FFY 2015



**Federal Highway Administration-New York Division**

Chris Gatchell, Lead Coordinator

**New York State Department of Transportation**

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July 1, 2015 (updates shown in red)

 **EDC3 Action Plan**

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| **Federal Highway Administration - New York State Department of Transportation****Every Day Counts 3 (EDC3) Dashboard** |
| **Initiative** | **page** | **Major Accomplishments** | **Status** |
| **Shortening Project Delivery** |
| **Regional Models of Cooperation** | 4 | MPOs engaged in State Freight Plan development. Technical working group formed to advise on management of large data sets. EBTC has developed a 2015 Work Plan |  |
| **Locally Administered Federal-Aid Projects: Stakeholder Agreements** (continuation from EDC2) | 6 | Started new webinar series; ADA held in April, EBO this summer. Completed and environmental scan of all NYSDOT Regions. Met with selected LPA’s to troubleshoot programs and projects. |  |
| **3D Modeling for Construction Means and Methods** (continuation from EDC2) | 9 | A demonstration of an Unmanned Aerial System (UAS) w/ Close Range Photogrammetry technology held. Initiated discussions with CADD vendors for demonstrations of 3D modeling capabilities. Held quarterly meetings of the (CIM) Working Group. |  |
| **Improving DOT and Railroad Coordination (SHRP2 R16)** | 19 | Prepared and submitted to FHWA the project implementation plan on for IAP grant.  |  |
| **Accelerated Bridge Construction:****Geosynthetic Reinforced Soil - Integrated Bridge System (GRS-IBS)** (continuation from EDC2) | 20 | Extensive use by St. Lawrence County (14 bridges).GRS used for embankments; IBS guidance developed (NYSDOT).Hosted FHWA workshop in Potsdam. |  |
| **e-Construction: Electronic Project Document Management Systems** | 22 | Beginning a pilot for utilizing Mobile Inspector, to allow construction inspectors to complete Daily Work Reports on a mobile device.Evaluating a pilot project for to help further facilitate NYSDOT’s paperless construction efforts. |  |
| Status Key: **Institutionalized:** The innovation is adopted by the State’s transportation community and used regularly on projects or within the program where appropriate.**Assessment Stage:** Beyond testing/piloting the innovation.  Assessing the performance and the process for carrying out the innovationand/or making adjustments to prepare for full deployment.**Demonstration Stage:** Testing/piloting the innovation.**Development Stage:** Collecting guidance and best practices, building support with partners and stakeholders, taking training, attending Peer-to-Peer workshops, and/or developing a process necessary for implementation of the innovation.  Interested in pursuing the innovation or seeking additional information on how to implement it.**Not Implementing: C**hose not to implement the innovation.  Not interested in pursuing the innovation. |
| **Federal Highway Administration - New York State Department of Transportation****Every Day Counts 3 (EDC3) Dashboard** |
| **Initiative** | **page** | **Major Accomplishments** | **Status** |
| **Mobility** |
| **Smart Work Zones** | 24 | Incorporating the FHWA Subpart J Mobility rule reporting into our annual work zone traffic control reviews. |  |
| **Safety** |
| **Data-Driven Safety Analysis** | 25 | More than 2,300 miles of CARDS have been installed. Pedestrian Count Down Timers have been installed at over 2,500 intersections. Hosted 6 external organizations for FHWA DDSA Exchange. |  |
| **Road Diets (Roadway Configuration)** | 27 | Compiled a list of potential locations for more than 40 road diets. Potential 4-lane to 3- lane reconfiguration candidates and being reviewed. |  |
| **Quality** |
| **Ultra-High Performance Concrete Connections for Pre-Fabricated Bridge Elements** | 28 | Completed the construction of 21 precast decks, 3 deck bulb tee superstructures, 3 deck beam element superstructures and 1 NEXT Beam superstructure utilizing UHPC connections; two additional accelerated interstate projects utilizing summer 2015. |  |
| **Environment** |
| **e-NEPA and Implementing Quality Environmental Documentation** | 30 | FHWA and Department met with each Region to discuss improvement opportunities. A summary document and training/resource references are being developed. |  |
| Status Key: **Institutionalized:** The innovation is adopted by the State’s transportation community and used regularly on projects or within the program where appropriate.**Assessment Stage:** Beyond testing/piloting the innovation.  Assessing the performance and the process for carrying out the innovationand/or making adjustments to prepare for full deployment.**Demonstration Stage:** Testing/piloting the innovation.**Development Stage:** Collecting guidance and best practices, building support with partners and stakeholders, taking training, attending Peer-to-Peer workshops, and/or developing a process necessary for implementation of the innovation.  Interested in pursuing the innovation or seeking additional information on how to implement it.**Not Implementing: C**hose not to implement the innovation.  Not interested in pursuing the innovation. |

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| **Regional Models of Cooperation***FHWA NY POC: Karen Rosenberger, Intermodal Transportation Coordinator**NYSDOT POC: Marty Neveu, Acting Director Statewide Planning Bureau***National Performance Metrics***tbd* | NYSDOT and the statewide MPO association (NYSAMPO) have been engaged in coordination and cooperation across MPO boundaries for many years. NYSDOT is currently engaged in an Integrated Planning effort with the MPOs to better coordinate our statewide and metropolitan planning activities. Through this effort, we work on planning issues of mutual interest such as data sharing, capacity building and statewide policy planning.NYSDOT participates in nine subject specific working groups with the NYSMPOs on topics such as safety, transit, modeling and GIS.NYSDOT actively promotes coordination and cooperation across State boundaries through its membership in many organizations, including, AASHTO, NASTO, the I-95 Corridor Coalition, the Eastern Border Transportation Coalition, the Transportation Border Working Group, and the Transportation and Climate Initiative, to name a few.In the spring of 2014, NYSDOT participated in a FHWA Performance Based Planning peer exchange at the New York Metropolitan Transportation Council (NYMTC) which involved MPOs from other states. NYSDOT staff also participated with several other states in the Target Setting Peer Exchange at the SCOP/SCOPM Joint Technical Meeting in June of 2014. | * NYSDOT will continue to collaborate on review of the various MAP-21 rulemakings with the NYSMPOs, AASHTO and others, and to discuss issues related to performance-based planning requirements.
* NYSDOT will engage the NYSMPOs as it develops a State Freight Plan and updates the statewide Rail Plan.
* NYSDOT will work with the Port Authority of New York and New Jersey on implementation of their Goods Movement Action Program (G-MAP).
* NYSDOT will pursue an effort under the UTRC contract to build a coordinated way to manage large data, such as the National Performance Management Research Data Set (NPMRDS), to pursue consistent data analysis and performance measurement methods for system reliability in coordination with NYS MPOs, and for other data management tasks.
* NYSDOT and Nova Scotia will co-Chair the Eastern Border Transportation Coalition (EBTC) beginning January 2015. EBTC is developing its 2015 Work Plan which will be finalized by December. A major action will be hiring a new Executive Director.
* NYSDOT will continue to actively participate in the I-95 Corridor Coalition Executive Committee, Intermodal & Passenger Movement, Travel Information Services, and Incident Management & Safety Program Tracks, the Funding & Finance Committee, and other areas, as necessary.
* NYSDOT continues to engage with NASTO on topics of mutual interest, including reauthorization discussions, and extreme weather response.
 | * NY Open Data, Statewide Rail Plan, STIC Communication Plan grant.
* NYSDOT has engaged the NYSMPOs among others in the external stakeholder advisory group assisting in the development of the State Freight Plan.
* NYSDOT began pursuing an effort under the UTRC contract to manage large data sets. Initial results are being discussed and work is ongoing, including engagement from a technical working group including MPOs.
* EBTC has developed its 2015 Work Plan. A new Executive Director has been hired. EBTC has completed a paper related to the importance of the border to EBTC members, and has updated its policy papers. EBTC’s annual conference will be held September 22-24, 2015 in Detroit, and will include a workshop discussing progress and next steps on the recently negotiated agreement for pre-clearance in rail, land and sea.
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| **Locally Administered Federal-Aid Projects: Stakeholder Agreements***FHWA NY POC: Dan Wood, High Risk and Innovation Oversight Team Leader**NYSDOT POC:**Donald Sweezy, P.E.**Director, Local Programs Bureau, Policy & Planning Division***National Performance Metrics*** tbd
 | NYSDOT developed and maintains Procedures for Locally Administered Federal Aid Projects (PLAFAP) to guide LPA’s through the process of developing and delivering Federally Aided Transportation projects.Provide dedicated regional staff to be the point of contact and liaisons between the LPA’s and NYSDOT. Attend association meetings with, NYS County Highway Superintendents, Association of General Contractors, American Council of Engineering Companies, NYS Association of Towns.  | * Continue to update the PLAFAP manual with input from all Stakeholders (NYSDOT program offices, LPA’s, consultants and contractors).
* Begin Annual Reporting per our new SOA.
* Bolster construction emphasis on inspection staffing, materials testing QA/QC, and documentation.
* Work with NYC to deliver SEP14 intersection safety markings.
* Present training for all of the above Associations.
* Work with Cornel University, NYS LTAP provider, to deliver an annual Highway School for Town Highway Superintendents and an annual Local Bridge Conference for all public bridge owners.
* Provide training to NYSDOT liaisons at annual meetings and regular webinars.
* NYSDOT Sponsor Certification Action Plan

The goals of Sponsor Certification is effective and efficient use of Federal funds for Local Projects while at the same time increasing quality, decreasing delivery time, and reducing cost.The following potential steps shall be considered and adjusted as needed.Develop Certification Process-Pilot phase-Acceptance Form-Recertification steps-Develop criteria for SponsorDevelop Oversight Agreement with Sponsor-FHWA Approvals-State Approvals-LPA ApprovalsDevelop Local Public Agency Minimum Qualifications / Criteria-Recurring successful FA projects-QA/QC Plan-LPA Coordinator and QC Coordinator-Project Development Process knowledge-Fulfills required procurement procedures -Established training program within LPA - Review Albany County experience- Hold a partnering meeting to solicit ideas(e.g. NYSDOT managed program) and identify risks (take a risk-based approach)Develop and maintain training program for SponsorMonitor Certified Sponsors and Oversight-Types of Reviews-Frequency of Reviews –major milestones-Performance measuresMay certify Local Public Agencies at different levels or for different project phases | * Utilizing multiple forums for LPA’s and industry to develop working relationships with NYSDOT and FHWA.
* Support regional staff with day-to-day program management skills and broader training efforts on Federal Regulations, Technology transfer, environmental stewardship, Civil Rights, asset management, project development, and construction administration.
* Started new webinar series; ADA in April, EBO this summer.
* Did environmental scan of all NYSDOT Regions including staffing and portfolio inventories.
* Met with selected LPA’s to get voice of the customer and troubleshoot programs and projects.
* Main Office LPB took an active role in project delivery when needed to get projects moving again.
* Main Office Construction supports DBE program and construction quality assurance reviews on local programs same as core program.
* Share best practices among regions like dedicated work zone inspection staff.
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| **Three- Dimensional Modeling***FHWA NY POC:* *Joseph Mondillo, Area Engineer, Region 11 (Co-POC)**Maria Chau, Statewide Planner & Research (Co-POC)**Michael Kowalczyk, Area Engineer, Regions 6 and 9 (Team Member)**NYSDOT POC’s:**Robert Howland, P.E.**Design Support Section Leader, Design Quality Assurance Bureau (Co-POC)**John Izzo, Office of Construction (Co-POC)**Supported by Phil Bell, Chair of Department CIM Working Group, Office of the Commissioner***National Performance Metrics*** *tbd*
 | Guidance is available that promotes maintaining electronic as-built plans. Of the 500+ active NYSDOT construction contracts, 102 contracts have “As-Built” folders created in NYSDOT’s ProjectWise file repository for storing files. To a lesser extent, 3D-files are being updated and saved as As-Built records.Guidance in place promoting the use of Automated Machine Guidance (AMG) technology on Construction Contracts.Agreement in place for equipping Construction field staff with necessary tools (GPS equipment) to use 3D models.Design policies and guidance in place for delivering 3D project models.During the 2014 Construction season approximately 25% of contracts were constructed using Automated Machine Guidance technology for earthwork and paving operations.CADD files and 3-D models (DTM’s & alignments) were provided as Supplemental Information to Bidders on approximately 22 highway/bridge contracts in SFY 2012.  | * NYSDOT is currently preparing to advertise a new RFP to solicit a vendor that will provide GPS survey equipment to be utilized by both Design staff for survey and Construction staff for field inspection. The contract would include GPS Rovers, Total Stations, Digital levels and Terrestrial LiDAR Scanners.
* NYSDOT Construction field staff will receive training over the winter in 3D Model manipulation using Bentley MicroStation & Inroads.
* NYSDOT is considering an effort to acquire funding (e.g. Accelerated Innovation Deployment (AID) funds) toward the purchase of a mobile scanner (LiDAR) device. A feasibility evaluation is still necessary before moving forward. A potential outcome of this endeavor would be a means of creating a data model, to allow for the extraction geospatial data for numerous asset types, along the entire Statewide Transportation System.
* NYSDOT will continue efforts to identify in-house design projects candidates that would benefit from requiring a 4D-Model to manage the construction phase of the project.
* NYSDOT is transitioning to a new enterprise asset management system that will offer the opportunity for storage of geospatial data for all Department asset types.
 | * On December 15, 2009 NYSDOT issued Engineering Instruction (EI) 09-031 to promote automated stakeout and Automated Machine Guidance Operations and the creation of contract items for RTK GPS equipment that inspectors can use to verify geospatial positioning of contract construction elements and measure quantities of completed work quicker and with greater accuracy compared to traditional methods.
* In September 2010, NYSDOT signed an agreement for a 5-year Survey Equipment Contract which in part provides Construction personnel with GPS Rovers, Robotic Total Stations and Digital Levels. This agreement is due to expire in the Fall 2015. An announcement has been posted on the Contract Reporter, informing vendors that there will be an RFP advertised in mid-July for the next GPS Equipment Contract.
* NYSDOT’s Highway Design Manual, Ch 21 recommends CADD files (i.e. mapping and 3D Models) be included as Supplemental Information Available to Bidders. CADD files and 3-D model data were provided as Supplemental Information to Bidders on approximately **28** highway/bridge contracts in SFY 2013 and **19** contracts for SFY 2014.
* In SFY 13, there were a total of 5 CADD training courses held for existing Design staff to provide the knowledge, tools, and workflows necessary to create 3D project models.
* To date in SFY 14, there have been a total of 31 CADD training courses held for Design staff and 4 CADD training course for Construction staff.
* In recent years, there have been numerous projects in New York State that have utilized 3D Engineered Models for Construction. Some of these projects are:
* Slingerlands Bypass Extension - NYS Route 85 (PIN 1125.24; D260243)
	+ Selected as NYSDOT automation pilot project
	+ Included a full 3D project model (mainline, roundabouts, bridge)
	+ Utilized GPS for inspection & quantity verifications, Automated Machine Guidance (AMG) and stakeless construction
* Fuller Road & Washington Avenue Intersection Improvement - (PIN 1757.31; D261876)
	+ Included full 3D project model with 3D solids bridge model , 3D underground utilities/drainage, and excellent 3D visualizations
	+ Utilized GPS (stakeout, inspection & quantity measurements), AMG and stakeless construction
	+ “Real time” 3D as-built were captured and data was exported to GIS
* NYS Route 17 Parksville - (PIN 9066.74; D260985)
	+ 3D project data supplied (mainline, ramps, detention ponds, culverts)
	+ Utilized GPS (stakeout, inspection & quantity measurements) and AMG
	+ Remarkable time savings was realized for earthwork measurements/verifications/payments…on average 60,000 cubic yards (45,000 cubic meters) of earthwork was processed and paid out every couple of weeks.
* NYSDOT has recently required that Contractors provide 4D and 5D models on several construction contracts. Some of these projects are:
* VAN WYCK EXPRESSWAY VIADUCTS REPLACEMENT AT THE KGI (A) (PIN X735.77, D261836)
	+ $113 million Bridge Viaduct Replacement contract.
	+ Required a 4D-Model utilized for constructability reviews, verification of staging sequences and conflict resolution between other phased contracts.
* KOSCIUSZKO BRIDGE REPL OVER NEWTOWN CREEK (PIN X731.24, D900011).
	+ $500+ million Design – Build Bridge Replacement.
	+ There is a 5D Modeling Requirement for the project.  The D/B team is required to develop a 3D model of the project and to link it to a cost loaded CPM Schedule (4D).
	+ The intent of the model is to provide visualization of the project and to provide a graphical representation of the progress of the project.  The model will also be able to be used for constructability reviews.
	+ Additionally, payments to the D/B team will be made off the cost loaded CPM Schedule (5D).  There will be a graphical representation of payments that can be used as a quick check of the work progress.  The DB team is required to update the model as the project progresses and it is desired to maintain the model over the life of the bridge to include future maintenance and other work.
	+ A meeting was held on June 23 with the consultants and NYSDOT to review the status of the 3D/4D/5D modeling. Data flow process, data completeness, quality and integrating of various file type formats was reviewed and discussed along with general issues and challenges

 * The FHWA sponsored “Civil Integrated Management (CIM)” one day technical workshop was held in Albany, New York on March 27, 2013. CIM is the collection, organization and managed accessibility to accurate data and information related to a highway facility. Representatives from FHWA, NYSDOT, and New York State engineering and construction industry members participated in the event. There were a total of approx. 140 attendees and the workshop offered a total of 13 sessions throughout the day.
* The NYSDOT continues participating on the NCHRP FY 14 Transportation Research Board “Civil Integrated Management “Project Panel (Project 10-96).
* In August 2014, numerous NYSDOT representatives participated in the NCHRP Domestic Scan 20-68A (13-02): Advances in Civil Integrated Management (CIM). The purpose of the scan was to facilitate information sharing and technology exchange among various states and other transportation agencies, and identify actionable items of common interest. The topics covered at the Scan were very closely tied to the Every Day Counts (EDC) Initiative “3D Modeling for Construction”.  The NYSDOT representatives in attendance showcased and discussed the Department’s efforts, challenges and successes related to implementation of CIM practices.
* NYSDOT staff participated in a FHWA sponsored workshop July 22nd in Harrisburg, PA for the Every Day Counts initiative for 3D Models in Construction. Presentations involved consultants, contractors and state DOT’s experiences creating and using 3D models for all aspects of construction project delivery and implementation processes to fully utilize 3D models on construction projects.
* Requiring that the Contractor use a 5D model (3D + Schedule (4D) that is Cost Loaded (5D)) to construct the K-Bridge (Kosciuszko Bridge Project, D900011, PIN X731.24).
* *The Engineering Center at Iowa State University in cooperation with the Iowa Department of Transportation is undertaking research on applications of 3D tools for bridge design and detailing.* ***NYSDOT, who is recognized nationally as a leader in utilizing 3D modeling in bridge design, was selected as 1 of the 2 two   states from whom the organizers of this study decided to learn.*** *The Structures Design Bureau hosted three representatives from Iowa DOT for two days, and conducted meetings and gave technical presentations explaining various aspects of this technology. Topics discussed included: design and detailing, technology development, implementation, training, visualization, demonstration of process, standards, future efforts and office production levels.*
* The Department received a STIC grant for “Development of 3D/4D Modeling and Civil Integrated Management (CIM) Guidance’ for $87,500. Department is preparing a scope of services for consultant resources to assist in supplementing and implementing the STIC grant.
* Quarterly meetings being held with 12 program areas & FHWA for knowledge sharing and improved coordination. Held first “Opportunities to advance Civil Integrated Management (CIM): 3D-4D-5D Data Modeling” meeting on March 13, 2015 with 12 internal NYSDOT offices and FHWA. Meeting summary: 1) Goal/purpose for meeting: a) to better understand the CIM activities the different program areas are implementing and pursuing (each attendee described their activities); and, b) to develop a list of issues to be addressed from an enterprise perspective (see attached list). 2) There was a group consensus for the need to meet on a quarterly basis. Phil Bell is the lead and schedule next meeting. 3) List of issues was documented for further action/discussion (completed).
* A second quarterly meeting of the Opportunities to Advance Civil Integrated Management (CIM) Working Group was held June 13, 2015. Items covered include:
* CIM/3D/4D Case Study update
* Meeting was held at the K Bridge project site to discuss and review the project for the case study
* K-Bridge project example update
* Craig Ruyle (Construction) provided overview of how the project is utilizing 3D-4D-5D modeling and the various processes and technologies involved. Craig will keep everyone updated on progress
* 3D Design, Fabrication, and Virtual Assembly of Structural Steel Structures Research Grant
* Scott Lagace (Structures) provided an overview of how the project is utilizing 3D-4D-5D modeling and the various processes and technologies involved. Scott will keep everyone updated on progress
* Status of the Statewide Term Agreement:

- The Draft Scope of services was discussed including the STIC grant* ASCE Meeting ‘Creating a Standard for Digital Project Delivery’ Metropolitan Section Construction Group
* Craig Ruyle (Construction) provided overview
* Phil Bell provided draft goals and objectives for review
* NYSDOT will host a visit from Alabama DOT, as part of an FHWA funded *3D Modeling Scan Tour.* The purpose of the visit will be to meet with NYSDOT Designers and Construction staff so that ALDOT can observe the technologies being used and the processes and guidance in place for developing and delivering 3D models. There will also be a visit to an active construction contract using 3D modeling.
* A demonstration was conducted for NYSDOT of an Unmanned Aerial System (UAS) w/ Close Range Photogrammetry technology, on Thursday June 04th, 2015. The demonstration was conducted as an investigation into the current technology available on the market and an exploratory review of the potential benefits and applications the Department could expect to gain if the technology were to be implemented. The demonstration was attended by several program areas within the Department. The overall results of the demonstration were a 3D PDF, point cloud, and LAS files created as deliverables to NYSDOT.
* NYSDOT is finalizing an application to seek Accelerated Innovation Deployment (AID) funds to allow for the development of a 3D model for D010285, PIN: X735.56, Kew Gardens Interchange Infrastructure and Operational Improvement Project. This funding would allow for the creation of a 3D Engineered Model that will be utilized during Construction for the purposes of requiring the Contractor to create a 4D Model to construct the contract.
* June 2015 initiated discussions with CADD vendors to set up demonstrations of their CADD products and solutions, including current 3D modeling capabilities.  Within the next year NYSDOT is anticipating the release of an RFP for CADD solutions for the next several years, in which may be included requirements for the inclusion of innovated 3D modeling technology and capabilities.
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| **Improving DOT and Railroad Coordination (SHRP2 R16)***FHWA NY POC: Emmett McDevitt, Safety Program Engineer**NYSDOT POC: Cathy Nusca, Design Quality Assurance Bureau***National Performance Metrics*** *tbd*
 | NYSDOT has Preliminary Engineering and Construction templates for agreements with CSXT, NS, MTA and a General template for all other railroads. These templates have been developed and approved by the various railroads and their use helps to expedite our agreement process. We also have initiated procedures to shorten agreement processing. One such procedure is to send partially executed agreements to the railroads thereby saving a step in the process. Amtrak agreements are each unique agreements although some of the agreement process has been streamlined by standardized agreement appendices and insurance practices. | * Share SHRP2 R16 resources with regional coordinators (<http://www.fhwa.dot.gov/goshrp2/Solutions/Renewal/R16/RailroadDOT_Mitigation_Strategies> and <http://www.trb.org/Publications/Blurbs/164283.aspx>)
* Review the SHRP2 R16 final report to identify improvement opportunities for NYS:
* Improved practices
* Model agreements
* Training
* tools
	+ - Join R16 Community of Interest Group
* Review and document existing process, identify improvements (e.g. right-of-entry time frames)
* Evaluate HSIPR program best-practices
* Discuss/reach-out to WashDOT re: ARRA project as a case-study
* Utilize a risk-based approach to identify improvements
* Consider consultant services/grants to review process
 | * Applied for an FHWA Implementation Assistance Program (IAP) grant as lead state adopter on February 13, 2015.
* FHWA announced on March 27, 2015 that NYSDOT has been selected as one of three lead state adopters (with Delaware and Kentucky) and awarded an FHWA IAP grant for $75,000. Held Department meeting with HSIPR, Freight and Design to discuss Department’s expectations and review draft Implementation Plan on June 22, 2015. Prepared and submitted to FHWA the project implementation plan on June 23, 2015.
* Department has prepared a scope of services for consultant resources to assist in supplementing and implementing the IAP grant (deliverables: Highway Design Manual update and training, consistent Department processes and agreements).
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| **Accelerated Bridge Construction:**  **Geosynthetic Reinforced Soil — Integrated Bridge System (GRS-IBS)***FHWA NY POC: Dan Byer, Senior Bridge Engineer (POC)**Chris Millington, Assistant Bridge Engineer (Team Member)**NYSDOT POC:* *Bob Burnett, Geotechnical Engineering Bureau, Office of Technical Services***National Performance Metrics***Tbd* | NYSDOT has not deployed the specific technology that is being promoted, however they have, and do use, GRS for highway embankments and an occasional temporary installation to support a bridge.Use of this technology for bridge abutments raises concerns regarding durability and longevity, particularly in areas with high potential for scour. St. Lawrence County in northern NY has used GRS IBS on 15 bridge projects. They are planning to construct three more in 2015 | * Review NYSDOT's GRS specification and guidance for conformity and verification with state-of-the-art practices.
* Track the number of projects utilizing GRS technology.
* NYSDOT concerned about GRS use on bridges with potential for scour; will consider pilot on single span grade separation structures.
* The FHWA HQ Research expert on GRS-IBS, Michael Adams, and the currentSt. Lawrence County engineer in charge of the largest GRS-IBS program in the state, Andy Willard, to present on the topic at the AGC Construction Conference in Saratoga in December 2014.
* The Office of Structures is keeping an eye out for a likely project on which to try this technology.
 | * On Tuesday, June 18, 2013 the FHWA New York Division is hosted a workshop on an Every Day Counts initiative for the Geosynthetic Reinforced Soil Integrated Bridge System. The workshop was held in Potsdam, New York, and was jointly sponsored by the Federal Highway Administration, the New York State Department of Transportation, and Cornell Local Roads Program. Participants from the surrounding area, including four of the Tribal Nations in New York State attended. Opening remarks made by the Division Office, and professional development hour credits were available.
* Andy Willard presented on GRS-IBS at the AGC Construction Conference in Saratoga in December 2014.
* On Wednesday, August 14, 2013 Dr. Barry Christopher, chairman of the TRB Committee on Geosynthetics, briefed members from the Offices of Technical Services and Structures on the advantages of GRS-IBS.
* On 6/19/2014, Massachusetts hosted a showcase for their first GRS-IBS bridge project in Sheffield, MA. FHWA and MassDOT staff explained the details of the project design and also lessons learned from the ongoing construction.
* The Department has issued internal guidance documents for the use of GRS-IBS structures. The design and construction guidelines were issued under EB 14-030, and the special specification was issued under EI 14-018, both on August 20, 2014.
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| **e-Construction***FHWA NY POC: Hans Anker, Senior Area Engineer**NYSDOT POC: John Izzo, Office of Construction***National Performance Metrics*** *tbd*
 | NYSDOT utilizes AASHTOWare Project – SiteManager to keep electronic records (DWR’s, Daily Diaries), process financials (Estimates, Change Orders) and process material sampling and testing requirements.NYSDOT has a Construction Seat Management Initiative contract (CSMIN) providing laptops to all field inspection staff as well as high speed networking into field office to accommodate electronic record keeping.NYSDOT promotes using ProjectWise and Contract Manager to track/approve/store electronic submittals (RFI’s, Shop Drawings, Plan Revisions, etc.).NYSDOT Construction promotes use of electronic PDF Fill-able Forms, w/digital signatures, to manage contracts.Guidance in place promoting the use of Automated Machine Guidance (AMG) technology on Construction Contracts. | * NYSDOT will be piloting use of Mobile Inspection which is a mobile-device application that will allow Construction inspection staff to complete Daily Work Reports using a mobile device (smartphones and tablets).
* NYSDOT is exploring opportunities to work with industry to identify improvements to 3D-Models in an effort to increase their usage during the construction phase.
* NYSDOT continues working with AASHTO to provide input toward the development of a web-based replacement of SiteManager (currently client-server based software).
* Continue refining the practices for promoting electronic bidding, such as efforts to provide electronic Design plans as supplemental information to bidders.
* Create a user roundtable of stakeholders (consider all different project delivery methods).
 | * NYSDOT utilizes Contract Manager document control software) on more complex contracts.
* Processes RFI’s
* Tracks electronic approval/rejection of submittals (e.g. shop drawings, erection/demolition plans)
* Repository for electronic records (e.g. correspondence, photos)
* NYSDOT requires all contractors to subscribe to e-pay so that the Department can process all payments electronically.
* NYSDOT made a presentation at the 2014 TRB Meeting at one of the Visualization workshops covering NYSDOT’s efforts in Digital Project Delivery.
* Several Regions are using GPS Rovers or tablets to capture geospatial asset data included in Construction contracts.
* NYSDOT provides websites (511, WEPI, Facebook, Twitter) to keep the public informed about active Construction contracts.
* NYSDOT recently transitioned to CSMIN II, which is a contract that provides computer hardware, high-speed networking, and software/hardware support to the Department’s 1600 Construction field staff. This contract replaced the original CSMIN I contract, providing an improved, direct link to the Department’s network for field personnel.
* NYSDOT continues efforts to launch a pilot for utilizing Mobile Inspector, which will allow Construction inspectors to complete Daily Work Reports on a mobile device while at the job site. Have an approved Information Technology Investment Request (ITIR) to load software and complete network configuration. Plan to start pilot in early-July.
* NYSDOT Region 11 (NYC) Construction Group is considering piloting an e-Construction contract. A potential candidate is D010285, PIN: X735.56, Kew Gardens Interchange Infrastructure and Operational Improvement Project. The Region is exploring opportunities for using Accelerated Innovation Deployment (AID) to equip staff with electronic hardware and software tools to help further facilitate NYSDOT’s paperless construction efforts.
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| **Smart Work Zones***FHWA NY POC: Emmett McDevitt, Safety Program Engineer**NYSDOT POC: Chuck Riedel, Office of Traffic Safety & Mobility***National Performance Metrics*** *tbd*
 | Institutional barriers obstruct flow of ideas and information.ITS measures in some projects not implemented due to impact on project cost.ITS applications primarily for surveillance and real time travel information | * Identify best practices which may help address institutional issues obstructing implementation of smart work zone strategies.
* Leverage available tools through Driver’s First Initiative.
* Identify a New York “champion.”
 | * Revisions to Highway Design Manual chapter 16 were issued to clarify requirements for Traffic Management Plans and institutionalize the evaluation of traffic impacts during construction and the development of operational, public outreach and traffic demand management measures to mitigate those impacts consistent with the Department’s Drivers First Initiative.
* Standard specifications for PVMS were updated to require NTCIP compliance at locations where it would be advantageous to have a TMC assume central control over any PVMS unit within the project limits.
* Began implementing a new tracking process which incorporates reporting on our Traffic Management Plan (TMP), Public Information (PI) campaign and Traffic Operations (TO) measures for significant projects into the annual Statewide Work Zone Traffic Control Review Program (i.e. incorporating the FHWA Subpart J Mobility rule reporting into our annual work zone traffic control reviews).
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| **Data-Driven Safety Analysis***FHWA NY POC: Emmett McDevitt, Safety Program Engineer**NYSDOT POC: Regina Doyle, Highway Data Services Bureau***National Performance Metrics*** *tbd*
 | Predictive ApproachCrash records from the Safety Information Management System (SIMS), roadway characteristics from the Roadway Information System (RIS) and an estimate of Vehicle Miles Traveled (VMT) derived from traffic counts are analyzed to identify Priority Investigation Locations (PILs). Subsets of the PILs are investigated each year in order to identify safety improvements. All PIL locations identified and studied are currently on the state system. New York State DOT also has a GIS based accident location analysis tool called ALIS that allows for geographic based crash analysis and a Post-Implementation Evaluation System called PIES that allows for actual before and after project evaluations.TRACSAs of March 31, 2013, 459 agencies were transmitting data through TraCS which is an electronic collection of ticket and traffic records. This represents more than one-third of all law enforcement agencies in NYS who are using the software. | Predictive Approach* Build a statewide linear referencing network and expand the traffic count program to obtain additional traffic counts on local roads. This will enhance the ability to perform crash analysis on all public roads.
* Develop Roads and Highways to provide for improved integration of crash, roadway, traffic and other data on all public roads regardless of ownership.
* Currently working with FHWA to perform a gap analysis between NYSDOT processes using the Safety Information Management System (SIMS) and the procedures defined in the Highway Safety Manual (HSM).
* Use the predictive approach in the Highway Safety Manual to evaluate the safety performance of Centerline Audible Roadway Delineators (CARDS).
 | Predictive Approach* The ALIS program was updated to improve performance and update the reporting functions to better align with the Highway Safety Improvement Program process.
* Updated ALIS and SIMS applications to differentiate between serious (A) and Minor (B, C) Injuries so queries can target the locations of fatal and serious injury crashes or they can be counted separately when needed.
* Added Roadway Inventory and Traffic Volume information to the ALIS application map layers to provide additional data for selecting comparison area streets for sliding scale analysis.
* NYS sponsored 11 host locations for the June 25, 2015FHWA EDC3 DDSA Exchange. Participants included 20 individuals from six external organizations (CDTC, FHWA, City of Buffalo, Nassau County, NYNJPA, and Cornell LTAP) and 28 NYSDOT staff.
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| Systemic Safety SolutionsCenter Line Audible Roadway Delineators (CARDS) and Pedestrian Countdown Timers are being implemented systemically to decrease the number of lane departure crashes and increase pedestrian safety at Intersections. | Systemic Safety Solutions * Develop the following 3 safety actions plans for the major emphasis areas in New York State. It is expected that all 3 plans will include a systemic safety component.
* Pedestrian Safety Action Plan
* Intersection Safety Action Plan
* Lane Departure Action Plan
 | Systemic Safety Solutions* Action Plan development is in progress. The Pedestrian Safety Action Plan is currently being vetted.
* More than 2,300 miles of CARDS have been installed
* Pedestrian Count Down Timers have been installed at over 2,500 intersections
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| SHRP2 Safety GrantNew York (NYSDOT/CUBRIC) received a grant from the SHRP2 Implementation Assistance Program for analyzing high-visibility pavement markings at cross-walks. |  |  |

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| **Road Diets (Roadway Configuration)***FHWA NY POC: Bob Davies, District Engineer**NYSDOT POC: Rick Wilder, Design Services Bureau***National Performance Metrics*** *tbd*
 | Road diets have been used successfully on more than 40 highway segments in New York State. However, guidance on when to consider them is not available in the Highway Design Manual. | * Identify locations of road diets and obtain pre and post implementation operational data.
* Revise Highway Design Manual Chapter 5 “Basic Design” to include general information on roadways that may benefit from a roadway reconfiguration that reduces the number or through travel lanes. For example, conversion of a 4 lane section to a 3 lane section that includes a two-way left-turn lane and wide shoulders for cyclists.
* Review the soon-to-be-released “Road Diet Informational guide” for improvement opportunities in our processes, procedures, criteria, specifications in our planning and design efforts.
* The Office of Design is working with the Office of Traffic & Safety to identify existing and sites, identify criteria for potential sites, collect crash data, and develop state specific guidance.
 | * Road diets have been used successfully on more than 40 highway segments in New York State.

 * Design has compiled a list of potential locations for more than 40 road diets. Traffic Safety & Mobility is analyzing the locations to determine the effects on crashes.
* Design and Traffic have developed a list of potential HSIP eligible funded 4-lane to 3- lane reconfiguration candidates and circulated the list to the Regions for review.
* NYSDOT hosted the web based April 9, 2015 FHWA Road Diets Exchange at 10 locations across the state. There were 107 attendees, 28 from local government entities.
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| **Ultra-High Performance Concrete Connections for Pre-Fabricated Bridge Elements** *FHWA NY POC: Dan Byer, Senior Bridge Engineer (POC)**Chris Millington, Assistant Bridge Engineer (Team Member)**NYSDOT POC: Mathew Royce, Office of Structures and Don Streeter, Materials Bureau***National Performance Metrics*** *tbd*
 | NYSDOT collaborated with the industry, trade associations and the FHWA in developing and testing field cast UHPC joints, panel to panel as well as girder to panel, for Precast Concrete Bridge Decks. Successfully implemented field cast UHPC joints for precast deck/superstructure systems for a significant number of projects achieving substantial acceleration in construction at a reasonable cost increase over conventional construction methods. | * Formalize the standards for the precast concrete deck systems with UHPC joints.
* Formalize the standards and details for prefabricated deck beam elements such as deck bulb-tees, NEXT Beam and deck beam element with steel girders; all utilizing UHPC joints.
* Develop UHPC connection details between prefabricated sub structure elements such as precast pier columns, cap beams, abutments and wing walls.
* Develop UHPC connection details between concrete bridge decks and precast barriers.
* UHPC splices for prestressed concrete girders.
* UHPC headers for transverse deck joints.
* Explore ways to reduce cost differential between conventional CIP construction and accelerated construction using Prefabricated Elements and System with UHPC joints.
* Develop UHPC mixtures using locally available materials.
 | * Completed the construction of 21 precast decks using UHPC joints. Most of the deck replacements were for bridges carrying interstate highways. All of the deck replacements were completed under an accelerated schedule; some of them were as short as three days.
* Completed the construction of 3 deck bulb-tee superstructures with UHPC longitudinal joints under shortened schedule.
* Completed the construction of 3 deck beam element superstructures with UHPC longitudinal joints under compressed schedule.
* Completed the construction of 1 NEXT Beam superstructure utilizing Ultra-High Performance Concrete Connections. Superstructure replacement portion of this bridge replacement project was completed utilizing lateral slide.
* The Contractor for I-84 (NB and SB) over Delaware and Neversink Rivers selected the precast deck option (with UHPC joints) versus the cast in place deck option (allowed as per contract). The North Bound bridge (6 span multi girder steel superstructure for both bounds) was completed late 2014. The south bound bridge construction is ongoing and expected to be completed this year.
* The Contractor for I-87 (NB and SB) over Albany Shaker Road selected the precast deck option (with UHPC joints) versus the cast in place deck option. These are single span multi girder steel superstructure bridges. Stage 1 portions of both bounds were completed in June of 2015. The stage 2 construction is ongoing and is expected be completed this year. Precast deck option enabled the contractor to reduce the construction time and finish the whole project in one construction season.
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| **e-NEPA and Implementing Quality Environmental Documentation***FHWA NY POC: Melissa Toni, Environmental Coordinator**NYSDOT POC: Mary Ricard, Design Quality Assurance Bureau, Office of Design, supported by Dan Hitt, Environmental Science Bureau, Office of Environment***National Performance Metrics*** *tbd*
 | NYSDOT policy and guidance is developed to fulfill the requirements of State and Federal environmental regulations (NEPA and SEQRA, and other environmental laws and regulations), and to meet the requirements of the stewardship agreement between FHWA and NYSDOT which exists to implement Federal highway legislation. NYSDOT is responsible for providing policy for the development of capital projects, and to review and approve associated documentation prior to sending it to FHWA and State and Federal resource or permitting agencies. The Department’s Project Development Manual (PDM) and The Environmental Manual (TEM – under development) provide policy and guidance for project development.Each Region is required to develop and implement a Quality Control/Quality Assurance Plan for capital project development, and to submit a portion of their capital projects to MO for review and/or approval, in accordance with the stewardship agreement between NYSDOT and FHWA. | * NYSDOT is actively working on implementing quality environmental documentation. Several actions have been identified to be progressed for this initiative:
* Continuing FEAW improvements;
* PDM Chapter 4 update;
* Project documentation ‘right- sizing’;
* Continuous improvement on DAD shells;
* Resource documentation guidance.
* Identify and deliver training available from FHWA.
* Pursue STIC funding for implementation activities.
* Present best-practices at Regional Design Engineer Meetings.
* Regional Visits to discuss improvements to the quality of environmental documentation
 | * DQAB and EAB, in consultation with FHWA, have issued the Federal Environmental Approvals Worksheet (FEAW) as a successor to the NEPA checklist. The Worksheet has helped clarify which Federal approvals are required, improved compliance with Federal and State environmental regulations, and has greatly streamlined the process of obtaining concurrence with project environmental determinations. The FEAW communicates the environmental determination along with any other approvals needed for a given project.
* A revision to PDM Chapter 4 to clarify guidance and streamline documentation is planned for release. Guidance for developing environmental assessments (EAs) has been added to Chapter 4 after many requests from practitioners; a Section on electronic reviews has been added to Chapter 4, along with appropriate references to policy updates for Smart Growth, Complete Streets, the FEAW, and links to e-NEPA guidance. We anticipate releasing this revision in 2015.

 * Improvements continue to be made in the DAD shells, based on best practice and other recommendations submitted from DQAB, EAB, and Regional staff.
* FHWA, DQAB and OoE traveled to each of the Regions to discuss opportunities to provide quality documentation of the environmental process. A number of solutions were identified and a summary document is being prepared. In addition, training/resource references are being developed for these solutions, to be distributed to the Regions and used as training opportunities with the Regions are identified.
* FHWA conducted a process review of a selection of NYSDOT and Local projects. The review enabled the Department and FHWA to discuss process implementation and documentation. The findings of that review are being finalized.
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