

## **Future of Mobility Study Request for Proposals**

### **Background**

Planning for the future of mobility is essential to planning the future of Cambridge. Thanks to new travel options and rapidly evolving technology, the way we get around our city and the region is changing very quickly. Where bike lanes were once occupied exclusively by people on bikes, they are now home to people riding electric scooters, motorized skateboards, and new self-balancing micromobility devices, with new types of devices being introduced regularly. Autonomous vehicles are being tested locally and around the world. Shared transportation and bike share systems are enticing people who want more flexible on-demand services to shift from other modes. The use of electric power is also changing mobility options and some entities have created sunset targets for diesel or gas-powered vehicles. Replacing fossil fuels in motorized vehicles is an effective emissions reduction strategy, while electrification of non-motorized vehicles, like scooters and skateboards, increases their range and convenience.

There are many reports available that contemplate the Future of Mobility. They tell us that we can expect transportation to be automated, electric, shared, and to include new micromobility options like scooters, with an increase in goods movement. Whether it's called Mobility as a Service (MaaS) or Mobility on Demand (MOD), it's clear that people are becoming comfortable sharing vehicles with strangers—they're using carshare, bikeshare, carpools, ridehail services, taxis, and car rentals in ever greater numbers. There also seems to have been a shift in the degree to which people are willing to share rides with strangers, judging from the popularity of app-based carpooling services, such as LyftLine and UberPool.

Futurists make the case that people stand to experience improved safety, accessibility, convenience, affordability, and equity while enjoying lower transportation GHG emissions, but also warn that cities must take an active role in guiding the transition to a new mobility. Researchers, planners, and policy makers widely agree that if we don't lay a thoughtful groundwork today, we could find ourselves in a future with more traffic, more harmful emissions, less safe streets, minimal access to trip data, vulnerabilities in personal data, and costly services that are out of reach for people with lower incomes.

Given the uncertainties of this new reality, the City of Cambridge is seeking a qualified consultant or consultant team of forward thinking planners, policy analysts, engineers, and/or legal advisors to help the City develop a Future of Mobility Implementation Blueprint. The recommended actions will enable a better, cleaner, more efficient and equitable transportation experience for all people who live in, work in, and visit the City. The consultants selected for this project will use the existing best practice research on the future of mobility (listed below) as a foundation to develop the Blueprint. The Blueprint will contain concrete actions for the City to transition from our existing mobility system to a future in which we meet our mobility, safety, and climate goals. This work will result in both the development of future scenarios, and also short-term recommendations to set the City on the path to transition to that future.

The selected consultant team will be responsible for completing the tasks detailed in the Scope of Work as directed by City Staff and with input from City Manager-appointed advisory groups in public meetings. Some of the tasks can be completed in parallel and others are sequential. Note that the selected consultant will be expected to exhibit a significant amount of creativity and flexibility in completing these tasks, as they work together with the advisory group to understand mobility issues in greater detail and develop recommendations.

### **Guiding Principles**

For nearly 25 years, Cambridge has adopted policies and built infrastructure to help people shift from driving alone to walking, biking, taking transit, and carpooling. Cambridge also has a long history of taking action on climate change, advocating for both mode shift and electrification as key strategies to mitigate emissions.

The Future of Mobility Implementation Blueprint will help us more aggressively advance these goals and will need to adhere to criteria set forth in the City's existing and ongoing plans. Envision Cambridge, the City's long-range plan, lays out the following goals related to transportation:

- **Safe and Active Transportation:** Eliminate traffic fatalities and serious injuries while encouraging active living and improving comfort for people of all ages and abilities.
- **Equity and Accessibility:** Ensure a diverse set of travel options that meet the access and mobility needs for people of all ages and abilities.
- **Reliability and Efficiency:** Ensure transit and goods movement reliability, and encourage the use of space-efficient modes, such as walking, biking, taking transit, and carpooling.
- **Community Character and Vitality:** Ensure that the city transportation system supports shared community spaces and enhances neighborhood streets.
- **Connectedness and User Friendliness:** Create an easy-to-understand, integrated, continuous, and comfortable transportation network.
- **Climate Resilience and Environmental Health:** Achieve a carbon neutral transportation system and adapt to climate change.

### Scope of Services

Our goal is to create a Future of Mobility Implementation Blueprint to help us prepare for and shape new mobility options in a way that meets our community goals, meets the mobility needs of all people who live in, work in, and visit Cambridge, and is well integrated with our sustainable transportation system. This transition will need to address equity and incentivize high-occupancy, high-density of passengers per space, shared, and electric vehicles. The Implementation Blueprint will provide clarity and specific, practical direction for strategies that support diverse transportation options and technological innovations, such as micromobility devices, electric vehicles, and autonomous vehicles, while ensuring that these changes do not adversely impact progress towards other City commitments related to safety, equity, traffic congestion, and GHG emissions.

After reviewing numerous existing reports on the future of mobility, as a starting point, we have determined these to be the most relevant to Cambridge's vision for a positive transportation future. Proposals should be based on an understanding of the findings and principles described in these reports, and we invite bidders to propose additional resources

- Seattle New Mobility Playbook (SDOT, Sept 2017)
- Urban Mobility in a Digital Age (City of LA Office of the Mayor and DOT, Aug 2016)
- Harnessing the future of mobility: How governments can enable a better transportation experience for all citizens (Deloitte Insights, 2018)
- An Urban Agenda for Autonomous Vehicles: Embedding Planning Principles into Technological Deployment (TRB paper by Yonah Freemark and Jinhua Zhao, 2018)
- Shared Mobility Principles for Livable Cities

### Task 1: Future of Mobility Implementation Blueprint Advisory Group

The consultant team shall work with City staff to convene and manage feedback and input from an advisory group appointed by the City Manager to provide community insight during the development of the Future of Mobility Implementation Blueprint. This is not a visioning exercise; instead, existing city goals will be communicated to the advisory group and used as an existing framework within which the advisory group will review and provide feedback on the Blueprint development and final deliverables. The consultant shall propose an organizational structure, workflow, timeline and agendas for the advisory

group activities. The timeline proposal must include the number of meetings and number of hours per meeting, as well as any other feedback mechanisms anticipated for communicating with the advisory group. The makeup of the advisory group is contingent on City Manager appointments, but may include the following types of stakeholders:

- Representative from the Bike Committee
- Representative from the Pedestrian Committee
- Representative from the Transit Advisory Committee
- Representative from the Vision Zero Advisory Committee
- Representative from the Climate Protection Action Committee
- Representative from the License Commission
- Representative from the Department of Public Works
- Representative from the Traffic, Parking, and Transportation Department
- Representative from the Public Health Department
- Representative from the Cambridge Police Department
- Representative from the CRLS student population
- Representatives from key underserved communities to be determined
- Representatives from transportation advocacy groups (Livable Streets Alliance, Cambridge Bike Safety, WalkBoston)
- Representative from local mobility company (Superpedestrian)
- Representatives from Boston, Somerville, Brookline
- Representative from state agency, such as MassDOT or MBTA
- Representatives from residential and commercial property owners

The consultant team will be expected to support all aspects of the advisory group, including organizing the format and content for the advisory group meetings, and compiling feedback. City staff will also participate in the advisory group, but the consultant team is expected to take the lead on most aspects. City staff will coordinate on all logistics (venues, invitations, audio/visual, etc.).

Deliverables:

1. An advisory group meeting plan and schedule for up to 4 meetings. The advisory group meeting plan should include the format, prepared materials for review by the advisory group in accordance with the proposed schedule and format.
2. Facilitation of up to 4 advisory group meetings.
3. Meeting notes for all advisory group meetings.

**Task 2: Transportation Assessment and Future Projections**

The consultant shall review existing plans, policies, and regulations that relate to transportation and mobility options in Cambridge. The goal of this task is to identify barriers and opportunities that would allow Cambridge to shape how new mobility options are implemented and prepare for a better and cleaner transportation experience. Transportation trend concepts should include, but are not limited to the following:

- Autonomous vehicles
- Electric vehicles
- Shared mobility (carshare, bikeshare, scooter-share, ride-hail, public and private mass transit)
- Mobility on demand (the use of app-based mobility services, integrated transit networks, real-time data, connected travelers, and cooperative Intelligent Transportation Systems)

## Request for Proposals to Develop a Future of Mobility Implementation Blueprint

- Micromobility devices (scooters, e-bikes, etc.)
- Fleets and goods movement, including municipal fleet
- Optional: Land use as it relates to current and future transportation trends (# sq. ft. currently paved for 1) public and private parking, 2) vehicle charging, 3) walking, 4) biking, and 5) vehicle travel lanes). Also consider traditional impacts on land use, zoning, and built form as it affects private property.

The consultant shall also develop transportation metrics and projections for key mobility trends, advising the City on key metrics to track and measure these trends over time. Metrics and future projections could include but are not limited to the following:

- Future mode share expectation.
- Using existing traffic volumes on major corridors, predict future traffic volumes under various scenarios, such as: People shift from public transit to autonomous single-occupancy vehicles (SOV), People shift from SOV to autonomous high-occupancy vehicles and high-density of people per space (micromobility services).
- Number of vehicles registered in Cambridge by fuel type and vehicle class.
- Number of parking permits issued per neighborhood.
- Demand for carshare, station-based and dockless bikeshare, carpools, ride-hail, e-bikes, personal mobility devices.
- Transportation infrastructure (EV charging stations, on-street and off-street parking spaces, bike racks, etc.).

Based on the review, analysis and future projections completed as part of this task, the consultant shall identify critical physical, regulatory, and other barriers to supporting and preparing for a changing transportation future. The consultant shall recommend actions necessary for the city and state to best prepare to transition to and support a transportation future that meets community goals and mobility needs. Building in flexibility will be key, as we cannot anticipate the full range of innovations yet to be introduced.

- The City will make available to the consultant relevant City and state policies, regulations, and plans, and data. Plans include the Envision Cambridge citywide plan, the Vision Zero Action Plan, the Bicycle Network Plan, the Transit Strategic Plan, the Pedestrian Plan, the Climate Action Plan, Climate Resiliency Plan, and the 5 Year Street and Sidewalk Reconstruction Plan. Policies and regulations include the MA Global Warming Solutions Act Requirements for Transportation, Executive Order 569, MA state law governing scooters and other personal mobility devices, the Cambridge traffic regulations, Cambridge license to display sidewalk merchandise, the Cambridge zoning code including parking requirements table, the Vehicle Trip Reduction Ordinance, the Parking and Transportation Demand Management Ordinance, Focus40, MassDOT CIP, and the MassDOT Delivery Solutions Study, once complete.
- The consultant shall identify additional Federal, State, regional, and industry plans, reports, studies and data sets that are helpful in identifying key barriers and strategies for adopting new mobility options in Cambridge and supporting electrification of motorized modes of transportation. For example, the NACTO Active Transportation Guidelines and the Shared Principles for Livable Cities, and “Accommodating Garage Orphans” report, commissioned by Eversource and completed by WXY Consultants).
- The City will share recent, relevant community feedback already gathered through other planning processes, such as the Envision Cambridge public outreach and sector specific working groups.

Deliverables:

1. A slide deck that includes the following:
  - a. Summary of key transportation trends expected to play a significant role in Cambridge's transportation future.
  - b. Summary of barriers and opportunities for Cambridge in shaping the future of transportation to meet our goals related to transportation.
  - c. Summary of future projections, primarily composed of charts and graphs that visually represent data projections, with clearly labeled and documented data sources.
  - d. Talking points for each slide.
2. An Excel document that includes, the key metrics, raw data, assumptions, and calculations used in analyzing current trends and future transportation projections.
3. A comprehensive draft list of recommended short- and long-term actions that would allow Cambridge to shape the future of mobility in a way that meets our transportation goals. This should be a "Think Big" list and should be developed without considering constraints.

**Task 3: Future of Mobility Implementation Blueprint**

During the development of the Future of Mobility Implementation Blueprint the consultant shall rely on city staff, with input from the advisory group, to review work products, provide feedback that refines the draft recommended strategies and actions from Task 2, and provide feedback on general Implementation Blueprint development. A draft outline of the Future of Mobility Implementation Blueprint shall be developed and shared with the advisory group for approval at the beginning of this task.

Evaluation and refinement of the draft recommended strategies and actions should include the following considerations:

- Equity and safety: equity across the entire transportation landscape, and within individual mobility options, physical accessibility, economic accessibility. Safety of all residents and visitors walking, cycling, using transit, driving, or moving around Cambridge another way
- Policy, programs and regulations: key policy, programmatic and regulatory levers that allow the City to shape the future of mobility.
- Infrastructure: land use, built environment, transportation infrastructure, grid impacts of electrification.
- Business models and partnerships: strategic partnerships, financing, models for profitability/financial sustainability, incentives, congestion pricing, time-of-use pricing, fair market value of public space.
- Emerging technologies: wireless networks, GPS/sensors, big data and predictive analytics, mobile devices.
- Impacts: relative contribution towards health, safety, emissions reduction and resiliency goals, paved area, battery production/disposal. Costs and savings.

The final Future of Mobility Implementation Blueprint shall include the following elements.

1. An Executive Summary

2. Transportation Goals

The Future of Mobility Implementation Blueprint shall state the City's already established transportation, climate change and equity goals, as well as any new goals or objectives that inform or relate to the Future of Mobility Implementation Blueprint. The City will provide these goals to the consultant.

3. Summary of Task 2: Transportation Assessment and Future Projections

The Future of Mobility Implementation Blueprint shall include a description, summary, and visualizations from Task 2 deliverables to provide context for the key strategies and actions that are included in the Blueprint.

In addition, this section shall include a brief discussion of the relevant data sources that currently exist and were used for Task 2 analysis, as well as what additional universal data requirements and/or specifications are needed to best plan for and manage our transportation future.

4. Future of Mobility Strategies and Actions

The Future of Mobility Implementation Blueprint shall clearly define strategies and actions that will allow the broader region to prepare for and support new mobility options and transportation electrification quickly and in a way that supports community goals. Actions shall include a detailed description with the expected timeframe for beginning and completing the action (short, medium and long-term), key stakeholders and roles for implementing the action, key obstacles, and a brief description and relative ranking of each strategy or action in relation to the evaluation criteria listed above. For long-term strategies, the consultant shall identify any intermediate steps or enabling actions needed to the short term to prepare for implementation of the long-term strategies.

The Future of Mobility Implementation Blueprint shall also highlight key actions that the City may need to take/pursue to enable implementation of the strategies and actions in the Blueprint. For example, the consultant may need to review current municipal codes, siting and permitting processes, or parking, design and zoning regulations as they relate to specific strategies and recommend actions that will enable private landowners or other community stakeholders to implement actions in the Blueprint. While key strategies of the Blueprint may be primarily implemented by partners or community stakeholders, the Blueprint should focus on the City's role in preparing for and enabling those key strategies in a way that supports the City's transportation goals.

5. A list of key talking points to use when communicating the Future of Mobility Implementation Blueprint to other City staff and/or the general public.

Deliverables:

All deliverables shall be submitted in editable format, as well as be concise and visually appealing.

1. One outline of the Future of Mobility Implementation Blueprint for City staff and advisory group review. Consultant will be expected to incorporate one round of edits from the City.
2. One draft document or documents for City staff and advisory group review that includes the five specific items listed in the description of Task 3. Consultant will be expected to incorporate one round of edits from the City.

3. One final draft of the document or documents provided as Deliverable #2 with edits from the advisory group and/or City staff. Consultant will be expected to incorporate one round of edits from the City.
4. One PDF version of the document or documents.

#### **Task 4. Residential/Neighborhood EV Charging Pilot Feasibility/Design**

One of the short terms actions in the Future of Mobility Implementation Blueprint shall be to implement a residential EVSE charging network pilot in Cambridge, to explore how the City might support equitable charging access for residents who do not have access to private, off street parking in which they can install a private EVSE. Based on information gathered in Task 1 and the work completed as part of the Blueprint development, the consultant team shall recommend a Residential/Neighborhood EVSE network expansion pilot program that the City could begin to implement in FY20. The consultant team shall evaluate options and recommend a residential/neighborhood EVSE network expansion pilot design. The pilot design shall evaluate and make recommendations related to the following elements and shall be specific to the City's residential/neighborhood charging use case.

- EVSE siting
- Hardware and software products
- Parking policies and regulations
- Use fees
- Ownership/partnership models
- Synergies with electrification of other transportation sectors, and other City goals

The pilot design and evaluation shall include key performance metrics and methods to gather public feedback, and shall help the City identify criteria, business models and regulations to support future public EVSE network development.

#### **Deliverable:**

1. An actionable pilot program for neighborhood EVSE charging that includes specific implementation and evaluation plans.

#### **Task 5: Proposed Regulatory Strategy**

Throughout the Blueprint development, the Consultant shall work with the City to identify state or city regulations that need to be amended or adopted in order to prepare for and support the future of mobility in a way that meets our community goals. The City and the Consultant will identify at least two (2) and no more than five (5) key regulations, either existing or new, that should be addressed in the short-term. The Consultant shall outline for each a conceptual framework and rationale (NOT specific regulatory language) for amending or adopting the key regulations identified through this task.

**Deliverable:** For each of the regulations addressed in this task, either a summary of the key issues, and the existing regulatory language and proposed edits (if an existing regulation), OR a summary of the key issue and recommended regulatory conceptual framework (if no current regulations address the issue).

### **Task 6: Public Engagement Approach**

Engaging with the general public about the Future of Mobility Implementation Blueprint, both during development and implementation, is critical to achieving mobility improvements that meet the community's needs, has community support, and allows the City to implement the Blueprint in a way that is responsive to both changing technologies and the community's changing mobility needs.

The consultant shall recommend outreach and engagement tools that address equity issues and can be used to engage with community members about the Blueprint, and to collect feedback on various aspects of the Blueprint over time.

The public engagement approach should clearly define outreach techniques and tools to be used during development of the Blueprint, and afterwards for regular and continuous engagement with the community about the Blueprint.

Deliverable: Two different type of public engagement activities or devices, that go beyond traditional public meetings, the City could use to engage in both 1) outreach/education and 2) solicitation of feedback from Cambridge residents, workers, fleet owners, visitors and other community members about the future of mobility.