REQUEST FOR INFORMATION:

Ultimate Urban Circulator Program

RESPONSE LETTER DUE DATE:

Monday, February 3, 2020 by 2:00 p.m. (EST)

RFI #: I-20-002

JACKSONVILLE TRANSPORTATION AUTHORITY
121 W. Forsyth Street., Suite 200 • Jacksonville, Florida 32202

JACKSONVILLE TRANSPORTATION AUTHORITY

REQUEST FOR INFORMATION (RFI) FOR

ULTIMATE URBAN CIRCULATOR PROGRAM

RESPONSE SUBMISSION DEADLINE:

BY 2:00 PM (LOCAL), MONDAY, FEBRUARY 3, 2020

RFI NUMBER: I-20-002

Jacksonville Transportation Authority
121 West Forsyth Street, Suite 200
Jacksonville, FL 32202

JACKSONVILLE TRANSPORTATION AUTHORITY

REQUEST FOR INFORMATION No. I-20-002

SUBJECT: ULTIMATE URBAN CIRCULATOR PROGRAM

RESPONSE DEADLINE: MONDAY, FEBRUARY 3, 2019, 3:00 p.m. (local time)

Request for Information for Ultimate Urban Circulator Program will be received by the Jacksonville Transportation Authority ("Authority" or "JTA"), until the above-stated response deadline at the following location:

Jacksonville Transportation Authority, Customer Service Desk
121 West Forsyth Street, Suite 200
Jacksonville, FL 32202

The complete Request for Information package will be available January 8, 2020 and must be obtained by sending an email request to JTA Procurement Department, at procurement@jtafla.com.

Questions and Answers. All questions or concerns regarding this RFI must be submitted on the JTA Procurement Portal under the "Questions and Answer (Q&A)" tab for this Solicitation prior to 12:00 PM (EST) on January 23, 2020. Late questions may be answered at the discretion of the Authority. All responses to questions will be uploaded to the Portal and issued in an Addendum on January 27, 2020 that is provided to all Respondents who have obtained the Solicitation package from the JTA. To obtain instructions regarding the Q&A tab, please see the User Manual under the Help Tab at the bottom of the Portal Home Page. Please contact the Procurement Department at procurement@jtafla.com regarding any questions or concerns prior to the questions deadline.

RESPONSE DELIVERY - Responses must be submitted in an opaque sealed envelope and properly labeled with the name and number of the Solicitation. Responses must be submitted by the due date, at the location identified in the Notice (or as amended in an Addendum). The sealed envelope must contain one (1) original paper copy and five (5) electronic copies of the exact response. No additional promotional or advertising information will be accepted. Please limit response to a cover letter plus attachments with a maximum length of fifteen (15) pages.

Pursuant to Article 1, Section 24 of the Florida Constitution and under Chapter 119, Florida Statutes, if a Respondent considers any portion of the documents, data, or records submitted in response to this solicitation to be confidential, proprietary, trade secret, or otherwise not subject to disclosure pursuant to applicable State of Florida laws, the Respondent must provide JTA with a separate USB Flash Drives (electronic) "REDACTED COPY" of its response. This redacted copy shall be submitted in a sealed envelope that contains the JTA solicitation name, number, and the name of the Respondent on the cover, and shall be clearly titled "REDACTED COPY" at the same time Respondent submits its response to the solicitation. An entire proposal or the proposed cost in a proposal cannot be identified as "CONFIDENTIAL", "PROPRIETARY" or "TRADE SECRET". The Respondent must provide a brief description of the grounds for claiming

exemption from public records law, including the specific statutory citation for such exemption that allows the withholding on the require form “Certification of Redacted Copy”.

Facsimile and electronic transmissions will not be accepted. Late Responses will not be opened. Due to the lack of control over the standard postal delivery service, many companies hand-deliver or use a private delivery service to ensure delivery by the 2:00 P.M. deadline. The Authority is not responsible for the failure of the postal service or private delivery service to locate and deliver the Response in a timely manner. The Authority is the official timekeeper and the Authority's determination of the time shall be deemed correct and final.

The response should contain a cover page containing the following information:

- name of a single point of contact
- business name
- address
- phone number
- email address
- RFI No. and Title

1. Introduction and Purpose

Jacksonville Transportation Authority (JTA) is embarking on the Ultimate Urban Circulator Program (U^2C), a first-of-its kind program to transform downtown Jacksonville through modernization and expansion of its downtown circulator (Automated Skyway Express) to accommodate Autonomous Vehicles (AV) and to extend service to nearby neighborhoods. The purpose of this Request for Information (RFI) is to obtain input from industry partners regarding program implementation for all components of the U^2C Program including civil works, vehicles, supervisory system, operations and maintenance and security and cybersecurity. JTA is also seeking input regarding procurement considerations, including procurement strategy, form of contract, Transit Oriented Development (TOD) interest, and opportunities for public private partnerships. Information from the responses may be used to better define the path forward including the scope of work, technical requirements, and procurement strategy for inclusion in an RFP to be issued by the JTA.

2. Program Goals

The goal of Ultimate Urban Circulator or U^2C Program is to modernize and expand Jacksonville's downtown circulator (Automated Skyway Express) to accommodate AV shuttles and extend operations to nearby neighborhoods. The U^2C autonomous transportation network will utilize and leverage multiple existing federal investments, including the elevated Skyway Automated People Mover (APM) infrastructure and street-level roads through the urban core. The existing Skyway is a 2.5-mile system, with 8 stations, an Operations and Maintenance (O&M) Center and crosses the St. Johns River on the Acosta Bridge. The envisioned system will convert the existing system and expand to approximately 10 miles by combining the at-grade and elevated infrastructure. This will also include the deployment of autonomous vehicles with modern stations and provide more frequent service with improved access for all customers.

3. Program Description

As shown in Attachment 1, the U^2C Program will include the conversion of the existing elevated skyway and the creation of neighborhood extensions, ultimately resulting in an approximately 10-mile system that will be developed in the following phases:

Bay Street Innovation Corridor (Phase 1) – This project is the Transit component of a wider, multi-partner effort to transform Bay Street in downtown Jacksonville. Partially funded by a USDOT BUILD grant of $12.5M, the Bay Street Innovation Corridor will create approximately 3 miles of at-grade AV-shuttle service along Bay Street from the Skyway Central Station to the Sports and Entertainment Districts near TIAA Bank Field, home of the Jacksonville Jaguars. It is anticipated that this section will include a new operations and maintenance center at the Jefferson lot near Jefferson Station.

Autonomous Avenue (Phase 2) – Conversion of an approximately ¼ mile section of existing elevated guideway between the new Jacksonville Regional Transportation Center (JRTC)

terminal and Jefferson station. This will be developed as a proof of concept to better define the scope of work needed to convert the elevated track to accommodate the autonomous vehicle system.

Skyway Conversion and Brooklyn Station Expansion (Phase 3) – Replace the aging vehicles with rubber-tired shuttles and convert the 2.5-mile elevated infrastructure by removing the existing monorail guideway and creating a smooth running-surface as well as system and station upgrades. The proposed conversion of the existing Skyway to accommodate autonomous vehicles includes an extension of the existing elevated guideway to the ground level to the Brooklyn neighborhood adjacent to the current Skyway Operations and Maintenance Center.

Neighborhood Extensions (Phase 4) – Expansion of AV shuttle service to four additional corridors: West (Riverside and Brooklyn neighborhood), North (Springfield neighborhood and regional hospitals), South (San Marco and Baptist Medical Complex), and Southeast (The District master plan and future commuter rail connection in San Marco). Preliminary evaluations considered a mix of concepts including elevated and at-grade segments with transitions.

The initial phases will include the development and/or expansion of the supervisory system and route technology necessary to support an autonomous vehicle network as well as deployment of vehicles and station modifications or new at grade stops. All Program components will also include both physical and cybersecurity best practices.

4. Response Format

Please provide your response organized in the manner described below.

A. Cover Letter – Please include contact information including address, telephone and e-mail address, website and brief summary of your organization and experience related to autonomous vehicle and systems development.

B. Narrative – Please provide narrative with the information and organized as described below.

a. Team Description and Structure

i. Is your organization potentially interested in participating in the JTA U^2C Program? If so, in what capacity would you participate?

ii. Please list and rank the factors that would most influence your decision on whether to participate in the Program.

iii. Please include narrative describing your team and an organizational chart.

iv. Please provide information on AV Transit Projects you have been involved with that are in operation or anticipated to be in operation within the next 5 years, and your role in those projects.

b. Proposed Approach to Program Elements

i. Civil Works

a) Please provide narrative describing your approach to the design of civil works both elevated and at-grade, including stations and technical infrastructure required to deploy autonomous vehicles. Concept layouts for Bay Street Innovation Corridor and Autonomous Avenue are shown in Attachment 3.

b) It is anticipated that the first phases of implementation of the U^2C will include conversion of the existing Skyway infrastructure to accommodate autonomous vehicle operations. Would your organization be interested in providing necessary infrastructure conversions to the existing Skyway System?

c) Compliance with the Americans with Disabilities Act (ADA) is very important to JTA. Please provide input regarding conversion to ensure that the elevated system is ADA compliant for both the elevated structure (conversion of the existing Skyway) and at-grade, in traffic conditions.

d) What additional information would be helpful to assess the infrastructure conversion?

ii. Vehicles

a) The preferred technology is an autonomous vehicle that can carry 12-20 passengers at a target speed of between 25 and 35 mph with desired headways of 2-3 minutes. The vehicle will be able to operate on the elevated infrastructure and transition to operate at street level in dedicated lanes in mixed traffic conditions. It is desired that the vehicles are able to platoon to increase capacity during peak events. Please provide information regarding vehicles you are considering that will meet the above requirements and their anticipated availability within the next 3years. Would these vehicles meet JTA's "Golden 20" basic vehicle requirements outlined in Attachment 4?

b) What is the useful life of those vehicles? What factors impact their useful life?

c) Please provide input on purchase versus lease of vehicles.

d) Please provide input regarding the process to ensure that vehicles will meet safety certification requirements for Florida Department of Transportation (FDOT) and Federal Transit Administration (FTA).

e) Please provide details regarding ADA compliance of your proposed vehicle.

iii. Supervisory Systems Control / Technology

a) Please provide a narrative approach to providing the supervisory system for the Program. Please include discussion on initial development and expansion to include additional extensions as the system is built out.

b) It is anticipated that all or a significant portion of the existing control system will be replaced as part of the modernization program. Please provide input regarding your concept for system controls, including vehicle and central operating system

technology for both elevated and at grade segments of the system including intersections.

c) Please provide input regarding charging requirements of the system or charging alternatives available.

iv. Operation and Maintenance

a) It is anticipated that the existing Skyway Operations and Maintenance Center will be modified to accommodate the new technology and significantly alter current practices. Please indicate your preferred approach for a turn-key or hybrid approach and considerations for each. Also indicate the preferred term of agreement and considerations for transitioning all or part of O&M to JTA beyond an initial O&M period.

b) Please provide information regarding expected routine maintenance and major maintenance needs.

v. Security and Cybersecurity

a) Describe your overall approach to providing a safe secure system considering both physical and cybersecurity.

c. Procurement Considerations

i. Major Program Milestones

a) As presented in Attachment 2, JTA anticipates issuing an RFP in mid-2020 with proposals due late 2020 and work beginning in 2021. Please describe your team's approach to meet the anticipated Program timeline.

ii. Program Phasing

a) Depending on funding availability, JTA anticipates the Program proceeding in the phases described in section 3. Please provide your suggested approach to each of the 4 phases and considerations for each.

b) Would you recommend that JTA consider delivering this Program in phases? If so, please describe how it can be completed.

c) What input could you provide related to procurement to reflect Program phasing and timing?

d) What additional information would assist you in evaluating phasing options and/or delivery method?

iii. Structure of Elements in Procurement

a) A general concept of the Program and its potential components is being presented at the Industry Forum. Please provide any thoughts related to procuring the Program as a comprehensive system or as individual system components. Are there specific components or elements that might best be procured separately?

b) Please describe your preferred approach to integrate all elements of the Program including civil works, supervisory system, vehicles and operations and maintenance.
c) Which of the following RFP methods would you be more likely to respond to:
   - Design Bid Build (DBB)?
   - Design Build (DB)?
   - Design Build Operate Maintain (DBOM)?
   - Design Build Finance Operate Maintain (DBFOM)?
   - Another form of Public Private Partnership (P3) Concession?
   - Would your team require a stipend to participate in the procurement? If so, how would you propose determining the magnitude of a stipend?

iv. Contract Structure

a) Provide feedback on any key risks your team would or would not be willing to assume under a public-private partnership (DBOM or DBFOM) agreement for the Program.
b) What do you envision as the optimal term of a concession arrangement? What term do you think JTA should be considering for the Program?
c) What, if any concerns do you have with Program governance? What measures would you suggest to mitigate these concerns?

d. Opportunities for Private Sector Involvement

i. Construction

a) What, if any, major risks do you foresee with design and construction of the Program? What measures would you suggest to JTA to mitigate these risks?
b) What, if any, major risks do you foresee with the lifecycle costs of the Program? What measures would you suggest to JTA to mitigate these risks?
c) Are there any other key risks and potential mitigation strategies you would like to discuss at this stage that the JTA should be aware of and take actions to mitigate in the procurement?

ii. Finance

a. Please provide a narrative proposed approach to providing Program financing for both capital and operations and maintenance cost and related considerations along with preferred term of agreement.
b. JTA's phasing plan currently assumes year-of-expenditure funding from a variety of funding sources. In your opinion, how should JTA spend its limited resources to advance the Program?
c. With its focus on innovative technology, is the Program supportable by the private financial and surety markets? Are there actions and/or policies by JTA that could facilitate such support?

d. Describe the nature of short and long-term payment commitments you would consider to support a long-term concession including some aspects of operation and maintenance.

a. How would operational considerations affect your interest in the Program as a potential DBFOM?

iii. Operations

a. Provide feedback on how you would undertake due diligence on the existing as built assets and operational systems to develop operating cost projections and what particular risks would be most important.

iv. Maintenance

a. Is inclusion of a long-term period for maintenance important to your interest in the Program?
b. What do you envision as a minimum and maximum length of term for a maintenance agreement?

e. Technical Challenges

i. Please provide general input regarding feasibility of the Program including technical challenges or opportunities. Please suggest any procurement strategies that may help mitigate those perceived challenges.
ii. Do you envision that the status of current state and federal policy and legislation including Buy America requirements could affect Program timing and outcome?
iii. Are there any questions you may have that will help you better understand the Program?
iv. Other than the answers you have already provided, what information would you like to receive that might influence whether you choose to participate in the bidding or how you may bid on the Program?
v. What advice or comments do you have for JTA in its pursuit of the U^2C Program?

f. Integration of TOD, Ancillary Revenues and Infrastructure

i. Should transit-oriented development opportunities be bundled into a DBFOM P3 for delivery of the U^2C Program? Are your firm or proposed teaming partners willing to assume real estate development risk related to station-adjacent parcels in return for long-term redevelopment potential?
ii. If TOD opportunities are bundled into a P3, should that be just for the station areas in segments where the Skyway guideway and stations have already been built or should parcels in the vicinity of proposed extensions also be included?
iii. Whether or not TOD opportunities are bundled into a DBFOM P3, are your firm or proposed teaming partners willing to take on ancillary revenue risk – such as

leasing risk related to on-station retail/commercial concessions and advertising – as part of a DBFOM P3 package? Is there enough value over time to contribute to O&M costs over time?

iv. Are your firm or potential teaming partners interested in operating and assuming revenue risk on the existing park-and-ride facilities? If so, what conditions would be required to transfer this risk (authority over rate-setting, non-compete provisions on the construction of publicly-sponsored parking facilities adjacent to a station, etc.)?

5. Request for Information Process

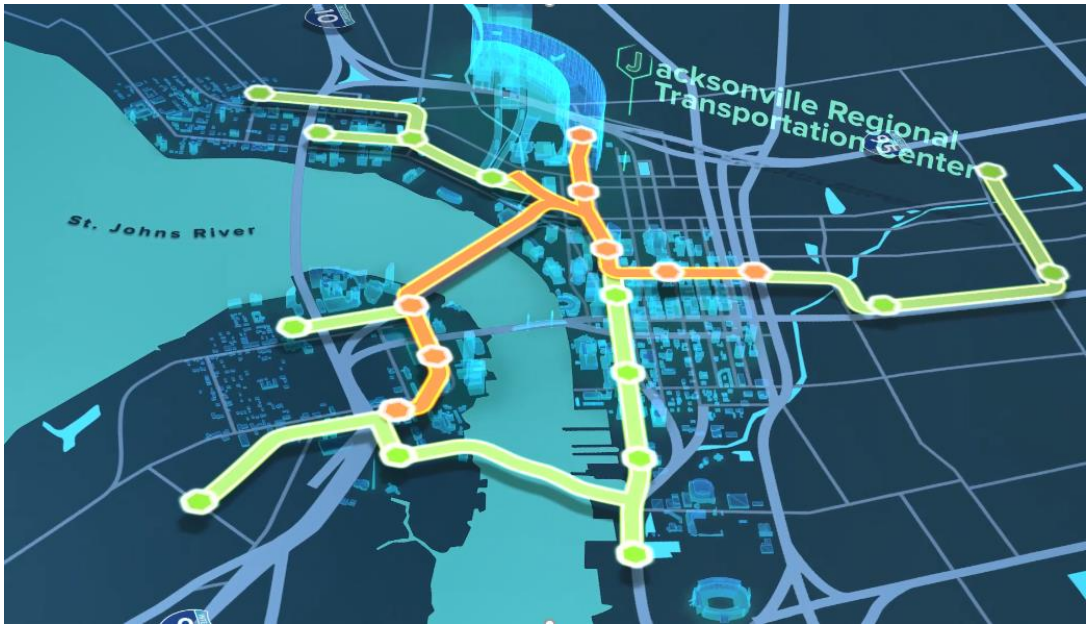
After review of the RFI responses and assessment of the marketplace, the JTA may choose to issue a Request for Proposal (RFP) or other appropriate solicitation process. Participation in the RFI process is not a prerequisite for any subsequent competitive procurement, although the results of this RFI may be used to build and refine and RFP.

KEY DATE SUMMARY

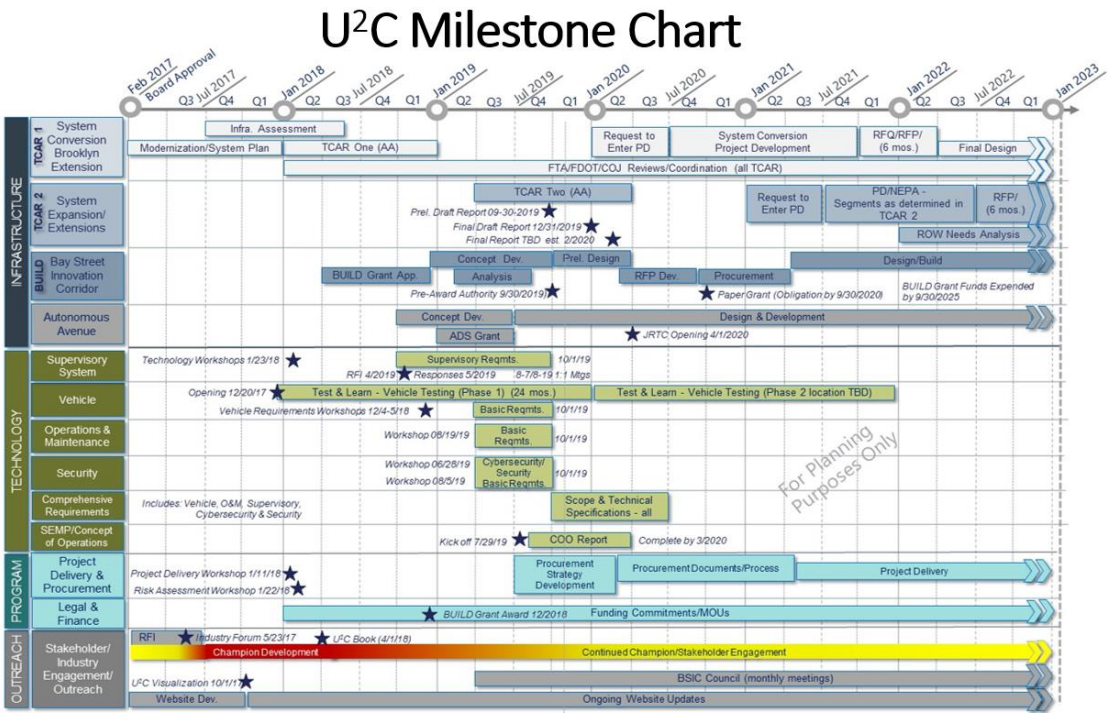
Response to Request for Information Due	February 3, 2020 by 3:00 PM (EST)
One on One Meeting Request Due (from Organizations Submitting Responses)	February 3, 2020 by 3:00 PM (EST)
Confirmation of One on One Meetings	February 10, 2020
JTA Industry Forum **Location:** Prime F. Osborn III Convention Center **Address:** 1000 Water St, Jacksonville, FL 32204 8:00 AM to 5:00PM (EST)	February 19, 2020
One on One Meetings **Location:** Omni Hotel Jacksonville **Address:** 245 Water St., Jacksonville, FL. 32202 8:00 AM to 5:00 PM	February 20 and 21, 2020

6. Attachments

Attachment 1: Map of Existing System and Proposed Extensions

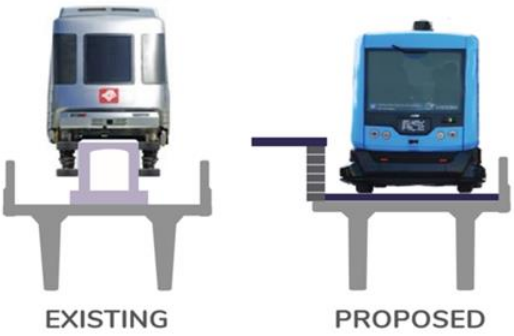


Attachment 2: Major Program Milestones



Attachment 3: Concept Layout of Bay Street Innovation Corridor and Autonomous Avenue

Autonomous Avenue



Attachment 4: JTA Golden 20

(On following pages)

Jacksonville Transportation Authority
Automation Division

Memo

TO: **RFI-U2C Industry Forum**

From: Bernard Schmidt
VP of Automation

Date: June 21, 2019

Subject: Release of JTA's top 20 High level Critical requirements for Autonomous Vehicles

After considerable research, the JTA Automation Division has identified the critical requirements for acceptable deployment of Autonomous Vehicles/Shuttles for its Ultimate Urban Circulator (U^2C) program. These requirements are particular to the JTA but are analogous to what we believe are critical requirements for all public transit agencies looking to deploy such a service.

These requirements are not all inclusive and we may find circumstances which dictate the need to add and modify this list. This is meant to serve as initial guidance to autonomous vehicle (AV) manufacturers and technology stack providers. These requirements are to be considered proprietary to the JTA and are copyrighted and are not to be shared or distributed beyond this memo without written consent of the JTA.

Below is the list of the 20 critical needed items/capabilities identified by the Automation Division for Autonomous Shuttles also known as the "Golden 20".

GOLDEN 20

JTA's (and Public Transportation's) Critical Needs of Autonomous Shuttles/Vehicles

1) Full ADA Compliance
2) Buy America/Buy American Compliance
3) Cybersecurity
4) Remote Route Programming with Low Latency
5) NHTSA Approval to operate on Public Road
6) Vehicle to Infrastructure and V^2X Capabilities (DSRC & 5G)
7) Traverse Slope of ± 12 Degrees w/ Full Passenger load (Sustained Acceleration/Deceleration)
8) Operate bidirectionally up to 35 MPH
9) ≥12 hours of battery life
10) Operate at speeds of 15 MPH within ± 1 foot of Stationary Object
    Operate at speeds of 15 MPH within ± 3 feet of Moving Object
11) May Operate during Inclement Weather (Rain, Fog, Wind, and Extreme Heat)
12) Internal Cab – Environment control with Rapid Cool capability
    & Sustained temperature with Full Passenger Load
13) Ability to be towed; Push/Pull and Steer AV Manually or towed via another AV
14) Crash Worthy up to 35 MPH
15) Ability for Fast Charge/Opportunity Charging
16) Ability to regulate passenger capacity

17) System for recording/storing video for at least 30 days (Black Box)
18) Emergency button to contact Authority/Agency control center
19) Remote command & control operations of vehicles with low latency
20) Complete Vehicle Monitoring system, including health monitoring

The JTA will provide further details, guidance and explanation for each of the define requirements upon request. Our AV test protocol and program will also provide further guidance and establish more define pass /fail criteria for the U^2C program. For autonomous shuttles which do not meet any or some of these critical requirements, the AV manufacturers will need to provide detailed explanation on how they plan to meet them in the future or provide an alternate solution deemed acceptable by the JTA.