

**ADDITIONAL MATERIAL  
10:00 A.M. REGULAR MEETING**

**JANUARY 23, 2018**

**SUBMITTED AT THE REQUEST OF**

**OFFICE OF THE COUNTY  
ATTORNEY**

### THIRD AMENDMENT TO WAVE PROJECT AGREEMENT

This Third Amendment to Wave Project Agreement (“Third Amendment”) is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by the State of Florida, Department of Transportation, an agency of the State of Florida (the “Department”) and Broward County, Florida, a charter county and political subdivision of the State of Florida (the “County”).

#### RECITALS

A. The Department and the County are parties to the Wave Project Agreement dated June 14, 2016 (the “Original Agreement”) regarding the funding, design, construction, operation and maintenance of the 2.8 mile modern streetcar known as The Wave Streetcar. The parties agreed to amend certain terms of the Original Agreement by a First Amendment to Wave Project Agreement entered into on July 25, 2017 (the “First Amendment”) and a Second Amendment to Wave Project Agreement entered into on October 3, 2017 (the “Second Amendment”) (the Original Agreement, as amended by the First Amendment and the Second Amendment, is referred to as the “Agreement”).

B. Pursuant to section 6.01 of the Agreement, the parties are entering into this Third Amendment to modify the terms of the Agreement.

#### AGREEMENT

The parties agree the terms of the Agreement are amended as follows:

1. Recital K is amended as follows:

K. The County is willing, under the terms and conditions of this Agreement, and pursuant to the Interlocal Agreement among the County, the City, and the DDA allocating the local share of capital costs overruns for the Project (the “Local Funding ILA”), which will be executed on or before the date of this Agreement, to: (i) serve as the lead local partner for the Wave Streetcar, providing input regarding the development of the Wave Streetcar; (ii) collect funds for Project Cost Overruns pursuant to the Local Funding ILA and provide such funds for the Wave Streetcar to the Department; (iii) subject to FTA approval, enter into an agreement with the Department to be a sub-recipient of the FTA Section 5309 Small Starts grant and directly acquire the streetcar vehicles for the Project; (iv) subject to FTA approval and execution of an agreement between the Department and the County as provided in this Agreement, directly acquire the fare collection system, non-revenue vehicles, and general tools for the Project, described in Exhibit A-2; (v) operate and maintain the Wave Streetcar after completion of construction for a period of twenty (20) years; and (vi) upon completion of design and construction of the Wave Streetcar, accept ownership of the Wave Streetcar assets and undertake certain obligations under the TIGER grant and the FTA Section 5309 Small Starts grant.

2. Section 1.01 is amended by insertion of a new subsection (2) and renumbering of the existing subsections (2) through (34) as subsections (3) through (35), and amendment of existing subsections (12), (13), (17), (19), (23) and (25). The text of the new and amended subsections is as follows:

(2) “County Contract Administrator” means the County Administrator.

~~(13)2~~ “Design-Build Contract” means an agreement with a Department-prequalified design build firm, procured by the Department in accordance with Florida Statute s. 337.11, Department rules, and the provisions of this Agreement, for the design and construction of the Project, not including the items described in Exhibit A-2. The Design-Build Contract may include the elements identified in Exhibit A-1, as otherwise provided in this Agreement.

~~(14)3~~ “Design-Build Estimate” means that portion of the Current Cost Estimate that is the estimated cost of the work that will be performed under the Design-Build Contract, which is One Hundred Fourteen Million Two Hundred Thirty Eight Thousand Dollars (\$114,238,000), the details of which are provided in Exhibit “C” hereto. The Design-Build Estimate does not include any costs for design or construction of the additional vehicle maintenance facility scope elements identified in Exhibit A-1 or the items described in Exhibit A-2.

~~(18)7~~ "Project" means the 2.8 mile modern streetcar known as The Wave Streetcar, as more fully described in Exhibit A, including the items described in Exhibit A-2. If the additional elements identified in Exhibit A-1 are included in the Design-Build Contract as otherwise provided in this Agreement, the Project will also include those additional elements. The Department and the County may mutually agree in writing to modify the scope of the Project as provided in this Agreement (but only to the extent permitted under the Project Construction Grant Agreement). The anticipated schedule for the Project, including the anticipated due date for the Initial County Capital Contribution, is attached as Exhibit F.

~~(20)9~~ “Project Capital Cost(s)” means: (i) any and all amounts paid by the Department to third parties for design or construction of the Project in connection with the performance of its Project responsibilities under this Agreement after the Agreement Date; (ii) any amounts paid by the Department to acquire the Wave Streetcar Vehicles, or, if the County directly acquires the Wave Streetcar Vehicles in accordance with the terms of this agreement, any amounts paid by the County to acquire the Wave Streetcar Vehicles (not including amounts paid as a result of changes in the specifications, requirements, or features of the vehicles not approved by the Department in writing); (iii) any amounts paid by the Department to acquire the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2, or, if the County directly acquires those items, any amounts paid by the County to acquire the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2, up to a

maximum of One Million Two Hundred Eighty Thousand Dollars (\$1,280,000); (iv) Real Property Acquisition costs; (iv) the \$2,000,000 cost of acquisition of the VMF Property; (vi) all amounts expended by SFRTA on capital costs for the Project out of the TIGER Grant, the portion of the Department Capital Contribution transferred to SFRTA pursuant to the Joint Participation Agreement between the Department and SFRTA for the Project (Contract AR068), the Existing MPO Funding Commitment, or the Existing Local Funding Commitments; and (vi) any additional amounts that are required to be paid in order to ensure that all real property acquired for the Project prior to the Agreement Date is acquired in full compliance with applicable federal requirements. Notwithstanding any provision of this Agreement or any other agreement relating to the Project, Project Capital Costs shall not include: (i) any amounts paid or liability incurred to the owner of a privately owned utility (a utility that is not owned by the County, the City, or the Department), if any, by the Department, the County, or the City for the relocation of any privately owned utility on or from Department Real Property, County Real Property, or City Real Property for accomplishment of the Project; or (ii) any financial liability for delays incurred by the Department under the Design-Build Contract as a result of the failure of a privately owned utility to timely relocate its facilities.

(~~2423~~) “Project Cost Overruns” means all Project Capital Costs that exceed the Current Cost Estimate. Project Cost Overruns includes, but is not limited to, increases in the cost of work included in the scope of the Project as of the Agreement Date above the current estimate for such work included in the Current Cost Estimate, the additional cost of work required for design and construction of the Project that was not included in the Current Cost Estimate as a result of unforeseen conditions, the cost incurred by the Department to pay claims asserted by any of its contractors on the Project (by settlement or otherwise), and the additional cost of work resulting from changes to the Project scope by mutual agreement of the Department and the County after the Agreement Date. Notwithstanding any provision of this Agreement to the contrary, the Department will not participate in: (i) any costs for design or construction of the additional vehicle maintenance facility elements identified in Exhibit A-1; or (ii) any costs incurred by the County to acquire the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2 in excess of One Million Two Hundred Eighty Thousand Dollars (\$1,280,000), which costs shall be the responsibility of the County.

(~~2625~~) “Project Property” means all property acquired by the Department during the design and construction of the Project which is incorporated into the Project and which is subject to the ongoing obligation under the Project Construction Grant Agreement to maintain satisfactory continuing control of property acquired or constructed with the use of federal funds throughout the useful life, or allowable disposition, of the Project Property. Project Property includes: (i) the Wave Streetcar Vehicles, whether acquired by the Department or acquired by the County

as provided in this Agreement; and (ii) the fare collection system, non-revenue vehicles, and general tools for the Project, identified in Exhibit A-2, whether acquired by the Department or acquired by the County as provided in this Agreement.

3. Section 3.01(3) is amended as follows:

The Department shall competitively procure the Design-Build Contract using the design-build procurement process authorized by section 337.11, Florida Statutes, and Department rules and procedures. The Department will work with designated qualified County staff in developing a request for proposals for the Design-Build Contract, ~~including whether the Project rolling stock will be procured as part of the Design-Build Contract.~~ The Design-Build Contract will require the Department's contractor to coordinate with the County's operation and maintenance staff or vendor to ensure that the County has an adequate opportunity to perform required testing as work on the Project progresses. The Design-Build Contract will include the base elements for the vehicle maintenance facility included in the description of the Project in Exhibit A. The request for proposals will also include an optional lump sum bid alternative that will add the elements for the vehicle maintenance facility identified in Exhibit A-1. The Design-Build Contract may include the elements identified in Exhibit A-1, as otherwise provided in this Agreement. The Department will advise the County of the date it intends to advertise the request for proposals at least forty five (45) days prior to the intended advertisement. The Department will designate an eligible qualified County staff member chosen by the County to participate in technical review of technical proposals from design-build firms submitted in response to the Department's request for proposals. The Department will designate an eligible qualified County staff member chosen by the County to serve on the procurement selection committee for the Design-Build Contract, if the County identifies the eligible qualified staff member to the Department at least thirty (30) days prior to the date the Department advises the County it intends to advertise the request for proposals. If the County does not timely designate a qualified eligible staff member, the Department will designate all members of the selection committee. County staff members whom the County designates to participate in the Design-Build Contract evaluation and selection process must satisfactorily complete the Department's design-build training prior to advertisement (which the Department will provide at no charge to the County). The Department will update its estimate for the Design-Build Contract before advertising and will provide the County with the updated estimate. The update to the estimate will be provided for information and coordination purposes, but will not change the definition of the Design-Build Estimate or the Current Cost Estimate as those terms are used in this Agreement.

4. Section 3.01(5) is amended as follows:

(5) The Department will also procure additional consultant services and other work required for design and construction of the Project (either by assumption of contracts entered into by SFRTA, task work orders on existing Department contracts, or through a new procurement(s)), and services required for demolition of the existing structures on the vehicle maintenance facility site. The Department will also separately procure the Wave Streetcar Vehicles if the FTA does not approve the use of the Small Starts grant as provided in this Agreement for the County to directly acquire the Wave Streetcar Vehicles. The Department will also separately procure the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2 if the FTA disapproves the County's direct acquisition of such items. The cost of all work performed for the Project under such additional Department contracts will be Project Capital Costs. The cost of such additional consultant services or other work that is anticipated as of the Agreement Date is included in the Current Cost Estimate, but may change.

5. Section 3.01(11) is amended as follows:

(11) During the period before award of the Design-Build Contract, the Department shall make no changes in the scope of the Project described in Exhibits A, ~~A-1, or A-2~~ without the assent of the County Contract Administrator. After award of the Design-Build Contract, the Department shall not enter into any supplemental agreement that adds work to the Project scope described in the Design-Build Contract without the assent of the County Contract Administrator. The assent of the County Contract Administrator shall not be withheld to the extent additional work does not fundamentally alter the Project (for example, by lengthening the Project or procuring more rolling stock) and the additional work is required to comply with the terms of the Project Construction Grant Agreement or the requirements of the Project Safety and Security Management Plan required by FTA. After award of the Design-Build Contract, Department staff shall notify County staff as soon as possible but no later than seven (7) days after it becomes apparent that any change in the Project will be required as a result of unanticipated or changed conditions or that work included in the Project will cost more than the estimate for such work included in the Current Cost Estimate and shall, in good faith, consider comments from County staff regarding changes. The Department shall promptly provide the County with a copy of any supplemental agreement to be entered into between the Department and any of its vendors on the Project. Unless a supplemental agreement is required to address a condition that poses an imminent risk to the public or persons performing work on the Project, or to avoid a stoppage of work on the Project and potential delay costs, the Department shall provide a copy of each proposed supplemental agreement to the County before it is executed. The intent of the parties is that the County will have a meaningful opportunity to participate in the Department's decision process prior to Project changes that could create Project Cost Overruns. The Department shall require its

CEI consultant to advise the County of the anticipated County share of any Project Cost Overrun at such time as the CEI consultant notifies the Department that additional funds will be required to pay for the work. The Department shall also promptly provide the County with copies of all invoices for work on the Project that exceed the Current Cost Estimate.

6. Section 3.02(15) is amended as follows:

(15) With the approval of the FTA, the County will directly acquire the Wave Streetcar Vehicles. Upon execution of the Project Construction Grant Agreement, the parties will enter into a subrecipient agreement for the County to receive a portion of the available federal funds~~Small Starts grant~~ for that purpose. The County and the Department will cooperate in providing documentation to FTA required to obtain federal consent to the subgrant, if required by FTA. The County shall directly procure the Wave Streetcar Vehicles from Siemens Industry, Inc. by obtaining any required consents and “piggybacking” on the Charlotte Area Transit System vehicle contract, Contract for the Purchase of Gold Line Modern Streetcar Vehicles (GSV), RFP No. 269-GLS111116, City Contract # 2017000930, in accordance with applicable law and all FTA guidance and requirements. The estimated total cost of the Wave Streetcar Vehicles from Siemens Industry, Inc., through “piggybacking” on the Charlotte Area Transit System vehicle contract is Twenty Nine Million Two Hundred Forty Five One Hundred Ninety Eight Dollars (\$29,245,198)(the “CATS Estimate”). The subrecipient agreement shall be similar to the form agreement attached as Exhibit “H”. The amount of available federal~~Small Starts grant~~ funds included in the subrecipient agreement shall not exceed fifty percent (50%) of the estimated total cost of the Wave Streetcar Vehicles under the Charlotte Area Transit System contract, or the amount approved by FTA, whichever is less. In acting as a subrecipient of, and expending, the subgrant the County shall comply with all provisions of the TIGER grant and Small Starts grant applicable to recipients of a first-tier subaward, including all requirements imposed pursuant to federal law and USDOT and FTA regulations, circulars, and guidance cited in the grant and its exhibits, and the assurances that are part of the TIGER grant and Small Starts grant exhibits. All clauses identified in the TIGER grant and Small Starts grant that are required to be incorporated into any first-tier subaward are hereby incorporated by reference. The County shall execute such additional documents, certificates and assurances as are reasonably required by USDOT and FTA in connection with the County’s role as a subrecipient of the TIGER grant and Small Starts grant. The Department, as grantee, shall submit electronic payment requests for costs incurred by the County that are eligible for reimbursement from the Small Starts grant through the Electronic Clearing House Operation (“ECHO”). The County shall invoice and provide the Department supporting documentation necessary for the Department to request reimbursement of costs incurred through ECHO and shall provide the Department cost details required to be included in the periodic reports the Department is required to submit to USDOT and/or FTA.

7. Section 3.02(17) is added as follows:

(17) The County shall notify the Department prior to the planned opening of price proposals (currently April 12, 2018) for the Design-Build Contract if it wishes for the Department to include in the Design-Build Contract, at the cost of the County, the additional vehicle maintenance facility elements identified in Exhibit A-1. Such notice shall identify the County budgetary action authorizing the County to pay the estimated costs for such additional elements. If the additional cost for the Exhibit A-1 elements proposed by the qualified Design-Build Contract proposer with the best overall score (the difference between the proposer's lump sum bid for the Project as identified in Exhibit A and the proposer's lump sum bid including the additional elements for the vehicle maintenance facility identified in Exhibit A-1) is less than one hundred twenty-five percent (125%) of the additional amount authorized by the County for the Exhibit A-1 elements, the County shall have twelve (12) days after opening of the price proposals to obtain such additional budgetary authority it needs to pay the full amount of the additional cost of the Exhibit A-1 elements. If:

(i) the County does not provide notice to the Department as provided in the first sentence of this section 3.02(17); or

(ii) the additional cost for the Exhibit A-1 elements proposed by the qualified Design-Build Contract proposer with the best overall score is one hundred twenty-five percent (125%) or more of the amount authorized by the County for the Exhibit A-1 elements; or

(iii) the additional cost for the Exhibit A-1 elements proposed by the qualified Design-Build Contract proposer with the best overall score is less than one hundred twenty five (125%) of the amount authorized by the County for the Exhibit A-1 elements, but the County does not obtain such additional budgetary authority it needs to pay the full amount of the additional cost of the Exhibit A-1 elements within twelve (12) days after the opening of price proposals; or

(iv) the County does not pay to the Department the additional cost for the Exhibit A-1 elements proposed by the qualified Design-Build Contract proposer with the best overall score within fourteen (14) days after the opening of price proposals.

the Department will not accept the bid alternative and the Design-Build Contract will not include the additional elements for the vehicle maintenance facility identified in Exhibit A-1.

In the event that the Exhibit A-1 elements are not included in the Design-Build Contract, all amounts paid by the County for Exhibit A-1 shall be transferred back

to the County by the Department within forty-five (45) days after the date of the opening of price proposals.

8. Section 3.02(18) is added as follows:

(18) Provided FTA does not object, the County will directly acquire and install the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2. Provided FTA does not object to the County's acquisition of such items, the parties will enter into a separate Joint Participation Agreement pursuant to which the Department will transfer to the County One Million Two Hundred Eighty Thousand Dollars (\$1,280,000) of the Department Capital Contribution for acquisition and installation of such items. Such separate agreement shall not be effective until after award and execution of the Design-Build Contract and shall not have terms conflicting with the terms of this Agreement. The County and the Department will cooperate in providing documentation to FTA required to obtain federal consent to the Joint Participation Agreement, if required by FTA. If FTA consents, the County shall directly procure the fare collection system, non-revenue vehicles, and general tools in accordance with applicable law and all FTA guidance and requirements. Any costs incurred by the County to acquire and install the fare collection system, non-revenue vehicles, and general tools for the Project identified in Exhibit A-2 in excess of One Million Two Hundred Eighty Thousand Dollars (\$1,280,000) shall be the responsibility of the County. Any portion of the Department Capital Contribution transferred to the County in accordance with this section remaining after acquisition of the items identified in Exhibit A-2 shall be promptly transferred back to the Department. Such remaining funds shall be applied by the Department to the payment of Project Capital Costs in accordance with the terms of this Agreement.

9. Section 4.01(4) is amended as follows:

(4) The parties anticipate that the total cost of the Wave Streetcar Vehicles that the County will incur in acquiring the vehicles from Siemens Industry, Inc. by "piggybacking" on the Charlotte Area Transit System vehicle contract as provided in section 3.02(15) will not exceed the sum of the portion of the Initial County Capital Contribution retained by the County pursuant to section 4.02(8) and the Small Starts grant funds available under the subgrant. If, at the time of contract execution between the County and Siemens Industry, Inc., the total cost of the Wave Streetcar Vehicles to be procured by the County, including only such changes in the specifications, requirements and features of the vehicles as have been approved by the Department in writing, will exceed the sum of the portion of the Initial County Capital Contribution retained by the County pursuant to section 4.02(8) and the ~~federal Small Starts grant~~ funds available under the subgrant, the Department will transfer to the County an amount of the Department Capital Contribution equal to the excess. If necessary, such transfer shall be accomplished by execution of a separate Joint Participation Agreement between the County and

the Department. Such separate agreement shall not have terms conflicting with the terms of this Agreement.

10. Section 4.02(3) is amended as follows:

(3) If the Design-Build Contract price (not including the additional cost for the elements for the vehicle maintenance facility identified in Exhibit A-1) exceeds the Design-Build Estimate, and the parties assent to continue the Project pursuant to Section 3.01(22), the County will contribute the County's fifty percent (50%) share of ~~such~~the excess of the total Design-Build Contract price over the Design-Build Estimate, if any, as follows:

- (i) The Department will draw on the County SIB Loan to pay fifty percent (50%) of the amount of invoices submitted by the Design-Build Contract vendor after the total amount invoiced on the Design-Build Contract reaches the Design-Build Estimate. Upon disbursement of any portion of the County SIB Loan, the Department shall notify the County of the amount of the disbursement.
- (ii) If the County's 50% share of the excess of the total Design-Build Contract price over the Design-Build Estimate exceeds the principal amount of the County SIB Loan, the County shall pay to the Department its remaining fifty (50%) percent of the amount in excess of the Design-Build Estimate within thirty (30) calendar days of notification from the Department.

If the Design-Build Contract includes the additional elements identified in Exhibit A-1, the County will contribute the funds for the additional costs for the Exhibit A-1 elements as provided in section 4.02(9).

11. Section 4.02(5) is amended as follows:

(5) The County SIB Loan will only be disbursed to pay the County's share of the excess of the total Design-Build Contract price over the Design-Build Estimate, ~~and~~ the County's share of Project Capital Costs Overruns created by this Agreement, including any increases in the cost of design and construction of the Exhibit A-1 elements due to unforeseen conditions or additional work that is required and approved by the County, as provided in section 4.02(9), and will not be disbursed to pay any part of the Existing Local Funding Commitments. The maximum initial principal amount of the SIB Loan shall not be construed as a limit on the County's responsibility for Project Cost Overruns including the additional cost of the Exhibit A-1 elements under this Agreement. Upon disbursement of any portion of the County SIB Loan, the Department shall notify the County of the amount of disbursement.

12. Section 4.02(9) is added as follows:

(9) If the County notifies the Department that it wishes to include in the Design-Build Contract the additional vehicle maintenance facility elements identified in Exhibit A-1 as provided in section 3.02(17), the County will, within fourteen (14) days after the opening of price proposals, pay to the Department, in cash, the additional cost for the Exhibit A-1 elements proposed by the qualified Design-Build Contract proposer with the best overall score. Such funds will be available to the Department to pay the costs for design and construction of such additional scope items. Any interest earned on such funds shall be treated as an increase in the funds deposited by the County for the payment of such costs. If the cost of design and construction of the Exhibit A-1 elements increases due to unforeseen conditions or additional work that is required and approved by the County, to the extent funds are available under the County SIB Loan to pay such increased costs, the Department will draw on the County SIB Loan for the increased costs, up to the maximum initial principal balance of the County SIB Loan. Upon disbursement of any portion of the County SIB Loan, the Department shall notify the County of the amount of the disbursement. If the balance available for disbursement under the County SIB Loan is less than the increased costs of the Exhibit A-1 elements, the County will provide, within thirty (30) days after the date it is notified of the increased costs, adequate funds to ensure that cash on deposit with the Department is sufficient to fully pay the increased costs. Funds due from the County during the Project not paid within forty (40) calendar days from the date of the invoice are subject to an interest charge at a rate established pursuant to section 55.03, Florida Statutes

13. Exhibit "A" to the Agreement is revised as reflected in Exhibit "A" attached to this Third Amendment.

14. Exhibit "A-1" attached to this Third Amendment is designated Exhibit "A-1" to the Agreement.

15. Exhibit "A-2" attached to this Third Amendment is designated Exhibit "A-2" to the Agreement.

16. Exhibit "C" to the Agreement is revised as reflected in Exhibit "C" attached to this Third Amendment.

17. Exhibit "F" to the Agreement is revised as reflected in Exhibit "F" attached to this Third Amendment.

18. Other than as expressly stated in this Third Amendment, the terms and conditions of the Agreement remain in full force and effect.

19. This Third Amendment may be executed in two or more counterparts, any of which shall be regarded as an original and all of which constitute but one and the same instrument.

**IN WITNESS WHEREOF**, the parties hereto have made and executed this Third Amendment to Wave Project Agreement on the respective dates under each signature: Broward County through its Board of County Commissioners, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the \_\_\_\_ day of \_\_\_\_\_, 2018, and the State of Florida, Department of Transportation, signing by and through the individual duly authorized to execute same.

**COUNTY**

ATTEST:

Broward County, by and through  
its Board of County Commissioners

\_\_\_\_\_  
Broward County Administrator, as  
Ex-officio Clerk of the Broward County  
Board of County Commissioners

By \_\_\_\_\_  
Mayor  
\_\_\_\_ day of \_\_\_\_\_, 2018

Approved as to form by  
Andrew J. Meyers  
Broward County Attorney  
Governmental Center, Suite 423  
115 South Andrews Avenue  
Fort Lauderdale, Florida 33301  
Telephone: (954) 357-7600  
Telecopier: (954) 357-7641

By \_\_\_\_\_  
Angela J. Wallace (Date)  
Deputy County Attorney

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

By: \_\_\_\_\_

Date: \_\_\_\_\_

Legal Review:  
\_\_\_\_\_

Office of the Comptroller  
\_\_\_\_\_

Words in ~~struck-through~~ type are deletions from existing text.  
Words in underscoring type are additions to existing text

## EXHIBIT A

### PROJECT DESCRIPTION

#### **Description of Work:**

The Wave Streetcar system will operate at-grade on a fixed rail embedded in the street, sharing the existing roadway right-of-way with vehicular traffic, and will be powered by an overhead contact wire system throughout most of the alignment. The alignment is approximately 2.8 miles in length with two fixed rail guideways, one in each direction. The streetcar vehicles will also be powered by an onboard energy storage system (OESS) for a segment of the alignment that crosses the New River over the existing SE 3rd Avenue bascule bridge.

The Wave Phase 1 revenue service alignment extends from the southern terminus at S 16th Street and S Andrews Avenue to NE 6th Street between N Andrews Avenue and NE 3rd Avenue, primarily utilizing Andrews Avenue, SE 3rd Avenue and Brickell Avenue for north/ south movement. The alignment utilizes SE 18th Street, SE 6th Street, Las Olas Boulevard, S 2nd Street, N 4th Street, and NE 6th Street for east/ west movement. The Wave Phase 1 requires five (5) modern streetcar vehicles with OESS capability; four (4) vehicles for peak service and one (1) spare.

The project includes guideway, traction power, overhead contact system (OCS), train control, communications, civil, structural, roadway, streetcar vehicles, and a Vehicle Maintenance and Storage Facility (VMSF) located on SW 1st Avenue between SW 18th Street and SW 18th Court, adjacent to the Florida East Coast (FEC) Railroad. The project also includes testing, commissioning, training, and safety certification required for a fully functional streetcar system.

#### **Guideway and Trackwork:**

An embedded track slab will be the standard for the mainline track. A reinforced concrete track slab will provide the foundation for this form of track construction. The design of the track slab will be based on automotive vehicle loadings, streetcar vehicles, and soil conditions. Embedded track shall be installed wherever the guideway is shared with rubber tired vehicles, either in mixed traffic or in locations where only emergency and service vehicles will be permitted to travel. All tracks shall be designed in accordance with the current Transit Requirements, included as an attachment to the RFP. The Work includes all drainage required to comply with the permit requirements for water quality and quantity. Track drains will be provided in paved track areas to properly drain the rail flangeways, the pavement surface between the rails, and at track switch locations.

Track work is required at the new VMSF. The yard track work will be constructed with embedded track and will consider its access to/ from the mainline track.

The term “special trackwork” designates the trackwork units necessary where tracks converge, diverge, or cross one another. Special trackwork includes turnouts, diamond crossings, crossovers, and expansion joints. A reinforced concrete tub lined with electric isolation material will be constructed for all special trackwork.

**Structures:**

The Work includes the design and construction of bridge retrofitting within the project limits. The embedded track within bridge retrofitting shall be designed in accordance with the ~~Concept Drawings and~~ Transit Requirements included as an attachment to the RFP.

The construction of the guideway across the SE 3rd Avenue Bridge over the New River requires structural, mechanical, and electrical modifications to the movable span of the bridge and other modifications to the approach spans of the bridge from the north and south. The bridge is comprised of seven spans including pre-stressed concrete spans, steel flanking spans, and a movable steel twin leaf Scherzer rolling lift bridge span with an open grid steel deck. The movable span and the approach spans will be retrofitted for the introduction of the Streetcar. ~~This will require replacement of girders/ beams on the bridge and construction of a concrete deck on the new girders/ beams with the streetcar embedded in that deck.~~

**Stations:**

The Work includes the design and construction of ~~thirteen (13)~~fourteen (14) streetcar station stops throughout the alignment, which include ~~eight (8)~~ten (10) curbside platforms and ~~five (5)~~four (4) median platforms, and provide level boarding access to the floor of the streetcar. The station platforms are proposed to be not less than 80 feet long, from 10 to 15 feet wide, and have a ramp at one or both ends, depending on the adjacent conditions. Each station stop will have a shelter, benches, public address, passenger information systems, passenger assistance telephone, closed-circuit television, infrastructure for ticket vending machines, trash receptacles, bike racks and other site furnishings. Layover and rest room facilities will be available near ~~at~~ the southern terminus stop at S 16th Street and S Andrews Avenue.

**Communications/ Supervisory Control And Data Acquisition (SCADA):**

The communications system will provide the necessary functions to support the operational requirements of the streetcar system. The communications systems will include public address, passenger information systems, passenger assistance telephone, internet protocol video (IPV) HD camera system with PTZ (pan, tilt, zoom), remote monitoring capabilities, and recording equipment. A SCADA system will also be provided to allow for monitoring and control of traction power substations (including intrusion detection), communications equipment houses and cases, fire/ life safety equipment, train control components, public address, public information equipment, and other elements.

**Signal and Route Control:**

Where the streetcar operates in mixed traffic, streetcar movements will be controlled by the traffic signal system. This includes interlocking protection at all control points for trains leaving the VMSF, a train-to-wayside communications (TWC) system, and a traffic signal controller that will communicate with the guideway proximity loops. The streetcar will be equipped with train-to-wayside communications systems that will activate special traffic signals and routing. In areas of on-street running, special streetcar signals will be provided at specific intersections and locations to allow the streetcar to proceed through the intersection or switch lanes independent of auto traffic. These signals will be displayed by wayside streetcar traffic signal controllers when activated by

the streetcar train-to-wayside communications system. The train-to-wayside controller will have a provision for the manual setting of predetermined routes. The train-to-wayside controller will then proceed to activate and set wayside powered track switch machines appropriate for the route. Manual switch control will also be possible.

#### **Vehicle Maintenance and Storage Facility:**

The Work includes a Vehicle Maintenance and Storage Facility (VMSF) on the property identified as Site K adjacent to the Florida East Coast corridor to accommodate a fleet of five (5) Streetcars. The VMSF will perform daily and routine inspections, maintenance, on-car repairs, and interior/exterior cleaning of the streetcars. The facility will also serve as a storage and component change-out location. The facility is intended as a light maintenance facility with minor component rebuild, truck overhaul and minor machine shop capabilities. Major machine shop work and sheet metal work may be performed at another location as an outsourced function. The VMSF will house the following functions:

- streetcar storage;
- train operator report area;
- operator and maintenance training;
- streetcar service and inspection;
- streetcar interior and exterior cleaning;
- streetcar air-conditioning, current collector and resistor unit repair;
- fare collection (FC) equipment repair, storage and inspection;
- traction electrification system (TES) service and inspection;
- TES overhead service and inspection;
- facilities maintenance;
- system wide parts storage;
- streetcar operations administration;
- streetcar maintenance administration;
- central control;
- electronic component repair;
- communications equipment repair, storage and inspection;
- storage of streetcar maintenance-of-way (MOW) materials;
- car wash; and
- LAN room for train control and communications.

#### **Traction Power Supply and Distribution:**

Traction electrification is provided via 750 VDC traction power sub-stations (TPSS) transmitting electric energy from its source to the vehicles. The vehicles will be propelled by electric traction motors. Energy to drive these motors will be supplied to the vehicles by rectifier substations located along the wayside through a system of distribution cables, switches and an OCS installed above each track. A pantograph will be mounted on each vehicle to serve as the interface between the vehicle and the OCS and function as the collector of electrical current for the vehicles. The running rails of each track, bonds, and cabling complete the path of electrical current back to the substation. The sections of the system between the stations, before and after the New River, will be without OCS. Vehicles will travel in these two sections using on-board storage batteries.

### **Spare Parts and Maintenance Materials**

The Work will include the furnishing of spare parts and maintenance materials to operate and maintain the streetcar system for the initial startup period. The spare parts and maintenance materials will include keys, special tools, and test equipment required to access, start, operate, monitor, maintain, and perform essential repairs needed for the continued operations of the initial phase of the streetcar system, and the hand tools and general equipment identified in Exhibit A-2.

### **Vehicles: (procured by Broward County under separate contract)**

The Work includes the design, manufacture, delivery, and testing of five (5) streetcar vehicles. The Work also includes the design and integration of all vehicle systems, as defined in the RFP, such that all specified requirements are achieved without conflict or error within or between systems.

Each vehicle shall be a double articulated, modern urban streetcar with contemporary styling, with the following characteristics:

- At least a three-section vehicle, with the carbody sections configured as A1-C1-B1.
- Not less than 50% low floor. Carbody section C1 shall be low floor.
- Carbody section C1 shall have at least two double wide doorways per side.
- Capable of bi-directional operation, with a fully functional cab at each end. Operating control and performance shall be equal from both cabs.
- Designed for single unit operation with provisions for towing a non-operable Vehicle.
- Heated and air conditioned consistent with the Fort Lauderdale, Florida climate and the Technical Specifications.
- Design shall incorporate the OESS, i.e. a battery and/or capacitor drive system, which shall provide capability for wireless operation in accordance with the Technical Specifications.

## EXHIBIT A-1

### ADDITIONAL VEHICLE MAINTENANCE FACILITY ELEMENTS

The additional elements for design and construction of the Vehicle Maintenance and Storage Facility (VMSF) not included in Exhibit A are the additional design and construction work required to provide an expanded VMSF to accommodate a fleet of twelve (12) Streetcars. The all-inclusive 12 streetcar VMSF includes:

- Yard track to provide for storage and operations of a 12 streetcar vehicle fleet;
- Non-revenue loop track connecting the yard track at the south end of the VMSF to the two proposed tracks on SW 18<sup>th</sup> Street leading to the VMSF and the revenue tracks along South Andrews Avenue;
- Concrete or masonry structure for the vehicle and maintenance storage building;
- VMSF building third service bay;
- Provide wheel truing machine infrastructure;
- Complete build out and furnishing of second floor office space;
- Provide power switch machines at all switch locations within the VMSF; and
- Provide infrastructure for standalone car wash.

EXHIBIT A-2

FARE COLLECTION SYSTEM, NON-REVENUE VEHICLES

AND GENERAL TOOLS

**Fare Collection**

Purchase and install the fare collection system, including fourteen (14) ticket vending machines at all streetcar station stops connecting to Project infrastructure, and associated hardware and software.

The available Project budget for the fare collection system is \$280,000.

**Non-Revenue Vehicles**

Purchase and provide non-revenue eleven (11) vehicles for the purpose of operations and maintenance of the Wave Streetcar system. The vehicles shall be used for:

- Traction Power & Overhead Line Maintenance;
- Trackway Maintenance;
- Signal & System Maintenance;
- Facilities Maintenance; and
- Operations Support.

The available Project budget for the 11 non-revenue vehicles is \$800,000.

**General Tools**

Purchase standard hand tools, basic electrical tools and test equipment, safety lights, portable generators, spill kits and basic cleaning equipment for the purpose of general maintenance of the Wave Streetcar system.

The available Project budget for the general tools is \$200,000.

EXHIBIT C

DESIGN-BUILD ESTIMATE

(in thousands)

CATEGORY	
10-Guideway & Track	<u>\$28,592,27,631</u>
20-Stations & Stops	<u>\$2,937,3,217</u>
30-VMSF	<u>\$16,194,15,655</u>
40-Sitework	<u>\$22,019,21,411</u>
50-Systems	<u>\$24,065,23,393</u>
Subtotal	<u>\$93,807,91,307</u>
Un Allocated Contingency	<u>\$7,546 *</u>
BASE PROJECT COST	<u>\$101,353,98,853</u>
ADDITIONAL COSTS:	
VMSF:	
<del>Non Revenue Equipment</del>	<del>\$2,000</del>
<del>Misc. Shop Tools</del>	<del>\$500</del>
Upgrade-Type IV Bldg.	\$1,929 **
Design/Build: Design	\$6,391 ***
Risk	\$4,565 ****
Subtotal	<u>\$12,885,15,385</u>
ESTIMATED COST ( <del>w/o Vehicles</del> )	\$114,238
<del>Vehicles (optional separate contract)</del>	<del>\$32,348</del>
ESTIMATED COST ( <del>with Vehicles</del> )	<del>\$146,586</del>

NOTE: Does not include any potential bid price or construction cost overruns

Notes:

- \* 4.52%
- \*\* Does not include wheel truing machine or complete upgrades under SFRTA plan
- \*\*\* 7% of 10-50
- \*\*\*\* 5% of 10-50

## EXHIBIT F

### ANTICIPATED PROJECT SCHEDULE

Industry Forum	May 20, 2016
Advertisement of Design-Build Contract	July 2016
Final RFP for Design-Build Contract	October 2016
Initial County Capital Contribution Due	November 1, 2016
Execute Project Construction Grant Agreement 2016	<u>October 12, 2017</u> <del>December 1,</del>
Letting of Design-Build Contract	<u>April 12, 2018</u> <del>March 1, 2017</del>

Note: the Initial County Capital Contribution is needed 30 days prior to execution of the Project Construction Grant Agreement. The 30 days is needed to deposit, encumber, and authorize the funds. This assures FTA that the match funds are programmed and available within the Department's systems prior to executing the federal agreement.