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THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



JEFF BRILLHART, P.E.
ACTING COMMISSIONER

Bureau of Planning & Community Assistance
January 9, 2015

Her Excellency, Governor Margaret Wood Hassan
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

Authorize the Department of Transportation to enter into a **SOLE SOURCE** Agreement with the University of New Hampshire, Civil Engineering Department (Vendor 177867) of Durham, New Hampshire for a total fee not to exceed \$510,000. This Agreement is to provide statewide asset data management, development, technical support and data collection services for the Statewide Asset Data Exchange Service (SADES) project, effective upon Governor and Council approval, through December 31, 2016. 100% Federal Funds.

Funding is available as follows for FY 2015, and is contingent upon the availability and continued appropriation of funds in FY 2016 and 2017:

04-096-96-963515-3054	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>
Consolidated Federal Aid	\$140,000	\$255,000	\$115,000
046-500464 Gen Consultant Non-Benefit			

The Consolidated Federal Fund, AU 3054, is utilized at this time to encumber funds for this request. Actual funding sources will be determined by each particular task order incurring expenses as a result of this request.

EXPLANATION

The Department requests this **sole source** contract between the Technology Transfer Center at the University of New Hampshire (T2@UNH) because T2@UNH is federally designated as a Technology Transfer Center, under the Federal Highway Administration's (FHWA) Local Technical Assistance Program (LTAP), effective August 18, 1986. T2@UNH operates the primary continuing education program in the state for local road managers, crews, and public officials. Additionally, T2@UNH administers special projects targeting municipal asset inventories, infrastructure maintenance, and improvement management that directly tie to regional and statewide efforts as well. T2@UNH has a long history of successful data collection and management projects it would be uniquely suited to facilitate this process. Most recently, T2@UNH has developed, and is currently managing the New Hampshire Statewide Mosaic Parcel Map (Mosaic). Mosaic integrates parcel and assessing data from 235 taxing jurisdictions into a single uniform data set.

This contract will provide the ability for the Department to effectively inventory, and assess the condition of assets for data driven planning and performance management critical for the Department's asset management efforts, as well as for planning commissions, municipalities, and other state agencies. The goal of SADES is to facilitate structured asset data collection efforts to coordinate statewide data collection initiatives. The T2@UNH will develop data collection specifications, provide training for data collectors, provide technical support, and develop and manage an on-line data repository compatible with the State's Geographical Information Systems (GIS).

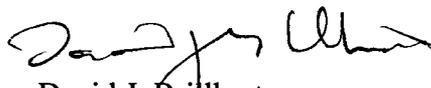
Around New Hampshire, state, regional, and local governments are in various stages of data collection initiatives. For transportation, a primary focus of these initiatives is critical infrastructure such as drainage (culverts), roadside restraint systems (guardrails) and public access ways (sidewalks & crosswalks). To effectively and uniformly collect this type of data on a statewide level, developing a structure that provides specifications, methods, training, and data exchange services for all stakeholders is essential.

The contract will be an on-call agreement with initial task orders to continue the technical support, enhancements, and training for existing asset inventories (Culverts and sidewalks/curb ramps), developed through a pilot project conducted by T2@UNH. Based on the pilot, the Department realized the effectiveness and efficiencies of the SADES program to collect and manage asset data to support asset management strategies. Additional task orders will follow to develop new asset inventories based on needs and priorities of the Department. The funding source(s) will be determined based on the scope of the individual task orders.

This Agreement has been approved by the Attorney General as to form and execution. The Department has verified that the necessary funds are available. Copies of the fully executed Agreement are on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to enter into an Agreement for consulting services as outlined above.

Sincerely,



David J. Brillhart
Acting Commissioner

COOPERATIVE PROJECT AGREEMENT

between the

STATE OF NEW HAMPSHIRE, Department of Transportation

and the

University of New Hampshire of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE

- A. This Cooperative Project Agreement (hereinafter "Project Agreement") is entered into by the State of New Hampshire, **Department of Transportation**, (hereinafter "State"), and the University System of New Hampshire, acting through **University of New Hampshire**, (hereinafter "Campus"), for the purpose of undertaking a project of mutual interest. This Cooperative Project shall be carried out under the terms and conditions of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, except as may be modified herein.
- B. This Project Agreement and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire approve this Project Agreement ("Effective date") and shall end on **12/31/16**. If the provision of services by Campus precedes the Effective date, all services performed by Campus shall be performed at the sole risk of Campus and in the event that this Project Agreement does not become effective, State shall be under no obligation to pay Campus for costs incurred or services performed; however, if this Project Agreement becomes effective, all costs incurred prior to the Effective date that would otherwise be allowable shall be paid under the terms of this Project Agreement.
- C. The work to be performed under the terms of this Project Agreement is described in the proposal identified below and attached to this document as Exhibit A, the content of which is incorporated herein as a part of this Project Agreement.

Project Title: **Technology Transfer Center (T2 Center) - Statewide Asset Data Exchange Service (SADES)**

- D. The Following Individuals are designated as Project Administrators. These Project Administrators shall be responsible for the business aspects of this Project Agreement and all invoices, payments, project amendments and related correspondence shall be directed to the individuals so designated.

State Project Administrator

Name: Glenn Davison
Address: NHDOT
Bureau of Planning & Comm. Assist.
PO Box 483, 5 Hazen Drive
Concord, NH 03302-0483
Phone: 603-271-3151

Campus Project Administrator

Name: Dianne Hall
Address: University of New Hampshire
Sponsored Programs Administration
51 College Rd. Rm 116
Durham, NH 03824
Phone: 603-862-1942

- E. The Following Individuals are designated as Project Directors. These Project Directors shall be responsible for the technical leadership and conduct of the project. All progress reports, completion reports and related correspondence shall be directed to the individuals so designated.

State Project Director

Name: Glenn Davison
Address: NHDOT
Bureau of Planning & Comm. Assist.
PO Box 483, 5 Hazen Drive
Concord, NH 03302-0483
Phone: 603-271-3151

Campus Project Director

Name: Charles Goodspeed
Address: University of New Hampshire
Kingsbury Hall
33 Academic Way
Durham, NH 03824
Phone: 603-862-1443

F. Total State funds in the amount of **\$510,000** have been allotted and are available for payment of allowable costs incurred under this Project Agreement. State will not reimburse Campus for costs exceeding the amount specified in this paragraph.

Check if applicable

Campus will cost-share % of total costs during the term of this Project Agreement.

Federal funds paid to Campus under this Project Agreement are from Grant/Contract/Cooperative Agreement No. **28293** from **Federal Highway Administration** under CFDA# **20.205**. Federal regulations required to be passed through to Campus as part of this Project Agreement, and in accordance with the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, are attached to this document as Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

G. Check if applicable

Article(s) **B** of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002 is/are hereby amended to read:

Added: Campus agrees not to incur any billable project costs prior to receiving a notice to proceed from NHDOT.

H. State has chosen **not to take** possession of equipment purchased under this Project Agreement.

State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

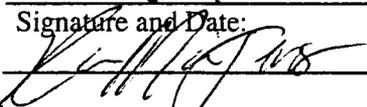
This Project Agreement and the Master Agreement constitute the entire agreement between State and Campus regarding this Cooperative Project, and supersede and replace any previously existing arrangements, oral or written; all changes herein must be made by written amendment and executed for the parties by their authorized officials.

IN WITNESS WHEREOF, the University System of New Hampshire, acting through the **University of New Hampshire** and the State of New Hampshire, **Department of Transportation** have executed this Project Agreement.

**By An Authorized Official of:
University of New Hampshire**

Name: Karen M. Jensen

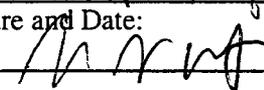
Title: Manager, Sponsored Programs Administration

Signature and Date:  12/24/14

**By An Authorized Official of: the New
Hampshire Office of the Attorney General**

Name: John J. Conforti

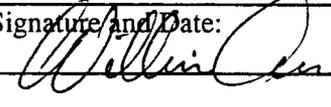
Title: Assistant Attorney General

Signature and Date:  1/29/15

**By An Authorized Official of:
State of New Hampshire Department of
Transportation**

Name: William J. Cass, P.E.
Director of Project Development

Title:

Signature and Date:  12/31/14

**By An Authorized Official of: the New
Hampshire Governor & Executive Council**

Name:

Title:

Signature and Date:

EXHIBIT A

- A. Project Title:** Technology Transfer Center (T2 Center) - Statewide Asset Data Exchange Service (SADES)
- B. Project Period:** 1/5/2015 – 12/31/2016
- C. Objectives:** The services required under this agreement shall generally include, but are not limited to the following:
- 1) **Specifications and Collection:** Facilitate the development of standard “core” data set based on common needs of stakeholders (DOT, RPCs, municipalities, and other state agencies). Develop data collection menus for field collection based on the standard data sets.
 - 2) **Training and Support:** Develop and conduct classroom and field training for specific asset inventory classes. Provide customer help services to support data collection and access to inventory data sets in SADES.
 - 3) **Compilations & Hosting:** Provide services to collect and compile data from stakeholders in a central on-line data repository.
 - 4) **Business process integration:** Develop quality assurance and quality control routines to ensure data reliability and accuracy based on stakeholder inputs. Facilitate the development or enhancements of stakeholder’s data processes to incorporate asset inventory data sets in SADES.
 - 5) **Data Integration:** Provide conversion and reformatting services to convert existing data sets (paper or electronic) to the core standards and integrate the data sets into SADES.
 - 6) **Collection of Field Data:** Provide resource for field collection of asset data. Coordinate stakeholder resources to collect requested asset data based on established priorities.
 - 7) **Management and Coordination:** Management of on-line central data repository (ArcGIS On-Line) and processes. Develop and support processes that provide efficiencies in maintaining, managing, and accessing asset inventory data sets.

D. Scope of Work:

Description of Services:

Campus will provide services required to accomplish the objectives in this project agreement that include but not limited to the following:

- Facilitation of asset and data management stakeholders for the transportation infrastructure including roadways, bridges, roadside safety structures.
- Training and support for office data management and remote asset inventory collection.
- Information technology for electronic data collection and web hosting.
- Business analysis for data quality assurance and quality control procedures.
- Technical Engineering for GIS
- Project and Program Administration.

Scope of Work:

Provide the ability for the State to effectively inventory, and assess the condition of assets for data driven planning and, performance management, critical for the State's asset management efforts, as well as, for planning commissions, municipalities, and other state agencies. The goal of SADES is to facilitate structured data collection efforts to coordinate statewide data collection initiatives. Develop data collection specifications, training for data collectors, technical support, and an on-line data repository compatible with the State's Geographical Information Systems (GIS).

This project agreement is for an on-call agreement with initial task orders to continue the technical support, enhancements, and training for existing asset inventories including, culverts and sidewalks/curb ramps, developed through a pilot project conducted by Campus. The State will assign additional tasks orders with specific deliverables to develop new asset inventories based on needs and priorities.

- E. Deliverables Schedule:** The State, through a working group will issue requests for work, which include a detailed description of the project or elements of work, and an outline of the services required. Campus shall submit to the State for approval a scope of work and fee proposal that includes the names of all personnel to be assigned to the task order and a tentative work schedule. The State will review Campus's proposal and schedule negotiations, if necessary, to clarify the proposed scope of work, assigned personnel, number of work hours needed, and other associated costs in order to establish the final not-to-exceed or lump-sum amount for the task order.

Upon approval of the State will issue a task order authorization to proceed letter.

Campus will not request cost reimbursements associated with the preparation of a scope of work and fees.

Any change to the approved task order, specifically relating to budget and schedule will require approval by the State.

- F. Budget and Invoicing Instructions:** This Agreement allows for a value of work not to exceed \$510,000.00. The cost for individual assignments will be negotiated on a case-by-case basis in accordance with the Master Agreement for Cooperative Projects between State and Campus.

Campus will submit invoices to State on regular Campus invoice forms accompanied by the reports or other deliverables for tasks completed according to the schedule specified in each assignment. State will pay campus within 30 days of receipt of each invoice. Campus will submit its final invoice no later than 75 days after the Project Period end date.

FY 2015	FY 2016	FY 2017	Total
\$140,000	\$255,000	\$115,000	\$510,000

EXHIBIT B

This Project Agreement is funded under a Grant/Contract/Cooperative Agreement to State from the Federal sponsor specified in Project Agreement article F. All applicable requirements, regulations, provisions, terms and conditions of this Federal Grant/Contract/Cooperative Agreement are hereby adopted in full force and effect to the relationship between State and Campus, except that wherever such requirements, regulations, provisions and terms and conditions differ for INSTITUTIONS OF HIGHER EDUCATION, the appropriate requirements should be substituted (e.g., OMB Circulars A-21 and A-110, rather than OMB Circulars A-87 and A-102). References to Contractor or Recipient in the Federal language will be taken to mean Campus; references to the Government or Federal Awarding Agency will be taken to mean Government/Federal Awarding Agency or State or both, as appropriate.

Special Federal provisions are listed here: None or

Technology Transfer Center (T²)

Proposal for

Statewide Asset Data Exchange Service
(SADES)



Proposal

A. Project Title: Technology Transfer Center (T2 Center) - Statewide Asset Data Exchange Service (SADES)

B. Project Period: 01/5/2015 – 12/31/2016

C. Description of Services:

The T2 Center will provide services required to accomplish the objectives in this project agreement that include but not limited to the following:

- Facilitation of asset management stakeholders for roadways, bridges, roadside infrastructure.
- Training and support for office and remote asset inventory collection.
- Information technology for electronic data collection and web hosting.
- Business analysis for data quality assurance and quality control procedures.
- Technical Engineering for GIS
- Project and Program Administration.

D. Scope of Work:

Provide the ability for the Department of Transportation to effectively inventory, and assess the condition of assets for data driven planning and, performance management, critical for the Department's asset management efforts, as well as, for planning commissions, municipalities, and other state agencies. The goal of SADES is to facilitate structured data collection efforts to coordinate statewide data collection initiatives. Develop data collection specifications, training for data collectors, technical support, and an on-line data repository compatible with the State's Geographical Information Systems (GIS).

This project agreement is for an on-call agreement with initial task orders to continue the technical support, enhancements, and training for existing asset inventories including, culverts and sidewalks/curb ramps, developed through a pilot project conducted by the

EXHIBIT A

~~A. Project Title: Technology Transfer Center (T2 Center) - Statewide Asset Data Exchange Service (SADES)~~

B. Project Period: 1/5/2015 – 12/31/2016

~~C. Objectives: The services required under this agreement shall generally include, but are not limited to the following:~~

- 1) **Specifications and Collection:** Facilitate the development of standard "core" data set based on common needs of stakeholders (DOT, RPCs, municipalities, and other state agencies). Develop data collection menus for field collection based on the standard data sets.
- 2) **Training and Support:** Develop and conduct classroom and field training for specific asset inventory classes. Provide customer help services to support data collection and access to inventory data sets in SADES.
- 3) **Compilations & Hosting:** Provide services to collect and compile data from stakeholders in a central on-line data repository.
- 4) **Business process integration:** Develop quality assurance and quality control routines to ensure data reliability and accuracy based on stakeholder inputs. Facilitate the development or enhancements of stakeholder's data processes to incorporate asset inventory data sets in SADES.
- 5) **Data Integration:** Provide conversion and reformatting services to convert existing data sets (paper or electronic) to the core standards and integrate the data sets into SADES.
- 6) **Collection of Field Data:** Provide resource for field collection of asset data. Coordinate stakeholder resources to collect requested asset data based on established priorities.
- 7) **Management and Coordination:** Management of on-line central data repository (ArcGIS On-Line) and processes. Develop and support processes that provide efficiencies in maintaining, managing, and accessing asset inventory data sets.

D. Scope of Work: Description of Services:

Campus will provide services required to accomplish the objectives in this project agreement that include but not limited to the following:

- Facilitation of asset and data management stakeholders for the transportation infrastructure including roadways, bridges, roadside safety structures.
- Training and support for office data management and remote asset inventory collection.
- Information technology for electronic data collection and web hosting.
- Business analysis for data quality assurance and quality control procedures.
- Technical Engineering for GIS
- Project and Program Administration.

Provide the ability for the State to effectively inventory, and assess the condition of assets for data driven planning and, performance management, critical for the State's asset management efforts, as well as, for planning commissions, municipalities, and other state agencies. The goal of SADES is to

Consolidated Sponsor Budget

PropBud v1.14

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
PCT	0.0%	138,610	2.00	Acad	30,802	30,802	Y	FF	
PCT	0.0%		3.00	Summer	46,203	46,203	Y	PF	
				67,005	67,005	134,010			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
DEF	B. Other Personnel					0			
	Grad Students AY			0	0	0	Y	NA	
	Grad Students SU			0	0	0	Y	PF	
	Post Doctoral Assoc	611Q90		0	0	0	Y	PD	
	Pat Staff	615N20		69,300	70,000	139,300	Y	FF	
	OS Staff	617N20		0	0	0	Y	FF	
	Labor (Apply partial fringe)	615N20		0	0	0	Y	PF	
	Labor (Exempt partial fringe)	615N20		0	0	0	Y	NA	
				69,300	70,000	139,300			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
LKUP	C. Fringe Benefits		65YF10	42,097	42,367	84,464	Y		
				42,097	42,367	84,464			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
NONE	D. Tuition	721100		0	0	0	Y		

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
NONE	E. Equipment	740000		0	0	0	Y		

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
NONE	F. Travel	710000		0	0	0	Y		

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
NONE	Materials & Supplies	711200		0	0	0	Y		
NONE	Publications Cost	711200		0	0	0	Y		
NONE	Consultants	717000		0	0	0	Y		
NONE	Computer Services	711200		0	0	0	Y		
NONE	SubAwards (Apply F&A)			0	0	0	Y		
NONE	SubAwards (Exempt F&A)			0	0	0	N		
				0	0	0			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
NONE	Service Providers	717200		0	0	0	Y		
NONE	Participant Support	722200		0	0	0	Y		
NONE	Other (Apply F&A)			0	0	0	Y		
NONE	Other (Exempt F&A)			0	0	0	N		
				0	0	0			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
Total Direct Costs in IDC Base				188,403	189,372	377,775			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
	H. Facilities & Administrative			65,941	66,280	132,221			
				65,941	66,280	132,221			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
	I. Cost-Sharing					0			
	J. Program Income					0			
				0	0	0			

Mode	Entry	Salary	# Mos	Period 1	Period 2	Total	In Base	FB Rate	Notes
				65,941	66,280	132,221			

CHARLES H. GOODSPEED, III

Department of Civil Engineering
University of New Hampshire
Durham, New Hampshire 03824

University Appointments:

1. Field Engineer, Structural Concrete Corporation, Laconia, NH
(1967-1969 part-time)
2. Assistant Professor of Civil Engineering, Carnegie Institute of Technology
(1972-1977).
3. Associate Professor of Civil Engineering, Carnegie Institute of Technology
(1977-1978).
4. Associate Professor of Civil Engineering (full-time), University of New
Hampshire
(1978-present).
5. IPA Fellow Federal Highway Administration, 1992, 2006

Education:

1. B.S. in Civil Engineering, Worcester Polytechnic Institute, Worcester,
Massachusetts (1967).
2. M.S. in Civil Engineering, Worcester Polytechnic Institute, Worcester,
Massachusetts (1969).
3. Ph.D. in Civil Engineering, University of Cincinnati, Cincinnati, Ohio (1972).

FRP Related Journal and Proceedings Publications:

Yost, J.R., Goodspeed, C.H., Schmeckpeper, E.R., "Flexural Performance of Concrete Beams Reinforced with FRP Grids," Journal of Composites for Construction Feb. 2001 Vol. 5 No.1

Goodspeed, C.H., and Vanikar, S.N., "Opportunities for University/State Highway Agency Partnerships", Academic News, Vol. 3, No.1 Winter 1998

Goodspeed, C.H., "LTAP Project Takes SHRP Products to Local Agencies", April 1997 Issue of Focus.

Goodspeed, C.H., Vanikar, S.N., Cook, R. "High-Performance concrete Defined for Highway Structures," Concrete International, February 1996

Vanikar, S.N., Goodspeed, C.H., High-Performance Concrete Demonstration Bridges in the United States of America," 4th International Symposium on Utilization of High-Strength/High Performance Concrete, Paris, 1996

Goodspeed, C.H., and Aleva, G., "Stress Distribution in FRP Grid Reinforced Members," Second International Symposium on Non-Metallic (FRP Reinforced for Concrete Structures, Ghent Belgium, August 1995

Goodspeed, C.H., "HPC Philosophy for Bridge Applications," 39th Annual Concrete Conference, Logan, Utah April 1997

Goodspeed, C.H., "Introduction to High Performance Concrete in Georgia," GDOT, Atlanta, Georgia, March 1997

Davison, G., Goodspeed, C.H., Fluharty, D., "Equipment Management System," Paper T177-4, TRB Circular May-June 1997

Anderson, J.A., Kilareski, W.P., Goodspeed, C.H., "Enhanced Technology Transfer Through Strategic Planning, Partnering and Model Integration," Paper No. 970479 TRB 76th Annual Meeting January 1997

Goodspeed, C.H., "High Performance Concrete for Bridge Applications," November 1996, Nebraska HPC Showcase

Goodspeed, C.H., "FRP & HPC in Bridge Decks," Research-to-Practice Symposium on Repair and Rehabilitation of Bridges and Pavements," Warwick, Rhode Island May 1996

Vanikar, S.N., and Goodspeed, C.H., "High Performance Concrete Bridge Technology Transfer in the United States of America," Paris France May 1996

Goodspeed, C.H., "Definition: High-Performance Concrete for Bridge Construction," TRB January 1995

Goodspeed, C.H., Vanikar, S.N., "High-Performance Concrete: FHWA Bridge Demonstration Projects," TRB January 1995

Goodspeed, C.H., Vanikar, S.N. Cook, R. "High Performance Concrete (HPC) Defined for Bridge Construction," TRB January 1995

Goodspeed, C.H., "New Hampshire Technology Transfer Center Pavement Management System," April 1993, Frederick, Maryland

Goodspeed, C.H., Vanikar, S.N. and Cook, R., "High-Performance Concrete Defined for Highway Structures," Concrete International, February 1996.

Goodspeed, C.H., and Aleva, G., "Stress Distribution in FRP Grid Reinforced Members," Second International Symposium on Non-Metallic (FRP Reinforced for Concrete Structures) Ghent Belgium, August 1995.

Goodspeed, C.H., Feragut, T., and Jackson, D., "Usage of a Corrosion Model to Predict the Service Life of High Performance Concrete (HPC) in Bridges," Corrosion 95, The NACE International Annual Conference and Corrosion Show, March 1995.

Goodspeed, C.H., Schmeckpeper, E.R. and Lemieux, R.R., "Road Surface Management System (RSMS)," Third International Conference on Managing Pavements, TRB, San Antonio, Texas, May 1994.

Schmeckpeper, E.R., Nielson, R., and Goodspeed, C.H., "Curtain Wall Panels Reinforced with FRP Grids," International SAMPE Conference, Philadelphia, PA, October 1993.

Gress, D.L., Goodspeed, C.H., "Alkali-Silica Reactivity Field Trials," FHWA \$89,074 9/1/95 to 8/30/98

Guest Lecturer

TCDC Workshop on Advances in High Performance Concrete Technology and its Applications, under the support of the United Nations Short Term Advisory Resources (UNISTAR), New Delhi, India, March 1997

USA-Mongolia Joint Workshop on High Performance Concrete for Construction and Rehabilitation of Transportation Structures, NSF Workshop Program, July 1998

Highway Related Projects

Partnered with 3M Corporation to develop a Retroreflectance meter to measure sign degradation and to refine SIMS, Sign Information & Management System, software to perform sign management.

Developed and managed the circulation, public domain, of RSMS, Road Surface Management System, which has over 5,000 user in the USA and 7 countries; MEMS, Municipal Equipment and Management System, over 500 users, and SIMS, Sign Information Management System, modified versions of this software is being marketed commercially by 3M.

CHRISTOPHER H. DOWD, E.I.T.

EDUCATION

UNIVERSITY OF NEW HAMPSHIRE

2014

Bachelors of Science in Civil Engineering

SKILLS

- E.I.T. Certification, NH, 2013
- AutoCAD, Revit 2014, Word, Excel, Project, and Powerpoint
- Excellent problem solving and analytical skills
- Productive while working in groups
- Proven ability to complete projects according to given specifications

EXPERIENCE

SADES MANAGER

2013

(Statewide Asset Data Exchange System)

Durham, NH

- Create and maintain asset data collection protocol
- Work directly with NHDOT to develop asset attributes
- Train Regional Planning Commissions on use of the collection software
- Modify existing collection systems to allow compatibility within SADES

DESMAN ASSOCIATES

2013

Engineering Co-op

Boston, MA

- Drafted and compiled full drawing sets for use by contractors, owners, and engineers
- Gained an understanding of the strengths and weaknesses of precast/prestressed concrete
- Collaborated with structural engineers to properly specify restoration procedures

COLANTONIO INC.

2012

Superintendent's Assistant

Holliston, MA

- Witnessed and participated in the preparation for, placement of, and care of concrete for slabs, footings, and walls
- Participated in on-site project meetings
- Established appropriate communication skills in the office and on site

YMCA CAMP BELKNAP

2008-2010

Leader

Wolfeboro, NH

- Developed extraordinary leadership, teamwork, and communication skills

EXTRA-CURRICULAR

ASCE STEEL BRIDGE TEAM

2011-present

Team Member (Captain 2013-2014)

UNH

UNH ASCE STUDENT BOARD

2013-present

Special Events Coordinator

UNH