

**AGREEMENT
BETWEEN
THE CITY OF JACKSONVILLE
AND
CENTRAL PIPE REHAB, LLC
FOR
SERVICES RELATING TO THE NSBB PROJECT**

THIS AGREEMENT (the “Agreement”) is made as of the ____ day of _____ 2022, by and between the **CITY OF JACKSONVILLE**, a consolidated municipality and county political subdivision of the State of Florida (“City”), for and on behalf of its Environmental Protection Board (“EPB”) whose address is c/o Jacksonville Environmental Protection Board, 214 North Hogan Street, Suite 500, Jacksonville, Florida, 32202 , and **CENTRAL PIPE REHAB, LLC** (“Central Pipe”), whose address is 7900 Belfort Parkway, Suite 100, Jacksonville, Florida 32256 for certain support services for the Nutrient Separating Baffle Box project as set forth in **Exhibit A**, attached hereto and incorporated herein by this reference (the “Project”).

RECITALS:

WHEREAS, the City of Jacksonville is responsible for its wasteload allocation and to reduce the loading of Total Nitrogen as defined in the Total Maximum Daily Loads (TMDL) for Nutrients as adopted by the Florida Department of Environmental Protection and implemented by the Lower St. Johns River Basin Main Stem Basin Management Action Plan (BMAP), October 2008; and

WHEREAS, it has been a common practice for municipalities across the state to implement baffle box programs to treat outfalls that discharge to impaired water bodies; and

WHEREAS, the use of, and monitoring of, nutrient separating baffle boxes can warrant a higher removal and an increase in credits received in a BMAP; and

WHEREAS, in order to deploy this innovative technology in other areas of the City of Jacksonville, the EPB desires to test the specifications and potential credits received in a pilot project, and

WHEREAS, through the enactment of Ordinance 2022-__-E, the Jacksonville City Council invoked Section 126.107(g), *Ordinance Code*, to waive competitive solicitation and bidding for this Agreement and authorized the execution of this Agreement by the Mayor or his designee and the Corporation Secretary; now therefore

IN CONSIDERATION of the foregoing and the mutual obligations set forth herein, the parties hereby agree as follows:

1. **Recitals.** The Recitals set forth above are true and correct in all respects and are hereby incorporated into and made a part hereof.

2. **Obligations of the Parties.**

a. Central Pipe shall perform and implement the project as set forth in the Scope of Services attached hereto as **Exhibit A** (the “Work”).

i. Project to be implemented in compliance with FDOT clear zone criteria

b. City shall pay Central Pipe a sum not to exceed \$274,000.00 for performance of the Work, in accordance with the pricing set forth in **Exhibit A** and the payment terms set forth with the project budget attached hereto as **Exhibit B**.

3. **Term and Renewal.** This Agreement shall commence on the Effective Date and shall continue through September 30, 2024. This Agreement may be extended only with the written agreement of both Parties. The City’s performance and obligations to pay, if any, under the provisions of this Agreement are subject to appropriation by the City Council of the City of Jacksonville. Upon termination of this Agreement, the City shall pay Central Pipe for all work performed prior to the date of termination, in no event to exceed \$274,000.00.

4. **Performance.** Central Pipe shall ensure that the work is performed in a workmanlike manner, using reasonable efforts and abilities on a non-emergency basis. EXCEPT FOR THE LIMITED WARRANTY IN THIS SECTION 4, THE WORK SHALL BE PROVIDED “AS IS” AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL EITHER PARTY HAVE ANY LIABILITY TO THE OTHER PARTY FOR ANY LOST PROFITS OR FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES HOWEVER CAUSED AND, WHETHER IN CONTRACT, TORT OR UNDER ANY OTHER THEORY OF LIABILITY, WHETHER OR NOT THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

5. **Safety.** City, EPB and Central Pipe agree that the safety of all employees, contractors, and the public shall always be a priority. Either City, EPB or Central Pipe personnel may stop the Work immediately due to any safety concerns.

6. **Force Majeure.** Except as otherwise expressly provided herein, neither party shall be liable for any failure or delay in the performance of its obligations under this Agreement due to a force majeure event, including but not limited to, acts of civil or military authority, acts of courts and/or regulatory agencies, war, riot or insurrection, embargoes, sabotages, strikes or lockouts (provided such strike or lockout does not arise from inequitable labor practices), epidemics, fires, floods, earthquakes, tornadoes, and hurricanes. In the event of any failure or delay resulting from such causes, upon notice of the other party within five (5) days of occurrence of the event giving rise to the delay, the time for performance hereunder shall be extended for a period of time reasonably necessary to overcome the effects of such

delays.

7. **No Third-Party Beneficiaries.** This Agreement is for the sole benefit of the Parties hereto and does not create any rights or privileges in any third parties.

8. **No Waivers.** Failure of EPB or the City to take action to enforce compliance with any of the terms or conditions of this Agreement or to give notice or declare this Agreement or any authorization granted hereunder terminated shall not constitute a waiver or relinquishment of any term or condition of this Agreement, but the same shall be and remain at all times in full force and effect.

9. **Entire Agreement.** This Agreement constitutes the entire agreement between the parties and supersedes all previous discussions, understandings, and agreements between the parties relating to the subject matter hereof.

10. **Applicable Law.** This Agreement shall be construed, interpreted, and controlled by the laws of the State of Florida.

11. **Public Records.** The Parties understand and agree that all documents of any kind provided in connection with this Agreement are public records and are treated as such in accordance with Florida law.

12. **Limitations of Government Liability.** Nothing in this Agreement shall be deemed a waiver of immunity or limits of liability of City or EPB beyond any statutory limited waiver of immunity or limits which may have been adopted by the Florida Legislature in Section 768.28, Florida Statutes, or other statute as it now exists or may be changed from time to time, and nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the Doctrine of Sovereign Immunity or by operation of law.

13. **Limitation of Liability – Central Pipe.** IN NO EVENT SHALL CENTRAL PIPE'S TOTAL AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO THE AGREEMENT AND THE WORK, WHETHER INCURRED WITH RESPECT TO ONE CLAIM, OR CUMULATIVELY INCURRED FROM MULTIPLE RELATED OR UNRELATED CLAIMS FROM TIME TO TIME, AND WHETHER IN CONTRACT, TORT OR UNDER ANY OTHER THEORY OF LIABILITY, EXCEED AN AMOUNT EQUAL TO THE FEES PAID TO CENTRAL PIPE UNDER THE AGREEMENT.

14. **Maximum Indebtedness.** \$274,000.00 is the City's maximum indebtedness under this Agreement. In no event shall the total amount owed by EPB or the City under this Agreement exceed this amount.

15. **Non-Discrimination.** Central Pipe represents that it has adopted and will maintain throughout the term of this Agreement a policy of nondiscrimination or harassment against any person with regard to race, color, sex (including pregnancy), sexual orientation, gender identity or expression, religion, political affiliation, national origin, disability, age, marital status, veteran status, or any other impermissible

factor in recruitment, hiring, compensation, training, placement, promotion, discipline, demotion, transfers, layoff, recall, termination, working conditions and related terms and conditions of employment.

16. Retention of Records/Audit.

a. Central Pipe must establish and maintain books, records, contracts, subcontracts, papers, financial records, supporting documents, statistical records, goods, services and all other documents, in whatsoever form or format including, but not limited to electronic storage media, (for purposes of this Section 11, hereinafter referred to as the "Records") sufficient to reflect all receipt and expenditures of funds provided by EPB or City under this MOU.

b. Central Pipe must retain all Project Records pertinent to this MOU for a period of three (3) years after completion of the Project. If an audit has been initiated and audit findings have not been resolved at the end of six years, the Records shall be retained until resolution of the audit findings or any litigation which may be based on the terms of this MOU, at no additional cost to EPB or the City. Records shall be retained for longer periods when the retention period exceeds the time frames required by law or ordinance.

c. Upon demand, at no additional cost to EPB or the City, Central Pipe must facilitate the duplication and transfer of any Records during the required retention period in Section 11(b) hereof.

d. Central Pipe must provide these Records at all reasonable times for inspection, review, copying or audit by EPB or the City.

e. At all reasonable times for as long as the Records are maintained, Central Pipe must allow persons duly authorized by EPB or City to have full access to and the right to examine any of the provider's Records, relative to the Project, regardless of the form in which kept.

f. Central Pipe, at its sole and exclusive cost and expense, must provide audits or reports as requested by EPB or the City, and must insure that all related party transactions are disclosed to the auditor.

g. Central Pipe must comply and cooperate immediately with any inspections, reviews, investigations, deemed necessary by EPB or the City.

h. Central Pipe must permit EPB or the City to interview any employees, subcontractors and subcontractor employees of Central Pipe to assure EPB or the City of the satisfactory performance of the terms and conditions of this MOU. Following such review, if performance of Central Pipe is, in the opinion of EPB or the City, deficient, EPB or the City will deliver to Central Pipe a written report of the deficiencies and request for development by Central Pipe of a corrective action plan. Central Pipe hereby agrees to prepare and submit, to EPB or the City, said corrective plan within ten (10) days of receiving EPB's or the City's written report.

Thereafter, Central Pipe must correct all deficiencies in the corrective action plan, within ten (10) days from EPB's or the City's receipt of the corrective action plan.

i. All reports, audits, and other information provided by Central Pipe pursuant to this Section shall contain the following statement: "The information provided to the City of Jacksonville in this submittal is submitted under penalties of perjury, under Section 837.06, Florida Statutes."

j. To the extent that Central Pipe uses subcontractors in the performance of the Services under this MOU, or assigns this MOU with prior CITY consent, Central Pipe must include the aforementioned audit, inspections, investigations and record keeping requirements in all subcontracts and assignments.

16. **Indemnity.** See **Exhibit C**, attached hereto.

17. **Insurance.** See **Exhibit D**, attached hereto.

16. **Compliance with Laws.** In performing under this Agreement, Central Pipe shall comply with all applicable federal, state, and local laws, rules, and regulations as the same exist or as may be amended from time to time, including but not limited to the Public Records Law, Chapter 119, Florida Statutes. In performing its obligations under this Agreement, the City of Jacksonville represents and warrants that it has complied with all applicable federal, state, and local laws, rules, and regulations as the same exist or as may be amended from time to time, and during the term of this Agreement, the City of Jacksonville shall continue to comply with all applicable federal, state, and local laws, rules, and regulations.

[Remainder of page left blank intentionally. Signature page follows immediately.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

WITNESS:

CENTRAL PIPE, LLC

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

ATTEST:

**CITY OF JACKSONVILLE, a
Florida municipal corporation**

By: _____

James R. McCain, Jr.
Corporation Secretary

By: _____

Lenny Curry
Mayor

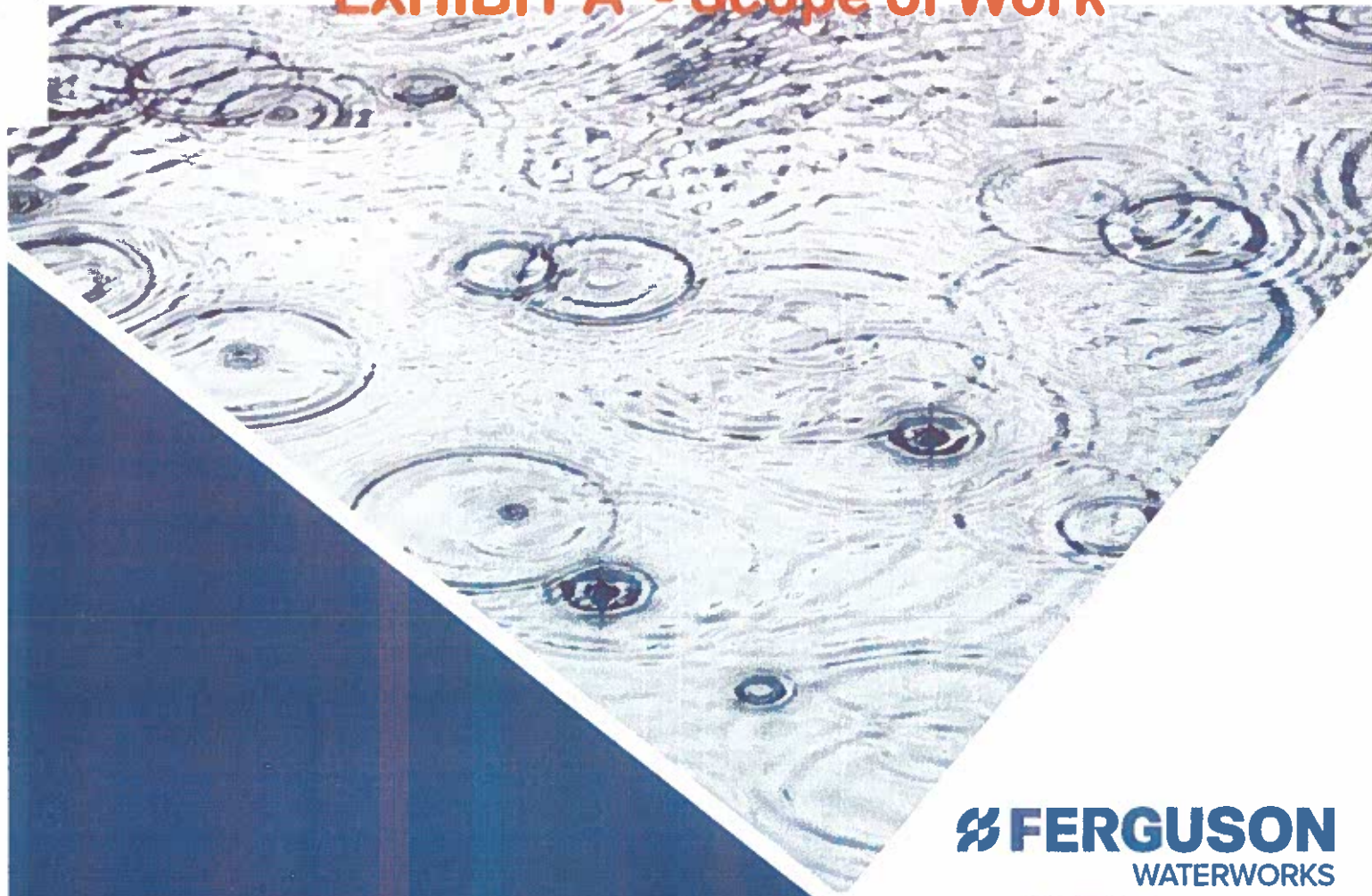
In accordance with the Ordinance Code of the City of Jacksonville, I do hereby certify that there is an unexpended, unencumbered, and unimpounded balance in the appropriation sufficient to cover the foregoing agreement, and that provision has been made for the payment of monies provided therein to be paid.

Director of Finance
City Contract Number: _____

Form Approved:

Office of General Counsel
GC-#1493815-v1a-
Agreement_between_The_City_of_Jacksonville_(EPB)_and_Central_Pipe_Rehab_LLC_for_Services_Relating_to_the_NSBB_Pro
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EXHIBIT A - Scope of Work



Stormwater Improvements with Nutrient Separating Baffle Boxes

PREPARED FOR: City of Jacksonville
PREPARED BY: Ferguson Waterworks and Central Pipe Rehab
DATE: 1.24.2022

Stormwater Improvements with Nutrient Separating Baffle Boxes

Prepared by: Ferguson Waterworks and Central Pipe Rehab

Prepared for: City of Jacksonville

Date: January 24, 2022

SUMMARY

Municipalities around the state of Florida are being directed to reduce their nutrient and pollutant loading to combat the negative side effects of development such as the red tides and algae blooms that have wreaked havoc across many of our impaired waterbodies and coastal shorelines. Our current infrastructure can carry pollutants miles away from their origins resulting in unnatural pollutant concentrations due to traditional methods of managing stormwater runoff. A net improvement requirement for new development is a tool that the DEP and Water Management Districts have been using to reduce our TMDL's. However, this does not address the legacy infrastructure that was not design with these low impact regulations that continue to act as point sources to our impaired water bodies. Thus, we have seen over the past decade a large increase in stormwater improvement projects to address our outdated infrastructure. There are many best management practices for reducing nutrient loads, some are better for dissolved pollutants, and others are better capturing solids and trash.

To address the nutrient load contained in solids, it has been a common practice for municipalities across the state to implement baffle box programs to treat outfall that discharge to impaired water bodies. The City of Melbourne, Titusville, Tampa, Pinellas County, and Ft. Myers are a few examples of municipalities that have chosen the NSBB as there their preferred BMP for their baffle box programs. This is because the NSBB has many proprietary features that maximize the pollutants captured, provides ideal access for servicing and maintenance, and allows for large flows to bypass internally without significant headloss because of NSBB's floating skimmer. When selecting a solution that requires a significant capital cost, it is important to select the product that has all the design features you will need in the most optimal manner which the NSBB does and is why it is the most widely specified baffle box across the state.

Based on GPI Southeast's 3rd party test report, *Baffle Box Effectiveness Monitoring Project DEP Contract No. S02356*, which was 100% funded by DEP, gives second generation baffle boxes 15.5% credit for TP and 19.05% for TN. While this report generically gives this credit to second generation baffle boxes, the specific products tested in this report were all Suntree NSBB's (now Oldcastle's after their acquisition of Suntree Technologies in 2019). These credits for TP and TN are based on the nitrogen and phosphorus attached or stored in the solids captured in the box. During maintenance these pollutants are physically removed which enables the box to receive more pollutants. It can be typical for an municipality to service these vaults up to once a month depending on the contributing area. Additionally, each site can be different and the monitoring of a NSBB's performance can warrant a higher removal and an increase in credits received in a BMAP.

If site conditions allow, NSBB's can be outfitted with an up-flow filter utilizing a biosorption activated media (BAM) called ECT which is a blend of Bold and Gold Media (Bold and Gold is a brand name like Kellogg's is to each of their "blends" of cereal) developed and tested by UCF. This is referred to a NSBB+UFF. The added benefit of the BAM filter on the NSBB is quantified using BMPTrains and is dependent on the hydraulic efficiency of the filter (determined by the Curve Number/DICA% of the catchment, and volume of water treated relative to the size of the catchment). Modeling an NSBB+UFF that treats roughly 0.10" to 0.25" typically yields results 20%-40% for either TP or TN. As previously mentioned, monitoring can warrant higher removals and

greater credit received on a BMAP. A 3rd party study on an NSBB+UFF conducted by UCF for an urban test site in Kissimmee yielded removals of 54% TN and 67% TP.

Ferguson and CRP visited four locations across Jacksonville to conduct field reviews of outfalls that discharged into impaired bodies of water. The approximate addresses to each of the locations are as follows:

1. 2215 Jersey Street, Jacksonville, FL 32210
2. 9767 E Carbondale Drive, Jacksonville, FL 32208
3. 9153 Carbondale Drive, Jacksonville, FL 32208
4. 6904 Gaillardia Road, Jacksonville, FL 3221

During these field reviews we measure elevations, tailwater conditions, recorded pipe sizes (some approximate based on access and ability to measure), and other site-specific conditions beneficial for making recommendations. Based on our findings at each site, our recommendation for a pilot project that is to be monitored is the 9767 E Carbondale Dr. location where we would propose to use a 5x10.5 NSBB+UFF. This site appears to have a large canopy area, an appropriate static water line, and potentially a large volume of water upstream of the ditches to provide an ideal hydraulic efficiency for the filter to provide an optimal removal efficiency.

9767 E CARBONDALE DRIVE, JACKSONVILLE, FL 32208

Below is an approximate profile based on existing conditions and our proposed solution for the outfall near 9767 Carbondale Drive. It includes the construction of an upstream and downstream headwall, 10ft of 24" RCP, and a 5x10.5 NSBB+UFF to service as treatment option for this outfall.

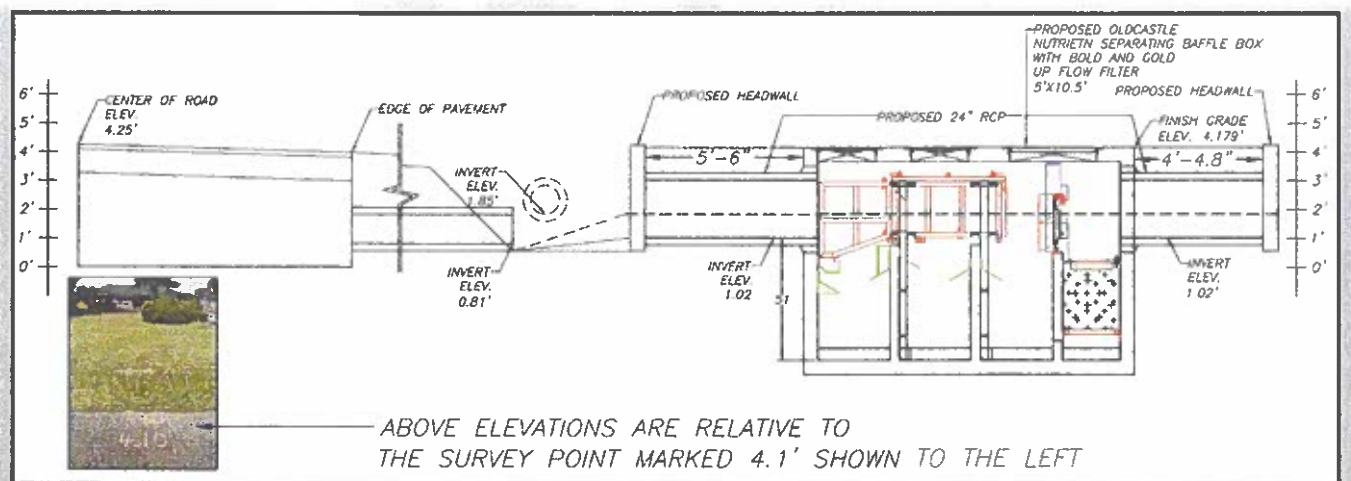


Figure 1. Profile View of 9767 Carbondale Dr.

The structure can be outfitted with standard rings and covers, hatches, or Oldcastle can provide a Sunview Observation Cover (as shown to the right) which is a marine grade fiberglass frame with heavy duty lexan windows. This observation cover which often includes an educational sign and can be used as a tool teach and inform the local public and of their stormwater infrastructure and where their tax dollars are being spent. The color of the observation cover comes standard as green but can be customized based on commercially available gelcoat pigments. DEP can sometimes provide additional credits for TN/TP for BMP's or educational components of projects.



Figure 2. Sunview Observation Cover

9767 E Carbondale Dr is in Duval County, 7 miles north of downtown Jacksonville in the Riverview neighborhood. The site has an open drainage ditch which flows directly into the Trout River and offers plenty of space for installation of the NSBB.

Riverview consists of single-family homes mostly built in the 1940's, 1950's and 1960's. Homes and lot sizes range from modest bungalows to large custom homes. Several large residences line Carbondale Drive and Water Street along the Trout and Ribault Rivers. Carbondale Drive is relatively flat, Water Street is built into the side of a hill, creating a bluff like setting very uncommon in coastal FL. This The neighborhood backs up to the Trout River which flows into the St Johns River which then empties into the Atlantic Ocean. The Trout River is the largest river in Jacksonville and spans nearly 20 miles, the widest point of the river is near the St Johns River, where it spans 0.6 miles across. The river splits into three tributaries: Ribault River, Little Trout River, and Moncrief Creek. Along the Trout River sits Riverview Park which offers a nice park like setting within the Jacksonville urban core.

BUDGET

| 1. Design Fees | | | |
|----------------|--------------|-----|--------------|
| Item | Cost | Qty | Total |
| Civil Engineer | \$ 22,000.00 | 1 | \$ 22,000.00 |
| Total | | | \$ 22,000.00 |

| 2. Construction | | | |
|--------------------|--------------|-----|---------------|
| Item | Cost | Qty | Total |
| 5x10.5 NSBB+UFF | \$ 42,500.00 | 1 | \$ 42,500.00 |
| Install of NSBB | \$ 65,500.00 | 1 | \$ 65,500.00 |
| 24" RCP Installed | \$ 100.00 | 10 | \$ 1000.00 |
| Headwalls | \$ 2,500.00 | 2 | \$ 5,000.00 |
| Additional Grading | \$ 10,000.00 | 1 | \$ 10,000.00 |
| Total | | | \$ 124,000.00 |

| 3. Water Quality Testing/Monitoring (Not Including Cleaning/Service) | | | |
|---|--------------|-----|--------------|
| Item | Cost | Qty | Total |
| ** ***Monitoring | \$ 80,000.00 | 1 | \$ 80,000.00 |
| Total | | | \$ 80,000.00 |

| | |
|--------------------------|---------------|
| Total Without Monitoring | \$ 146,000.00 |
|--------------------------|---------------|

| | |
|-----------------------|---------------|
| Total With Monitoring | \$ 226,000.00 |
|-----------------------|---------------|

| | |
|--|--------------|
| ** Adder for Sunview Observation Cover** | \$ 20,000.00 |
|--|--------------|

| | |
|--|--------------|
| ** Adder for Tideflex 24" inline check valve** | \$ 16,000.00 |
|--|--------------|

**Stetson University Institute for Water and Environmental Resilience / 1-year of monitoring.

SOW to include:

- Monitoring of typical stormwater constituents (TN, TP, OP, TSS, etc.)
- Monthly grab samples (12)
- Certified testing equipment
- Lab tests
- Final report

***The City may desire to work with a local university to conduct the monitoring and testing as outlined in this proposal for a potential reduced fee or for no fee at all in conjunction with student curriculum requirements. In the alternate, the City may desire to conduct the testing with its own environmental quality staff or with a local testing firm.

Proposed payment schedule:

| |
|--|
| 1. \$22,000 upon approval (engineering/design fees) |
| 2. (4) construction draws of \$40,000 each for a total construction cost of \$160,000 |
| a. First payment upon mobilization |
| b. Second payment after NSBB has been set into ground (around 50% completion) |
| c. Third payment 75% completion |
| d. Final payment after demobilization |
| 3. \$40,000 or ½ of monitoring fee at end of construction |
| 4. \$40,000 Final Payment after final report from agency selected for monitoring the NSBB for 1-year |

Cleaning/maintenance:

\$12,000 Cleaning/Maintenance (1-year) includes 6 cleaning events @ \$2,000/event**

**Cleaning events will be provided by CPR @ a rate of \$2,000 per event with a total of (4) cleaning events in 12 months with (2) additional events budgeted. CPR request payment upon completion of each cleaning event.

Design and Construction Schedule: 6-10 months, depending on material delivery.

Total Project Cost including, Design, Construction, Monitoring, Sunview Observation Cover, Tide Flex In-Line Check Valve and Cleaning/Maintenance = \$274,000.00

OLDCASLTE NUTRIENT SEPARATING BAFFLE BOX

The Nutrient Separating Baffle Box also referred to as an NSBB, is a hydrodynamic separator design to treat stormwater in an online configuration. The standard NSBB is considered a second generation baffle box by the WMD's and FLDEP. The NSBB is designed to capture sediments, trash, foliage, hydrocarbons, nutrients, and various debris to be harvested by service crews later during maintenance. Material collected in the screen system is designed to be collected above the water column which minimizes the amount of nutrients the debris can leach into the water and downstream. This BMP is comprised of a concrete vault, a centrally located screen system, turbulence deflectors, and a floating skimmer. Additionally, the NSBB can also be designed to include an internal up flow filter with built in bypass. We refer to this as an NSBB+UFF. The up flow filter component uses Bold and Gold media (ECT blend) to provide additional treatment of dissolved nitrogen, phosphorus, and TSS. These systems can be designed for low flows as well as high flows, capable of treating and bypassing up to hundreds of CFS. The NSBB can be designed to tie in to existing culverts, whether RCP HPDE, box culverts swales, or ditches, making it an extremely versatile product.

NSBB COMPONENTS AND FEATURES

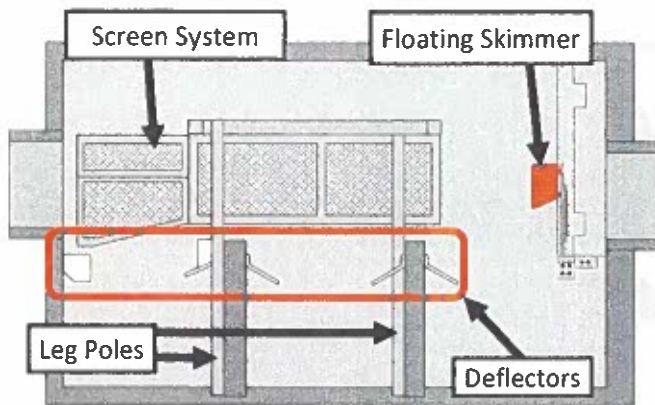


Figure 3. NSBB Components

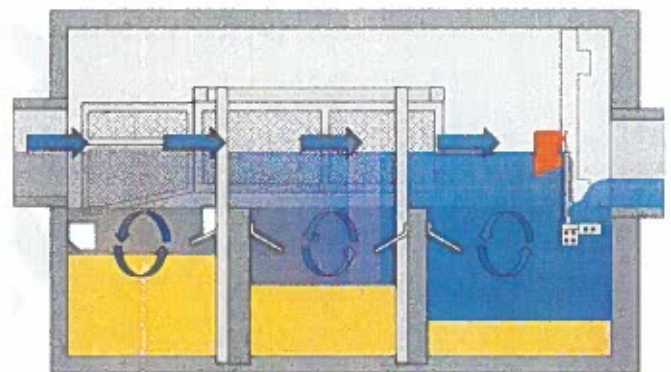


Figure 4. Normal Flow Path

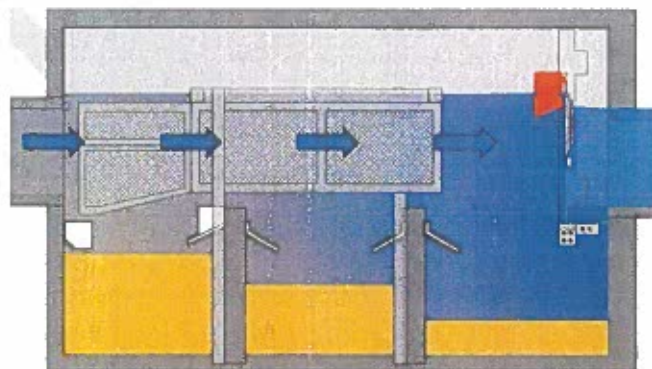


Figure 4. Bypass Flow Path

NSBB+UFF COMPONENTS AND FEATURES

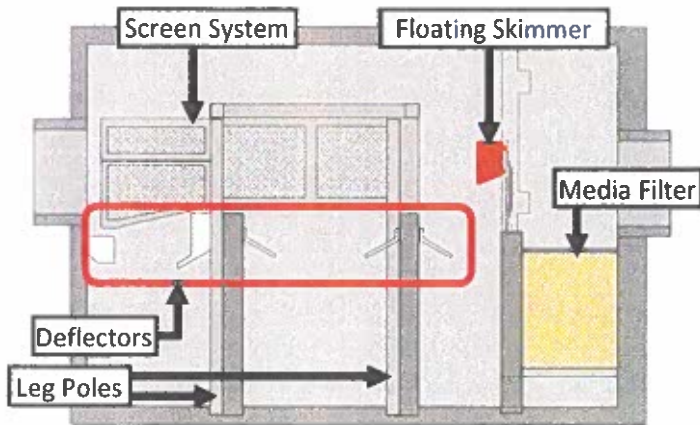


Figure 5. NSBB+UFF Components

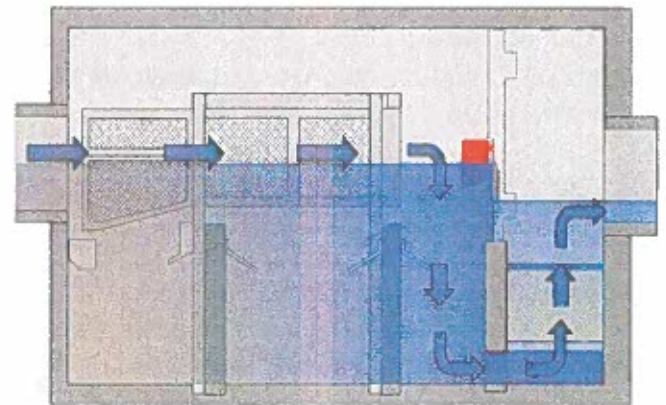


Figure 6. Normal Flow Path

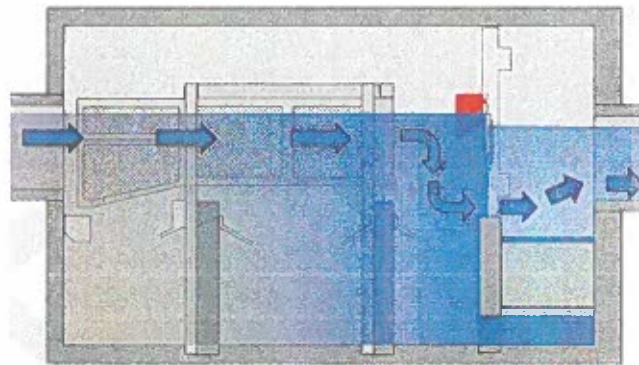


Figure 7. Normal Flow Path

SIZING

NSBB's are design based are typically sized based off pipe size and flowrate. In a typical application we size the width of the NSBB to be double the width of the pipe diameter. We size length of the vault (while in accordance with standard mold sizes) to be double the width. Thus a 48" pipe would be sized to have an 8ft wide by 16 ft long interior concrete structure. After a vault size is selected, it is necessary to cross check the flowrate of the location to the peak flow rates or design flow rates of the structure. The table below shows the standard vault sizes, peak flowrates, and square feet of media for the NSBB's with UFF's.

Table 1: Standard Vault Sizes with Flow Capacities and SF of Media

| Standard Sizes | NSBB | NSBB+UFF | SF MEDIA NSBB+UFF (Only) | Peak Flow NSBB/NSBB+UFF |
|----------------|------|----------|--------------------------|-------------------------|
| 4x8 | ✓ | NA | NA | 30 CFS |
| 5X10.5 | ✓ | ✓ | 10.00 SF | 36 CFS |
| 6X12 | ✓ | ✓ | 10.00 SF | 62 CFS |
| 8X16 | ✓ | ✓ | 23.33 SF | 147 CFS |
| 10x20 | ✓ | ✓ | 46.67 SF | 287 CFS |
| 12X24 | ✓ | ✓ | 50.00 SF | 500 CFS |

NSBB+UFF's are sized using the same methodology as NSBB's except there is a third component to this design aside from just pipe size and flowrate, and that is the upstream treatment volume. For NSBB+UFF we need to look at the volume that is store in the NSBB as well as upstream up to the bypass elevation (based on the floating skimmer height). This would be any water upstream in the pipes, culverts, swales (this is considered you treatment volume or T.V.). In many cases this may only be 0.1"-0.25" of treatment depth. The filter in the NSBB is designed to treat half the upstream volume in 24 hours based on 1 gpm/sf treatment rate of the ECT Bold and Gold media. The square feet of media required can be shown below:

$$Eq 1. SF of Media Required = T.V. \frac{gallons}{day} * \frac{1}{2} \div 1,440 \frac{minutes}{day} \div 1 \frac{gpm}{sf}$$

Once you've sized your filter's minimum square ft of media required, you can selected the smallest vault size that meets your filter requirement as well as pipe size and peak flow rate.

Once preliminary site information regarding pipe inverts, elevations, flowrates, and location have been determined, a design worksheet can be filled out with as much of those details as available to generate a site-specific conceptual drawing.

NSBB'S and NSBB+UFF's are designed to have a static water line that keeps the debris captured in the screen system dry between rain events. If there is a high static water line, the NSBB can be designed to have an elevated screen system that sits above the water line while the lead-in or front half of the screen system can be designed to be extended low enough to capture the either the top portion of the pipe or the entire portion of the pipe. Ideally there should be around a minimum of 3ft between static water line and the top of the vault. It may be determined the if conditions are not suitable for a NSBB based on the static water line that another product or BMP be used.

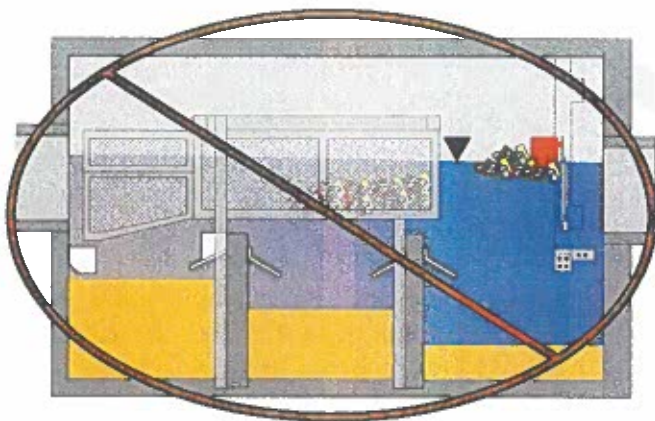


Figure 8. High Static Water Line with Improperly Set Screen System

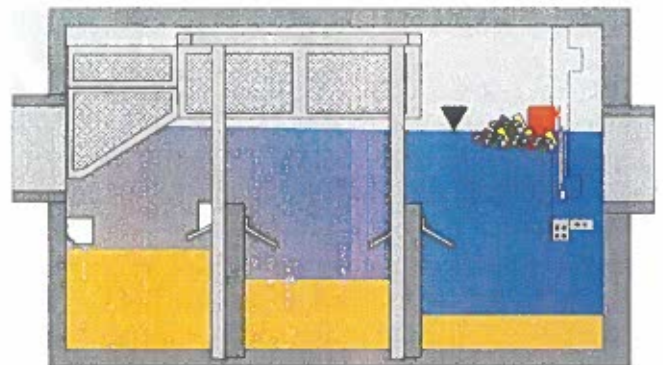


Figure 9. High Static Water Line with Properly Set Screen System and Extended Lead-In

HEADLOSS

Another consideration to take into account for a project's design is the amount of headloss that a given BMP creates. No matter the product there will always be headloss, however through the Oldcastle's floating skimmer we are able to provide a greater level of treatment and reduce the amount of headloss

during peak flows. Since the floating skimmer can adjust with the static water line of the structure, this means the flow area under the skimmer is increasing as the waterline increases which causes the headloss VS flow curve to taper much sooner than a traditional static skimmer. Due to the nature of the box having double the width of the pipe for standard NSBB design, for a 5x10.5 NSBB the skimmer needs to rise less than 12" to meet or exceed the cross sectional area of the typical pipe size for the structure. At table of the required rise in the skimmer due to the static water to meet the typical cross-sectional area for each size NSBB can be found below.

Table 2: Equivalent Area Under Skimmer to Pipe Size

| Structure Size | Typical Pipe Size | Rise in Skimmer to Equal Pipe Area |
|----------------|-------------------|------------------------------------|
| 4x8 | 24.00 " | 9.42 " |
| 5x10.5 | 30.00 " | 11.78 " |
| 6x12 | 36.00 " | 14.14 " |
| 8x16 | 48.00 " | 18.85 " |
| 10x20 | 60.00 " | 23.56 " |
| 12x24 | 72.00 " | 28.27 " |

Additionally, due to the NSBB's centrally located screen system (another proprietary feature) there is ample bypass around both sides of the screen system as well as over top. This fundamental design is a key feature that prevents the NSBB from compromising the hydrology of the upstream watershed.

For estimating to headloss of a system, Oldcastle will need to know pipe invert sizes, elevations, outlet pipe slope, target flow rate, and if there is a tailwater condition. For conservative estimates the NSBB is modeled to have a screen system that is 75% impacted.

NUTRIENT CREDIT

NSBB's are classified as second generation baffle box are thus credited 19.05% TN and 15.5% TP. This can be found under the DEP's "BMP Efficiencies Aug 2020" report. Additionally, the DEP report references a test report for the basis of the of the 15.5% TP and 19.05% TN which was prepared by GPI Southeast, Inc. in 2010. GPI's report was conducted using the Suntime NSBB as the test BMP for their second generation baffle boxes. It should also be noted that regardless of existing precedence set by DEP or WMD's, field monitoring can potentially warrant even greater removals or credits on a BMAP than outlined above or below. For example, a Kissimmee study conducted by UCF show an NSBB+UFF had removals of 54% TN and 67% TP. The NSBB+UFF is modeled as 2 BMP's in series and is thus the NSBB's removal followed by a surface discharge. To manually calculate these BMP's in series the equations below:

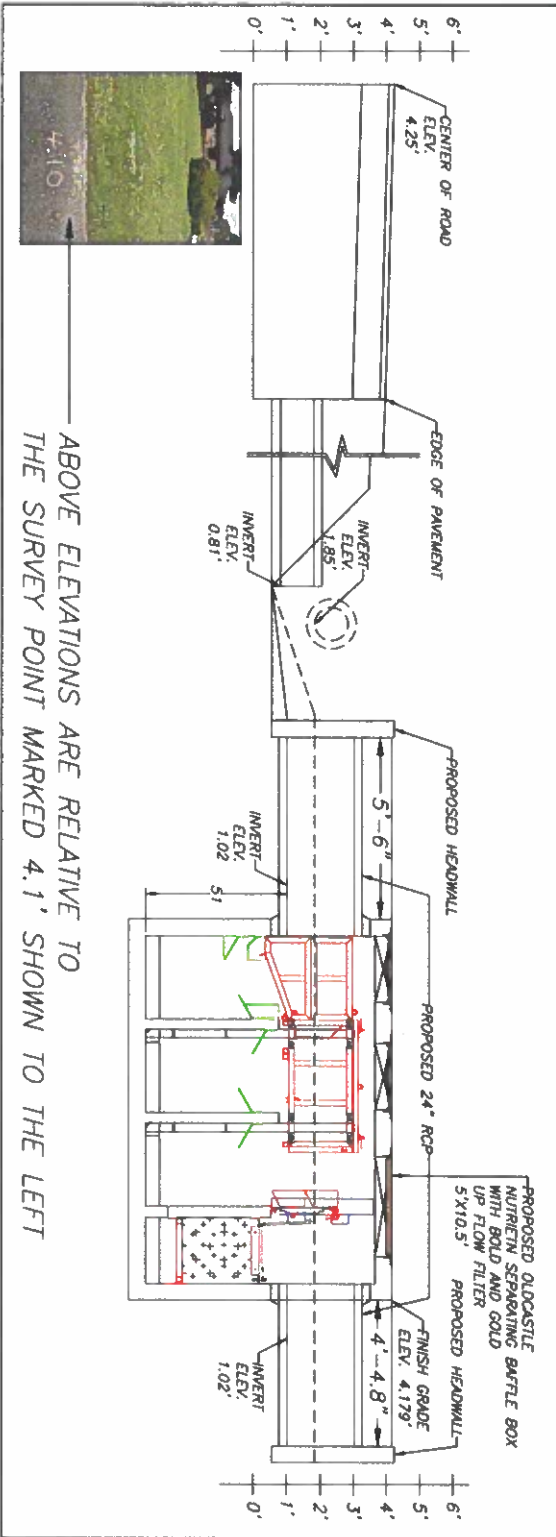
$$Eq 2. R_{NSBB+UFF} = R_{NSBB+UFF} + (1 - R_{NSBB+UFF}) * R_{FILTER}$$

$$Eq 3. R_{FILTER} = R_{ECT MEDIA} * Hydraulic Efficiency = 45\% \left(For \frac{TN}{TP} \right) * Hydraulic Efficiency$$

Hydraulic efficiency is determined by modeling your watershed in BMPTrains using your catchment area, treatment volume or associated treatment depth, curve number, and percent DICA.

STORMWATER TREATMENT PROPOSAL
ATTACHMENT A





ABOVE ELEVATIONS ARE RELATIVE TO THE SURVEY POINT MARKED 4.1' SHOWN TO THE LEFT

| | | | | |
|--------------|-------------------|--|--|--|
| 1 OF 1 | DATE 11/8/2021 | 9767 CARBONDALE DRIVE EAST JACKSONVILLE, FL | FERGUSON WATERWORKS <small>FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com</small> | <small>ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN</small> |
|--------------|-------------------|--|--|--|

EXHIBIT B - PROJECT BUDGET PAYMENT SCHEDULE

| Project Budget - NSBB Pilot Project | | | |
|--|-------------|-----|---------------------|
| 1. Design Fees | | | |
| Item | Cost | Qty | Total |
| Civil Engineer | \$22,000.00 | 1 | \$22,000.00 |
| Total for Design | | | \$22,000.00 |
| 2. Construction | | | |
| Item | Cost | Qty | Total |
| 5x10.5 NSBB+UFF | \$42,500.00 | 1 | \$42,500.00 |
| Install of NSBB | \$65,500.00 | 1 | \$65,500.00 |
| 24" RCP Installed | \$100.00 | 10 | \$1,000.00 |
| Headwalls | \$2,500.00 | 2 | \$5,000.00 |
| Additional Grading | \$10,000.00 | 1 | \$10,000.00 |
| Total for Construction | | | \$124,000.00 |
| 3. Monitoring | | | |
| Item | Cost | Qty | Total |
| Monitoring | \$80,000.00 | 1 | \$80,000.00 |
| Total for Monitoring | | | \$80,000.00 |
| 4. Sunview Observation Cover | | | |
| Item | Cost | Qty | Total |
| Observation Cover and Signage | \$20,000.00 | 1 | \$20,000.00 |
| Total for Observation | | | \$20,000.00 |
| 5. Backflow Prevention | | | |
| Item | Cost | Qty | Total |
| Tideflex 24" inline check valve | \$16,000.00 | 1 | \$16,000.00 |
| Total for Backflow Prevention | | | \$16,000.00 |
| Total Cost for Project Installation | | | \$262,000.00 |
| 6. Cleaning / Maintenance | | | |
| Item | Cost | Qty | Total |
| Cleaning/maintenance (1-year) | \$2,000.00 | 6 | \$12,000.00 |
| Total for Monitoring | | | \$12,000.00 |
| Total Project Cost | | | \$274,000.00 |

EXHIBIT B - PROJECT BUDGET PAYMENT SCHEDULE

| Proposed Payment Schedule | | | |
|---|-------------|--|---------------------|
| Due upon Council approval | | | \$22,000.00 |
| Four (4) construction draws | | | \$160,000.00 |
| upon mobilization | \$40,000.00 | | |
| after NSSB set in ground | \$40,000.00 | | |
| at 75% completion | \$40,000.00 | | |
| after demobilization | \$40,000.00 | | |
| 1/2 of monitoring fee at end of construction | | | \$40,000.00 |
| Final payment after final monitoring report | | | \$40,000.00 |
| Total Project Payments | | | \$262,000.00 |
| Maintenance Payments | | | |
| Cleaning events will be provided by Central Pipe at a rate of \$2,000 per event with a total of (4) cleaning events in 12 months with (2) additional events budgeted. Central Pipe to request payment upon completion of each cleaning event. | | | \$12,000 |

| Proposed Project Schedule | |
|------------------------------------|-----------|
| Project Commences | July 2022 |
| Installation/Construction Complete | May 2023 |
| Monitoring Begins | June 2023 |
| 6-month Monitoring Report | Dec 2023 |
| Final Report Due | July 2024 |

EXHIBIT C - INDEMNIFICATION

Applicant (the “**Indemnifying Party**”) shall hold harmless, indemnify, and defend the City of Jacksonville and their respective members, officers, officials, employees and agents (collectively the “**Indemnified Parties**”) from and against, without limitation, any and all claims, suits, actions, losses, damages, injuries, liabilities, fines, penalties, costs and expenses of whatsoever kind or nature, which may be incurred by, charged to or recovered from any of the foregoing Indemnified Parties for:

1. General Tort Liability, for any negligent act, error or omission, recklessness or intentionally wrongful conduct on the part of the Indemnifying Party that causes injury (whether mental or corporeal) to persons (including death) or damage to property, whether arising out of or incidental to the Indemnifying Party’s performance of the **Agreement**, operations, services or work performed hereunder; and

2. Environmental Liability, to the extent this **Agreement** contemplates environmental exposures, arising from or in connection with any environmental, health and safety liabilities, claims, citations, clean-up or damages whether arising out of or relating to the operation or other activities performed in connection with the **Agreement**; and

3. Intellectual Property Liability, to the extent this **Agreement** contemplates intellectual property exposures, arising directly or indirectly out of any allegation that the Services provided under this **Agreement** (the “**Service(s)**”), any product generated by the Services, or any part of the Services as contemplated in this **Agreement**, constitutes an infringement of any copyright, patent, trade secret or any other intellectual property right. If in any suit or proceeding, the Services, or any product generated by the Services, is held to constitute an infringement and its use is permanently enjoined, the Indemnifying Party shall, immediately, make every reasonable effort to secure within sixty (60) days, for the Indemnified Parties, a license, authorizing the continued use of the Service or product. If the Indemnifying Party fails to secure such a license for the Indemnified Parties, then the Indemnifying Party shall replace the Service or product with a non-infringing Service or product or modify such Service or product in a way satisfactory to the City, so that the Service or product is non-infringing.

If an Indemnified Party exercises its right under this **Agreement**, the Indemnified Party will (1) provide reasonable notice to the Indemnifying Party of the applicable claim or liability, and (2) allow Indemnifying Party, at its own expense, to participate in the litigation of such claim or liability to protect its interests. **The scope and terms of the indemnity obligations herein described are separate and apart from, and shall not be limited by, any insurance provided pursuant to the Agreement or otherwise. Such terms of indemnity shall survive the expiration or termination of the Agreement.**

In the event that any portion of the scope or terms of this indemnity is in derogation of Section 725.06 or 725.08 of the Florida Statutes, all other terms of this indemnity shall remain in full force and effect. Further, any term which offends Section 725.06 or 725.08 of the Florida Statutes will be modified to comply with said statutes.

Without limiting its liability under this **Agreement**, Contractor shall at all times during the term of this **Agreement** procure prior to commencement of work and maintain at its sole expense during the life of this **Agreement** (and **Agreement** shall require its, subcontractors, laborers, materialmen and

suppliers to provide, as applicable), insurance of the types and limits not less than amounts stated below:

EXHIBIT D - Insurance Coverages

| | |
|------------------------------|----------------------------------|
| Worker's Compensation | Florida Statutory Coverage |
| Employer's Liability | \$ 100,000 Each Accident |
| | \$ 500,000 Disease Policy Limit |
| | \$ 100,000 Each Employee/Disease |

This insurance shall cover the Applicant (and, to the extent they are not otherwise insured, its contractors and subcontractors) for those sources of liability which would be covered by the latest edition of the standard Workers' Compensation policy, as filed for use in the State of Florida by the National Council on Compensation Insurance (NCCI), without any restrictive endorsements other than the Florida Employers Liability Coverage Endorsement (NCCI Form WC 09 03), those which are required by the State of Florida, or any restrictive NCCI endorsements which, under an NCCI filing, must be attached to the policy (i.e., mandatory endorsements). In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the Federal Employers' Liability Act, USL&H and Jones, and any other applicable federal or state law.

| | |
|-------------------------------------|---|
| Commercial General Liability | \$2,000,000 General Aggregate |
| | \$2,000,000 Products & Comp.Ops. Agg. |
| | \$1,000,000 Personal/Advertising Injury |
| | \$1,000,000 Each Occurrence |
| | \$ 50,000 Fire Damage |
| | \$ 5,000 Medical Expenses |

Such insurance shall be no more restrictive than that provided by the most recent version of the standard Commercial General Liability Form (ISO Form CG 00 01) as filed for use in the State of Florida without any restrictive endorsements other than those reasonably required by the City's Office of Insurance and Risk Management. An Excess Liability policy or Umbrella policy can be used to satisfy the above limits.

| | |
|---|-----------------------------------|
| Automobile Liability | \$1,000,000 Combined Single Limit |
| (Coverage for all automobiles, owned, hired or non-owned used in performance of the Contract) | |

Such insurance shall be no more restrictive than that provided by the most recent version of the standard Business Auto Coverage Form (ISO Form CA0001) as filed for use in the State of Florida without any restrictive endorsements other than those which are required by the State of Florida, or equivalent manuscript form, must be attached to the policy equivalent endorsement as filed with ISO (i.e., mandatory endorsement).

| | |
|-------------------------------|-----------------------|
| Professional Liability | \$1,000,000 per Claim |
| | \$1,000,000 Aggregate |

The Professional Liability insurance shall include coverage for Technology Errors and Omissions Liability and must be provided on an Occurrence Form or, if on a Claims Made Form, the retroactive date must be no later than the first date of this Agreement and such Claims-made coverage must respond to all claims reported within three (3) years following the period for which coverage is required and which would have been covered had the coverage been on an occurrence basis.

Pollution Liability

\$1,000,000 per Loss
\$2,000,000 Annual Aggregate

Any entity hired to perform services as part of this **Agreement** for environmental or pollution related concerns shall maintain Contractor’s Pollution Liability coverage. Such coverage will include bodily injury, sickness, and disease, mental anguish or shock sustained by any person, including death; property damage including physical injury to destruction of tangible property including resulting loss of use thereof, cleanup costs, and the loss of use of tangible property that has not been physically injured or destroyed; defense including costs charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages; coverage for losses caused by pollution conditions that arises from the operations of the contractor including transportation. Such coverage must be provided on an Occurrence Form or, if on a Claims Made Form, the retroactive date must be no later than the first date of this **Contract** and such claims-made coverage must respond to all claims reported within three (3) years following the period for which coverage is required and which would have been covered had the coverage been on an occurrence basis.

Pollution Legal Liability

\$1,000,000 per Loss
\$2,000,000 Aggregate

Any entity hired to perform services as a part of this **Agreement** that require disposal of any hazardous material off the job site shall maintain Pollution Legal Liability with coverage for bodily injury and property damage for losses that arise from the facility that is accepting the waste under this **Agreement**. Such coverage must be provided on an Occurrence Form or, if on a Claims Made Form, the retroactive date must be no later than the first date of this **Agreement** and such claims-made coverage must respond to all claims reported within three (3) years following the period for which coverage is required and which would have been covered had the coverage

Installation Floater

%100 Completed Value of the Project

To the extent construction services above \$10,000 will occur, a Builder’s Risk policy shall be required. Such insurance shall be on a form acceptable to the City’s Office of Risk Management. The Builder’s Risk policy shall include All Risk Coverages on a form no more restrictive than the ISO “Special” Causes of Loss form and shall include coverage for Wind and Hail and Earth Movement. The Builder’s Risk and/or Installation policy shall not be subject to a coinsurance clause. A maximum \$10,000 deductible for other than windstorm and hail. For windstorm and hail coverage, the maximum deductible applicable shall be 2% of the completed value of the project. Named insureds shall be: the Design-Builder, the City, and the City’s members, officials, officers, employees and agents, and the Program Management Firms(s) (when program management services are provided). The City of Jacksonville and the City’s members, officials, officers, employees and agents are to be named as a loss payee.

Additional Insurance Provisions

- A. Certificates of Insurance. **Applicant** shall deliver the City of Jacksonville Certificates of Insurance that shows the corresponding **City Contract or Bid Number** in the Description, **Additional Insureds, Waivers of Subrogation** and **& statement** as provided below. The certificates of insurance shall be mailed to the City of Jacksonville (Attention: Chief of Risk Management), 117 W. Duval Street, Suite 335, Jacksonville, Florida 32202.

- B. Additional Insured: All insurance **except** Worker's Compensation and Professional Liability, shall be endorsed to name the City of Jacksonville and their respective members, officers, officials, employees and agents as Additional Insured. Additional Insured for General Liability shall be in a form no more restrictive than CG2010 and, if products and completed operations is required, CG2037, Automobile Liability CA2048.
- C. Waiver of Subrogation. All required insurance policies shall be endorsed to provide for a waiver of underwriter's rights of subrogation in favor of the City of Jacksonville and their respective members, officers, officials, employees and agents
- D. Carrier Qualifications. The above insurance shall be written by an insurer holding a current certificate of authority pursuant to chapter 624, Florida State or a company that is declared as an approved Surplus Lines carrier under Chapter 626 Florida Statutes. Such Insurance shall be written by an insurer with an A.M. Best Rating of A- VII or better.
- E. **Applicant** Insurance Primary. The insurance provided by the **Applicant shall** apply on a primary basis to, and shall not require contribution from, any other insurance or self-insurance maintained by the Duval County Clerk of the Circuit and County Courts and the City of Jacksonville and their respective members, officers, officials, employees and agents
- F. Deductible or Self-Insured Retention Provisions. All deductibles and self-insured retentions associated with coverages required for compliance with this **Agreement** shall remain the sole and exclusive responsibility of the named insured **Applicant**. Under no circumstances will the City of Jacksonville and their respective members, officers, officials, employees and agents be responsible for paying any deductible or self-insured retention related to this **Agreement**.
- G. **Agreement** Insurance Additional Remedy. Compliance with the insurance requirements of this **Agreement** shall not limit the liability of the **Applicant** or its Subcontractors, employees or agents to the City of Jacksonville and their respective members, officers, officials, employees and agents shall be in addition to and not in lieu of any other remedy available under this **Agreement** or otherwise.
- H. Waiver/Estoppel. Neither approval by City of Jacksonville nor failure to disapprove the insurance furnished by Ontario Systems shall relieve **Applicant of Applicant** 's full responsibility to provide insurance as required under this **Agreement** .
- I. Notice. The **Applicant** shall provide an endorsement issued by the insurer to provide the City of Jacksonville thirty (30) days prior written notice of any change in the above insurance coverage limits or cancellation, including expiration or non-renewal. If such endorsement is not provided, the Ontario Systems, as applicable, shall provide said a thirty (30) days written notice of any change in the above coverages or limits, coverage being suspended, voided, cancelled, including expiration or non-renewal.
- J. Survival. Anything to the contrary notwithstanding, the liabilities of the **Applicant** under this Agreement shall survive and not be terminated, reduced or otherwise limited by any expiration or termination of insurance coverage.
- K. Additional Insurance. Depending upon the nature of any aspect of any project and its accompanying exposures and liabilities, the City of Jacksonville may reasonably require additional insurance coverages in amounts responsive to those liabilities, which may or may not require that the City of Jacksonville and their respective members, officers, officials, employees and agents also be

named as an additional insured.

- L. Special Provision: Prior to executing this Agreement, **Applicant shall** present this **Agreement** and insurance requirements to its Insurance Agent Affirming: 1) That the Agent has Personally reviewed the insurance requirements of the Contract Documents, and (2) That the Agent is capable (has proper market access) to provide the coverages and limits of liability required on behalf of **Agreement**.