

Olivencia, Mildred

From: [REDACTED]
Sent: Friday, July 24, 2015 2:17 PM
To: Olivencia, Mildred
Cc: Torres-Rojas, Genara; Van Duyne, Sheree; Ng, Danny
Subject: Freedom of Information Online Request Form

Information:

First Name: robert
Last Name: maschke
Company: -
Mailing Address 1: [REDACTED]
Mailing Address 2:
City: [REDACTED]
State: [REDACTED]
Zip Code: [REDACTED]
Email Address: [REDACTED]
Phone: [REDACTED]
Required copies of the records: Yes

List of specific record(s):

I would like either hard copies or an electronic file of the following information associated with WSPs PANYNJ recently awarded projects 4900011508 405-15-05-2, GWB HH Ramps Signs and 49000159 405-15-07-1, GWB Mahatten Bridges. I would like all proposals technical, cost, etc. and internal PANYNJ review comments concerning said WSP proposal efforts.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

October 20, 2015

Mr. Robert Maschke


Re: Freedom of Information Reference No. 16182

Dear Mr. Maschke:

This is in response to your July 24, 2015 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code", copy enclosed) for a copy of WSPs PANYNJ recently awarded projects 4900011508 405-15-05-2, GWB HH Ramps Signs and 49000159 405-15-07-1, GWB Manhattan Bridges. Request for copies of all proposals technical, cost, etc. and internal PANYNJ review comments concerning said WSP proposal efforts.

Material responsive to your request and available under the Code can be found on the Port Authority's website at <http://www.panynj.gov/corporate-information/foi/16182-C.pdf>. Paper copies of the available records are available upon request.

Pursuant to the Code, certain portions of the material responsive to your request are exempt from disclosure as, among other classifications, deliberative process and personal privacy.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,



Danny Ng
FOI Administrator

Enclosure

*4 World Trade Center, 18th Floor
150 Greenwich Street
New York, NY 10007
T: 212 435 7348 F: 212 435 7555*

2015 BIENNIAL INSPECTION OF GWB NY APPROACH HHR STRUCTURES & ON-Grade S&LS

CLOSING DATE: March 19, 2015
 EVALUATION DATE: APRIL 3, 2015

Firm	Total Fee \$\$	Staff Qualification & Experience	Technical Approach	Management Approach	Firm Experience	Score	Ranking	Notes
		(A)	(B)	(C)	(D)	3.5A+3.5B+2C+ID		
WAI	██████████	█	█	█	█	85	2	
CHA	██████████	█	█	█	█	73	6	
WSP	██████████	█	█	█	█	88	1	
H&H	██████████	█	█	█	█	74	4	
A&W	██████████	█	█	█	█	74	5	
KS	██████████	█	█	█	█	73	7	
HAKS	██████████	█	█	█	█	78	3	
HNTB	██████████	█	█	█	█			
STANTEC	██████████	█	█	█	█			NO RESPONSE
Technical Ratings: Excellent = 10 Good = 9 - 8 Fair = 7 - 6 Unsatisfactory = 5 - 0								
PA ESTIMATE	\$457,000							

Albert S. Chin
 Date: 4/3/2015

Victor Demel
 Date: 4/03/2015

Victor Demel
 Date: 4/3/15

Victor Demel

RFP REVIEW - 2015 BIENNIAL INSPECTION OF GWB NY APPROACHES-HHR & On-Grade S&LS

Firm	Staff Qualification & Experience		Technical Approach		Management Approach		Firm Experience	
	Rating	Review Comments	Rating	Review Comments	Rating	Review Comments	Rating	Review Comments
WAI	■		■		■		■	
CHA	■		■		■		■	
WSP SELLS	■		■		■		■	
H&H	■		■		■		■	
A&W	■		■		■		■	
KSE	■		■		■		■	
HAKS	■		■		■		■	

TECHNICAL PROPOSAL

2015 BIENNIAL INSPECTION OF THE GEORGE WASHINGTON
BRIDGE NEW YORK APPROACH ROADWAYS
HENRY HUDSON RAMPS & RETAINING WALLS & ON-GRADE
SIGN & LIGHTING STRUCTURES

March 19, 2015

Submitted to:

**THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY**

Submitted by:

WSP USA CORP.
555 Pleasantville Road, South Bldg.
Briarcliff Manor, NY 10510
Tel: (914) 747-1120
www.wspgroup.com/usa



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555 Pleasantville Road
South Building
P.O. Box 2650
Briarcliff Manor, NY 10510
Main: 914 747 1120
www.wspgroup.com/usa

March 18, 2015

C. John Lin, P.E.
Assistant Chief Engineer- Quality Assurance
Engineering Department
The Port Authority of New York and New Jersey
2 Gateway Center
16th Floor
Newark, NJ 07102

Attn: Mr. Camille Dagher, P.E., Project Manager

*Re: 2015 Biennial Inspection of the George Washington Bridge New York Approach
Roadways Henry Hudson Ramps & Retaining Walls & On-Grade Sign & Lighting
Structures*

Dear Mr. Dagher:

WSP USA CORP (WSP) is pleased to submit three (3) copies and one (1) pdf of our proposal to provide inspection services for the above referenced project.

Since 1993, WSP has been continuously working with the Port Authority Quality Assurance Division by performing condition surveys of various facilities. WSP has provided over twenty years of continuous bridge inspection services to the Port Authority for some of their most distinctive facilities including the completion of nine biennial inspection projects at the George Washington Bridge facility. In addition, WSP has extensive long span bridge experience having performed the biennial inspection of twenty major suspension bridges during the past 17 years, including the George Washington, Verrazano Narrows, Triborough, Throgs Neck, Bronx Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges.

WSP has a recognized record of performance with our clients and believes our extensive experience with the Port Authority and similar projects render us well qualified to complete this project. WSP appreciates the opportunity to submit our proposal and to assist the Port Authority of New York and New Jersey with maintaining a safe and efficient infrastructure. Should you require any additional information, please feel free to contact me at (914) 747-1120 or at david.althaver@wspgroup.com.

Very truly yours,
WSP USA CORP

A handwritten signature in blue ink, appearing to read "D. Althaver", with a long horizontal flourish extending to the right.

David Althaver, P.E.
Project Manager

Cc: Mose Buonocore, P.E., Executive Vice President

Section 1: Technical Approach

TECHNICAL APPROACH

TASK B – FIELD INSPECTION

General Procedures

As soon as we receive notice from the Port Authority to begin work, we will have our inspection personnel begin the process of acquiring the SWAC and Facility ID Cards as soon as possible so that we will not be delayed in starting the field inspection. In addition, comprehensive field inspection forms will be developed prior to the start of inspection.

Each inspection team will be comprised of a qualified Team Leader who is a registered Professional Engineer in the state of New York and an Assistant Team Leader who is a graduate engineer. All proposed Team Leaders (including our sub-consultants) have attended the 2 week NHI bridge inspector's training and the 3 day NHI bridge inspector's refresher (if the training was attended over 5 years ago). The Team Leader will ensure that all inspections are performed in compliance with the latest FHWA/NBIS and NYSDOT requirements. The Team Leader will also ensure that all Port Authority procedures are strictly adhered to at all times.

In order to ensure the Port Authority of a consistent, high quality inspection, all sub-consultant personnel will be assigned to work with one person from WSP for the duration of the field inspection. Therefore, a Team Leader from WSP will work with an Assistant Team Leader from a sub-consultant or a Team Leader from a sub-consultant will work with an Assistant Team Leader from WSP.

Each inspection team will review all existing defects found in the previous cycle report for the locations scheduled to be inspected each day. All Priority repairs previously recommended will be either removed (due to the repair having been completed), updated (due to a change in condition) or confirmed (if there was no change from the previously noted conditions) and new photos will be taken. All significant defects found during the inspection will be fully evaluated using hand tools and NDT testing methods such as D-meters and dye penetrant as needed to determine the accurate, actual conditions encountered. Field notes, sketches, drawings and photographs will be taken of all significant defects in order to fully describe the conditions found.

Any condition that the Team Leader feels may warrant an Immediate repair will be brought to the attention of the WSP Quality Control Engineer. All Team Leaders will be equipped with mobile phones and laptop computers with internet access to contact and transmit photographs and/or sketches to the QC Engineer as soon as possible once a potential Immediate repair condition is found. After the Team Leader and the QC Engineer discuss the condition and determine that it warrants Immediate action, the Port Authority Project Manager will be immediately contacted by phone, followed by an accurate description of the condition (including sketches as required) with photographs sent by e-mail as soon as possible. Once approved by the Port Authority, WSP will expeditiously develop repair details and signed and sealed drawings to address all Immediate repair items. This was most recently done by WSP for 2 Immediate repairs during the 2013 Biennial Inspection of the George Washington Bridge NJ Approach Structures.

The underside of all concrete decks, reinforced concrete beams and concrete encased members will be sounded with a hammer. If a Team Leader finds areas of loose, delaminated or hollow sounding concrete that may cause a safety concern to the public, the Team Leader will attempt to remove the concrete and therefore remove the safety concern. If the Team Leader or Assistant Team Leader is not able to remove the concrete themselves (due to limited access or a safety concern), the Port Authority's Project Manager and the GWB facility liaison and operations manager will be contacted phone and will be given the necessary information to have Port Authority's maintenance department remove the concrete. The Team Leader or QC Engineer will send by e-mail to the QAD's Project Manager a detailed description of the conditions found including a sketch and photos no later than the following morning. In addition, the Team Leader will submit to the QAD's project Manager the Immediate Action Tracking Form as soon as possible and follow up by submitting the Immediate Action Completion Form once the condition has been resolved.

All components and attachments to the GWB NY Approach Roadway Structures (sign structures, lighting standards, etc.) will receive a visual inspection and all fracture critical, non-redundant or fatigue prone details will receive a hands-on inspection. If any significant defects are found on members receiving a visual inspection, the Team Leader will thoroughly clean and perform a hands-on inspection of those locations in order to fully determine and describe the conditions found. In addition, any significant defects found by one Team Leader will be discussed with the QC Engineer and the other inspection teams at the beginning of each day or night of work so that all inspection teams pay particular attention for similar defects that may occur at other locations throughout the structures being inspected.

Coordination of all field inspections, and especially all lane closures, with the Port Authority and local authorities will be crucial in order to complete the required inspections on schedule and within budget. WSP is highly experienced with scheduling and conducting lane closures within close proximity of highly sensitive, Port Authority facilities such as the George Washington Bridge. We will ensure open communication with all required GWB facility personnel and will coordinate all field work around any scheduled or on-going construction or maintenance activities in and around the bridges to be inspected. WSP has successfully worked at several Port Authority facilities (including the GWB in 2013) and will strictly follow all current requirements and procedures of the facility (including the use of barrels for all lane closures) while working on and around the George Washington Bridge including (but not limited to) the following:

- Obtain all required permits for closing traffic lanes on roadways outside of the Port Authority jurisdiction.
- Obtaining SWAC and facility ID cards for all inspection personnel including sub-consultants and equipment operators/lane closure personnel.
- Submission of weekly inspection schedules.
- Submission of approved MPT plans (based on the Port Authority's posted MPT plans found on their website) to the facility for proposed lane closures.
- Coordination of lane closures with any construction activities scheduled on the bridge or adjacent to the bridge on the NY and NJ approach roadways/ramps.
- Notifying in person the facility communications desk / police when entering and leaving the facility, providing such information as work location, contact phone number, number of workers and type of vehicles and equipment to be used.

During the course of the field inspection, WSP will give the Port Authority an update of all Priority repair conditions, stating whether they have been repaired, confirmed from the previous inspection or found during this inspection when requested. Upon completion of the field work, WSP will present, in a PowerPoint format, all existing and proposed Priority Repairs and all proposed Safety Repairs and any additional significant findings discovered throughout the field inspection of the GWB NY Approach Roadway Structures to the Port Authority management personnel in their offices.

Specific Approach

As we previously did during our 2009 inspection of the NY Approach Roadway Structures, WSP anticipates utilizing a parking facility in Fort Lee, NJ to store our inspection equipment (bucket trucks, manlifts, etc.). This is an efficient location, since we need to check in with the GWB facility personnel before working each day or night and they are also located in Fort Lee, NJ.

Since all of the bridges and several of the additional structures will require the inspections to be performed during night time lane closures (between the hours of 11:00pm and 5:00am), WSP will schedule between 2 and 4 inspection teams each night. Whenever possible, a single lane or full ramp closure will be utilized to inspect the underside of multiple bridges at the same time. This will significantly reduce the total MPT costs, since we will only need to provide an Attenuator Truck behind the additional inspection teams instead of a full lane closure. In addition, this will increase the quality and uniformity of the inspections between the various teams since they will be working in close proximity and will be able to easily discuss conditions with each other found during their inspection.

Access permitting, the top of deck of each bridge will be inspected during the day (between the hours of 8:00am and 4:00pm). The typical photos of each bridge will be taken during daylight hours (as long as it is safe for our inspectors to access the various locations in order to take the photos) to produce the best quality images for the NYSDOT and Port Authority reports. In addition, any portion of a structure that is found to be accessible during the day will also be inspected during daylight hours in order to minimize the night time lane closures and therefore save the Authority the additional premium charged for night time MPT operations.

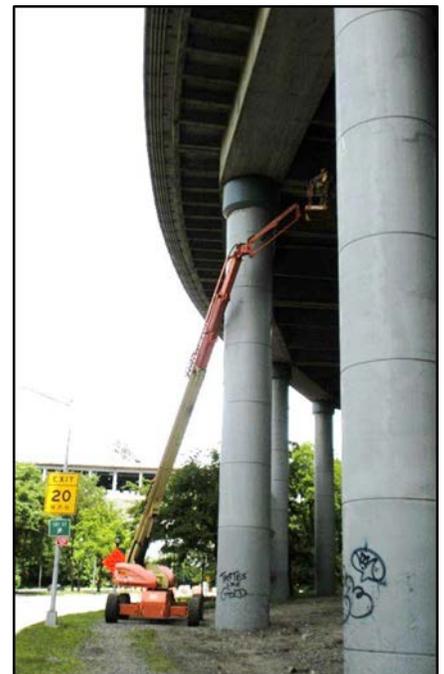
WSP anticipates utilizing 2 to 4 inspection teams throughout the duration of this project. The bridge inspections will be scheduled to ensure that the last inspection date is on or before the previous inspection date in order to satisfy NYSDOT's requirements. The retaining walls, soffits and additional structures to be inspected will be scheduled in the most efficient way by adding additional inspection teams and utilizing the lane closures installed for adjacent bridges. In this way, we will not only save the Authority money spent on MPT operations, but will also minimize our impact on the public travelling over the roadways. Based upon the previous cycle's inspection dates the field inspection for all structures included within this contract will be performed between May and October.

TASK C – REPORT

WSP understands the importance of timely report submissions. Upon the completion of each inspected bridge, WSP will thoroughly review all documented field information in accordance with our Quality Assurance Plan. We will then prepare and submit one copy of the NYSDOT Biennial Inspection Report to the Port Authority for review within 30 days of the last day of inspection and within 3 days of the QC Engineer’s signature for review. Within 10 calendar days of receiving the Authority’s comments, WSP will submit five copies of the NYSDOT Biennial Inspection Report along with two CD-ROMs for each bridge, containing the report in PDF format.

Once all of the field inspection work is completed and all of the NYSDOT reports are submitted, WSP will then prepare and submit a separate Condition Survey Report in accordance with Port Authority’s requirements. Within 60 days of the completion of the field inspections, we will submit 2 copies of the Condition Survey Reports and 1 copy of all field inspection reporting forms and color photographs. Within 20 calendar days of receiving the Authority’s comments, WSP will submit nine final copies of the Condition Survey Reports.

Upon completion of the Final Condition Survey Reports, WSP will submit all required digital files as outlined in the Authority’s “Request for Proposal” and upload all required files to the Authority’s QAD database.



ID	Task Name	Duration	Start	2015																														
				Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Ma																	
1	Notice to Proceed	0 days	Mon 4/13/15	◆ Notice to Proceed																														
2	Start-Up MTG/Submit Schedule	0 days	Mon 4/20/15	◆ Start-Up MTG/Submit Schedule																														
3	Inspect 2 Bridges Due in May	18 days	Mon 4/27/15	■ Inspect 2 Bridges Due in May																														
4	Prepare NYSDOT Biennial Reports	22 days	Fri 5/15/15	■ Prepare NYSDOT Biennial Reports																														
5	Submit NYSDOT Reports	5 days	Mon 6/15/15	■ Submit NYSDOT Reports																														
6	Inspect 2 Bridges Due in June	25 days	Mon 5/25/15	■ Inspect 2 Bridges Due in June																														
7	Prepare NYSDOT Biennial Reports	21 days	Fri 6/26/15	■ Prepare NYSDOT Biennial Reports																														
8	Submit NYSDOT Reports	0 days	Fri 7/24/15	◆ Submit NYSDOT Reports																														
9	Inspect 3 Bridges Due in July	25 days	Mon 6/22/15	■ Inspect 3 Bridges Due in July																														
10	Prepare NYSDOT Biennial Reports	28 days	Thu 7/16/15	■ Prepare NYSDOT Biennial Reports																														
11	Submit NYSDOT Reports	7 days	Fri 8/14/15	■ Submit NYSDOT Reports																														
12	Inspect 4 Bridges Due in August	32 days	Thu 7/16/15	■ Inspect 4 Bridges Due in August																														
13	Prepare NYSDOT Biennial Reports	32 days	Fri 8/14/15	■ Prepare NYSDOT Biennial Reports																														
14	Submit NYSDOT Reports	11 days	Mon 9/14/15	■ Submit NYSDOT Reports																														
15	Inspect 6 Bridges Due in October	35 days	Mon 8/24/15	■ Inspect 6 Bridges Due in October																														
16	Prepare NYSDOT Biennial Reports	26 days	Fri 10/2/15	■ Prepare NYSDOT Biennial Reports																														
17	Submit NYSDOT Reports	5 days	Mon 11/2/15	■ Submit NYSDOT Reports																														
18	Inspect Retaining Walls	120 days	Mon 4/27/15	■ Inspect Retaining Walls																														
19	Inspect On-Grade Sign & Lighting Structures	120 days	Mon 4/27/15	■ Inspect On-Grade Sign & Lighting Structures																														
20	Prepare Draft PA Condition Survey Report	42 days	Fri 10/9/15	■ Prepare Draft PA Condition Survey Report																														
21	Submit Draft PA Condition Survey Report	0 days	Fri 12/4/15	◆ Submit Draft PA Condition Survey Report																														
22	Port Authority Review	10 days	Mon 12/7/15	■ Port Authority Review																														
23	Prepare Final PA Condition Survey Report	9 days	Mon 12/21/15	■ Prepare Final PA Condition Survey Report																														
24	Submit Final PA Condition Survey Report	0 days	Thu 12/31/15	◆ Submit Final PA Condition Survey Report																														
25	CD/DVD Submission	0 days	Fri 1/29/16	◆ CD/DVD Submission																														
26	Structural Integrity Database Upload	10 days	Mon 1/18/16	■ Structural Integrity Database Upload																														

Project: 02b Project Schedule
Date: Thu 3/19/15

Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Progress
Split		External Tasks		Inactive Summary		Manual Summary		Deadline
Milestone		External Milestone		Manual Task		Start-only		
Summary		Inactive Task		Duration-only		Finish-only		

**2015 BIENNIAL INSPECTION OF THE GWB NY APPROACH ROADWAYS
HENRY HUDSON RAMPS, RETAINING WALLS AND ON-GRADE SIGN & LIGHTING STRUCTURES**



Section 2: Cost Estimate

**2015 Biennial Inspection of the New York Approach Roadways
Henry Hudson Ramps, Retaining Walls and
On-Grade Sign & Lighting Structures
COST PROPOSAL**

**QUALITY ASSURANCE DIVISION
CONDITION SURVEY REPORT
TASKS 'B' & 'C' COST ESTIMATE**

FACILITY: George Washington Bridge			
PROJECT: 2015 Biennial Inspection of GWB NY Approaches - HHR Structures & On-Grade Sign & Lighting Structures		DATE: March 19, 2015	
	STAFF DAYS	COST/DAY	TOTAL
TASK 'B' FIELD INSPECTION	---	---	---
1. PRELIMINARY WALK THROUGH	3.0	\$1,346	\$4,038
2. DEVELOP FIELD FORMS (Including CADD)	5.0	\$919	\$4,595
3. FIELD INSPECTION	157.0	\$938	\$147,266
4. QUALITY CONTROL	10.0	\$1,326	\$13,260
5. SUPERVISION BY SENIOR STAFF	5.0	\$1,498	\$7,490
I. TASK 'B' SUBTOTAL	180.0	---	\$176,649
TASK 'C' REPORT PREPARATION	---	---	---
1. REPORT WRITING (Including CADD)	65.0	\$867	\$56,355
2. FINAL REPORT (Including Pre-final Review)	14.0	\$921	\$12,894
3. QAD Database Upload	4.0	\$867	\$3,468
4. QUALITY CONTROL	10.0	\$1,326	\$13,260
5. SUPERVISION BY SENIOR STAFF	5.0	\$1,498	\$7,490
II. TASK 'C' SUBTOTAL	98.0	---	\$93,467
OUT-OF-POCKET EXPENSES	---	---	---
1. TASK 'B' INCLUDING: Travel & Equip.	L.S.	L.S.	\$135,725
2. TASK 'C' INCLUDING: Travel & Printing	L.S.	L.S.	\$3,883
III. OUT-OF-POCKET SUBTOTAL:	L.S.	L.S.	\$139,608
TOTAL (I + II + III) =			\$409,724
SAY			\$409,000
<u>Subconsultant Budgets</u>			
American Structural Engineering (MBE):		\$32,414	
LGM Consultants (WBE):		\$13,506	
ESTIMATED BY: David Althaver			

**2015 Biennial Inspection of the New York Approach Roadways
Henry Hudson Ramps, Retaining Walls and
On-Grade Sign & Lighting Structures
COST PROPOSAL**

I. TASK 'B' - FIELD INSPECTION

1. Preliminary Walk Through

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Manager	8	\$80.00	\$640.00	Multiplier = 2.55
Project Engineer / Team Leader	8	\$53.00	\$424.00	
Quality Control Engineer	8	\$65.00	\$520.00	
TOTAL	24		\$1,584.00	\$1,346

2. Develop Field Forms (Including CADD)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	16	\$53.00	\$848.00	Multiplier = 2.55
Designer II / Assistant Team Leader	8	\$39.00	\$312.00	
CAD / Drafter Production Supervisor	8	\$47.50	\$380.00	
CAD Operator	8	\$32.65	\$261.20	
TOTAL	40		\$1,801.20	\$919

3. Field Inspection

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	628	\$53.00	\$33,284.00	Multiplier = 2.55
Designer II / Assistant Team Leader	628	\$39.00	\$24,492.00	
TOTAL	1256		\$57,776.00	\$938

4. Quality Control

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Quality Control Engineer	80	\$65.00	\$5,200.00	\$1,326

**2015 Biennial Inspection of the New York Approach Roadways
Henry Hudson Ramps, Retaining Walls and
On-Grade Sign & Lighting Structures
COST PROPOSAL**

5. Supervision by Senior Staff

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Principal / Department Manager*	8	\$120.00	\$960.00	*Multiplier not used
Project Manager	32	\$80.00	\$2,560.00	Multiplier = 2.55
TOTAL	40		\$3,520.00	\$1,498

II. TASK 'C' - REPORT PREPARATION

1. Report Writing (Including CADD)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	160	\$53.00	\$8,480.00	Multiplier = 2.55
Designer II / Assistant Team Leader	200	\$39.00	\$7,800.00	
CAD / Drafter Production Supervisor	40	\$47.50	\$1,900.00	
CAD Operator	120	\$32.65	\$3,918.00	
TOTAL	520		\$22,098.00	\$867

2. Final Report (Including Pre-final Review)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	60	\$53.00	\$3,180.00	Multiplier = 2.55
CAD / Drafter Production Supervisor	12	\$47.50	\$570.00	
CAD Operator	40	\$32.65	\$1,306.00	
TOTAL	112		\$5,056.00	\$921

3. QAD Database Upload

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	8	\$53.00	\$424.00	Multiplier = 2.55
Designer II / Assistant Team Leader	24	\$39.00	\$936.00	
TOTAL	32		\$1,360.00	\$867

**2015 Biennial Inspection of the New York Approach Roadways
Henry Hudson Ramps, Retaining Walls and
On-Grade Sign & Lighting Structures
COST PROPOSAL**

4. Quality Control

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Quality Control Engineer	80	\$65.00	\$5,200.00	\$1,326

5. Supervision by Senior Staff

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Principal / Department Manager*	8	\$120.00	\$960.00	*Multiplier not used
Project Manager	32	\$80.00	\$2,560.00	Multiplier = 2.55
TOTAL	40		\$3,520.00	\$1,498

SUMMARY LABOR COST

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL LABOR COST
Principal / Department Manager	16	\$120.00	\$1,920.00	\$1,920
Project Manager	72	\$80.00	\$5,760.00	\$14,688
Project Engineer / Team Leader	880	\$53.00	\$46,640.00	\$118,932
Designer II / Assistant Team Leader	860	\$39.00	\$33,540.00	\$85,527
Quality Control Engineer	168	\$65.00	\$10,920.00	\$27,846
CAD / Drafter Production Supervisor	60	\$47.50	\$2,850.00	\$7,268
CAD Operator	168	\$32.65	\$5,485.20	\$13,987
TOTAL	2224		\$107,115.20	\$270,168

**2015 Biennial Inspection of the New York Approach Roadways
Henry Hudson Ramps, Retaining Walls and
On-Grade Sign & Lighting Structures
COST PROPOSAL**

III. OUT-OF-POCKET EXPENSES

1. Task 'B'

Travel

Van rental/gas (5 mo. x \$1,850/mo.):	\$9,250.00	
Tolls - field work (65 trips x \$16.00/trip):	\$1,040.00	
		\$10,290.00

Inspection Equipment

Cellular Phones 2 x (5 months x \$50/mo.):	\$500.00	
MPT - Single Lane Closure (night time) (30 nights x \$1,975/night):	\$59,250.00	
Attenuator Truck (20 nights x \$575/night):	\$11,500.00	
30' Bucket Truck (2 x 3 months x \$1,800/mo.):	\$10,800.00	
60' Bucket Truck w/operator (8 days x \$875/day.):	\$7,000.00	
80' Manlift (3 weeks x \$3,275/week):	\$9,825.00	
135' Manlift (2 weeks x \$5,550/week):	\$11,100.00	
Transport Manlifts to and from lane closures (10 nights x \$650/night):	\$6,500.00	
Parking for equipment (2 vehicles x 5 mos x \$300/mo):	\$3,000.00	
Generator/Lights (8 weeks x \$250/week):	\$2,000.00	
SWAC ID Cards (8 people x \$495/person):	\$3,960.00	
		\$125,435.00
		\$135,725.00

2. Task 'C'

Reports

Printing Costs:	\$3,000.00	
Postage/ Deliveries:	\$500.00	
		\$3,500.00

Travel

Meetings (5 trips x 88 mi. x \$0.575/mi.):	\$253.00	
Tolls - meetings (5 trips x \$16.00):	\$80.00	
Parking - meetings (5 trips x \$10.00):	\$50.00	
		\$383.00
		\$3,883.00

**2015 Biennial Inspection of George Washington Bridge
NY Approaches - Henry Hudson Ramps and Retaining Walls**

BRIDGES

Structure Number	Structure Name	No. of Spans	Staff Days		
			Task B Inspection	Task C Report Writing	Task C Final Report
5522490	Ramp HR17 over Riverside Drive, HR15 & HR16	4	4	2	0.50
552250A	Ramp LX1 over Henry Hudson Pkwy & Ramps	15	16	4	1.00
552250B	Ramps LX2 over Henry Hudson Pkwy & Ramps	16	16	4	1.00
552250D	Ramp HR1 over Ramp HR3	8	6	3	0.50
552250H	Ramp HR2 over Ramps HR6, HR7, HR8, HR9 & HR11	16	12	4	0.50
552250J	Lower Level I95 (Ramps 3 & 4) over Henry Hudson Pkwy	5	10	2	0.50
552250K	Ramp UX over I95 Lower Level	23	18	4	1.00
5522510	Ramps HR6 & HR11 over I95 Lower Level	1	4	2	0.50
5522520	Ramp HR11 over HR9	10	4	3	0.50
5522530	Ramp HR7 over Pedestrian Walkway	8	4	3	0.50
5522541	Ramp HR8 over Pedestrian Walkway	11	6	3	0.50
5522542	Ramp HR10 over Riverside Drive	15	8	4	1.00
552254A	Ramp HR12 over Parkway Ramps to Riverside Drive	13	8	3	1.00
552254B	Ramps HR2 & HR4 over Ramps HR7, HR8, HR9 & HR11	9	6	3	0.50
5522550	Bus Station Plaza over Ft. Washington	2	6	2	0.50
5522570	North Bus Parking Bridge over Broadway	1	3	2	0.50
5522580	South Bus Parking Bridge over Broadway	1	3	2	0.50
TOTAL			134	50	11.00

**2015 Biennial Inspection of George Washington Bridge
NY Approaches - Henry Hudson Ramps and Retaining Walls**

RETAINING WALLS AND SIGN STRUCTURES

Structure Number	Structure Name	LF	Staff Days		
			Task B Inspection	Task C Report Writing	Task C Final Report
HR 3	Reinforced Concrete	295	1	1	0.25
HR 4	Reinforced Concrete	265	1	1	0.25
HR 6	Reinforced Concrete Faced with Stone Masonry	312	1	1	0.25
HR 7	Stone Masonry	1,119	4	2	0.50
HR 9	Stone Masonry	244	1	1	0.25
HR 11	Stone Masonry	280	1	1	0.25
HR 13	Stone Masonry	142	1	1	0.25
HR 16	Reinforced Concrete Faced with Stone Masonry - North and South Walls	110 (N) 537 (S)	2	2	0.25
HR 19	Stone Masonry	594	1	1	0.25
-	Sign Structures	-	10	4	0.50
TOTAL			23	15	3.00
PROJECT TOTAL			157	65	14

Section 3: Staffing

PROJECT MANAGEMENT & STAFFING

WSP PROJECT TEAM

The WSP Project Team proposed for this project is shown on the Organization Chart located in this section. Our proposed staff and personnel from both sub-consultant firms have successfully worked together on several previous projects, and would use our established working relationships to “hit the ground running” if awarded this project.

Sub-Consultant Participation

WSP is committed to the PA’s MBE/WBE participation goals. For this project we propose utilizing **American Structural Engineering, P.C. as our MBE firm and LGM Consultants as our WBE firm.** As required in our agreement, we will allocate a minimum of 12% of the total contract labor cost to American Structural Engineering and a minimum of 5% of the total contract labor cost to LGM Consultants. American Structural Engineering and LGM Consultants will provide personnel to assist in both the field inspection and the report preparation tasks.

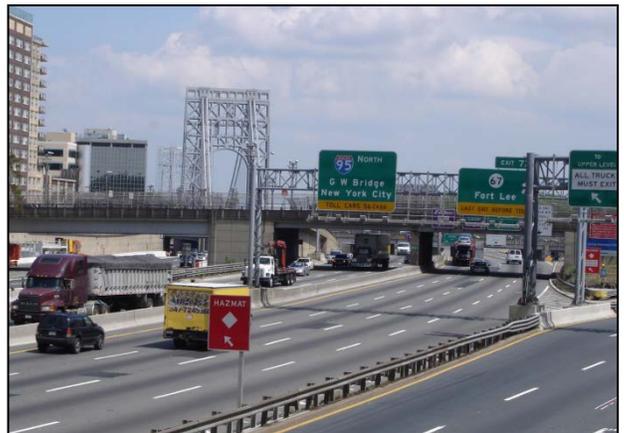
WSP Staff

WSP proposes a staff that offers both continuity of experience with Port Authority Biennial Inspection Projects as well as “fresh eyes” to not only re-evaluate known conditions, but to document previously unidentified conditions.

Our designated Principal-In-Charge, Project Manager and Quality Control Engineer have worked together on numerous previous projects for the Port Authority. All three individuals will work together to ensure that the appropriate level of effort is used for the field inspection and that all required submissions throughout the project meets both Port Authority and WSP standards. Project schedules and invoice submissions will be strictly adhered to and additional staff will be provided as required to meet all deadlines.

Mr. Mosè Buonocore, P.E. our proposed Principal-In-Charge has served in this capacity for all PA inspection projects since 2012 and has served as the Project Manager for every PA inspection project for a nineteen year period from 1993 through 2011. His vast experience and oversight will ensure timely provision of staff resources to complete the project on schedule.

Mr. David Althaver, P.E. our proposed Project Manager has successfully managed the Biennial Inspection and Condition Survey of all 6 projects awarded to WSP between 2012 and 2014 including the GWB NJ Approach Structures in 2013. He has previously served as the Site Coordinator/Team Leader for the inspection of the Lincoln Tunnel NY Approach Roadway Bridges and On Grade Sign and Lighting Structures in 2011 and as the Quality Control Engineer for the NJ Marine Terminal Bridges in 2014, the JFK Terminal Bridges in 2012 and the GWB NJ Approach Structures and the PATH Hackensack River Bridge in 2013 and is thoroughly familiar with the requirements and high expectations of the Authority. Having previously served the PA as the Lead Team Leader, the Quality Control



Engineer and the Project Manager, Mr. Althaver provides the PA the unique experience to fully understand all aspects and requirements of this project. Mr. Althaver will oversee the entire project staff and sub-consultants, and will serve as a liaison with the PA on all critical issues.

Mr. Robert Kemp, P.E. our proposed Quality Control Engineer has successfully served in this capacity for the majority of our previously completed PA projects. He completely understands the PA's requirements for inspection and reporting. He will be the initial contact for the Team Leader when any critical or immediate conditions are found during the course of the inspection. He will review field work with the inspection teams during the project and will review all NYSDOT Biennial Inspection Reports and the Authority's Condition Survey Report before any submissions are made to ensure the PA a high quality product.

Key Inspection Staff

WSP will assign one Team Leader to serve as the Site Coordinator for all inspection teams, sub-consultants and subcontractor personnel at the bridge site each day. This individual will supervise the activities of all other inspection teams and will oversee MPT and other subcontractor operations connected with the inspection.

In the event that the PA assigns more than one project to WSP this year, we would assign a different individual to serve as the Site Coordinator for each project, unless the projects are at the same facility or are progressed during different months. WSP's staff includes several individuals who are experienced at serving in this capacity, and are available for assignment to PA projects.

Mr. Mark Paoline, P.E. our proposed Site Coordinator/Team Leader has successfully served in this capacity in 2014 and 2012 for the Biennial Inspection of the JFK International Airport Terminal Bridges and in 2011 for the Condition Survey of the Staten Island Bridges On-Grade Sign and Lighting Structures. He is thoroughly familiar with and experienced in all of the PA's requirements for Biennial Bridge/Sign/Lighting projects, including inspection and report procedures, coordinating with facility and sub-consultant staff, scheduling equipment and MPT, etc. Because site security, MPT and other inspection activities are critical to the successful completion of this inspection project, Mr. Paoline will serve as the Site Coordinator for all inspection activities, including additional inspection teams, coordination and deployment of lane closures, special access equipment, permits, etc.

Mr. Bruce Woogen, P.E. our proposed Team Leader has over 30 years of experience in the inspection, design, load rating and construction of highway and railroad bridges. He has previously served as a Team Leader for the GWB New York Approaches Henry Hudson and Trans-Manhattan Expressway Structures in 2009 and most recently served as Team Leader for the NJ Marine Terminal Bridges in 2014. He is completely familiar with all NYSDOT and Port Authority requirements concerning field inspection and report preparation.

Mr. Mitesh Patel, P.E. our proposed Team Leader, American Structural Engineers, possesses over 19 years' experience in bridge inspection and design. He has previously served as a sub-consultant Team Leader to WSP in 2011 for the Biennial Inspection of the New York Approach Structures to the Lincoln Tunnel and the Condition Survey of the Staten Island Bridges On-Grade Sign and Lighting Structures. He has also worked as a Team Leader on long span bridges in NYC including the Brooklyn and Queensboro bridges.

In addition to the above Key Staff, the resumes of all proposed personnel that would be assigned to this project are included in the “Staffing” tab of this proposal.

During the last twenty-two years, WSP has gained valuable experience which will be utilized to execute the 2015 Biennial Inspection of the GWB New York Approach Roadway Structures in the most efficient manner. We are completely familiar with the procedures (having just completed the Biennial Inspection of the GWB New Jersey Approach Structures in 2013) and have previously obtained entry/work permits from Conrail, New Jersey Turnpike, Coast Guard, NJDOT, and NYCDOT. In addition to having previously obtained the said permits, WSP has also coordinated day to day field inspection activities with facility personnel and SEMAC - the Port Authority’s own construction forces. We are experienced with all of the PA security protocols (including the need for all personnel to obtain a SWAC security clearance and ID badges) for personnel clearance and site access.

In summary, WSP is confident that our highly experienced and capable technical staff along with our proven Project Management and Quality Assurance procedures will allow us to efficiently complete the biennial inspection and condition survey services required in this RFP.

2015 – Biennial Inspection of the GWB New York Approach Roadways
Henry Hudson Ramps & Retaining Walls and On-Grade Sign & Lighting Structures

THE PORT AUTHORITY OF NY & NJ

PRINCIPAL-IN-CHARGE

Mosé Buonocore, P.E. (W)

PROJECT MANAGER

David Althaver, P.E. (W)

QUALITY ASSURANCE & CONTROL

Robert Kemp, P.E. (W)

SITE COORDINATOR/TEAM LEADER

Mark Paoline, P.E. (W)

TEAM LEADERS

Bruce Woogen, P.E. (W)
Mitesh Patel, P.E. (ASE)

ASSISTANT TEAM LEADERS

Matthew Greer (W)
Amer Mohammed (ASE)
Anthony Guzzo (LGM)

***ADDITIONAL STAFF AVAILABLE
(if required)**

Albert Ari, P.E. (W)
Yvonne Choubah (W)

DESIGN SERVICES/RATINGS

Phil Bousader, P.E. (W)
Structural Engineer
Walid Najjar, Ph.D., P.E. (W)
Load Rating
Anthony Guzzo (LGM)
CAD Drafter

Team:

Prime: WSP - (W)

MBE: American Structural Engineering, P.C. - (ASE)

WBE: LGM Consultants – (LGM)



David Althaver, P.E. Project Manager



Professional Qualifications

P.E. - New York, 2000
P.E. - New Jersey, 1999
P.E. - Delaware, 1998
P.E. - Virginia, 1999
P.E. - Pennsylvania, 2013

Education

BS, Civil Engineering
Manhattan College, 1991

Technical Courses

NYSDOT Highway Bridge
Inspection Refresher
Training, 2013

FHWA/NHI 130055 Safety
Inspection of In-Service
Bridges, 1996

NYSDOT Methods of
Bridge Inspection, 2001

FHWA/NHI 150053,
Bridge Inspection
Refresher Course, 2012

FHWA/NHI 130078,
Fracture Critical
Inspection Techniques,
Steel Bridges, 2005

FHWA/NHI 130087,
Inspection & Maintenance
of Ancillary Highway
Structures, 2015

Years with WSP: 8

**Years with Other Firms:
15**

Mr. Althaver has over 23 years of experience in the inspection, load rating and emergency repair design of several hundred highway and railroad bridges including numerous sign and high mast lighting structures. He has successfully served in all engineering roles from Assistant Team Leader to Project Manager throughout his career and is completely familiar with the bridge inspection and rating procedures of AASHTO, NYSDOT and NJDOT. He has also developed emergency repair drawings for the Port Authority of NY & NJ when conditions were discovered during the biennial inspections that warranted immediate repairs to ensure the safety of the public.

Mr. Althaver has worked extensively with multiple clients including NJDOT, NYSDOT, NJ Transit, the Port Authority of NY & NJ and the TBTA and will use this vast experience and knowledge to efficiently manage the bridge, culvert or sign structure inspection project from beginning to end and ensure each client a high quality product, on schedule and under budget.

Project Experience

- **Project Manager/Quality Control Engineer – 2013 Biennial Inspection of the George Washington Bridge New Jersey Approaches, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager and QC Engineer for the Biennial Inspection of 19 roadway bridges, 1 pedestrian bridge and several retaining walls, lighting and sign structures located at the New Jersey Approach Roadways to the George Washington Bridge. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.

- **Project Manager – 2014 Biennial Inspection of the JFK Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the 2014 Biennial Inspection of the JFK Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority of New York and New Jersey to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority format. Mr. Althaver was responsible for all scheduling, invoicing and coordination with the client as well as ensuring that all project deliverables were submitted on schedule.

- **Project Manager/Quality Control Engineer – 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager/Quality Control Engineer for the Biennial Inspection of the New Jersey Marine Terminal Bridges. Work involved the inspection of seven structures (Nos. 3800003, 3800073 in Port Newark, and 3800067, 3800068, 3800069, 3800070 and 3800075 in Port Elizabeth). WSP's inspection team verified the status of any previously recommended priority repairs for each structure; submitted a NJDOT Biennial Inspection Report for all bridges and a Condition Survey Report in Port Authority format. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.

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- **Project Manager/Quality Control Engineer – 2013 Biennial Inspection of the PATH Hackensack Bridge, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the inspection and gusset plate load rating for the PATH Hackensack River Bridge. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager – 2013 Biennial Inspection of the Holland Tunnel Sign & Lighting, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the Holland Tunnel Sign & Lighting. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager – 2013 – 2015 In-Depth Inspection and Load Rating of Undergrade Railroad Bridges, NJ Transit**

Mr. Althaver was the Project Manager for the in-depth inspection and load rating for 38 undergrade railroad bridges throughout northern New Jersey for NJ Transit. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager/Quality Control Engineer – 2012 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager/Quality Control Engineer for the 2012 Biennial Inspection of the John F. Kennedy Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority of New York and New Jersey to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority format. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Site Coordinator/Team Leader- 2011 Biennial Inspection of the Lincoln Tunnel New York Approach Roadways & On-Grade Sign & Lighting Structures, Port Authority of NY & NJ**

Mr. Althaver inspected 11 of the 23 bridges and over 130 sign and lighting structures included in this project. He was responsible for all scheduling and field supervision of the additional inspection teams (including participation from 2 sub-consultants) and coordination with all equipment vendors and Port Authority facility personnel throughout the project. NYCDOT lane closure permits were applied for and acquired and an Amtrak temporary access permit was applied in order to inspect a few of the structures.
 - **Quality Control Engineer- Biennial Inspection of the Gowanus Expressway Viaduct and Related Ramp Structures, Brooklyn, NY, NYSDOT Region 11 (2007 – 2014)**

Mr. Althaver was the Quality Control Engineer for the 2013 – 2014; 2011 – 2012; 2009 – 2010; and 2007 – 2008 biennial inspection cycles for the 322 span Mainline Gowanus Expressway Viaduct and 22 related ramp structures. Mr. Althaver was responsible for the review and submission of over 1,000 safety and structural flags issued during the course of the inspection. He was also responsible for the review and submission of all ramp and mainline reports in addition to addressing all NYSDOT main and regional office comments.



Robert Kemp, P.E. Quality Control Engineer

Mr. Kemp's well-rounded background is the result of his extensive involvement in all aspects of bridge inspection and design. His experience in the office with the preparation of reports and design documents combined with his field experience in both in-depth and biennial inspections give him a comprehensive perspective which he applies to each assignment. Mr. Kemp is presently the Quality Control Engineer for our Triborough Bridge & Tunnel Authority and Port Authority projects. Additionally, Mr. Kemp is assisting with the preparation of advanced detailed plans for the emergency repair contract of the Gowanus Expressway Viaduct for the NYSDOT.

Professional Qualifications

P.E. New York, 1992

Education

BS, Civil Engineering Syracuse
University, 1980

BS, Forest Engineering College of
Environmental Science &
Forestry, Syracuse, 1980

Technical Courses

FHWA/NHI Course No.130055 –
Safety Inspection of In-Service
Bridges, 2013

NYSDOT - Highway Bridge
Inspection Refresher Training
Course , 2012, 2010

NYSDOT – Behavior, Failure
Mechanisms and Inspection of
R/C and Prestressed Concrete
Bridges, 2010

Federal Bridge
Inspection/Fracture Critical
Members Workshop, 2009

Load and Resistance Factor
Rating for Highway Bridges, 2006

NYSDOT Bridge Inspection
Workshop, 1993

Years with WSP: 34

Years with Other Firms:

0

Project Experience

■ Quality Control Engineer – 2010 Biennial Inspection of John F. Kennedy Roadway Bridges, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the biennial inspection of the JFK Roadway Bridges. The purpose of the condition survey was to determine the overall condition of these structures and to identify all structural and non-structural deficiencies. The field work included a thorough visual inspection of all structural and related elements with 100% hands-on inspection performed on all non-redundant, fracture critical members and fatigue prone details in accordance with the latest requirements of the NBIS and Federal Highway Administration.

■ Quality Control Engineer – 2014 & 2010 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ

Mr. Kemp was Quality Control Engineer for the biennial inspection of the JFK Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority's format.

■ Quality Control Engineer – 2005 Biennial Inspection of the Upper Level of the George Washington Bridge, New York, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the Biennial Inspection of this steel suspension bridge spanning the Hudson River between New York City and Fort Lee, New Jersey. Included was the preparation of a Biennial Inspection Report for submission to NYSDOT and a Condition Survey Report for in-house Port Authority use that included immediate, priority and routine repair recommendations.

■ Quality Control Engineer – 2007 Condition Survey of the George Washington Bridge New Jersey Approach Roadways, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the condition survey of the New Jersey Approach Roadway Bridges at the George Washington Bridge. The inspection consisted of 17 highway bridges, 1 pedestrian bridge, the Main Toll Building over I-95 Northbound, the Eastbound and Westbound Tunnels, and 13 retaining walls including the median concrete barrier located on the New Jersey Approach to the George Washington Bridge in the Borough of Fort Lee, New Jersey. Work incorporated all mounted sign structures and light standards into the inspection effort. A NJDOT Biennial Inspection Report and a Condition Survey Report according to Port Authority's format were submitted. The inspection recommended 63 safety repairs at 134 locations and 303 routine repairs at

2,126 locations. The reports contained conclusions concerning the causes of the noted deterioration and recommendations for the rehabilitation of the structures.

■ **Quality Control Engineer – Holland Tunnel Sign & Lighting Structure Inspection, Port Authority of NY & NJ (2013)**

Mr. Kemp was the Quality Control Engineer for the inspection of 246 light poles, high mast lighting structures and sign structures located on the New York and New Jersey Approaches to the Holland Tunnel. In this role, Mr. Kemp was also responsible for identifying structural and non-structural deficiencies and making recommendations for repair, as well as a condition report review and a review of all reports and deliverables to the client.

■ **Quality Control Engineer – 2011 Biennial Inspection of the Lincoln Tunnel New York Approach Roadways and On-Grade Sign and Lighting Structures, Port Authority of NY & NJ**

Mr. Kemp was Quality Control Engineer for the biennial inspection of 23 bridges and over 130 sign and lighting structures. The inspection included: multi-girder; single and continuous span bridges, tunnels and retaining walls, and light poles. Data was compiled to create inspection reports in word and excel file documents for the NYSDOT and Port Authority of NY & NJ.

■ **Quality Control Engineer - Triborough Bridge & Tunnel Authority Biennial Inspection & Design of Miscellaneous Structural Repairs:**

- 2013/2009/2005/1999 Biennial & 2014/2010/2006/2000 Special Inspection Bronx-Whitestone Bridge
- 2012/2008/2004/2000 Biennial & 2013/2009/2005/2001 Special Inspection of the Verrazano-Narrows Bridge
- 2011/2007/2001 Biennial & 2008/2002 Special Inspection Throgs Neck Bridge
- 2010 Biennial & 2011 Special Inspection Robert F. Kennedy Bridge (Triborough)
- 2006/2002 Biennial & 2007/2003 Special Inspection Triborough Bridge Mainline

■ **Quality Control Engineer – Newport Pell Bridge Inspection, RITBA, Newport, RI (Ongoing)**

Mr. Kemp is the Quality Control Engineer for this on-going inspection of the Newport-Pell Bridge, an 11,248 foot long structure which includes a suspension bridge section consisting of a 1,600 foot long main span and two 687 foot long side spans. The remainder of the bridge consists of various superstructure types including continuous and simply supported steel deck truss spans, built-up steel plate girder spans, steel multi-stringer spans and prestressed concrete beam spans. Responsibilities include assisting in the management of this on-call engineering contract, visiting the teams performing inspections of all portions of the structure to ensure client specifications are being followed and review of detailed inspection reports including repair and maintenance recommendations with estimated costs required to maintain the structural integrity and lifespan of the bridge.

■ **Quality Control Engineer – 2008, 2012 Biennial & 2009, 2013 Special Inspection – Ben Franklin Bridge, Delaware River Port Authority**

Mr. Kemp was Quality Control Engineer for the inspections of the Ben Franklin Bridge in accordance with NJDOT, PennDOT and DRPA requirements. Work was coordinated and completed during extensive rehabilitation and painting contracts. Included in-depth inspection, summary report, DOT inventory updates, load rating review and update of work/maintenance schedules.



Mark Paoline, P.E.

Site Coordinator/Team Leader

Mr. Paoline is a Team Leader successful in the completion of bridge inspection projects. He has extensive knowledge with the condition inspections of short span, long span and movable bridges, as well as the design of bridges, subways and special structures. He has inspected bridges for the Triborough Bridge & Tunnel Authority, PANY&NJ, NYSDOT, and NJDOT

Project Experience

- **Site Coordinator/Team Leader – 2014 & 2012 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ**

Mr. Paoline was the Site Coordinator/Team Leader for the Biennial Inspection of 14 roadway bridges, 15 pedestrian bridges, 1 canopy structure and 447 sign and lighting structures located at JFK International Airport for the Port Authority of NY & NJ. Inspection reports in Port Authority format as well as New York State DOT format were submitted. Mr. Paoline was responsible for coordination with Port Authority airport personnel, Airtrain personnel, terminal tenants and airport Police required for the use of inspection equipment, for his own inspection team as well as a sub-consultant's inspection team. Inspection equipment included 35' bucket trucks, a 55' man-lift, and 25' and 45' scissor lifts. Coordination of the Maintenance and Protection of Traffic sub-consultants for traffic lane closures.

- **Site Coordinator/Team Leader – 2011 Inspection of the Staten Island Bridges, and On-Grade Sign & Lighting Structures, Port Authority of NY & NJ**

Mr. Paoline performed a condition survey of the On-Grade Sign and Lighting Structures at the Goethals and Bayonne Bridges and the Outerbridge Crossing. This hands-on inspection project consisted of 75 sign structures, 24 high mast light towers, 183 light poles, and 6 surveillance cameras. Coordination with facility personnel and Police was required for the use of a 35' bucket truck, 55' and 125' manlifts, and lane closures.

- **Team Leader – 2002 Biennial Bridge Inspection JFK Airport Terminal Ramp Bridges, NY, Port Authority of NY & NJ**

Mr. Paoline was Team Leader for the Inspection of JFK Airport Terminal Ramp Bridges for the Port Authority. Mr. Paoline was responsible for the preparation of the biennial inspection reports, condition survey report and all inspection notes and photographs for Port Authority in-house use. Access to most structures was gained with a 30' bucket truck. Higher areas required the use of a 65' bucket truck. Lane closures were in accordance with Authority and facility requirements.

- **Team Leader – 1993 Biennial Bridge Inspection of the Goethals Bridge Approach Roadway, Port Authority of NY & NJ**

Mr. Paoline was Team Leader for this biennial inspection, heading a 3 man crew. The Goethals Bridge is 7,413 feet long and connects Howland Hook, Staten Island to Elizabeth, New Jersey. The Goethals N.J. approach is comprised of forty-four girder floorbeam stringer simple spans supported on concrete piers. The main span measuring 1,152 feet is a series of truss spans consisting of anchor, cantilever, and suspended spans. The field work included hands-on inspection of all fatigue prone and non-redundant components.

Professional Qualifications

P.E., New York
P.E. New Jersey

Education

MS, Structural Engineering
New Jersey Institute of Technology

BS, Civil Engineering
New Jersey Institute of Technology

Technical Courses

NYSDOT, Highway Bridge Inspectors Refresher Training, 2013

NYSDOT, Ethics for Engineers, 2013

NHI 130053 Bridge Inspection Refresher Training, 2012

NYSDOT Methods of Bridge Inspection, 2001

FHWA/NHI, 130055, Safety Inspection of In-Service Bridges, 1994

Professional Affiliations

ASCE
Metropolitan Section Board Director & Treasurer – Structures Group Chair

Years with WSP

5

Years with Other Firms:

35

- **Team Leader – 2012 & 2010 Biennial/Interim Inspections of the Gowanus Expressway Viaduct and Ramps, Brooklyn, NY, NYSDOT**
Mr. Paoline served as a Team Leader for the NBIS Inspection of the 322 span (3.8 mile) elevated Gowanus Expressway Viaduct (I-278). Mr. Paoline was involved with the on-going critical condition monitoring program at 600 +/- locations on the viaduct. His duties included extensive planning and daily coordination with DOT personnel, contractors, police municipal boards, etc. for special access methods and lane closures.
- **Team Leader – 2012 & 2011 Biennial/Interim Bridge Inspections for New York State Department of Transportation, Region 8**
Mr. Paoline served as a Team Leader for the biennial/interim inspections of 41 bridges and In-depth/biennial inspections of 2 bridges, in several counties, in 2012, and of 19 bridges and In-depth inspections of 17 bridges, in 2011, providing structural evaluation and condition rating in accordance with NYSDOT specifications. Access to most structures was gained with a 35' bucket truck and UBIU. Lane closures were in accordance with NYSDOT and NYS Thruway Authority requirements.
- **Team Leader – 2003 Biennial Inspection Verrazano-Narrows Bridge Ramp F, TBTA**
Mr. Paoline was Team Leader for this inspection effort. The bridge not only connects Brooklyn with Staten Island, but is also a major link in the interstate highway system, providing the shortest route between the middle Atlantic states and Long Island. Access methods included high lifts, bucket trucks, underbridge inspection units, free climbing, necessary M & PT. NYSDOT report, TBTA Summary and Paint Reports, UBEIS database and steel and concrete details vulnerability assessment.
- **Coordinating Team Leader – 1993 Biennial Inspection of the Throgs Neck Bridge, TBTA**
Biennial inspection of this 13,400-foot long suspension span bridge. The structures include a main suspension span of 2,900 feet between abutments and approach spans totalling 10,500 feet. The bridge carries 6 lanes of traffic over Long Island Sound and East River. Lead by Mr. Paoline, a total of two 3-man inspection teams were required to complete the inspection. Work included the inspection of Fracture Critical members. A variety of access methods were used, including barge with high lift, UBIU, bucket trucks and free climbing techniques were employed to complete inspection operations.
- **Team Leader – 54 On & Off-System County Owned Bridges, Essex County, NY, NJDOT (2009)**
Mr. Paoline was Team Leader of a 2 man crew for the biennial and interim inspections and reports of 54 On & Off-System County owned bridges.
- **Team Leader – Two Movable Bridges in Suffolk County, NY, Nassau County DPW (2009)**
Mr. Paoline was Team Leader of a 3 man crew and electrical/mechanical crews for eh bridge inspection and reports for two movable bridges in Suffolk County.
- **Team Leader – Two Movable Bridges in Nassau County, NY, Nassau County DPW (2009)**
Mr. Paoline was Team Leader of a 3 man crew and electrical/mechanical crews for the bridge inspection and reports for two movable bridges in Nassau County.



Bruce Woogen, P.E.

Team Leader

Mr. Woogen has over 32 years of managerial, bridge inspection, design and load rating experience with WSP and other firms. He has served in varying capacities including Project Manager, QC Engineer, and Team Leader for the inspection, design, and construction of highway and railroad bridges. He has led bridge inspections on numerous types of bridges ranging from culverts to multi-span truss structures. Projects have included in-depth bridge inspections and load ratings, as well as pin testing, retaining wall inspection, and gusset plate analysis.

Professional Qualifications

PE – New York, 1987
PE – New Jersey, 1983
PE – Connecticut, 1992
PE – Virginia, 1997
PE – Florida, 1998

Education

MS, Civil Engineering
New Jersey Institute of
Technology, 1983

BS, Civil Engineering
Syracuse University, 1977

Certifications

FHWA/NHI 13055, Safety
Inspection of In-Service
Bridges, 2014

NYSDOT, Bridge
Inspectors Meeting
Inspection Refresher,
2013 & 2015

NYSDOT, Behavior,
Failure Mechanisms &
Inspection of R/C &
Prestressed Concrete
Bridges, 2010

Years with WSP

12

Years with Other Firms:

20

Project Experience

▪ **Site Coordinator/Team Leader – 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges, Port Authority of NY & NJ**

Mr. Woogen was the Team Leader for the Biennial Inspection of the New Jersey Marine Terminal Bridges. Work involved the inspection of seven structures (Nos. 3800003, 3800073 in Port Newark, and 3800067, 3800068, 3800069, 3800070 and 3800075 in Port Elizabeth). Mr. Woogen verified the status of any previously recommended priority repairs for each structure; submitted an NJDOT Biennial Inspection Report for all bridges and a Condition Survey Report in Port Authority's format. 100% hands-on Inspection work was done on all fracture critical and non-redundant members in accordance with the latest requirements of FHWA/NBIS and NJDOT bridge inspection programs. Access was gained in coordination with various PANY&NJ, Conrail and NJ Turnpike Authority personnel. Access included extension ladders, and a 30' and 55' bucket truck. Lane closures were necessary on the New Jersey Turnpike for Bridge Nos. 3800069 and 3800070.

▪ **Team Leader – 2009 Biennial Inspection of the George Washington Bridge New York Approach – Henry Hudson Ramps, Port Authority of NY & NJ**

This inspection, for which Mr. Woogen was a Team Leader, consisted of 17 ramps and 9 retaining walls. In addition, all bridge mounted sign and lighting structures were inspected. The purpose of the condition survey was to determine the overall condition of these structures and to identify all structural and non-structural deficiencies surveyed. All structures received a full visual inspection with a 100% hands-on inspection of all non-redundant, fracture critical members, fatigue prone details and/or the encasement of such elements. Access was obtained by extension ladders, bucket trucks, manlifts up to 110 feet and lane closures with shadow vehicles and arrow board. Coordination with Port Authority personnel and maintenance and protection of traffic was a major component of this project.

▪ **Team Leader – 2009 Biennial Inspection of the George Washington Bridge Trans-Manhattan Expressway Structures, Port Authority of NY & NJ**

Mr. Woogen was Team Leader for this biennial inspection, which included 11 bridges, 2 retaining walls, soffits for Air Rights Building Nos. 1 through 4, as well as the abandoned 178th and 179th Street tunnels. In addition, all bridge mounted sign and lighting structures were inspected. All structures received a full visual inspection with a 100% hands-on inspection of all non-redundant, fracture critical members, fatigue prone details and/or the encasement of such elements. The majority of the inspection was performed during the night hours due to traffic volumes. Access was gained through access doors and 35' and 55' bucket trucks.

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- **Project Manager/Quality Control Engineer - Routine, Verification, and In-Depth Inspection and Load Rating of 200 Metro-North Railroad Undergrade Bridges on the New Haven, Mainline, Danbury, New Canaan and Waterbury Branches, ConnDOT, 2006 – 2014**

Mr. Woogen served as Project Manager / Quality Control Engineer for 4 consecutive 2-year cycles of bridge inspection. The 2-year cycles have included different types of inspections, and have included Load Ratings, Underwater Inspection, Mechanical/Electrical Inspection of Movable Bridges, Ultrasonic Pin Testing, and the inspection of retaining walls and towers. The bridges carry Metro-North tracks on the New Haven Line, the Waterbury Branch, the Danbury Branch and the New Canaan Branch in Connecticut. The New Haven line tracks are electrified with a Catenary system. This work also included the oversight and review of the level 1 load ratings, including fatigue analysis for these bridges. Mr. Woogen oversaw all work according to ConnDOT, AREMA and NBIS standards.
 - **Team Leader – Biennial Bridge Inspection of Region 8 Bridges, NYSDOT (2011 - 2013)**

Mr. Woogen was the Team Leader for the NYSDOT Region 8 2010-2011 & 2012-2013 Biennial & Interim Inspections in Columbia, Dutchess, Orange, Putnam, Rockland, Ulster and Westchester Counties. Mr. Woogen provided structural evaluation and condition rating in accordance with NYSDOT specifications. A major component of these projects has been the inspection of railroad overhead bridges. In Region 8, which includes seven counties in the Mid-Hudson Valley, approximately 100 railroad overhead bridges were inspected per year. During the past four years alone, WSP performed the inspection of 400 railroad overhead bridges in Region 8. 95% of these overhead bridges cross Metro-North Railroad's Harlem, Hudson, New Haven, Beacon and Port Jervis Lines. Inspections for the Metro-North overhead bridges were typically conducted in groups twice a year, with one group including the New Haven Line bridges. The NHL bridges required track outages and catenary de-energization, and were therefore conducted at night
 - **Team Leader – 2008 & 2004 Biennial & 2005 Special Inspection of the Verrazano-Narrows Bridge, TBTA**

Mr. Woogen was a Team Leader for the inspection and analysis of the world's seventh longest suspension span bridge. The suspension structure is 1.25 miles between anchorages and carries dual deck levels. Access consisted of a variety of means including high lifts, bucket trucks, underbridge inspection units, free climbing, and necessary MPT. Fieldwork included the hands-on inspection of all fatigue prone and non-redundant components. The main suspension span of the bridge, which consists of 86 panels, was inspected utilizing an underbridge manually operated traveler. Also responsible for NYSDOT and steel and concrete vulnerability assessment report preparation, as well as TBTA narrative, paint, and database submittals.
 - **Team Leader – 2006 Biennial Inspection of the Robert F. Kennedy Bridge, TBTA**

Mr. Woogen was Team Leader for the biennial inspection and load rating of the Mainline Viaduct, Bronx Kill Truss Crossing, and the main suspension bridge connecting the boroughs of the Bronx, Manhattan, and Queens. The inspection effort involved 150+ spans in a busy urban locale using a variety of access equipment consisting of high lift bucket trucks, manlifts, rigging, and maintenance and protection of traffic. His duties included extensive planning and daily coordination with TBTA personnel, contractors, police, municipal boards, etc. for special access methods and lane closures.



Mitesh Patel, P.E.

Team Leader

EDUCATION: 1990-1994, Saurashtra University, India
Bachelor of Science, Civil Engineering

TRAINING: NYSDOT Bridge Inspection Refresher 2013
NHI-130055 (Safety Inspection of In-Service Bridges) 2013
NYSDOT Bridge Inspection Workshop 2010

PROFESSIONAL LICENSE/REGISTRATION:

New York, PE [REDACTED]
Connecticut, PE [REDACTED]

EXPERIENCE: Mr. Patel has over 19 years of experience in Design and Analysis of the Steel and Concrete structures, Bridge Inspection, In-Depth Inspection, Load Rating, His ability to design gives him an edge during inspection to understand the member condition and mentally analyze the impact of the deterioration notices. Mr. Patel has been performing good inspections and is well versed in use of computer software and BIPPI. He performed design, analysis and quantity estimation of the flag repairs for the Gowanus Viaduct. He is well conversant with NYSDOT Standards, Procedures and Requirements. Mr. Patel has completed NYSDOT Bridge Inspection Workshop and NHI Safety Inspection of In-Services Bridges Course.

- 04/13-Present *American Structural Engineering, P.C.* New York, NY
Team Leader for **Queensboro Bridge** a cantilever truss bridge Biennial inspection. responsible for performing Biennial Inspection, preparation of reports, inspecting all active structural and safety flags, inspecting critical and special emphasis members and updating inventory. Performed inspection work on Manhattan and Queens Approaches, Abutment, Piers, and Truss Members of the entire bridge. (NYSDOT) (4/2014-11/2014)
- 07/13-11/13 *Weidlinger Associates, Inc.* New York, NY
Team Leader for **Brooklyn Bridge** Special inspection. Inspected and issued over 200 structural flags for the deficient members at the main and approach spans.
- 11/08-03/13 *AI Engineers, Inc.* New York, NY
Brooklyn Bridge, Senior Design Engineer (Skanska), Performed field verification of structural flag repair drawings, at main spans and side spans, for any constructability issues due to existing field condition. Inspected upper and lower level catwalk. Performed field measurements and prepared shop drawings for repair or replacement of catwalk deficient members.
Team Leader for Biennial inspection on the main line of the **Gowanus Viaduct and Ramp** structures total over 350 spans, prepared BIPPI reports, updated inventory and detail sketches. Also, performed In-Depth Stringer ends inspection over 400 locations for Mainline of Gowanus Viaduct. Performed inspection on the high section requires 130 feet man lift, coordination with contractors, and substantial MPT lane closures. (NYSDOT) (2010-2012)
Team Leader for Biennial inspection on the **Lincoln Tunnel Ramp structures** in New York. (PA NY/NJ, 2011)
Team Leader for the sign structures inspection on **Bayonne Bridge and Goethals Bridge** approaches including report writing. Project included inspection of 260 structures. (PA NY/NJ, 2011)
Team Leader for Biennial inspection on the **Verrazano Bridge Ramp structures**. Prepared inspection reports including updated rating database, bearing measurements. (MTA TBTA, 2010)

Mitesh Patel, P.E.

Team Leader

Team Leader/Load Rating Engineer for Biennial/Interim inspection on various bridges in **New York County**, submitted flag reports, BIPPI reports, updated inventory in Region 11. Inspected over 500 spans including GWB ramp structures, FDR Viaduct and Battery Park tunnel. Performed web crippling calculations for stringers web condition, load rating and load posting calculations for low rated bridges. (NYSDOT, 2009-2010)

Design Engineer for preparation of Flag repair for the steel structural deficient members (i.e. stringers, floor beams, girders, bearings, etc.) on **Gowanus viaduct**. Prepare/review design plans, quantity estimates for the flag repairs. (NYSDOT, 2009)

Team Leader for In-Depth Inspection of Woodbury Viaduct, Bridge MP 50.17 JS, know as Woodbury Viaduct, is a ten span, steel deck girder structure with an open deck and a total bridge length of approximately 590 feet.. It was built in 1907 and is located in Woodburry, New York. The viaduct crosses over New York State Route 32 in Span 5 and Bonny Brook stream in Span 4. The viaduct carries one active track and one abandoned track of Metro North Railroad. Performed in-depth inspection for the Woodbury Viaduct, prepared inspection report and prepared detail sketches which were used for repair detail preparation. (MNR, June 09)
Brooklyn/Kings County (NYSDOT), Assistant Team Leader, Inspection of Bridges in the Kings County. (December, 2008)

02/05-11/08 **Freeland and Kauffman, Inc.** Greenville, SC
Civil Engineer for preparation of civil site work development plans including site layout, grading, erosion control, and utilities; Stormwater runoff calculations for retention pond routing/sizing, stormdrain routing/sizing, erosion and sedimentation control; earthwork quantity takeoffs; Research and implement local, state, and federal regulations pertaining to the specific project

05/01-07/03 **AECOM (CTE Engineers)** New York, NY
Design Engineer for the new LIRR terminal in Grand Central Terminal as part of the 4.3 Billion **East Side Access Project** for MTA Long Island Rail Road. Design Engineer responsible for conceptual and detail design, includes possibilities of replacement and/or modification of columns, girders, stringers and footings. Responsibilities include design and analysis of existing and new Grand Central Terminal, viaduct structures and associated structural elements using STAAD Pro and RISA. Responsibilities include preparation of design drawings using MicrostationJ (MTA LIRR, 2001-2003)

08/99-05/01 **TRC Engineers (A&H Engineers)** New York, NY
Design Engineer of the following projects:

- **Hope Avenue Bridge, Staten Island, NY (NYCDOT)**
- **Westchester Avenue Bridge, Bronx, NY (NYSDOT)**
- **Congress Street Bridge, Brooklyn, NY (NYCDOT)**
- **Lincoln Road Bridge, Brooklyn, NY (NYCDOT)**
- **Seeley Street Bridge, Brooklyn, NY (NYCDOT)**
- **Forest Hill Road, Staten Island, NY (NYCDDC)**

Design Engineer responsible of the above projects for the design and preparation of the Street Lighting and Traffic Signal Plans, including preparation of the specifications and Engineer's cost estimates



Matthew Greer

Assistant Team Leader

Mr. Greer is a recent graduate with a degree in Civil Engineering and has been hired by WSP as an Assistant Team Leader. He is experienced with BIPPI, Microstation, Inroads, RAM, Microsoft Office and Staad Pro and has most recently been involved in the 2012-2013 NYSDOT Region 8 and 2013 CTDOT/MNRR Bridge Inspection projects.

Education

BSCE, Civil Engineering
University of Connecticut,
2012

Professional Affiliations

UCONN ASCE

Years with WSP

2

Years with Other Firms:

0

Technical Courses

NYSDOT Bridge
Inspection Workshop,
2013

Project Experience

- **Assistant Team Leader – Survey & Inspection of Bridges in Northern New Jersey, New Jersey Transit (2013 - 2014)**

Survey and evaluation of 35 railway bridges in northern New Jersey. Mr. Greer assisted with a variety of hands-on inspection tasks including photographs, field notes, sketches, field measurements and the preparation of inspection reports.

- **Assistant Team Leader – General & In-Depth Inspection of 10 High Elevated Structures, MTA New York City Transit (2013 - 2014)**

WSP was a subconsultant on this project. Mr. Greer assisted with a variety of hands-on inspection tasks including photographs, field notes, sketches, field measurements and the preparation of inspection reports.

- **Assistant Team Leader – Inspection of Metro-North Railroad Bridges, ConnDOT (2013 - 2014)**

Mr. Greer provided assistance during 2013 for the ConnDOT Metro-North Railroad Undergrade Bridge Inspection project. He assisted with inspection tasks including field notes, sketches, photographs and evaluating bridge components as well compiling documentation for the inspection reports. Inspections include hands-on review of a wide range of superstructure configurations, including deck arches; trusses and girders; steel multi-beams; pin and hanger spans; concrete T-beams and slabs; and steel, masonry and concrete culverts. Access equipment requirements range from fiberglass ladders to underbridge inspection units, rail mounted lift trucks, and bridge mounted lifts.

- **Assistant Team Leader – Gowanus Joint Venture, Brooklyn, NY (1993-2013) -- Repair Study of Copes and Connections**

Located and prepared the surface for the test gauges, Installed and wired test gauges, Performed QA on the sensor installations, Scheduled Maintenance and Protection of Traffic, Supervised test vehicles during test, Provided field measurements of the sensor placement.

- **Assistant Team Leader – Region 8 Bridge Condition Inspection Local & State Bridges, NYSDOT (2012 - 2013)**

Inspection of State and local System Bridges for approximately 1,800 bridges in Region 8. Assisted with structural inspections, preparing flag reports and inspection reports using BIPPI. This inspection work included a physical examination, evaluation, and rating of all bridge components, including primary and secondary members, structural deck, substructure units, wearing surface, approaches, railings, and signage.

- **Assistant Team Leader – Design Services for Rehabilitation of Four Bridges over I-95, NYS Thruway Authority (2012)**

In Depth Inspection of 4 bridges over I-95 in Westchester County. Mr. Greer aided in recording In-Depth measurements and structural conditions. He was in charge of coordinating Maintenance and Protection of Traffic, and developing field measurement documents.

Amer I Mohammed

Assistant Team Leader/Construction Inspector

TRAINING: NHI –Prerequisite Assessment for Safety Inspection of In-Service Bridges, 2014
NHI –Introduction to Safety Inspection of In-Service Bridges, April, 2014
Geographical Information Systems (GIS), University of New Haven, West Haven, CT

EDUCATION: 2001- 2005, **Osmania University**, Hyderabad, India, **BS-Civil Engineering**
2006-2008, **University of New Haven**, CT, **MS Civil Engineering** (Environmental)

EXPERIENCE: 03/13-Present *American Structural Engineering, P.C.*

Assistant Team Leader for Biennial Inspection of the Queensboro Bridge (NYSDOT).
Responsible for the inspection of bridge, all active structural and safety flags, critical and special emphasis members, including report writing. (5/14 – 11/14)

09/09-03/12 *JVC Services*

Construction Development - PM/ Coordinator Plan, organize and manage the overall residential and construction development. Oversee material purchasing, scheduling, project budget, building code compliance, project development, quality control. Managed daily project completion and trades coordination, supervised crews of up to 25 carpenters, journeymen drywall hangers, foundation and general laborer personnel.

04/08-08/09 *AI Engineers, Inc.*

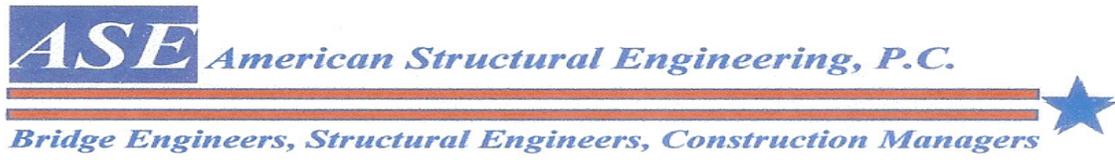
CDOT Biennial Bridge & Sign Structure Inspection (2008-2010) - Assistant Team Leader for inspection of bridges in the states of Connecticut and Rhode Island. Inspected Connecticut complex bridges such as Thomson bridge, Arrigoni bridge, Bascule bridge, Moses Wheeler bridge, Gold star bridge, Commodore Hull bridge, Bridgeport lift bridge. Trained in the inspection of Mast Arm and Overhead Sign support structures.

01/08-03/08 *United International Corporation (UIC)*

Massachusetts Bay transportation authority Load rating project - Load Rating Engineer & Asst. Team Leader in preparing bridge inspection report using BRI 18, 19 and 10. Involved in preparing estimate for Hartford survey project. Assisted in surveying work needed for design and construction of public works project. Responsible for other duties as needed.

05/05-08/06 *KMC Construction*

Widening of six minor bridges along National Highway – Design Engineer widening of six minor bridges along National Highway within the stipulated time. Involved in construction of three spans post stressed concrete girder **bridge** with depth of each girder is 2.5 meters, length 36 meters. Assisted Roadway Engineers in traffic engineering analysis and design. Experience in implementation of construction and maintenance standards. Extensive experience of road



Amer I Mohammed

Assistant Team Leader/Construction Inspector

construction with paved layers of earthwork, sub grade GSB, WMM, DBM, BM, AC and supervised a group of technicians.

COMPUTER SKILLS: Microstation J, Autodesk LDD, MS Office

Anthony Guzzo

Project Assignment: Assistant Team Leader/CAD Drafter
Years of Experience: With This Firm: 2.5; With Other Firms: 2.5
Education: Bachelor Science in Civil Engineering
Stevens Institute of Technology, Hoboken, NJ, 2012
Certification: 40 Hour HAZWOPER Certification, FE Exam (Passed October 2011)
Special Skills: Rock Climbing

Mr. Guzzo is a junior structural engineer with good knowledge in structural/civil and geotechnical engineering. He has solid experience in structural inspection and condition evaluation of buildings and special structures. Mr. Guzzo has also strong CAD drafting skills and the experience in bridge and structural commercial and residential analysis and design.

Port Authority of New York and New Jersey Agreement No. 405-13-007

P.O. 4900009257-2013 Biennial Inspection of the GWB New Jersey Roadway and Retaining Walls

Structural Engineer responsible for report preparation and CADD support for 2013 Biennial Inspection of the GWB New Jersey Roadway and Retaining Walls

Condition Survey of Buildings 105 & 128 at Stewart Airport for the PANY&NJ, Project No. 405-12-014

Junior Structural Engineer responsible for 2012 in-depth inspection, report preparation and CADD support for Condition evaluation of two buildings Stewart Airport

Condition Survey of GWB On-Grade Sign and Lighting Structures for the PANY&NJ, Project No. 405-12-026

Structural Engineer responsible for 2012 in-depth inspection and report preparation for Condition Survey Lighting Structures

Design and Construction Support Services for Various Structural Repairs and Removal of the Tuned Mass Damper at the Bronx Whitestone Bridge, BW-14

Structural Engineer/Assistant Team Leader responsible for special inspection at the Bronx Whitestone Bridge, including inspection of Queens and Bronx Towers, Main Cables, preparation of inspection report and design of various structural repairs

Design and Construction Support Services for Project TN-49, Roadway Deck Rehabilitation/Replacement for the Suspended Spans at the Throgs Neck Bridge

Structural Engineer/Assistant Team Leader for special inspection of at the Throgs Neck Bridge, including roadway deck, sidewalks, railing, stringers, floorbeams, and etc. Participated in preparation of Special Design Brief Report for Suicide Prevention Barrier systems

Design and Construction Support Services for Dehumidification System/Elimination of Water Infiltration at the Throgs Neck Bridge, TN-60

Structural Engineer Structural Engineer/Assistant Team Leader responsible for special inspection of Main Towers and Concrete Piers at the Throgs Neck Bridge. Participated in preparation of inspection report and design of various structural repairs

Engineering Services during Construction Phase, Brooklyn Bridge, Rehabilitation of Approach Spans and Ramps Borough of Manhattan and Brooklyn, NYC DOT

Junior Engineer responsible for preparation of Flag Repair shop drawings for Main and Side Spans

Structural Inspection and Condition Evaluation of Residence affected by Hurricane Irene, 78 Ferncliff Road, Greenwood Lake, New York, 10925

Junior Structural Engineer responsible for condition evaluation, field measurements and report preparation for the existing building damaged during the hurricane.

Miscellaneous Engineering Services, Robert Moses Causeway Bridge over Fire Island Inlet, Spot Bridge Repairs, NYSDOT

Junior Structural Engineer responsible for structural analysis and design of structural lifting operations for bearing replacement. Perform condition inspection and field measurements of the existing wind tongue structure required for design of the temporary wind resistance system.

Consulting Engineering Services, Structural Engineering and Special Inspections, Underpinning of Adjacent Existing Buildings and Temporary Excavation Support System, 323 Park Avenue South, New York, NY

Junior Structural Engineer responsible for condition evaluation and assessment of existing adjacent structures affected by construction of a new 12-story building.

Various Construction Projects, Railroad Construction Company, Paterson NJ

Junior Engineer responsible for take-off estimates for various projects, project management support, and preparation of floor/site plans in AutoCAD. Responsibilities also included condition inspection and evaluation of various structures, field measurements and etc.

Various Projects, Yu & Associates, Elmwood Park NJ

Junior Engineer responsible for soil boring inspection services for geotechnical/environmental purposes (USCS & Bermeister), conducting passive soil gas investigation on behalf of NYSDEC, analysis and documentation of soil contamination data, preparation site investigation reports on behalf of NYSDEC

Various Construction Projects CME Associates, Parlin NJ

Junior Engineer responsible review of site plans for local township ordinance compliance, stormwater management plans and reports, and preparation of drawing details/site plans in AutoCAD



Philippe N. Bousader, PE Structural Engineer

Mr. Bousader brings 25 years of award winning bridge engineering expertise to his role as Chief Engineer at WSP. His experience encompasses infrastructure evaluation, load rating, diagnostics and instrumentation, design, seismic vulnerability analysis and retrofit of complex concrete and steel structures, including segmental precast concrete, curved steel box girders as well as the development of contract plans and specifications. His insight has been successfully applied towards many projects for a variety of clients primarily the City and State departments of transportation, and various toll collecting agencies.

Project Experience

- **Project Engineer - In-Depth Inspection and Load Rating of the PATH Railroad Bridge over Hackensack River, Port Authority of NY & NJ (1997)**

As Project Engineer, Mr. Bousader was responsible for the load rating on this 24-span, 3,020 riveted steel and concrete structure. Load ratings were conducted per AREMA specifications for Cooper E80 loads. Structural configurations that were rated include steel through girder, deck girder, deck truss, through truss lift span and concrete frame spans. The project also included in-depth inspection, diving inspection and recommendations for prioritized repairs.

- **Project Director – Henry Hudson Bridge Skewback Investigation, TBTA, New York, NY (On-going)**

Mr. Bousader is Project Director for this task to investigate the cause of damage to the concrete of the skewbacks, bent pedestals and abutments at the Henry Hudson Bridge. Based on that investigation, the structural impacts of that damage and potential repairs alternatives will be developed and presented. The assignment is providing TBTA with a scoping report and RFP document to confirm the existence of past ASR activity, determine the level of past activity, and determine the severity of expected future activity. Under Mr. Bousader's direction, WSP will provide alternative means of addressing the damage that has occurred to-date on the skewbacks, bent pedestals and the north and south abutments and to eliminate/minimize future damage. Three alternatives are being evaluated in the Scoping Report.

- **Structural Task Leader – Henry Hudson Toll Plaza Reconstruction, TBTA, New York, NY (2013-2020)**

Mr. Bousader is Structural Task Leader for this \$90M Reconstruction project involving the Upper and Lower Toll Plazas and Southbound Approach for the Henry Hudson Bridge. This project is being forwarded in two phases. Phase 1, HH-88A, will include the toll plaza equipment relocation upper level and lower level, and the lower maintenance garage utility relocation. Phase 2, HH- 88B will include reconstruction of upper level and lower level toll plaza and lower level South approach and maintenance garage. Mr. Bousader oversees all structural elements of this project and works closely with WSP's transportation department and TBTA staff.

- **Senior Project Engineer – LIRR 3 Freight Bridges 65th Street, Flushing Ave., Fresh Pond, Jaimaca, New York (2012-2013)**

WSP provided design engineering services for the rehabilitation and/or replacement of the following three (3) railroad freight bridges located in New York City, Queens County, New York.

Professional Qualifications

PE, New Jersey, 1998
PE, New York, 1994

Education

M.S., Civil Engineering,
Polytechnic University,
1990

B.S., Civil Engineering
Polytechnic University,
1988

Professional Affiliations

American Society of Civil
Engineers, Member

Society of American
Military Engineers (SAME)

Years with WSP

21

Years with other firms

5

- Replacement of 65th Street Bridge Span “A” (LIRR Bridge No. 54-O-115): MP 11.5, located on the Bay Ridge Branch, Queens County, New York
- Rehabilitation of Fresh Pond Yard Truss Bridge (LIRR Bridge NO. 54-O-117): MP 11.7, located on the Bay Ridge Branch, Queens County, New York
- Rehabilitation of Flushing Avenue Bridge (LRR Bridge No. 27-O-031): MP 3.1 located on the Lower Montauk Branch, Queens County, New York. This project was initiated to bring the bridges back to a “State of Good Repair” as well as, meet a 286,000 pound freight load rating along LIRR’s and NY Atlantic Railroad’s ROW.

WSP performed in-depth inspection and load rating of the three freight bridges and prepared design recommendation reports summarizing data collection, in-depth inspection findings, environmental assessment findings, concrete strength and durability testing results, geotechnical evaluation results, non-destructive testing (to ascertain the abutment configuration) results, topographic survey including track and road profile plans, load rating results, identification of necessary permits, design assumptions, evaluation of rehabilitation and replacement alternatives, conceptual design drawings, cost estimates for various alternatives and preliminary construction schedules.

■ **Senior Project Engineer - Conceptual & Final Design for the Elevated & On-Grade Approach Deck Replacement of the Bronx and Queens Approach to the Bronx-Whitestone Bridge, TBTA (2010)**

Mr. Bousader served as Senior Project Engineer for the reconfiguration of the Queens interchange ramps for the BWB to/from the CIP and Whitestone Expressway to improve non-standard geometric features, facilitate MPT, and improve operational deficiencies of the ramps. Using a hands-on approach, Mr. Bousader was responsible for breaking each critical task to its basic element to ensure that construction sequencing and construction methods were optimized.

■ **Chief Engineer – Rehabilitation of the Gowanus Expressway Viaduct, I-278 – Shore Parkway Interchange, D261302, NYSDOT, Brooklyn, NY (2008 – 2013)**

Mr. Bousader is the Chief Engineer for the Shore Parkway Interchange, a two-level structure that connects the Gowanus Expressway Viaduct to the Belt Parkway and to the Verrazano Narrows Bridge. The condition of the existing concrete deck of the Gowanus Expressway Viaduct was poor due to extensive deteriorations. There have been continual localized deck failures on the Viaduct resulting in undesirable emergency repairs and disruption to traffic during peak and off-peak travel periods. Mr. Bousader supervised and oversaw the structural drawing preparation of the following \$220 million work to be built under NYSDOT Emergency Contract D261302: 1) Replacement of the existing deteriorated concrete deck with a combination of new reinforced cast-in-place concrete deck and portions of new deck constructed with accelerated concrete; 2) The design and contract plan preparation of a new Ramp Q, a 780m elevated viaduct located between the Gowanus inbound and outbound travel lanes to accommodate a new reversible HOV lane; 3) Emergency structural repairs based on in-depth inspection and monitoring findings. It included emergency structural repairs and replacement of existing steel members; 4) Operation and maintenance of the Eastbound HOV Lane and all related items on the Gowanus Expressway (I-278), from the Verrazano-Narrows Bridge to the BT/BQE Interchange and from the Prospect Expressway at 5th Avenue to the merge with the HOV ramp from Gowanus to the BBT toll plaza; 5) Modifications to the lighting system due to the proposed widening of the Eastbound Gowanus Expressway; 6) Providing new sign structures to accommodate the new widened viaduct and ramps, and 7) QA/QC review of the contract plans of all the consultants working on the project.



Walid S. Najjar, Ph.D., P.E. Load Rating

Dr. Najjar provides WSP with expertise in the areas of design, structural analysis, construction materials, fracture and fatigue, and non-destructive evaluation. His credentials include a doctorate in Civil Engineering from Cornell University where he developed neutron radiography as a non-destructive test method to detect micro-cracking and other defects in concrete. Clients depend on Dr. Najjar to resolve complex design issues and benefit from his training seminars on project related topics. His QA/QC experience includes identifying new/innovative technical or management methods or approaches that add value, and describing ways the project team could exceed the client's contractual or stated/unstated expectations. He is certified as an ISO 9001:2008 internal auditor.

Dr. Najjar served as an Assistant Professor at Northeastern University and a Visiting Assistant Professor at Cornell University. As a technical expert, he has presented his research and practical work at national and international conferences and is widely published. Also he is certified by the Practicing Institute of Engineering, Inc. (PIE) as an evaluator of continuing education courses and auditor of organizations that sponsor such courses. Further, he planned and supervised the innovative project "Maturity Testing for Bridge Deck Rapid Replacement" that won for WSP the diamond award for research from the 2009 ACEC-NY Engineering Excellence Awards.

Professional Qualifications

P.E., New York, 1997
P.E., Connecticut, 1996
P.E., Massachusetts, 1995
ISO 9001:2008 Internal Auditor

Education

Ph.D., Civil Engineering
Cornell University, 1987

M.S., Civil Engineering
Oklahoma State University, 1981

B.S., Civil Engineering
Oklahoma State University, 1980

Professional Affiliations

AASHTO/NSBA
AREMA
ACI
TRB
PIE, Auditor and Reviewer
ASCE, JBE Reviewer
TRB Committee AFH70
Fabrication and Inspection of Metal Structures

Years with WSP

18

Years with Other Firms

13

Publications and Presentations

"Analysis of Gusset Plates in Railroad Bridges, Using Mathcad

Project Experience

■ Load Rating Quality Assurance/Technical Quality Engineer – Biennial Bridge Inspection, Region 9, NYSDOT (2014 - 2016)

Dr. Najjar is the Load Rating/Quality Assurance for this inspection project, ensuring the Virtis updates for all local bridges in Region 9, and the creation of models for 60 reinforced concrete box culverts. Dr. Najjar's oversight guarantees accuracy of the new models and that field inspection section losses are accurately accounted for in the load ratings.

■ Quality Assurance/Technical Quality Engineer – Biennial Bridge Inspection, Region 8, NYSDOT (2010 – 2011)

Dr. Najjar oversaw level I load rating analysis for the Popolopen Creek Truss Bridge and Route 28 over Esopus Creek. This analysis included gusset plate ratings, SAP2000 modeling of the truss, load history analysis, substructure evaluation, prestressed and post tensioned concrete analysis using SAP2000. He also oversaw gusset plate analysis, and additional level 1 load ratings for a post tensioned concrete beam bridge.

■ Technical Engineer - Routine, Verification, and In-Depth Inspection and Load Rating of 200 Metro-North Railroad Undergrade Bridges on the New Haven Mainline, Danbury, New Canaan and Waterbury Branches, ConnDOT (2006 – 2014)

WSP was responsible for 4 consecutive 2-year cycles of bridge inspection. The 2-year cycles included different types of inspections, and have included Load Ratings, Underwater Inspection, Mechanical/Electrical Inspection of Movable Bridges, Ultrasonic Pin Testing, and the inspection of retaining walls and towers. 800 total bridge inspections. Work conformed to the standards prescribed by the National Bridge Inspection Standards (NBIS), American Railway Engineering and Maintenance

and Finite Elements”, AREMA Annual Conference, Orlando, FL, August 31, 2010

“Use of Refined Methods of Analysis”, Session on Methodology for Live Load Distribution for Bridge Evaluation, ACI Spring Convention, San Antonio, TX, March 15, 2009

“Cross-frame Diaphragm Testing – A Research Need”, TRB Committee AFF40 Dynamics and Field Testing of Bridges, January 14, 2009

“Rapid Replacement of Deck Slabs of the Gowanus Expressway Viaduct, Using Accelerated Concrete and the Maturity Method,” FHWA ABC Conference, Baltimore, MD, March 19-21, 2008

“Load Testing of a Steel Thru-Girder Railroad Bridge with Ballasted Trough Deck,” AREMA Annual Conference, Chicago, IL, September 9-12, 2007

“Parametric Seismic Analysis of Curved Steel Box-Girder Bridges with Two Continuous Spans”, Journal of Bridge Structures, Vol. 3, Nos. 3-4, pp. 205-213, 2007

“A Road Map for Developing LRFD Specifications for Railroad Bridges,” AREMA Annual Conference, Louisville, KY, September 17-20, 2006

of Way Association (AREMA), and the ConnDOT Bridge Inspection Manual. In the capacity of Quality Control Engineer and Load Rating Specialist, Dr. Najjar provided all necessary technical support.

■ **Load Rating Engineer - Port Jervis Line Rehabilitation Inspection, Load Rating & Design, Metro-North Railroad (2006)**

Mr. Najjar was the Load Rating Engineer for this project, where the WSP/URS Joint Venture Team provided inspection, Load Rating and design services for the Port Jervis Line Rehabilitation project for Metro-North. Provide Inspection; Live Load Rating Analysis; Repair Recommendations for select fixed undergrade railroad bridges (plus the Woodbury and Moodna Viaducts); and Design of select bridges. All inspections were 100% hands-on for all 83 structures including the 590 foot long Woodbury Viaduct and the 3,200 foot long Moodna Viaduct. The WSP/URS Team utilized a variety of access methods including Rigging, Bucket Truck, Tracker, Hi-Rail UBIU, Lift Truck, and Ladders, and was fully equipped with Tablet PC/laptop computers, inspection tools, d-meters, calipers, digital cameras, dye penetrant kits, ladders, mobile phones, etc. The inspection results for each bridge were compiled to facilitate the Live Load Analysis and Rating phase of the work. The goal of this phase was to determine the ability of each bridge to safely carry railroad live loads.

■ **Load Rating Engineer - Lincoln Tunnel Entrance and Exit Ramps, NY, PA/NY&NJ**

Dr. Najjar performed load analysis and rating for two existing concrete bridges, each with five spans and slab decks that are cast-in-place monolithically over longitudinal and transverse beams; the exit ramp has a variable roadway width.

■ **Load Rating Engineer – Biennial Bridge Inspection & Load Rating for Multiple NYSDOT Bridges in Regions 1, 8 & 10, NYSDOT (2002/03 and 2006 – 2010)**

WSP inspected approximately 4,000 bridges in Regions 1, 8, and 10. Dr. Najjar was responsible for all load rating tasks on these projects. He possesses an expert knowledge of AASHTO’s Virtis Load Rating software, and other analytical software. In addition to overseeing the rating of thousands of bridge spans using Virtis since 2000, Dr. Najjar has led Level I analyses for a number of complex structures, and for gusset plate analysis of bridges in Region 1 & 8. Dr. Najjar supervised engineers on the load rating of 840 highway bridge spans in 2002 and for an estimated 1,200 spans in 2003. He also trained engineers on the use and interpretation of the load rating program Virtis.

■ **Quality Control Engineer - Route 9W over Washington St, Rockland County, NY, NYSDOT (2003)**

Mr. Najjar oversaw the Level I Load Rating for this \$13 million superstructure replacement of the 33 span elevated steel viaduct. WSP replaced the existing non-redundant two-girder structure with a multi-stringer deck system. The final design also addressed the seismic retrofit of the present condition by using seismic isolation bearings and lighter deck system.

Certifications

David Althaver, P.E.

The University of the State of New York
Education Department
Office of the Professions
REGISTRATION CERTIFICATE
Do not accept a copy of this certificate



License Number: [REDACTED]

Certificate Number: [REDACTED]

ALTHAVER DAVID B
[REDACTED]

is registered to practice in New York State through 09/30/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

[Signature]
DEPUTY COMMISSIONER
FOR THE PROFESSIONS

This document is valid only if it has not expired, name and address are correct, it has not been tampered with and is an original - not a copy. To verify that this registration certificate is valid or for more information please visit www.op.nysed.gov.

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors

HAS LICENSED

David B. Althaver
[Redacted]

FOR PRACTICE IN NEW JERSEY AS A(N): Professional Engineer

03/11/2014 TO 04/30/2016
VALID

[Redacted]
LICENSE REGISTRATION CERTIFICATION #
[Redacted]
Signature of Licensee/Registrant/Certificate Holder
DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors
HAS LICENSED
David B. Althaver
Professional Engineer

03/11/2014 TO 04/30/2016
VALID

SIGNATURE

[Signature]
DIRECTOR

License/Registration/Certificate #
[Redacted]

PLEASE DETACH HERE

IF YOUR LICENSE/REGISTRATION/
CERTIFICATE ID CARD IS LOST
PLEASE NOTIFY:

Board of Prof. Engineers & Land Surv
P.O. Box 45015
Newark, NJ 07101

PLEASE DETACH HERE

State of New York
New York State Department of Transportation



Record of Completion

David Althaver

For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)

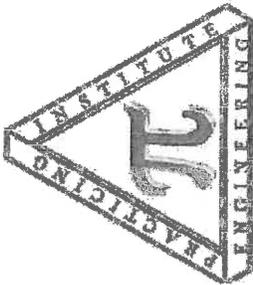
March 2013, Troy, New York

Sheri K. ...

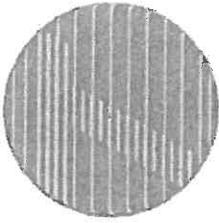
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

David Althaver

Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *David Althaver* has completed

Introduction to Element Level Bridge Inspection Training

Professional Development Hours Awarded: 6.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130101 PE

Location: Troy, NY

Date: March 14, 2013

Carbis Limer

Continuing Education Coordinator

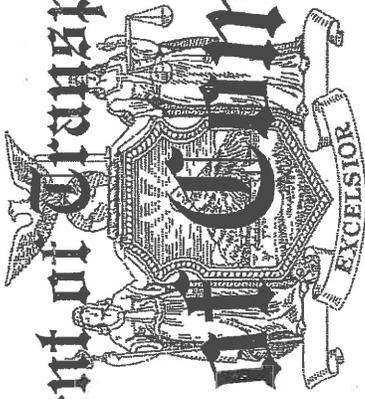
PIE Organization#SM0000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.

State of New York

Department of Transportation



Record of Completion

This is to document that

David Althauer

has Received Instruction in the Methods
of Bridge Inspection Prescribed by the
Structures Design and Construction Division

in token whereof this document is granted

Given at Albany, New York this 30th Day of March 2001

Thomas J. Moon
Structures Design and Construction Division



National Highway Institute



Certificate of Training

David Althaver

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

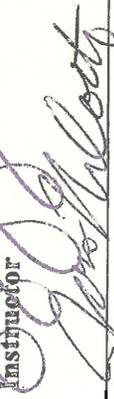
Kisinger Campo & Associates Corp.

Date: April 3-5, 2012

Hours of Instruction: 19

Location: Tampa, FL


 Instructor


 Instructor


 Local Coordinator

**Richard Barnaby, Director
National Highway Institute**



U.S. Department
of Transportation
Federal Highway
Administration

National Highway Institute Certificate of Training

David B. Althaver

has satisfactorily completed training in

Safety Inspection of In-Service Bridges

conducted by

Michael Baker Jr., Inc.

Newark, New Jersey

80

Hours of instruction:

October 21 - November 1, 1996

6.0

Continuing Education Units:

Raymond A. Feltz

Thomas H. Pym

Instructor

Moses Ayello

Director, Special Strategic
National Highway Institute Initiatives

Coordinator

Thomas E. Stea

Federal Highway Administrator



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute



Certificate of Training

David Althaver

has participated in

FHWA-NHI-130087 Inspection & Maintenance of Ancillary Highway Structures

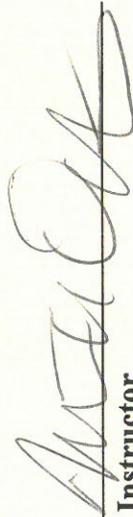
hosted by

Whitman, Requardt & Associates, LLP

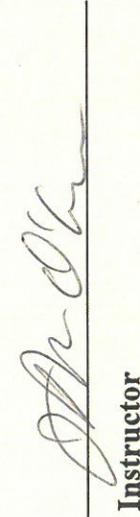
Date: February 4-5, 2015

Hours of Instruction: 12 Hours

Location: Richmond, VA


Instructor

Local Coordinator


Instructor

Valerie Briggs
**Valerie Briggs, Director
National Highway Institute**

Certifications

Robert Kemp, P.E.

The University of the State of New York
Education Department
Office of the Professions

REGISTRATION CERTIFICATE

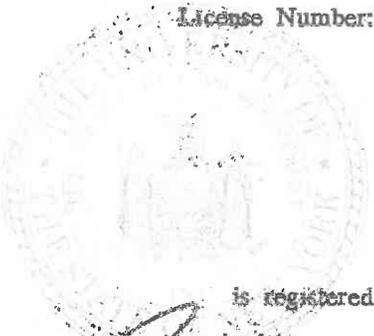
Do not accept a copy of this certificate

License Number: [REDACTED]

Certificate Number: [REDACTED]

KBMP ROBERT A.
[REDACTED]

is registered to practice in New York State through 05/31/2017 as a(n)
PROFESSIONAL ENGINEER



[Signature]
LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

[Signature]
DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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National Highway Institute

Certificate of Training



Robert Kemp, P.E.

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

National Highway Institute

Date: April 8 - 19, 2013

Location: Arlington, VA

Hours of Instruction: 67

Guy R Long
Instructor

Thomas A. Ryan
Instructor

B. Spotek
Local Coordinator

Richard Barnaby
Richard Barnaby, Director
National Highway Institute



U.S. Department
Of Transportation
Federal Highway
Administration



NATIONAL HIGHWAY INSTITUTE
Training Solutions for Transportation Excellence

National Highway Institute Certificate of Training

Robert A. Kemp, P.E.

has participated in

Bridge Inspection Refresher Course
NHI Course Number 130053A

hosted by

C.V. Associates NY; PE, LS, P.C.

Presented by
Michael Baker Jr., Inc.

Location: New York, New York

Hours of instruction: 21 (3 days)

Date: September 16 - 18, 2005

Karajan N. Risher
Instructor

Morgan Nyelle

Director, National Highway Institute
Federal Highway Administration

C.v. Zeller
Coordinator

[Signature]

Director, Office of Professional and Corporate Development
Federal Highway Administration

INSPECTOR

Last Name:	[Redacted]	Last DT_APPR	4/1/2010
First Name:	Robert	DT_REJ	
Mid Name:	A.	Last DT_RESP	4/1/2010
PE_NUMB.	[Redacted] Expires: 5/31/2011	FLD_VST_SD	
POSITION	3	FLD_VST_PD	
GEN_INSP	<input checked="" type="checkbox"/>	FLD_APT_JS	
OSS	<input type="checkbox"/>	FLD_VST_CM	
DIV_INSP	<input type="checkbox"/>	Last Insp_Mtg_Yr	2010
FATH_SURV	<input type="checkbox"/>	APPR_ENGR	Gager
CUR_PROJ1	Gowanus (10-11)		
CUR_REG1	11		
GEN_TRAIN	4/23/1993		
COMMENTS	Previously an ATL in 1986/1987. Prev. approved By Campisi 12/98 as QCE for BL. Now for Sells on the Gowanus as QCE. Last approved 3/01 by Andrews for the Gowanus.		

Certifications

Mark Paoline, P.E.

The University of the State of New York
Education Department

Office of the Professional
REGISTRATION CERTIFICATE

Do not accept a copy of this certificate

Number

Certificate Number



ADRIAN MARIANO

is authorized to practice in New York State through 05/31/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSER/REGISTRANT

COMMISSIONER OF EDUCATION

EXECUTIVE SECRETARY

DEPUTY COMMISSIONER
FOR THE PROFESSIONS

This document is valid only if the name and address are correct. If changed, the registrant must file an
original, not a copy, with the Office of Professional Registration. Certificate is void if name is incorrect. Please visit
www.dps.ny.gov



National Highway Institute



Certificate of Training

Mark M. Paoline

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

Kisinger Campo & Associates Corp.

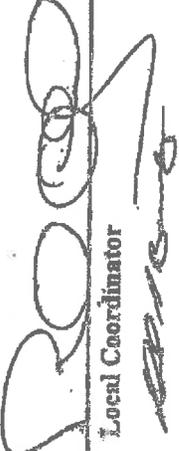
Date: April 3-5, 2012

Hours of Instruction: 19

Location: Tampa, FL

Instructor

 Instructor


Local Coordinator

 Richard Barnaby, Director
 National Highway Institute



National Highway Institute
Certificate of Training
Mark M. Paoline, P.E.



has participated in
Bridge Inspection Refresher
NHI Course number 130053A
hosted by
New Jersey Department of Transportation

Trenton, NJ

Location:

June 26-28, 2006

Date:

Instructor

John Wang
Mogea Ayala

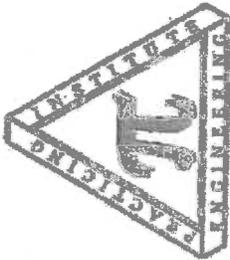
**Director, National Highway Institute
Federal Highway Administration**

Hours of Instruction:

21

[Signature]
Coordinator

**Associate Administrator, Office of Professional
and Corporate Development
Federal Highway Administration**



New York State
Department of Transportation

CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

2011 Bridge Inspectors Meeting: Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20110258

Location: Albany, NY

Date: March 1 & 2, 2011

Michael A. Shanahan

Continuing Education Coordinator

PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
385 Jordan Rd, Troy, NY 12180-7620

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.



U.S. Department
of Transportation
Federal Highway
Administration

National Highway Institute Certificate of Training

Mark M. Paoline

has satisfactorily completed training in

Safety Inspection of In-Service Bridges

conducted by

Michael Baker Jr., Inc.

Location: Langhorne, Pennsylvania

Hours of instruction: 80

Date: February 7-18, 1994

Continuing Education Units: 6.0

Charles E. Blumenthal, P.E.
Instructor

Dennis R. Baughman, P.E.
Coordinator

George M. Hoover
Director, National Highway Institute

Thomas J. [Signature]
Federal Highway Administrator

State of New York
New York State Department of Transportation



Record of Completion

Mark Paoline

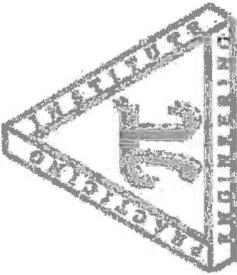
For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)
March 2018, Troy, New York

Skeini Kempfelli
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

David L. ...
Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation

CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

2013 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130107 PE

Location: Troy, NY

Date: March 12-13, 2013

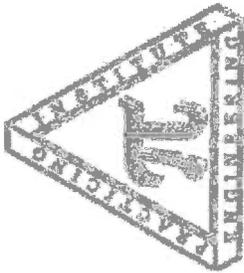
Carlos Rivera

Continuing Education Coordinator

PIE Organization#SM000007

Accreditation of training provided under the auspices of
The Practicing Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of this credit is outside of NYS, please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

Ethics for Engineers

Professional Development Hours Awarded: 1

This course is accredited for the profession(s) of: Professional Engineering
Course #20130106 PE

Location: Troy, NY

Date: March 13, 2013

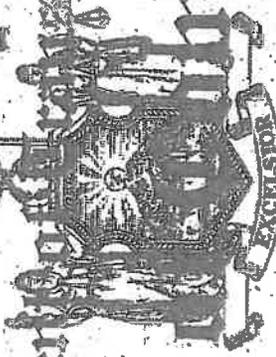
Carole Zimmer

Continuing Education Coordinator

PIE Organization#SM000007

Accredited training provided under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of U.S. credits outside of NYS, please consult the licensure board of the state.

State of New York
Department of Transportation

Record of Completion

This is to document that

Mark Pauline

has Received Instruction in the Methods
of Bridge Inspection Prescribed by the
Structures Design and Construction Division

in token whereof this document is granted

Given at Albany, New York this 29th day of March 2002

Thomas J. Moon
Structures Design and Construction Division

Certifications

Bruce Woogen, P.E.

The University of the State of New York
Education Department
Office of the Professions

REGISTRATION CERTIFICATE
Do not accept a copy of this certificate

License Number: [REDACTED]

Certificate Number [REDACTED]



WOOGEN BRUCE
[REDACTED]

is registered to practice in New York State through 04/30/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

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DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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New Jersey Office of the Attorney General
Division of Consumer Affairs**

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Board of Prof. Engineers & Land Surveyors**

HAS LICENSED

BRUCE WOODEN
[Redacted]

FOR PRACTICE IN NEW JERSEY AS A(N): Professional Engineer

**04/24/2014 TO 04/30/2016
VALID**

LICENSE/REGISTRATION/CERTIFICATION #
[Redacted]

[Signature]
ACTING DIRECTOR

Signature of Licensee/Registrant/Certificate Holder

Division of Consumer Affairs (outside)
Division of Consumer Affairs
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Board of Prof. Engineers & Land Surveyors
HAS LICENSED
BRUCE WOODEN
Professional Engineer
04/24/2014 TO 04/30/2016
1438
[Redacted]

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IF YOUR LICENSE/REGISTRATION/
CERTIFICATE ID CARD IS LOST
PLEASE NOTIFY:
Board of Prof. Engineers & Land S
P.O. Box 45015
Newark, NJ 07101**



U.S. Department
Of Transportation
Federal Highway
Administration

National Highway Institute



Certificate of Training

Bruce Woogen

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

WSP GROUP

Date:

January 27- February 7, 2014

Hours of Instruction: 60

Location:

Charlotte, NC


Instructor


Instructor


Local Coordinator


Richard Barnaby, Director
National Highway Institute

State of New York
New York State Department of Transportation



Record of Completion

Bruce Woogen

For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)

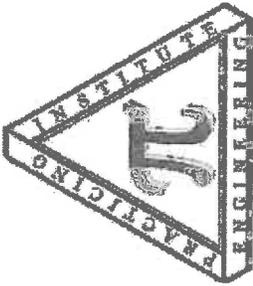
March 2013, Troy, New York

Steven Montali

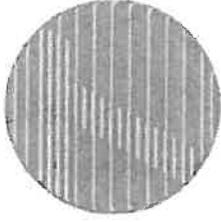
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

Daniel Byrne

Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

2013 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130107 PE

Location: Troy, NY

Date: March 12-13, 2013

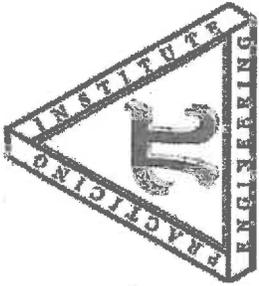
Carlos Rivera

Continuing Education Coordinator

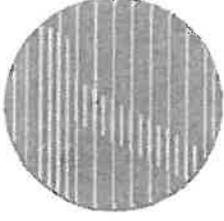
PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of N.Y.S., please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

Introduction to Element Level Bridge Inspection Training

Professional Development Hours Awarded: 6.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130101 PE

Location: Troy, NY

Date: March 14, 2013

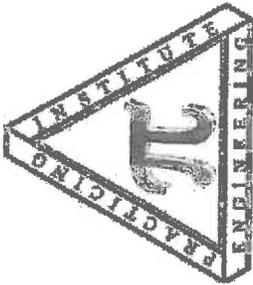
Carlos Rivera

Continuing Education Coordinator

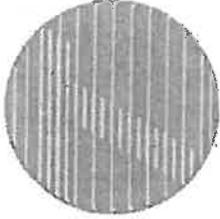
PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of N.Y. please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

Ethics for Engineers

Professional Development Hours Awarded: 1

This course is accredited for the profession(s) of: Professional Engineering
Course #20130106 PE

Location: Troy, NY

Date: March 13, 2013

Carlos Rivera

Continuing Education Coordinator

PE Organization#SM000007

Accreditation of training provided under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of N.Y.S. please consult the licensure board of the state.

Certifications

Mitesh Patel, P.E.

THE UNIVERSITY OF THE STATE OF NEW YORK
EDUCATION DEPARTMENT



BE IT KNOWN THAT

MITESH VALLABHAI PATEL

HAVING GIVEN SATISFACTORY EVIDENCE OF THE COMPLETION OF PROFESSIONAL
AND OTHER REQUIREMENTS PRESCRIBED BY LAW IS QUALIFIED TO PRACTICE AS A

PROFESSIONAL ENGINEER

IN THE STATE OF NEW YORK

IN WITNESS WHEREOF THE EDUCATION DEPARTMENT GRANTS THIS LICENSE
UNDER ITS SEAL AT ALBANY, NEW YORK
THIS NINTH DAY OF FEBRUARY, 2009.

R. Howard Phillips
PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION

LICENSE NUMBER



David Hund
ASSOCIATE COMMISSIONER
OFFICE OF THE PROFESSIONS
David S. G. G.
EXECUTIVE SECRETARY
STATE BOARD FOR
ENGINEERING AND LAND SURVEYING

**The University of the State of New York
Education Department
Office of the Professions**

REGISTRATION CERTIFICATE

Do not accept a copy of this certificate.

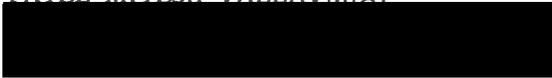
License Number:



Certificate Number:



PATEL MITESH VALLABHAI

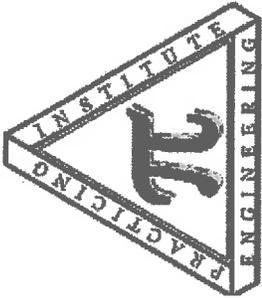


is registered to practice in New York State through 05/31/2017 as a(n)
PROFESSIONAL ENGINEER

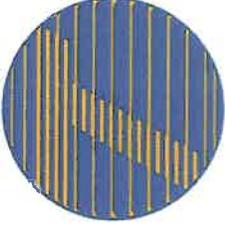
LICENSEE/REGISTRANT

EXECUTIVE SECRETARY
COMMISSIONER OF EDUCATION
DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Mitesh Patel* has completed

2014 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8

This course is accredited for the profession(s) of: Professional Engineering
Course #20140109 PE

Location: Troy, NY

Date: March 4-5, 2014

Carlos Rivera

Continuing Education Coordinator

PTE Organization#SM000007

Accreditation of training performed under the auspices of
The Practicing Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.



National Highway Institute



Certificate of Training

Mitesh Patel

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

Weidlinger Associates, Inc.

Date: February 25-March 08, 2013 **Hours of Instruction:** 67

Location: New York, NY

William R. Henderson, P.E.

Instructor

Thomas A. Gya

Instructor

[Signature]

Local Coordinator

[Signature]

Richard Barnaby, Director
National Highway Institute



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute

Certificate of Training



Mitesh Patel

has participated in

NHI Course No. FHWA-NHI-130101

Introduction to Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: *Web-Based Course*

Hours of Instruction: *14 hours*

Date: 3/1/2013

Richard J. Barnaby, Director
National Highway Institute



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute

Certificate of Training



Mitesh Patel

has participated in

NHI Course No. FHWA-NHI-130101A

**Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB
-BASED**

hosted by

National Highway Institute

Location: *Web-Based Course*

Hours of Instruction: *1 hours*

Date: 12/19/2012

Richard J. Barnaby, Director
National Highway Institute

Section 4: Experience

EXPERIENCE

BACKGROUND

WSP offers the Port Authority a highly qualified and experienced staff with over 400 registered professional engineers and trained technical personnel in our Metro NYC offices who will provide timely, high quality, and cost effective engineering and inspection services to meet the project's objectives.

WSP offers the PA unique qualifications for the 2015 Biennial Inspection of the George Washington Bridge New York Approach Roadways – Henry Hudson Ramps and Retaining Walls:

- Completion of nine Biennial Inspection projects at the GWB facility during the past 20 years:
 - 2013 New Jersey Approach Bridges
 - 2009 Trans-Manhattan Bridges
 - 2009 Henry Hudson Bridges
 - 2009 Sign & Lighting Structures
 - 2007 New Jersey Approach Bridges
 - 2006 Sign & Lighting Structures
 - 2005 Main Bridge Upper Level
 - 1999 New York Approach Bridges
 - 1995 Main Bridge Lower Level
- Thorough understanding of, and experience with the PA's work requirements at this facility, including coordination/scheduling with facility personnel, security, ongoing contract work, MPT and Access Equipment, etc.
- Continuous Biennial Bridge, Sign & Light Structure Inspection Projects for the PA since 1993. Thorough understanding of the PA's inspection and documentation requirements, including identification and reporting of Immediate, Priority, Safety and Routine Conditions.
- A qualified, available staff including up to 12 inspection teams experienced with the inspection of major PA facilities.
- Extensive experience providing Load Rating Analysis and designing Emergency Repair Details for conditions discovered during inspections.
- Biennial Inspection of twenty major suspension bridges during the past 17 years, including the George Washington, Verrazano Narrows, Triborough, Throgs Neck, Bronx Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges. Expert inspection of cable, tower, and anchorage elements.
- Four PE Team Leaders on staff trained and experienced in Industrial Rope Access Techniques.

- Completion of more than 35,000 Biennial Bridge Inspections for the NYSDOT since 1978. Industry-leading training with the creation of BDIS Inspection Reports. Inspection of more than 1,000 bridges per year, every year since 1978.
- Continuity of Staff – WSP QC Engineers and Team Leaders have more than 110 years of combined tenure with the firm – the staff that starts a job completes the job.
- Extensive experience in major bridge design and rehabilitation projects.
- Commitment and involvement of the firm’s Principals with on-going and recent bridge inspection and design projects.
- Established QA/QC and Safety Procedures developed specifically for bridge inspection and bridge design projects.
- Understanding of safety concerns, including removal when possible of loose/hollow-sounding areas of concrete.

WSP offers the PA proven recent and on-going bridge inspection, evaluation, and design experience for highway bridges, airport roadway bridges, and railroad bridges. Since 1993, WSP has been continuously working with the PA by performing condition surveys of various facilities. During this time, our staff has become thoroughly familiar with all PA requirements and procedures. For our most recent projects for the Authority WSP performed condition surveys and prepared condition reports for the following PA facilities utilizing a consistent and experienced Project Manager and Lead Team Leader:

Representative Port Authority of NY & NJ Projects Completed by WSP			
FACILITY	YEAR INSPECTED	MANAGER	LEAD TEAM LEADER
JFK Terminal Bridges	2014	David Althaver, PE	Mark Paoline, PE
NJ Marine Terminal Bridges	2014	David Althaver, PE	Bruce Woogen, PE
GWB New Jersey Approaches	2013	David Althaver, PE	Albert Ari, PE
PATH Bridge over Hackensack River	2013	David Althaver, PE	Albert Ari, PE
Holland Tunnel Sign & Lighting	2013	David Althaver, PE	Matthew Bacon, PE
JFK Terminal Bridges	2012	David Althaver, PE	Mark Paoline, PE
Lincoln Tunnel NY Approach Roadway Bridges and Sign Structures	2011	Mosé Buonocore, PE	David Althaver, PE
Stewart Airport Sign Structures	2011	Mosé Buonocore, PE	David Althaver, PE
Staten Island Bridges On Grade Sign and Lighting Structures	2011	Mosé Buonocore, PE	Mark Paoline, PE
NJ Marine Terminal Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Roadway Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Terminal Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Sign & Lighting	2009	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Trans-Manhattan Bridges	2009	Mosé Buonocore, PE	Nick DiFilippo, PE

Representative Port Authority of NY & NJ Projects Completed by WSP			
FACILITY	YEAR INSPECTED	MANAGER	LEAD TEAM LEADER
GWB Henry Hudson Bridges	2009	Mosé Buonocore, PE	Nick DiFilippo, PE
Newark International Airport Bridges	2008	Mosé Buonocore, PE	Nick DiFilippo, PE
Newark Airport Sign & Light Structures	2008	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB NJ Approach Bridges	2007	Mosé Buonocore, PE	Nick DiFilippo, PE
PATH Bridge over Hackensack River	2007	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Sign & Lighting	2006	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Airport Bridges	2006	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Upper Level	2005	Mosé Buonocore, PE	Matthew Bacon, PE
Goethals Bridge	2004	Mosé Buonocore, PE	Matthew Bacon, PE
Bayonne Bridge	2003	Mosé Buonocore, PE	Matthew Bacon, PE
Newark International Airport Bridges	2002	Mosé Buonocore, PE	Matthew Bacon, PE
Newark Airport Sign & Light Structures	2001	Mosé Buonocore, PE	Matthew Bacon, PE
LaGuardia Airport Roadway Bridges	2000	Mosé Buonocore, PE	Matthew Bacon, PE
GWB NY Approaches Bridges	1999	Mosé Buonocore, PE	Hugh McCarey, PE
Goethals Bridge	1998	Mosé Buonocore, PE	Hugh McCarey, PE
Lincoln Tunnel Approach Roadway Bridges	1997	Mosé Buonocore, PE	Hugh McCarey, PE
Newark International Airport Bridges	1996	Mosé Buonocore, PE	Hugh McCarey, PE
GWB Lower Level	1995	Mosé Buonocore, PE	Hugh McCarey, PE
Outerbridge Crossing	1994	Mosé Buonocore, PE	Hugh McCarey, PE
PATH Bridge over Hackensack River	1994	Mosé Buonocore, PE	Hugh McCarey, PE
Bayonne Bridge	1993	Mosé Buonocore, PE	Hugh McCarey, PE

In addition to our ongoing experience with the PA, WSP has recent inspection experience on some of the most critical and largest long span suspension structures in the Northeast, including the Verrazano Narrows, Throgs Neck, RFK/Triborough, Bronx-Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges. Additional recent experience includes:



- Biennial Inspection of 800+ Bridges, NYSDOT Region 9, 2014
- Biennial Inspection of 1,800+ Bridges, NYSDOT Region 8, 2012 - 2013
- Biennial & Interim Inspection of the 400+ span I-278 Gowanus Expressway BIN Group, NYSDOT Region 11, annually 1998 – 2014.
- Inspection of 36 Undergrade Bridge Structures, New Jersey Transit, 2014, 2008

- Biennial Inspection of 194 Bridges, New Jersey Turnpike Garden State Parkway Division, 2008
- Biennial Inspection of 350+ Bridges, NYSDOT Region 10, 2007 – 2008.
- Inspection of 800+ Metro-North Bridges on New Haven, Mainline, Danbury, New Canaan & Waterbury Branches, Connecticut Department of Transportation, 2006 – 2014.
- In-Depth Inspection of 360 Undergrade Bridges on the Harlem, Hudson and New Haven lines, Metro-North Railroad, 1999 – 2001.
- In-Depth Inspection of 83 Structures on the Port Jervis Line, Metro-North Railroad, 2004 – 2005.

WSP has provided over 35 years of continuous Biennial Bridge Inspection services to the NYSDOT. Through 2015, WSP is completing the inspections of approximately 1,700 bridges in Region 9. In addition, WSP has performed several cycles of NJDOT bridge inspection work. The combination of recent bridge inspection experience, coupled with our highly qualified staff's familiarity with PA requirements makes WSP ideally suited for this project. Our unique combination of inspection, analysis, design and rehabilitation experience of bridge structures allows the firm to offer the PA the most efficient operation for inspection and engineering services of PA Facilities. WSP is able to successfully complete bridge inspection and analysis projects for our various clients because we understand the underlying issues in such projects, namely:

- Scheduling inspections – date constraints, ongoing contractor activity, geography, etc.
- Logistics – access, MPT, RR Flagging, work permit requirements, night work, etc.
- Safety – working on roadways, at heights, in RR right-of-way, etc.
- Reports – Adapting to client's report format specifications; paper & electronic
- Quality Control – meeting client's specifications, plus uniformity amongst teams
- Submission Schedule – timely submittal of product, allowing client review & feedback

RELEVANT EXPERIENCE

Biennial Bridge Inspection Projects Completed During the Last 3 Years

All of the projects listed were completed on schedule and within budget.

1. Port Authority of New York & New Jersey

Client Contact: Mr. Mitch Aldea, PE (973)792-3940

- a. 2014 Biennial Inspection of the JFK Terminal Bridges
- b. 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges
- c. 2013 Biennial Inspection of the GWB NJ Approaches
- d. 2013 Condition Survey of the PATH Bridge over the Hackensack River
- e. 2013 Biennial Inspection of the Holland Tunnel Sign & Lighting Structures
- f. 2012 Biennial Inspection of the JFK Terminal Bridges

2. MTA Triborough Bridge & Tunnel Authority

Client Contact: Mr. Samir Salah, PE (212) 360-2960

- a. 2014 Biennial Inspection of the Verrazano-Narrows Ramps
- b. 2013 Biennial Inspection of the Bronx Whitestone Bridge
- c. 2012 Biennial Inspection of the Verrazano Narrows Bridge

3. New York State Department of Transportation

- a. 2014 – 2015 Biennial Inspection of 1,700+ Bridges in NYSDOT Region 9
Client Contact: Mr. Bob LaCourt (607) 721-8164
- b. 2012 – 2013 Biennial Inspection of 1,800± Bridges in NYSDOT Region 8
Client Contact: Mr. Eric Foster, PE (845) 431-7924
- c. 2013 – 2014 Biennial Inspection of the 400+ Span I-278 Gowanus Expressway Viaduct BIN Group (322 span main viaduct plus ramp bridges inspected annually), NYSDOT Region 11
Client Contact: Mr. John Wong, PE (718) 482-4727

4. Delaware River Port Authority

Client Contact: Mr. Ed Montgomery, PE (856) 968-2091

- a. 2012 Biennial Inspection of the Benjamin Franklin Suspension Bridge

Section 5: Quality Assurance

QUALITY ASSURANCE PROGRAM PLAN

Prepared for the Port Authority of New York and New Jersey

I. Introduction–Quality Management System/Quality Assurance Program Plan

The management of WSP is dedicated to the establishment of a quality environment in the workplace, which will be reflected not only in the actual product delivered but also in the type of service provided to its clients during its preparation. We are committed to the basic values and principles which are essential to the attainment of quality and have striven to instill this commitment in all of our employees.

Quality in the WSP organization is defined as “the application of technical principles in a practical and economical fashion to solve the problems posed by a project and arrive at solutions which concurrently satisfy the technical standards of the firm and meet or exceed the standards of the reviewing authorities and meet or exceed the expectations of our clients”.

WSP is committed to achieving standards of quality in all its services and has established, documented, implemented, maintained and is continually improving its Quality Management System.

In order to implement the Quality Management System WSP has developed a matrix that identifies:

- the process needed for the Quality Management System;
- the sequence and interaction of these processes;
- the criteria and methods to ensure effective operation and control of the processes;
- availability of information necessary to support the effective operation and monitoring of these processes;
- methods of measurement, monitoring and analysis needed in order to implement those actions that will achieve planned results and continual improvement.

For each project undertaken, WSP implements a customized quality management program to set quality guidelines for project activities. Quality procedures established companywide are used as the foundation and tailored to satisfy each client’s needs and expectations. Additionally, in order to assure that each project conforms properly to the contract or client requirements, WSP, as a part of its Quality Management System, implements for each project a **Quality Assurance Program Plan**.

II. Documentation Requirements

A. Control of Documents

A combination of digital files and hard copy documents will be used throughout the project. Digital Project Documents shall be maintained on WSP’s Briarcliff Manor, NY Server in a directory dedicated to this project. All files on this server are backed up daily. Hard copies of project documents shall be maintained in three ring binder files at the Briarcliff Manor office. Access to these files shall be limited to the Project Manager, QA/QC Engineer and Lead Team Leader.

Only the latest authorized issue of Project documents shall be available for use by WSP personnel. Documents not authorized for use, voided documents or superseded documents shall be so marked as a means to prevent use.

All documents transmitted to the Port Authority Project Manager for review shall identify the action to be taken by the Project Manager. The Document status shall be updated based on the response.

Methods shall be used to track the status of transmittals that require action by the recipient. Such transmittals will be placed in an interim action folder that is monitored on a daily basis.

WSP's Project Manager is responsible for reviewing the Contract and identifying submittals and deliverables to be transmitted to the Port Authority. These identified items shall not be released until approved or authorized. The QA/QC Engineer shall ensure compliance with contract requirements for approval/authorization.

B. Control of Records

Project Records, maintained in three ring binders will, at the conclusion of the project, be stored in a suitable environment at WSP's Briarcliff Manor office to prevent damage or deterioration and to prevent loss.

An index of Project Records shall be part of the File. Access to records shall be under control of the Project Manager. Removal of Records to a location other than the immediate areas where the file is located shall be restricted to authorized persons, namely, the Project Manager, QA/QC Engineer and Lead Team Leader. Measures to identify removed files and their current location shall be maintained.

WSP's records which provide evidence of conformance to requirements and of the effective operation of the WSP's Quality Management System shall be identified, stored, protected and retained. Retrieval will be controlled. The Project Manager is responsible for identifying the records to be retained, retention time, disposal method, and for arranging for their protection and controlled retrieval.

III. Management Responsibility

A. Management Commitment

The Top Management of WSP is committed to the continued development and improvement of the Quality Management System (QMS). Management believes that quality can only be provided if all levels of the organization are involved in the quality process. As such, input and output are encouraged and in many instances required, from all levels.

At WSP, "quality" means completing a task correctly the first time. This can only be achieved by thorough preparation from the start of the project by the assignment of qualified personnel and by a methodical sequence of operations which includes quality measures for each task. By following defined procedures, we are able to achieve the highest level of quality for our clients.

B. Customer Focus

WSP ensures customer satisfaction by:

- Review of Contract Requirements and this Quality Assurance Program Plan procedures for compatibility.
- Allocating trained and qualified staff resources to perform project tasks.
- Scheduling and reporting progress in sufficient detail to control project cost.
- Training personnel as required.
- Performing Internal Quality Audits at intervals which shall ensure compliance with the Quality Plan.
- Establishing a program for problem identification and resolution and problem prevention.
- Maintaining data control systems and records of project activities.

C. Quality Assurance Program Plan

WSP's Quality Assurance Program consists of two basic levels.

- Quality Control.
- Quality Assurance Activities.

Quality Control

Quality Control involves proper documentation of all work efforts, careful documentation and dissemination of all communications and other project related information, coordination meetings to keep all team members fully informed, and proper and complete checking of inspection reports, calculations and other work elements.

Quality Assurance

Quality Assurance activities are designed to verify that the quality control processes are fully implemented. These procedures include periodic and random reviews of project records and project processes.

To insure quality in the work product, a Quality Assurance/Quality Control Engineer (QA/QC) will be designated at the beginning of project. The person selected for this position will have the technical expertise relevant to the disciplines included in the project work scope and be independent from the project staff. The designated QA/QC Engineer shall act as a representative of the project management and shall have the authority to act in its behalf. His or her specific duties will be dependent on the type of project (survey, design, inspection, etc.) and will be established accordingly.

It is the responsibility of each employee to become thoroughly familiar with the quality assurance procedures established for this project to which he or she is assigned. These procedures will be outlined and fixed in writing by the Project Manager in consultation with the assigned QA/QC Engineer. The degree of excellence of our technical services is measured by how well our employees conform to the requirements of each item in the specific project procedures.

D. Planning**Quality Objectives**

Top Management of WSP has identified the following Quality Objectives for this Project. The objectives are measurable, consistent with policy, relevant to the

successful completion of the project and attainment of objectives is considered as part of our effort for improvement.

Quality Objectives include:

- meeting contract requirements,
- resource allocations,
- cost control,
- schedule control.

Quality Management System Planning

The elements that comprise the Quality Planning process include this Quality Assurance Program Plan, personnel allocations, titles of individuals, subcontractors/subconsultants necessary to complete the work and the integration of Quality improvement initiatives.

E. Responsibility, Authority and Communication

1. Responsibility and Authority

For this project, WSP has assigned responsibilities and authority and is organized in the following manner.

TITLE	TASK DESCRIPTIONS
Principal-In-Charge & Structures Department Manager	<ol style="list-style-type: none"> 1. Provide overall direction to project. 2. Contractual matters. 3. Intra-corporate coordination
Project Manager	<ol style="list-style-type: none"> 1. Overall coordination of project. 2. Scheduling, planning and monitoring progress. 3. Liaison with the Port Authority for day to day operations. 4. Supervision of QA/QC Engineer and Inspection Staff including Lead Team Leader. 5. Interfacing with Subconsultants. 6. Enforcement of technical and contractual requirements. 7. Staffing 8. Receive directions from Principal-in-Charge.
Quality Control Engineer	<ol style="list-style-type: none"> 1. Field review on spot basis. 2. Engineer 3. Review of inspection reports and other deliverables for compliance. 4. Technical requirements enforcement. 5. Indoctrination of T.L., A.T.L. and other staff as per QA Program Plan. 6. Review of Immediate Conditions. 7. Receive directions from Project Manager.
Lead Team Leader	<ol style="list-style-type: none"> 1. Liaison with Port Authority. 2. Review previous reports/plan field operations. 3. Direct field teams for inspection in consultation with Project Manager and QA/QC. 4. Technical compliance (field work)



TITLE	TASK DESCRIPTIONS
	5. Immediate Action coordination with QC and Port. 6. Field inspection and reports. 7. Receive directions from PM and QA/QC.
Team Leader	1. Review previous inspection reports, and plan field operations. 2. Perform inspection work and compile reports. 3. Direct A.T.L. and other field members. 4. Liaison with Port for Immediate Conditions. 5. Assist Port with Immediate Conditions. 6. Enforce safe operations in field. 7. Receive and return rented equipment. 8. Receive directions from Lead Team Leader.
Assistant Team Leader	1. Receive directions from T.L. 2. Assist T.L. in inspection and report writing and preparation.
Additional Team Members	1. Provide assistance to T.L. And A.T.L. as per their direction.

2. Management Representative

WSP has assigned the QA/QC Engineer as the management representative for Quality. He shall ensure the Quality Assurance Program Plan is established, maintained and implemented. Additionally, the QA/QC Engineer shall report to top management on a monthly basis and make recommendations for Quality System improvements. Reports shall be issued in writing to top management and maintained in an open status until the resolution of outstanding items. The management representative for Quality shall assure that the Project Team is aware of customer requirements regarding the Project.

3. Internal Communication

WSP ensures the processes of the Quality Management System and this Quality Assurance Program including their effectiveness are communicated throughout the organization by documenting the identification and resolution of QA issues via memoranda issued to project staff. The QA/QC verifies the receipt and understanding of these memoranda with on-site follow up visits and regular project meetings.

4. Management Review

General

WSP Top Management shall review the Quality Management System at least once a year and more often as needs dictate to ensure its suitability, adequacy and effectiveness. The Quality Management System, quality policy and quality objectives will be evaluated for any needed change.

Review Input

Management Reviews shall utilize:

- Internal and external Quality Audit results.
- Customer performance evaluations (feedback).
- Process performance and product conformance results.
- Preventive and corrective action status.

- Follow up on actions from previous Management Reviews.
- Other changes (i.e. business climate, scope of work changes, etc. that could affect the Quality Management System

Review Output

Results of Management Reviews shall be recorded and appropriate actions taken to remedy systematic problems.

IV. Production Realization

A. Planning of Product Realization

WSP shall plan and document the product realization process. The documentation for the realization process is this Quality Assurance Program Plan and other in-house Quality Assurance documents.

Verification and validation of activities are monitored continuously. Monthly progress reports will be prepared for the Port Authority that will estimate physical percent complete and track expenditures. By comparing these two values, WSP's Project Manager can evaluate if the project is on budget. Moreover, by comparing the estimated physical percent complete to the project schedule, also presented in the monthly progress reports, the Project Manager can monitor compliance with the schedule.

On discovery of budget or schedule discrepancies, WSP will prepare for internal use, and circulate to the Authority, a recovery plan to get the project back on budget and/or schedule.

B. Customer Communication

WSP's Project Manager is responsible for establishing and maintaining communication with the Port Authority Project Manager or representative regarding inspection activities. The Project Manager is also responsible for evaluation of customer (Port Authority) feedback/complaints and to respond to them.

C. Project Development Planning

The Project Manager is responsible for scheduling and monitoring progress with respect to the project schedule. Progress is tracked and compared to the Design Progress Schedule prepared using scheduling software such as MS Project or Primavera. The progress of the project, along with an updated schedule comparing the original schedule with actual tasks completed, will become part of the progress report submitted to the Port Authority on a monthly basis.

D. Project Development Input and Output

Project development input consists of the requirements and criteria defined in the Technical Scope of Work. Outputs are those deliverables required by the Technical Scope of Work. All deliverables are reviewed by the Project Manager and QA/QC and both are responsible for ensuring that the deliverables address the input requirements.

V. Control of Subconsultants

The selection of subconsultants will be based on a number of factors including their past performance, their ability to perform the required services, their acceptability to the client, and

the adequacy of their quality control procedures. To confirm their selection, they will be asked, as part of their Statement of Qualifications (SOQ), to submit evidence of each of these factors.

The Project Manager, with input from the QA/QC Engineer, will review the SOQ to determine the acceptability of the Subconsultant for the proposed assignment. The subconsultant performs work with WSP in conformance with this Quality Assurance Program Plan. Conformance to this is subject to Internal Quality Audits. The QA/QC Engineer will perform such internal audits. Additionally, during the course of the project, detailed spot checks of the inspection notes, design product or other service, of each subconsultant are performed. Areas of noncompliance shall be resolved to the satisfaction of WSP. The Project Manager is responsible for following up on identified areas of poor performance and for maintaining records of subconsultant performance. Subconsultants with a record of poor performance shall be excluded from future consideration with WSP.

VI. Corrective and Preventative Action

Non-conformance in work output occurs when errors are discovered in output documents issued as final documents. The initiation of corrective or preventive action to eliminate actual or minimize potential non-conformities is the responsibility of the Project Manager in collaboration with the project's QA/QC Engineer.

A. Corrective Action

Immediate action is taken by the Project Manager to correct the non-conformity through the QA/QC Engineer or other management personnel. The QA/QC Engineer will document the non-conformity and review the project to see if the problem is recurrent.

B. Preventive Actions

If, upon review, the QA/QC Engineer finds that there may be an underlying cause to consistent non-conformities, which could be attributed to faults in quality assurance or other standard procedures, these issues will be systematically addressed. The Project Manager will then insure the implementation of all preventive procedures. Results of these actions are documented and reported to the Port Authority's Project Manager

VII. Training

The firm has established an organization manual, which contains job descriptions for each of the established technical grades and positions. Minimum requirements for experience, education and training are specified for these positions. In order for an employee to be approved in a given technical title these minimum requirements must be met. Training requirements can be satisfied through outside seminars or courses or internal on-going training programs. Certifications of all training and education subsequently become part of each employee's permanent personnel record file.

VIII. Program Specifics

A. Scope of Services

The WSP Project Manager is responsible for defining all project requirements for each specific service requested by the Authority. It is essential that all requirements and information necessary to perform the requested services be identified at the first stage

of the work process. Essential information includes not only information that the Authority requires, but also information that WSP needs from the Authority to properly produce the work. In defining the project requirements, the Project Manager will as a minimum adhere to the following procedures:

- The Project Manager will perform a detailed review of specific scope of services provided by the Authority. A copy of the scope will be forwarded to the QA/QC Engineer and Lead Team Leader for review and comment.
- The WSP Project Manager will contact the Authority's Project Manager to discuss any general questions and/or comments regarding the specific scope of services. At this time, our Project Manager will request all available information on the structure or structures to be inspected including existing condition reports, plans, and access arrangements.
- Our Project Manager and Lead Team Leader will then conduct a site visit to define the scope of inspection work. It is WSP policy that all site visits conducted prior to the start of work be performed by teams of two qualified personnel.
- During preparation of the inspection procedure outline and detailed scope of work, a review and sign-off will be performed by: Project Manager; Lead Team Leader, and Department Manager, Structures

B. Field Inspection

WSP will perform the biennial/condition inspection and associated task in accordance with the Port Authority contract requirements, as well as the latest requirements of the New York State Department of Transportation and FHWA / NBIS requirements.

WSP shall assign crews as necessary to perform the field work assigned by the Authority. Each inspection crew shall consist of two or three individuals, one Licensed Professional Engineer/Team Leader, one Assistant Team Leader, and where necessary one Team Member, all thoroughly experienced in bridge inspection.

- Prior to beginning the inspection, the Lead Team Leader and the other Team Leader(s) will fully review the scope of work and proposed inspection procedures. Copies of all existing inspection data that highlight known areas of concern will be distributed to appropriate personnel. As-built plans, when available, will also be reviewed and copies will be distributed as necessary.
- The QA/QC Engineer, Lead Team Leader and other Team Leader(s) will review all relevant Authority, NYSDOT, NJDOT (if applicable), NYCDOT, AASHTO, and FHWA / NBIS inspection guidelines to ensure compliance with all standard requirements.
- Inspection forms will be prepared which will identify all inspection components. Standard classification criteria symbols will be developed. Each will identify component material, condition/degree of deterioration, and type of action required (i.e. Immediate, Priority, or Routine). The standardization of inspection forms and classification criteria ensures that all inspectors will be consistent in categorizing deterioration.
- The status of all Priority Repairs previously recommended shall be verified.

- Whenever an Immediate, Priority or Routine Condition is identified in the field, the Lead Team Leader will verify the condition:
 - Promptly for an Immediate Condition, conferring as needed with the QA/QC Engineer and/or the Project Manager.
 - Within a day for a Priority or Routine Condition, in consultation with the inspecting party.
- This will assure correct documentation, which is critical in evaluating repair recommendations and also avoiding re-inspection, which is costly, especially when special inspection equipment is utilized.
- Our Project Manager, along with the Authority's Project Manager, will establish a detailed reporting sequence for areas requiring Immediate Action.
- Immediate Actions shall be documented and completion shall be tracked and certified using forms provided by the Authority.
- Throughout the inspection, especially concentrating on the first stage of inspection, the QA/QC Engineer shall review each Team Leader's findings to ensure accuracy and compliance with standard procedures.
- Each inspection team will organize and maintain separate files for areas it inspects, consisting of reference materials, field notes, sketches, recommended repairs, photo logs, and photographs. Partially completed files, which are not being worked on, will be stored in a file drawer in the inspection vehicle for safekeeping and expedient review by the Quality Control Engineer. Any questions or discrepancies will be brought to the attention of the Team Leader immediately, for prompt on-site resolution.
- At all locations at which a Team Leader recommends a course of action (i.e. Immediate or Priority), the Lead Team Leader shall personally inspect any location deemed Immediate and review findings and inspect "questionable" Priority conditions, if there is doubt or debate as to whether the condition should be downgraded to an Immediate condition.
- The Project Manager will make spot site visits during inspection to review field data.
- The individual performing the inspection will initiate each inspection form and sketch. Upon completion of the inspection, the Team Leader will review each inspection form and the accompanying sketches, and initial beneath the inspector's initials.

C. NYSDOT Biennial Inspection Reports

After completion of the field inspection, WSP will prepare and submit the NYSDOT Biennial Inspection Reports as well as a diving report in compliance with the latest NYSDOT requirements. Prior to submission, a careful review of the report(s) shall be performed by the Team Leader and QA/QC Engineer, to assure that the requirements for the State DOT reports are adhered to properly.

D. Condition Survey Report

Prior to submission of the Condition Survey Report, a careful review of report information shall be performed by the Project Manager, QA/QC Engineer and Lead Team Leader. This review shall include:

- Text review for content, clarity, and spelling.
- Review of priority and routine recommendations.
- Cross-reference check between text and report photographs.
- Review of sketches and photographs to ensure correct location identification and orientation.

IX. Summation

WSP has established a Quality Management System and a Quality Assurance Program Plan which allows for the continual monitoring and review of procedures, methodologies, and on-going projects to ensure that WSP is providing quality technical services to the Port Authority. The WSP program structure allows for input and output from all levels of the organization to assure that a quality product is produced for the Authority.

Submitted by:

WSP USA CORP.
555 Pleasantville Road, South Bldg.
Briarcliff Manor, NY 10510
Tel: (914) 747-1120
www.wspgroup.com/usa



2015 BIENNIAL INSPECTION OF GWB NY APPROACH TME STRUCTURES & ON-Grade S&LS

CLOSING DATE: March 19, 2015
EVALUATION DATE: APRIL 3, 2015

Firm	Total Fee \$\$	Staff Qualification & Experience (A)	Technical Approach (B)	Management Approach (C)	Firm Experience (D)	Score 3.5A+3.5B+2C+1D	Ranking	Notes
WSP	██████████	██████████	██████████	██████████	██████████	85	1	
WAI	██████████	██████████	██████████	██████████	██████████	81	2	
H&H	██████████	██████████	██████████	██████████	██████████	74	3	
CHA	██████████	██████████	██████████	██████████	██████████	73	5	
HAKS	██████████	██████████	██████████	██████████	██████████	74	4	
KS	██████████	██████████	██████████	██████████	██████████	73	6	
HNTB	██████████	██████████	██████████	██████████	██████████			NO RESPONSE
A&W	██████████	██████████	██████████	██████████	██████████			NO RESPONSE
STANTEC	██████████	██████████	██████████	██████████	██████████			NO RESPONSE
Technical Ratings: Excellent = 10 Good = 9 - 8 Fair = 7 - 6 Unsatisfactory = 5 - 0								
PA ESTIMATE	\$476,600							

Albert S. Chin
Albert S. Chin, P.E. Date: 4/3/2015

Victor Demel
Victor Demel Date: 4/3/2015

RFP REVIEW - 2015 BIENNIAL INSPECTION OF GWB NY APPROACHES-TME & On-Grade \$&LS											
Firm	Staff Qualification & Experience		Technical Approach		Management Approach		Firm Experience				
	Rating	Review Comments	Rating	Review Comments	Rating	Review Comments	Rating	Review Comments			
WSP SELLS	■		■		■		■		■		
WAI	■		■		■		■		■		
H&H	■		■		■		■		■		
CHA	■		■		■		■		■		
H&KS	■		■		■		■		■		
KS	■		■		■		■		■		

TECHNICAL PROPOSAL

2015 BIENNIAL INSPECTION OF THE GEORGE WASHINGTON
BRIDGE NEW YORK APPROACH ROADWAYS
TRANS-MANHATTAN EXPRESSWAY STRUCTURES
& ON-GRADE SIGN & LIGHTING STRUCTURES

March 19, 2015

Submitted to:

**THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY**

Submitted by:

WSP USA CORP.
555 Pleasantville Road, South Bldg.
Briarcliff Manor, NY 10510
Tel: (914) 747-1120
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- Licenses & Certifications

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- Qualifications
- Relevant Projects

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555 Pleasantville Road
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Main: 914 747 1120
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March 18, 2015

C. John Lin, P.E.
Assistant Chief Engineer- Quality Assurance
Engineering Department
The Port Authority of New York and New Jersey
2 Gateway Center
16th Floor
Newark, NJ 07102

Attn: Mr. Camille Dagher, P.E., Project Manager

*Re: 2015 Biennial Inspection of the George Washington Bridge New York Approach
Roadways Trans-Manhattan Expressway Structures & On-Grade Sign & Lighting
Structures*

Dear Mr. Dagher:

WSP USA CORP (WSP) is pleased to submit three (3) copies and one (1) pdf of our proposal to provide inspection services for the above referenced project.

Since 1993, WSP has been continuously working with the Port Authority Quality Assurance Division by performing condition surveys of various facilities. WSP has provided over twenty years of continuous bridge inspection services to the Port Authority for some of their most distinctive facilities including the completion of nine biennial inspection projects at the George Washington Bridge facility. In addition, WSP has extensive long span bridge experience having performed the biennial inspection of twenty major suspension bridges during the past 17 years, including the George Washington, Verrazano Narrows, Triborough, Throgs Neck, Bronx Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges.

WSP has a recognized record of performance with our clients and believes our extensive experience with the Port Authority and similar projects render us well qualified to complete this project. WSP appreciates the opportunity to submit our proposal and to assist the Port Authority of New York and New Jersey with maintaining a safe and efficient infrastructure. Should you require any additional information, please feel free to contact me at (914) 747-1120 or at david.althaver@wspgroup.com.

Very truly yours,
WSP USA CORP

A handwritten signature in blue ink, appearing to read "D Althaver", is written over the typed name.

David Althaver, P.E.
Project Manager

Cc: Mose Buonocore, P.E., Executive Vice President

Section 1: Technical Approach

TECHNICAL APPROACH

TASK B – FIELD INSPECTION

General Procedures

As soon as we receive notice from the Port Authority to begin work, we will have our inspection personnel begin the process of acquiring the SWAC and Facility ID Cards as soon as possible so that we will not be delayed in starting the field inspection. In addition, comprehensive field inspection forms will be developed prior to the start of inspection.

Each inspection team will be comprised of a qualified Team Leader who is a registered Professional Engineer in the state of New York and an Assistant Team Leader who is a graduate engineer. All proposed Team Leaders (including our sub-consultants) have attended the 2 week NHI bridge inspector's training and the 3 day NHI bridge inspector's refresher (if the training was attended over 5 years ago). The Team Leader will ensure that all inspections are performed in compliance with the latest FHWA/NBIS and NYSDOT requirements. The Team Leader will also ensure that all Port Authority procedures are strictly adhered to at all times.

In order to ensure the Port Authority of a consistent, high quality inspection, all sub-consultant personnel will be assigned to work with one person from WSP for the duration of the field inspection. Therefore, a Team Leader from WSP will work with an Assistant Team Leader from a sub-consultant or a Team Leader from a sub-consultant will work with an Assistant Team Leader from WSP.

Each inspection team will review all existing defects found in the previous cycle report for the locations scheduled to be inspected each day. All Priority repairs previously recommended will be either removed (due to the repair having been completed), updated (due to a change in condition) or confirmed (if there was no change from the previously noted conditions) and new photos will be taken. All significant defects found during the inspection will be fully evaluated using hand tools and NDT testing methods such as D-meters and dye penetrant as needed to determine the accurate, actual conditions encountered. Field notes, sketches, drawings and photographs will be taken of all significant defects in order to fully describe the conditions found.

Any condition that the Team Leader feels may warrant an Immediate repair will be brought to the attention of the WSP Quality Control Engineer. All Team Leaders will be equipped with mobile phones and laptop computers with internet access to contact and transmit photographs and/or sketches to the QC Engineer as soon as possible once a potential Immediate repair condition is found. After the Team Leader and the QC Engineer discuss the condition and determine that it warrants Immediate action, the Port Authority Project Manager will be immediately contacted by phone, followed by an accurate description of the condition (including sketches as required) with photographs sent by e-mail as soon as possible. Once approved by the Port Authority, WSP will expeditiously develop repair details and signed and sealed drawings to address all Immediate repair items. This was most recently done by WSP for 2 Immediate repairs during the 2013 Biennial Inspection of the George Washington Bridge NJ Approach Structures.

The underside of all concrete decks, reinforced concrete beams and concrete encased members will be sounded with a hammer. If a Team Leader finds areas of loose, delaminated or hollow sounding concrete that may cause a safety concern to the public, the Team Leader will attempt to remove the concrete and therefore remove the safety concern. If the Team Leader or Assistant Team Leader is not able to remove the concrete themselves (due to limited access or a safety concern), the Port Authority's Project Manager and the GWB facility liaison and operations manager will be contacted phone and will be given the necessary information to have Port Authority's maintenance department remove the concrete. The Team Leader or QC Engineer will send by e-mail to the QAD's Project Manager a detailed description of the conditions found including a sketch and photos no later than the following morning. In addition, the Team Leader will submit to the QAD's project Manager the Immediate Action Tracking Form as soon as possible and follow up by submitting the Immediate Action Completion Form once the condition has been resolved.

All components and attachments to the GWB NY Approach Roadway Structures (sign structures, lighting standards, etc.) will receive a visual inspection and all fracture critical, non-redundant or fatigue prone details will receive a hands-on inspection. If any significant defects are found on members receiving a visual inspection, the Team Leader will thoroughly clean and perform a hands-on inspection of those locations in order to fully determine and describe the conditions found. In addition, any significant defects found by one Team Leader will be discussed with the QC Engineer and the other inspection teams at the beginning of each day or night of work so that all inspection teams pay particular attention for similar defects that may occur at other locations throughout the structures being inspected.

Coordination of all field inspections, and especially all lane closures, with the Port Authority and local authorities will be crucial in order to complete the required inspections on schedule and within budget. WSP is highly experienced with scheduling and conducting lane closures within close proximity of highly sensitive, Port Authority facilities such as the George Washington Bridge. We will ensure open communication with all required GWB facility personnel and will coordinate all field work around any scheduled or on-going construction or maintenance activities in and around the bridges to be inspected. WSP has successfully worked at several Port Authority facilities (including the GWB in 2013) and will strictly follow all current requirements and procedures of the facility (including the use of barrels for all lane closures) while working on and around the George Washington Bridge including (but not limited to) the following:

- Obtain all required permits for closing traffic lanes on roadways outside of the Port Authority jurisdiction.
- Obtaining SWAC and facility ID cards for all inspection personnel including sub-consultants and equipment operators/lane closure personnel.
- Submission of weekly inspection schedules.
- Submission of approved MPT plans (based on the Port Authority's posted MPT plans found on their website) to the facility for proposed lane closures.
- Coordination of lane closures with any construction activities scheduled on the bridge or adjacent to the bridge on the NY and NJ approach roadways/ramps.
- Notifying in person the facility communications desk / police when entering and leaving the facility, providing such information as work location, contact phone number, number of workers and type of vehicles and equipment to be used.

During the course of the field inspection, WSP will give the Port Authority an update of all Priority repair conditions, stating whether they have been repaired, confirmed from the previous inspection or found during this inspection when requested. Upon completion of the field work, WSP will present, in a PowerPoint format, all existing and proposed Priority Repairs and all proposed Safety Repairs and any additional significant findings discovered throughout the field inspection of the GWB NY Approach Roadway Structures to the Port Authority management personnel in their offices.

Specific Approach

As we previously did during our 2009 inspection of the NY Approach Roadway Structures, WSP anticipates utilizing a parking facility in Fort Lee, NJ to store our inspection equipment (bucket trucks, manlifts, etc.). This is an efficient location, since we need to check in with the GWB facility personnel before working each day or night and they are also located in Fort Lee, NJ.

Since all of the bridges and several of the additional structures will require the inspections to be performed during night time lane closures (between the hours of 11:00pm and 5:00am), WSP will schedule between 2 and 4 inspection teams each night. Whenever possible, a single lane or full ramp closure will be utilized to inspect the underside of multiple bridges at the same time. This will significantly reduce the total MPT costs, since we will only need to provide an Attenuator Truck behind the additional inspection teams instead of a full lane closure. In addition, this will increase the quality and uniformity of the inspections between the various teams since they will be working in close proximity and will be able to easily discuss conditions with each other found during their inspection.

Access permitting, the top of deck of each bridge will be inspected during the day (between the hours of 8:00am and 4:00pm). The typical photos of each bridge will be taken during daylight hours (as long as it is safe for our inspectors to access the various locations in order to take the photos) to produce the best quality images for the NYSDOT and Port Authority reports. In addition, any portion of a structure that is found to be accessible during the day will also be inspected during daylight hours in order to minimize the night time lane closures and therefore save the Authority the additional premium charged for night time MPT operations.

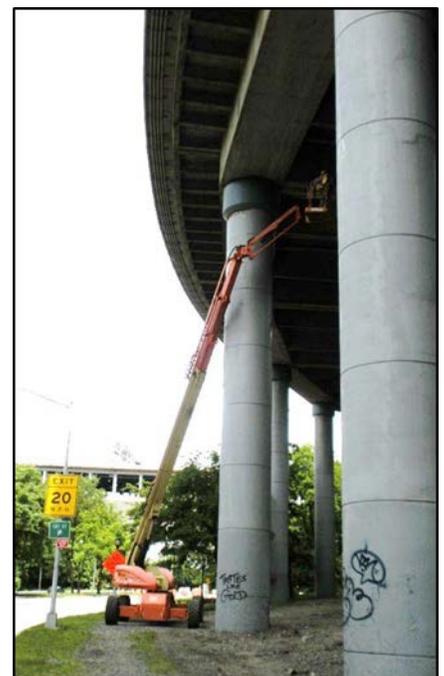
WSP anticipates utilizing 2 to 4 inspection teams throughout the duration of this project. The bridge inspections will be scheduled to ensure that the last inspection date is on or before the previous inspection date in order to satisfy NYSDOT's requirements. The retaining walls, soffits and additional structures to be inspected will be scheduled in the most efficient way by adding additional inspection teams and utilizing the lane closures installed for adjacent bridges. In this way, we will not only save the Authority money spent on MPT operations, but will also minimize our impact on the public travelling over the roadways. Based upon the previous cycle's inspection dates the field inspection for all structures included within this contract will be performed between May and October.

TASK C – REPORT

WSP understands the importance of timely report submissions. Upon the completion of each inspected bridge, WSP will thoroughly review all documented field information in accordance with our Quality Assurance Plan. We will then prepare and submit one copy of the NYSDOT Biennial Inspection Report to the Port Authority for review within 30 days of the last day of inspection and within 3 days of the QC Engineer’s signature for review. Within 10 calendar days of receiving the Authority’s comments, WSP will submit five copies of the NYSDOT Biennial Inspection Report along with two CD-ROMs for each bridge, containing the report in PDF format.

Once all of the field inspection work is completed and all of the NYSDOT reports are submitted, WSP will then prepare and submit a separate Condition Survey Report in accordance with Port Authority’s requirements. Within 60 days of the completion of the field inspections, we will submit 2 copies of the Condition Survey Reports and 1 copy of all field inspection reporting forms and color photographs. Within 20 calendar days of receiving the Authority’s comments, WSP will submit nine final copies of the Condition Survey Reports.

Upon completion of the Final Condition Survey Reports, WSP will submit all required digital files as outlined in the Authority’s “Request for Proposal” and upload all required files to the Authority’s QAD database.



ID	Task Name	Duration	Start	2015																																																																
				May					Jun					Jul					Aug					Sep					Oct					Nov					Dec					Jan					Feb					Mar					Apr					May				
				20	28	6	14	22	30	7	15	23	1	9	17	25	2	10	18	26	3	11	19	27	5	13	21	29	6	14	22	30	8	16	24	1	9	17	25	2	10	18	26	5	13	21	29	6	14	22	30	8	16															
1	Notice to Proceed	0 days	Mon 5/4/15	◆ Notice to Proceed																																																																
2	Start-Up MTG/Submit Schedule	0 days	Mon 5/18/15	◆ Start-Up MTG/Submit Schedule																																																																
3	Inspect 3 Bridges Due in July	40 days	Mon 6/1/15	Inspect 3 Bridges Due in July																																																																
4	Prepare NYSDOT Biennial Reports	27 days	Thu 7/16/15	Prepare NYSDOT Biennial Reports																																																																
5	Submit NYSDOT Reports	6 days	Fri 8/14/15	Submit NYSDOT Reports																																																																
6	Inspect 5 Bridges Due in August	25 days	Thu 7/16/15	Inspect 5 Bridges Due in August																																																																
7	Prepare NYSDOT Biennial Reports	36 days	Fri 7/31/15	Prepare NYSDOT Biennial Reports																																																																
8	Submit NYSDOT Reports	15 days	Mon 8/31/15	Submit NYSDOT Reports																																																																
9	Inspect 3 Bridges Due in September	38 days	Mon 8/3/15	Inspect 3 Bridges Due in September																																																																
10	Prepare NYSDOT Biennial Reports	31 days	Fri 9/11/15	Prepare NYSDOT Biennial Reports																																																																
11	Submit NYSDOT Reports	7 days	Fri 10/9/15	Submit NYSDOT Reports																																																																
12	Inspect Retaining Walls, Abandoned Tunnels and Air Rights Bldg Nos. 1-4	83 days	Mon 6/1/15	Inspect Retaining Walls, Abandoned Tunnels and Air Rights Bldg Nos. 1-4																																																																
13	Inspect On-Grade Sign & Lighting Structures	83 days	Mon 6/1/15	Inspect On-Grade Sign & Lighting Structures																																																																
14	Prepare Draft PA Condition Survey Report	43 days	Wed 9/23/15	Prepare Draft PA Condition Survey Report																																																																
15	Submit Draft PA Condition Survey Report	0 days	Fri 11/20/15	◆ Submit Draft PA Condition Survey Report																																																																
16	Port Authority Review	11 days	Mon 11/23/15	Port Authority Review																																																																
17	Prepare Final PA Condition Survey Report	13 days	Mon 12/7/15	Prepare Final PA Condition Survey Report																																																																
18	Submit Final PA Condition Survey Report	0 days	Wed 12/23/15	◆ Submit Final PA Condition Survey Report																																																																
19	CD/DVD Submission	0 days	Fri 1/29/16	◆ CD/DVD Submission																																																																
20	Structural Integrity Database Upload	11 days	Fri 1/15/16	Structural Integrity Database Upload																																																																

Project: 02b Project Schedule
Date: Thu 3/19/15

Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Progress	
Split		External Tasks		Inactive Summary		Manual Summary		Deadline	
Milestone		External Milestone		Manual Task		Start-only			
Summary		Inactive Task		Duration-only		Finish-only			

**2015 BIENNIAL INSPECTION OF THE GWB NY APPROACH ROADWAYS,
TRANS-MANHATTAN EXPRESSWAY STRUCTURES AND ON-GRADE SIGN & LIGHTING STRUCTURES**



Section 2: Cost Estimate

**2015 Biennial Inspection of the New York Approach Roadways
Trans-Manhattan Expressway Structures and
On-Grade Sign & Lighting Structures**

COST PROPOSAL

**QUALITY ASSURANCE DIVISION
CONDITION SURVEY REPORT
TASKS 'B' & 'C' COST ESTIMATE**

FACILITY: George Washington Bridge			
PROJECT: 2015 Biennial Inspection of GWB NY Approaches - Trans-Manhattan Expressway Structures & On-Grade Sign & Lighting Structures		DATE: March 19, 2015	
	STAFF DAYS	COST/DAY	TOTAL
TASK 'B' FIELD INSPECTION	---	---	---
1. PRELIMINARY WALK THROUGH	3.0	\$1,346	\$4,038
2. DEVELOP FIELD FORMS (Including CADD)	5.0	\$919	\$4,595
3. FIELD INSPECTION	163.0	\$938	\$152,894
4. QUALITY CONTROL	10.0	\$1,326	\$13,260
5. SUPERVISION BY SENIOR STAFF	5.0	\$1,498	\$7,490
I. TASK 'B' SUBTOTAL	186.0	---	\$182,277
TASK 'C' REPORT PREPARATION	---	---	---
1. REPORT WRITING (Including CADD)	50.0	\$873	\$43,650
2. FINAL REPORT (Including Pre-final Review)	14.0	\$921	\$12,894
3. QAD Database Upload	4.0	\$867	\$3,468
4. QUALITY CONTROL	10.0	\$1,326	\$13,260
5. SUPERVISION BY SENIOR STAFF	5.0	\$1,498	\$7,490
II. TASK 'C' SUBTOTAL	83.0	---	\$80,762
OUT-OF-POCKET EXPENSES	---	---	---
1. TASK 'B' INCLUDING: Travel & Equip.	L.S.	L.S.	\$120,630
2. TASK 'C' INCLUDING: Travel & Printing	L.S.	L.S.	\$3,883
III. OUT-OF-POCKET SUBTOTAL:	L.S.	L.S.	\$124,513
TOTAL (I + II + III) =			<u>\$387,552</u>
SAY			<u>\$387,000</u>
Subconsultant Budgets			
American Structural Engineering (MBE):		<u>\$31,565</u>	
LGM Consultants (WBE):		<u>\$13,152</u>	
ESTIMATED BY: David Althaver			

**2015 Biennial Inspection of the New York Approach Roadways
Trans-Manhattan Expressway Structures and
On-Grade Sign & Lighting Structures**

COST PROPOSAL

I. TASK 'B' - FIELD INSPECTION

1. Preliminary Walk Through

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Manager	8	\$80.00	\$640.00	Multiplier = 2.55
Project Engineer / Team Leader	8	\$53.00	\$424.00	
Quality Control Engineer	8	\$65.00	\$520.00	
TOTAL	24		\$1,584.00	\$1,346

2. Develop Field Forms (Including CADD)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	16	\$53.00	\$848.00	Multiplier = 2.55
Designer II / Assistant Team Leader	8	\$39.00	\$312.00	
CAD / Drafter Production Supervisor	8	\$47.50	\$380.00	
CAD Operator	8	\$32.65	\$261.20	
TOTAL	40		\$1,801.20	\$919

3. Field Inspection

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	652	\$53.00	\$34,556.00	Multiplier = 2.55
Designer II / Assistant Team Leader	652	\$39.00	\$25,428.00	
TOTAL	1304		\$59,984.00	\$938

4. Quality Control

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Quality Control Engineer	80	\$65.00	\$5,200.00	\$1,326

**2015 Biennial Inspection of the New York Approach Roadways
Trans-Manhattan Expressway Structures and
On-Grade Sign & Lighting Structures**

COST PROPOSAL

5. Supervision by Senior Staff

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Principal / Department Manager*	8	\$120.00	\$960.00	*Multiplier not used
Project Manager	32	\$80.00	\$2,560.00	Multiplier = 2.55
TOTAL	40		\$3,520.00	\$1,498

II. TASK 'C' - REPORT PREPARATION

1. Report Writing (Including CADD)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	120	\$53.00	\$6,360.00	Multiplier = 2.55
Designer II / Assistant Team Leader	160	\$39.00	\$6,240.00	
CAD / Drafter Production Supervisor	40	\$47.50	\$1,900.00	
CAD Operator	80	\$32.65	\$2,612.00	
TOTAL	400		\$17,112.00	\$873

2. Final Report (Including Pre-final Review)

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	60	\$53.00	\$3,180.00	Multiplier = 2.55
CAD / Drafter Production Supervisor	12	\$47.50	\$570.00	
CAD Operator	40	\$32.65	\$1,306.00	
TOTAL	112		\$5,056.00	\$921

3. QAD Database Upload

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Project Engineer / Team Leader	8	\$53.00	\$424.00	Multiplier = 2.55
Designer II / Assistant Team Leader	24	\$39.00	\$936.00	
TOTAL	32		\$1,360.00	\$867

**2015 Biennial Inspection of the New York Approach Roadways
Trans-Manhattan Expressway Structures and
On-Grade Sign & Lighting Structures**

COST PROPOSAL

4. Quality Control

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Quality Control Engineer	80	\$65.00	\$5,200.00	\$1,326

5. Supervision by Senior Staff

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL COST/DAY
Principal / Department Manager*	8	\$120.00	\$960.00	*Multiplier not used
Project Manager	32	\$80.00	\$2,560.00	Multiplier = 2.55
TOTAL	40		\$3,520.00	\$1,498

SUMMARY LABOR COST

CLASSIFICATION	PERSON HOURS	RATE	SALARY COST	TOTAL LABOR COST
Principal / Department Manager	16	\$120.00	\$1,920.00	\$1,920
Project Manager	72	\$80.00	\$5,760.00	\$14,688
Project Engineer / Team Leader	864	\$53.00	\$45,792.00	\$116,770
Designer II / Assistant Team Leader	844	\$39.00	\$32,916.00	\$83,936
Quality Control Engineer	168	\$65.00	\$10,920.00	\$27,846
CAD / Drafter Production Supervisor	60	\$47.50	\$2,850.00	\$7,268
CAD Operator	128	\$32.65	\$4,179.20	\$10,657
TOTAL	2152		\$104,337.20	\$263,085

**2015 Biennial Inspection of the New York Approach Roadways
Trans-Manhattan Expressway Structures and
On-Grade Sign & Lighting Structures**

COST PROPOSAL

III. OUT-OF-POCKET EXPENSES

1. Task 'B'

Travel

Van rental/gas (4 mo. x \$1,850/mo.):	\$7,400.00	
Tolls - field work (70 trips x \$16.00/trip):	\$1,120.00	
		\$8,520.00

Inspection Equipment

Cellular Phones 2 x (4 months x \$50/mo.):	\$400.00	
MPT - Single Lane Closure (night time) (30 nights x \$1,975/night):	\$59,250.00	
Attenuator Truck (20 nights x \$575/night):	\$11,500.00	
30' Bucket Truck (2 x 3 months x \$1,800/mo.):	\$10,800.00	
60' Bucket Truck w/operator (10 days x \$875/day.):	\$8,750.00	
80' Manlift (2 weeks x \$3,275/week):	\$6,550.00	
Transport Manlifts to and from lane closures (10 nights x \$650/night):	\$6,500.00	
Parking for equipment (2 vehicles x 4 mos x \$300/mo):	\$2,400.00	
Generator/Lights (8 weeks x \$250/week):	\$2,000.00	
SWAC ID Cards (8 people x \$495/person):	\$3,960.00	
		\$112,110.00
		\$120,630.00

2. Task 'C'

Reports

Printing Costs:	\$3,000.00	
Postage/ Deliveries:	\$500.00	
		\$3,500.00

Travel

Meetings (5 trips x 88 mi. x \$0.575/mi.):	\$253.00	
Tolls - meetings (5 trips x \$16.00):	\$80.00	
Parking - meetings (5 trips x \$10.00):	\$50.00	
		\$383.00
		\$3,883.00

**2015 Biennial Inspection of George Washington Bridge
NY Approaches - Trans-Manhattan Expressway Structures**

BRIDGES

Structure Number	Structure Name	No. of Spans	Staff Days		
			Task B Inspection	Task C Report Writing	Task C Final Report
552250C	Ramp 179 over Ramp LX1	50	20	8	2.00
552250E	Bus Turnaround over I95	1	5	2	0.50
552250F	West Bus Ramp over I95	12	8	3	1.00
552250G	Ramp 178 over Ramp LX2	38	20	8	2.00
552250I	East Bus Ramp over I95	12	8	3	1.00
5522569	Fort Washington Avenue over I95	6	10	2	0.50
5522590	Broadway over I95	2	8	2	0.50
5522600	Wadsworth Avenue over I95	2	8	2	0.50
5522610	St. Nicholas Avenue over I95	2	8	2	0.50
5522620	Audubon Avenue over I95	2	8	2	0.50
5522630	Amsterdam Avenue over I95	2	10	2	0.50
TOTAL			113	36	9.50

RETAINING WALLS

Structure Name	LF	Staff Days		
		Task B Inspection	Task C Report Writing	Task C Final Report
North Exp. Wall (Reinforced Concrete)	1,707	4	1	0.25
South Exp. Wall (Reinforced Concrete)	1,668	4	1	0.25
Sign Structures	-	6	2	0.50
TOTAL		14	4	1.00

**2015 Biennial Inspection of George Washington Bridge
NY Approaches - Trans-Manhattan Expressway Structures**

TUNNELS

Structure Name	LF	Staff Days		
		Task B Inspection	Task C Report Writing	Task C Final Report
178 th Street Tunnel	1,700	4	0.5	0.50
179 th Street Tunnel	1,700	4	0.5	0.50
TOTAL		8	1	1.00

BUILDING SOFFITS AND FASCIAE

Structure Name	Staff Days		
	Task B Inspection	Task C Report Writing	Task C Final Report
Air Rights Building Nos. 1 through 4	8	2	0.50
TOTAL	8	2	0.50

GWB BUS STATION & NERVI TRUSS

Structure Name	Staff Days		
	Task B Inspection	Task C Report Writing	Task C Final Report
Bus and Parking Levels Slabs	10	3	1.00
Inspection of Metal Soffit under the Bus Station	6	2	0.50
Nervi Truss (Reinforced Concrete)	4	2	0.50
TOTAL	20	7	2.00

PROJECT TOTALS 163 50 14

Section 3: Staffing

PROJECT MANAGEMENT & STAFFING

WSP PROJECT TEAM

The WSP Project Team proposed for this project is shown on the Organization Chart located in this section. Our proposed staff and personnel from both sub-consultant firms have successfully worked together on several previous projects, and would use our established working relationships to “hit the ground running” if awarded this project.

Sub-Consultant Participation

WSP is committed to the PA’s MBE/WBE participation goals. For this project we propose utilizing **American Structural Engineering, P.C. as our MBE firm and LGM Consultants as our WBE firm.** As required in our agreement, we will allocate a minimum of 12% of the total contract labor cost to American Structural Engineering and a minimum of 5% of the total contract labor cost to LGM Consultants. American Structural Engineering and LGM Consultants will provide personnel to assist in both the field inspection and the report preparation tasks.

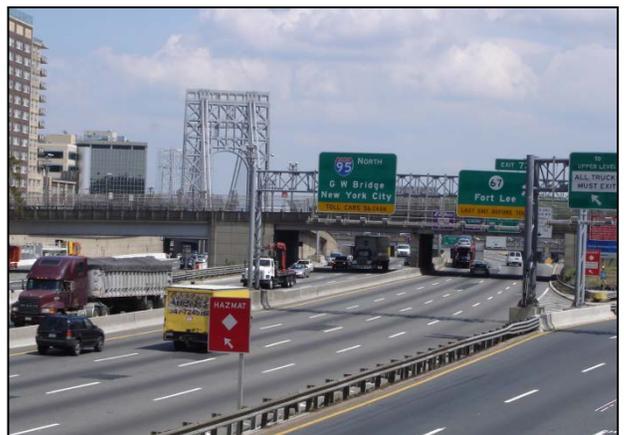
WSP Staff

WSP proposes a staff that offers both continuity of experience with Port Authority Biennial Inspection Projects as well as “fresh eyes” to not only re-evaluate known conditions, but to document previously unidentified conditions.

Our designated Principal-In-Charge, Project Manager and Quality Control Engineer have worked together on numerous previous projects for the Port Authority. All three individuals will work together to ensure that the appropriate level of effort is used for the field inspection and that all required submissions throughout the project meets both Port Authority and WSP standards. Project schedules and invoice submissions will be strictly adhered to and additional staff will be provided as required to meet all deadlines.

Mr. Mosè Buonocore, P.E. our proposed Principal-In-Charge has served in this capacity for all PA inspection projects since 2012 and has served as the Project Manager for every PA inspection project for a nineteen year period from 1993 through 2011. His vast experience and oversight will ensure timely provision of staff resources to complete the project on schedule.

Mr. David Althaver, P.E. our proposed Project Manager has successfully managed the Biennial Inspection and Condition Survey of all 6 projects awarded to WSP between 2012 and 2014 including the GWB NJ Approach Structures in 2013. He has previously served as the Site Coordinator/Team Leader for the inspection of the Lincoln Tunnel NY Approach Roadway Bridges and On Grade Sign and Lighting Structures in 2011 and as the Quality Control Engineer for the NJ Marine Terminal Bridges in 2014, the JFK Terminal Bridges in 2012 and the GWB NJ Approach Structures and the PATH Hackensack River Bridge in 2013 and is thoroughly familiar with the requirements and high expectations of the Authority. Having previously served the PA as the Lead Team Leader, the Quality Control



Engineer and the Project Manager, Mr. Althaver provides the PA the unique experience to fully understand all aspects and requirements of this project. Mr. Althaver will oversee the entire project staff and sub-consultants, and will serve as a liaison with the PA on all critical issues.

Mr. Robert Kemp, P.E. our proposed Quality Control Engineer has successfully served in this capacity for the majority of our previously completed PA projects. He completely understands the PA's requirements for inspection and reporting. He will be the initial contact for the Team Leader when any critical or immediate conditions are found during the course of the inspection. He will review field work with the inspection teams during the project and will review all NYSDOT Biennial Inspection Reports and the Authority's Condition Survey Report before any submissions are made to ensure the PA a high quality product.

Key Inspection Staff

WSP will assign one Team Leader to serve as the Site Coordinator for all inspection teams, sub-consultants and subcontractor personnel at the bridge site each day. This individual will supervise the activities of all other inspection teams and will oversee MPT and other subcontractor operations connected with the inspection.

In the event that the PA assigns more than one project to WSP this year, we would assign a different individual to serve as the Site Coordinator for each project, unless the projects are at the same facility or are progressed during different months. WSP's staff includes several individuals who are experienced at serving in this capacity, and are available for assignment to PA projects.

Mr. Mark Paoline, P.E. our proposed Site Coordinator/Team Leader has successfully served in this capacity in 2014 and 2012 for the Biennial Inspection of the JFK International Airport Terminal Bridges and in 2011 for the Condition Survey of the Staten Island Bridges On-Grade Sign and Lighting Structures. He is thoroughly familiar with and experienced in all of the PA's requirements for Biennial Bridge/Sign/Lighting projects, including inspection and report procedures, coordinating with facility and sub-consultant staff, scheduling equipment and MPT, etc. Because site security, MPT and other inspection activities are critical to the successful completion of this inspection project, Mr. Paoline will serve as the Site Coordinator for all inspection activities, including additional inspection teams, coordination and deployment of lane closures, special access equipment, permits, etc.

Mr. Bruce Woogen, P.E. our proposed Team Leader has over 30 years of experience in the inspection, design, load rating and construction of highway and railroad bridges. He has previously served as a Team Leader for the GWB New York Approaches Henry Hudson and Trans-Manhattan Expressway Structures in 2009 and most recently served as Team Leader for the NJ Marine Terminal Bridges in 2014. He is completely familiar with all NYSDOT and Port Authority requirements concerning field inspection and report preparation.

Mr. Mitesh Patel, P.E. our proposed Team Leader, American Structural Engineers, possesses over 19 years' experience in bridge inspection and design. He has previously served as a sub-consultant Team Leader to WSP in 2011 for the Biennial Inspection of the New York Approach Structures to the Lincoln Tunnel and the Condition Survey of the Staten Island Bridges On-Grade Sign and Lighting Structures. He has also worked as a Team Leader on long span bridges in NYC including the Brooklyn and Queensboro bridges.

In addition to the above Key Staff, the resumes of all proposed personnel that would be assigned to this project are included in the “Staffing” tab of this proposal.

During the last twenty-two years, WSP has gained valuable experience which will be utilized to execute the 2015 Biennial Inspection of the GWB New York Approach Roadway Structures in the most efficient manner. We are completely familiar with the procedures (having just completed the Biennial Inspection of the GWB New Jersey Approach Structures in 2013) and have previously obtained entry/work permits from Conrail, New Jersey Turnpike, Coast Guard, NJDOT, and NYCDOT. In addition to having previously obtained the said permits, WSP has also coordinated day to day field inspection activities with facility personnel and SEMAC - the Port Authority’s own construction forces. We are experienced with all of the PA security protocols (including the need for all personnel to obtain a SWAC security clearance and ID badges) for personnel clearance and site access.

In summary, WSP is confident that our highly experienced and capable technical staff along with our proven Project Management and Quality Assurance procedures will allow us to efficiently complete the biennial inspection and condition survey services required in this RFP.

2015 – Biennial Inspection of the GWB New York Approach Roadways
Trans-Manhattan Expressway Structures and On-Grade Sign & Lighting Structures

THE PORT AUTHORITY OF NY & NJ

PRINCIPAL-IN-CHARGE
Mosé Buonocore, P.E. (W)

PROJECT MANAGER
David Althaver, P.E. (W)

QUALITY ASSURANCE & CONTROL
Robert Kemp, P.E. (W)

SITE COORDINATOR/TEAM LEADER
Mark Paoline, P.E. (W)

TEAM LEADERS
Bruce Woogen, P.E. (W)
Mitesh Patel, P.E. (ASE)

ASSISTANT TEAM LEADERS
Matthew Greer (W)
Amer Mohammed (ASE)
Anthony Guzzo (LGM)

***ADDITIONAL STAFF AVAILABLE
(if required)**
Albert Ari, P.E. (W)
Yvonne Choubah (W)

DESIGN SERVICES/RATINGS
Phil Bousader, P.E. (W)
Structural Engineer
Walid Najjar, Ph.D., P.E. (W)
Load Rating
Anthony Guzzo (LGM)
CAD Drafter

Team:
Prime: WSP - (W)
MBE: American Structural Engineering, P.C. - (ASE)
WBE: LGM Consultants – (LGM)



David Althaver, P.E. Project Manager



Professional Qualifications

P.E. - New York, 2000
P.E. - New Jersey, 1999
P.E. - Delaware, 1998
P.E. - Virginia, 1999
P.E. - Pennsylvania, 2013

Education

BS, Civil Engineering
Manhattan College, 1991

Technical Courses

NYSDOT Highway Bridge
Inspection Refresher
Training, 2013

FHWA/NHI 130055 Safety
Inspection of In-Service
Bridges, 1996

NYSDOT Methods of
Bridge Inspection, 2001

FHWA/NHI 150053,
Bridge Inspection
Refresher Course, 2012

FHWA/NHI 130078,
Fracture Critical
Inspection Techniques,
Steel Bridges, 2005

FHWA/NHI 130087,
Inspection & Maintenance
of Ancillary Highway
Structures, 2015

Years with WSP: 8

**Years with Other Firms:
15**

Mr. Althaver has over 23 years of experience in the inspection, load rating and emergency repair design of several hundred highway and railroad bridges including numerous sign and high mast lighting structures. He has successfully served in all engineering roles from Assistant Team Leader to Project Manager throughout his career and is completely familiar with the bridge inspection and rating procedures of AASHTO, NYSDOT and NJDOT. He has also developed emergency repair drawings for the Port Authority of NY & NJ when conditions were discovered during the biennial inspections that warranted immediate repairs to ensure the safety of the public.

Mr. Althaver has worked extensively with multiple clients including NJDOT, NYSDOT, NJ Transit, the Port Authority of NY & NJ and the TBTA and will use this vast experience and knowledge to efficiently manage the bridge, culvert or sign structure inspection project from beginning to end and ensure each client a high quality product, on schedule and under budget.

Project Experience

- **Project Manager/Quality Control Engineer – 2013 Biennial Inspection of the George Washington Bridge New Jersey Approaches, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager and QC Engineer for the Biennial Inspection of 19 roadway bridges, 1 pedestrian bridge and several retaining walls, lighting and sign structures located at the New Jersey Approach Roadways to the George Washington Bridge. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.

- **Project Manager – 2014 Biennial Inspection of the JFK Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the 2014 Biennial Inspection of the JFK Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority of New York and New Jersey to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority format. Mr. Althaver was responsible for all scheduling, invoicing and coordination with the client as well as ensuring that all project deliverables were submitted on schedule.

- **Project Manager/Quality Control Engineer – 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager/Quality Control Engineer for the Biennial Inspection of the New Jersey Marine Terminal Bridges. Work involved the inspection of seven structures (Nos. 3800003, 3800073 in Port Newark, and 3800067, 3800068, 3800069, 3800070 and 3800075 in Port Elizabeth). WSP's inspection team verified the status of any previously recommended priority repairs for each structure; submitted a NJDOT Biennial Inspection Report for all bridges and a Condition Survey Report in Port Authority format. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.

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- **Project Manager/Quality Control Engineer – 2013 Biennial Inspection of the PATH Hackensack Bridge, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the inspection and gusset plate load rating for the PATH Hackensack River Bridge. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager – 2013 Biennial Inspection of the Holland Tunnel Sign & Lighting, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager for the Holland Tunnel Sign & Lighting. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager – 2013 – 2015 In-Depth Inspection and Load Rating of Undergrade Railroad Bridges, NJ Transit**

Mr. Althaver was the Project Manager for the in-depth inspection and load rating for 38 undergrade railroad bridges throughout northern New Jersey for NJ Transit. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Project Manager/Quality Control Engineer – 2012 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ**

Mr. Althaver was the Project Manager/Quality Control Engineer for the 2012 Biennial Inspection of the John F. Kennedy Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority of New York and New Jersey to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority format. He was responsible for all scheduling, invoicing and coordination with the client as well as the review of all reports, letters and deliverables required to be submitted to the client throughout the project.
 - **Site Coordinator/Team Leader- 2011 Biennial Inspection of the Lincoln Tunnel New York Approach Roadways & On-Grade Sign & Lighting Structures, Port Authority of NY & NJ**

Mr. Althaver inspected 11 of the 23 bridges and over 130 sign and lighting structures included in this project. He was responsible for all scheduling and field supervision of the additional inspection teams (including participation from 2 sub-consultants) and coordination with all equipment vendors and Port Authority facility personnel throughout the project. NYCDOT lane closure permits were applied for and acquired and an Amtrak temporary access permit was applied in order to inspect a few of the structures.
 - **Quality Control Engineer- Biennial Inspection of the Gowanus Expressway Viaduct and Related Ramp Structures, Brooklyn, NY, NYSDOT Region 11 (2007 – 2014)**

Mr. Althaver was the Quality Control Engineer for the 2013 – 2014; 2011 – 2012; 2009 – 2010; and 2007 – 2008 biennial inspection cycles for the 322 span Mainline Gowanus Expressway Viaduct and 22 related ramp structures. Mr. Althaver was responsible for the review and submission of over 1,000 safety and structural flags issued during the course of the inspection. He was also responsible for the review and submission of all ramp and mainline reports in addition to addressing all NYSDOT main and regional office comments.



Robert Kemp, P.E. Quality Control Engineer

Mr. Kemp's well-rounded background is the result of his extensive involvement in all aspects of bridge inspection and design. His experience in the office with the preparation of reports and design documents combined with his field experience in both in-depth and biennial inspections give him a comprehensive perspective which he applies to each assignment. Mr. Kemp is presently the Quality Control Engineer for our Triborough Bridge & Tunnel Authority and Port Authority projects. Additionally, Mr. Kemp is assisting with the preparation of advanced detailed plans for the emergency repair contract of the Gowanus Expressway Viaduct for the NYSDOT.

Professional Qualifications

P.E. New York, 1992

Education

BS, Civil Engineering Syracuse
University, 1980

BS, Forest Engineering College of
Environmental Science &
Forestry, Syracuse, 1980

Technical Courses

FHWA/NHI Course No.130055 –
Safety Inspection of In-Service
Bridges, 2013

NYSDOT - Highway Bridge
Inspection Refresher Training
Course , 2012, 2010

NYSDOT – Behavior, Failure
Mechanisms and Inspection of
R/C and Prestressed Concrete
Bridges, 2010

Federal Bridge
Inspection/Fracture Critical
Members Workshop, 2009

Load and Resistance Factor
Rating for Highway Bridges, 2006

NYSDOT Bridge Inspection
Workshop, 1993

Years with WSP: 34

Years with Other Firms:

0

Project Experience

■ Quality Control Engineer – 2010 Biennial Inspection of John F. Kennedy Roadway Bridges, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the biennial inspection of the JFK Roadway Bridges. The purpose of the condition survey was to determine the overall condition of these structures and to identify all structural and non-structural deficiencies. The field work included a thorough visual inspection of all structural and related elements with 100% hands-on inspection performed on all non-redundant, fracture critical members and fatigue prone details in accordance with the latest requirements of the NBIS and Federal Highway Administration.

■ Quality Control Engineer – 2014 & 2010 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ

Mr. Kemp was Quality Control Engineer for the biennial inspection of the JFK Terminal Bridges. The inspection was performed to identify structural defects, potential problems and areas of concern as part of a continuing effort by the Port Authority to evaluate the integrity of its structures and to warrant the safety and continuing service to the traveling public. WSP provided the Authority with a NYSDOT Biennial Report and a Condition Survey Report in Port Authority's format.

■ Quality Control Engineer – 2005 Biennial Inspection of the Upper Level of the George Washington Bridge, New York, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the Biennial Inspection of this steel suspension bridge spanning the Hudson River between New York City and Fort Lee, New Jersey. Included was the preparation of a Biennial Inspection Report for submission to NYSDOT and a Condition Survey Report for in-house Port Authority use that included immediate, priority and routine repair recommendations.

■ Quality Control Engineer – 2007 Condition Survey of the George Washington Bridge New Jersey Approach Roadways, Port Authority of NY & NJ

Mr. Kemp was the Quality Control Engineer for the condition survey of the New Jersey Approach Roadway Bridges at the George Washington Bridge. The inspection consisted of 17 highway bridges, 1 pedestrian bridge, the Main Toll Building over I-95 Northbound, the Eastbound and Westbound Tunnels, and 13 retaining walls including the median concrete barrier located on the New Jersey Approach to the George Washington Bridge in the Borough of Fort Lee, New Jersey. Work incorporated all mounted sign structures and light standards into the inspection effort. A NJDOT Biennial Inspection Report and a Condition Survey Report according to Port Authority's format were submitted. The inspection recommended 63 safety repairs at 134 locations and 303 routine repairs at

2,126 locations. The reports contained conclusions concerning the causes of the noted deterioration and recommendations for the rehabilitation of the structures.

■ **Quality Control Engineer – Holland Tunnel Sign & Lighting Structure Inspection, Port Authority of NY & NJ (2013)**

Mr. Kemp was the Quality Control Engineer for the inspection of 246 light poles, high mast lighting structures and sign structures located on the New York and New Jersey Approaches to the Holland Tunnel. In this role, Mr. Kemp was also responsible for identifying structural and non-structural deficiencies and making recommendations for repair, as well as a condition report review and a review of all reports and deliverables to the client.

■ **Quality Control Engineer – 2011 Biennial Inspection of the Lincoln Tunnel New York Approach Roadways and On-Grade Sign and Lighting Structures, Port Authority of NY & NJ**

Mr. Kemp was Quality Control Engineer for the biennial inspection of 23 bridges and over 130 sign and lighting structures. The inspection included: multi-girder; single and continuous span bridges, tunnels and retaining walls, and light poles. Data was compiled to create inspection reports in word and excel file documents for the NYSDOT and Port Authority of NY & NJ.

■ **Quality Control Engineer - Triborough Bridge & Tunnel Authority Biennial Inspection & Design of Miscellaneous Structural Repairs:**

- 2013/2009/2005/1999 Biennial & 2014/2010/2006/2000 Special Inspection Bronx-Whitestone Bridge
- 2012/2008/2004/2000 Biennial & 2013/2009/2005/2001 Special Inspection of the Verrazano-Narrows Bridge
- 2011/2007/2001 Biennial & 2008/2002 Special Inspection Throgs Neck Bridge
- 2010 Biennial & 2011 Special Inspection Robert F. Kennedy Bridge (Triborough)
- 2006/2002 Biennial & 2007/2003 Special Inspection Triborough Bridge Mainline

■ **Quality Control Engineer – Newport Pell Bridge Inspection, RITBA, Newport, RI (Ongoing)**

Mr. Kemp is the Quality Control Engineer for this on-going inspection of the Newport-Pell Bridge, an 11,248 foot long structure which includes a suspension bridge section consisting of a 1,600 foot long main span and two 687 foot long side spans. The remainder of the bridge consists of various superstructure types including continuous and simply supported steel deck truss spans, built-up steel plate girder spans, steel multi-stringer spans and prestressed concrete beam spans. Responsibilities include assisting in the management of this on-call engineering contract, visiting the teams performing inspections of all portions of the structure to ensure client specifications are being followed and review of detailed inspection reports including repair and maintenance recommendations with estimated costs required to maintain the structural integrity and lifespan of the bridge.

■ **Quality Control Engineer – 2008, 2012 Biennial & 2009, 2013 Special Inspection – Ben Franklin Bridge, Delaware River Port Authority**

Mr. Kemp was Quality Control Engineer for the inspections of the Ben Franklin Bridge in accordance with NJDOT, PennDOT and DRPA requirements. Work was coordinated and completed during extensive rehabilitation and painting contracts. Included in-depth inspection, summary report, DOT inventory updates, load rating review and update of work/maintenance schedules.



Mark Paoline, P.E.

Site Coordinator/Team Leader

Mr. Paoline is a Team Leader successful in the completion of bridge inspection projects. He has extensive knowledge with the condition inspections of short span, long span and movable bridges, as well as the design of bridges, subways and special structures. He has inspected bridges for the Triborough Bridge & Tunnel Authority, PANY&NJ, NYSDOT, and NJDOT

Project Experience

- **Site Coordinator/Team Leader – 2014 & 2012 Biennial Inspection of John F. Kennedy Terminal Bridges, Port Authority of NY & NJ**

Mr. Paoline was the Site Coordinator/Team Leader for the Biennial Inspection of 14 roadway bridges, 15 pedestrian bridges, 1 canopy structure and 447 sign and lighting structures located at JFK International Airport for the Port Authority of NY & NJ. Inspection reports in Port Authority format as well as New York State DOT format were submitted. Mr. Paoline was responsible for coordination with Port Authority airport personnel, Airtrain personnel, terminal tenants and airport Police required for the use of inspection equipment, for his own inspection team as well as a sub-consultant's inspection team. Inspection equipment included 35' bucket trucks, a 55' man-lift, and 25' and 45' scissor lifts. Coordination of the Maintenance and Protection of Traffic sub-consultants for traffic lane closures.

- **Site Coordinator/Team Leader – 2011 Inspection of the Staten Island Bridges, and On-Grade Sign & Lighting Structures, Port Authority of NY & NJ**

Mr. Paoline performed a condition survey of the On-Grade Sign and Lighting Structures at the Goethals and Bayonne Bridges and the Outerbridge Crossing. This hands-on inspection project consisted of 75 sign structures, 24 high mast light towers, 183 light poles, and 6 surveillance cameras. Coordination with facility personnel and Police was required for the use of a 35' bucket truck, 55' and 125' manlifts, and lane closures.

- **Team Leader – 2002 Biennial Bridge Inspection JFK Airport Terminal Ramp Bridges, NY, Port Authority of NY & NJ**

Mr. Paoline was Team Leader for the Inspection of JFK Airport Terminal Ramp Bridges for the Port Authority. Mr. Paoline was responsible for the preparation of the biennial inspection reports, condition survey report and all inspection notes and photographs for Port Authority in-house use. Access to most structures was gained with a 30' bucket truck. Higher areas required the use of a 65' bucket truck. Lane closures were in accordance with Authority and facility requirements.

- **Team Leader – 1993 Biennial Bridge Inspection of the Goethals Bridge Approach Roadway, Port Authority of NY & NJ**

Mr. Paoline was Team Leader for this biennial inspection, heading a 3 man crew. The Goethals Bridge is 7,413 feet long and connects Howland Hook, Staten Island to Elizabeth, New Jersey. The Goethals N.J. approach is comprised of forty-four girder floorbeam stringer simple spans supported on concrete piers. The main span measuring 1,152 feet is a series of truss spans consisting of anchor, cantilever, and suspended spans. The field work included hands-on inspection of all fatigue prone and non-redundant components.

Professional Qualifications

P.E., New York
P.E. New Jersey

Education

MS, Structural Engineering
New Jersey Institute of Technology

BS, Civil Engineering
New Jersey Institute of Technology

Technical Courses

NYSDOT, Highway Bridge Inspectors Refresher Training, 2013

NYSDOT, Ethics for Engineers, 2013

NHI 130053 Bridge Inspection Refresher Training, 2012

NYSDOT Methods of Bridge Inspection, 2001

FHWA/NHI, 130055, Safety Inspection of In-Service Bridges, 1994

Professional Affiliations

ASCE
Metropolitan Section Board Director & Treasurer – Structures Group Chair

Years with WSP

5

Years with Other Firms:

35

- **Team Leader – 2012 & 2010 Biennial/Interim Inspections of the Gowanus Expressway Viaduct and Ramps, Brooklyn, NY, NYSDOT**
Mr. Paoline served as a Team Leader for the NBIS Inspection of the 322 span (3.8 mile) elevated Gowanus Expressway Viaduct (I-278). Mr. Paoline was involved with the on-going critical condition monitoring program at 600 +/- locations on the viaduct. His duties included extensive planning and daily coordination with DOT personnel, contractors, police municipal boards, etc. for special access methods and lane closures.
- **Team Leader – 2012 & 2011 Biennial/Interim Bridge Inspections for New York State Department of Transportation, Region 8**
Mr. Paoline served as a Team Leader for the biennial/interim inspections of 41 bridges and In-depth/biennial inspections of 2 bridges, in several counties, in 2012, and of 19 bridges and In-depth inspections of 17 bridges, in 2011, providing structural evaluation and condition rating in accordance with NYSDOT specifications. Access to most structures was gained with a 35' bucket truck and UBIU. Lane closures were in accordance with NYSDOT and NYS Thruway Authority requirements.
- **Team Leader – 2003 Biennial Inspection Verrazano-Narrows Bridge Ramp F, TBTA**
Mr. Paoline was Team Leader for this inspection effort. The bridge not only connects Brooklyn with Staten Island, but is also a major link in the interstate highway system, providing the shortest route between the middle Atlantic states and Long Island. Access methods included high lifts, bucket trucks, underbridge inspection units, free climbing, necessary M & PT. NYSDOT report, TBTA Summary and Paint Reports, UBEIS database and steel and concrete details vulnerability assessment.
- **Coordinating Team Leader – 1993 Biennial Inspection of the Throgs Neck Bridge, TBTA**
Biennial inspection of this 13,400-foot long suspension span bridge. The structures include a main suspension span of 2,900 feet between abutments and approach spans totalling 10,500 feet. The bridge carries 6 lanes of traffic over Long Island Sound and East River. Lead by Mr. Paoline, a total of two 3-man inspection teams were required to complete the inspection. Work included the inspection of Fracture Critical members. A variety of access methods were used, including barge with high lift, UBIU, bucket trucks and free climbing techniques were employed to complete inspection operations.
- **Team Leader – 54 On & Off-System County Owned Bridges, Essex County, NY, NJDOT (2009)**
Mr. Paoline was Team Leader of a 2 man crew for the biennial and interim inspections and reports of 54 On & Off-System County owned bridges.
- **Team Leader – Two Movable Bridges in Suffolk County, NY, Nassau County DPW (2009)**
Mr. Paoline was Team Leader of a 3 man crew and electrical/mechanical crews for eh bridge inspection and reports for two movable bridges in Suffolk County.
- **Team Leader – Two Movable Bridges in Nassau County, NY, Nassau County DPW (2009)**
Mr. Paoline was Team Leader of a 3 man crew and electrical/mechanical crews for the bridge inspection and reports for two movable bridges in Nassau County.



Bruce Woogen, P.E.

Team Leader

Mr. Woogen has over 32 years of managerial, bridge inspection, design and load rating experience with WSP and other firms. He has served in varying capacities including Project Manager, QC Engineer, and Team Leader for the inspection, design, and construction of highway and railroad bridges. He has led bridge inspections on numerous types of bridges ranging from culverts to multi-span truss structures. Projects have included in-depth bridge inspections and load ratings, as well as pin testing, retaining wall inspection, and gusset plate analysis.

Professional Qualifications

PE – New York, 1987
PE – New Jersey, 1983
PE – Connecticut, 1992
PE – Virginia, 1997
PE – Florida, 1998

Education

MS, Civil Engineering
New Jersey Institute of
Technology, 1983

BS, Civil Engineering
Syracuse University, 1977

Certifications

FHWA/NHI 13055, Safety
Inspection of In-Service
Bridges, 2014

NYSDOT, Bridge
Inspectors Meeting
Inspection Refresher,
2013 & 2015

NYSDOT, Behavior,
Failure Mechanisms &
Inspection of R/C &
Prestressed Concrete
Bridges, 2010

Years with WSP

12

Years with Other Firms:

20

Project Experience

- **Site Coordinator/Team Leader – 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges, Port Authority of NY & NJ**

Mr. Woogen was the Team Leader for the Biennial Inspection of the New Jersey Marine Terminal Bridges. Work involved the inspection of seven structures (Nos. 3800003, 3800073 in Port Newark, and 3800067, 3800068, 3800069, 3800070 and 3800075 in Port Elizabeth). Mr. Woogen verified the status of any previously recommended priority repairs for each structure; submitted an NJDOT Biennial Inspection Report for all bridges and a Condition Survey Report in Port Authority's format. 100% hands-on Inspection work was done on all fracture critical and non-redundant members in accordance with the latest requirements of FHWA/NBIS and NJDOT bridge inspection programs. Access was gained in coordination with various PANY&NJ, Conrail and NJ Turnpike Authority personnel. Access included extension ladders, and a 30' and 55' bucket truck. Lane closures were necessary on the New Jersey Turnpike for Bridge Nos. 3800069 and 3800070.

- **Team Leader – 2009 Biennial Inspection of the George Washington Bridge New York Approach – Henry Hudson Ramps, Port Authority of NY & NJ**

This inspection, for which Mr. Woogen was a Team Leader, consisted of 17 ramps and 9 retaining walls. In addition, all bridge mounted sign and lighting structures were inspected. The purpose of the condition survey was to determine the overall condition of these structures and to identify all structural and non-structural deficiencies surveyed. All structures received a full visual inspection with a 100% hands-on inspection of all non-redundant, fracture critical members, fatigue prone details and/or the encasement of such elements. Access was obtained by extension ladders, bucket trucks, manlifts up to 110 feet and lane closures with shadow vehicles and arrow board. Coordination with Port Authority personnel and maintenance and protection of traffic was a major component of this project.

- **Team Leader – 2009 Biennial Inspection of the George Washington Bridge Trans-Manhattan Expressway Structures, Port Authority of NY & NJ**

Mr. Woogen was Team Leader for this biennial inspection, which included 11 bridges, 2 retaining walls, soffits for Air Rights Building Nos. 1 through 4, as well as the abandoned 178th and 179th Street tunnels. In addition, all bridge mounted sign and lighting structures were inspected. All structures received a full visual inspection with a 100% hands-on inspection of all non-redundant, fracture critical members, fatigue prone details and/or the encasement of such elements. The majority of the inspection was performed during the night hours due to traffic volumes. Access was gained through access doors and 35' and 55' bucket trucks.

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- **Project Manager/Quality Control Engineer - Routine, Verification, and In-Depth Inspection and Load Rating of 200 Metro-North Railroad Undergrade Bridges on the New Haven, Mainline, Danbury, New Canaan and Waterbury Branches, ConnDOT, 2006 – 2014**

Mr. Woogen served as Project Manager / Quality Control Engineer for 4 consecutive 2-year cycles of bridge inspection. The 2-year cycles have included different types of inspections, and have included Load Ratings, Underwater Inspection, Mechanical/Electrical Inspection of Movable Bridges, Ultrasonic Pin Testing, and the inspection of retaining walls and towers. The bridges carry Metro-North tracks on the New Haven Line, the Waterbury Branch, the Danbury Branch and the New Canaan Branch in Connecticut. The New Haven line tracks are electrified with a Catenary system. This work also included the oversight and review of the level 1 load ratings, including fatigue analysis for these bridges. Mr. Woogen oversaw all work according to ConnDOT, AREMA and NBIS standards.
 - **Team Leader – Biennial Bridge Inspection of Region 8 Bridges, NYSDOT (2011 - 2013)**

Mr. Woogen was the Team Leader for the NYSDOT Region 8 2010-2011 & 2012-2013 Biennial & Interim Inspections in Columbia, Dutchess, Orange, Putnam, Rockland, Ulster and Westchester Counties. Mr. Woogen provided structural evaluation and condition rating in accordance with NYSDOT specifications. A major component of these projects has been the inspection of railroad overhead bridges. In Region 8, which includes seven counties in the Mid-Hudson Valley, approximately 100 railroad overhead bridges were inspected per year. During the past four years alone, WSP performed the inspection of 400 railroad overhead bridges in Region 8. 95% of these overhead bridges cross Metro-North Railroad's Harlem, Hudson, New Haven, Beacon and Port Jervis Lines. Inspections for the Metro-North overhead bridges were typically conducted in groups twice a year, with one group including the New Haven Line bridges. The NHL bridges required track outages and catenary de-energization, and were therefore conducted at night
 - **Team Leader – 2008 & 2004 Biennial & 2005 Special Inspection of the Verrazano-Narrows Bridge, TBTA**

Mr. Woogen was a Team Leader for the inspection and analysis of the world's seventh longest suspension span bridge. The suspension structure is 1.25 miles between anchorages and carries dual deck levels. Access consisted of a variety of means including high lifts, bucket trucks, underbridge inspection units, free climbing, and necessary MPT. Fieldwork included the hands-on inspection of all fatigue prone and non-redundant components. The main suspension span of the bridge, which consists of 86 panels, was inspected utilizing an underbridge manually operated traveler. Also responsible for NYSDOT and steel and concrete vulnerability assessment report preparation, as well as TBTA narrative, paint, and database submittals.
 - **Team Leader – 2006 Biennial Inspection of the Robert F. Kennedy Bridge, TBTA**

Mr. Woogen was Team Leader for the biennial inspection and load rating of the Mainline Viaduct, Bronx Kill Truss Crossing, and the main suspension bridge connecting the boroughs of the Bronx, Manhattan, and Queens. The inspection effort involved 150+ spans in a busy urban locale using a variety of access equipment consisting of high lift bucket trucks, manlifts, rigging, and maintenance and protection of traffic. His duties included extensive planning and daily coordination with TBTA personnel, contractors, police, municipal boards, etc. for special access methods and lane closures.

Mitesh Patel, P.E.

Team Leader

EDUCATION: 1990-1994, Saurashtra University, India
Bachelor of Science, Civil Engineering

TRAINING: NYSDOT Bridge Inspection Refresher 2013
NHI-130055 (Safety Inspection of In-Service Bridges) 2013
NYSDOT Bridge Inspection Workshop 2010

PROFESSIONAL LICENSE/REGISTRATION:

New York, PE [REDACTED]
Connecticut, PE [REDACTED]

EXPERIENCE: Mr. Patel has over 19 years of experience in Design and Analysis of the Steel and Concrete structures, Bridge Inspection, In-Depth Inspection, Load Rating, His ability to design gives him an edge during inspection to understand the member condition and mentally analyze the impact of the deterioration notices. Mr. Patel has been performing good inspections and is well versed in use of computer software and BIPPI. He performed design, analysis and quantity estimation of the flag repairs for the Gowanus Viaduct. He is well conversant with NYSDOT Standards, Procedures and Requirements. Mr. Patel has completed NYSDOT Bridge Inspection Workshop and NHI Safety Inspection of In-Services Bridges Course.

- 04/13-Present *American Structural Engineering, P.C.* New York, NY
Team Leader for **Queensboro Bridge** a cantilever truss bridge Biennial inspection. responsible for performing Biennial Inspection, preparation of reports, inspecting all active structural and safety flags, inspecting critical and special emphasis members and updating inventory. Performed inspection work on Manhattan and Queens Approaches, Abutment, Piers, and Truss Members of the entire bridge. (NYSDOT) (4/2014-11/2014)
- 07/13-11/13 *Weidlinger Associates, Inc.* New York, NY
Team Leader for **Brooklyn Bridge** Special inspection. Inspected and issued over 200 structural flags for the deficient members at the main and approach spans.
- 11/08-03/13 *AI Engineers, Inc.* New York, NY
Brooklyn Bridge, Senior Design Engineer (Skanska), Performed field verification of structural flag repair drawings, at main spans and side spans, for any constructability issues due to existing field condition. Inspected upper and lower level catwalk. Performed field measurements and prepared shop drawings for repair or replacement of catwalk deficient members.
Team Leader for Biennial inspection on the main line of the **Gowanus Viaduct and Ramp** structures total over 350 spans, prepared BIPPI reports, updated inventory and detail sketches. Also, performed In-Depth Stringer ends inspection over 400 locations for Mainline of Gowanus Viaduct. Performed inspection on the high section requires 130 feet man lift, coordination with contractors, and substantial MPT lane closures. (NYSDOT) (2010-2012)
Team Leader for Biennial inspection on the **Lincoln Tunnel Ramp structures** in New York. (PA NY/NJ, 2011)
Team Leader for the sign structures inspection on **Bayonne Bridge and Goethals Bridge** approaches including report writing. Project included inspection of 260 structures. (PA NY/NJ, 2011)
Team Leader for Biennial inspection on the **Verrazano Bridge Ramp structures**. Prepared inspection reports including updated rating database, bearing measurements. (MTA TBTA, 2010)

Mitesh Patel, P.E.

Team Leader

Team Leader/Load Rating Engineer for Biennial/Interim inspection on various bridges in **New York County**, submitted flag reports, BIPPI reports, updated inventory in Region 11. Inspected over 500 spans including GWB ramp structures, FDR Viaduct and Battery Park tunnel. Performed web crippling calculations for stringers web condition, load rating and load posting calculations for low rated bridges. (NYSDOT, 2009-2010)

Design Engineer for preparation of Flag repair for the steel structural deficient members (i.e. stringers, floor beams, girders, bearings, etc.) on **Gowanus viaduct**. Prepare/review design plans, quantity estimates for the flag repairs. (NYSDOT, 2009)

Team Leader for In-Depth Inspection of Woodbury Viaduct, Bridge MP 50.17 JS, know as Woodbury Viaduct, is a ten span, steel deck girder structure with an open deck and a total bridge length of approximately 590 feet.. It was built in 1907 and is located in Woodburry, New York. The viaduct crosses over New York State Route 32 in Span 5 and Bonny Brook stream in Span 4. The viaduct carries one active track and one abandoned track of Metro North Railroad. Performed in-depth inspection for the Woodbury Viaduct, prepared inspection report and prepared detail sketches which were used for repair detail preparation. (MNR, June 09)
Brooklyn/Kings County (NYSDOT), Assistant Team Leader, Inspection of Bridges in the Kings County. (December, 2008)

02/05-11/08 **Freeland and Kauffman, Inc.** Greenville, SC
Civil Engineer for preparation of civil site work development plans including site layout, grading, erosion control, and utilities; Stormwater runoff calculations for retention pond routing/sizing, stormdrain routing/sizing, erosion and sedimentation control; earthwork quantity takeoffs; Research and implement local, state, and federal regulations pertaining to the specific project

05/01-07/03 **AECOM (CTE Engineers)** New York, NY
Design Engineer for the new LIRR terminal in Grand Central Terminal as part of the 4.3 Billion **East Side Access Project** for MTA Long Island Rail Road. Design Engineer responsible for conceptual and detail design, includes possibilities of replacement and/or modification of columns, girders, stringers and footings. Responsibilities include design and analysis of existing and new Grand Central Terminal, viaduct structures and associated structural elements using STAAD Pro and RISA. Responsibilities include preparation of design drawings using MicrostationJ (MTA LIRR, 2001-2003)

08/99-05/01 **TRC Engineers (A&H Engineers)** New York, NY
Design Engineer of the following projects:

- **Hope Avenue Bridge, Staten Island, NY (NYCDOT)**
- **Westchester Avenue Bridge, Bronx, NY (NYSDOT)**
- **Congress Street Bridge, Brooklyn, NY (NYCDOT)**
- **Lincoln Road Bridge, Brooklyn, NY (NYCDOT)**
- **Seeley Street Bridge, Brooklyn, NY (NYCDOT)**
- **Forest Hill Road, Staten Island, NY (NYCDDC)**

Design Engineer responsible of the above projects for the design and preparation of the Street Lighting and Traffic Signal Plans, including preparation of the specifications and Engineer's cost estimates



Matthew Greer

Assistant Team Leader

Mr. Greer is a recent graduate with a degree in Civil Engineering and has been hired by WSP as an Assistant Team Leader. He is experienced with BIPPI, Microstation, Inroads, RAM, Microsoft Office and Staad Pro and has most recently been involved in the 2012-2013 NYSDOT Region 8 and 2013 CTDOT/MNRR Bridge Inspection projects.

Project Experience

Education

BSCE, Civil Engineering
University of Connecticut,
2012

Professional Affiliations

UCONN ASCE

Years with WSP

2

Years with Other Firms:

0

Technical Courses

NYSDOT Bridge
Inspection Workshop,
2013

- **Assistant Team Leader – Survey & Inspection of Bridges in Northern New Jersey, New Jersey Transit (2013 - 2014)**

Survey and evaluation of 35 railway bridges in northern New Jersey. Mr. Greer assisted with a variety of hands-on inspection tasks including photographs, field notes, sketches, field measurements and the preparation of inspection reports.

- **Assistant Team Leader – General & In-Depth Inspection of 10 High Elevated Structures, MTA New York City Transit (2013 - 2014)**

WSP was a subconsultant on this project. Mr. Greer assisted with a variety of hands-on inspection tasks including photographs, field notes, sketches, field measurements and the preparation of inspection reports.

- **Assistant Team Leader – Inspection of Metro-North Railroad Bridges, ConnDOT (2013 - 2014)**

Mr. Greer provided assistance during 2013 for the ConnDOT Metro-North Railroad Undergrade Bridge Inspection project. He assisted with inspection tasks including field notes, sketches, photographs and evaluating bridge components as well compiling documentation for the inspection reports. Inspections include hands-on review of a wide range of superstructure configurations, including deck arches; trusses and girders; steel multi-beams; pin and hanger spans; concrete T-beams and slabs; and steel, masonry and concrete culverts. Access equipment requirements range from fiberglass ladders to underbridge inspection units, rail mounted lift trucks, and bridge mounted lifts.

- **Assistant Team Leader – Gowanus Joint Venture, Brooklyn, NY (1993-2013) -- Repair Study of Copes and Connections**

Located and prepared the surface for the test gauges, Installed and wired test gauges, Performed QA on the sensor installations, Scheduled Maintenance and Protection of Traffic, Supervised test vehicles during test, Provided field measurements of the sensor placement.

- **Assistant Team Leader – Region 8 Bridge Condition Inspection Local & State Bridges, NYSDOT (2012 - 2013)**

Inspection of State and local System Bridges for approximately 1,800 bridges in Region 8. Assisted with structural inspections, preparing flag reports and inspection reports using BIPPI. This inspection work included a physical examination, evaluation, and rating of all bridge components, including primary and secondary members, structural deck, substructure units, wearing surface, approaches, railings, and signage.

- **Assistant Team Leader – Design Services for Rehabilitation of Four Bridges over I-95, NYS Thruway Authority (2012)**

In Depth Inspection of 4 bridges over I-95 in Westchester County. Mr. Greer aided in recording In-Depth measurements and structural conditions. He was in charge of coordinating Maintenance and Protection of Traffic, and developing field measurement documents.

Amer I Mohammed

Assistant Team Leader/Construction Inspector

TRAINING: NHI –Prerequisite Assessment for Safety Inspection of In-Service Bridges, 2014
NHI –Introduction to Safety Inspection of In-Service Bridges, April, 2014
Geographical Information Systems (GIS), University of New Haven, West Haven, CT

EDUCATION: 2001- 2005, **Osmania University**, Hyderabad, India, **BS-Civil Engineering**
2006-2008, **University of New Haven**, CT, **MS Civil Engineering** (Environmental)

EXPERIENCE: 03/13-Present *American Structural Engineering, P.C.*

Assistant Team Leader for Biennial Inspection of the Queensboro Bridge (NYSDOT).
Responsible for the inspection of bridge, all active structural and safety flags, critical and special emphasis members, including report writing. (5/14 – 11/14)

09/09-03/12 *JVC Services*

Construction Development - PM/ Coordinator Plan, organize and manage the overall residential and construction development. Oversee material purchasing, scheduling, project budget, building code compliance, project development, quality control. Managed daily project completion and trades coordination, supervised crews of up to 25 carpenters, journeymen drywall hangers, foundation and general laborer personnel.

04/08-08/09 *AI Engineers, Inc.*

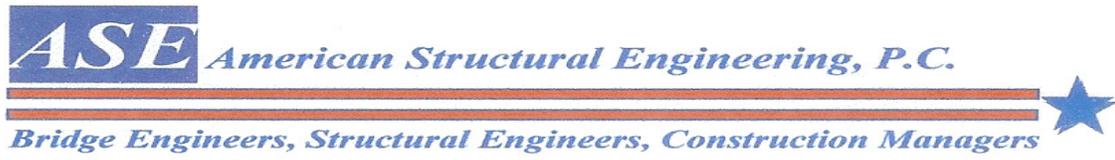
CDOT Biennial Bridge & Sign Structure Inspection (2008-2010) - Assistant Team Leader for inspection of bridges in the states of Connecticut and Rhode Island. Inspected Connecticut complex bridges such as Thomson bridge, Arrigoni bridge, Bascule bridge, Moses Wheeler bridge, Gold star bridge, Commodore Hull bridge, Bridgeport lift bridge. Trained in the inspection of Mast Arm and Overhead Sign support structures.

01/08-03/08 *United International Corporation (UIC)*

Massachusetts Bay transportation authority Load rating project - Load Rating Engineer & Asst. Team Leader in preparing bridge inspection report using BRI 18, 19 and 10. Involved in preparing estimate for Hartford survey project. Assisted in surveying work needed for design and construction of public works project. Responsible for other duties as needed.

05/05-08/06 *KMC Construction*

Widening of six minor bridges along National Highway – Design Engineer widening of six minor bridges along National Highway within the stipulated time. Involved in construction of three spans post stressed concrete girder **bridge** with depth of each girder is 2.5 meters, length 36 meters. Assisted Roadway Engineers in traffic engineering analysis and design. Experience in implementation of construction and maintenance standards. Extensive experience of road



Amer I Mohammed

Assistant Team Leader/Construction Inspector

construction with paved layers of earthwork, sub grade GSB, WMM, DBM, BM, AC and supervised a group of technicians.

COMPUTER SKILLS: Microstation J, Autodesk LDD, MS Office

Anthony Guzzo

Project Assignment: Assistant Team Leader/CAD Drafter
Years of Experience: With This Firm: 2.5; With Other Firms: 2.5
Education: Bachelor Science in Civil Engineering
Stevens Institute of Technology, Hoboken, NJ, 2012
Certification: 40 Hour HAZWOPER Certification, FE Exam (Passed October 2011)
Special Skills: Rock Climbing

Mr. Guzzo is a junior structural engineer with good knowledge in structural/civil and geotechnical engineering. He has solid experience in structural inspection and condition evaluation of buildings and special structures. Mr. Guzzo has also strong CAD drafting skills and the experience in bridge and structural commercial and residential analysis and design.

Port Authority of New York and New Jersey Agreement No. 405-13-007

P.O. 4900009257-2013 Biennial Inspection of the GWB New Jersey Roadway and Retaining Walls

Structural Engineer responsible for report preparation and CADD support for 2013 Biennial Inspection of the GWB New Jersey Roadway and Retaining Walls

Condition Survey of Buildings 105 & 128 at Stewart Airport for the PANY&NJ, Project No. 405-12-014

Junior Structural Engineer responsible for 2012 in-depth inspection, report preparation and CADD support for Condition evaluation of two buildings Stewart Airport

Condition Survey of GWB On-Grade Sign and Lighting Structures for the PANY&NJ, Project No. 405-12-026

Structural Engineer responsible for 2012 in-depth inspection and report preparation for Condition Survey Lighting Structures

Design and Construction Support Services for Various Structural Repairs and Removal of the Tuned Mass Damper at the Bronx Whitestone Bridge, BW-14

Structural Engineer/Assistant Team Leader responsible for special inspection at the Bronx Whitestone Bridge, including inspection of Queens and Bronx Towers, Main Cables, preparation of inspection report and design of various structural repairs

Design and Construction Support Services for Project TN-49, Roadway Deck Rehabilitation/Replacement for the Suspended Spans at the Throgs Neck Bridge

Structural Engineer/Assistant Team Leader for special inspection of at the Throgs Neck Bridge, including roadway deck, sidewalks, railing, stringers, floorbeams, and etc. Participated in preparation of Special Design Brief Report for Suicide Prevention Barrier systems

Design and Construction Support Services for Dehumidification System/Elimination of Water Infiltration at the Throgs Neck Bridge, TN-60

Structural Engineer Structural Engineer/Assistant Team Leader responsible for special inspection of Main Towers and Concrete Piers at the Throgs Neck Bridge. Participated in preparation of inspection report and design of various structural repairs

Engineering Services during Construction Phase, Brooklyn Bridge, Rehabilitation of Approach Spans and Ramps Borough of Manhattan and Brooklyn, NYC DOT

Junior Engineer responsible for preparation of Flag Repair shop drawings for Main and Side Spans

Structural Inspection and Condition Evaluation of Residence affected by Hurricane Irene, 78 Ferncliff Road, Greenwood Lake, New York, 10925

Junior Structural Engineer responsible for condition evaluation, field measurements and report preparation for the existing building damaged during the hurricane.

Miscellaneous Engineering Services, Robert Moses Causeway Bridge over Fire Island Inlet, Spot Bridge Repairs, NYSDOT

Junior Structural Engineer responsible for structural analysis and design of structural lifting operations for bearing replacement. Perform condition inspection and field measurements of the existing wind tongue structure required for design of the temporary wind resistance system.

Consulting Engineering Services, Structural Engineering and Special Inspections, Underpinning of Adjacent Existing Buildings and Temporary Excavation Support System, 323 Park Avenue South, New York, NY

Junior Structural Engineer responsible for condition evaluation and assessment of existing adjacent structures affected by construction of a new 12-story building.

Various Construction Projects, Railroad Construction Company, Paterson NJ

Junior Engineer responsible for take-off estimates for various projects, project management support, and preparation of floor/site plans in AutoCAD. Responsibilities also included condition inspection and evaluation of various structures, field measurements and etc.

Various Projects, Yu & Associates, Elmwood Park NJ

Junior Engineer responsible for soil boring inspection services for geotechnical/environmental purposes (USCS & Bermeister), conducting passive soil gas investigation on behalf of NYSDEC, analysis and documentation of soil contamination data, preparation site investigation reports on behalf of NYSDEC

Various Construction Projects CME Associates, Parlin NJ

Junior Engineer responsible review of site plans for local township ordinance compliance, stormwater management plans and reports, and preparation of drawing details/site plans in AutoCAD



Philippe N. Bousader, PE Structural Engineer

Mr. Bousader brings 25 years of award winning bridge engineering expertise to his role as Chief Engineer at WSP. His experience encompasses infrastructure evaluation, load rating, diagnostics and instrumentation, design, seismic vulnerability analysis and retrofit of complex concrete and steel structures, including segmental precast concrete, curved steel box girders as well as the development of contract plans and specifications. His insight has been successfully applied towards many projects for a variety of clients primarily the City and State departments of transportation, and various toll collecting agencies.

Project Experience

- **Project Engineer - In-Depth Inspection and Load Rating of the PATH Railroad Bridge over Hackensack River, Port Authority of NY & NJ (1997)**

As Project Engineer, Mr. Bousader was responsible for the load rating on this 24-span, 3,020 riveted steel and concrete structure. Load ratings were conducted per AREMA specifications for Cooper E80 loads. Structural configurations that were rated include steel through girder, deck girder, deck truss, through truss lift span and concrete frame spans. The project also included in-depth inspection, diving inspection and recommendations for prioritized repairs.

- **Project Director – Henry Hudson Bridge Skewback Investigation, TBTA, New York, NY (On-going)**

Mr. Bousader is Project Director for this task to investigate the cause of damage to the concrete of the skewbacks, bent pedestals and abutments at the Henry Hudson Bridge. Based on that investigation, the structural impacts of that damage and potential repairs alternatives will be developed and presented. The assignment is providing TBTA with a scoping report and RFP document to confirm the existence of past ASR activity, determine the level of past activity, and determine the severity of expected future activity. Under Mr. Bousader's direction, WSP will provide alternative means of addressing the damage that has occurred to-date on the skewbacks, bent pedestals and the north and south abutments and to eliminate/minimize future damage. Three alternatives are being evaluated in the Scoping Report.

- **Structural Task Leader – Henry Hudson Toll Plaza Reconstruction, TBTA, New York, NY (2013-2020)**

Mr. Bousader is Structural Task Leader for this \$90M Reconstruction project involving the Upper and Lower Toll Plazas and Southbound Approach for the Henry Hudson Bridge. This project is being forwarded in two phases. Phase 1, HH-88A, will include the toll plaza equipment relocation upper level and lower level, and the lower maintenance garage utility relocation. Phase 2, HH- 88B will include reconstruction of upper level and lower level toll plaza and lower level South approach and maintenance garage. Mr. Bousader oversees all structural elements of this project and works closely with WSP's transportation department and TBTA staff.

- **Senior Project Engineer – LIRR 3 Freight Bridges 65th Street, Flushing Ave., Fresh Pond, Jaimaca, New York (2012-2013)**

WSP provided design engineering services for the rehabilitation and/or replacement of the following three (3) railroad freight bridges located in New York City, Queens County, New York.

Professional Qualifications

PE, New Jersey, 1998
PE, New York, 1994

Education

M.S., Civil Engineering,
Polytechnic University,
1990

B.S., Civil Engineering
Polytechnic University,
1988

Professional Affiliations

American Society of Civil
Engineers, Member

Society of American
Military Engineers (SAME)

Years with WSP

21

Years with other firms

5

- Replacement of 65th Street Bridge Span “A” (LIRR Bridge No. 54-O-115): MP 11.5, located on the Bay Ridge Branch, Queens County, New York
- Rehabilitation of Fresh Pond Yard Truss Bridge (LIRR Bridge NO. 54-O-117): MP 11.7, located on the Bay Ridge Branch, Queens County, New York
- Rehabilitation of Flushing Avenue Bridge (LRR Bridge No. 27-O-031): MP 3.1 located on the Lower Montauk Branch, Queens County, New York. This project was initiated to bring the bridges back to a “State of Good Repair” as well as, meet a 286,000 pound freight load rating along LIRR’s and NY Atlantic Railroad’s ROW.

WSP performed in-depth inspection and load rating of the three freight bridges and prepared design recommendation reports summarizing data collection, in-depth inspection findings, environmental assessment findings, concrete strength and durability testing results, geotechnical evaluation results, non-destructive testing (to ascertain the abutment configuration) results, topographic survey including track and road profile plans, load rating results, identification of necessary permits, design assumptions, evaluation of rehabilitation and replacement alternatives, conceptual design drawings, cost estimates for various alternatives and preliminary construction schedules.

■ **Senior Project Engineer - Conceptual & Final Design for the Elevated & On-Grade Approach Deck Replacement of the Bronx and Queens Approach to the Bronx-Whitestone Bridge, TBTA (2010)**

Mr. Bousader served as Senior Project Engineer for the reconfiguration of the Queens interchange ramps for the BWB to/from the CIP and Whitestone Expressway to improve non-standard geometric features, facilitate MPT, and improve operational deficiencies of the ramps. Using a hands-on approach, Mr. Bousader was responsible for breaking each critical task to its basic element to ensure that construction sequencing and construction methods were optimized.

■ **Chief Engineer – Rehabilitation of the Gowanus Expressway Viaduct, I-278 – Shore Parkway Interchange, D261302, NYSDOT, Brooklyn, NY (2008 – 2013)**

Mr. Bousader is the Chief Engineer for the Shore Parkway Interchange, a two-level structure that connects the Gowanus Expressway Viaduct to the Belt Parkway and to the Verrazano Narrows Bridge. The condition of the existing concrete deck of the Gowanus Expressway Viaduct was poor due to extensive deteriorations. There have been continual localized deck failures on the Viaduct resulting in undesirable emergency repairs and disruption to traffic during peak and off-peak travel periods. Mr. Bousader supervised and oversaw the structural drawing preparation of the following \$220 million work to be built under NYSDOT Emergency Contract D261302: 1) Replacement of the existing deteriorated concrete deck with a combination of new reinforced cast-in-place concrete deck and portions of new deck constructed with accelerated concrete; 2) The design and contract plan preparation of a new Ramp Q, a 780m elevated viaduct located between the Gowanus inbound and outbound travel lanes to accommodate a new reversible HOV lane; 3) Emergency structural repairs based on in-depth inspection and monitoring findings. It included emergency structural repairs and replacement of existing steel members; 4) Operation and maintenance of the Eastbound HOV Lane and all related items on the Gowanus Expressway (I-278), from the Verrazano-Narrows Bridge to the BT/BQE Interchange and from the Prospect Expressway at 5th Avenue to the merge with the HOV ramp from Gowanus to the BBT toll plaza; 5) Modifications to the lighting system due to the proposed widening of the Eastbound Gowanus Expressway; 6) Providing new sign structures to accommodate the new widened viaduct and ramps, and 7) QA/QC review of the contract plans of all the consultants working on the project.



Walid S. Najjar, Ph.D., P.E. Load Rating

Dr. Najjar provides WSP with expertise in the areas of design, structural analysis, construction materials, fracture and fatigue, and non-destructive evaluation. His credentials include a doctorate in Civil Engineering from Cornell University where he developed neutron radiography as a non-destructive test method to detect micro-cracking and other defects in concrete. Clients depend on Dr. Najjar to resolve complex design issues and benefit from his training seminars on project related topics. His QA/QC experience includes identifying new/innovative technical or management methods or approaches that add value, and describing ways the project team could exceed the client's contractual or stated/unstated expectations. He is certified as an ISO 9001:2008 internal auditor.

Dr. Najjar served as an Assistant Professor at Northeastern University and a Visiting Assistant Professor at Cornell University. As a technical expert, he has presented his research and practical work at national and international conferences and is widely published. Also he is certified by the Practicing Institute of Engineering, Inc. (PIE) as an evaluator of continuing education courses and auditor of organizations that sponsor such courses. Further, he planned and supervised the innovative project "Maturity Testing for Bridge Deck Rapid Replacement" that won for WSP the diamond award for research from the 2009 ACEC-NY Engineering Excellence Awards.

Professional Qualifications

P.E., New York, 1997
P.E., Connecticut, 1996
P.E., Massachusetts, 1995
ISO 9001:2008 Internal Auditor

Education

Ph.D., Civil Engineering
Cornell University, 1987

M.S., Civil Engineering
Oklahoma State University, 1981

B.S., Civil Engineering
Oklahoma State University, 1980

Professional Affiliations

AASHTO/NSBA
AREMA
ACI
TRB
PIE, Auditor and Reviewer
ASCE, JBE Reviewer
TRB Committee AFH70
Fabrication and Inspection of Metal Structures

Years with WSP

18

Years with Other Firms

13

Publications and Presentations

"Analysis of Gusset Plates in Railroad Bridges, Using Mathcad

Project Experience

■ Load Rating Quality Assurance/Technical Quality Engineer – Biennial Bridge Inspection, Region 9, NYSDOT (2014 - 2016)

Dr. Najjar is the Load Rating/Quality Assurance for this inspection project, ensuring the Virtis updates for all local bridges in Region 9, and the creation of models for 60 reinforced concrete box culverts. Dr. Najjar's oversight guarantees accuracy of the new models and that field inspection section losses are accurately accounted for in the load ratings.

■ Quality Assurance/Technical Quality Engineer – Biennial Bridge Inspection, Region 8, NYSDOT (2010 – 2011)

Dr. Najjar oversaw level I load rating analysis for the Popolopen Creek Truss Bridge and Route 28 over Esopus Creek. This analysis included gusset plate ratings, SAP2000 modeling of the truss, load history analysis, substructure evaluation, prestressed and post tensioned concrete analysis using SAP2000. He also oversaw gusset plate analysis, and additional level 1 load ratings for a post tensioned concrete beam bridge.

■ Technical Engineer - Routine, Verification, and In-Depth Inspection and Load Rating of 200 Metro-North Railroad Undergrade Bridges on the New Haven Mainline, Danbury, New Canaan and Waterbury Branches, ConnDOT (2006 – 2014)

WSP was responsible for 4 consecutive 2-year cycles of bridge inspection. The 2-year cycles included different types of inspections, and have included Load Ratings, Underwater Inspection, Mechanical/Electrical Inspection of Movable Bridges, Ultrasonic Pin Testing, and the inspection of retaining walls and towers. 800 total bridge inspections. Work conformed to the standards prescribed by the National Bridge Inspection Standards (NBIS), American Railway Engineering and Maintenance

and Finite Elements”, AREMA Annual Conference, Orlando, FL, August 31, 2010

“Use of Refined Methods of Analysis”, Session on Methodology for Live Load Distribution for Bridge Evaluation, ACI Spring Convention, San Antonio, TX, March 15, 2009

“Cross-frame Diaphragm Testing – A Research Need”, TRB Committee AFF40 Dynamics and Field Testing of Bridges, January 14, 2009

“Rapid Replacement of Deck Slabs of the Gowanus Expressway Viaduct, Using Accelerated Concrete and the Maturity Method,” FHWA ABC Conference, Baltimore, MD, March 19-21, 2008

“Load Testing of a Steel Thru-Girder Railroad Bridge with Ballasted Trough Deck,” AREMA Annual Conference, Chicago, IL, September 9-12, 2007

“Parametric Seismic Analysis of Curved Steel Box-Girder Bridges with Two Continuous Spans”, Journal of Bridge Structures, Vol. 3, Nos. 3-4, pp. 205-213, 2007

“A Road Map for Developing LRFD Specifications for Railroad Bridges,” AREMA Annual Conference, Louisville, KY, September 17-20, 2006

of Way Association (AREMA), and the ConnDOT Bridge Inspection Manual. In the capacity of Quality Control Engineer and Load Rating Specialist, Dr. Najjar provided all necessary technical support.

■ **Load Rating Engineer - Port Jervis Line Rehabilitation Inspection, Load Rating & Design, Metro-North Railroad (2006)**

Mr. Najjar was the Load Rating Engineer for this project, where the WSP/URS Joint Venture Team provided inspection, Load Rating and design services for the Port Jervis Line Rehabilitation project for Metro-North. Provide Inspection; Live Load Rating Analysis; Repair Recommendations for select fixed undergrade railroad bridges (plus the Woodbury and Moodna Viaducts); and Design of select bridges. All inspections were 100% hands-on for all 83 structures including the 590 foot long Woodbury Viaduct and the 3,200 foot long Moodna Viaduct. The WSP/URS Team utilized a variety of access methods including Rigging, Bucket Truck, Tracker, Hi-Rail UBIU, Lift Truck, and Ladders, and was fully equipped with Tablet PC/laptop computers, inspection tools, d-meters, calipers, digital cameras, dye penetrant kits, ladders, mobile phones, etc. The inspection results for each bridge were compiled to facilitate the Live Load Analysis and Rating phase of the work. The goal of this phase was to determine the ability of each bridge to safely carry railroad live loads.

■ **Load Rating Engineer - Lincoln Tunnel Entrance and Exit Ramps, NY, PA/NY&NJ**

Dr. Najjar performed load analysis and rating for two existing concrete bridges, each with five spans and slab decks that are cast-in-place monolithically over longitudinal and transverse beams; the exit ramp has a variable roadway width.

■ **Load Rating Engineer – Biennial Bridge Inspection & Load Rating for Multiple NYSDOT Bridges in Regions 1, 8 & 10, NYSDOT (2002/03 and 2006 – 2010)**

WSP inspected approximately 4,000 bridges in Regions 1, 8, and 10. Dr. Najjar was responsible for all load rating tasks on these projects. He possesses an expert knowledge of AASHTO’s Virtis Load Rating software, and other analytical software. In addition to overseeing the rating of thousands of bridge spans using Virtis since 2000, Dr. Najjar has led Level I analyses for a number of complex structures, and for gusset plate analysis of bridges in Region 1 & 8. Dr. Najjar supervised engineers on the load rating of 840 highway bridge spans in 2002 and for an estimated 1,200 spans in 2003. He also trained engineers on the use and interpretation of the load rating program Virtis.

■ **Quality Control Engineer - Route 9W over Washington St, Rockland County, NY, NYSDOT (2003)**

Mr. Najjar oversaw the Level I Load Rating for this \$13 million superstructure replacement of the 33 span elevated steel viaduct. WSP replaced the existing non-redundant two-girder structure with a multi-stringer deck system. The final design also addressed the seismic retrofit of the present condition by using seismic isolation bearings and lighter deck system.

Certifications

David Althaver, P.E.

The University of the State of New York
Education Department
Office of the Professions
REGISTRATION CERTIFICATE
Do not accept a copy of this certificate



License Number: [REDACTED]

Certificate Number: [REDACTED]

ALTHAVER DAVID B
[REDACTED]

is registered to practice in New York State through 09/30/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

[Signature]
DEPUTY COMMISSIONER
FOR THE PROFESSIONS

This document is valid only if it has not expired, name and address are correct, it has not been tampered with and is an original - not a copy. To verify that this registration certificate is valid or for more information please visit www.op.nysed.gov.

**State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs**

THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors

HAS LICENSED

David B. Althaver



FOR PRACTICE IN NEW JERSEY AS A(N): Professional Engineer

03/11/2014 TO 04/30/2016
VALID

[Redacted]
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
**THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors
HAS LICENSED
David B. Althaver
Professional Engineer**

03/11/2014 TO 04/30/2016
VALID

SIGNATURE

DIRECTOR



License/Registration/Certificate #

PLEASE DETACH HERE

**IF YOUR LICENSE/REGISTRATION/
CERTIFICATE ID CARD IS LOST
PLEASE NOTIFY:**
Board of Prof. Engineers & Land Surv
P.O. Box 45015
Newark, NJ 07101

PLEASE DETACH HERE

State of New York
New York State Department of Transportation



Record of Completion

David Althaver

For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)

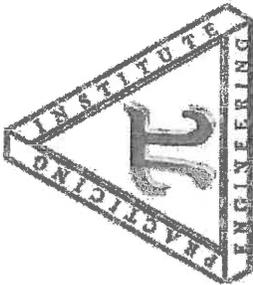
March 2013, Troy, New York

Skeiny K... [Signature]

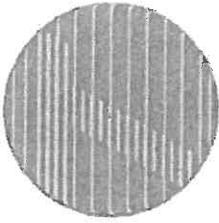
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

[Signature]

Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *David Althaver* has completed

Introduction to Element Level Bridge Inspection Training

Professional Development Hours Awarded: 6.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130101 PE

Location: Troy, NY

Date: March 14, 2013

Carbis Limer

Continuing Education Coordinator

PIE Organization#SM0000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.

State of New York

Department of Transportation



Record of Completion

This is to document that

David Althauer

has Received Instruction in the Methods
of Bridge Inspection Prescribed by the
Structures Design and Construction Division

in token whereof this document is granted

Given at Albany, New York this 30th Day of March 2001

Thomas J. Moon
Structures Design and Construction Division



National Highway Institute



Certificate of Training

David Althaver

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

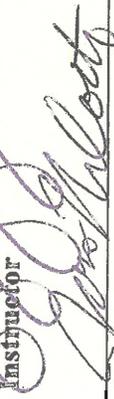
Kisinger Campo & Associates Corp.

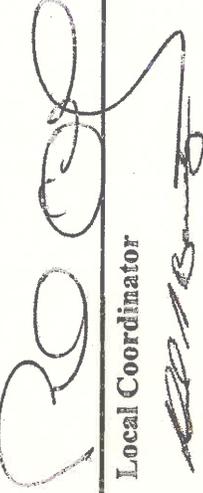
Date: April 3-5, 2012

Hours of Instruction: 19

Location: Tampa, FL


 Instructor


 Instructor


 Local Coordinator

**Richard Barnaby, Director
National Highway Institute**



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute *Certificate of Training*

David B. Althaver

has satisfactorily completed training in
Safety Inspection of In-Service Bridges

conducted by
Michael Baker Jr., Inc.

Location: Newark, New Jersey *Hours of instruction:* 80

Date: October 21 - November 1, 1996 *Continuing Education Units:* 6.0

Thomas H. Papp

Instructor

Moses Ayello
Director, Special Strategic
National Highway Institute Initiatives

Raymond A. Feltz

Coordinator

Thomas E. Stea
Federal Highway Administrator



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute



Certificate of Training

David Althaver

has participated in

FHWA-NHI-130087 Inspection & Maintenance of Ancillary Highway Structures

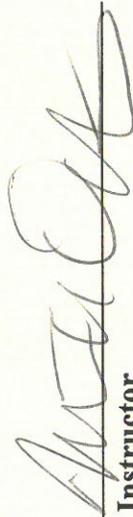
hosted by

Whitman, Requardt & Associates, LLP

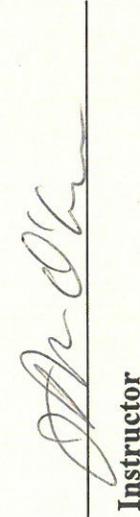
Date: *February 4-5, 2015*

Hours of Instruction: 12 Hours

Location: *Richmond, VA*


Instructor

Local Coordinator


Instructor

Valerie Briggs
**Valerie Briggs, Director
National Highway Institute**

Certifications

Robert Kemp, P.E.

The University of the State of New York
Education Department
Office of the Professions

REGISTRATION CERTIFICATE

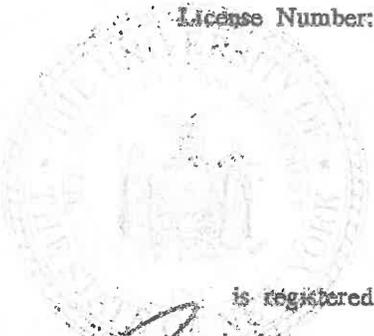
Do not accept a copy of this certificate

License Number: [REDACTED]

Certificate Number: [REDACTED]

KBMP ROBERT A.
[REDACTED]

is registered to practice in New York State through 05/31/2017 as a(n)
PROFESSIONAL ENGINEER



[Signature]
LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

[Signature]
DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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National Highway Institute

Certificate of Training



Robert Kemp, P.E.

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

National Highway Institute

Date: April 8 - 19, 2013

Location: Arlington, VA

Hours of Instruction: 67

Guy R Long
Instructor

Thomas A. Ryan
Instructor

B Spotek
Local Coordinator

Richard Barnaby
Richard Barnaby, Director
National Highway Institute



U.S. Department
Of Transportation
Federal Highway
Administration



NATIONAL HIGHWAY INSTITUTE
Training Solutions for Transportation Excellence

National Highway Institute Certificate of Training

Robert A. Kemp, P.E.

has participated in

Bridge Inspection Refresher Course
NHI Course Number 130053A

hosted by

C.V. Associates NY; PE, LS, P.C.

Presented by
Michael Baker Jr., Inc.

Location: New York, New York

Hours of instruction: 21 (3 days)

Date: September 16 - 18, 2005

Karajan N. Risher
Instructor

Morgan Byelle

Director, National Highway Institute
Federal Highway Administration

C.v. Zeller
Coordinator

[Signature]

Director, Office of Professional and Corporate Development
Federal Highway Administration

INSPECTOR

Last Name:	[REDACTED]	Last DT_APPR	4/1/2010
First Name:	Robert	DT_REJ	
Mid Name:	A.	Last DT_RESP	4/1/2010
PE_NUMB.	[REDACTED] Expires: 5/31/2011	FLD_VST_SD	
POSITION	3	FLD_VST_PD	
GEN_INSP	1	FLD_APT_JS	
OSS	1	FLD_VST_CM	
DIV_INSP	1	Last Insp_Mtg_Yr	2010
FATH_SURV	1	APPR_ENGR	Gager
CUR_PROJ1	Gowanus (10-11)		
CUR_REG1	11		
GEN_TRAIN	4/23/1993		
COMMENTS	Previously an ATL in 1986/1987. Prev. approved By Campisi 12/98 as QCE for BL. Now for Sells on the Gowanus as QCE. Last approved 3/01 by Andrews for the Gowanus.		

Certifications

Mark Paoline, P.E.

The University of the State of New York
Education Department

Office of the Professional
REGISTRATION CERTIFICATE

Do not accept a copy of this certificate

Number

Certificate Number



ADRIAN MARIANO

is authorized to practice in New York State through 05/31/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSER/REGISTRANT

COMMISSIONER OF EDUCATION

EXECUTIVE SECRETARY

DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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National Highway Institute



Certificate of Training

Mark M. Paoline

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

Kisinger Campo & Associates Corp.

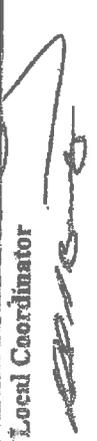
Date: April 3-5, 2012

Hours of Instruction: 19

Location: Tampa, FL


Instructor

Instructor


Local Coordinator

Richard Barnaby, Director
National Highway Institute



National Highway Institute
Certificate of Training
Mark M. Paoline, P.E.

has participated in
Bridge Inspection Refresher
 NHI Course number 130053A
hosted by

New Jersey Department of Transportation

Trenton, NJ

June 26-28, 2006

Location:

Hours of Instruction: 21

Date:

Instructor

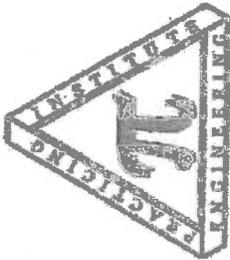
John Wang
Mogea Ayala

Director, National Highway Institute
 Federal Highway Administration

Coordinator

[Signature]

Associate Administrator, Office of Professional
 and Corporate Development
 Federal Highway Administration



New York State
Department of Transportation

CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

2011 Bridge Inspectors Meeting: Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20110258

Location: Albany, NY

Date: March 1 & 2, 2011

Michael A. Shanahan

Continuing Education Coordinator

PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
385 Jordan Rd, Troy, NY 12180-7620

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.



U.S. Department
of Transportation
Federal Highway
Administration

National Highway Institute Certificate of Training

Mark M. Paoline

has satisfactorily completed training in

Safety Inspection of In-Service Bridges

conducted by

Michael Baker Jr., Inc.

Location: Langhorne, Pennsylvania

Hours of instruction: 80

Date: February 7-18, 1994

Continuing Education Units: 6.0

George M. Hoover
Instructor

Dennis R. Baughman, P.E.
Coordinator

George M. Hoover
Director, National Highway Institute

Thomas J. Baker
Federal Highway Administrator

State of New York
New York State Department of Transportation



Record of Completion

Mark Paoline

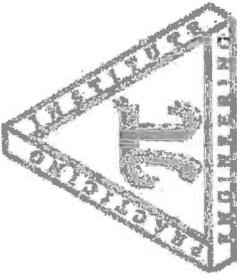
For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)
March 2018, Troy, New York

Skeini Kempfelli
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

David L. ...
Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation

CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

2013 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130107 PE

Location: Troy, NY

Date: March 12-13, 2013

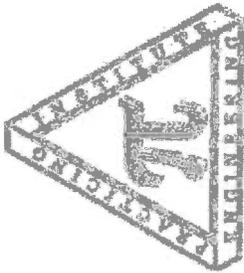
Carlos Rivera

Continuing Education Coordinator

PIE Organization#SM000007

Accreditation of training provided under the auspices of
The Practicing Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of this credit is outside of NYS, please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Mark Paoline* has completed

Ethics for Engineers

Professional Development Hours Awarded: 1

This course is accredited for the profession(s) of: Professional Engineering
Course #20130106 PE

Location: Troy, NY

Date: March 13, 2013

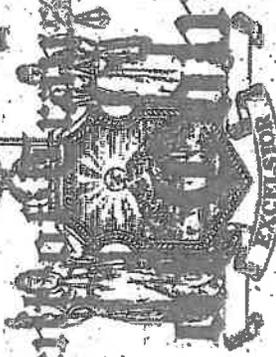
Carole Zimmer

Continuing Education Coordinator

PIE Organization#SM000007

Accredited training provided under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of U.S. credits outside of NYS, please consult the licensure board of the state.

State of New York
Department of Transportation

Record of Completion

This is to document that

Mark Pauline

has Received Instruction in the Methods
of Bridge Inspection Prescribed by the
Structures Design and Construction Division

in token whereof this document is granted

Given at Albany, New York this 29th day of March 2002

Thomas J. Moon
Structures Design and Construction Division

Certifications

Bruce Woogen, P.E.

The University of the State of New York
Education Department
Office of the Professions

REGISTRATION CERTIFICATE
Do not accept a copy of this certificate

License Number: [REDACTED]

Certificate Number: [REDACTED]



WOOGEN BRUCE
[REDACTED]

is registered to practice in New York State through 04/30/2015 as a(n)
PROFESSIONAL ENGINEER

LICENSEE/REGISTRANT

[Signature]
EXECUTIVE SECRETARY

[Signature]
COMMISSIONER OF EDUCATION

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DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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**State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs**

**THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors**

HAS LICENSED

BRUCE WOODEN
[Redacted]

FOR PRACTICE IN NEW JERSEY AS A(N): Professional Engineer

**04/24/2014 TO 04/30/2016
VALID**

LICENSE/REGISTRATION/CERTIFICATION #
[Redacted]

[Signature]
ACTING DIRECTOR

Signature of Licensee/Registrant/Certificate Holder

Division of Consumer Affairs (outside)
Division of Consumer Affairs (inside)
**THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors
HAS LICENSED
BRUCE WOODEN
Professional Engineer**

04/24/2014 TO 04/30/2016
VALID

Signature: *[Signature]*

**PLEASE DETACH HERE
IF YOUR LICENSE/REGISTRATION/
CERTIFICATE ID CARD IS LOST
PLEASE NOTIFY:
Board of Prof. Engineers & Land S
P.O. Box 45015
Newark, NJ 07101**



U.S. Department
Of Transportation
Federal Highway
Administration

National Highway Institute



Certificate of Training

Bruce Woogen

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

WSP GROUP

Date:

January 27- February 7, 2014

Hours of Instruction: 60

Location:

Charlotte, NC


Instructor


Instructor


Local Coordinator


Richard Barnaby, Director
National Highway Institute

State of New York
New York State Department of Transportation



Record of Completion

Bruce Woogen

For the Successful Completion of

NYS Highway Bridge Inspection Refresher Training

(New York State Department of Transportation Bridge Inspectors Meeting)

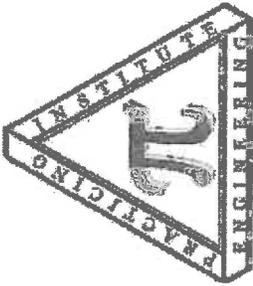
March 2013, Troy, New York

Steven Montali

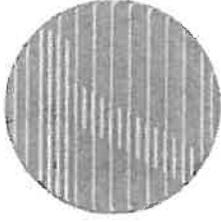
Director, Structures Evaluation Services Bureau
New York State Department of Transportation

David Byrne

Division Bridge Engineer
Federal Highway Administration



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

2013 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130107 PE

Location: Troy, NY

Date: March 12-13, 2013

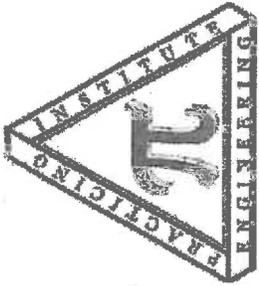
Carlos Rivera

Continuing Education Coordinator

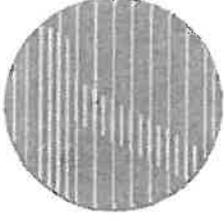
PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of N.Y.S., please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

Introduction to Element Level Bridge Inspection Training

Professional Development Hours Awarded: 6.5

This course is accredited for the profession(s) of: Professional Engineering
Course #20130101 PE

Location: Troy, NY

Date: March 14, 2013

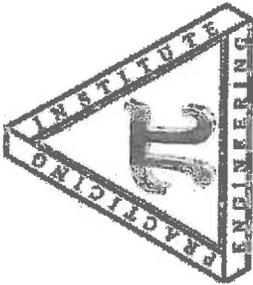
Carlos Rivera

Continuing Education Coordinator

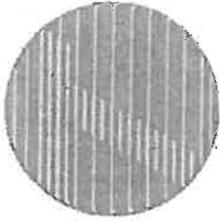
PIE Organization#SM000007

Accreditation of training performed under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of NY, please consult the licensure board of the state.



New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Bruce Woogen* has completed

Ethics for Engineers

Professional Development Hours Awarded: 1

This course is accredited for the profession(s) of: Professional Engineering
Course #20130106 PE

Location: Troy, NY

Date: March 13, 2013

Carlos Rivera

Continuing Education Coordinator

PE Organization#SM000007

Accreditation of training provided under the auspices of
The Practising Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside of N.Y.S. please consult the licensure board of the state.

Certifications

Mitesh Patel, P.E.

THE UNIVERSITY OF THE STATE OF NEW YORK
EDUCATION DEPARTMENT



BE IT KNOWN THAT

MITESH VALLABHAI PATEL

HAVING GIVEN SATISFACTORY EVIDENCE OF THE COMPLETION OF PROFESSIONAL
AND OTHER REQUIREMENTS PRESCRIBED BY LAW IS QUALIFIED TO PRACTICE AS A

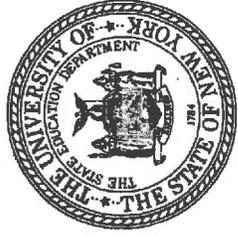
PROFESSIONAL ENGINEER

IN THE STATE OF NEW YORK

IN WITNESS WHEREOF THE EDUCATION DEPARTMENT GRANTS THIS LICENSE
UNDER ITS SEAL AT ALBANY, NEW YORK
THIS NINTH DAY OF FEBRUARY, 2009.

R. Howard Phillips
PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION

LICENSE NUMBER [REDACTED]



David Hund
ASSOCIATE COMMISSIONER
OFFICE OF THE PROFESSIONS
David S. G. G.
EXECUTIVE SECRETARY
STATE BOARD FOR
ENGINEERING AND LAND SURVEYING

**The University of the State of New York
Education Department
Office of the Professions**

REGISTRATION CERTIFICATE

Do not accept a copy of this certificate.

License Number: [REDACTED]

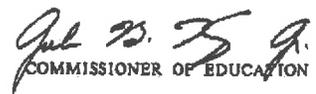
Certificate Number: [REDACTED]

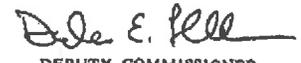
PATEL MITESH VALLAVBHAI
[REDACTED]

is registered to practice in New York State through 05/31/2017 as a(n)
PROFESSIONAL ENGINEER

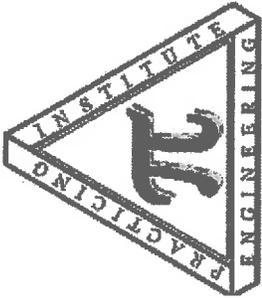

LICENSEE/REGISTRANT


EXECUTIVE SECRETARY


COMMISSIONER OF EDUCATION


DEPUTY COMMISSIONER
FOR THE PROFESSIONS

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New York State
Department of Transportation



CERTIFICATE OF COURSE COMPLETION

This certifies that *Mitesh Patel* has completed

2014 Bridge Inspectors Meeting - Inspection Refresher

Professional Development Hours Awarded: 8

This course is accredited for the profession(s) of: Professional Engineering
Course #20140109 PE

Location: Troy, NY

Date: March 4-5, 2014

Carlos Rivera

Continuing Education Coordinator

PTE Organization#SM000007

Accreditation of training performed under the auspices of
The Practicing Institute Of Engineering, Inc.
6 Airline Drive, Albany, NY 12205

To confirm the acceptance of these credits outside NYS, please consult the licensure board of the state.



National Highway Institute



Certificate of Training

Mitesh Patel

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

Weidlinger Associates, Inc.

Date: February 25-March 08, 2013 **Hours of Instruction:** 67

Location: New York, NY

William R. Henderson, P.E.

Instructor

Thomas A. Gya

Instructor

[Signature]

Local Coordinator

[Signature]

Richard Barnaby, Director
National Highway Institute



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute

Certificate of Training



Mitesh Patel

has participated in

NHI Course No. FHWA-NHI-130101

Introduction to Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: Web-Based Course

Hours of Instruction: 14 hours

Date: 3/1/2013

Richard J. Barnaby, Director
National Highway Institute



U.S. Department
of Transportation
**Federal Highway
Administration**

National Highway Institute

Certificate of Training



Mitesh Patel

has participated in

NHI Course No. FHWA-NHI-130101A

**Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB
-BASED**

hosted by

National Highway Institute

Location: *Web-Based Course*

Hours of Instruction: *1 hours*

Date: 12/19/2012

Richard J. Barnaby, Director
National Highway Institute

Section 4: Experience

EXPERIENCE

BACKGROUND

WSP offers the Port Authority a highly qualified and experienced staff with over 400 registered professional engineers and trained technical personnel in our Metro NYC offices who will provide timely, high quality, and cost effective engineering and inspection services to meet the project's objectives.

WSP offers the PA unique qualifications for the 2015 Biennial Inspection of the George Washington Bridge New York Approach Roadways – Trans-Manhattan Expressway Structures:

- Completion of nine Biennial Inspection projects at the GWB facility during the past 20 years:
 - 2013 New Jersey Approach Bridges
 - 2009 Trans-Manhattan Bridges
 - 2009 Henry Hudson Bridges
 - 2009 Sign & Lighting Structures
 - 2007 New Jersey Approach Bridges
 - 2006 Sign & Lighting Structures
 - 2005 Main Bridge Upper Level
 - 1999 New York Approach Bridges
 - 1995 Main Bridge Lower Level
- Thorough understanding of, and experience with the PA's work requirements at this facility, including coordination/scheduling with facility personnel, security, ongoing contract work, MPT and Access Equipment, etc.
- Continuous Biennial Bridge, Sign & Light Structure Inspection Projects for the PA since 1993. Thorough understanding of the PA's inspection and documentation requirements, including identification and reporting of Immediate, Priority, Safety and Routine Conditions.
- A qualified, available staff including up to 12 inspection teams experienced with the inspection of major PA facilities.
- Extensive experience providing Load Rating Analysis and designing Emergency Repair Details for conditions discovered during inspections.
- Biennial Inspection of twenty major suspension bridges during the past 17 years, including the George Washington, Verrazano Narrows, Triborough, Throgs Neck, Bronx Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges. Expert inspection of cable, tower, and anchorage elements.
- Four PE Team Leaders on staff trained and experienced in Industrial Rope Access Techniques.
- Completion of more than 35,000 Biennial Bridge Inspections for the NYSDOT since 1978. Industry-leading training with the creation of BDIS Inspection Reports. Inspection of more than 1,000 bridges per year, every year since 1978.

- Continuity of Staff – WSP QC Engineers and Team Leaders have more than 110 years of combined tenure with the firm – the staff that starts a job completes the job.
- Extensive experience in major bridge design and rehabilitation projects.
- Commitment and involvement of the firm’s Principals with on-going and recent bridge inspection and design projects.
- Established QA/QC and Safety Procedures developed specifically for bridge inspection and bridge design projects.
- Understanding of safety concerns, including removal when possible of loose/hollow-sounding areas of concrete.

WSP offers the PA proven recent and on-going bridge inspection, evaluation, and design experience for highway bridges, airport roadway bridges, and railroad bridges. Since 1993, WSP has been continuously working with the PA by performing condition surveys of various facilities. During this time, our staff has become thoroughly familiar with all PA requirements and procedures. For our most recent projects for the Authority WSP performed condition surveys and prepared condition reports for the following PA facilities utilizing a consistent and experienced Project Manager and Lead Team Leader:

Representative Port Authority of NY & NJ Projects Completed by WSP			
FACILITY	YEAR INSPECTED	MANAGER	LEAD TEAM LEADER
JFK Terminal Bridges	2014	David Althaver, PE	Mark Paoline, PE
NJ Marine Terminal Bridges	2014	David Althaver, PE	Bruce Woogen, PE
GWB New Jersey Approaches	2013	David Althaver, PE	Albert Ari, PE
PATH Bridge over Hackensack River	2013	David Althaver, PE	Albert Ari, PE
Holland Tunnel Sign & Lighting	2013	David Althaver, PE	Matthew Bacon, PE
JFK Terminal Bridges	2012	David Althaver, PE	Mark Paoline, PE
Lincoln Tunnel NY Approach Roadway Bridges and Sign Structures	2011	Mosé Buonocore, PE	David Althaver, PE
Stewart Airport Sign Structures	2011	Mosé Buonocore, PE	David Althaver, PE
Staten Island Bridges On Grade Sign and Lighting Structures	2011	Mosé Buonocore, PE	Mark Paoline, PE
NJ Marine Terminal Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Roadway Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Terminal Bridges	2010	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Sign & Lighting	2009	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Trans-Manhattan Bridges	2009	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Henry Hudson Bridges	2009	Mosé Buonocore, PE	Nick DiFilippo, PE
Newark International Airport Bridges	2008	Mosé Buonocore, PE	Nick DiFilippo, PE
Newark Airport Sign & Light Structures	2008	Mosé Buonocore, PE	Nick DiFilippo, PE



Representative Port Authority of NY & NJ Projects Completed by WSP			
FACILITY	YEAR INSPECTED	MANAGER	LEAD TEAM LEADER
GWB NJ Approach Bridges	2007	Mosé Buonocore, PE	Nick DiFilippo, PE
PATH Bridge over Hackensack River	2007	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Sign & Lighting	2006	Mosé Buonocore, PE	Nick DiFilippo, PE
JFK Airport Bridges	2006	Mosé Buonocore, PE	Nick DiFilippo, PE
GWB Upper Level	2005	Mosé Buonocore, PE	Matthew Bacon, PE
Goethals Bridge	2004	Mosé Buonocore, PE	Matthew Bacon, PE
Bayonne Bridge	2003	Mosé Buonocore, PE	Matthew Bacon, PE
Newark International Airport Bridges	2002	Mosé Buonocore, PE	Matthew Bacon, PE
Newark Airport Sign & Light Structures	2001	Mosé Buonocore, PE	Matthew Bacon, PE
LaGuardia Airport Roadway Bridges	2000	Mosé Buonocore, PE	Matthew Bacon, PE
GWB NY Approaches Bridges	1999	Mosé Buonocore, PE	Hugh McCarey, PE
Goethals Bridge	1998	Mosé Buonocore, PE	Hugh McCarey, PE
Lincoln Tunnel Approach Roadway Bridges	1997	Mosé Buonocore, PE	Hugh McCarey, PE
Newark International Airport Bridges	1996	Mosé Buonocore, PE	Hugh McCarey, PE
GWB Lower Level	1995	Mosé Buonocore, PE	Hugh McCarey, PE
Outerbridge Crossing	1994	Mosé Buonocore, PE	Hugh McCarey, PE
PATH Bridge over Hackensack River	1994	Mosé Buonocore, PE	Hugh McCarey, PE
Bayonne Bridge	1993	Mosé Buonocore, PE	Hugh McCarey, PE

In addition to our ongoing experience with the PA, WSP has recent inspection experience on some of the most critical and largest long span suspension structures in the Northeast, including the Verrazano Narrows, Throgs Neck, RFK/Triborough, Bronx-Whitestone, Benjamin Franklin, Walt Whitman, Mount Hope and Brooklyn Bridges. Additional recent experience includes:



- Biennial Inspection of 800+ Bridges, NYSDOT Region 9, 2014
- Biennial Inspection of 1,800+ Bridges, NYSDOT Region 8, 2012 - 2013
- Biennial & Interim Inspection of the 400+ span I-278 Gowanus Expressway BIN Group, NYSDOT Region 11, annually 1998 – 2014.
- Inspection of 36 Undergrade Bridge Structures, New Jersey Transit, 2014, 2008
- Biennial Inspection of 194 Bridges, New Jersey Turnpike Garden State Parkway Division, 2008
- Biennial Inspection of 350+ Bridges, NYSDOT Region 10, 2007 – 2008.

- Inspection of 800+ Metro-North Bridges on New Haven, Mainline, Danbury, New Canaan & Waterbury Branches, Connecticut Department of Transportation, 2006 – 2014.
- In-Depth Inspection of 360 Undergrade Bridges on the Harlem, Hudson and New Haven lines, Metro-North Railroad, 1999 – 2001.
- In-Depth Inspection of 83 Structures on the Port Jervis Line, Metro-North Railroad, 2004 – 2005.

WSP has provided over 35 years of continuous Biennial Bridge Inspection services to the NYSDOT. Through 2015, WSP is completing the inspections of approximately 1,700 bridges in Region 9. In addition, WSP has performed several cycles of NJDOT bridge inspection work. The combination of recent bridge inspection experience, coupled with our highly qualified staff's familiarity with PA requirements makes WSP ideally suited for this project. Our unique combination of inspection, analysis, design and rehabilitation experience of bridge structures allows the firm to offer the PA the most efficient operation for inspection and engineering services of PA Facilities. WSP is able to successfully complete bridge inspection and analysis projects for our various clients because we understand the underlying issues in such projects, namely:

- Scheduling inspections – date constraints, ongoing contractor activity, geography, etc.
- Logistics – access, MPT, RR Flagging, work permit requirements, night work, etc.
- Safety – working on roadways, at heights, in RR right-of-way, etc.
- Reports – Adapting to client's report format specifications; paper & electronic
- Quality Control – meeting client's specifications, plus uniformity amongst teams
- Submission Schedule – timely submittal of product, allowing client review & feedback

RELEVANT EXPERIENCE

Biennial Bridge Inspection Projects Completed During the Last 3 Years

All of the projects listed were completed on schedule and within budget.

1. Port Authority of New York & New Jersey

Client Contact: Mr. Mitch Aldea, PE (973)792-3940

- a. 2014 Biennial Inspection of the JFK Terminal Bridges
- b. 2014 Biennial Inspection of the New Jersey Marine Terminal Bridges
- c. 2013 Biennial Inspection of the GWB NJ Approaches
- d. 2013 Condition Survey of the PATH Bridge over the Hackensack River
- e. 2013 Biennial Inspection of the Holland Tunnel Sign & Lighting Structures
- f. 2012 Biennial Inspection of the JFK Terminal Bridges

2. MTA Triborough Bridge & Tunnel Authority

Client Contact: Mr. Samir Salah, PE (212) 360-2960

- a. 2014 Biennial Inspection of the Verrazano-Narrows Ramps
- b. 2013 Biennial Inspection of the Bronx Whitestone Bridge
- c. 2012 Biennial Inspection of the Verrazano Narrows Bridge

3. New York State Department of Transportation

- a. 2014 – 2015 Biennial Inspection of 1,700+ Bridges in NYSDOT Region 9
Client Contact: Mr. Bob LaCourt (607) 721-8164
- b. 2012 – 2013 Biennial Inspection of 1,800± Bridges in NYSDOT Region 8
Client Contact: Mr. Eric Foster, PE (845) 431-7924
- c. 2013 – 2014 Biennial Inspection of the 400+ Span I-278 Gowanus Expressway
Viaduct BIN Group (322 span main viaduct plus ramp bridges inspected annually),
NYSDOT Region 11
Client Contact: Mr. John Wong, PE (718) 482-4727

4. Delaware River Port Authority

Client Contact: Mr. Ed Montgomery, PE (856) 968-2091

- a. 2012 Biennial Inspection of the Benjamin Franklin Suspension Bridge

Section 5: Quality Assurance

QUALITY ASSURANCE PROGRAM PLAN

Prepared for the Port Authority of New York and New Jersey

I. Introduction–Quality Management System/Quality Assurance Program Plan

The management of WSP is dedicated to the establishment of a quality environment in the workplace, which will be reflected not only in the actual product delivered but also in the type of service provided to its clients during its preparation. We are committed to the basic values and principles which are essential to the attainment of quality and have striven to instill this commitment in all of our employees.

Quality in the WSP organization is defined as “the application of technical principles in a practical and economical fashion to solve the problems posed by a project and arrive at solutions which concurrently satisfy the technical standards of the firm and meet or exceed the standards of the reviewing authorities and meet or exceed the expectations of our clients”.

WSP is committed to achieving standards of quality in all its services and has established, documented, implemented, maintained and is continually improving its Quality Management System.

In order to implement the Quality Management System WSP has developed a matrix that identifies:

- the process needed for the Quality Management System;
- the sequence and interaction of these processes;
- the criteria and methods to ensure effective operation and control of the processes;
- availability of information necessary to support the effective operation and monitoring of these processes;
- methods of measurement, monitoring and analysis needed in order to implement those actions that will achieve planned results and continual improvement.

For each project undertaken, WSP implements a customized quality management program to set quality guidelines for project activities. Quality procedures established companywide are used as the foundation and tailored to satisfy each client’s needs and expectations. Additionally, in order to assure that each project conforms properly to the contract or client requirements, WSP, as a part of its Quality Management System, implements for each project a **Quality Assurance Program Plan**.

II. Documentation Requirements

A. Control of Documents

A combination of digital files and hard copy documents will be used throughout the project. Digital Project Documents shall be maintained on WSP’s Briarcliff Manor, NY Server in a directory dedicated to this project. All files on this server are backed up daily. Hard copies of project documents shall be maintained in three ring binder files at the Briarcliff Manor office. Access to these files shall be limited to the Project Manager, QA/QC Engineer and Lead Team Leader.

Only the latest authorized issue of Project documents shall be available for use by WSP personnel. Documents not authorized for use, voided documents or superseded documents shall be so marked as a means to prevent use.

All documents transmitted to the Port Authority Project Manager for review shall identify the action to be taken by the Project Manager. The Document status shall be updated based on the response.

Methods shall be used to track the status of transmittals that require action by the recipient. Such transmittals will be placed in an interim action folder that is monitored on a daily basis.

WSP's Project Manager is responsible for reviewing the Contract and identifying submittals and deliverables to be transmitted to the Port Authority. These identified items shall not be released until approved or authorized. The QA/QC Engineer shall ensure compliance with contract requirements for approval/authorization.

B. Control of Records

Project Records, maintained in three ring binders will, at the conclusion of the project, be stored in a suitable environment at WSP's Briarcliff Manor office to prevent damage or deterioration and to prevent loss.

An index of Project Records shall be part of the File. Access to records shall be under control of the Project Manager. Removal of Records to a location other than the immediate areas where the file is located shall be restricted to authorized persons, namely, the Project Manager, QA/QC Engineer and Lead Team Leader. Measures to identify removed files and their current location shall be maintained.

WSP's records which provide evidence of conformance to requirements and of the effective operation of the WSP's Quality Management System shall be identified, stored, protected and retained. Retrieval will be controlled. The Project Manager is responsible for identifying the records to be retained, retention time, disposal method, and for arranging for their protection and controlled retrieval.

III. Management Responsibility

A. Management Commitment

The Top Management of WSP is committed to the continued development and improvement of the Quality Management System (QMS). Management believes that quality can only be provided if all levels of the organization are involved in the quality process. As such, input and output are encouraged and in many instances required, from all levels.

At WSP, "quality" means completing a task correctly the first time. This can only be achieved by thorough preparation from the start of the project by the assignment of qualified personnel and by a methodical sequence of operations which includes quality measures for each task. By following defined procedures, we are able to achieve the highest level of quality for our clients.

B. Customer Focus

WSP ensures customer satisfaction by:

- Review of Contract Requirements and this Quality Assurance Program Plan procedures for compatibility.
- Allocating trained and qualified staff resources to perform project tasks.
- Scheduling and reporting progress in sufficient detail to control project cost.
- Training personnel as required.
- Performing Internal Quality Audits at intervals which shall ensure compliance with the Quality Plan.
- Establishing a program for problem identification and resolution and problem prevention.
- Maintaining data control systems and records of project activities.

C. Quality Assurance Program Plan

WSP's Quality Assurance Program consists of two basic levels.

- Quality Control.
- Quality Assurance Activities.

Quality Control

Quality Control involves proper documentation of all work efforts, careful documentation and dissemination of all communications and other project related information, coordination meetings to keep all team members fully informed, and proper and complete checking of inspection reports, calculations and other work elements.

Quality Assurance

Quality Assurance activities are designed to verify that the quality control processes are fully implemented. These procedures include periodic and random reviews of project records and project processes.

To insure quality in the work product, a Quality Assurance/Quality Control Engineer (QA/QC) will be designated at the beginning of project. The person selected for this position will have the technical expertise relevant to the disciplines included in the project work scope and be independent from the project staff. The designated QA/QC Engineer shall act as a representative of the project management and shall have the authority to act in its behalf. His or her specific duties will be dependent on the type of project (survey, design, inspection, etc.) and will be established accordingly.

It is the responsibility of each employee to become thoroughly familiar with the quality assurance procedures established for this project to which he or she is assigned. These procedures will be outlined and fixed in writing by the Project Manager in consultation with the assigned QA/QC Engineer. The degree of excellence of our technical services is measured by how well our employees conform to the requirements of each item in the specific project procedures.

D. Planning**Quality Objectives**

Top Management of WSP has identified the following Quality Objectives for this Project. The objectives are measurable, consistent with policy, relevant to the

successful completion of the project and attainment of objectives is considered as part of our effort for improvement.

Quality Objectives include:

- meeting contract requirements,
- resource allocations,
- cost control,
- schedule control.

Quality Management System Planning

The elements that comprise the Quality Planning process include this Quality Assurance Program Plan, personnel allocations, titles of individuals, subcontractors/subconsultants necessary to complete the work and the integration of Quality improvement initiatives.

E. Responsibility, Authority and Communication

1. Responsibility and Authority

For this project, WSP has assigned responsibilities and authority and is organized in the following manner.

TITLE	TASK DESCRIPTIONS
Principal-In-Charge & Structures Department Manager	<ol style="list-style-type: none"> 1. Provide overall direction to project. 2. Contractual matters. 3. Intra-corporate coordination
Project Manager	<ol style="list-style-type: none"> 1. Overall coordination of project. 2. Scheduling, planning and monitoring progress. 3. Liaison with the Port Authority for day to day operations. 4. Supervision of QA/QC Engineer and Inspection Staff including Lead Team Leader. 5. Interfacing with Subconsultants. 6. Enforcement of technical and contractual requirements. 7. Staffing 8. Receive directions from Principal-in-Charge.
Quality Control Engineer	<ol style="list-style-type: none"> 1. Field review on spot basis. 2. Engineer 3. Review of inspection reports and other deliverables for compliance. 4. Technical requirements enforcement. 5. Indoctrination of T.L., A.T.L. and other staff as per QA Program Plan. 6. Review of Immediate Conditions. 7. Receive directions from Project Manager.
Lead Team Leader	<ol style="list-style-type: none"> 1. Liaison with Port Authority. 2. Review previous reports/plan field operations. 3. Direct field teams for inspection in consultation with Project Manager and QA/QC. 4. Technical compliance (field work)

TITLE	TASK DESCRIPTIONS
	5. Immediate Action coordination with QC and Port. 6. Field inspection and reports. 7. Receive directions from PM and QA/QC.
Team Leader	1. Review previous inspection reports, and plan field operations. 2. Perform inspection work and compile reports. 3. Direct A.T.L. and other field members. 4. Liaison with Port for Immediate Conditions. 5. Assist Port with Immediate Conditions. 6. Enforce safe operations in field. 7. Receive and return rented equipment. 8. Receive directions from Lead Team Leader.
Assistant Team Leader	1. Receive directions from T.L. 2. Assist T.L. in inspection and report writing and preparation.
Additional Team Members	1. Provide assistance to T.L. And A.T.L. as per their direction.

2. Management Representative

WSP has assigned the QA/QC Engineer as the management representative for Quality. He shall ensure the Quality Assurance Program Plan is established, maintained and implemented. Additionally, the QA/QC Engineer shall report to top management on a monthly basis and make recommendations for Quality System improvements. Reports shall be issued in writing to top management and maintained in an open status until the resolution of outstanding items. The management representative for Quality shall assure that the Project Team is aware of customer requirements regarding the Project.

3. Internal Communication

WSP ensures the processes of the Quality Management System and this Quality Assurance Program including their effectiveness are communicated throughout the organization by documenting the identification and resolution of QA issues via memoranda issued to project staff. The QA/QC verifies the receipt and understanding of these memoranda with on-site follow up visits and regular project meetings.

4. Management Review

General

WSP Top Management shall review the Quality Management System at least once a year and more often as needs dictate to ensure its suitability, adequacy and effectiveness. The Quality Management System, quality policy and quality objectives will be evaluated for any needed change.

Review Input

Management Reviews shall utilize:

- Internal and external Quality Audit results.
- Customer performance evaluations (feedback).
- Process performance and product conformance results.
- Preventive and corrective action status.



- Follow up on actions from previous Management Reviews.
- Other changes (i.e. business climate, scope of work changes, etc. that could affect the Quality Management System

Review Output

Results of Management Reviews shall be recorded and appropriate actions taken to remedy systematic problems.

IV. Production Realization

A. Planning of Product Realization

WSP shall plan and document the product realization process. The documentation for the realization process is this Quality Assurance Program Plan and other in-house Quality Assurance documents.

Verification and validation of activities are monitored continuously. Monthly progress reports will be prepared for the Port Authority that will estimate physical percent complete and track expenditures. By comparing these two values, WSP's Project Manager can evaluate if the project is on budget. Moreover, by comparing the estimated physical percent complete to the project schedule, also presented in the monthly progress reports, the Project Manager can monitor compliance with the schedule.

On discovery of budget or schedule discrepancies, WSP will prepare for internal use, and circulate to the Authority, a recovery plan to get the project back on budget and/or schedule.

B. Customer Communication

WSP's Project Manager is responsible for establishing and maintaining communication with the Port Authority Project Manager or representative regarding inspection activities. The Project Manager is also responsible for evaluation of customer (Port Authority) feedback/complaints and to respond to them.

C. Project Development Planning

The Project Manager is responsible for scheduling and monitoring progress with respect to the project schedule. Progress is tracked and compared to the Design Progress Schedule prepared using scheduling software such as MS Project or Primavera. The progress of the project, along with an updated schedule comparing the original schedule with actual tasks completed, will become part of the progress report submitted to the Port Authority on a monthly basis.

D. Project Development Input and Output

Project development input consists of the requirements and criteria defined in the Technical Scope of Work. Outputs are those deliverables required by the Technical Scope of Work. All deliverables are reviewed by the Project Manager and QA/QC and both are responsible for ensuring that the deliverables address the input requirements.

V. Control of Subconsultants

The selection of subconsultants will be based on a number of factors including their past performance, their ability to perform the required services, their acceptability to the client, and

the adequacy of their quality control procedures. To confirm their selection, they will be asked, as part of their Statement of Qualifications (SOQ), to submit evidence of each of these factors.

The Project Manager, with input from the QA/QC Engineer, will review the SOQ to determine the acceptability of the Subconsultant for the proposed assignment. The subconsultant performs work with WSP in conformance with this Quality Assurance Program Plan. Conformance to this is subject to Internal Quality Audits. The QA/QC Engineer will perform such internal audits. Additionally, during the course of the project, detailed spot checks of the inspection notes, design product or other service, of each subconsultant are performed. Areas of noncompliance shall be resolved to the satisfaction of WSP. The Project Manager is responsible for following up on identified areas of poor performance and for maintaining records of subconsultant performance. Subconsultants with a record of poor performance shall be excluded from future consideration with WSP.

VI. Corrective and Preventative Action

Non-conformance in work output occurs when errors are discovered in output documents issued as final documents. The initiation of corrective or preventive action to eliminate actual or minimize potential non-conformities is the responsibility of the Project Manager in collaboration with the project's QA/QC Engineer.

A. Corrective Action

Immediate action is taken by the Project Manager to correct the non-conformity through the QA/QC Engineer or other management personnel. The QA/QC Engineer will document the non-conformity and review the project to see if the problem is recurrent.

B. Preventive Actions

If, upon review, the QA/QC Engineer finds that there may be an underlying cause to consistent non-conformities, which could be attributed to faults in quality assurance or other standard procedures, these issues will be systematically addressed. The Project Manager will then insure the implementation of all preventive procedures. Results of these actions are documented and reported to the Port Authority's Project Manager

VII. Training

The firm has established an organization manual, which contains job descriptions for each of the established technical grades and positions. Minimum requirements for experience, education and training are specified for these positions. In order for an employee to be approved in a given technical title these minimum requirements must be met. Training requirements can be satisfied through outside seminars or courses or internal on-going training programs. Certifications of all training and education subsequently become part of each employee's permanent personnel record file.

VIII. Program Specifics

A. Scope of Services

The WSP Project Manager is responsible for defining all project requirements for each specific service requested by the Authority. It is essential that all requirements and information necessary to perform the requested services be identified at the first stage

of the work process. Essential information includes not only information that the Authority requires, but also information that WSP needs from the Authority to properly produce the work. In defining the project requirements, the Project Manager will as a minimum adhere to the following procedures:

- The Project Manager will perform a detailed review of specific scope of services provided by the Authority. A copy of the scope will be forwarded to the QA/QC Engineer and Lead Team Leader for review and comment.
- The WSP Project Manager will contact the Authority's Project Manager to discuss any general questions and/or comments regarding the specific scope of services. At this time, our Project Manager will request all available information on the structure or structures to be inspected including existing condition reports, plans, and access arrangements.
- Our Project Manager and Lead Team Leader will then conduct a site visit to define the scope of inspection work. It is WSP policy that all site visits conducted prior to the start of work be performed by teams of two qualified personnel.
- During preparation of the inspection procedure outline and detailed scope of work, a review and sign-off will be performed by: Project Manager; Lead Team Leader, and Department Manager, Structures

B. Field Inspection

WSP will perform the biennial/condition inspection and associated task in accordance with the Port Authority contract requirements, as well as the latest requirements of the New York State Department of Transportation and FHWA / NBIS requirements.

WSP shall assign crews as necessary to perform the field work assigned by the Authority. Each inspection crew shall consist of two or three individuals, one Licensed Professional Engineer/Team Leader, one Assistant Team Leader, and where necessary one Team Member, all thoroughly experienced in bridge inspection.

- Prior to beginning the inspection, the Lead Team Leader and the other Team Leader(s) will fully review the scope of work and proposed inspection procedures. Copies of all existing inspection data that highlight known areas of concern will be distributed to appropriate personnel. As-built plans, when available, will also be reviewed and copies will be distributed as necessary.
- The QA/QC Engineer, Lead Team Leader and other Team Leader(s) will review all relevant Authority, NYSDOT, NJDOT (if applicable), NYCDOT, AASHTO, and FHWA / NBIS inspection guidelines to ensure compliance with all standard requirements.
- Inspection forms will be prepared which will identify all inspection components. Standard classification criteria symbols will be developed. Each will identify component material, condition/degree of deterioration, and type of action required (i.e. Immediate, Priority, or Routine). The standardization of inspection forms and classification criteria ensures that all inspectors will be consistent in categorizing deterioration.
- The status of all Priority Repairs previously recommended shall be verified.

- Whenever an Immediate, Priority or Routine Condition is identified in the field, the Lead Team Leader will verify the condition:
 - Promptly for an Immediate Condition, conferring as needed with the QA/QC Engineer and/or the Project Manager.
 - Within a day for a Priority or Routine Condition, in consultation with the inspecting party.
- This will assure correct documentation, which is critical in evaluating repair recommendations and also avoiding re-inspection, which is costly, especially when special inspection equipment is utilized.
- Our Project Manager, along with the Authority's Project Manager, will establish a detailed reporting sequence for areas requiring Immediate Action.
- Immediate Actions shall be documented and completion shall be tracked and certified using forms provided by the Authority.
- Throughout the inspection, especially concentrating on the first stage of inspection, the QA/QC Engineer shall review each Team Leader's findings to ensure accuracy and compliance with standard procedures.
- Each inspection team will organize and maintain separate files for areas it inspects, consisting of reference materials, field notes, sketches, recommended repairs, photo logs, and photographs. Partially completed files, which are not being worked on, will be stored in a file drawer in the inspection vehicle for safekeeping and expedient review by the Quality Control Engineer. Any questions or discrepancies will be brought to the attention of the Team Leader immediately, for prompt on-site resolution.
- At all locations at which a Team Leader recommends a course of action (i.e. Immediate or Priority), the Lead Team Leader shall personally inspect any location deemed Immediate and review findings and inspect "questionable" Priority conditions, if there is doubt or debate as to whether the condition should be downgraded to an Immediate condition.
- The Project Manager will make spot site visits during inspection to review field data.
- The individual performing the inspection will initiate each inspection form and sketch. Upon completion of the inspection, the Team Leader will review each inspection form and the accompanying sketches, and initial beneath the inspector's initials.

C. NYSDOT Biennial Inspection Reports

After completion of the field inspection, WSP will prepare and submit the NYSDOT Biennial Inspection Reports as well as a diving report in compliance with the latest NYSDOT requirements. Prior to submission, a careful review of the report(s) shall be performed by the Team Leader and QA/QC Engineer, to assure that the requirements for the State DOT reports are adhered to properly.

D. Condition Survey Report

Prior to submission of the Condition Survey Report, a careful review of report information shall be performed by the Project Manager, QA/QC Engineer and Lead Team Leader. This review shall include:

- Text review for content, clarity, and spelling.
- Review of priority and routine recommendations.
- Cross-reference check between text and report photographs.
- Review of sketches and photographs to ensure correct location identification and orientation.

IX. Summation

WSP has established a Quality Management System and a Quality Assurance Program Plan which allows for the continual monitoring and review of procedures, methodologies, and on-going projects to ensure that WSP is providing quality technical services to the Port Authority. The WSP program structure allows for input and output from all levels of the organization to assure that a quality product is produced for the Authority.

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