

Volume 2: Budget Application

BEYOND TRAFFIC:

The Smart City Challenge

PHASE 2

July 29, 2016 | Solicitation No. DTFH6116RA00002



#SMARTCOLUMBUS

THE CITY OF
SUBMITTED BY: COLUMBUS



#SMARTCOLUMBUS

Solicitation No.: DTFH6116RA00002

Volume 1: Budget Application

BEYOND TRAFFIC: The Smart City Challenge Phase 2

July 29, 2016

NOTE: The Technical Application and Budget Application update dated July 29, 2016 is based on current knowledge of partnership agreements. Any new partnership agreements may affect the technical proposal and budget requiring updates/amendments in the future.



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Application Standard Forms

Application for Federal Assistance SF-424*** 1. Type of Submission:**

- ☐ Preapplication
- ☒ Application
- ☐ Changed/Corrected Application

*** 2. Type of Application:**

- ☒ New
- ☐ Continuation
- ☐ Revision

*** If Revision, select appropriate letter(s):***** Other (Specify):***** 3. Date Received:**

07/08/2016

4. Applicant Identifier:**5a. Federal Entity Identifier:****5b. Federal Award Identifier:****State Use Only:****6. Date Received by State:****7. State Application Identifier:****8. APPLICANT INFORMATION:***** a. Legal Name:**

City of Columbus

*** b. Employer/Taxpayer Identification Number (EIN/TIN):**

316400223

*** c. Organizational DUNS:**

6096795480000

d. Address:*** Street1:**

50 West Gay Street

Street2:*** City:**

Columbus

County/Parish:

Franklin

*** State:**

OH: Ohio

Province:*** Country:**

USA: UNITED STATES

*** Zip / Postal Code:**

43215-9004

e. Organizational Unit:**Department Name:**

Department of Public Service

Division Name:**f. Name and contact information of person to be contacted on matters involving this application:****Prefix:**

Ms.

*** First Name:**

Aparna

Middle Name:*** Last Name:**

Dial

Suffix:**Title:**

Deputy Director of Public Service

Organizational Affiliation:*** Telephone Number:**

614-645-6671

Fax Number:

614-645-7805

*** Email:**

apdial@columbus.gov

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

U.S. Department of Transportation/FHWA

11. Catalog of Federal Domestic Assistance Number:

20.200

CFDA Title:

Highway Research & Development

* 12. Funding Opportunity Number:

DTFH6116RA00002

* Title:

Beyond Traffic: The Smart City Challenge -- Phase 2

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

City of Columbus, Franklin County, Ohio.doc

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:


Smart Columbus

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant: <input type="text" value="oh-003"/>	* b. Program/Project: <input type="text" value="oh-003"/>
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text" value="Other districts for 16A&16B OH-012&OH-015."/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date: <input type="text" value="07/01/2016"/>	* b. End Date: <input type="text" value="06/30/2020"/>
18. Estimated Funding (\$):	
* a. Federal	<input type="text" value="40,000,000.00"/>
* b. Applicant	<input type="text" value="8,000,000.00"/>
* c. State	<input type="text" value="7,000,000.00"/>
* d. Local	<input type="text" value="4,000,000.00"/>
* e. Other	<input type="text" value=""/>
* f. Program Income	<input type="text" value=""/>
* g. TOTAL	<input type="text" value="59,000,000.00"/>
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on <input type="text"/>	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)	
<input checked="" type="checkbox"/> ** I AGREE	
<small>** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.</small>	
Authorized Representative:	
Prefix: <input type="text" value="Ms."/>	* First Name: <input type="text" value="Jennifer"/>
Middle Name: <input type="text"/>	
* Last Name: <input type="text" value="Gallagher"/>	
Suffix: <input type="text"/>	
* Title: <input type="text" value="Director of Public Service"/>	
* Telephone Number: <input type="text" value="614-645-8290"/>	Fax Number: <input type="text" value="614-645-7805"/>
* Email: <input type="text" value="jlgallagher@columbus.gov"/>	
* Signature of Authorized Representative: 	* Date Signed: <input type="text" value="07/08/2016"/>

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Program Management		\$ 4,086,645.00	\$ 8,000,000.00	\$	\$	12,086,645.00
2. Communications and Outreach		3,369,998.00				3,369,998.00
3. Enabling Technologies		23,020,933.00	8,000,000.00			31,020,933.00
4. Districts		9,522,424.00	3,000,000.00			12,522,424.00
5. Totals		\$ 40,000,000.00	\$ 19,000,000.00	\$	\$	59,000,000.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Program Management	(2) Communications and Outreach	(3) Enabling Technologies	(4) Districts	
a. Personnel	\$ 1,258,366.00	\$ 237,489.00	\$ 646,631.00	\$ 288,932.00	\$ 2,431,418.00
b. Fringe Benefits	487,114.00	91,932.00	250,311.00	111,846.00	941,203.00
c. Travel	190,000.00				190,000.00
d. Equipment	100,000.00				100,000.00
e. Supplies	50,000.00				50,000.00
f. Contractual	2,001,165.00	803,077.00	7,083,991.00	3,424,273.00	13,312,506.00
g. Construction					
h. Other	8,000,000.00	2,237,500.00	23,040,000.00	8,697,373.00	41,974,873.00
i. Total Direct Charges (sum of 6a-6h)	12,086,645.00	3,369,998.00	31,020,933.00	12,522,424.00	\$ 59,000,000.00
j. Indirect Charges					\$
k. TOTALS (sum of 6i and 6j)	\$ 12,086,645.00	\$ 3,369,998.00	\$ 31,020,933.00	\$ 12,522,424.00	\$ 59,000,000.00
7. Program Income	\$	\$	\$	\$	\$

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Standard Form 424A (Rev. 7- 97)
Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. Program Management	\$ 8,000,000.00	\$	\$	\$	8,000,000.00
9. Communications and Outreach					
10. Enabling Technologies		7,000,000.00		1,000,000.00	8,000,000.00
11. Districts				3,000,000.00	3,000,000.00
12. TOTAL (sum of lines 8-11)	\$ 8,000,000.00	\$ 7,000,000.00	\$	4,000,000.00	19,000,000.00

SECTION D - FORECASTED CASH NEEDS				
Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal \$ 6,620,544.00	\$ 1,655,136.00	\$ 1,655,136.00	\$ 1,655,136.00	\$ 1,655,136.00
14. Non-Federal \$ 5,900,000.00	\$ 1,475,000.00	\$ 1,475,000.00	\$ 1,475,000.00	\$ 1,475,000.00
15. TOTAL (sum of lines 13 and 14) \$ 12,520,544.00	\$ 3,130,136.00	\$ 3,130,136.00	\$ 3,130,136.00	\$ 3,130,136.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. Program Management	\$ 1,021,661.00	\$ 1,021,661.00	\$ 1,021,661.00	\$ 1,021,661.00
17. Communications and Outreach	842,499.00	842,499.00	842,499.00	842,499.00
18. Enabling Technologies	2,943,663.00	7,469,245.00	7,160,513.00	5,447,512.00
19. Districts	1,812,721.00	2,799,315.00	3,394,703.00	1,515,685.00
20. TOTAL (sum of lines 16 - 19)	\$ 6,620,544.00	\$ 12,132,720.00	\$ 12,419,376.00	\$ 8,827,357.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges:
23. Remarks:	

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.


PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE Director of Public Service
APPLICANT ORGANIZATION City of Columbus	DATE SUBMITTED 05/24/2016

Standard Form 424B (Rev. 7-97) Back

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action: <input checked="" type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance		2. Status of Federal Action: <input checked="" type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award		3. Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____	
4. Name and Address of Reporting Entity: <input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known:			5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: Congressional District, if known:		
6. Federal Department/Agency: U.S Department of Transportation/FHWA			7. Federal Program Name/Description: Beyond Traffic: The Smart City Challenge -- Phase 2 CFDA Number, if applicable: 20.200		
8. Federal Action Number, if known:			9. Award Amount, if known: \$ 40,000,000.00		
10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI): None			b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI): None		
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.			Signature: <u>Jennifer L. Gallagher</u> Print Name: <u>Jennifer L. Gallagher</u> Title: <u>Director of Public Service</u> Telephone No.: <u>614-645-8290</u> Date: <u>05-20-2016</u>		
Federal Use Only:			Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)		

Cost/Budget Information



BUDGET APPLICATION NARRATIVE

The City of Columbus has prepared and is submitting a detailed cost estimate for the entire four-year project period as required by the NOFO. This budget was assembled through a combination of quotations from specific vendors, use of CO-PILOT, and actual costs incurred by City of Columbus partners in recent deployments of Connected Vehicle, Autonomous Vehicle, and ITS infrastructure deployments. Our methodology for developing these budget estimates consisted of several steps and iterations including:

1. Initial budget development using CO-PILOT. City staff leveraged the CO-PILOT tool made available by USDOT to derive an initial budget estimate that accounted for the various ITS hardware, Connected Vehicle Applications, and installation costs.
2. The initial budget was refined based upon quotes from potential vendors and partners for specific components that were not necessarily included in CO-PILOT or where a specific partner had more detailed information. This resulted in significant modifications in cost estimates for autonomous vehicle and truck platooning estimates as well as costs associated with Connected Vehicle transit systems.
3. The City engaged in an aggressive campaign to seek contributions from both public and private partners, resulting in a cost matching of USDOT's investment when combining both dollars and in-kind contributions.
4. Detailed estimates for each of the major Work Breakdown Structure elements were individually estimated based upon the proposed quantities of equipment as well as estimates of component costs from potential vendors and partners. The following table summarizes the overall components that are being proposed for deployment that were used to derive cost estimates.

Component	District				
	Quantity	Residential	Commercial	Logistic	Downtown
DSRC Roadside Unit (RSU)	200	X	X	X	X
DSRC Connected Vehicles (OBU)	3,000	X	X	X	
Smart Street Lights with WiFi	200	X			
Mobileye Shield + and Enhanced Transit Safety Retrofit	350	X	X	X	X
Transit Bus Stop Pedestrian Warning System	12	X			X
Traffic Signal Controller Upgrades	100	X	X	X	
DSRC Enabled Signalized Intersections	175	X	X	X	
Multi-Media Kiosks	10	X	X		X
Video-Based Parking Detection System	10				X
RFID Customized Windshield Stickers	50,000	X	X		X
Point of Service RFID Readers	10				X
Mobile RFID Readers	10	X			X
Multi-Modal Transportation Planning Application	1	X	X	X	X
Social Service Provider Trip Reservation and Booking Application	1	X			
Truck Routing and Parking Application	1			X	X
App & Town Compagnon Application to Assist Persons with Disabilities (on 50 Buses)	50	X			



Component	District				
	Quantity	Residential	Commercial	Logistic	Downtown
Cash-to-Smart City Smart Card Vending Devices	10	X			
Electronic Vehicle Charging Station	20	X	X		
Autonomous Truck Platoon Tractors	10			X	
DSRC, Electric, Pedal Assisted Bicycles	50	X			
Integrated Data Exchange	1	X	X	X	X
Electric Autonomous Vehicles	6		X		
NXP Technology Demonstration Trailer	1	X	X	X	X

For the purposes of developing cost estimates, the City has divided the costs into City Labor, Subcontractor Labor and Other Direct Costs. City Labor consists of City staff; Subcontractor Labor consists of staff costs from partners, as well as labor hours expected from contracted entities. As procurement of these services will be completed upon award under the City's procurement practices and policies, overhead rates and the specific division of labor between City staff, partners, and vendors is provided as anticipated amounts. However, the City has specifically included hours in the budget for all key proposed staff from the City and Battelle with approximately seven FTEs and two part-time student interns in Program Management.

Travel for the project was estimated by calculating the expected number of domestic trips (45) and international trips (20) and using approximate numbers for each trip. Specific cost assumptions and approximate numbers for equipment and installation are contained in the notes and comments in the "Detailed Cost Summary" Worksheet.

In the included spreadsheet entitled, "City of Columbus Budget Estimates for USDOT Grant FINAL.xlsx," we have included all of the information that would typically be provided in the Template Form 4022 corresponding to Standard Form 1411 prescribed by GSA, FAR (48 CFR) 52.215-2(c), Format 7A. There are three worksheets that are included in the spreadsheet as follows:

- "City of Columbus Master Summary" is the first worksheet and provides a high-level summary of the Federal and In-Kind budget estimates for Program Management, Communications and Outreach, Enabling Technologies, and our four Districts. Budget estimates are provided for the major project components within the Enabling Technologies and each District.
- "Summary by Year" provides information similar to the City of Columbus Master Summary, but disaggregates this information into each of the four years by prorating the overall budget using percentages of the work expected to be completed in each WBS in each year.
- "Detailed Cost Summary" provides a summary of our budget build-up that was developed through an iterative process by the application team. Within each WBS, detailed costs were estimated for each purchased service or major equipment purchase. This worksheet provides notes and formulas that include the various assumptions that were used to derive each estimate. In general, labor estimates include both City staff as well as contracted labor, however, if the entire scope of work was expected to be contracted, this was included as an ODC.
- Following the line-by-line cost buildup is another summary of the budget estimates that includes the specific contributions from each of the City's partners as they pertain to the USDOT application. The total contributions of non-Federal cash and in-kind services and equipment across the USDOT and Vulcan Grant exceeds \$90 million.

Task	Federal Costs				Other Direct Costs	Cost Share	Total
	Total Labor	City Labor	Subcontractor Labor				
Program Management	\$3,746,645	\$1,745,480	\$2,001,165		\$340,000	\$8,000,000	\$12,086,645
Communications and Outreach	\$1,132,498	\$329,421	\$803,077		\$2,237,500	\$0	\$3,369,998
Enabling Technologies (Integration)	\$7,980,933	\$896,941	\$7,083,991		\$15,040,000	\$8,000,000	\$31,020,933
Connected Columbus Transportation Network (CCTN)	\$4,790,004	\$549,637	\$4,240,367		\$12,340,000	\$0	\$17,130,004
Integrated Data Exchange (IDE)	\$2,077,209	\$124,994	\$1,952,216		\$1,000,000	\$8,000,000	\$11,077,209
Enhanced Human Service (EHS)	\$1,103,608	\$219,999	\$883,608		\$1,700,000	\$0	\$2,803,608
Electrification Infrastructure	\$10,112	\$2,311	\$7,800		\$0	\$0	\$10,112
Projects within the Districts (Implementation)	\$3,825,051	\$400,778	\$3,424,273		\$5,697,373	\$3,000,000	\$12,522,424
Residential District	\$1,177,259	\$141,127	\$1,036,132		\$1,562,373	\$0	\$2,739,632
CMAX	\$578,134	\$59,113	\$519,020		\$1,377,373	\$0	\$1,955,507
Smart Corridor	\$599,126	\$82,014	\$517,112		\$185,000	\$0	\$784,126
Commercial District	\$875,375	\$69,409	\$805,966		\$50,000	\$3,000,000	\$3,925,375
Autonomous Vehicles	\$875,375	\$69,409	\$805,966		\$50,000	\$3,000,000	\$3,925,375
Logistics	\$1,083,385	\$108,772	\$974,613		\$3,825,000	\$0	\$4,908,385
Truck Platooning	\$463,689	\$45,213	\$418,475		\$2,840,000	\$0	\$3,303,689
Asset Inventory Development and Refresh	\$309,126	\$31,779	\$277,346		\$485,000	\$0	\$794,126
Long Haul Truck Parking	\$310,570	\$31,779	\$278,791		\$500,000	\$0	\$810,570
Downtown District	\$689,033	\$81,471	\$607,562		\$260,000	\$0	\$949,033
Event Parking	\$190,676	\$20,223	\$170,452		\$160,000	\$0	\$350,676
Delivery Loading Zones	\$225,344	\$25,135	\$200,209		\$100,000	\$0	\$325,344
Permit Parking Management	\$273,013	\$36,113	\$236,900		\$0	\$0	\$273,013
Grand Totals for Public Sector Funding Only	\$16,685,127	\$3,372,621	\$13,312,507		\$23,314,873	\$19,000,000	\$59,000,000

Task Number	Task Name	Federal Costs				Other Direct Costs	Cost Share	Notes/Comments	
		Total Labor	City Labor	Subcontractor Labor					
1. Program Management	Kick-Off Meeting	\$ 3,746,645	\$ 1,745,477	\$ 2,001,139	\$ 340,000	\$ 8,000,000	\$ 12,086,616		
	Prepare PMP	\$72,226	\$ 36,113	\$ -	\$ -	\$ -	\$ 72,226	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Detailed Smart City Schedule (SCS)	\$142,675	\$ 35,669	\$107,006	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Quality Management Plan (CMP)	\$142,675	\$ 21,401	\$121,274	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Configuration Management Plan	\$142,675	\$ 42,802	\$99,872	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Risk Management Plan (RMP)	\$142,675	\$ 35,669	\$107,006	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Update Risk Register	\$171,210	\$ 17,210	\$ -	\$ -	\$ -	\$ 171,210	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Prepare Quarterly Progress Report	\$214,012	\$ 192,611	\$ 21,401	\$ -	\$ -	\$ 214,012	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Interim and Final Reporting	\$142,675	\$ 128,407	\$ 14,267	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Prepare Monthly Invoice	\$72,226	\$ 65,003	\$ 7,223	\$ -	\$ -	\$ 72,226	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Systems Engineering Management Plan (SEMP)	\$185,477	\$ 18,548	\$166,930	\$ -	\$ -	\$ 185,477	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Concept of Operations (ConOps)	\$265,350	\$ 71,337	\$214,012	\$ -	\$ -	\$ 265,350	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Demonstration Site Map and Installation Schedule	\$156,942	\$ 39,236	\$117,707	\$ -	\$ -	\$ 156,942	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Site Map and Installation Schedule Webinar	\$36,113	\$ 32,502	\$ 3,611	\$ -	\$ -	\$ 36,113	7/29 update: Budget line item has been updated in anticipation of grant award.	
	System Requirements Specification (SYRS)	\$142,675	\$ 21,401	\$121,274	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Interface Control Document (ICD)	\$108,433	\$ 16,265	\$92,168	\$ -	\$ -	\$ 108,433	7/29 update: Budget line item has been updated in anticipation of grant award.	
	SDD Webinar	\$114,140	\$ 45,656	\$68,484	\$ -	\$ -	\$ 114,140	7/29 update: Budget line item has been updated in anticipation of grant award.	
	TP Webinar	\$114,140	\$ 45,656	\$68,484	\$ -	\$ -	\$ 114,140	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Operations and Management Plan (O&MP)	\$142,675	\$ 21,401	\$121,274	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Bi-Annual Architecture and Standards Meetings	\$142,675	\$ 114,140	\$28,535	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Independent Evaluation Support Plan (IESP)	\$142,675	\$ 114,140	\$28,535	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Security Management Operations Concept (SMOC)	\$247,432	\$ 24,743	\$222,689	\$ -	\$ -	\$ 247,432	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Safety Management Plan (SMP)	\$57,070	\$ 51,363	\$ 5,707	\$ -	\$ -	\$ 57,070	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Human Use Approval	\$185,477	\$157,656	\$ 27,822	\$ -	\$ -	\$ 185,477	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Prepare Quarterly Human Use Approval Updates for IRB	\$142,675	\$ 121,274	\$ 21,401	\$ -	\$ -	\$ 142,675	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Performance Measurement Plan (PMP)	\$99,872	\$49,936	\$49,936	\$ -	\$ -	\$ 99,872	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Data Privacy Plan (DPP)	\$57,070	\$ 28,535	\$28,535	\$ -	\$ -	\$ 57,070	7/29 update: Budget line item has been updated in anticipation of grant award.	
	Travel		\$ -	\$ -	\$ 190,000	\$ -	\$ -	\$ 190,000	Assumes 45 domestic trips at \$2,000 each with 20 international trips at \$5,000 each.
	Equipment				\$ 100,000	\$ -	\$ -	\$ 100,000	7/29 update: \$100K of ODC savings from AT&T and Continental contributions re-allocated to City of Columbus In-Kind Cash held as Management Reserve (Holding Task).
	Supplies				\$ 50,000	\$ -	\$ -	\$ 50,000	7/29 update: \$50K of ODC savings from AT&T and Continental contributions re-allocated to City of Columbus In-Kind Cash held as Management Reserve (Holding Task).
	Management Reserve for Contingency and Expansion (Holding Task)				\$ -	\$ 4,000,000	\$ -	\$ 4,000,000	City of Columbus In-Kind Cash held as Management Reserve (Holding Task).
	Sustainment Fund				\$ -	\$ 1,800,000	\$ -	\$ 1,800,000	City of Columbus In-Kind Cash held as Management Reserve (Holding Task).
	Quality Control/Quality Assurance Oversight				\$ -	\$ -	\$ 800,000	\$ 800,000	Reduced sustainment fund to provide budget for Quality Control/Quality Assurance Oversight.
Safety Oversight				\$ -	\$ -	\$ 400,000	\$ 400,000	Reduced sustainment fund to provide budget for Safety Oversight.	
Data Security Oversight				\$ -	\$ -	\$ 1,000,000	\$ 1,000,000	Reduced sustainment fund to provide budget for Data Security Oversight.	
2. Communications and Outreach									
Communications and Outreach	\$ 1,132,498	\$ 329,421	\$ 803,077	\$ 2,237,500	\$ -	\$ 3,969,998			
Communications and Outreach Plan (Comm Plan)	\$268,903	\$ 72,226	\$216,677	\$ -	\$ -	\$ 268,903			
Draft Master Comm Plan				\$ -	\$ -	\$ -			
Website and Communications Toolkit	\$108,338	\$ 37,918	\$70,420	\$ 10,000	\$ -	\$ 108,338	Quote		
Website Hosting and Maintenance				\$ -	\$ -	\$ -			
Website / Blog Updates	\$106,894	\$ 21,379	\$85,515	\$ -	\$ -	\$ 106,894			
Communication Toolkit	\$86,671	\$ 17,334	\$69,337	\$ -	\$ -	\$ 86,671	Quote		
Toolkit Production				\$ 297,500	\$ -	\$ 297,500	Quote		
Quarterly Updates and Production				\$ 75,000	\$ -	\$ 75,000	Quote		
Update Toolkit				\$ -	\$ -	\$ -			
Toolkit Production				\$ 75,000	\$ -	\$ 75,000	Quote		
Update Toolkit				\$ -	\$ -	\$ -			
Stakeholder Engagement	\$268,903	\$ 86,671	\$202,232	\$ -	\$ -	\$ 268,903			
Public Awareness and Collaboration	\$72,226	\$ 21,668	\$50,558	\$ -	\$ -	\$ 72,226	Quote		
National and Intl Awareness and Collaboration	\$180,564	\$ 72,226	\$108,338	\$ -	\$ -	\$ 180,564	Quote		
All Districts - Production and Finalize Media Buy				\$ 80,000	\$ -	\$ 80,000	Quote		
All Districts - Paid Media Campaign Ads				\$ 1,000,000	\$ -	\$ 1,000,000	Quote		
All Districts - Deploy Ambassadors/Participate in Media Interviews				\$ 150,000	\$ -	\$ 150,000	Quote		
Linden District - Rewards Game - Recruit Sponsors - Develop Game Promotions and Logistics				\$ 90,000	\$ -	\$ 90,000	Incentives		
Linden District - Rewards Game - Recruit Sponsors - Estimate and Purchase Incentives				\$ 290,000	\$ -	\$ 290,000	Incentives		
Downtown District - Convene MORPC insight2050 Planning Academy sessions				\$ 15,000	\$ -	\$ 15,000	Quote		
Logistics District - Linden Logistics Pilot Program with Cols State				\$ 5,000	\$ -	\$ 5,000	Quote		
3. Enabling Technologies (Integration)									
3.1 Connected Columbus Transportation Network (CCTN)	\$ 7,980,933	\$ 896,941	\$ 7,083,991	\$ 15,040,000	\$ 8,000,000	\$ 31,020,933			
3.1 Connected Columbus Transportation Network (CCTN)	\$ 4,790,004	\$ 549,637	\$ 4,240,367	\$ 12,340,000	\$ -	\$ 17,130,004			
Concept of Operations (ConOps)	\$268,903	\$28,890	\$260,012	\$ -	\$ -	\$ 268,903			
System Requirements Specification (SYRS)	\$144,451	\$ 14,445	\$130,006	\$ -	\$ -	\$ 144,451			
Interface Control Document (ICD)	\$108,338	\$ 10,834	\$97,505	\$ -	\$ -	\$ 108,338			
System Design Document (SDD)	\$216,677	\$ 21,668	\$195,009	\$ -	\$ -	\$ 216,677			
Test Plan (TP)	\$144,451	\$ 14,445	\$130,006	\$ -	\$ -	\$ 144,451			
Develop	\$1,733,415	\$ 86,671	\$1,646,744	\$ -	\$ -	\$ 1,733,415			
Procurement	\$1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ 1,445			
DSRC Roadside Equipment							Install at 175 Signalized Intersections. Assumed we would need to buy 125 and 75 are being in-kind donated from NXP with 25 spares. Assume installation costs of \$30k per intersection includes add hardware and fiber hookups, etc. 7/29 update: \$7.25M ODC offset by \$1M anticipated contribution from Continental for roadside units, resulting in \$6.25M ODC being purchased and installed with USDOT funds. \$1.0M savings allocated to management reserve and sustainment funds.		
DSRC In-Vehicle Equipment	\$0	\$ -	\$ -	\$ 6,250,000	\$ -	\$ 6,250,000	Includes: 350 COTA buses, 400 City Vehicles, 50 Heavy City Vehicles (Emergency Responders, etc.), 1,900 volunteer vehicles, 200 Honda vehicles, 100 School buses. With OBE equipment assumed to be \$1,500 installed.		

Task Number	Federal Costs				Other Direct Costs	Cost Share	Total	Notes/Comments
	Total Labor	City Labor	Subcontractor Labor					
Fiber Expansion	\$0	\$	\$	\$	\$ 400,000	\$	\$ 400,000	7/29 update: \$100K ODC offset with anticipated A1&T contribution. \$100K savings allocated to management reserve and sustainment funds.
Smart Streetlights	\$0	\$	\$	\$	\$	\$	\$	ROM - but assuming using cellular backhaul instead of fiber if this is exceeded. Offset \$100K in smart streetlight costs with A1&T equipment. \$100K savings allocated to management reserve and sustainment funds.
GPS Correction	\$0	\$	\$	\$	\$ 30,000	\$	\$ 30,000	200 Smart Street Lights (one circuit) Based upon Quote
Pedestrian Detection	\$0	\$	\$	\$	\$ 350,000	\$	\$ 350,000	350 Coda Buses at \$1,000 installed.
Pedestrian Bus Stop Warning System	\$0	\$	\$	\$	\$ 360,000	\$	\$ 360,000	12 Bus Stops @30,000 each
Adaptive Signal Control	\$0	\$	\$	\$	\$ 80,000	\$	\$ 80,000	Quote based upon experience.
Procure ISP	\$0	\$	\$	\$	\$	\$	\$	ROM 7/29 update: \$600K ODC offset by \$600K anticipated contribution for A1&T.
Multi-Function Kiosk	\$0	\$	\$	\$	\$ 250,000	\$	\$ 250,000	\$60K savings allocated to management reserve and sustainment funds.
WiFi Radios / Hotspots	\$0	\$	\$	\$	\$	\$	\$	200 Smart Street Lights with WiFi additional equipment at \$1,000 each. 7/29 update: \$200K ODC offset by \$200K anticipated contribution for A1&T. \$200K savings allocated to management reserve and sustainment funds.
Parking / Delivery Zone Availability Detection	\$0	\$	\$	\$	\$ 120,000	\$	\$ 120,000	10 Video Cameras at \$12,000 each
Traffic Signal Controller Upgrades	\$0	\$	\$	\$	\$	\$	\$	Assume we need to update 50% of the controllers = 100 controllers @ \$3,500 each based upon previous work. 7/29 update: Fed Funds and Govt Cost Share summary reflects a cost of \$0 due to anticipated contribution of \$280K from Econollie.
Deploy	\$1,300,061	\$ 130,006	\$ 1,170,055	\$	\$	\$	\$ 1,300,061	DSRC equipment will be installed and tested at SPARC.
Test	\$462,244	\$ 46,224	\$ 416,020	\$	\$	\$	\$ 462,244	
Operate and Maintain	\$	\$	\$	\$	\$	\$	\$	
3.2 Integrated Data Exchange (IDE)	\$ 2,077,209	\$ 124,994	\$ 1,952,216	\$	\$ 1,000,000	\$ 8,000,000	\$ 11,077,209	Funded by in-kind cash from Franklin County
Concept of Operations (ConOps)	\$716,677	\$ 21,668	\$ 195,009	\$	\$	\$	\$ 716,677	
System Requirements Specification (SVRS)	\$72,226	\$ 7,223	\$ 65,003	\$	\$	\$	\$ 72,226	
Interface Control Document (ICD)	\$43,335	\$ 4,334	\$ 39,002	\$	\$	\$	\$ 43,335	
System Design Document (SDD)	\$30,335	\$ 3,033	\$ 27,301	\$	\$	\$	\$ 30,335	
Test Plan (TP)	\$	\$	\$	\$	\$	\$	\$	
Develop	\$1,661,190	\$ 83,059	\$ 1,578,130	\$	\$ 7,000,000	\$	\$ 8,661,190	Includes various databases and information sources from Ohio Department of Transportation (e.g., Long Distance Truck Parking Availability)
Develop Governance	\$1,445	\$ 1,083	\$ 361	\$	\$	\$	\$ 1,445	
Develop Data Warehouse	\$4,334	\$ 217	\$ 4,117	\$	\$	\$	\$ 4,334	
Data Analytics Services	\$	\$	\$	\$	\$ 500,000	\$	\$ 500,000	Assume that this is a purchased service from an analytics provider.
Deploy	\$1,445	\$ 14	\$ 1,430	\$	\$ 650,000	\$	\$ 651,445	Funded by in-kind cash from Franklin County
Test	\$1,445	\$ 14	\$ 1,430	\$	\$	\$	\$ 1,445	
Operate and Maintain	\$1,445	\$ 14	\$ 1,430	\$	\$	\$	\$ 1,445	
Performance and System Monitoring	\$	\$	\$	\$	\$	\$	\$	Assume that this is a purchased service from an analytics provider. Funding from Franklin County included.
	\$0	\$	\$	\$	\$ 500,000	\$ 250,000	\$ 750,000	
3.3 Enhanced Human Service (BHS)	\$ 1,103,608	\$ 219,999	\$ 883,608	\$	\$ 1,700,000	\$	\$ 2,803,608	
Concept of Operations (ConOps)	\$144,451	\$ 14,445	\$ 130,006	\$	\$	\$	\$ 144,451	
System Requirements Specification (SVRS)	\$108,338	\$ 10,834	\$ 97,505	\$	\$	\$	\$ 108,338	
Interface Control Document (ICD)	\$72,226	\$ 7,223	\$ 65,003	\$	\$	\$	\$ 72,226	
System Design Document (SDD)	\$50,558	\$ 5,056	\$ 45,502	\$	\$	\$	\$ 50,558	
Test Plan (TP)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
Procurement	\$1,445	\$ 1,445	\$	\$	\$	\$	\$ 1,445	
Contact List Card Procurement and Activation	\$	\$	\$	\$	\$ 300,000	\$	\$ 300,000	60,000 cards assumed to cost \$5 each including activation.
Card Value Loading Hardware	\$	\$	\$	\$	\$	\$	\$	Assumed 10 loading stations @ \$25,000 each installed with equipment at \$5k each based upon quote
Multi Modal Trip Planning Software (Customer)	\$	\$	\$	\$	\$ 250,000	\$	\$ 250,000	Moovel Quote for application
Trip Reservation and Booking (Service Provider)	\$	\$	\$	\$	\$ 250,000	\$	\$ 250,000	Based Upon prior experience
Integration of Customer-Facing Applications	\$	\$	\$	\$	\$ 200,000	\$	\$ 200,000	Based Upon prior experience
COMPAGNON Software for Persons with Disabilities	\$	\$	\$	\$	\$	\$	\$	
Art and Education Program Planning and Implementation	\$	\$	\$	\$	\$	\$	\$	
Develop	\$577,805	\$ 144,451	\$ 433,354	\$	\$	\$	\$ 577,805	
Deploy	\$144,451	\$ 36,113	\$ 108,338	\$	\$	\$	\$ 144,451	
Test	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
Operate and Maintain	\$1,445	\$ 144	\$ 1,300	\$	\$ 450,000	\$	\$ 451,445	Assumed to be a vendor such as Moovel
3.4 Electrification Infrastructure	\$ 10,112	\$ 2,311	\$ 7,800	\$	\$	\$	\$ 10,112	Main bulk of electrification included in Vulcan budget
Concept of Operations (ConOps)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
System Requirements Specification (SVRS)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
Interface Control Document (ICD)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
System Design Document (SDD)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
Test Plan (TP)	\$1,445	\$ 144	\$ 1,300	\$	\$	\$	\$ 1,445	
Develop	\$1,445	\$ 1,445	\$	\$	\$	\$	\$ 1,445	
Procurement	\$	\$	\$	\$	\$	\$	\$	See Vulcan Application Budget
Costs Associated with Vulcan Application/Grant	\$	\$	\$	\$	\$	\$	\$	Used to convert treats to EAVs and install charging stations and associated labor.
Columbus Partnership for EAV vehicles and Infrastructure	\$	\$	\$	\$	\$	\$	\$	

4. Projects within the Districts (Implementation)	Task Number	Federal Costs					Other Direct Costs	Cost Share	Total	Notes/Comments
		Total Labor	City Labor	Subcontractor Labor						
4.1 Residential District	4.1.1 CMAX	\$ 3,825,051	\$ 400,778	\$ 3,424,273	\$ 5,687,373	\$ 3,000,000	\$ 12,522,424			
		\$ 1,177,259	\$ 141,127	\$ 1,036,132	\$ 1,562,373	\$ -	\$ 2,739,632			
4.2 Commercial District	4.2.1 Smart Corridor	\$ 599,126	\$ 82,014	\$ 517,112	\$ 1,017,373	\$ -	\$ 1,017,373			
	Concept of Operations (ConOps)	\$ 193,893	\$ 19,389	\$ 174,504	\$ 193,893	\$ -	\$ 193,893			
	System Requirements Specification (SyRS)	\$ 61,113	\$ 6,111	\$ 55,002	\$ 61,113	\$ -	\$ 61,113			
	Interface Control Document (ICD)	\$ 28,890	\$ 2,889	\$ 26,001	\$ 28,890	\$ -	\$ 28,890			
	System Design Document (SDD)	\$ 114,445	\$ 11,445	\$ 103,001	\$ 114,445	\$ -	\$ 114,445			
	Test Plan (TP)	\$ 1,445	\$ 144	\$ 1,300	\$ 1,445	\$ -	\$ 1,445			
	Procurement	\$ 1,445	\$ 1,445	\$ -	\$ 1,445	\$ -	\$ 1,445			
	Operate and Maintain	\$ 52,002	\$ 5,200	\$ 46,802	\$ 52,002	\$ -	\$ 52,002			
	System Requirements Specification (SyRS)	\$ 14,445	\$ 1,445	\$ 13,001	\$ 14,445	\$ -	\$ 14,445			
	Interface Control Document (ICD)	\$ 14,445	\$ 1,445	\$ 13,001	\$ 14,445	\$ -	\$ 14,445			
	System Design Document (SDD)	\$ 59,445	\$ 5,945	\$ 53,501	\$ 59,445	\$ -	\$ 59,445			
	Test Plan (TP)	\$ 34,445	\$ 3,445	\$ 31,001	\$ 34,445	\$ -	\$ 34,445			
4.3 Logistics	4.3.1 Truck Platooning	\$ 1,083,385	\$ 108,772	\$ 974,613	\$ 3,825,000	\$ -	\$ 4,908,385			
	Concept of Operations (ConOps)	\$ 463,689	\$ 45,213	\$ 418,475	\$ 2,840,000	\$ -	\$ 3,303,689			
	System Requirements Specification (SyRS)	\$ 144,451	\$ 14,445	\$ 130,006	\$ 144,451	\$ -	\$ 144,451			
	Interface Control Document (ICD)	\$ 108,338	\$ 10,834	\$ 97,505	\$ 108,338	\$ -	\$ 108,338			
	System Design Document (SDD)	\$ 72,226	\$ 7,223	\$ 65,003	\$ 72,226	\$ -	\$ 72,226			
	Test Plan (TP)	\$ 36,113	\$ 3,611	\$ 32,502	\$ 36,113	\$ -	\$ 36,113			
	Procurement	\$ 1,445	\$ 1,445	\$ -	\$ 1,445	\$ -	\$ 1,445			
	Tractors to Equip with Peloton System	\$ 2,540,000	\$ -	\$ -	\$ 2,540,000	\$ -	\$ 2,540,000			
	Develop	\$ 14,445	\$ 433	\$ 14,012	\$ 14,445	\$ -	\$ 14,445			
	Deploy	\$ 36,113	\$ -	\$ 36,113	\$ 36,113	\$ -	\$ 36,113			
	Test	\$ 72,226	\$ 722	\$ 71,503	\$ 72,226	\$ -	\$ 72,226			
	Operate and Maintain	\$ 383,893	\$ 1,878	\$ 92,015	\$ 3,000,000	\$ -	\$ 3,000,000			
4.3.2 Asset Inventory Development and Refresh	4.3.2.1 Long Haul Truck Parking	\$ 310,570	\$ 31,779	\$ 278,791	\$ 500,000	\$ -	\$ 810,570			
	Concept of Operations (ConOps)	\$ 115,561	\$ 11,556	\$ 104,005	\$ 115,561	\$ -	\$ 115,561			
	System Requirements Specification (SyRS)	\$ 36,113	\$ 3,611	\$ 32,502	\$ 36,113	\$ -	\$ 36,113			
	Interface Control Document (ICD)	\$ 43,338	\$ 4,334	\$ 39,002	\$ 43,338	\$ -	\$ 43,338			
	System Design Document (SDD)	\$ 72,226	\$ 7,223	\$ 65,003	\$ 72,226	\$ -	\$ 72,226			
	Test Plan (TP)	\$ 1,445	\$ 1,445	\$ -	\$ 1,445	\$ -	\$ 1,445			
	Procurement	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Truck Routing Application	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Develop	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Asset Inventory Development and Refresh	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Test	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Deploy	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
4.3.3 Long Haul Truck Parking	4.3.3.1 Long Haul Truck Parking	\$ 310,570	\$ 31,779	\$ 278,791	\$ 500,000	\$ -	\$ 810,570			
	Concept of Operations (ConOps)	\$ 115,561	\$ 11,556	\$ 104,005	\$ 115,561	\$ -	\$ 115,561			
	System Requirements Specification (SyRS)	\$ 36,113	\$ 3,611	\$ 32,502	\$ 36,113	\$ -	\$ 36,113			
	Interface Control Document (ICD)	\$ 43,338	\$ 4,334	\$ 39,002	\$ 43,338	\$ -	\$ 43,338			
	System Design Document (SDD)	\$ 72,226	\$ 7,223	\$ 65,003	\$ 72,226	\$ -	\$ 72,226			
	Test Plan (TP)	\$ 1,445	\$ 1,445	\$ -	\$ 1,445	\$ -	\$ 1,445			
	Procurement	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Truck Routing Application	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Develop	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Asset Inventory Development and Refresh	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Test	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			
	Deploy	\$ 2,889	\$ 289	\$ 2,600	\$ 2,889	\$ -	\$ 2,889			

Task Number	Federal Costs					Cost Share	Total	Notes/Comments
	Total Labor	City Labor	Subcontractor Labor	Other Direct Costs				
System Design Document (SDD)	\$36,113	\$ 3,611	\$ 32,502	\$ -	\$ -	\$ -	\$ 36,113	
Test Plan (TP)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Procurement	\$1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ -	\$ 1,445	
Long Haul Truck Parking Application	\$2,889	\$ -	\$ -	\$ 350,000	\$ -	\$ -	\$ 350,000	Based upon quote from TSPS
Develop	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
Deploy	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
Operate and Maintain	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
4.4 Downtown District	\$ 689,033	\$ 81,471	\$ 607,562	\$ 150,000	\$ -	\$ -	\$ 949,033	Assume TSPS to maintain
4.4.1 Event Parking	\$ 190,676	\$ 20,223	\$ 170,452	\$ 260,000	\$ -	\$ -	\$ 550,676	
Concept of Operations (ConOps)	\$ 115,561	\$ 11,556	\$ 104,005	\$ -	\$ -	\$ -	\$ 115,561	
System Requirements Specification (SVRS)	\$28,880	\$ 2,889	\$ 25,991	\$ -	\$ -	\$ -	\$ 28,880	
Interface Control Document (ICD)	\$21,668	\$ 2,167	\$ 19,501	\$ -	\$ -	\$ -	\$ 21,668	
System Design Document (SDD)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Test Plan (TP)	\$7,223	\$ 722	\$ 6,501	\$ -	\$ -	\$ -	\$ 7,223	
Procurement	\$1,445	\$ 1,445	\$ -	\$ 100,000	\$ -	\$ -	\$ 100,000	Based upon quote from Experience Columbus.
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Operate and Maintain	\$1,445	\$ 1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ 51,445	
4.1.2 Delivery Loading Zones	\$ 225,344	\$ 25,135	\$ 200,209	\$ 100,000	\$ -	\$ -	\$ 325,344	
Concept of Operations (ConOps)	\$108,338	\$ 10,834	\$ 97,505	\$ -	\$ -	\$ -	\$ 108,338	
System Requirements Specification (SVRS)	\$96,671	\$ 8,667	\$ 78,004	\$ -	\$ -	\$ -	\$ 86,671	
Interface Control Document (ICD)	\$13,001	\$ 1,300	\$ 11,701	\$ -	\$ -	\$ -	\$ 13,001	
System Design Document (SDD)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Procurement	\$1,445	\$ 1,445	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Operate and Maintain	\$1,445	\$ 1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ 51,445	
4.1.3 Permit Parking Management	\$ 273,013	\$ 36,113	\$ 236,900	\$ -	\$ -	\$ -	\$ 273,013	
Concept of Operations (ConOps)	\$108,338	\$ 10,834	\$ 97,505	\$ -	\$ -	\$ -	\$ 108,338	
System Requirements Specification (SVRS)	\$57,781	\$ 5,778	\$ 52,002	\$ -	\$ -	\$ -	\$ 57,781	
Interface Control Document (ICD)	\$50,558	\$ 5,056	\$ 45,502	\$ -	\$ -	\$ -	\$ 50,558	
System Design Document (SDD)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Test Plan (TP)	\$21,668	\$ 2,167	\$ 19,501	\$ -	\$ -	\$ -	\$ 21,668	
Procurement	\$1,445	\$ 1,445	\$ -	\$ 145	\$ -	\$ -	\$ 1,445	
Develop	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Deploy	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Test	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Operate and Maintain	\$14,445	\$ 7,223	\$ 7,223	\$ -	\$ -	\$ -	\$ 14,445	
Budget Summary	\$ 16,685,127	\$ 3,372,618	\$ 13,312,480	\$ 23,314,873	\$ 19,000,000	\$ -	\$ 58,999,971	

Task Number	Federal Costs					Cost Share	Total	Notes/Comments
	Total Labor	City Labor	Subcontractor Labor	Other Direct Costs				
System Design Document (SDD)	\$36,113	\$ 3,611	\$ 32,502	\$ -	\$ -	\$ -	\$ 36,113	
Test Plan (TP)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Procurement	\$1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ -	\$ 1,445	
Long Haul Truck Parking Application	\$2,889	\$ -	\$ -	\$ 350,000	\$ -	\$ -	\$ 350,000	Based upon quote from TSPS
Develop	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
Deploy	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
Operate and Maintain	\$1,445	\$ -	\$ 1,445	\$ -	\$ -	\$ -	\$ 2,889	
4.4 Downtown District	\$ 689,033	\$ 81,471	\$ 607,562	\$ 150,000	\$ -	\$ -	\$ 949,033	Assume TSPS to maintain
4.4.1 Event Parking	\$ 190,676	\$ 20,223	\$ 170,452	\$ 260,000	\$ -	\$ -	\$ 550,676	
Concept of Operations (ConOps)	\$ 115,561	\$ 11,556	\$ 104,005	\$ -	\$ -	\$ -	\$ 115,561	
System Requirements Specification (SVRS)	\$28,880	\$ 2,889	\$ 25,991	\$ -	\$ -	\$ -	\$ 28,880	
Interface Control Document (ICD)	\$21,668	\$ 2,167	\$ 19,501	\$ -	\$ -	\$ -	\$ 21,668	
System Design Document (SDD)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Test Plan (TP)	\$7,223	\$ 722	\$ 6,501	\$ -	\$ -	\$ -	\$ 7,223	
Procurement	\$1,445	\$ 1,445	\$ -	\$ 100,000	\$ -	\$ -	\$ 100,000	Based upon quote from Experience Columbus.
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ 10,000	
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Operate and Maintain	\$1,445	\$ 1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ 51,445	
4.1.2 Delivery Loading Zones	\$ 225,344	\$ 25,135	\$ 200,209	\$ 100,000	\$ -	\$ -	\$ 325,344	
Concept of Operations (ConOps)	\$108,338	\$ 10,834	\$ 97,505	\$ -	\$ -	\$ -	\$ 108,338	
System Requirements Specification (SVRS)	\$96,671	\$ 8,667	\$ 78,004	\$ -	\$ -	\$ -	\$ 86,671	
Interface Control Document (ICD)	\$13,001	\$ 1,300	\$ 11,701	\$ -	\$ -	\$ -	\$ 13,001	
System Design Document (SDD)	\$14,445	\$ 1,445	\$ 13,001	\$ -	\$ -	\$ -	\$ 14,445	
Procurement	\$1,445	\$ 1,445	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Parking Availability and Routing Software	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	
Operate and Maintain	\$1,445	\$ 1,445	\$ 1,445	\$ -	\$ -	\$ -	\$ 51,445	
4.1.3 Permit Parking Management	\$ 273,013	\$ 36,113	\$ 236,900	\$ -	\$ -	\$ -	\$ 273,013	
Concept of Operations (ConOps)	\$108,338	\$ 10,834	\$ 97,505	\$ -	\$ -	\$ -	\$ 108,338	
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Interface Control Document (ICD)	\$50,558	\$ 5,056	\$ 45,502	\$ -	\$ -	\$ -	\$ 50,558	
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Procurement	\$1,445	\$ 1,445	\$ -	\$ 145	\$ -	\$ -	\$ 1,445	
Develop	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Deploy	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Test	\$1,445	\$ 722	\$ 722	\$ -	\$ -	\$ -	\$ 1,445	
Operate and Maintain	\$14,445	\$ 7,223	\$ 7,223	\$ -	\$ -	\$ -	\$ 14,445	
Budget Summary	\$ 16,685,127	\$ 3,372,618	\$ 13,312,480	\$ 23,314,873	\$ 19,000,000	\$ -	\$ 58,999,971	

Organizational Information

**ORGANIZATIONAL INFORMATION QUESTIONS AND ANSWERS
NOTICE OF FUNDING OPPORTUNITY NUMBER DTFH6116RA00002
BEYOND TRAFFIC: THE SMART CITY CHALLENGE – PHASE 2
CITY OF COLUMBUS APPLICATION**

The following is the Organizational Information requested on pages 66 - 68 of the Notice of Funding Opportunity for Beyond Traffic: The Smart City Challenge – Phase 2.

1. Identify any exceptions to the anticipated award terms and conditions as contained in Section F, Federal Award Administration Information.

Answer: No exceptions are taken to the anticipated award terms and conditions.

2. Identify any preexisting intellectual property that you anticipate using during award performance, and your position on its data rights during and after the award period of performance.

Answer: The City does not have preexisting intellectual property that they anticipate using during award performance. The solutions to be deployed are anticipated to use open architecture and open API's that are transferable within the region and to other municipalities across the US.

3. The use of a Dun and Bradstreet (D&B) Data Universal Numbering System (DUNS) number is required on all applications for Federal grants or cooperative agreements. Please provide your organization's DUNS number in your budget application.

Answer: This will be provided on the application. It is 6096795480000.

4. A statement to indicate whether your organization has previously completed an A-133 Single Audit and, if so, the date that the last A-133 Single Audit was completed.

Answer: The most recent A-133 Single Audit was for Fiscal Year 2014 ending 12/31/14. The opinion letter is dated 3/24/15.

5. A statement regarding Conflicts of Interest. The Applicant must disclose in writing any actual or potential personal or organizational conflict of interest in its application that describes in a concise manner all past, present or planned organizational, contractual or other interest(s), which may affect the Applicants' ability to perform the proposed project in an impartial and objective manner. Actual or potential conflicts of interest may include but are not limited to any past, present or planned contractual, financial, or other relationships, obligations, commitments or responsibilities, which may bias the Applicant or affect the Applicant's ability to perform the agreement in an impartial and objective manner. The Agreement Officer (AO) will review the statement(s) and may require additional relevant information from the Applicant. All such information, and any other relevant information known to DOT, will be used to determine whether an award to the Applicant may create an actual or potential conflict of interest. If any such conflict of interest is found to exist, the AO may (a) disqualify the Applicant, or (b) determine that it is otherwise in the best interest of the United States to contract

**ORGANIZATIONAL INFORMATION QUESTIONS AND ANSWERS
NOTICE OF FUNDING OPPORTUNITY NUMBER DTFH6116RA00002
BEYOND TRAFFIC: THE SMART CITY CHALLENGE – PHASE 2
CITY OF COLUMBUS APPLICATION**

with the Applicant and include appropriate provisions to mitigate or avoid such conflict in the agreement pursuant to 2 CFR 200.112.

Answer: There are no actual or potential conflict of interest issues that we are aware of. The City receives Federal Highway funds from grants and other sources on a yearly basis with no known issues.

6. A statement to indicate whether a Federal or State organization has audited or reviewed the Applicant's accounting system, purchasing system, and/or property control system. If such systems have been reviewed, provide summary information of the audit/review results to include as applicable summary letter or agreement, date of audit/review, Federal or State point of contact for such review.

Answer: This audit is performed by Plante Moran as part of a three party arrangement with the Auditor of the State of Ohio. This audit is incorporated into our general audit opinion and a separate report on these systems is not issued. The last audit report available is for Fiscal Year 2014 ending 12/31/14. The opinion letter is dated 3/24/15.

7. Terminated Contracts - List any contract/agreement that was terminated for convenience against the Applicant within the past 3 years, and any contract/agreement that was terminated for default within the past 5 years. Briefly explain the circumstances in each instance.

Answer: We are not aware of any of our contracts being terminated for convenience or default by the Government within these time periods.

8. Describe how your organization will obtain the necessary resources to fund and fulfill the proposed cost share, if applicable.

Answer: The City of Columbus will contribute \$8M from its capital fund and \$2.5M from the operating fund. The City of Columbus will establish a Smart Columbus non-profit that will collect and distribute the additional resources needed to fund and help sustain the Smart Columbus Program. Monies being contributed by other partners including the Greater Columbus Art Council, The Columbus Partnership, and others will be collected based on commitments made in the attached Letters of Commitment from Partners.

9. The Applicant is directed to review Title 2 CFR §170 (http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr170_main_02.tpl) dated September 14, 2010, and Appendix A thereto, and acknowledge in its application that it understands the requirement, has the necessary processes and systems in place, and is prepared to fully comply with the reporting described in the term if it receives funding resulting from this Notice. The text of Appendix A will be incorporated in the award document as a

**ORGANIZATIONAL INFORMATION QUESTIONS AND ANSWERS
NOTICE OF FUNDING OPPORTUNITY NUMBER DTFH6116RA00002
BEYOND TRAFFIC: THE SMART CITY CHALLENGE – PHASE 2
CITY OF COLUMBUS APPLICATION**

General Term and Condition as referenced under this Notice's Section F, Federal Award Administration Information.

Answer: The above referenced material was read, the requirement is understood, the necessary processes and systems are in place, and we are prepared to fully comply with the reporting described in the term if funding results from this Notice.

- 10.** Disclose any violations of Federal criminal law involving fraud, bribery, or gratuity violations. Failure to make required disclosures can result in any of the remedies described in 2 CFR 200.338 entitled Remedies for Noncompliance, including suspension or debarment. (See also 2 CFR Part 180 and 31 U.S.C. 3321).

Answer: We are not aware of any such violations and do not believe we have any. We apply for and receive Federal funds on a yearly basis for a variety of programs and this has not been an issue.

- 11.** A statement to acknowledge receipt and acceptance of any Notice of Funding Opportunity (NOFO) Amendments issued by USDOT.

Answer: The applicant hereby acknowledges receipt and acceptance of the NOFO amendments issued by USDOT.

BUDGET NOTES
NOTICE OF FUNDING OPPORTUNITY NUMBER
DTFH6116RA00002 BEYOND TRAFFIC: THE SMART CITY
CHALLENGE – PHASE 2 CITY OF COLUMBUS APPLICATION

BUDGET Notes: Include a narrative or list of bullets (ie, not a column within the big spreadsheet) that provides important Budget Notes: Include narrative text/bullets to document support/explanation for:

1. State/Explain in general how Other Direct Costs (ODCs) were estimated.

When possible, ODCs were estimated based on verbal quotes from vendors to the application writing team. In cases where a quote was not possible within the timeframe of the application process, the approximate cost was estimated based upon past experience with similar projects.

2. State/Explain in general how subcontractor labor was estimated.

Subcontractor labor was estimated by blending approximate rates from multiple firms for the labor categories of program/project manager, senior engineer, mid-level engineer, junior engineer, and administrative support. An estimated level of effort for each labor category was then applied to program management, each of the enabling technologies, and projects within each of the four districts.

3. State/Explain that Columbus will procure equipment / ODCs, and procure subcontractors, following its procurement code (provide link)

Chapter 329 of Columbus City Code governs procurement of goods and services by the City. The entire code section can be found at this address:

https://www.municode.com/library/oh/columbus/codes/code_of_ordinances?nodeId=TI_T3FITACO_CH329PRGOSEALPR

4. State/Explain estimated City staff Level of Effort for the award (yearly or for entire 4 year period of performance) in hours or in percent of time. A table to show roughly city level of effort for the agreement.

Refer to updated Columbus Labor Rates tab in spreadsheet attached to revised Budget Application dated July 29, 2016.

5. State/Explain that no City Overhead will be applied.

The City has elected to not bill indirect City labor rates to the Federal share, which explains the reduction in the fringe multiplier; Columbus will only bill salary + benefits to the Federal share.

6. State/Explain City Fringe rates, burdens consist of Insurance amounts plus a fringe rate. Has that fringe rate been audited and if so by whom / provide support?

BUDGET NOTES
NOTICE OF FUNDING OPPORTUNITY NUMBER
DTFH6116RA00002 BEYOND TRAFFIC: THE SMART CITY
CHALLENGE – PHASE 2 CITY OF COLUMBUS APPLICATION

The City's Fringe Rate has not been audited for federal funding purposes; however, the City's insurance costs are based on actual 2016 budgeted insurance funding rates developed based on prior year actual costs. In addition, the City's fringe rates include employee contribution rates for Ohio Public Employee Retirement System, Ohio Bureau of Worker's Compensation and Medicare. The Fringe Rates and Insurance Rate are disclosed in the Columbus Labor Rates tab in the spreadsheet attached to revised Budget Application dated July 29, 2016.

7. State/Explain Cost Share;

- A. City Cost Share of \$8M is not currently pinned to a cost element but available for ODCs/anticipated for capital expenses/purchases, and held under Program Management to be used as needed.

The City has allocated \$8M in cost share for the program management task, which is itemized as follows: quality control/quality assurance oversight (\$800,000), safety oversight (\$400,000), and data security oversight (\$1,000,000), a management reserve for contingency and expansion (\$4,000,000), and a sustainment fund (\$1,800,000).

- B. Ohio DOT cost share \$7M in data services per Ohio DOT letter

See attached letter in the next section.

- C. Franklin County cost share of \$4M per their letter

See attached letter in the next section.

Letters of Commitment



Commissioner John O'Grady • Commissioner Paula Brooks • Commissioner Marilyn Brown
President

Board of Commissioners
Kenneth Wilson, County Administrator

May 23, 2016

The Honorable Anthony Foxx
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Re: Support of the City of Columbus Smart City Challenge Finalist Application

Dear Mr. Secretary:

We are writing to you in support of the City of Columbus finalist grant application for the U.S. Department of Transportation Smart City Challenge.

Columbus is the state capital, county seat, largest city in Ohio and the 15th largest city in the U.S. The Columbus region, which includes the City of Columbus and Franklin County, is the fastest growing metro in the Midwest, the top metro for job growth in the Midwest, and the top metro for wage growth in the U.S. Franklin County has a population of approximately 1.3 million which makes it the second most populous county in Ohio and the 30th largest county in the nation. The County is recognized as one of the best managed and fiscally secure counties in the nation. The Central Ohio region has a very diverse economy that stands to greatly benefit from investments intelligent transportation systems due to its great logistical advantages over just about any area in America.

Franklin County enthusiastically supports the efforts of the City of Columbus and encourages the U.S. Department of Transportation to select Columbus as the Smart City Challenge winner. To further the effort of Columbus to win this Challenge, Franklin County officials, including the Board of Commissioners, Engineer, and other County agencies, stand ready to invest upon winning the challenge up to a total of \$4 Million over four years through a combination of in kind and cash contributions. The initiatives include such investments as Geographic Information System-Automated Mapping upgrades, smart traffic control devices, electric fleet vehicles and charging facilities, targeted transportation strategies aimed at reducing poverty and increasing employment opportunities, complimenting infrastructure technologies and social service smartcard transportation payment access. Columbus is poised to become a benchmark Smart City if awarded the winner of this challenge due to this community's unique ability to bring monumental public private partnerships to full scale. Thank you for your consideration.

Sincerely,

Kenneth N. Wilson
Franklin County Administrator

373 South High Street, 26th Floor, Columbus, Ohio 43215
Tel: 614-525-4266 Fax: 614-525-5999 www.co.franklin.oh.us



OHIO DEPARTMENT OF TRANSPORTATION

CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223

JOHN R. KASICH, GOVERNOR • JERRY WRAY, DIRECTOR

May 20, 2016

The Honorable Anthony Foxx
U.S. Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Re: Support of the City of Columbus Smart City Challenge Application

Dear Secretary Foxx,

The Ohio Department of Transportation is pleased to support the Columbus Smart City Challenge application for the U.S. Department of Transportation.

ODOT supports the City of Columbus's initiatives that parallel the Department's policies and purview; data collection, technical support and knowledge; specifically with grant opportunities, asset management, and intelligent transportation systems (ITS), right of way, connected and autonomous vehicles (CAVs).

ODOT is currently developing an action plan to strengthen relationships with its key transportation partners to prepare for CAVs. The agency has assembled an executive management team to guide activities and has named a primary point of contact for CAV initiatives. In addition, ODOT is actively organizing a cross functional leadership team comprised of key internal and external stakeholders. The cross functional team will include state agencies like the Departments of Public Safety, Commerce, and Administrative Services, as well as regional and local entities such as metropolitan planning organizations including the Mid-Ohio Regional Planning Commission, the Central Ohio Transit Authority, and the City of Columbus. ODOT's action plan is closely coordinated with the City of Columbus Smart City plan. ODOT's plan tentatively includes hosting a CAV conference in Columbus within the next two years. The purpose of this conference will be to engage Ohio CAV stakeholders in a national dialog and discuss the progress made in Ohio.

In addition, ODOT has implemented a new cloud based Traffic Count System that allows the Department to share data both internally and to the public instantaneously to support the City of Columbus. The system allows local agencies the ability to upload their collected counts into the system to take advantage of pre-designed reports and graphs as well as sharing opportunities. This clearing house approach has been extended to the next phase of this project which will include a Bicycle and Pedestrian Count Module. In recent years, the City of Columbus has seen an increasing number of people walking and riding bicycles for both recreational and business (e.g., biking to work) purposes. In addition local, regional, State and/or Federal funding programs are increasingly interested in linking funding for Complete Streets considerations, that is, streets designed and operated to enable safe access for all users. This module will assist local agencies in better understanding trends in walking and bicycling activity requirements. The system will also allow local transportation agencies the ability to objectively and consistently measure, analyze, and report on the volume of these users along trails, sidewalks, and roads and upload this information into the system for storage and reporting options. This module is anticipated to be in place by January 2017.

ODOT has over \$90 Billion worth of assets in our Pavements, Bridges and Culverts. These assets make up Ohio's transportation system. Transportation Asset Management (TAM) will play a critical role in the planning, development, preservation and construction of Ohio's Transportation System. The purpose of Transportation Asset Management as a business process is to provide a vital contribution to the economic health of the state of Ohio by leveraging its critical assets for the safe and efficient movement of people and goods. The TAM process will support

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the Department's decision making in providing a safe, affordable, high performing transportation system through optimal resource allocation. ODOT is a \$3 billion enterprise with an annual Capital Program over \$2 billion, and as such it is important to account for our assets in terms of location, value, and condition in order to make fiscally responsible strategic decisions. We will utilize systems such as the Transportation Information Management System (TIMS), a public facing mapping tool, to support our outreach effort with our local partners by sharing information and data vital to the decision making processes of those communities. The Ohio Department of Transportation will also provide approximately \$7 million worth of data services over a four year period (provided by sources like INRIX, RITIS, and HERE) to the City of Columbus to ensure a seamless transition of information across jurisdiction boundaries.

In addition, ODOT will work with the City of Columbus, the Mid-Ohio Regional Planning Commission (MORPC) and other regional partners to prioritize freight logistics and transportation investments for the Smart Columbus Smart Logistics effort. This initiative will be a stepping stone towards full deployment of systems which reduce emissions, increase safety, improve system operation, and enhance economic development in our state.

As stated above, ODOT supports the City of Columbus, Smart Columbus Plan and encourages the U.S. Department of Transportation to select the City of Columbus as the Smart City Challenge winner. Columbus is an ideal Smart City due to its innovative plans, its strong partners including the Ohio Department of Transportation and its understanding of how transportation is the foundation to economic success.

Thank you for your consideration.

Respectfully,

A handwritten signature in blue ink, appearing to read "Jerry Wray", is positioned above the printed name and title.

Jerry Wray, Director
The Ohio Department of Transportation