

# Attachment 9

## Responsibility Matrix

<b>Work Item:</b>
1 = Design
2 = Furnish and Install
3 = Operations & Maintenance
<b>Responsibility:</b>
A = Primary Responsibility – The party has the primary responsibility for completion of the item.
B = Support / Coordination – The party provides either support or coordination to assist the primary responsible party with successful completion of the item.
C = No Responsibility – The party has no action for the item.

Item	Element / Task / Component / Sub-system Description	Constructor			Contractor			NCTA Program Management			NCTA MRTMC & STOC			NCTA Back Office			Primary Law Enforcement Agency (NCSHP or CMPD)		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1.	Provide oversight of all aspects of operations to ensure all parties are coordinated and performing to expectations.	C	C	C	C	C	C	A	A	A	C	C	C	C	C	C	C	C	C
2.	Define the tolling business rules and tolling policies for the NCTA Roadways.	C	C	C	B	B	B	A	A	A	B	B	B	B	B	B	B	B	B
3.	Toll gantries and foundations	A/B	A	B	B	B	B	A	B	A	C	B	B	C	C	C	C	C	C
4.	Provide poles, and overhead and side-mount structures for supporting static signs and variable message signs.	A/B	A	B	C	C	C	B	B	A	B	B	B	C	C	C	C	C	C
5.	Signage, signing ancillary equipment, cabinets, signing power, UPS and network communications to the designated demarcation points.	B	A	B	C	C	A	A	B	B	B	B	B	C	C	C	C	C	C
6.	Digital Video Audit Subsystem	C	C	C	A	A	A	A	B	A	C	B	B	C	C	C	C	C	C
7.	Provide power distribution services and power assets to all locations including, but not limited to signing locations, vehicle measurement sites, and RTCS locations.	A/B	A	B	C	B	A	A	B	B	B	B	B	C	C	C	C	C	C
8.	Provide all WAN/LAN/MAN network communications equipment and wiring for the RTCS as shown in Attachment 11: US-74 and Monroe Communications Schematic.	B	B	B	A	A	A	B	B	B	C	B	B	B	B	B	C	C	C
9.	Provide Incident Management services for the NCTA Roadway.	C	B	C	B	B	B	B	B	B	A	A	A	C	C	C	B	B	B
10.	Provide the traffic management software used in the TOC.	C	C	C	C	C	B	B	B	B	A	A	A	C	C	C	B	B	B
11.	Provide and manage traffic alert messages on the DMS, 511 North Carolina and project web site.	C	B	C	C	B	B	B	B	B	A	A	A	C	C	C	B	B	B
12.	Maintain the interface between the MRTMC and the VTMS pricing signs.	B	B	C	B	A	A	B	B	B	A	B	B	C	C	C	C	C	C
13.	Provide/Retrieve traffic flow information from traffic detectors.	C	C	C	A	A	A	B	B	B	A	A	A	C	C	C	C	C	C

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		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
14.	Provide the pricing updates, including publishing information (location, toll rate, transmit and publish date & time) to the NCTA CSC and MRTMC for distribution.	C	C	C	A	A	A	B	B	B	B	B	B	B	B	B	C	C	C
15.	Create and maintain the NCTA website with current traffic conditions, advisory sign messages, current toll rates on all DMS, and camera feeds. The website will also provide information on how to sign up for NC QuickPass accounts.	C	C	C	B	B	B	A	A	A	B	B	B	B	B	B	C	C	C
16.	Monitor the published toll rates during peak traffic hours and manually adjust toll rates if necessary.	C	C	C	B	B	B	B	B	B	A	A	A	B	B	B	C	C	C
17.	Maintain the roadside traffic management equipment, including DMS signs, ICS and network communications.	C	C	C	C	C	A	B	B	B	A	A	B	C	C	C	B	B	B
18.	Operate the Safety Service Patrol.	C	C	C	C	C	C	B	B	B	A	A	A	C	C	C	B	B	B
19.	Maintain the roadway and roadside structures.	C	B	C	C	C	C	A	A	A	B	B	B	C	C	C	C	C	C
20.	Maintain the Roadway Toll Collection System.	C	C	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
21.	Provide system reports for performance including traffic flow, Express Lane toll rate history, incidents history, traffic & revenue, AVI penetration rates, image processing quality, and equipment and maintenance performance.	C	C	C	A	A	A	B	B	B	B	C	B	C	C	C	C	C	C
22.	Provide law enforcement and assistance to motorists in distress.	C	B	C	C	C	C	B	B	B	B	B	B	C	C	C	A	A	A
23.	Provide enforcement through the use of roadside observations using dedicated enforcement areas during peak travel hours, including the use of mobile transponder readers.	C	C	C	B	B	B	B	B	B	C	C	C	B	B	B	A	A	A
24.	Provide RTCS System Design, Installation Drawings, and System Documentation for Roadside and Roadway Support Systems.	C	B	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
25.	Provide RTCS System toll equipment buildings/vaults.	B	A	C	B	B	A	A	B	B	C	B	B	C	C	C	C	C	C
26.	Provide RTCS System equipment cabinets on the roadway and gantries as needed.	B	C	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
27.	Conduit, junction boxes, pull boxes, etc. from toll equipment buildings/vaults and cabinets to toll gantries.	B	A	B	B	B	A	A	B	B	C	B	B	C	C	C	C	C	C
28.	Provide all RTCS System equipment and mounting hardware, excluding the AVI readers/antennas.	C	C	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
29.	Equipment brackets and mounting hardware for overhead toll equipment on toll gantries.	C	B	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
30.	Provide all RTCS System equipment installations, terminations, and connections, including DVAS	C	C	C	A	A	A	B	B	B	C	B	B	C	C	C	C	C	C
31.	Provide and install any required in-pavement toll equipment.	B	B	C	A	A	A	B	B	B	C	B	B	C	C	C	C	C	C

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		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
32.	Power, UPS and network communications from demarcation point in toll equipment buildings/vaults and cabinets to overhead toll equipment, in-pavement toll equipment and DVAS cameras.	C	C	C	A	A	A	B	B	B	C	B	B	C	C	C	C	C	C
33.	Provide the NCTA Interoperable Partner compatible multi-protocol readers and Automatic Vehicle Identification (AVI) System as selected by NCTA.	C	C	C	B	B	B	A	A	A	C	C	C	C	C	C	C	C	C
34.	Provide the Automatic Vehicle Detection and Classification (AVDC) System.	C	C	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
35.	Provide the Digital Video Audit System (DVAS) with overview cameras of each RTCS System tolling zone.	C	C	C	A	A	A	B	B	B	C	C	C	C	C	C	C	C	C
36.	Maintenance of Traffic (MOT) for Civil Contractor items of work.	A	A	A	B	B	B	B	B	B	B	B	B	C	C	C	B	B	B
37.	Provide Management of Traffic (MOT) during RTCS System installation and maintenance.	B	B	B	A	A	A	B	B	B	B	B	B	C	C	C	B	B	B
38.	Provide the Image Capture and Processing Systems (ICPS) including front & rear cameras, lighting, lighting sensors, and accurate and timely image processing.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
39.	Provide verified License Plate (LP) values and jurisdictions using a combination of OCR/ALPR (optional) and manual image review for all image-based transactions and images presented to NCTA CSC Back Office.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
40.	Use the verified LP values presented to the NCTA CSC Back Office to determine possible image-based toll (I-Toll) associations for transponder misreads for transaction formation before sending "Bill-by-Mail" notices and to provide transaction dispositions to the RTCS.	C	C	C	B	B	B	B	B	B	C	C	C	A	A	A	C	C	C
41.	Provide the RTCS System, which includes optional Dynamic Pricing Algorithms for all Express Lanes tolled segments, and fare display logic for the Variable Toll Message Signs (VTMS).	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
42.	Provide a Manual Override feature in the RTCS System to allow TOC operators to adjust toll rates for toll segments, individual or all toll zones in a given direction for traffic that is severely impacted by incidents. All Manual Override periods are noted in the toll rate history.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
43.	Monitor traffic and pricing through the defined start-up period (during the first 120-160 days) and provide adjustments to the dynamic pricing algorithm.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
44.	Provide the MOMS integrated with the RTCS System for sending real-time alerts and for logging maintenance records.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
45.	Provide Wrong Way Vehicle detection integrated with the RTCS System for sending real-time alerts, images, and video and interfaces to Wrong Way signs on the roadway.	C	C	C	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B
46.	Provide all testing for RTCS System, including Roadside-Roadway Support Systems and end to end testing with the NCTA Back Office.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
47.	Provide equipment vault	A	A	C	B	B	A	A	B	B	B	B	B	C	C	C	C	C	C

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		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
48.	Provide Facilities for Disaster Recovery Roadway Support Systems.	C	C	C	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C
49.	Power and network communications for Roadway Support Systems in two locations.	C	C	C	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C
50.	Roadway Support Systems equipment and software in primary and DR locations.	C	C	C	A	A	A	B	B	B	C	C	B	B	B	B	C	C	C
51.	Interface between RTCS and the NCTA CSC Back Office.	C	C	C	A	A	A	B	B	B	C	C	B	B	B	B	C	C	C
52.	Responsible for issuing AVI transponders, for providing account maintenance services, and for providing the transponder status list for all NCTA and compatible transponders on a daily (bulk) and incremental basis throughout each day.	C	C	C	B	B	B	B	B	B	C	C	C	A	A	A	C	C	C
53.	Responsible for processing all fully-formed toll transactions including AVI and image-based transactions presented from the RTCS.	C	C	C	B	B	B	B	B	B	C	C	C	A	A	A	C	C	C
54.	Responsible for processing the posting disposition from the NCTA Back Office for all toll transactions sent to the NCTA Back Office for reporting and reconciliation purposes.	C	C	C	A	A	A	B	B	B	C	C	C	B	B	B	C	C	C
55.	Responsible for providing all collection efforts for all image-based toll transactions and associated selected images presented from the RTCS including generating and mailing "Bill-by-Mail" invoices, processing payments and dispute resolution.	C	C	C	B	B	B	B	B	B	C	C	C	A	A	A	C	C	C
56.	Provide coordination and suspension of tolls during incidents per the NCDOT Approved operating procedures.	C	C	C	B	B	B	B	B	B	A	A	A	C	C	C	C	C	C
57.	Express Lanes Traffic detectors, power, cabinets and ancillary equipment	B	A	C	B	B	A	A	B	B	B	B	B	C	C	C	C	C	C
58.	Express Lanes Traffic detector network communications and interface to Dynamic Pricing system	B	B	C	B	A	A	A	B	B	B	B	B	C	C	C	C	C	C
59.	AET Facility Traffic detectors, power, cabinets, ancillary equipment, network communications and ITS integration with MRTMC/STOC	A	A	C	C	B	A	B	B	B	B	B	B	C	C	C	C	C	C
60.	Site work, including earthwork, grading, paving, barrier, retaining walls, and drainage throughout the corridor.	A/B	A	B	C	B	B	A	B	A	B	B	B	C	C	C	C	C	C
61.	Responsible for immediately updating MOMs as ITS devices are added or taken out of service on NCTA facilities.	C	C	C	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C
62.	Responsible for integrating MRTMC/STOC workstations into the RTCS network.	C	C	C	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C
63.	Provide reversible Express Lane Gate Control Software.	B	A	C	B	B	B	A	B	A	B	B	A	C	C	C	C	C	C
64.	Provide reversible Express Lane Gates.	B	A	C	B	B	A	B	B	B	B	B	B	C	C	C	C	C	C
65.	Provide reversible Express Lane Operations including Lane Clearing.	B	B	B	B	B	B	B	B	B	B	B	A	C	C	C	C	C	C

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		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
66.	Provide reversible Express Lane Operations interface for Reversible Express Lane tolling operations.	B	B	B	B	A	A	B	B	A	B	B	B	C	C	C	C	C	C
67.	Provide Metro Area Network (MAN) physical network from vault to vault.	B	A	C	B	B	A	A	B	B	B	B	B	C	C	C	C	C	C