April 20, 2018
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Y18-905-RM / ADDENDUM #1
CONTINUING PROFESSIONAL SERVICES FOR ANNUAL TRAFFIC COUNTS

Proposal Opening Date: May 3, 2018

This addendum is hereby incorporated into the solicitation documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. <u>Underlining</u> indicates additions, deletions are indicated by ~~strikethrough~~.

A.   The following changes are being made to the RFP:

1. In the EXHIBIT A SCOPE OF SERVICES included in the RFP, deleted and replace with the attached revised EXHIBIT A SCOPE OF SERVICES.

B.   The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the proposal.

Receipt acknowledged by:

_____   _____
Authorized Signature   **Date Signed**

_____
Title

_____
Name of Firm

"REVISED EXHIBIT A"

SCOPE OF SERVICES

CONTINUING PROFESSIONAL SERVICES FOR ANNUAL TRAFFIC COUNTS CONTRACT

Orange County requires professional traffic engineering services for a variety of reports, studies and traffic data collection services. These reports, studies and services will be assigned as needed and accomplish a specific task for a described scope of work for the task.

The reports, studies and tasks to be conducted under this contract may include, but are not limited to the following:

1. **County Wide Traffic Count Reports**

   a. **Purpose -** To perform data collection activities for the Orange County Annual Traffic Count Report. The purpose of this exercise is to collect traffic count data to support Orange County's Average Annual Daily Traffic Count Program, as outlined in the following paragraphs b, c and d. This will involve coordinating closely on the required information needed to complete each task. The following describes the tasks that will be performed in completing the project.

   b. **Collection** – Collect 24-hour bi-directional machine traffic volume counts for various count stations within Orange County. The quantity of stations may change but will be 720 locations for the purpose of quantifying scope. The count locations will be approximately equally divided between the two successfully qualified Consultants. The counts will be collected for a period of 72 continuous hours on Tuesday, Wednesday, and Thursday excluding the County defined holidays. Data will not be collected in times of emergency or at times when the normal traffic pattern is disrupted. These counts will be adjusted to reflect seasonal factors for Orange County as defined by the Florida Department of Transportation.

   c. **Reduction and Processing** – The traffic counts will be reduced and processed in accordance to the format required by Orange County. The traffic count data will be assembled in Excel format. The data will also be submitted in PDF format. The data will also be prepared in Access database format. The database will include: concurrency management segment identification number, count station identification number; roadway segment name; segment limits; length of the segment; average annual daily traffic; design hour factor, "K-100"; directional distribution factor, "D"; peak direction; peak hour total volume; peak hour volume of the peak direction; peak direction by cardinal direction name (northbound, southbound, westbound or eastbound); peak hour volume of the off-peak direction; number of through lanes; and posted speed limit. All counts will

be conducted and reports (prior to the application of seasonal factor adjustments) will be submitted by the end of February. Each count station location shall be provided on a Google™ map and located with GPS coordinates with a pop up window that identifies the AADT, peak hour and peak direction.

d. **Documentation and Quality Control** – Electronic and paper versions of the traffic count report will be prepared and submitted to Orange County. Progress reports will be submitted for approval at the end of each month. One signed and sealed copy shall be submitted. The final report will be submitted two weeks after Orange County receives the seasonal factors from FDOT. Reports will be reviewed and certified by a Professional Engineer Licensed in the State of Florida. For quality control purposes, traffic counts will be compared against historical Orange County traffic counts and other traffic data compiled by the maintaining agencies. Orange County reserves the right to have traffic counts redone for verification of counts that appear inconsistent with historical counts or other data.

2. Standard Operating Procedure (SOP) Manuals

The consultant shall, as-required, provide services necessary to create SOP manuals to include but not be limited to the review and documentation of existing procedures, making procedural change recommendations, flow charts, schedules using Microsoft Project, training manuals and pamphlets, technical writing and other services necessary to create SOP manuals.

3. County-wide Pedestrian and Bicycle Counts and Annual Report

a. **Purpose** – To perform data collection activities for the Orange County Pedestrian and Bicycle Count Program, as outlined in the following paragraphs b through f. This will involve coordinating closely on the required information to complete each task. The following describes the tasks that will be performed in completing the project.

b. **Short-Term Count Collection** – Pedestrian and bicycle counts should be counted manually, through video processing, or using Eco-Counter Pyro-Boxes, with the count locations and methods to be specified by the County. Counts conducted manually could vary in duration from 2 to 8 hours and may be single-day or multiple-day, as specified by the County. Weekend or night time counts may be required. Counts conducted through video processing could vary in duration, but would typically be 7-day counts. Counts conducted manually or through video processing may be either intersection or screenline counts. Screenline counts conducted using Eco-Counters would typically be 30-day counts. Counts shall be collected in 1-hour increments.

All count equipment for short-term counts, including Eco-Counters, must be owned and maintained in working condition by the Consultant. It is anticipated that no more than two Eco-Counter Pyro Boxes would be required to be owned by the Consultant for portable, short-term counts. These devices would be rotated, typically on a monthly basis. Counts collected at intersections shall follow the format provided in Appendix F of the Orange County Bicycle and Pedestrian Count Program Design and Implementation Report or other format specified by the County.

c. **Validation, Calibration, and Counter Maintenance –**
i) Short-term counts - Upon installation by the Consultant, devices must be validated to ensure accurate counting of cyclists and pedestrians. If it is determined that the device is not counting correctly the Consultant must calibrate the device.
ii) Permanent-counts – Orange County plans to install Eco-Counter Urban Post counters to collect permanent counts. Orange County plans to install two (2) counters in Year 1, two (2) counters in Year 2, and three (3) counters in Year 3. The Consultant shall inspect each device within the County's permanent count system every three (3) months to ensure they are still present, in working condition, and free from dirt or debris that may impact the sensor and accurate counting. Batteries shall be replaced by the Consultant every 2 years or as needed. The consultant shall annually, or as needed based on data anomalies, conduct manual validation counts. If it is determined that the device is not counting correctly, the Consultant must calibrate the device.
Orange County also plans to install Eco-Counter ZELT loops to collect permanent bicycle counts at up to five (5) locations. No inspection or maintenance is required for ZELT loops by the Consultant. However, the Consultant shall annually conduct manual validation counts. If it is determined that the device is not counting accurately, the Consultant must notify the County.

Every three (3) months the Consultant shall manually transmit the data from both Urban Posts and ZELT loops via a Bluetooth-enabled Windows laptop or Android device. The Consultant will be provided access to the County's Eco-Visio web-based software to manage the transmitted data.

d. **Development of Localized Adjustment Factors –** After any Orange County permanent count station (both Urban Posts and ZELT loops) has been in place for a minimum of one (1) year, the Consultant shall develop localized adjustment factors to be used to adjust/expand short term counts, using the approach recommended in Appendix G of the Orange County Bicycle and Pedestrian County Program Design and Implementation Report.

e. **Reduction and Processing** – The short-term pedestrian and bicycle counts will be reduced and processed in accordance with the format required by Orange County. Counts will be assembled in Excel and PDF

formats for counts collected manually or through video processing, presenting counts in hourly and, once localized adjustment factors have been developed, daily totals. Where the technology capability exists, distinguish pedestrians from bicyclists. Each count location shall be provided on a Google™ map and located with GPS coordinates with a pop-up window to the PDF document.

    f. **Annual Pedestrian and Bicycle Count Report** – An annual pedestrian and bicycle count report shall be prepared by the Consultant which will summarize the locations of short-term counts and permanent count stations, the development of localized adjustment factors by count classification, and expansion of all short-term counts collected during the year to an estimated average daily count. In addition to counts collected by the Consultant, the report shall also compile the following counts both collected and provided by the County into one document:
1) Orange County Parks and Recreation trail counts for up to twenty (20) locations; and,
2) PedTrax pedestrian and bicycle counts provided by the County for up to twenty (20) intersections.

4. Freight Network (Truck) Data Collection

    a. **Purpose** – To perform data collection activities to support network planning.

    b. **Collection** – Collect 24-hour machine classification counts at up to fifteen (15) locations. The counts shall be collected for a period of 72 continuous hours on Tuesday, Wednesday, and Thursday excluding the County defined holidays. The counts shall include a breakdown of the number and percentage of vehicles by FHWA class and calculation of the peak hour T-factor and 24-hour truck factor (T24) for categories 5 through 13.

5. Provide in-house Technical/Professional Staff Support

Provide technical and professional staff services to Orange County staff at Orange County offices. This may require consultant to work at Orange County offices up to 40 hours a week on an as-required basis. The work could be on any of the above-mentioned studies/tasks.
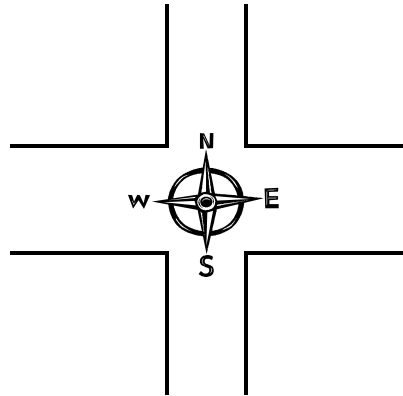
END OF SCOPE OF SERVICES

Pedestrian & Bicycle Summary

Project #: _____   NB/SB: _____

Date: _____   EB/WB: _____

Hour
_____

		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike									0
	Ped									0
Westbound ◀	Bike									0
	Ped									0

Southbound / **Northbound**

Hour	Ped	▼	Bike	Ped	▼	Bike
1						
2						
3						
4						
5						
6						
7						
8						
	0		0	0		0

N
W — E
S

Southbound / **Northbound**

Ped	▼	Bike	Ped	▼	Bike	Hour
						1
						2
						3
						4
						5
						6
						7
						8
0		0	0		0	

Eastbound ▶	Bike									0
	Ped									0
Westbound ◀	Bike									0
	Ped									0

1	2	3	4	5	6	7	8

Hour

Appendix "G"

Derivation of Local Adjustment Factors

The FHWA Traffic Monitoring Guide chapter on non-motorized traffic, suggests a series of adjustment factors similar to those applied by NBPDP that can be developed based on the County's permanent count program. It is recommended that the County develop localized adjustment factors similar to the NBPDP for:

- Time-of-day: if less than a full day of data is collected, this factor adjusts a sub-daily count to a total daily count.
- Day-of-week: if data is collected on a single weekday or weekend day, this factor adjusts a single daily count to an average daily weekday count, or a weekly count.
- Month/season of the year: if less than a full year of data is collected, this factor adjusts an average daily count to an annual average daily count or to an annual count.

After obtaining a year's worth of data at a specific permanent count station:

Create table that depicts the percentage of total day for each hour of the day:

- H_0: percentage of daily count between midnight to 1 a.m.
- H_1: percentage of daily count between 1 a.m. to 2 a.m.
- H_2: percentage of daily count between 2 a.m. to 3 a.m.
- …
- H_{23}: percentage of daily count between 11 p.m. to midnight, all expressed as decimals

Create a table that depicts the percentage of total week for each day of the week:

- D_1: percentage of weekly count on Sundays
- D_2: percentage of weekly count on Mondays
- D_3: percentage of weekly count on Tuesdays
- D_4: percentage of weekly count on Wednesdays
- D_5: percentage of weekly count on Thursdays
- D_6: percentage of weekly count on Fridays
- D_7: percentage of weekly count on Saturdays, all expressed as decimals

Create a table that depicts the percentage of total year for each month of the year:

- M_1: percentage of yearly count in January
- M_2: percentage of yearly count in February
- M_3: percentage of yearly count in March
- M_4: percentage of yearly count in April
- M_5: percentage of yearly count in May
- M_6: percentage of yearly count in June
- M_7: percentage of yearly count in July

- M_8: percentage of yearly count in August
- M_9: percentage of yearly count in September
- M_{10}: percentage of yearly count in October
- M_{11}: percentage of yearly count in November
- M_{12}: percentage of yearly count in December, all expressed as decimals

Once these factors have been summarized for a particular permanent count location, sample counts at other locations can be expanded as noted below.

Using a symbol C_n to depict hourly field counts, the following equation can be used to convert short term counts to estimated daily counts:

Daily Count = $(C_n + C_{n+1} + C_{n+2} + ...) / (H_n + H_{n+1} + H_{n+2} + ...)$, where the H factors are the decimal shares corresponding to the hours of the field counts. This could be applied for short term counts of any duration, though a minimum of two hours is generally recommended.

To convert a daily count to a weekly count, the following equation can be used:

Weekly Count = Daily Count $/ D_n$, where D_n is the decimal share corresponding to the day of the week on which the field count was performed.

To convert a weekly count to a monthly count, the weekly count should be multiplied by the number of days in the month, divided by 7 (e.g. 30/7=4.26 ; 31/7=4.43)

To convert a monthly count to an annual count, the equation can be used:

Annual Count = Monthly Count$/M_n$, where M_n is the decimal share corresponding to the month in which the field count was performed.