining why you think your approach is novel and effective.

All responses should address the following topics:

1. Safety
2. Quality and Durability
3. Aesthetics
4. Cost
5. Time and Efficiency

The most compelling responses will include the following:

1. Opportunities for use and barriers to use
2. Examples of where this approach has been used successfully

[Appendix B: Timeline and Process]

Submission

6/25/18: RFI released

7/2/18, 12 pm: Submissions due to joe.christo@boston.gov

7/2/18: Deadline extended

7/16/18: Submissions due to joe.christo@boston.gov

Follow Up

7/9/18: City may request follow-up phone calls for further information

7/16/18: City will be holding a Sidewalk Fair, and some respondents and other organizations may be asked to conduct demos

[Appendix C: Contact Info and Overview of Departments Involved in this RFI]

Please do not contact any departments directly with questions. Instead, email joe.christo@boston.gov.

Public Works

We ensure that Boston's streets, sidewalks, and bridges are safe, clean, and attractive.

Our department provides core basic services essential to neighborhood quality of life. We direct the general construction, maintenance, and cleaning of approximately 802 miles of roadways throughout the City. We operate two major drawbridges, maintain 68,055 City-owned street lights, and supervise contracts for the removal and disposal of approximately 260,000 tons of solid waste. We also operate Boston's recycling program with an annual diversion of approximately 44,000 tons.

Mayor's Office of New Urban Mechanics

The Mayor's Office of New Urban Mechanics was formed in 2010 as one of the first municipal innovation offices in the world. Our research and design projects tackle a range of topics – from civic engagement to city infrastructure to education.

As the City's civic research and development team, we pilot experiments that aim to improve the quality of life for Boston's residents.

[Appendix D: Context]

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.

By submitting, applicant authorizes the City of Boston to publicize, refer to, and use your application as it sees fit.

Boston Sidewalk Conditions

