EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 0-06

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-14-032	09/16/2014 To 09/15/2019 Base X Option Period Number	Updating PopSim and Conceptual

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW: 1,10,12,14

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 09/16/2014 To 09/15/2019

Comments:
THE WORK ASSIGNMENT INCLUDES 150 HOURS FOR PREPARATION OF THE WORKPLAN/COST ESTIMATE AND TO BEGIN THE WORK ASSIGNMENT. THE CONTRACTOR SHALL PROPOSE THE HOURS NECESSARY TO COMPLETE ALL TASKS. NO PREVIOUSLY PERFORMED WORK SHALL BE DUPLICATED.
SEE ATTACHED SOW

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period: 09/16/2014 To 09/15/2019 Cost/Fee: LOE:

This Action:

Total:

Work Plan / Cost Estimate Approvals

Contractor WP Dated: Cost/Fee: LOE:

Cumulative Approved: Cost/Fee: LOE:

Work Assignment Manager Name Neal Fann (Signature) (Date)	Branch/Mail Code: Phone Number 919-541-0209 FAX Number:
Project Officer Name Carolyn Blake (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-5256 FAX Number:
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name Natalia Fisher-Jackson NATALIA FISHER-JACKSON (Signature) (Date) Digitally signed by NATALIA FISHER-JACKSON DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=NATALIA FISHER-JACKSON, dnQualifier=0000016076 Date: 2015.07.28 15:16:31 -04'00'	Branch/Mail Code: Phone Number: 919-541-3564 FAX Number:

I. **TITLE:** **Updating PopSim and Conceptualizing Pooling Windows**
CONTRACTOR: **IEc, Inc.**
CONTRACT #: **EP-D-14-032**
WA #: **0-06**
PERIOD OF PERF.: **Issue date – 09/15/2015**

II. WORK ASSIGNMENT MANAGER (WAM):

Neal Fann
EPA, OAQPS, OAR
C539-07
RTP, NC 27711
919-541-0209

III. LEVEL OF EFFORT:

Duration: 2 months

IV. BACKGROUND:

In 2003 the U.S. EPA contracted with a developer to create version 1.0 of the environmental Benefits Mapping and Analysis Program (BenMAP). That tool systematized a number of the steps of a health impact and benefits analysis that had previously been performed using the Criteria Air Pollutant Modeling System (CAPMS). Subsequent versions of BenMAP incorporated a number of new features, including a database that could be modified by end-users, more spatially resolved baseline health data and a broader array of health impact functions. The U.S. EPA has used BenMAP to estimate the avoided human health impacts and economic benefits of a number of air quality policies, including the 2002 Non-Road Diesel rule, the 2004 Clean Air Interstate Rule, and the 2011 Mercury and Air Toxics rules, among many others. Over 50 researchers have published over 25 journal articles using BenMAP.

Beginning in 2011, the U.S. EPA began redeveloping the tool from the ground-up to meet two goals: (1) create an open-source software platform so that anyone could see the software code and improve the program; (2) improve the performance, accessibility, capabilities and usability of the software. In the Fall of 2013, after iterating through dozens of beta versions, the U.S. EPA released version 1.0 of the environmental Benefits Mapping and Analysis Program—Community Edition (BenMAP-CE). In the winter of 2015, the Agency released version 1.1 of the software, which addressed a number of bugs identified in version 1.0 and incorporated several new features designed to make it easier for non-U.S. analysts to apply the program.

In 2014, the Agency delivered two 1-day BenMAP-CE training classes—one in Seattle, Washington that was affiliated with the International Society for Environmental Epidemiology conference and one in Colombo, Sri Lanka that was affiliated with the Better Air Quality conference. Having piloted the 1-day training

class, the BenMAP-CE team now looks to develop a 3-day class that will address more completely the practice of using BenMAP-CE in a non-U.S. setting.

V. STATEMENT OF WORK (SOW):

The Contractor shall conduct the following tasks in accomplishing the objective of this Work Assignment.

Task #1: Develop Work Plan

The contractor shall develop a work plan for this work assignment, including a cost estimate. The contractor shall submit the proposed work plan no later than twenty (20) days following approval and receipt of this Work Assignment. In addition, the contractor shall provide monthly progress reports to be submitted with the invoice in the manner described in this contract.

Task #2: Update the input data to PopSim

The Contractor shall modify the MS Access version of PopSim to incorporate the following input data:

- The most currently available: (1) Census population data by gender and single year of age; (2) CDC mortality and natality data; (3) CDC cause of death by ICD-10 code.
- These data above for the year 1980, so that PopSim may estimate changes in life expectancy beginning in the year 1980.
- New cause-specific and all-cause long-term mortality concentration-response functions from studies including: (1) Lepeule et al. 2012; (2) Krewski et al. 2009; (3) Burnett et al. 2014.

The Contractor shall incorporate these changes to the "indexed" version of the MS Access PopSim model. The Contractor shall further document these new features for the BenMAP-CE user manual.

Deliverables:
2.1 Revised version of PopSim
2.2 Documentation for the BenMAP-CE user manual

Task #3: Conceptualize new user interface to BenMAP-CE pooling procedure

The Contractor shall identify the strengths and weaknesses of the existing graphic user interface for pooling incidence and value estimate in BenMAP-CE v1.1. Consulting with health scientists and software developers, the Contractor shall identify two or more alternative approaches to the graphic user interface that leverage open source data libraries. The revised user interface shall: (1) be more intuitive to operate; (2) be more aesthetically appealing; (3) provide more relevant information to the user as he or she selects pooling options.

In a memo to the WAM, the Contractor shall detail these two or more alternative approaches and characterize: (1) the expected level of effort required to modify the code; (2) the anticipated ease with which users can operate the revised interface; (3) the extent to which open source data libraries are available.

Deliverables:
3.1 Memo describing proposed new user interface

VI. REPORTING REQUIREMENTS:

All reports shall be in accordance with contract specifications. The Contractor shall submit work products in electronic as well as hard copy form. In addition, the Contractor shall deliver to the WAM each draft and final report in electronic format that is readable by OAQPS's windows-based word-processing (Microsoft Word 2007), graphics (Microsoft PowerPoint 2007), spreadsheet (Excel 2007), and database (Access 2007) programs.

III. DELIVERABLES:

The Contractor shall adhere to the following schedule:

Task	Deliverable	Delivery Schedule
1	Work Plan/Cost estimate	20 days after effective date of WA
2	Update PopSim input data and user manual	1 month after effective date of WA
3	Memo summarizing options for user interface	2 months after effective date of WA