

## NTC Program Progress Performance Report (PPPR) Information Form

### For P.I.'s Use

On a semi-annual basis the NTC sponsored P.I. must report Program Progress Performance Report (PPPR) using the format specified in this PPPR Information Form. The form must be submitted electronically to the corresponding NTC Associate Director by **2/22/2016**.

**Cover Period: 9/30/2015 – 3/31/2016**

NTC Funded Project Information (Round/Year 2, 2014-2015)	
University Name	Arizona State University
Project Title	The Saturation, Economic, and Energy Effects of Maturing Roadway Networks
Principal Investigator	Mikhail Chester
PI Contact Information	mchester@asu.edu

The form includes the following six parts:

- Part I – Performance Indicators
- Part II – Accomplishments: What was done? What was learned?
- Part III – Products: What has the program produced?
- Part IV – Participants & Collaborating Organizations: Who has been involved?
- Part V – Impact: What is the impact of the program? How has it contributed to transportation education, research and technology transfer?
- Part VI – Changes/Problems

*Supplementary documents/materials can be attached to this form with the submission.*

<b>Part I – Performance Indicators</b>	
<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
<b>1. Transportation-related courses offered during the reporting period that were taught by faculty and/or teaching assistants who are associated with the UTC</b>	
Undergraduate courses	
Graduate courses	
<b>2. Students supported by this grant</b>	
Undergraduate students	[Student Name] [Supervisor]
Masters students	[Student Name] [Supervisor]
Doctoral students	Andrew Fraser Mikhail Chester
<b>3. Students participating in transportation research projects funded by this grant (but not supported by this grant)</b>	
Undergraduate students	[Student Name] [Supervisor]
Graduate students	[Student Name] [Supervisor]
<b>4. Students supported by this grant who received degrees</b>	
Undergraduate degrees	[Student Name]
Masters degrees	[Student Name]
Doctoral degrees	[Student Name]

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**Part II – Accomplishments: What was done? What was learned?**

The information provided in this section allows the OST-R grants official to assess whether satisfactory progress has been made during the reporting period.

<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
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<b>1. What are the major goals of the program?</b>	<p>The National UTC aims to promote strategic transportation policies, investment, and decisions that bring lasting and equitable economic benefits to the U.S. and its citizens. The Center is concerned with the integrated operations and planning of all modes serving the nation’s passenger and freight transportation system, including the institutional issues associated with their management and investments. A balanced multi-modal approach will be used that considers freight and passenger travel mobility, reliability, and sustainability, as well as system operations during periods of both recurring and non-recurring incidents, including response to major emergencies. The modes in this theme include highway, transit, rail, and inter-modal interfaces including ports, terminals and airports. In particular, the center focuses on research, education, and technology transfer activities that can lead to (1) Freight efficiency for domestic shipping and for our international land, air, and sea ports; (2) Highway congestion mitigation with multi-modal strategies; and (3) Smart investments in intercity passenger travel facilities such as high speed rail. Major center activities are as following:</p> <ul style="list-style-type: none"> <li>• <b>Advanced &amp; Applied Research Promoting Economic Competitiveness:</b> Our research activities are multimodal/intermodal and multidisciplinary in scope, with the aims of addressing nationally and regionally significant transportation issues pertinent to economic competitiveness and providing practice-ready solutions.</li> <li>• <b>Education, Workforce Development, Technology Transfer, &amp; Diversity</b> The consortium is committed to providing high-quality transportation education and workforce development programs for a broad and diverse audience. Center’s efforts will support the development of a critical transportation knowledge base and a transportation workforce that is prepared to design, deploy, operate, and maintain the complex transportation systems of the</li> </ul>
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	future.
<b>2. What was accomplished under these goals?</b>	During this reporting period we developed roadway infrastructure growth models for Los Angeles. The model combines building assessor databases with roadway link information to assign roadway links with representative ages. The model outputs shows us how roadway networks have grown over time, in the case of Los Angeles, from 1900 to the present. We extended the models to also consider parking infrastructure. Two publications were developed and accepted at major journals.
<b>3. How have the results been disseminated?</b>	We have developed websites of our results including videos, animations, and other content, and have presented the results at conferences and workshops.
<b>4. What do you plan to do during the next reporting period to accomplish the goals? (10/1/2014 – 3/10/2016)</b>	The project is nearing completion. We plan on developing several additional publications for the work.

**Part II – Products: What has the program produced?**

**Publications are the characteristic product of research projects funded by the UTC Program. OST-R may evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many research projects (though not all) develop significant products other than publications. OST-R may assess and report both publications and other products to Congress, communities of interest, and the public.**

<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
<b>1. Journal publications:</b>	<p>Environmental and Economic Consequences of Permanent Roadway Infrastructure Commitment: City Road Network Life-cycle Assessment and Los Angeles County, Andrew Fraser and Mikhail Chester, ASCE Journal of Infrastructure Systems, Expected 2015, Volume and Issue Forthcoming, doi: 10.1061/(ASCE)IS.1943-555X.0000271.</p> <p>Parking Infrastructure: A Constraint on or Opportunity for Urban Redevelopment? A Study of Los Angeles County Parking Supply and Growth, Mikhail Chester, Andrew Fraser, Juan Matute, Carolyn Flower, and Ram Pendyala, Journal of the American Planning Association, Expected 2015, Volume and Issue Forthcoming.</p>
<b>2. Books or other non-periodical, one-time publications</b>	Nothing to report.
<b>3. Other publications, conference papers and presentations</b>	Nothing to report.
<b>4. Website(s) or other Internet site(s)</b>	<p>Growth of the Los Angeles Roadway Network:  <a href="http://www.transportationlca.org/losangelesroadways/">http://www.transportationlca.org/losangelesroadways/</a></p> <p>Growth of Parking Infrastructure in Los Angeles:  <a href="http://www.transportationlca.org/losangelesparking/">http://www.transportationlca.org/losangelesparking/</a></p>

<b>5. Technologies or techniques</b>	None to report.
<b>6. Outreach activities</b>	None to report.
<b>7. Courses and workshops</b>	None to report.
<b>8. Inventions, patent applications, and/or licenses</b>	None to report.
<b>9. Other products</b>	None to report.

**Part III – Participants & Collaborating Organizations: Who has been involved?**

OST-R needs to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations.

<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
<b>1. What organizations have been involved as partners?</b>	Nothing to report.
<b>2. Have other collaborators or contacts been involved?</b>	Nothing to report.

**Part IV – Impact: What is the impact of the program? How has it contributed to transportation education, research and technology transfer?**

DOT uses this information to assess how the research and education programs:

- increase the body of knowledge and techniques;
- enlarge the pool of people trained to develop that knowledge and techniques or
- put it to use; and,
- improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
<b>1. What is the impact on the development of the principal discipline(s) of the program?</b>	The results show how roadway infrastructure grows, matures, and results in costs and environmental impacts over time. The results have broad implications for how we manage infrastructure, for sustainable financing and environmental outcomes.
<b>2. What is the impact on other disciplines?</b>	Nothing to report.
<b>3. What is the impact on the development of transportation workforce development?</b>	Nothing to report.
<b>4. What is the impact on physical, institutional, and information resources at the university or other partner institutions?</b>	The research is well positioned to help regions think about how to make infrastructure investments into the future.



<b>5. What is the impact on technology transfer?</b>	Nothing to report.
<b>6. What is the impact on society beyond science and technology?</b>	Nothing to report.
<b>7. Additional impacts</b>	Nothing to report.

**Part V – Changes/Problems**

If not previously reported in writing to OST-R through other mechanisms, provide the following additional information or state, “Nothing to Report, if applicable:

<b>Reporting Period</b>	<b>9/30/2015 – 3/31/2016</b>
<b>1. Changes in approach and reasons for change</b>	Nothing to report.
<b>2. Actual or anticipated problems or delays and actions or plans to resolve them</b>	Nothing to report.
<b>3. Changes that have a significant impact on expenditures</b>	Nothing to report.
<b>4. Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards</b>	Nothing to report.
<b>5. Change of primary performance site location from that originally proposed</b>	Nothing to report.