

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

This page summarizes all of the open tasks under the Cambridge Systematics contract with the research bureau.

Task	Project Budget	Budget Expended	% of Budget Expended	% of Work Complete
TO#21 – Climate Change Adaptation Guidebook	\$19,900.00	\$19,900	100%	100%
TO#22 – Worker Safety Issues of WiFi Devices	\$14,740.00	\$14,740.00	100%	100%
TO#23 – Steel Erection Out of Plumb	\$75,010.00	\$70,718.00	94%	94%
TO #24 – Criteria for Multimodal Rehabilitation versus Maintenance	\$64,892.50	\$50,710.00	78%	78%
TO #25 – Channel Usage Research and Analysis	\$112,760.00	\$107,711.00	96%	96%

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Climate Change Adaptation Guidebook		
RFP NUMBER: 7830809	NJDOT RESEARCH PROJECT MANAGER: Stefanie Potapa		
TASK ORDER NUMBER: 21	PRINCIPAL INVESTIGATOR: Josh DeFlorio, Hugh Louch		
Project Starting Date: 7/26/2013 Project Ending Date: 1/31/2014	Period Starting Date: 1/1/2014 Period Ending Date: 3/31/2014		

Task	% of Total Project Budget	Total Budget	% of Task This Quarter	Cost This Quarter	% of Task to Date	Total Cost to Date
1. Preparing for Action	76%	\$15,040	1%	\$ 140	100%	\$ 15,040
2. Final Report	24%	\$4,860	4%	\$ 770	100%	\$ 4,860
TOTAL	100%	\$19,900	5%	\$ 910	100%	\$ 19,990

Project Objectives:

The objectives of this project are to:

1. Construct suggested agency-wide approaches and process flows for climate-change and extreme weather risk reduction; and follow up interviews with selected personnel to further explore opportunities for integrating climate risk into current activities (as needed).
2. Develop a Final Report to summarize results and recommendations of Task 20 and Task 21.

Project Abstract:

For the New Jersey Department of Transportation (DOT), Cambridge Systematics is providing additional research support for work begun under the previous contract through the optional task (identified as 3b) set out in that scope of work. The specific purpose of Task 21 is to develop context-specific recommendations for factoring climate change into key decision-making processes at NJDOT.

1. Progress this Quarter by Task

Task 1: Preparing for Action

- None, task complete.

Task 2: Final Report

- Quarterly meeting, presentation of draft final report document
- Performed minor revisions, as requested
- Project management

2. Proposed activities for next quarter by task

Task 1:

- None, task complete.

Task 2:

- Revisions to final deliverables, as requested.
- Submission of final deliverable package.

3. List of deliverables provided in this quarter by task (product date):

- Attended quarterly meeting.

4. Progress on Implementation and Training Activities:

- No work on implementation or training in this period

5. Problems/Proposed Solutions:

- No problems to report during this period.

Total Project Budget	\$19,900.00
Contract Amount:	\$19,900.00
Total Project Expenditure to date	\$19,900.00
% of Total Project Budget Expended	100%

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Steel Erection Out of Plumb		
RFP NUMBER: 7830815	NJDOT RESEARCH PROJECT MANAGER: Giri Venkiteela		
TASK ORDER NUMBER: 23	PRINCIPAL INVESTIGATOR: Hugh Louch		
Project Starting Date: 7/26/2013 Project Ending Date: 3/31/2014	Period Starting Date: 1/01/2014 Period Ending Date: 3/31/2014		

Task	% of Total Project Budget	Total Budget	% of Task This Quarter	Cost This Quarter	% of Task to Date	Total Cost to Date
1. Kick-off meeting	5.6%	\$4,220	0%	\$0	100%	\$4,220
2. Literature Review & Subject Matter Expert (SME) Input	37.0%	\$27,780	5%	\$1,389	100%	\$27,780
3. Evaluation Findings and Recommendations	47.8%	\$35,860	23%	\$8,275	98%	\$35,143
4. Final Report	9.5%	\$7,150	50%	\$3,575	50%	\$3,575
TOTAL	100%	\$ 75,010	18%	\$13,239	94%	\$70,718

Project Objectives:

The purpose of this task will be to develop recommendations for construction engineering guidance based on a focused review of relevant DOT/University research papers, reports, presentations, available DOT Design and Construction guidelines, AASHTO LRFD Specifications, National Guidelines for Steel Girder Bridge Analysis and Design for Constructability, and NCHRP/TRB reports, input from subject matter experts related to constructability and steel erection which would include GPI senior construction engineers, fabricators, erectors and contractors, and review of recent GPI bridge project design plans and submitted shop and erection drawings which involved the design and construction of heavily skewed and/or curved girder bridges.

The final deliverable will be a report which will summarize the literature review, subject matter expert input, methods used and guidance provided on similar bridge construction projects, and recommendations for specific guidelines for NJDOT review and implementation.

Project Abstract:

There is currently no specific or consistent guidance on how designers and contractors are to address out-of-plumb girders associated with curved and skewed steel girder bridges as part of design and during construction.

1. Progress this Quarter by Task

Task 2: Literature Review & Subject Matter Expert (SME) Input

- Finalized literature review

Task 3: Evaluation, Findings and Recommendations

- Reviewed recommendations with NJDOT staff
- Refined recommendations

Task 4: Final Report

- Developed draft final report

2. Proposed activities for next quarter by task

Task 1: Kick Off Meeting

- Work completed. No further work expected.

Task 2: Literature Review & Subject Matter Expert (SME) Input

- Work completed. No further work expected.

Task 3: Evaluation, Findings and Recommendations

- Finalize recommendations pending any final input from NJDOT staff

Task 4: Final Report

- Update final report
- Draft technical brief
- Respond to NJDOT comments and finalize

3. List of deliverables provided in this quarter by task (product date):

- Revised findings and recommendations

4. Progress on Implementation and Training Activities:

- No work on implementation or training in this period.

5. Problems/Proposed Solutions:

- No problems to report during this period.

Total Project Budget	\$75,010.00
Contract Amount:	\$75,010.00
Total Project Expenditure to date	\$70,718.00
% of Total Project Budget Expended	94%

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Criteria for Multimodal Rehabilitation versus Maintenance		
RFP NUMBER: 7841209	NJDOT RESEARCH PROJECT MANAGER: Daniel LiSanti		
TASK ORDER NUMBER: 24	PRINCIPAL INVESTIGATOR: Christopher Lamm		
Project Starting Date: 8/16/2013 Project Ending Date: 4/01/2014	Period Starting Date: 01/01/2014 Period Ending Date: 03/31/2014		

Task	% of Total Project Budget	Total Budget	% of Task This Quarter	Cost This Quarter	% of Task to Date	Total Cost to Date
1. Literature Review and Interviews	59%	\$38,183	0%	\$0	93%	\$35,683
2. Recommended Threshold Criteria for Multimodal Grants	29%	\$18,600	27%	\$4,995	81%	\$15,027
3. Final Report	12%	8,110	0%	\$0	0%	\$0
TOTAL	100%	\$64,893	8%	\$4,995	78%	\$50,710

Project Objectives:

The purpose of this project will be to help the Bureau of Multimodal Grants and Programs to resolve conflicting information regarding the types of projects that qualify for grants supported by the New Jersey Transportation Trust Fund (TTF). Specifically, the threshold between “routine (or scheduled) maintenance,” which the TTF cannot support, and “rehabilitation” project, which can be supported by the TTF, appears to be inconsistent, according to the research problem posed. To resolve this conflict, this project aims to:

- Examine state-of-the-practice definitions for the terms “routine/scheduled maintenance,” “rehabilitation,” and “reconstruction,” based upon the body of transportation planning and engineering literature, laws and statutes of other states and federal agencies;
- Prepare recommended policy definitions of these terms for NJDOT to incorporate into office policy (and into rulemaking and legislation if necessary); and
- Develop recommended criteria for classifying candidate projects (or components of candidate projects) for the NJDOT Multi-Modal Grants program as maintenance, rehabilitation, or reconstruction; and

Project Abstract:

For the New Jersey Department of Transportation (DOT), Cambridge Systematics is researching state and Federal requirements, design guidelines, and best practices in order to determine the threshold between rail and aviation projects that are considered routine or

scheduled maintenance versus those that are better classified as rehabilitation projects. This effort is developing policy definitions that will be used to classify candidate projects for the New Jersey DOT Bureau of Multimodal Grants and Programs Rail Freight Assistance Program and Aeronautics Grants Program. Cambridge Systematics also is conducting reviews of literature, interviews with rail and aviation officials in Federal and state agencies, and a workshop with DOT staff.

1. Progress this Quarter by Task

Task 1:

- No new activities were completed under Task 1.

Task 2:

- CS prepared a worksheet containing:
 - The definitions and threshold criteria found in the literature review and interviews which may be applicable to NJDOT's rail and aeronautics grants programs.
 - A set of draft "strawman" working definitions of the terms "maintenance" and "rehabilitation" and listed examples of activities which may be considered "rehabilitation" projects for the purpose of categorizing applicant projects.

2. Proposed activities for next quarter by task

Task 1:

- CS and FHI will incorporate comments and requested edits to the Task 1 technical memorandum upon request from NJDOT

Task 2:

- CS and FHI will convene a working meeting with NJDOT to review Task 1 findings and review "strawman" working definitions of key terms and project categorization criteria;
- CS and FHI will submit a draft Task 2 Technical Memorandum to NJDOT for review and comments;
- CS and FHI will submit a final Task 2 Technical Memorandum to NJDOT for review and comments;

3. List of deliverables provided in this quarter by task (product date):

- Draft worksheet containing threshold criteria and list of "strawman" definitions and (3/26/2014)

4. Progress on Implementation and Training Activities:

- No work on implementation or training in this period

5. Problems/Proposed Solutions:

- No problems to report during this period.

Total Project Budget	\$64,893.00
Contract Amount:	\$64,893.00
Total Project Expenditure to date	\$50,710.00
% of Total Project Budget Expended	728%

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Channel Usage Research and Analysis		
RFP NUMBER: 7841174	NJDOT RESEARCH PROJECT MANAGER: Giri Venkiteela		
TASK ORDER NUMBER: 25	PRINCIPAL INVESTIGATOR: Brian ten Siethoff, Christopher Titze, David Wagner		
Project Starting Date: 8/16/2013 Project Ending Date: 2/15/2014	Period Starting Date: 1/1/2014 Period Ending Date: 3/31/2014		

Task	% of Total Project Budget	Total Budget	% of Task This Quarter	Cost This Quarter	% of Task to Date	Total Cost to Date
1. Literature Search	12%	\$14,020	10%	\$1,402	100%	\$14,020
2. Evaluate and Screen Vessel Count and Classification Methodologies	8%	\$9,120	10%	\$912	100%	\$9,120
3. Data Collection and Pilot Test of Vessel Count and Classification Methodologies	64%	\$72,560	20%	\$14,512	100%	\$72,560
4. Final Report	15%	\$17,060	64%	\$10,833	71%	\$12,027
TOTAL	100%	\$112,760	25%	\$27,659	96%	\$107,711

Project Objectives:

The purpose of this task is to 1) Develop and implement a reliable, repeatable, and verifiable method or SOP (Standard Operating Procedure) to collect vessel count and classification information by time of day; 2) Test one or more approaches that could be applicable to a broader statewide effort to collect vessel count information utilizing the selected method on approximately 214 state channels within the state's Marine Transportation System; and 3) Collect channel usage and classification data on a representative sample of the 214 state channels using a variety of methodologies so that results can be compared and guidance can be provided for future data collection efforts.

Project Abstract:

New Jersey's state channels are critical to the quality of life and economies of the state's coastal communities. The channels provide access to marinas and docks, and they allow fishing vessels, charter boats, and other commercial traffic to access Federally-maintained waterways like major inlets to the Atlantic Ocean and the Atlantic Intracoastal Waterway. As an initial step in a broader effort to better understand how these channels are used and how the Department of Transportation can best allocate scarce resources to channel dredging and other maintenance activities, this project involves defining a standard operating

procedure for collecting data about the size and number of vessels using each of the 214 state-maintained channels in New Jersey.

1. Progress this Quarter by Task

Task 1:

- The consultant team completed technical memorandum summarizing information gathered in literature search, and integrated findings into the draft final report.

Task 2:

- The consultant team completed a narrative summarizing screening criteria for the evaluation of various vessel count and classification methodologies, and integrated findings into the draft final report.

Task 3:

- The consultant team will completed requested revision to the summary tables in the data collection result database. Specific modifications will include:
 - Re-formatted the summary tables (where available) to provide an at-a-glance count of vessels by category for each site;
 - Indicated the percentage split of personal vs. commercial vessels for each pilot area (where available); and
 - Added basic descriptive statistics such as percent difference in the total count for the various alternative methodologies.
- The consultant team edited vessel classification education materials to incorporate additional photographs of vessel captured during data collection program.
- The consultant team completed the review of the findings from the field research and began categorizing the information by location into a data collection results database.

Task 4:

- The consultant team completed and submitted draft final report to NJDOT for review and comment.
- The consultant team began addressing comments provided by NJDOT.

2. Proposed activities for next quarter by task

Task 1:

- None.

Task 2:

- None.

Task 3:

- None.

Task 4:

- Complete final report and submit with accompanying project data and documentation.

3. List of deliverables provided in this quarter by task (product date):

Task 1:

- Technical Memorandum – Literature Review Summary

Task 2:

- No deliverables this quarter.

Task 3:

- Post-processed data of field data collection effort
- Updated Summary Tables.
- Update Vessel Classification Education Documents

Task 4:

- Draft Final Report

4. Progress on Implementation and Training Activities:

- No work on implementation or training in this period

5. Problems/Proposed Solutions:

- No problems to report during this period.

Total Project Budget	\$112,760.00
Contract Amount:	\$112,760.00
Total Project Expenditure to date	\$107,711
% of Total Project Budget Expended	96%