Public Safety & Transportation Committee Report

City of Newton
In City Council

Wednesday, September 7, 2016

Present: Councilors Blazar (Acting Chair), Fuller, Yates, Lipof, Norton, Cote and Ciccone

Absent: Councilor Harney

Also Present: Councilor Baker

City Staff: Chief Bruce Proia, Newton Fire Department; Captain Marc Gromada and Laura McGerigle, Senior Dispatch Supervisor, Newton Police Department; Dori Zaleznik, Chief Administrative Officer and Maura O'Keefe, Assistant City Solicitor

Others Present: Stephanie Pollack, Secretary & CEO and Rob Garrity, Chief of Staff, MassDOT

#302-16 **Discussion with MassDOT regarding new toll structure on the Mass Pike in Newton**
COUNCILOR CICCONE, on behalf of the Public Safety & Transportation Committee requesting a discussion with MassDOT regarding the new toll structure on the Massachusetts Turnpike in Newton. [08/31/16 @ 10:13 AM]

Action: **No Action Necessary 4-0, Councilors Norton, Lipof and Ciccone not voting**

Note: Stephanie Pollack, Secretary & CEO, MassDOT joined the Committee for discussion on this item.

Ms. Pollack provided Committee members with a detailed presentation on the electronic tolling schedule and rate setting on the Massachusetts Turnpike. Both are attached to this report.

Ms. Pollack stated that MassDOT would be holding seven public hearings including a public hearing meeting on Monday September 12, at Newton City Hall, War Memorial, at 6:30 p.m. to discuss toll structure changes within the Massachusetts Turnpike, and the Metropolitan Highway System.
The proposed changes include changes in the toll collection gantry locations and rates through the implementation of all-electronic tolling along the Massachusetts Turnpike and the Metropolitan Highway System. Residents will be given an opportunity to present comments orally or in writing at the hearings. In addition, written comments will be accepted until 5:00 p.m. on Thursday, September 29, 2016. Emailed comments may be made to: AETinfo@dot.state.ma.us. Written comments may be mailed to: MassDOT Legal Department, Att: Eileen Fenton, Senior Counsel, Suite 3510, 10 Park Plaza, 3rd Floor, Boston, Massachusetts 02116.

Ms. Pollack stated that the system is scheduled to go live on October 28, 2016. Currently the system is gathering data and is in the test mode. The board anticipates a vote to approve the final rates and fees on October 6, 2016. MassDOT will monitor traffic and tweak if necessary proposed rates.

The all-electronic tolling (AET) is a free flowing tolling system that operates without toll booths, barriers or gates, allowing traffic to move freely through tolls at highway speeds.

TRANSPONDERS OR BILLING YOUR CHOICE:

Transponders are easy to obtain and are provided free of charge. Massachusetts has high usage rates of E-Z Pass transponders (73% on Western Turnpike, 81% on Boston extension and 74% on tunnels). Customers may obtain their no cost E-Z Pass transponder on the website, Registry of Motor Vehicles and AAA offices. The toll amount is calculated by the AET system based on the distance you have travelled by detecting the first and last tolling point.

TRANSPONDERS: Transponders on each vehicle allow positive identification of a vehicle as you pass through an AET tolling point gantry. The toll is automatically charged to your E-Z Pass account.

INVOICES: The AET tolling point gantry uses cameras to capture a license plate photo and the registered owner of the vehicle is sent an invoice. This rate will be higher, due to billing purposes than one who uses a transponder.

RATE SETTING:

Ms. Pollack provided Committee members with current toll rates and proposed toll rate examples.

The Tobin Bridge, Sumner/Callahan and Ted Williams Tunnels will be tolled in both directions. The toll will split ½ and ½ so customers pay the same roundtrip amount as today if they use an E Z-Pass transponder. The roundtrip cost under the resident discount program will remain the same for those with resident discounted transponders.

NEWTON:

A new gantry will be installed between exit 16 and exit 17 in Newton. Approximately 18% of commuters enter the Mass Pike on exit 16 and 94% of the commuters are not Newton residents.

THREE DIFFERENT RATES THAT WILL APPLY TO EACH GANTRY:

One rate for users of E-Z Pass transponders issued in Massachusetts.
One rate for users of E-Z Pass transponders issued by other states.
One rate for vehicles without E-Z Pass transponders, “pay by plate” including a billing invoice mailing fee.

Under the proposed rates, the majority (51.5%) of the E-Z Pass Massachusetts trips will either see a decrease or stay the same. An online toll calculator is available on the MassDOT website.

West Newton to Downtown Boston COST:
$1.00 current trip fee with E-Z Pass MA transponder
$1.70 future trip fee with E-Z Pass MA transponder

$1.25 current trip fee with E-Z Pass NON MA transponder
$2.65 future trip fee with E-Z Pass NON MA transponder

$1.25 current trip fee when pay by plate
$3.55 future trip fee when pay by plate

Newton Corner to Downtown Boston COST:
$1.00 current trip fee with E-Z Pass MA transponder
$1.50 future trip fee with E-Z Pass MA transponder

$1.25 current trip fee with E-Z Pass NON MA transponder
$2.25 future trip fee with E-Z Pass NON MA transponder

$1.25 current trip fee when pay by plate
$2.85 future trip fee when pay by plate

Committee members addressed Ms. Pollack with privacy concerns regarding information maintained by MassDOT. Ms. Pollack stated that there are three privacy concerns including:
Privacy Concerns:
1.How will information be used and how will information be dispersed? The Federal and State Laws protect your privacy concerns, unless the agency receives a subpoena.
2.How long will information be maintained by the agency? A policy will be written on establishing and destroying information by regulation.
3.Hot List: Scanners will be used for emergencies. The HOT LIST is 'pinged' if a car just appears where the Public Safety Secretary would be immediately notified. Possible situations include an Amber Alert, search of the Marathon Bomber, or any other unique emergency.

Committee members asked about Route 128 North/South directions why tolling has never been implemented? Ms. Pollack answered the Interstate Highways Law prohibits this. Tolling location proposals would have to be changed at the Federal Government level. Seven states now are committed to a Federal Government pilot program including pay by the mile. Massachusetts will learn from these pilot programs.

Committee members asked about Newtonville, Newton Highlands and West Newton T stations accessibility including the frequency of trains and locations in order to continue building a vibrant city. Ms. Pollack answered that it is necessary to have easy access to all stations. The state is in the process of conducting a 'Key Stations Program' where they are reviewing, prioritizing and trouble-shooting a list of all stops and volume to address that all service needs and performances become better.

Committee members thanked Ms. Pollack for her presentation. Without further discussion, Councilor Fuller made the motion for no action necessary. Committee members agreed 4-0, Councilors Norton, Lipof and Ciccone not voting.

Referred to Public Safety & Transportation and Finance Committees

#307-16 **Request to bond $650,000 to purchase a new fire pumper truck**
HIS HONOR THE MAYOR requesting authorization to appropriate six hundred fifty thousand dollars ($650,000) from bonded indebtedness for the purpose of purchasing a new Fire Department Pumper Truck – Engine 3 in accordance with the frontline apparatus replacement schedule. [08/25/16 @ 1:18 PM]

Action: **Approved 5-0, Councilors Lipof and Ciccone not voting**

Note: Chief Proia joined the Committee for discussion on this item.

Chief Proia stated that the appropriation of $650,000 is to purchase a pumper truck including the necessary equipment. This pumper truck will replace the existing busiest pumper truck, Engine 3, a 2004 apparatus with over 100,000 miles, located in Newton Centre. The current equipment in the 2004 apparatus is approximately 20 years old. The new pumper truck will be located at Newton Centre. Engine 3 pumper truck will serve as a spare for the department.

Without discussion, Councilor Yates made the motion to approve this appropriation. Committee members agreed 5-0, Councilors Lipof and Ciccone not voting.

Referred to Public Safety & Transportation and Finance Committees

#272-16 **$700,000 for replacement of the dispatch consoles at the Police Dispatch Center**
HIS HONOR THE MAYOR requesting authorization to appropriate seven hundred thousand dollars ($700,000) from bonded indebtedness for the purpose of funding the replacement of the dispatch consoles at the Police Dispatch Center. [08/01/16 @ 4:19 PM]

Action: **Approved 6-0, Subject to Second Call, Councilor Lipof not voting**

Note: Captain Gromada and Laura McGerigle, Senior Dispatch Supervisor joined the Committee for discussion on this item.

Capt. Gromada stated that the appropriation of $700,000 is to purchase nine dispatch consoles for the Police and Fire Departments; seven consoles for the Police Department and two consoles for the Fire Department.

The current dispatch equipment is dated 2011. It is out of date. By 2018, parts and repairs will no longer be available. The department is experiencing frequent unacceptable problems with the current consoles. Captain Gromada provided a previous bid manual on the proposed dispatch consoles and intent to cancel letter. Both are attached to this report.

Committee members felt that backup material on proposed equipment and a cost breakdown would be helpful to them. A Committee member asked if this appropriation was included in the Capital Improvement Plan? They then asked when could the new equipment be installed? Captain Gromada answered that he is hopeful new equipment would be installed prior to the end of this year. Captain Gromada said that he would request backup as requested to be attached to this report.

Without discussion, Councilor Yates made the motion to approve this appropriation, subject to second call pending backup material on proposed equipment and a cost breakdown. Committee members agreed 6-0, Councilor Lipof not voting.

Committee Clerk's Note:

- The request for new Dispatch Center equipment is included in the Capital Improvement Plan FY2017-2021, by priority, line #16, a request for $700,000, attached to this report.
- On September 8, 2016, the Committee Clerk received the workstation description and a cost breakdown. Both are attached to this report.

#188-16 Discussion concerning traffic safety measures in West Newton Square
COUNCILORS HESS-MAHAN, COTE AND BROUSAL-GLASER, requesting a discussion with the Police Department, DPW and Transportation Division concerning safety measures to protect individuals from motor vehicles in West Newton in light of the accident on March 1, 2016, which caused fatalities and serious injuries. [05/06/16 @ 1:02 PM]

Action: No Action Necessary 6-0, Councilor Lipof not voting

Note: Councilors Hess-Mahan, Cote and Brousal-Glaser in e-mail correspondences agree that a vote of no action necessary is appropriate. Councilor Cote stated that the bollards would be installed soon and improvements in West Newton will be forthcoming.

Without discussion, Councilor Cote made the motion for no action necessary. Committee members agreed 6-0, Councilor Lipof not voting.

#80-16 Discussion on alternative bus routes impacting the closing of the Elliott Street Bridge
COUNCILOR YATES, requesting a discussion with the Massachusetts Department of Transportation and Massachusetts Bay Transportation Authority to work with the City to develop alternative routes for bus route 59 that lessen the impact of closing the Elliot Street (Cooks) Bridge. [02/22/16 @ 4:45 PM]
Held 5-0 on 03/23/16, Councilor Lipof not voting

Action: No Action Necessary 6-0, Councilor Lipof not voting

Note: Councilor Yates in e-mail correspondence with Shane Mark, Director of Operations, agrees that a vote of no action necessary is appropriate. In part, the email stated 'that the MBTA has completed their job'. Councilor Yates provided e-mail correspondence with Mr. Mark stating

that the Highland Avenue Bridge is part of the detour route for the Elliot Street Bridge, attached to this report.

Without discussion, Councilor Yates made the motion for no action necessary. Committee members agreed 6-0, Councilor Lipof not voting.

CITY COUNCIL RECOMMITTED TO PUBLIC SAFETY ON 06/20/16

Referred to Public Safety & Transportation and Finance Committees

#197-15(2) Pilotless Aircraft Operation
COUNCILORS ALBRIGHT, BAKER, AND NORTON proposing an ordinance regulating the operation and registration of pilotless aircraft in the City of Newton. [04/07/16 @ 4:25 PM]
Public Safety & Transportation approved 5-0 on 05/04/16
Finance Approved 5-0-2 on 06/13/16, Lappin, Norton abstaining

Action: Public Safety & Transportation Held 6-0 on 09/07/16, Lipof not voting

Note: Maura O'Keefe, Assistant City Solicitor and Councilor Baker joined the Committee for discussion on this item.
Committee members were provided with a revised draft ordinance and DRONE FAQ's, both are attached to this report.

Councilor Norton said that she received an email from a constituent expressing concerns and suggestions on the proposed draft ordinance, attached to this report. Several constituents have expressed their different points of view and concerns regarding the proposed draft ordinance. She said that it is her intent to meet with the constituents to address their concerns. Councilor Norton the stated that additional information and work may be necessary before a vote can be taken and requested that this item be held.

Committee members and Councilors present thought that any previous issues or concerns were resolved and felt that the new draft ordinance provided was ready to be discussed and acted on. A Councilor stated that a registration process is necessary and the residents need to be protected.

Committee members expressed their suggestions.
Suggestions

- Please clarify, the wording *significant education component*, section 1, DRONE FAQs : The Newton registration process includes a significant educational component that will help owners and operators better understand how and where to fly drones in a safe and careful manner.
- Please provide a list on the registration process information necessary, section 1, DRONE FAQs: The registration process in Newton includes some information that the FAA does not require, in order to assist law enforcement with tracking drones to their operators.
- If appropriate, please add , to the draft ordinance, section 2, DRONE FAQs: The City of Newton ordinance only regulates drones that fly under 400 feet, in the airspace that the FAA permits cities and towns to oversee.

- Please provide Councilor Norton email to the Committee Clerk for it to be attached to the report. Councilor Norton agreed.

Chair Ciccone requested that this item be ready for discussion on September 21. Without further discussion, Councilor Norton made the motion to hold this item. Committee members agreed 6-0, Councilor Lipof not voting.

#187-16 **Discussion on steps taken to train the Police Department on downing drones**
COUNCILORS COTE AND HARNEY, requesting a discussion with the Chief of Police on the steps the department has taken, either internally or externally with mutual aid to prepare the city for potential criminal threats by drones including what the department has done to train officers in effective means of downing dangerous drones. [05/04/16 @ 4:13 PM]

Action: **No Action Necessary 6-0, Councilor Lipof not voting**

Note: Captain Gromada joined the Committee for discussion on this item.

Councilor Cote stated that he has spoken with Chief MacDonald regarding steps, if any the department has taken on preparing officers to down drones. He then stated that Chief MacDonald informed him that the department has taken no action on training personnel.

Captain Gromada stated that the department would have to purchase equipment necessary to down drones. Equipment is necessary, *not* training. The Massachusetts State Police and the Federal Government do not have the necessary equipment. Councilor Cote said that he is concerned with fire type weapons on drones perhaps firing and threatening the public. Captain Gromada then said that Chief MacDonald reviews all/any threats.

Without further discussion, Councilor Cote made the motion for no action necessary. Committee members agreed 6-0, Councilor Lipof not voting.

At approximately 8:35 p.m., Councilor Yates made a motion to adjourn. Committee members agreed 6-0, Councilor Lipof not voting.

Respectfully submitted,

Richard Blazar, Acting Chair

#302-16

MassDOT
Massachusetts Department of Transportation
Highway Division

All Electronic Tolling
August 22, 2016

Schedule

Schedule and Labor Impacts

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- System construction and preparation for "Go Live"
- Process for setting rates
- Outreach on Go Live/E-Z Pass Transponders
- Labor Transition

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System Testing / Go Live Date

- The system is scheduled to Go Live October 28th.
- Currently the system is gathering data and is in test mode. Daily meetings are held between Raytheon/TransCore/MassDOT to troubleshoot issues.
- Construction at two toll zones (Callahan, TWT) has been delayed; therefore, 16 toll zones will not be brought into the system until early September.
  - Once complete, the formal assessment of the system will begin.
  - This assessment period will 30 days.
- The contract requires Raytheon to achieve a specific level of accuracy prior to Go Live.

Public Process for Setting Rates

	Planned Date(s)
Initial Briefing to MassDOT Board	August 22nd
7 Public Meetings	September 6th- September 15th
14 day comment period	September 16th- September 29th
Board Vote to Approve Final Rates and Fee	October 6th

Suggesting Meeting Locations and Dates (All Meetings Begin at 6:30pm)

Tuesday September 6th
Worcester
Union Station – Union Hall

Wednesday September 7th
Lynn
North Shore Community College

Monday September 12th
Newton
City Hall – War Memorial Room

Tuesday September 13th
Framingham
Town Hall –Nevins Hall

Wednesday September 14th
Allston /Brighton
Jackson Mann School

Wednesday September 14th
Springfield
Springfield City Hall

Thursday September 15th
Lenox
MassDOT District 1 Headquarters

Details of the proposed rates and rate-setting process will be provided later in today's Board presentation

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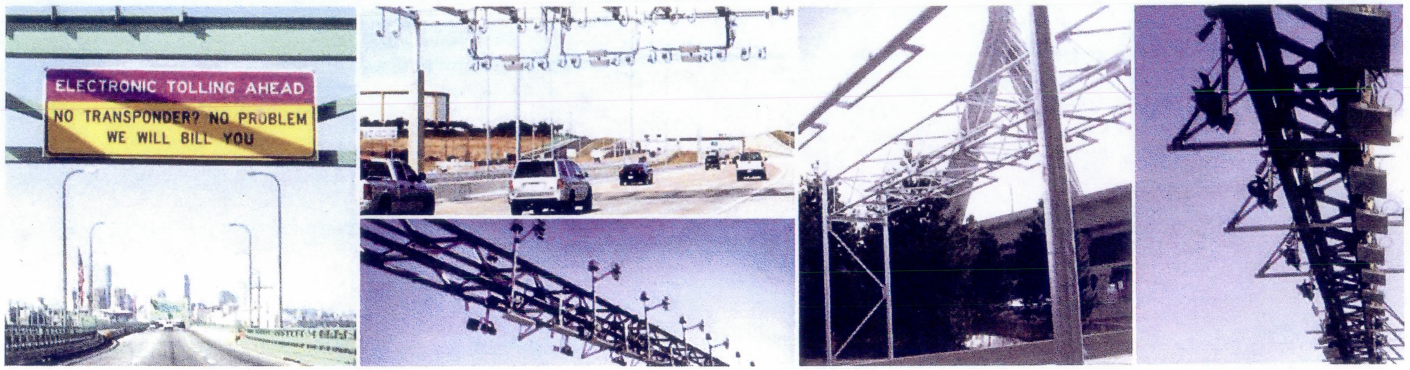
Outreach: The new EZ Drive MA Website

EZDRIVEMA
massDOT

Search

Home E-ZPass MA Pay By Plate MA Customer Service



Welcome To Massachusetts AET

AET stands for All Electronic Tolling and is Massachusetts own road toll collection system. AET is a free flow tolling system that operates without toll booths, barriers or gates, allowing traffic to move freely through tolling points at highway speeds.
The heart of the system is the AET E-ZPass Transponder, (or TAG) which is attached to the vehicle windshield and is used to positively identify your vehicle as you pass through an AET tolling point.

The AET tolling point consists of an gantry, mounted over the roadway, which holds detectors to read the E-ZPass Transponders as they pass under the gantry as well as cameras to capture images of the vehicles license plate. As you travel under the gantry, either:

- the E-ZPass Transponder is read and the toll is automatically charged to your E-ZPass account, or
- a photo of the license plate is taken and the registered owner of the vehicle is sent a Pay By Plate MA invoice.

The toll amount is calculated by the AET system based on the distance you have travelled by detecting the first and last tolling point you pass on each journey: no worries, it's all that simple.

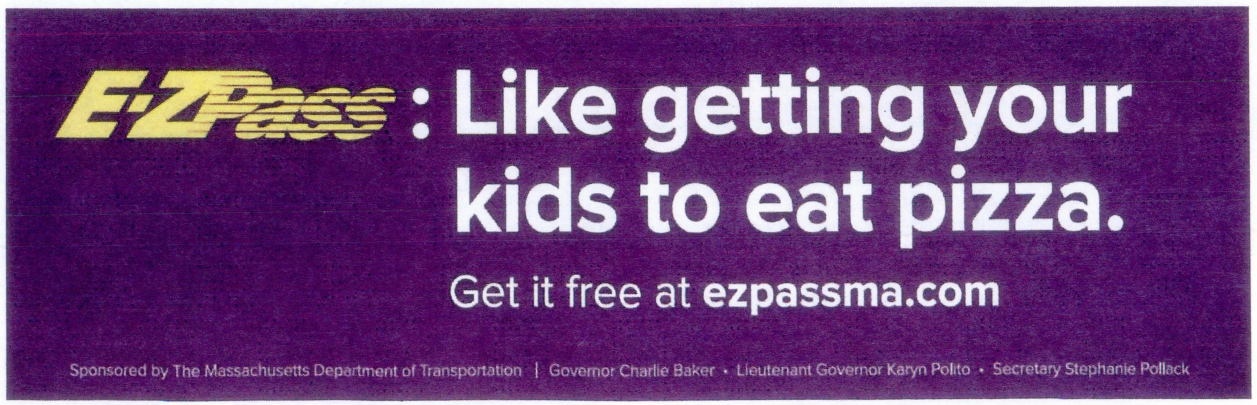
My E-ZPass Account | Pay a Pay By Plate Invoice | My Pay By Plate Account | Pay an E-ZPass Toll Violation Notice

Outreach: E-ZPass Marketing Plan

MassDOT Massachusetts Department of Transportation Highway Division

- E-ZPass transponders are provided free of charge and Massachusetts has high rates of E-ZPass usage (73% on the Western Turnpike, 81% on the Boston Extension and 74% on tunnels). The new Tobin system is currently at an 85% E-ZPass usage rate (compared to a 65% usage rate prior to its AET conversion). MassDOT's goal is to reach 85% E-ZPass usage rate system-wide by Go Live

- MassDOT began its advertising campaign on July 11th focused on the theme of "Free and Easy" and is using a combination of print, radio, and web advertisements to promote E-ZPass and drive users to the website to signup (ezpassma.com)



Obtaining a Transponder

MassDOT Massachusetts Department of Transportation Highway Division

- MassDOT is encouraging customers to obtain an E-ZPass transponder before October and has a coordinated effort underway to provide multiple opportunities for customers to sign up for E-ZPass

- E-ZPass Signup Options
  - Signup at ezpassma.com
  - E-Z Pass transponders are available at most Registry of Motor vehicles centers (currently at 19/29 locations) – locations listed at www.mass.gov/ezpassma
  - E-Z Pass sign-up is available for AAA members at all 30 AAA locations statewide - locations listed at www.mass.gov/ezpassma
  - Currently five (5) E-ZPass customer service centers and seven (7) post Labor Day- locations listed at www.mass.gov/ezpassma

- MassDOT will conduct outreach efforts after Labor Day and throughout the fall to bring E-ZPass sign-up directly to communities by having the E-Z Pass van at major festivals/events
  - MassDOT will publish this list at www.mass.gov/ezpassma

E-ZPASS SIGN-UPS LIVE

September 2016

Subject to Change

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				September 1	September 2	September 3
September 4	September 5 Holiday	September 6	September 7 Mayflower Senior Center, Springfield 10a-2p	September 8	September 9	September 10 NE Food Truck Festival - Watertown 11am-3pm
September 11	September 12	September 13	September 14 Chicopee Public Library 10a-2p	September 15	September 16	September 17 Lee Founders Weekend 10am-2pm
September 18	September 19	September 20	September 21 Granby Senior Center 10a-2p	September 22 Big E, Mass Day 9am – 2pm	September 23	September 24 Lenox Apple Squeeze 10am-2pm
September 25	September 26	September 27	September 28 Monson Senior Center 10a-2p	September 29 South Hadley Farmers Market 2pm-6pm	September 30	

Status of Labor Transition

MassDOT Massachusetts Department of Transportation Highway Division

- There are currently 510 full and part-time toll takers.

- As part of the transition to All Electronic Tolling, MassDOT has made commitments to Unit F employees, including job opportunities, early retirement incentives, and career training opportunities. These benefits are available only to employees hired before January 31, 2014.

- Early Retirement or Cash Retention Stipend - The 200 most senior toll collectors may elect either a 5/5 ERIP or a cash stipend equal to 50% of base wage earned over last 12 months prior to end of manual toll collection. Eligible employees must work through the end of manual toll collection and retire within 90 days.

- Alternative Cash Stipend - Employees not eligible to retire who remain employed through the end of manual toll will receive $1,000 per completed year of service to a maximum of $20,000.

Status of Labor Transition

MassDOT Massachusetts Department of Transportation Highway Division

- Job Opportunities - MassDOT agreed to post and fill 86 Minimum Entry Requirement positions. If 86 positions are not posted and filled by the end of manual toll collection, laid off employees will be placed into special applicant pool for up to 3 years.

  Current Status as of August 2016:

  - Filled 40 positions with former toll collectors
  - Scheduled to fill 30 additional MEO I positions.

- Career Training Funds- $750,000 in career training and education funds administered through the EOLWD Career Training Centers.
  - 150 toll collectors took part in career and skills classes

- CDL and Hoisting- License Training
  - 136 toll collectors employees have received CDL
  - 76 toll collectors received a hoisting license

#302-16

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Massachusetts Department of Transportation
Highway Division

All Electronic Tolling
August 22, 2016

Rate Setting

Setting Gantry Rates

MassDOT Massachusetts Department of Transportation Highway Division

- The proposed gantry rates are being shown and discussed publicly for the first time at the August 22nd MassDOT Board meeting.
  - No Board action is required at this time
- A revision of the existing toll structure is discussed in MGL Chapter 6C, Section 3, and requires MassDOT to hold at least 2 public hearings that take place 30 days prior to effective date of a change in the toll structure, and allow for a 14 day public comment period.
- MassDOT will hold seven meetings after Labor Day to present the rates and fee and receive feedback
- The rates and fees will be voted on at the October 6th Board meeting
- Note: the late fees associated with unpaid tolls for Pay By Plate customers are set through a separate process and MassDOT intends on maintaining the existing structure already in place on the Tobin Bridge.

MassDOT Massachusetts Department of Transportation Highway Division

Goal: Maintaining current toll revenues and proportions

- The gantry rate proposal has been designed to maintain existing revenue levels across the whole system , as well as the current proportion of total revenue generated by the Western Turnpike and Metropolitan Highway System.

- The commitment to a **revenue neutral program** means that rates will be set such that a *passenger vehicle with a Massachusetts E-ZPass* driving from one end of I-90 to the other will pay no more than the same amount as they do today
  - Under the proposed rates passenger vehicles with E-ZPassMA will pay $0.45 less than they do today to go from the NY border to Boston
  - Due to location of the gantries selected by the previous administration, many existing trips will go up or down in cost. Some un-tolled movements will become tolled, and vice versa.

- The Tobin Bridge and Sumner/Callahan, and Ted Williams Tunnel will be tolled in both directions, with the toll split ½ and ½ so customers pay the same roundtrip amount as today if they use E-ZPass MA.

- The roundtrip cost under the Resident Discount Program will remain the same for those with resident discount transponders.

Current Toll Rates

MassDOT Massachusetts Department of Transportation Highway Division

- The current full length toll (NY to Boston) for E-ZPass MA drivers is $6.60. This does not include tolls on the Tobin Bridge or Tunnels.

- The full length Western Turnpike toll is $4.70 and the full length Metropolitan Highway System toll is $2.00. A $0.10 discount assessed for traveling across both facilities at the Weston plaza (IC15)

- Western Turnpike -- distance-based fee structure based on entry and exit points, and the marginal per mile cost drops the further someone travels.
  - *No E-ZPass MA discount*
  - No higher tolls above 5+ axle vehicles[1]
  - No commercial rate differential

- Metropolitan Highway System -- toll is $1.25 at Weston and $1.25 at Allston/Brighton
  - E-ZPass MA passenger vehicles receive a $0.25 discount at each facility[2]
  - Tolls increase consistently above 5+ axles

- Sumner/Callahan and Ted William Tunnel tolls are $3.50 for cash and out of state E-ZPass customers, and $3.00 for E-ZPass MA.

- On the Tobin Bridge, all E-ZPass customers pay $2.50 and Pay by Plate customers pay $3.00

[1] With the exception of tandem trucks, which account for a small %of trips on WT
[2]Legislatively required discount program (Chapter 6C, Section 13b)

How Many Different Rates Will Apply at Each Gantry?

MassDOT's proposal is to have three rates at each gantry:

- One rate is for users of E-ZPass transponders issued by the Commonwealth (E-ZPassMA)
- One rate is for users of compatible E-ZPass transponders issued by other states
- One rate is for vehicles that do not have any transponder and will be billed using the Pay-By-Plate system
  - As explained later, these vehicles will pay the PBP gantry rate and a fee on their first bill associated with the costs mailing an invoice

E-Z Pass MA

- E-ZPassMA is a transponder issued by Massachusetts. Other states also issue E-ZPass transponders. All E-ZPass Transponders are usable in every state that uses E-ZPass.
- Out of state residents may receive E-ZPassMA transponders; they are not limited to in-state residents.
- The Commonwealth can offer discounts to E-ZPassMA users without violating the U.S. Constitution's Interstate Commerce Clause because the discount is available to a resident of any state, should they get an E-ZPassMA Transponder.

Process Used for Setting Revenue Neutral E-ZPassMA Rates

massDOT Massachusetts Department of Transportation Highway Division

Assumptions

- Full length NY-Boston trip of $6.70 for E-ZPassMA passenger vehicles remains, at a minimum, "revenue neutral" or is reduced.
- All facilities generate comparable revenue as to today (ie: Western Turnpike drivers do not pay more tolls than they do today)
- Tunnels and Tobin Bridge are tolled equally in each direction with the roundtrip cost revenue neutral for E-ZPassMA drivers.
  - By default, these rates have already been set for E-ZPassMA drivers. ($1.50 each way at Tunnels, and $1.25 each way on Tobin).

Methodology

- Gantry rates were developed by calculating the per mile cost of travel on different sections of I-90 and setting rates at each gantry to be as close to that per mile cost of travel today.
- The discount for E-ZPassMA users currently applied only at the Weston and Allston/Brighton tolls is applied to all E-ZPassMA customers at all gantries

How do the proposed rates reflect this commitment to "revenue neutrality"?

MassDOT Massachusetts Department of Transportation Highway Division

- Systemwide: Using 2015 calendar year data to project full calendar year anticipated revenue, revenue on both the Western Turnpike and Metropolitan Highway System will be roughly the same after AET as it is with current tolls:
  - Western Turnpike calendar year revenue with current tolls: $128.1M
  - Western Turnpike projected calendar year revenue with AET: $127.7M
  - Metropolitan Highway System calendar year revenue w/current tolls: $225.0M
  - Metropolitan Highway System calendar year revenue with AET: $216.3M
- End-to-End
  - Current toll from NY border to Boston with E-ZPassMA: $6.60
  - Proposed AET from NY border to Boston with E-ZPassMA: $6.15
  - Western Turnpike current toll from NY border to Weston w/E-ZPassMA: $4.70
  - Western Turnpike proposed AET from NY border to Boston w/E-ZPassMA: $4.45
  - MHS current toll from Weston to downtown Boston w/E-ZPassMA: $2.00
  - MHS proposed AET from Weston to downtown Boston w/E-ZPassMA: $1.70

How will proposed rates affect specific trips?

MassDOT Massachusetts Department of Transportation Highway Division

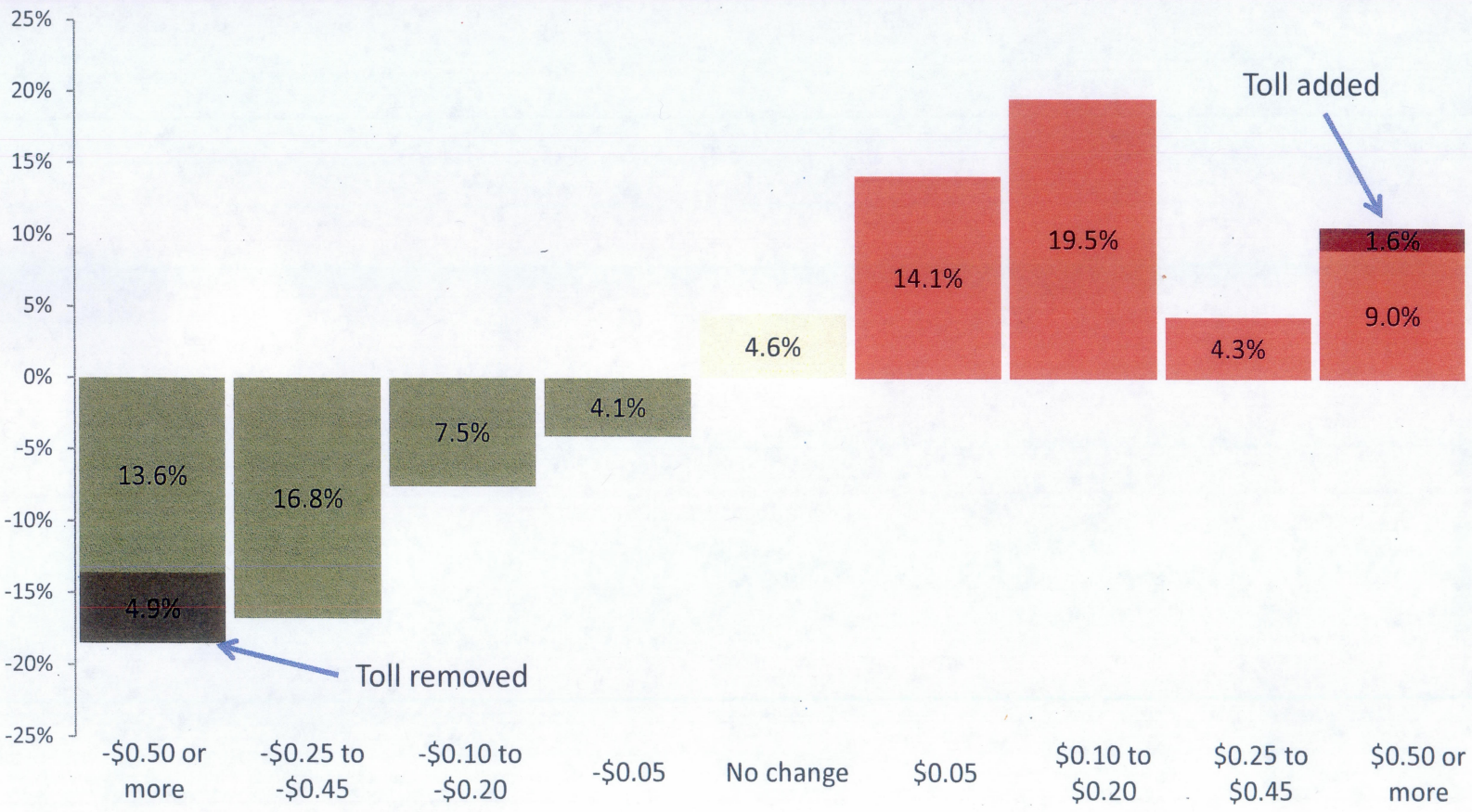
- Individual drivers may see their tolls decrease, stay the same or increase for a given trip from point to point within the Turnpike since tolls will be charged and collected at gantries that vary from current toll locations. This change in the location of toll collections required MassDOT to set the rates that will be charged at each gantry.

- The data presented on the next slide illustrates how the cost of trips under the proposed E-ZPassMA rates will compare with current trip costs:
  - The cost of 46.9% of trips will decrease
  - The cost of 4.6% of trips will remain the same
  - The cost of 14.1% of trips will increase by 5 cents
  - The cost of 5% of trips will increase by 10 cents

- MassDOT has also developed a set of regional maps to demonstrate how the cost of commonly made trips in different regions will be affected by the proposed rates

massDOT Massachusetts Department of Transportation Highway Division

Under the proposed rates, the majority (51.5%) of E-ZPass MA trips will either see a decrease or stay the same



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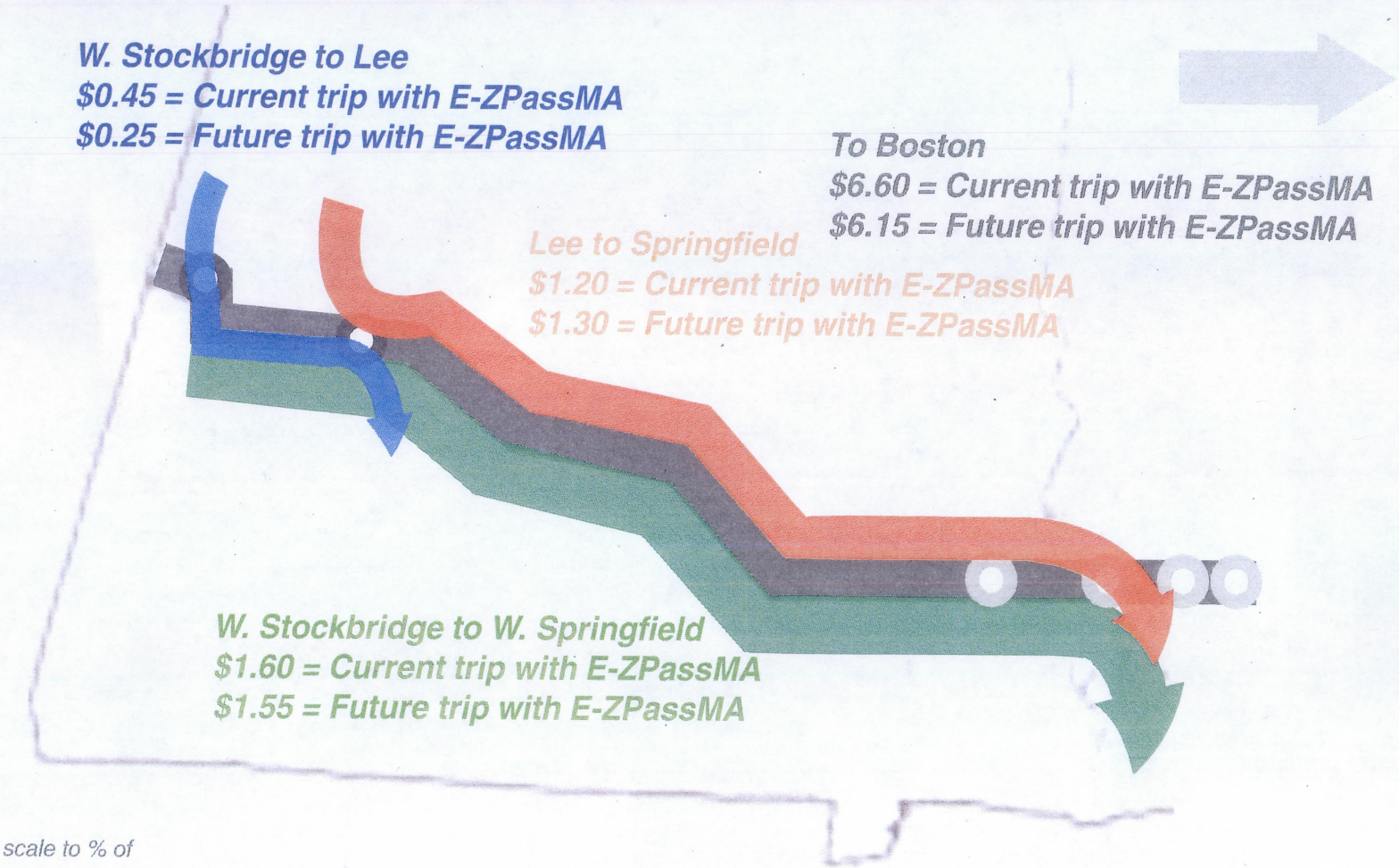
Highway Division

Berkshire region trips



Arrow relative scale to % of regional entries

20% of entries

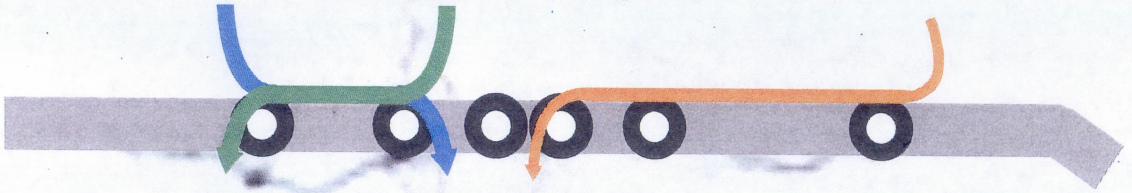
massDOT
Massachusetts Department of Transportation
Highway Division

Springfield Metro region trips

To New York
$2.15 = Current trip with E-ZPassMA
$2.00 = Future trip with E-ZPassMA

To Boston
$4.90 = Current trip with E-ZPassMA
$4.90 = Future trip with E-ZPassMA

Westfield to W. Springfield
$0.25= Current trip with E-ZPassMA
$0.30 = Future trip with E-ZPassMA



W. Springfield to Westfield
$0.25 = Current trip with E-ZPassMA
$0.30 = Future trip with E-ZPassMA

Palmer to Springfield
$0.45 = Current trip with E-ZPassMA
$0.45= Future trip with E-ZPassMA

Arrow relative scale to % of regional entries

20% of entries

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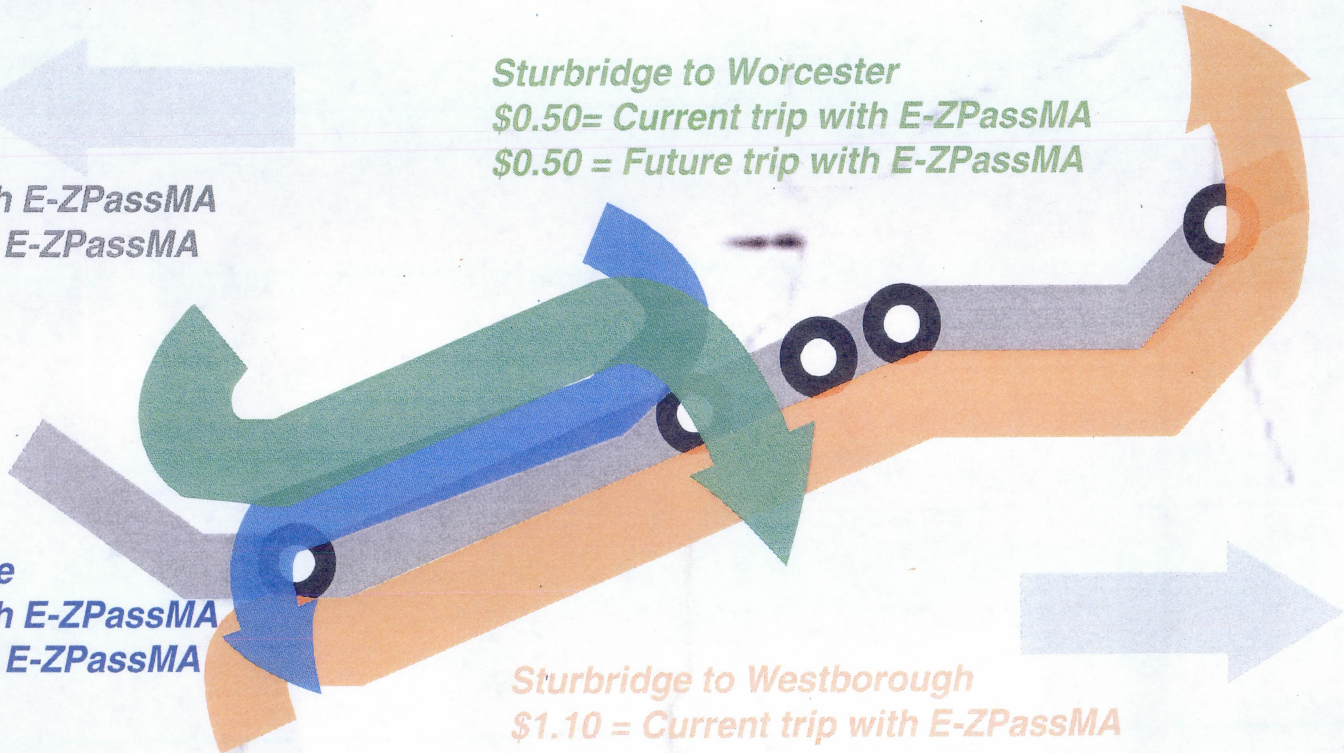
Highway Division

Worcester Metro region trips



To New York
$3.40 = Current trip with E-ZPassMA
$3.05 = Future trip with E-ZPassMA

Sturbridge to Worcester
$0.50= Current trip with E-ZPassMA
$0.50 = Future trip with E-ZPassMA

Worcester to Sturbridge
$0.50 = Current trip with E-ZPassMA
$0.50 = Future trip with E-ZPassMA

Sturbridge to Westborough
$1.10 = Current trip with E-ZPassMA
$0.95= Future trip with E-ZPassMA

To Boston
$3.65= Current trip with E-ZPassMA
$3.60 = Future trip with E-ZPassMA

Arrow relative scale to % of regional entries

20% of entries

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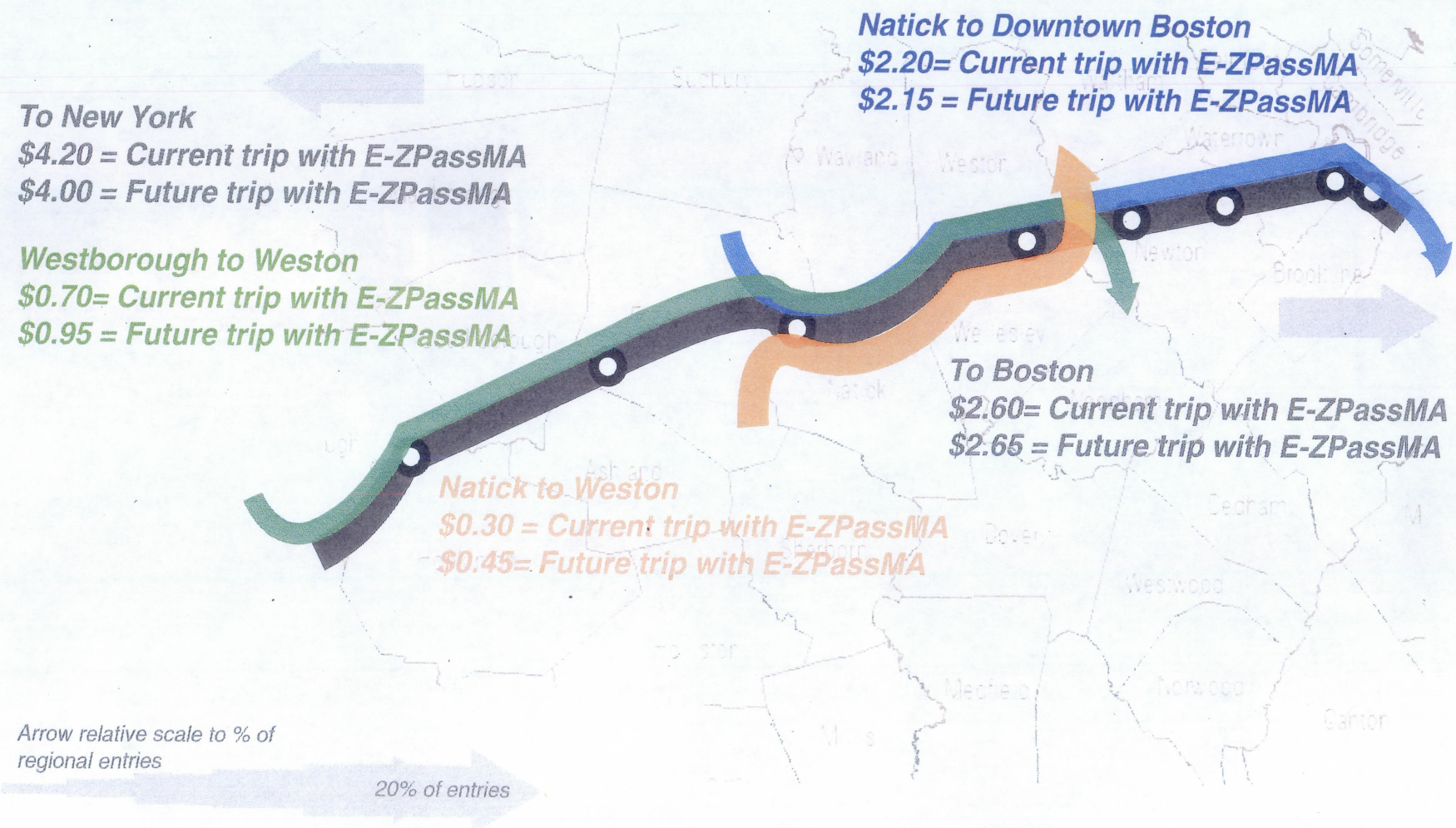
Metro West region trips



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Highway Division

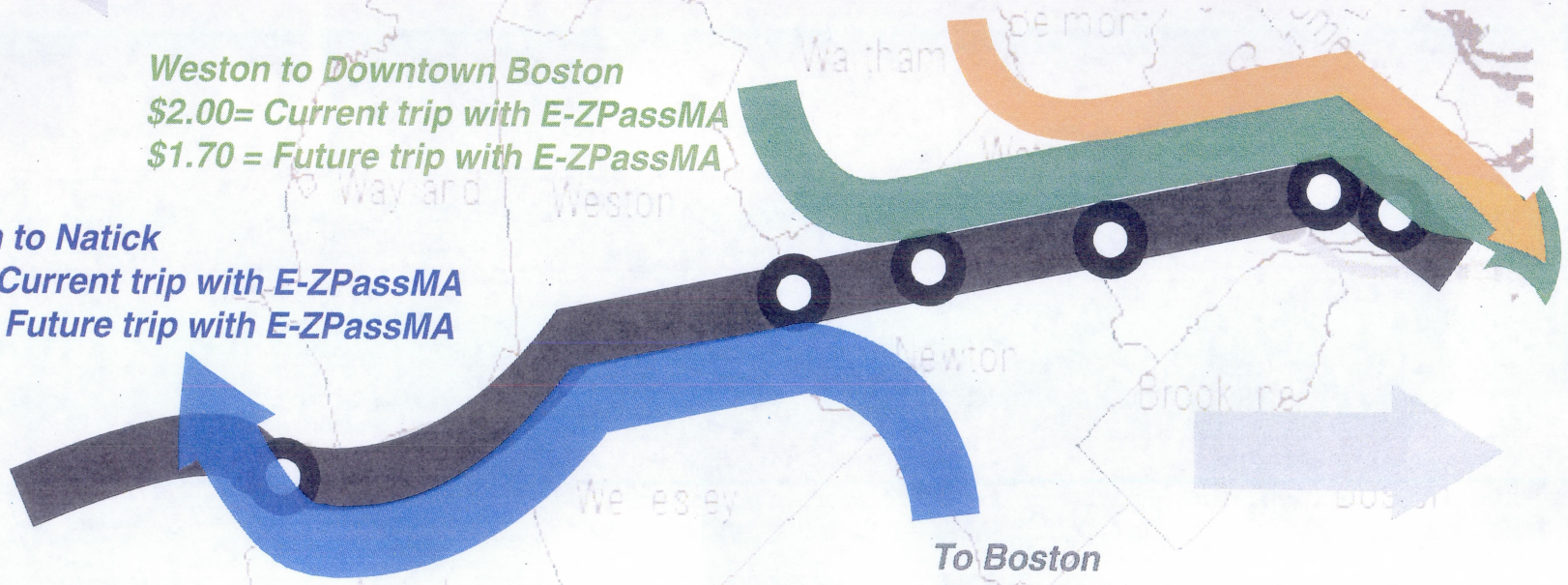
128 and Newton trips

To New York
$5.60 = Current trip with E-ZPassMA
$4.65 = Future trip with E-ZPassMA

Newton Corner to Downtown Boston
$1.00 = Current trip with E-ZPassMA
$1.50= Future trip with E-ZPassMA

Weston to Downtown Boston
$2.00= Current trip with E-ZPassMA
$1.70 = Future trip with E-ZPassMA

Weston to Natick
$0.30= Current trip with E-ZPassMA
$0.45 = Future trip with E-ZPassMA



To Boston
$2.20= Current trip with E-ZPassMA
$1.70 = Future trip with E-ZPassMA

Arrow relative scale to % of regional entries

20% of entries

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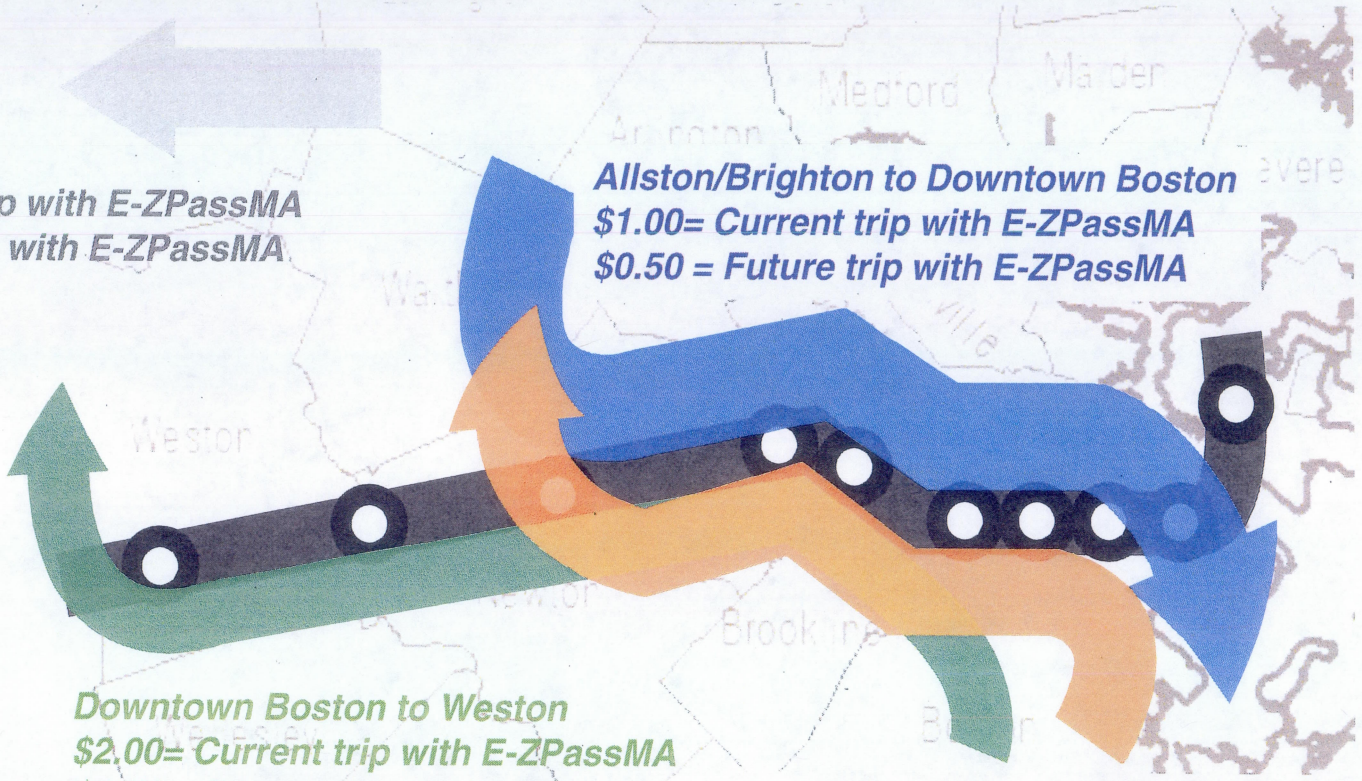
Boston Metro region trips



Setting Pay By Plate Fees and "Leakage"

- Leakage is the difference between all potential revenue and what is actually collected
- When tolls are collected either by E-ZPass transponder or cash, almost all potential revenue is collected and there is very little leakage.
- The introduction of Pay By Plate introduces more leakage; to keep total revenue constant, leakage must be accounted for when Pay By Plate fees are set.
- Leakage can come from a variety of sources: non-payment, unreadable images, or incorrect addresses. Non-payment is by far the largest source of leakage.
- It is important to emphasize that not all leakage is lost revenue – it represents a snapshot in time for what has not been collected.
  - For example, leakage is calculated based on revenue received after the first bill is mailed. But MassDOT will mail 4 bills before putting a hold on at the RMV; revenue collected on the 2nd, 3rd or 4th mailing reduces the leakage percentage.

Pay by Plate Leakage

MassDOT Massachusetts Department of Transportation Highway Division

- MassDOT's recommended Pay By Plate rates assume a conservative estimate for leakage, so that actual revenue collected from Pay By Plate customers is equal to what we would collect if they all paid.

- During the Tobin Bridge pilot "leakage" was approximately **21**% of PBP revenue (and only 4% of total revenue) but a higher leakage number was assumed on other tolled facilities (26-38%) since they are likely to attract more out-of-state Pay By Plate customers.

- Based on data collected from the Tobin Bridge, and assumptions made about the other tolled facilities, a "waterfall analysis" to estimate leakage shows that on average 35% of potential Pay By Plate revenue will go uncollected. Assuming 85% E-ZPass market share, this would represent 5% of total possible revenue.

- The analysis assumes that
  - 5- 7% of images are non-usable/unreadable
  - 1.5-2.5% of RMV records are incorrect
  - 7.5% of addresses are invalid or do not reach the addressee
  - 50-60% of bill recipients do not pay the first bill

Strategies to Minimize Leakage

MassDOT Massachusetts Department of Transportation Highway Division

1. Violation reciprocity with other states
   - Currently Massachusetts has reciprocity with Maine and New Hampshire
   - MassDOT will be issuing letters to Connecticut, Rhode Island, and New York (states with the greatest numbers of drivers using the Turnpike) in the next week seeking to establish reciprocity agreements

2. Increasing E-ZPass market share
   - MassDOT is engaged in a marketing campaign to reach or exceed its goal of 85% E-ZPass market share by Go-Live

3. Simplifying Pay By Plate payment process
   - As part of AET, a new website is being developed to simplify the payment process
   - Based on lessons learned on the Tobin Bridge, MassDOT has already improved the envelopes and notices it mails to Pay By Plate customers

- Massachusetts residents who do not pay their toll will eventually have a hold on their vehicle registration renewal.

Setting Pay by Plate fees and costs

MassDOT Massachusetts Department of Transportation Highway Division

- In addition to leakage, there are direct costs MassDOT incurs to bill Pay By Plate customers that are far greater than the cost to bill E-ZPass customers.
- Pay By Plate rates and fees are not meant to be punitive, but to cover the additional cost of processing the transaction and mailing invoices. There are costs incurred for each time a PBP customer passes under a gantry, and a cost for sending a bill at the end of the month.
- The proposed fee option was developed by studying the **additional** cost of processing Pay By Plate transactions vs. E-ZPass transactions
- In order to recover these additional costs, Pay By Plate customers will pay a higher rate at each gantry (equivalent to the per transaction cost MassDOT incurs), and a billing fee (equivalent to the cost of mailing a bill at the end of the month).
- The estimated cost for each PBP transaction is $0.37, plus $0.58 for mailing each bill, as demonstrated on the next slide

Pay by Plate vs. E-ZPass Cost Analysis

massDOT Massachusetts Department of Transportation Highway Division

Per Gantry Transaction Cost (ie: each time a driver passes under a gantry)	Per Transaction cost for Pay By Plate (cost varies by facility)	Average Per Transaction cost for Pay By Plate (avg[8])	Per Transaction cost for E-ZPass	Average Per Transaction cost for E-ZPass (avg[8])
Image Processing[1]	$0.05-$0.06	$0.06	--	
Account Maintenance Fee[2]	--	--	$0.03-$0.06	$0.03
Banking and Credit Card Fees[3]	$0.01-$0.05	$0.02	$0.01	$0.01
Invoicing Processing Fee[4]	$0.09-$0.21	$0.11	--	--
Out of State DMV Lookup Fee	$0.01 - $0.03	$0.02		
Other Fees incurred to collect toll[9]	$0.02- $0.03	$0.03	$0.03-$0.04	$0.04
Total Cost Per Gantry Transaction before leakage [5]	**$0.22 - $0.36**	**$0.24**	**$0.07-$0.10**	**$0.08**
Total Cost Per Transaction including leakage	**$0.34-$0.53[6]**	**$0.37**	--	**$0.08**
Cost to Issue Mail First Bill	**Pay By Plate**		**E-ZPass**	
Postage Cost	$0.58[7]		$0.00	

[1]Based on TransCore contract
[2]Based on TransCore contract
[3]2.1% credit card fee
[4]Based on TransCore contract
[5]Assumes average of 35% "leakage" across all toll facilities
[6]Based on postage cost of $0.55 plus 5% contingency
[7]Jacobs assumed a higher leakage than experience on Tobin (35% vs. 24%), using the Tobin leakage number the Cost Per Transaction would be $0.3 vs. $0.37
[8]Weighted by # of PBP transactions per facility to derive average cost per transaction across all facilities
[9]Includes walk in centers, equipment maintenance, etc

Recovering Pay by Plate Costs

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- MassDOT is recommending a rate differential at each gantry plus a fee on the monthly invoice in order to recover Pay By Plate processing costs.
  - The proposed rates include a $0.30 rate differential at each gantry so E-ZPass and PBP pay different rates at each location
  - In addition, MassDOT will assess a $0.60 processing fee to cover the cost of mailing bills
- MassDOT believes this method is the fairest and most transparent way to assess the fee, since it allows customers to be charged per transaction for costs that are incurred per transaction and per invoice for costs that are incurred per invoice.

Putting It All Together: Proposed Rate Schedule

MassDOT Massachusetts Department of Transportation Highway Division

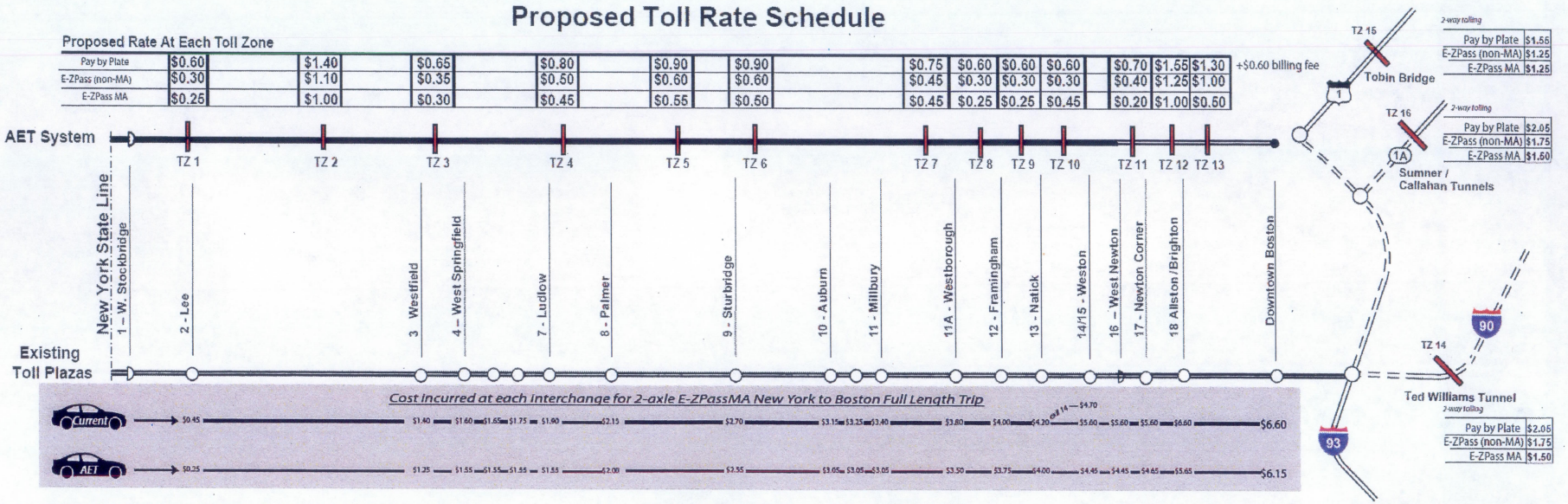
Not Drawn to Scale

Proposed Toll Rate Schedule

Proposed Rate At Each Toll Zone

	TZ 1	TZ 2	TZ 3	TZ 4	TZ 5	TZ 6	TZ 7	TZ 8	TZ 9	TZ 10	TZ 11	TZ 12	TZ 13
Pay by Plate	$0.60	$1.40	$0.65	$0.80	$0.90	$0.90	$0.75	$0.60	$0.60	$0.60	$0.70	$1.55	$1.30
E-ZPass (non-MA)	$0.30	$1.10	$0.35	$0.50	$0.60	$0.60	$0.45	$0.30	$0.30	$0.30	$0.40	$1.25	$1.00
E-ZPass MA	$0.25	$1.00	$0.30	$0.45	$0.55	$0.50	$0.45	$0.25	$0.25	$0.45	$0.20	$1.00	$0.50

+$0.60 billing fee



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Highway Division

Cost and Revenue Projections

Savings/Costs Associated with AET Conversion

MassDOT Massachusetts Department of Transportation Highway Division

- Earlier projections that AET would save $50M annually in operating costs did not include initial capital costs, and also assumed regular toll increases which we are not pursuing, and did not account for offsetting increases in operating expenses.

- AET will reduce toll collection operating costs modestly, by approximately $5M annually (see next slide)

- Operating cost savings are projected to rise slightly in the first year of the program and future efforts to reduce leakage may increase net revenue; MassDOT will reassess gantry fees periodically to ensure that the overall program remains revenue neutral

- Substantial capital costs have been incurred to build the AET system and will be incurred to demolish the toll plazas
  - AET System Buildout--$130M
  - Toll Demolition Contracts– total construction cost of $132.8M

Operating Cost Estimates

MassDOT Massachusetts Department of Transportation Highway Division

Operational Cost Categories	Current System	AET System
Salary of Toll Collectors + Fringe Rate	$38.14M	$0
TransCore Back office Processing Costs	$18.92M	$27.8M
Banking Fees (Credit Card Fees)	$5.83M	$7.7M
RMV Lookup up Fees	$0.068M	$2.1M
Postage Fees	$1.01M	$18.7M
MassDOT Customer Service Center Costs	$2.62M	$3.6M
Utility Costs and Equipment Maintenance Costs	$1.1M	$2.7M
Estimated Annual Operational Cost	**$67.69M**	**$62.6M**

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Highway Division

Appendix Information

Finding: MassDOT has one of the lowest per mile costs in the country

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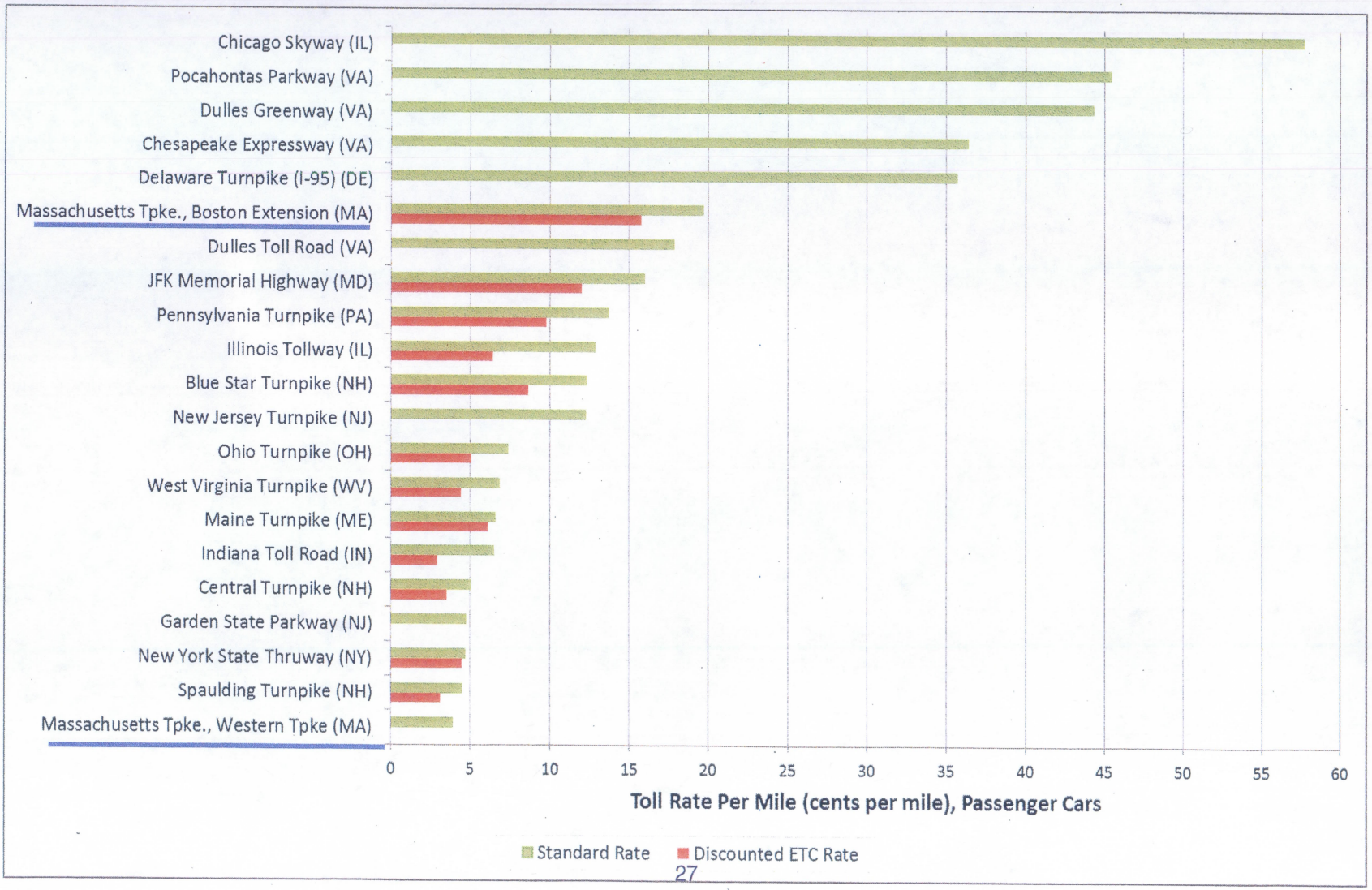
Highway Division

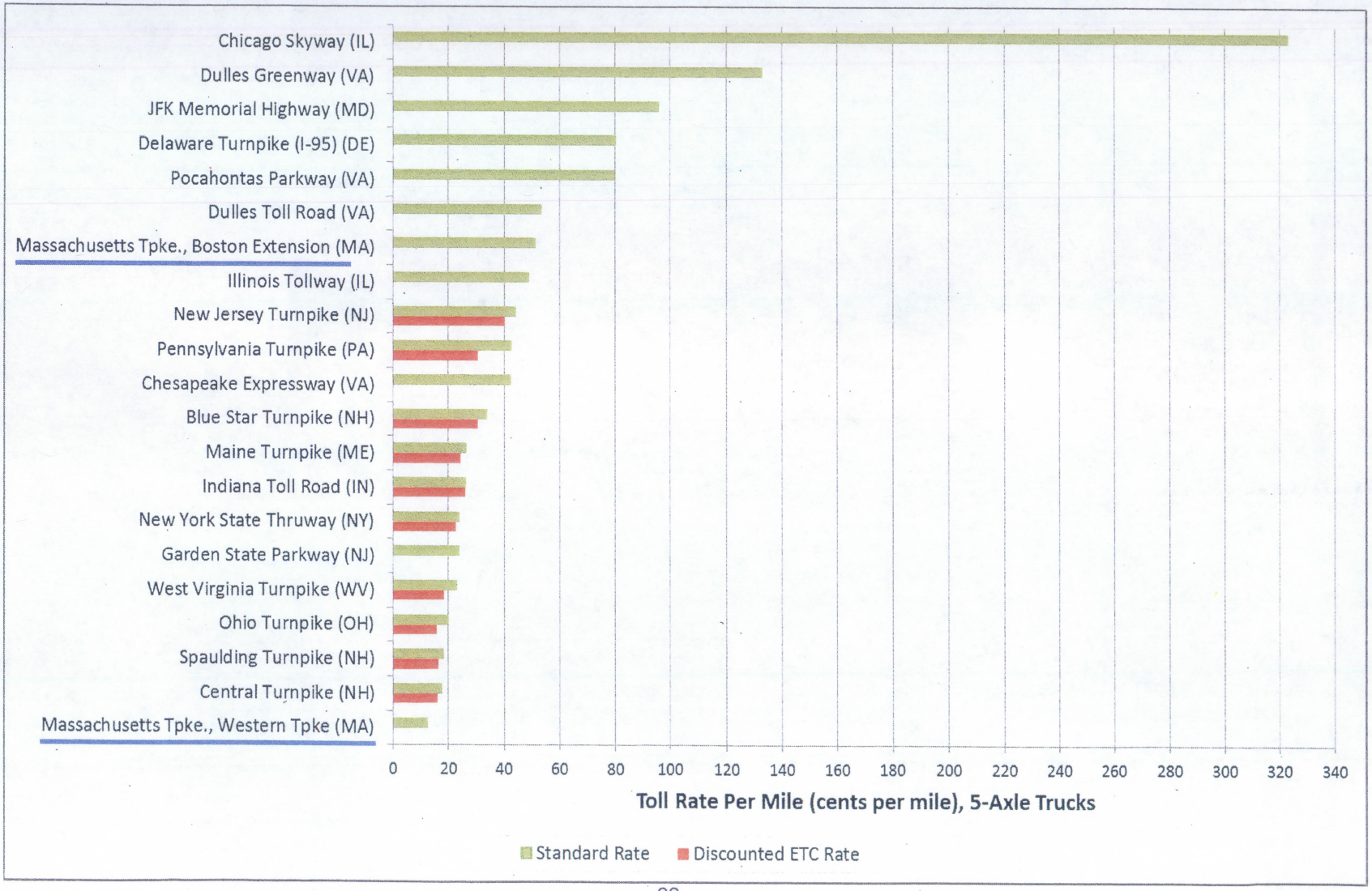
Cost per Mile Comparison (Passenger Vehicles)



Finding: MassDOT has one of the lowest per mile costs in the country

MassDOT Massachusetts Department of Transportation Highway Division

Cost per Mile Comparison (5+ Axle Trucks)



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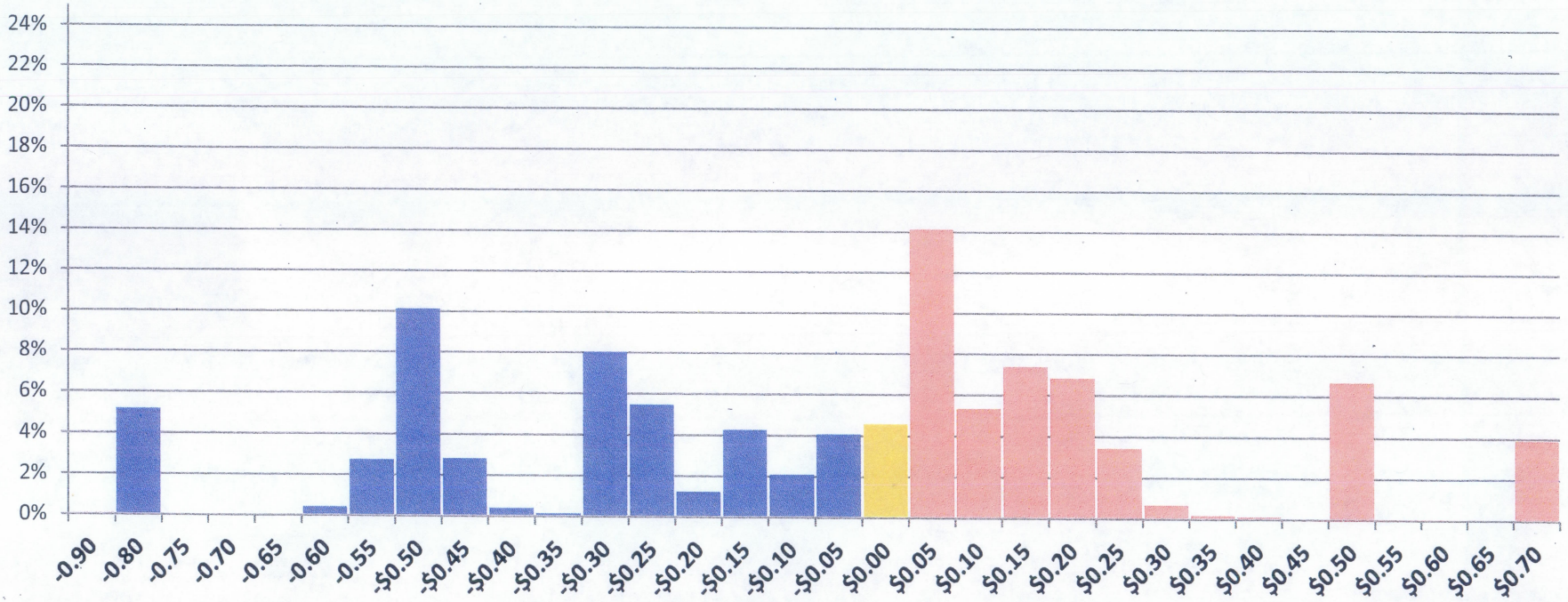
Highway Division

Distribution of changes in trip costs with proposed E-ZPassMA Gantry Rates



Blue = Decreased trip costs
Yellow = Same trip costs
Red = Increased trip costs

Revenue Impacts of AET on Tobin Bridge

MassDOT Massachusetts Department of Transportation Highway Division

- Tobin Bridge was converted to All Electronic Tolling in July 2014. Now a full calendar year of data is available to study how the conversion impacted revenue. These are "lessons learned" that are transferable to other tolled facilities in the Commonwealth.
  - E-ZPass usage rate increased from around 65% to 85%
  - Gross revenue increased slightly from pre-AET to post-AET. Some of this can be attributed to increased traffic volumes and high late fees that were in effect for a period of time

Tobin Bridge "Leakage"

MassDOT Massachusetts Department of Transportation Highway Division

- In CY 2015, approximately $1.24M was not collected from Pay By Plate users, out of $5.9M of possible PBP revenue. This represents 21% of potential PBP revenue and 4% of total revenue collected (31.7M).
- Non-payment accounts for close to 98% of leakage. Other sources like bad images from the system or incorrect RMV records account for 2.%
- Currently there are 185,750 accounts that are unpaid:
  - The majority (64%) of unpaid accounts are from Massachusetts drivers
  - Top 5 non-paying states border Massachusetts-- ME, NH, RI, CT and NY
- We assume larger leakage numbers for the turnpike due to the increased number of out of state drivers.

Resident Discount Program

massDOT Massachusetts Department of Transportation Highway Division

- Annual Resident Programs Requirements:
  - Private 2-axle 4-tire vehicle
  - Current RMV registration in qualifying zip code
  - MA driver's license
  - Proof of residency
  - Annual re-qualification at an E-ZPass Center

- Tobin Bridge
  - Qualified Charlestown and Chelsea residents pay discounted rate of $0.30*
- Sumner and Ted Williams Tunnels
  - Qualified East Boston, South Boston and North End residents pay discounted rate of $0.40*

*Discounted Bridge and Tunnel rates required by MGL Chapter 6C § 13b

Current Fine Structure on Tobin Bridge

MassDOT Massachusetts Department of Transportation Highway Division

Invoice or Notice Time Period	Form of Notice	Balance Due
1-30 Days	Initial Invoice	Toll Due
31-60 Days	Past Due Invoice	Previous Balance Plus $1.00 for each overdue toll transaction
61-90 Days	Notice of Non-Payment	Previous Balance Plus $1.00 for each overdue toll payment
91-120 Days	Notice of Liability	Previous Balance Plus $1.00 for each overdue toll payment; Plus a $20.00 RMV Fee

Pay By Plate Fee in Other States

massDOT Massachusetts Department of Transportation Highway Division

Golden Gate Bridge	$1.00	NWP	$0.40 per gantry
MdTA crossings	$2-3	E-470	$0.30-$0.70 per gantry
Henry Hudson Bridge	$2.96	Florida Turnpike	Approx 25%
SR 520 Bridge	$2.00	Tampa-Hillsborough	$0.25-$1.03 (per gantry)
Tacoma Narrows Br	$2.00	Miami Dade Expressway	$0.30-$0.70 per gantry
Elizabeth River Tun	$2.50	Triangle Expy	Approx 50%
South Norfolk	$2.75	PA Turnpike	$1.75
TxDOT	33%	CTRMA	$0.13-$0.48 per gantry
NTTA	$0.24-$0.83 per gantry	TCA (CA)	$1.00 per gantry

Toll Crossings single point transaction

- Currently the Pay By Plate fee on the Tobin Bridge is $0.50 (20%). This is one of the lowest in the country.

Differentials for Users of E-ZPassMA Transponders

- Currently at Weston and Allston, E-ZPass MA drivers receive a discount ($1.00 vs. $1.25 for a total discount of $2.00 vs. $2.50).

- A 50% discount was enacted in 2002 when toll rates increased from $0.50 to $1.00 at Weston and Allston/Brighton. Legislation requires that "[the] 50 per cent discount shall be applied to all toll increases implemented after the effective date of this act."

- Under the existing toll structure, users of E-ZPassMA on the Western Turnpike do not receive such a discount.

- MassDOT's proposed rates assume that we apply a similar discount program for E-ZPassMA users, compared to out of state E-ZPass, at each gantry on the Western Turnpike.

#307-16

City of Newton, Massachusetts
Office of the Mayor

SETTI D. WARREN
MAYOR

Telephone
(617) 796-1100

Facsimile
(617) 796-1113

TDD/TTY
(617) 796-1089

E-mail
swarren@newtonma.gov

2016 AUG 25 PM 1:18

August 25, 2016

Honorable City Council
Newton City Hall
1000 Commonwealth Avenue
Newton Centre, MA 02459

Ladies and Gentlemen:

I write to request that your Honorable Council docket for consideration a request to authorize the appropriation of the sum of $650,000 and authorize a general obligation borrowing of an equal amount for the purpose of purchasing a new Fire Department Pumper Truck - Engine 3 in accordance with the City's front line fire apparatus replacement schedule.

Thank you for your consideration of this matter.

Sincerely,

Setti D. Warren
Mayor

#307-16

Bruce A. Proia
Chief

CITY OF NEWTON, MASSACHUSETTS
FIRE DEPARTMENT HEADQUARTERS

1164 Centre Street, Newton Center, MA 02459-1584
Chief: (617) 796-2210 Fire Prevention: (617) 796-2230
FAX: (617) 796-2211 EMERGENCY: 911

Setti D. Warren
Mayor

2016 AUG 25 PM 12:35

August 25, 2016

Maureen Lemieux
Chief Financial Officer
City of Newton
1000 Commonwealth Ave
Newton, MA 02459

Maureen,

I respectfully request to docket funding of $650,000.00 for the purchase of a new Fire Department Pumper Truck Engine 3 and equipment for the truck. This will replace the existing Engine 3 truck which is a 2004 apparatus. The 2004 truck will now serve as a spare for the Department. The equipment funding is to replace the equipment on truck with is approx. 20 years old.

Thank you for your consideration to this request.

Respectfully,

Bruce Proia
Chief of Department

#272-16

City of Newton, Massachusetts
Office of the Mayor

SETTI D. WARREN
MAYOR

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(617) 796-1100

Facsimile
(617) 796-1113

TDD/TTY
(617) 796-1089

E-mail
swarren@newtonma.gov

August 1, 2016

Honorable City Council
Newton City Hall
1000 Commonwealth Avenue
Newton Centre, MA 02459

Ladies and Gentlemen:

I write to request that your Honorable Board docket for consideration a request to authorize the appropriation of the sum of $700,000 and authorize a general obligation borrowing of an equal amount for the replacement of the dispatch consoles at the Police Dispatch Center.

Thank you for your consideration of this matter.

Sincerely,

Setti D. Warren
Mayor

#272-16

City of Newton
Police Department

TELEPHONE
(617) 796-2101
FAX # (617) 796-3679

Office of the Chief of Police
HEADQUARTERS
1321 WASHINGTON STREET
NEWTON, MASSACHUSETTS 02465

DAVID L. MacDONALD
CHIEF OF POLICE

August 4, 2016

Hon. Mayor Setti D. Warren
Newton City Hall
1000 Commonweath Avenue
Newton, Massachusetts 02459-1449

Re: Request for Replacement of Dispatch Console

Dear Mayor Warren,

I respectfully request to spend $700,000 from the Capital Improvement Plan FY17 . I am asking for approval to replace the dispatch console which has reached its life expectancy.

Thank you for your assistance.

Very Truly Yours,

Chief David L. MacDonald

DLM:mp

#272-16

MCC7500 OPERATOR POSITIONS WITH K2 CORE

MOTOROLA

TABLE OF CONTENTS

#272-16

#272-16

November 27, 2013

Steve Smith
Newton Police Department
1321 Washington Street
Newton, MA 02465

Subject: MCC7500 (7 Operator Positions) with K2 Core

Dear Steve,

Motorola Solutions, Inc. ("Motorola") is pleased to have the opportunity to provide Newton Police with quality communications equipment and services. The Motorola project team has taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this solicitation, Motorola's solution includes a combination of hardware, software, and services. Specifically, this solution provides:

- New 7 Position MCC7500 Dispatch Console
- New K2 Redundant Core

This proposal consists of this cover letter and . This proposal shall remain valid for a period of 90 days from the date of this cover letter. Newton Police may accept the proposal by delivering to Motorola the CSA signed by Newton Police. Alternatively, Motorola will be pleased to address any concerns Newton Police may have regarding the proposal. Please direct any questions to your Motorola account executive, Scott Cruikshank, at 978-270-5505.

Motorola appreciates your interest in our company, products, and services. We look forward to continuing our relationship and implementing this project with Newton Police.

Sincerely,

Motorola Solutions, Inc.

Scott Cruikshank
Senior Account Manager

SYSTEM DESCRIPTION

#272-16

Motorola's MCC 7500 Dispatch Console is Motorola's mission-critical IP high-tier radio dispatch console system. The MCC 7500 Dispatch Console features an intuitive, easy-to-use Graphical User Interface (GUI) that runs under a Microsoft Windows operating system, utilizing the industry-standard PC platform. MCC 7500's highly recognizable icons are designed to reduce user training time and allow dispatchers to manage information more productively.

Designed for effective, flexible dispatch communications, the MCC 7500 Dispatch Console provides a range of valuable features:

- Seamless integration with ASTRO 25 trunking systems.
- IP Network – MCC 7500 supports the IP protocols of the ASTRO 25 system's transport network.
- Centralized System Management – the MCC 7500 console system is configured and managed by the ASTRO 25 system's configuration manager, fault manager and performance reporting applications. This provides Newton Police with a single point for configuring and managing the entire radio system, including the console portion. This information can also be accessed from multiple remove locations, giving Newton Police convenient access while enjoying the benefits of centralized system management.
- User-Friendly – MCC 7500's environment features the familiar standards used by other Windows programs, worldwide.
- Screen layout, menus and icons are easy to understand and quickly recognizable.
    - Each dispatcher's configuration can be customized via the Elite Admin application.
    - Elite Dispatch GUI uses a simple point-and-click response. The dispatcher has the choice of using a mouse, trackball or optional touchscreen and the keyboard is not required for day-to-day operations.
- Agency Partitioning – Allows multiple agencies to use a common system while maintaining control over their console resources.

An MCC 7500 Dispatch IP Console consists of the following elements:

- Operator position computer
- Voice Processing Module (VPM)
- Auxiliary Input/Outputs
- Logging equipment
- Network equipment
- Conventional Channel Interface equipment

Various combinations of these components are connected together and to the rest of the ASTRO 25 system via console site routers and switches on an IP network.

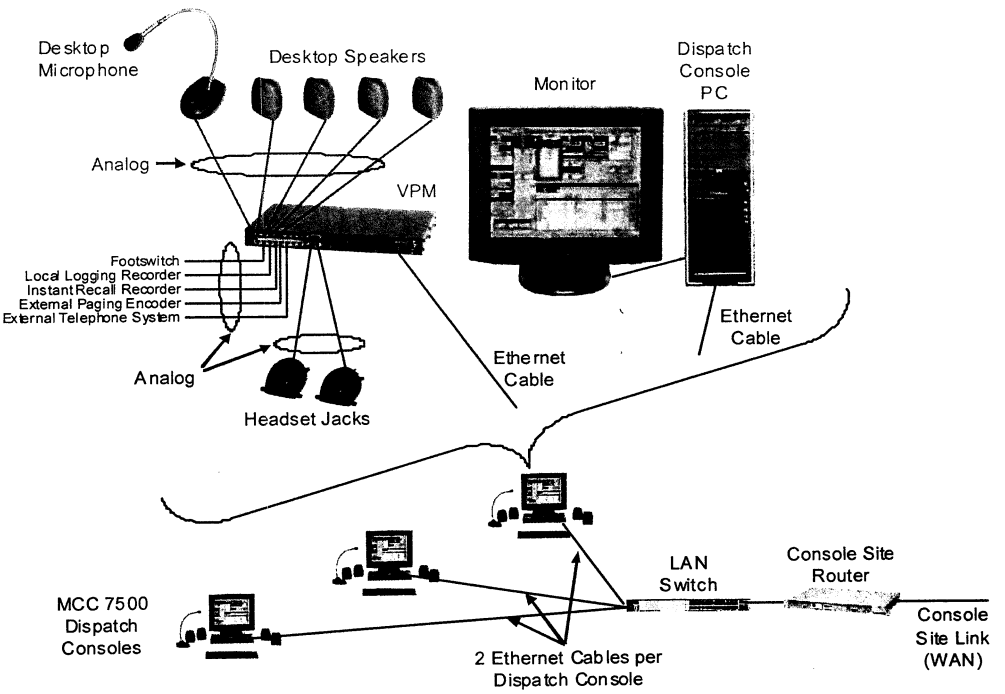
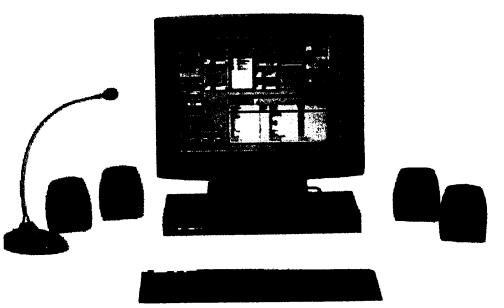


Figure 1: Motorola MCC 7500 Dispatch Console Hardware Architecture

1.1.1 Operator Position Components

MCC 7500 operator positions connect directly to the radio system's IP transport network without gateways or interface boxes. Audio processing, encryption, and switching intelligence for dispatch are performed within each software-based operator position, without additional centralized electronics.

An MCC 7500 operator position consists of a computer, a Voice Processing Module (VPM), one select speaker, up to three unselect speakers, a desktop gooseneck microphone and/or headset jack box with in-line PTT amplifier and headset, and optional footswitch.



MCC 7500 Operator Position Components

Voice Processing Module (VPM)

The VPM provides vocoding and audio processing services for the dispatch console. It connects to the console site LAN switch and communicates with the dispatch console PC via Ethernet. Each operator position includes a PC and a dedicated VPN. The VPM also provides connections for analog devices to be connected to the digital console.

The VPM has connectors for the following devices:

- One desktop microphone
- Two headset jacks
- Eight desktop speakers (four speakers max supported in the initial releases)
- Logging recorder
- Radio instant recall recorder

- Telephone instant recall recorder (not supported in initial releases)
- External telephone set
- External paging encoder **#272-16**
- Footswitch
- Generic transmit audio input

Some of the connectors listed above can be used to provide audio inputs and outputs for connecting other types of dispatch consoles to the Motorola radio system in conjunction with the Motorola MCC 7500 Dispatch APIs.

An optional secure card provides encryption and decryption services for the dispatch console. It is capable of supporting multiple, simultaneous encryption/decryption sessions using multiple algorithms and multiple secure keys.

Personal Computer (PC)

The dispatch console uses a customized Motorola-certified PC running the Microsoft Windows 7 operating system. The PCs used in ASTRO 25 systems have a mini-tower form factor.

The PCs are processed through Motorola factories in Schaumburg so that the application software can be installed and tested to ensure they are operating properly.

1.1.2 Auxiliary Inputs and Outputs

An Auxiliary Input/Output server enables console operators to control and monitor external devices, such as doors and lights, from the console user interface. Multiple dispatch consoles anywhere in the network may monitor and control the same relay output and/or external inputs. Changes are indicated across all dispatch consoles simultaneously. Customizable graphic icons are also used to provide a visual indication of both the function and state of external inputs.

The contact closures and input buffers required to interface to these devices are housed in Remote Terminal Units (RTUs). These RTUs can be physically located close to where they are needed, at any console site or RF site. The dispatch consoles and RTUs communicate with each other across the radio system's IP transport network. Individual relay outputs can be configured so that they require a safety switch to be pressed before they respond to any commands from the dispatch console user.

This proposal includes support for 96 High Inputs and 48 Outputs.

Supported Aux I/O Configurations

The following Aux I/O configurations are supported.

Aux I/O Configuration	Description
Momentary Input	This is an input where the user interface always shows the true state of the input.
Latched Input	This is an input where the user interface does not necessarily show the true state of the input. When the input goes active, the user interface shows the state as active. The display will continue to show the state as active even if the input changes to the inactive state. A dispatch console user must manually reset the display to return it to the inactive state.
Momentary Output	This output relay is activated when the dispatch console user presses the button on the user interface and deactivated when the dispatch console user releases the button.

Aux I/O Configuration	Description
Latched Output	This output relay changes state only when the dispatch console user presses the button. #272-16
Interlocked Latched Output	This latched output relay is part of a group of latched output relays. Only one of the relays in the group may be active at a time. Interlocked relays work in a "break before make" fashion; that is, the previously active relay is deactivated before the new relay is activated.

1.2 CONVENTIONAL K-CORE

The ASTRO 25 K-core is a scalable and virtualized core which provides an adaptable and affordable platform for mission critical wireless communications. The K-core is targeted at small capacity conventional customers who require an ASTRO25 conventional only system. The K-core allows customers to interface channels to an IP based MCC 7500 Console, provides a migration path for customers with fielded Motorola Conventional solutions, and allows the flexibility for customers to join a larger system in the future while maximizing their equipment investment. The K-core is available in a non-redundant configuration (K1) or redundant configuration (K2).

The proposed system includes a **redundant K2-core** with the following components:

- Two (2) GCP8000 Conventional Site Controller (CSC)
- Two (2) GGM8000 Site Gateway
- Four (4) GGM8000-based High Density Enhanced Conventional Channel Gateway (ECCGW)
- Two (2) LAN Switches

Figure 1-2 shows a basic K1 core single site with 2 MCC7500 operator positions.

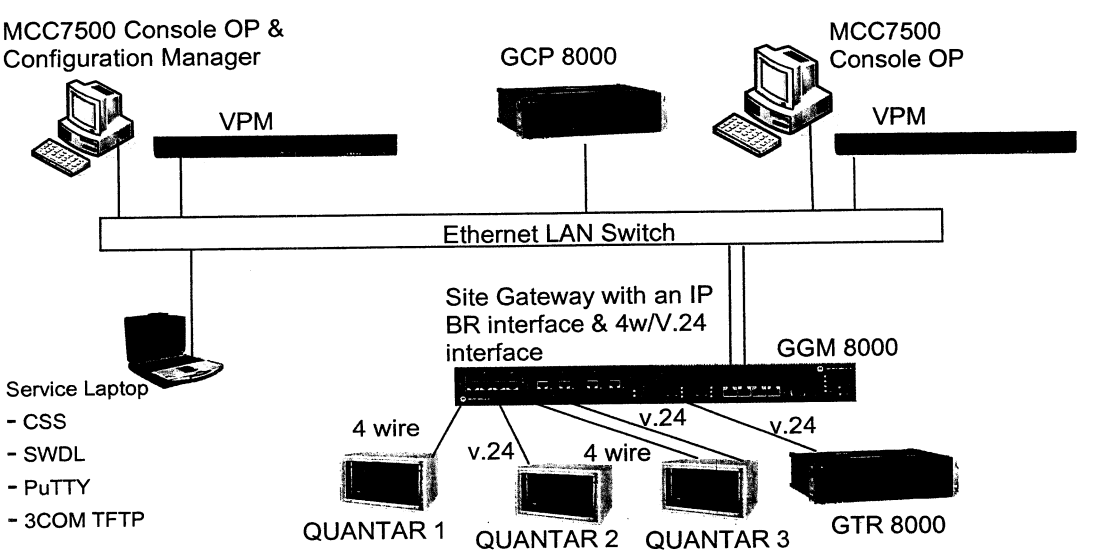


Figure 1-2: basic K1 core single site with 2 MCC7500 operator positions

1.2.1 GCP8000 Conventional Site Controller

The GCP 8000 Conventional Site Controller provides mission critical call processing and fault management throughout the ASTRO 25 Conventional System. The GCP 8000 interfaces via multiple Ethernet LAN switches, and provides access to the packet switched network via the Core Gateway. The GCP 8000 is capable of supporting the full set of dispatch consoles, archiving interface servers, and conventional gateways. The GCP 8000 can only be located at the K1/K2 Core. The GCP 8000 is responsible for: #272-16

- Fault management for the GCP 8000
- Processing conventional call requests from the conventional gateway or from the Console
- Assigning the multicast groups for conventional calls
- Issuing a call grant to the requestor
- Issuing a beginning of mobile transmission to the consoles (with alias information)
- Arbitration between multiple radios and/or consoles vying for the same channel
- Processing an end of call
- Acknowledge subscriber signaling calls (e.g. Emergency)
- Distributes subscriber signaling to affiliated consoles
- As well as other conventional voice call processing

The proposed system includes two (2) GCP8000 conventional site controllers.

1.2.2 GGM8000 Site Gateway

In a K-core, the site gateway combines the functions of core and gateway routers. It handles LAN traffic within the core site and provides an interface between the core and the customer network via backhaul switch when applicable. The core gateway performs the routing control of audio, data, and network management traffic in and out of the zone, replicating packets while achieving the fast access levels required by real-time voice systems.

The proposed system includes two (2) GGM8000 site gateways.

1.2.3 GGM8000-based Enhanced Conventional Channel Gateway

Enhanced Conventional Channel Gateways (CCGWs) are used in the MCC 7500 Dispatch Console to connect the dispatchers to analog or digital conventional channels in their system.

The GGM 8000-based ECCGW contains eight analog ports and eight V.24 ports plus an Ethernet port. Up to sixteen conventional channels can be connected to the analog and V.24 ports on a GGM8000-based CCGW. The sixteen channels can be any mixture of analog, MDC 1200 digital or mixed mode. Note that mixed mode channels must use a V.24 port for the digital portion, they cannot use IP.

In addition to the sixteen channels supported on the analog and V.24 ports, the ECCGW is also capable of supporting up to sixteen digital conventional channels via its IP port.

The proposed system includes four (4) GGM8000-based High Density ECCGW, to be co-located at the console site. They can be interfaced to 32 existing analog resources. The CCGW module will be housed in the site gateway.

1.2.4 LAN Switch

The LAN switch aggregates all the Ethernet interfaces for MCC7500 dispatch positions, gateway, controller and router. #272-16

1.2.5 Configuration Manager

The Configuration Manager application can co-hab on a Console OP or can run from its own PC (note the Console OP will only support one other application cohabiting with it). There should be one and only one Configuration Manager that is connected and running continuously and can only be used from the core. The Configuration Manager application is used to configure the Console OP, the AIS and the CCGW through the same LDAP interface used in the large "M" and "L" systems. A number of parameters have been preset to minimize the amount of configuration needed.

In the proposed system, the configuration manager application will run on a dedicated workstation.

1.2.6 Design Details

1.2.6.1 Staging

The proposed MCC7500 console equipment will be staged at Motorola's CCSI staging facility in Schaumburg, IL.

1.3 SYSTEM COMPONENTS

Our proposed solution includes the following summary of equipment:

ASTRO Conventional K Core

- Redundant ASTRO Conventional K2 Core Backroom equipment. This includes:
  - 2 Core LAN Switch
  - 2 GCP 8000 Site Controller
  - 2 GGM 8000 Site Gateway
  - 4 GGM 8000 based High Density Enhanced Conventional Channel Gateway (ECCGW)
  - SDM 3000 Aux I/O module to control up to 96 High Inputs and 48 Outputs
- Recommended Spares

MCC7500 Dispatch Console System

- 7 MCC7500 Positions
  - 1 Certified Workstation per position
  - 4 Speakers per position
  - 1 Gooseneck Microphone per position
  - 1 Headset Jacks per position
  - 1 Footswitch per position
  - Dual IRR
- Recommended Spares

1.4 SUMMARY

#272-16

Motorola's MCC 7500 Dispatch Console offers Newton PD many enhancements along with flexibility to allow their dispatchers the ability to do their job in the most efficient way possible. Every dispatch position can be configured to reflect the exact needs of those dispatchers, while being able to be changed and modified as needed.

SECTION 2

DIAGRAMS

#272-16

Motorola has included system diagram(s) on the following page(s).

TRAINING PLAN

#272-16

3.1 OVERVIEW

User training will be provided by Cyber Communications.

Cyber Communications will perform 4 X 2 hour training sessions during normal business hours Monday - Friday 9AM – 5PM.

STATEMENT OF WORK

#272-16

4.1 CONTRACT

4.1.1 Contract Award (Milestone)

The Customer and Motorola execute the contract and both parties receive all the necessary documentation.

4.1.2 Contract Administration

Cyber Communications Responsibilities:

- Assign a Project Manager, as the single point of contact with authority to make project decisions.
- Assign resources necessary for project implementation.
- Set up the project in the Motorola information system.
- Schedule the project kickoff meeting with the Customer.

Customer Responsibilities:

Assign a Project Manager, as the single point of contact responsible for Customer-signed approvals. Assign other resources necessary to ensure completion of project tasks for which the Customer is responsible.

Completion Criteria:

- Motorola internal processes are set up for project management.
- Both Motorola and the Customer assign all required resources.
- Project kickoff meeting is scheduled.

4.1.3 Project Kickoff

Cyber Communications Responsibilities:

- Conduct a project kickoff meeting during the Contract Design Review (CDR) phase of the project.
- Ensure key project team participants attend the meeting.
- Introduce all project participants attending the meeting.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Review the overall project scope and objectives with the Customer.
- Review the resource and scheduling requirements with the Customer.
- Review the Project Schedule with the Customer to address upcoming milestones and/or events.

- Review the teams' interactions (Motorola and the Customer), meetings, reports, milestone acceptance, and the Customer's participation in particular phases.

#272-16

Customer Responsibilities:

- The Customer's key project team participants attend the meeting.
- Review Motorola and Customer responsibilities.

Completion Criteria:

- Project kickoff meeting completed.
- Meeting notes identify the next action items.

4.2 CONTRACT DESIGN REVIEW

4.2.1 Review Contract Design

Cyber Communications Responsibilities:

- Meet with the Customer project team.
- Review the operational requirements and the impact of those requirements on various equipment configurations.
- Establish a defined baseline for the system design and identify any special product requirements and their impact on system implementation.
- Review the System Design, Statement of Work, Project Schedule, and Acceptance Test Plans, and update the contract documents accordingly.
- Discuss the proposed Cutover Plan and methods to document a detailed procedure.
- Submit design documents to the Customer for approval. These documents form the basis of the system, which Motorola will manufacture, assemble, stage, and install.
- Prepare equipment layout plans for staging.

Restrictions:

- Motorola assumes no liability or responsibility for inadequate frequency availability or frequency licensing issues.
- Motorola is not responsible for issues outside of its immediate control. Such issues include, but are not restricted to, improper frequency coordination by others and non-compliant operation of other radios.
- Motorola is not responsible for co-channel interference due to errors in frequency coordination by APCO or any other unlisted frequencies, or the improper design, installation, or operation of systems installed or operated by others.
- If, for any reason, any of the proposed sites cannot be utilized due to reasons beyond Motorola's control, the costs associated with site changes or delays including, but not limited to, re-engineering, frequency re-licensing, site zoning, site permitting, schedule delays, site

abnormalities, re-mobilization, etc., will be paid for by the Customer and documented through the change order process.

#272-16

Customer Responsibilities:

- The Customer's key project team participants attend the meeting.
- Make timely decisions, according to the Project Schedule.
- Frequency Licensing and Interference:
  - As mandated by FCC, the Customer, as the licensee, has the ultimate responsibility for providing all required radio licensing or licensing modifications for the system prior to system staging. This responsibility includes paying for FCC licensing and frequency coordination fees.
  - Provide the FCC "call sign" station identifier for each site prior to system staging.

Completion Criteria:

- Incorporate any deviations from the proposed system into the contract documents accordingly.
- The system design is "frozen" in preparation for subsequent project phases such as Order Processing and Manufacturing.
- A Change Order is executed in accordance with all material changes resulting from the Design Review to the contract.

4.3 ORDER PROCESSING

4.3.1 Process Equipment List

Cyber Communications Responsibilities:

- Validate Equipment List by checking for valid model numbers, versions, compatible options to main equipment, and delivery data.
- Enter order into Motorola's Customer Order Fulfillment (COF) system.
- Reconcile the equipment list(s) to the Contract.

Customer Responsibilities:

- Provide shipping location(s).
- Complete and provide Tax Certificate information verifying tax status of shipping location.

Completion Criteria:

- Verify that the Equipment List contains the correct model numbers, version, options, and delivery data.
- Trial validation completed.
- Bridge the equipment order to the manufacturing facility.

4.4 MANUFACTURING AND STAGING

#272-16

4.4.1 Manufacture Motorola Equipment

Motorola Responsibilities:

Manufacture the Motorola fixed, subscribers and non-Motorola equipment necessary for the system based on equipment order.

Customer Responsibilities:

None.

Completion Criteria:

FNE shipped to either the field or the staging facility.

4.4.2 Stage System

Motorola Responsibilities:

- Set up and rack the system equipment on a site-by-site basis, as it will be configured in the field at each of the transmitter/receiver sites.
- Provide internal cables.
- Assemble required subsystems to assure system functionality.
- Power up, program, and test all staged equipment.
- Confirm system configuration and software compatibility to the existing system.
- Programming of equipment being staged with information provided at the time of staging.
- Inventory the equipment with serial numbers and installation references.
- Complete system documentation.
- Third party subsystems may be staged at the manufacturer's facilities and integrated in the field.
- Provide a Factory Acceptance Test Plan.

Customer Responsibilities:

- Provide information on existing system interfaces as may be required.
- Provide information on room layouts or other information necessary for the assembly to meet field conditions.
- Review and approve proposed Factory Acceptance Test Plan.

Completion Criteria:

System staging completed and ready for testing.

4.4.3 Ship Equipment to Field

Motorola Responsibilities:

- Pack system for shipment to final destination.

- Arrange for shipment to the field.

Customer Responsibilities: **#272-16**

Customer to provide shipment location.

Completion Criteria:

Equipment ready for shipment to the field.

4.4.4 CCSi Ship Acceptance (Milestone)

All equipment shipped to the field.

4.5 SYSTEM INSTALLATION

4.5.1 Install Fixed Network Equipment (Milestone)

Motorola Responsibilities:

- Will not provide storage location for the Motorola-provided equipment.
- Install system equipment as specified by the Equipment List, System Description, and system drawings.

  Interference:

  – Motorola is not responsible for interference caused or received by the Motorola provided equipment except for interference that is directly caused by the Motorola-provided transmitter(s) to the Motorola-provided receiver(s). Should the Newton Police system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue.

Customer Responsibilities:

- Provide secure storage for the Motorola-provided equipment, at a location central to the sites. Motorola coordinates the receipt of the equipment with the Customer's designated contact, and inventory all equipment.
- Provide access to the sites, as necessary.

Completion Criteria:

Fixed Network Equipment installation completed and ready for optimization.

4.5.2 Fixed Network Equipment Installation Complete

All fixed network equipment installed and accepted by the Customer.

4.5.3 Console Installation

Motorola Responsibilities:

- Install the console in the space provided by the Customer.

- Connect the Customer-supplied, previously-identified circuits into the console, to a demarcation point located within 25 feet of the console interface.

#272-16

- Terminate the audio outputs for the logged talkgroups onto a punchblock, and then terminate these outputs into the logging recorder.
- Install a dedicated Local Area Network (LAN) at each dispatch center to connect the proposed console positions.
- Connect the appropriate equipment to the Newton Police-supplied ground system in accordance with Motorola's R56 Site Installation standards.
- Perform the console programming, based on the console templates designed during the fleet mapping process.
- For consoles not located at the master site, additional network link resources will be required, as identified in the network diagram provided by Motorola.

Customer Responsibilities:

- Provide demarcation point located within 25 feet of the console interface.
- Provide all monitors and KVM as required, rack and rack space for console Alias/Core Configuration Manager workstation and monitor.

Completion Criteria:

Console installation is complete.

4.6 DESIGN ASSUMPTIONS

Motorola has made several system design assumptions in preparing this proposal, which are noted below. Should any of these assumptions be incorrect, Motorola reserves the right to amend the proposal which could result in a change in project scope, schedule, and/or cost. Motorola will need to verify all assumptions or seek alternate solutions in the case of invalid assumptions.

- All existing sites or equipment locations will have sufficient space available for the system described.
- Monitors are not included in the system. Customer will be responsible for providing them in field.
- No Life Cycle services are included in the proposal.
- No IP Logging is required in the system.
- No Comparator display feature is included in the system.
- No Data application is required in the system.
- No Encryption is required in the system.
- No separate configuration manager workstation is required in the system.
- No Watson furniture is required in the system.
- No Control stations or Consolettes are included in the proposal.
- No new antennas, cables and connectors are required in the system.
- All existing sites or equipment locations will have adequate electrical power and site grounding to support the requirements of the system described.
- Any towers, shelters, and/or connectivity required for new sites will be the responsibility of the customer
- Any tower stress/structural analyses or tower upgrade requirements will be the responsibility of the customer.

- All existing towers will have adequate space and size to support the antenna network requirements of the system described.
- The customer will make any necessary site improvements to meet R56 standards. **#272-16**
- Any site/location upgrades or modifications are the responsibility of the Customer.
- Any tower stress analysis or tower upgrade requirements are the responsibility of the Customer.
- The customer will provide frequencies necessary to support the system design.
- Approved FCC licensing provided by the Customer.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of the Customer.
- Any required system interconnections not specifically outlined here will be provided by the Customer. These may include dedicated phone circuits or microwave links.
- Where necessary, the Customer will provide a dedicated delivery point, such as a warehouse, for receipt, inventory, and storage of equipment prior to delivery to the sites.

In addition:

- This quote does not include considerations for any site specific installation requirements, including but not limited to:
  - HVAC
  - Floor Loading
  - Power sourcing/loading
  - Breaker panel availability
  - Surge suppression, beyond that provided by Motorola for new equipment
- All power/HVAC will be provided by the customer:
  - Equipment power is to be 120V AC
  - The demarcation point will be the circuit distribution devices in the equipment racks.
  - The customer will provide NEC and R56 compliant TVSS power panel protection and grounding connection points for all rack-mounted equipment
  - The customer will provide a connection to the building grounding system at each operator position.
- All existing sites or equipment locations will have sufficient space available for the system described. The customer will be responsible to secure the use of existing equipment racks and power/grounding systems for the proposed hardware from existing site owners
- Motorola is not providing any console workspace furniture or enclosures. The customer will be responsible for providing furniture and any custom equipment to accommodate the console operator terminal(s) and to suit individual dispatcher preferences.
- Any site/location or facility upgrades or modifications are the responsibility of the customer.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of the customer.
- No logging recorder solution integrated with the radio system network has been included. The Customer-supplied analog logging recorder will be able to record audio via the resources connected to the CCGW only. Talkgroups along with signaling directly coming from the IP radio

network will not be able to be accessed by the analog logging recorder. Audiobridges have not been included to interface the customer's analog resources to the logging recorder.

#272-16

- This proposal/design does not make any claims with regards to equivalent functionality between the existing console dispatch equipment/design and the MCC 7500 dispatch equipment.
- The provided CCGWs support conventional stations that utilize four-wire analog E&M (Type II) or Tone-Remote Controlled (TRC) interfaces.
  - Motorola assumes that all existing conventional resources utilize keying methods that are compatible with the provided CCGWs
- AUX I/O functionality has been provided for the dispatch center via a MCC 7500 AUXI/O server depending on the requirement. This server is capable of supporting 96 High Inputs and 48 Outputs.
  - Relay outputs are single pole form A that are capable of switching 1A @ 24V (AC or DC)
  - Input buffers are active high and are configurable to work with wet (5 or 12V) or dry closures
- Motorola has not made any provisions in its design for connection of third-party systems to its dispatch hardware, this includes but is not limited to:
  - Computer Aided Dispatch (CAD)
  - Telephone Interconnect
  - IP Logging recorder
- The MCC7500 supports Private AUX I/O connections. The Private AUX I/O functions are limited to:
  - Call on Selected Channel
  - Op PTT
  - Emergency Beacon
  - Activate Private Relay when Public AUXI/O is active
- No provision has been made for a Netclock or another GPS time reference at the console site.
- Any required system interconnections not specifically outlined here will be provided by the Customer. These may include dedicated phone circuits, microwave links or other types of connectivity.
- No coverage guarantee is included in this proposal.
- Console encryption has not been included in this proposal as it was identified as not being required during the pre-sale design. It can be added upon request in a proposal and quotation revision if needed.
- No box level or performance spec testing will be conducted.
- At the time of the customer Console site implementation, the proposed equipment will be at the current Astro release.
- No logging recorder solution has been included.
- No lifecycle services have been included for the console site. Should the master site have lifecycle services when the console is implemented, lifecycle services will need to be ordered separately from this proposal.

- Console Installation Complete

Console installation completed and accepted by the Customer. **#272-16**

4.6.1 System Installation Acceptance (Milestone)

All equipment installations are completed and accepted by the Customer.

4.7 SYSTEM OPTIMIZATION

4.7.1 Optimize System FNE

Motorola Responsibilities:

- Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.
- Check forward and reflected power for all radio equipment, after connection to the antenna systems, to verify that power is within tolerances.
- Motorola and its subcontractors optimize each subsystem.
- Check audio and data levels to verify factory settings.
- Test features and functionality are in accordance with manufacturers' specifications and that they comply with the final configuration established during the CDR/system staging.
- Install and integrate the RF sites with the system.
- Integrate the consoles and RF sites into the system to ensure proper operation.
- Set up the consoles on the new radio system to perform the dispatching operation.
- Customer Responsibilities:
- Provide access/escort to the sites.
- Provide required radio ID and alias information to enable alias database setup for interface to console.
- Define the logging recorder tracks by talkgroup.
- Dispatchers to use the existing conventional system icons for dispatching until cutover.

Completion Criteria:

System FNE optimization is complete.

#272-16

4.7.2 Optimization Complete

System optimization is completed. Motorola and the Customer agree that the equipment is ready for acceptance testing.

4.8 TRAINING

4.8.1 Perform Training

Motorola Responsibilities:

- Cyber Comm will perform 4 X 2 hour training sessions during normal business hours Monday – Friday – 9AM – 5PM.

Customer Responsibilities:

- Attend training classes.
- Comply with the prerequisites in the Training Plan.

Completion Criteria:

All training classes completed.

4.8.2 Training Complete

All training classes completed.

4.9 AUDIT AND ACCEPTANCE TESTING

4.9.1 Perform R56 Installation Audit

Motorola Responsibilities:

- Perform R56 site-installation quality audits, verifying proper physical installation and operational configurations.
- Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola's Standards and Guidelines for Communication Sites (R56).

Customer Responsibilities:

- Provide access/escort to the sites.

Completion Criteria:

All R56 audits completed successfully.

4.10 CONDUCT FIELD ATP

#272-16

Motorola Responsibilities:

- Conduct the Field ATP upon functional testing documents approved during the Design Review phase.
- If any major task as contractually described fails, repeat that particular task after Motorola determines that corrective action has been taken.
- Document all issues that arise during the acceptance tests.
- Document the results of the acceptance tests and present to the Customer for review.
- Resolve any minor task failures before Final System Acceptance.

Customer Responsibilities:

Witness the Field ATP.

Completion Criteria:

- Successful completion of the Field ATP.
- Customer approval of the Field ATP.

4.10.1 System Acceptance Test Procedures (Milestone)

Customer approves the completion of all the required tests.

4.11 FINALIZE

4.11.1 Cutover

Motorola Responsibilities:

- Motorola and the Customer develop a mutually agreed upon cutover plan based upon discussions held during the CDR.
- During cutover, follow the written plan and implement the defined contingencies, as required.
- Conduct cutover meeting(s) to address both how to mitigate technical and communication problem impact to the users during cutover and during the general operation of the system.

Customer Responsibilities:

- Attend cutover meetings and approve the cutover plan.
- Notify the user group(s) affected by the cutover (date and time).
- Conduct a roll call of all users working during the cutover, in an organized and methodical manner.
- Ensure that all subscriber users are trained and the subscribers have been activated on the system.
- Provide Motorola with the subscriber information for input into the system database, for activation.

Completion Criteria:

Successful migration from the old system to the new system. **#272-16**

4.11.2 Resolve Punchlist

Motorola Responsibilities:

Work with the Customer to resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.

Customer Responsibilities:

Assist Motorola with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist item(s).

Completion Criteria:

All punchlist items resolved and approved by the Customer.

4.11.3 Transition to Service/Project Transition Certificate

Motorola Responsibilities:

- Review the items necessary for transitioning the project to warranty support and service.
- Provide a Customer Support Plan detailing the warranty and post-warranty support, if applicable, associated with the Contract equipment.
- Provide additional information regarding post-warranty support, included in the Warranty/Post-Warranty section of this document.

Customer Responsibilities:

Participate in the Transition Service/Project Transition Certificate (PTC) process.

Completion Criteria:

All service information has been delivered and approved by the Customer.

4.11.4 Finalize Documentation

Motorola Responsibilities:

Provide the following documents:

- System-Level Diagram as shown on the system diagram section of this proposal.
- Rack Diagrams
- ATP Test Checklists
- Field Acceptance Test Plan Test Sheets and Results

Customer Responsibilities:

Receive and approve all documentation provided by Motorola.

Completion Criteria:

All required documentation is provided and approved by the Customer. **#272-16**

4.11.5 Final Acceptance (Milestone)

All deliverables completed, as contractually required.

Final System Acceptance received from the Customer.

4.12 PROJECT ADMINISTRATION

4.12.1 Project Status Meetings

Motorola Responsibilities:

- Motorola Project Manager, or designee, will attend all project status meetings with the Customer, as determined during the CDR.
- Record the meeting minutes and supply the report.
- The agenda will include the following:
  - Overall project status compared to the Project Schedule.
  - Product or service related issues that may affect the Project Schedule.
  - Status of the action items and the responsibilities associated with them, in accordance with the Project Schedule.
  - Any miscellaneous concerns of either the Customer or Motorola.

Customer Responsibilities:

- Attend meetings.
- Respond to issues in a timely manner.

Completion Criteria:

Completion of the meetings and submission of meeting minutes.

4.12.2 Progress Milestone Submittal

Motorola Responsibilities:

Submit progress (non-payment) milestone completion certificate/documentation.

Customer Responsibilities:

Approve milestone, which will signify confirmation of completion of the work associated with the scheduled task.

Completion Criteria:

The Customer approval of the Milestone Completion document(s).

4.12.3 Change Order Process

Either Party may request changes within the general scope of this Agreement. If a requested change #272-16 causes an increase or decrease in the cost or time required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

PRELIMINARY ACCEPTANCE TEST PLAN #272-16

Testing of the proposed equipment is included. This includes the following:

- Test features and functionality are in accordance with manufacturers' specifications.
- Verify the operational functionality and features of the individual subsystems and the system supplied by Motorola, as contracted.

A detailed Acceptance Test Plan will be developed upon purchase and will be reviewed during the Project Kickoff/Design Review meeting.

SERVICE/WARRANTY

#272-16

Motorola has the most comprehensive service organization in the Land Mobile Industry. Since 1947, we have been building a unique service team, national in scope, but local in its ability to respond to our Customer's diverse needs. As product and system complexity has evolved over the years, the Motorola Global Solutions and Service Division has responded by developing new service products and programs to match the evolution. This ensures that we have the ability to provide service products to effectively maintain your system.

MOTOROLA STANDARD WARRANTY

Motorola's standard warranty covers on-site response during normal business hours and provides for the repair or replacement of defective hardware components.

In addition, Motorola provides a customized support package to meet your needs. We have included the following additional services in your support plan. After the first year, these services may be purchased under a separate agreement.

6.1 ONSITE INFRASTRUCTURE RESPONSE/ DISPATCH SERVICE

Motorola's On-Site Response service gives you that advantage by making available our network of expert support resources located all across North America to *provide on-site support when you need it*. These Motorola certified field technicians arrive at your door equipped and ready to do what it takes to get your system running at optimum capacity.

Using Motorola-approved test equipment, service procedures and backed by Motorola's centralized technical resources, technicians from your local authorized service center are dispatched to your site to perform diagnostics, remove components for repair, and reinstall new or reconditioned components. When it is a response to a call for help, Motorola On-Site Response service *guarantees technician dispatch, site arrival, and problem resolution—all within your contracted response times.*

Motorola field technicians average 35-60 hours of technical training per year and 15-25 years of solution experience that aid in the quick and timely resolution of your service issues. Motorola on-site technicians are also backed up by technical consultants and field engineering support across the county when the situation calls for a more specialized expertise. We recognize that your communication system is critical to your operation and our support strategy of local and centralized support is our promise to you that we will do whatever it takes to keep it working at peak efficiency.

Motorola's On-Site Response service is a vital component of an intelligent communication support plan that keeps your business running, your costs down, and helps you stay focused on your goals.

Our **Dispatch Service** is 24 hours a day, 7 days a week. Dispatch service provides robust escalation process whereby predefined response times are monitored and escalated throughout Motorola Management to prevent delayed or dropped response times. Dispatch service combined with MOL allows the customer to be actively involved with the service process.

6.2 TECHNICAL SUPPORT SERVICE

#272-16

Motorola Technical Support Service assures you maximum preparedness with on-demand technical support, commitment to restoration, and whatever it takes to enable immediate communication via your wireless network! The skilled professionals and advanced systems at the Motorola System Support Center are there to keep your network running at peak performance 24 hours a day, 7 days a week.

Technical Support provides:

- Expert technologists trained in troubleshooting to analyze, isolate and correct problems to get your system issue(s) resolved quickly.
- Best-in-class Remote Diagnosis capabilities: advanced diagnostics and fully equipped test labs, if applicable, based on system type
- Automated test systems to quickly diagnose boards
- Shared knowledge database constantly updated for technologists to utilize to reduce cycle time
- Immediate access to Network Designers and Engineers
- Rigorous and defined case and escalation management process and procedures
- Motorola technologists participate in ongoing training programs
- Customer case performance reports available upon request

6.3 INFRASTRUCTURE REPAIR WITH ADVANCED REPLACEMENT

Motorola Infrastructure Repair and/or Infrastructure Repair with Advanced Replacement Service assures you maximum preparedness through the most effective repair processes so that potential service disruptions are minimized or alleviated. The skilled professionals and advanced systems at the Motorola Infrastructure Depot are here to keep your network running at peak performance 24 hours a day, 7 days a week. Infrastructure may be repaired down to the Component level at the Motorola Infrastructure Depot Operations (IDO). At Motorola's discretion, select third party Infrastructure may be sent to the original equipment manufacturer or third party vendor for repair. If Infrastructure is no longer supported by the original equipment manufacturer or third party vendor, Motorola may replace the equipment with similar Infrastructure.

Infrastructure Repair with Advanced Replacement Service adds:

- 24 hour advanced replacement exchange for the malfunctioning equipment
- Rental/Loaner equipment in cases where the customer requires the exact serialized repaired equipment returned.

6.4 NETWORK PREVENTATIVE MAINTENANCE

Motorola's Network Preventative Maintenance is a program of regularly scheduled check-ups designed to assure network readiness and overall reliability. This service will be performed annually in conjunction with a prearranged schedule. This service will be performed during normal working hours with the intent to minimize any disruption of service to users. If the service must be performed after hours, a quote will be provided. System documentation will be updated based on this information. The list of documented parameters will be determined by agreement with the customer. All equipment provided as a part of the system will be included.

As wireless networks become increasingly complex, and are enabled to perform more sophisticated tasks, the scope of possible issues grows exponentially. With Network Preventative Maintenance, Motorola offers a proactive, anticipatory service that ensures all network components are operating consistent to manufacturers' specifications – *the first step in minimizing premature repairs.*

#272-16

Certified field technicians, located throughout North America, are prepared to inspect networks on a routine and prescribed basis. This service is likely the most cost-effective form of network maintenance – the technological equivalent of routine physical examinations.

Using Motorola's best-in-class test equipment, technicians examine hands-on and, if operational testing dictates, align infrastructure to manufacturer's specifications. Equally important, on-site field technicians are supported by Motorola's centralized technical resources and engineering expertise.

EQUIPMENT LIST

#272-16

This section lists the equipment necessary for the proposed solution.

7.1 MAIN OFFERING EQUIPMENT LIST

Qty	Nomenclature	Description
		Site 1
		K2 CORE
1	SQM01SUM0236	SINGLE ZONE CONV RED CORE -K2
1	CA01663AB	ADD: RACK
4	SQM01SUM0205	GGM 8000 GATEWAY
4	CA01616AA	ADD: AC POWER
4	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
		MCC7500 (7 OPERATOR POSITIONS)
1	B1905	MCC 7500 ASTRO 25 SOFTWARE
7	B1933	MOTOROLA VOICE PROCESSOR MODULE
7	CA01642AA	ADD: MCC 7500 BASIC CONSOLE FUNCTIO
7	CA01644AA	ADD: MCC 7500 /MCC 7100 ADV CONVL O
7	CA00140AA	ADD: AC LINE CORD, NORTH AMERICAN
7	TT2538	Z420 LOW TIER WORKSTATION WINDOWS 7
7	T7449	WINDOWS SUPPLEMENTAL TRANS CONFIG
7	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A P
28	B1912	MCC SERIES DESKTOP SPEAKER
7	B1914	MCC SERIES DESKTOP GOOSENECK MICROP
7	B1913	MCC SERIES HEADSET JACK
7	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH
7	T7885	MCAFEE WINDOWS AV CLIENT
7	DDN1245	DUAL IRR SW USB HASP WITH LICENSE (
7	DDN1118	PCI EXPRESS SOUND BLASTER X-FI XTRE
		AUX INPUTS/OUTPUTS
1	F4543	SITE MANAGER BASIC

Qty	Nomenclature	Description
1	VA00212	SDM3000 MCC 7500 AUX IO F/W FOR A7. #272-16
1	V266	ADD: 90VAC TO 260VAC PS TO SM
3	V592	AAD TERM BLCK & CONN WI
2	F4547	SM IO EXPANSION BASIC
2	V266	ADD: 90VAC TO 260VAC PS TO SM
6	V592	AAD TERM BLCK & CONN WI
8	BLN6884	PUNCH BLOCK
		CONSOLE ALIAS MANAGER
1	BVN1013	MKM 7000 Console Alias Manager Soft
1	TT2538	Z420 LOW TIER WORKSTATION WINDOWS 7
1	T7885	MCAFEE WINDOWS AV CLIENT
1	T7449	WINDOWS SUPPLEMENTAL TRANS CONFIG
1	DDN9748	19 INCH BLACK SHELF
1	DS9130R1800N006	UPS, 9130 RACKMT, 2KVA/1.8KW, 6 MIN

7.2 OPTIONAL SPARE EQUIPMENT LIST (NOT INCLUDED IN MAIN OFFERING)

		Optional Spares
		CORE SPARES
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
1	DLN6569	FRU: GCP 8000/GCM 8000
1	DLN6781	FRU POWER SUPPLY
1	DLN1338	FAN MODULE
		CONSOLE SPARES
1	B1912	MCC SERIES DESKTOP SPEAKER
1	B1914	MCC SERIES DESKTOP GOOSENECK MICROP

Optional Spares		
1	B1913	MCC SERIES HEADSET JACK #272-16
1	TT2538	Z420 LOW TIER WORKSTATION WINDOWS 7
1	B1934	MCC 7500 VOICE PROCESSOR MODULE FRU
1	1009513002	PWR SPLY 108W AC INP 12VDC OUT W18
1	3082933N08	GR500 AC POWER CORD
1	30009351001	DC CABLE ASSY
1	CLN1856	2620-24 ETHERNET SWITCH

SECTION 8

PRICING

#272-16

Motorola is pleased to provide the following equipment and services to Newton Police:

Total System Cost: $382,109 with K Core Promotion

K-Core Promotion: (-$50,000) Promotion expires on December 31, 2013

Total System Cost without K Core Promotion: $432,109

Pricing is per State Contract ITT40

Warranty Optional 2 Year (not included in the above pricing) - $25,077.

Pay terms: Net 45 from invoice as shipped.

This proposal is subject to the terms listed below.

Payment Terms:

- 20% down payment
- 65% upon shipment
- 10% install
- 5% final acceptance

Pricing is valid through December 31, 2013. In order to proceed, Motorola will need to receive an executed contract and notice to proceed.

OUR COMMITMENT

#272-16

Motorola Solutions connects people through technology. Businesses and government agencies around the world turn to Motorola Solutions innovations when they want highly connected teams that have the information they need throughout their workdays and in the moments that matter most to them.

You can find Motorola Solutions products and services in a wide range of workplaces. From the retail floor to the warehouse floor, and from the small town police station to the most secure government offices, our products support customers who make up the diverse global economy. We are proud that our products support mobile transactions of all kinds, as well as the safety and security of citizens everywhere.

Our customers rely on us for the expertise, services and solutions we provide, trusting our years of invention and innovation experience. By partnering with customers and observing how our products can help in their specific industries, we are able to enhance our customers' experience every day.

Motorola Solutions—An Industry Leader

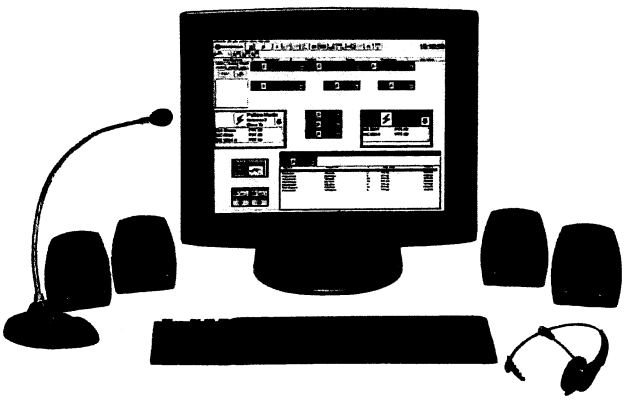
Motorola Solutions serves both enterprise and government customers with core markets in public safety government agencies and commercial enterprises. Our leadership in these areas includes public safety communications from infrastructure to applications and devices such as radios as well as task-specific mobile computing devices for enterprises. We produce advanced data capture devices such as barcode scanners and RFID (radio-frequency identification) products for business. We make professional and commercial two-way radios for a variety of markets, and we also bring unlicensed wireless broadband capabilities and wireless local area networks – or WLAN – to retail enterprises

Pioneering New Areas of Cognitive Research

As an industry leader in government and public safety, we design and develop devices including radios and the infrastructure that supports them. Our mission-critical design philosophy led to our new High Velocity Human Factors investigation, an area of cognitive research that helps us develop products for first responders by working with them in crisis situations to study their communication needs. We take what we learn in the field and bring it back to the lab to create products that will function under extreme conditions and networks that will reliably support those products.

Our Focus: Our Customers

Working with our global channel partner community, Motorola Solutions reaches an extensive customer base, from small businesses to Fortune 500 companies. Our focus is on developing integrated end-to-end solutions that deliver a clear return on investment, and our products empower individuals through seamless connectivity.



CONSTANT COMMUNICATION WHEN IT MATTERS MOST

ASTRO® 25 MCC 7500 IP DISPATCH CONSOLE

Designed to ensure optimal-quality audio, reliable communication and ease of use for dispatchers, the MCC 7500 IP Dispatch Console operator positions connect directly to the ASTRO 25 system for communication with both trunked and conventional radios, and for all other dispatch activity.

Integration of the MCC 7500 Console positions with the ASTRO 25 system enables full participation in end-to-end voice encryption for secure communication, priority handling of emergency calls and agency partitioning. Each console is centrally configured and managed from the network manager, providing vital efficiency.

EASY TO USE, FLEXIBLE, AND CUSTOMIZABLE USER INTERFACE

Featuring the Elite Graphical User Interface (GUI), which has been refined and proven through years of use in mission critical dispatch operations, the MCC 7500 Console eases migration and minimizes user training requirements.

The intuitive and familiar GUI is based on Microsoft Windows® and uses easily recognized icons and aliases. The GUI's powerful customization capabilities enable the colors, sizes and locations of resources on the screens to be tailored to best meet each individual user's needs. Designated folders organize resources for flexibility in handling responsibilities from shift to shift and increased efficiency in responding to events and incidents.

Trunked and conventional radio channels are customizable with various controls, such as patch status, frequency select, coded/clear select and individual volume control, based on user preferences. Per-channel controls can be fully or partially shown, or hidden to save space on the screen.

Busy dispatchers can respond to a missed call by simply clicking on an entry in the Activity Log. The number of calls and call information displayed in the Activity Log is customizable to suit the needs of the user(s).

Telephone resources are accessed and easily patched with radio resources within the MCC 7500 Dispatch Console's GUI, eliminating the cost of having additional telephone equipment at the dispatch position and speeding communications between systems.

The status of auxiliary inputs and outputs is conveniently interpreted from the GUI with the use of familiar graphical icons, such as a door shown open or closed.

KEY INTEROPERABILITY FEATURES

Agency Partitioning

Multiple agencies can share a system to gain interoperability and cost savings benefits, while still maintaining control of their own channels, encryption keys, console configuration and more.

Priority for Emergencies

Transmit Priority Levels provide an orderly and consistent method for ensuring higher priority transmissions are able to take over resources from lower priority transmissions.

Optimized Patch Functionality

MCC 7500 Console users can patch communications between trunked and/or conventional radios that are normally unable to communicate with each other. Patched radio users see the ID or alias of the other patched radio(s), as opposed to that of the console. This minimizes confusion and the need for the dispatcher to intervene in the call. Patches are automatically re-established if interrupted so the MCC 7500 Console user can concentrate on continuing operations.

Enhanced Secure Operation

Encryption and decryption services within each dispatch operator position enable dispatchers to fully participate in secure communications while keeping the sensitive, vital information completely encrypted between the dispatcher and the radio users.

Dispatchers can interface with agencies that have different encryption configurations without any manual intervention or delay. Up to 60 calls using up to six different algorithms and multiple secure keys can be supported simultaneously.

To help reduce dispatcher stress and potential errors when managing encrypted audio situations, indicators and alerts are provided when the console mode does not match that of a received call, as well as when a patch or multi-select group is being set up between a mix of clear and secure channels.

MCC 7500 CONSOLE SOLUTION COMPONENTS

MCC 7500 Console Operator Position

MCC 7500 Console operator positions connect directly to the radio system's IP transport network without gateways or interface boxes. Audio processing, encryption, and switching intelligence for dispatch is performed within each software-based operator position, without additional centralized electronics. MCC 7500 Consoles function as integrated components of the total radio system, enabling full participation in system level features such as end-to-end encryption and agency partitioning.

Operator position hardware consists of a monitor, personal computer, keyboard and mouse/trackball/ touchscreen, speakers, audio accessories and a Voice Processor Module (VPM). The VPM allows analog devices to be connected to the digital console. The low-profile VPM can be rack mounted, furniture mounted or placed on the desktop.

The MCC 7500 Console does not require separate configuration or performance management equipment. The console system is configured and managed by the radio system's configuration manager, fault manager and performance reporting applications to provide the customer with a single point for configuring and managing the entire radio system. Changes are automatically distributed throughout the system. This centralized approach saves valuable time and effort for system administrators and technicians. Aliases for Radio PTT IDs may be managed both locally and centrally in the same system to provide agencies sharing an ASTRO 25 radio system with the flexibility to meet their alias management needs.

CONVENTIONAL GATEWAY

The Conventional Channel Gateway (CCGW) enables both analog and digital channels to interface with MCC 7500 Consoles with no need for a separate hardware network and channel banks. Conventional calls are transported between the dispatch operator positions and CCGWs on the same IP network as trunked calls.

A CCGW provides 2-wire/4-wire analog ports for analog channels, V.24 ports for older ASTRO 25 conventional channels and IP connectivity for current architecture ASTRO 25 conventional channels. Enhanced digital control of consolettes can be achieved by using a combination of analog and V.24 ports. CCGWs are available in two capacities. The standard density CCGW supports up to eight "port based" channels and up to sixteen "IP based" channels for a total of twenty four channels. The high density CCGW supports up to sixteen "port based" channels and up to sixteen "IP based" channels for a total of thirty two channels.

The 2-wire/4-wire analog ports support tone remote and ear and mouth (E&M) station control. The V.24 ports and IP connections support digital station control while a combination of analog and V.24 ports support enhanced digital control of consolettes. The CCGW also supports simple analog, MDC 1200 analog, digital-only and mixed-mode analog/digital channels.

AUXILIARY INPUT/OUTPUT SERVER

The auxiliary input/output server enables console operators to control and monitor external devices, such as doors and lights, from the console user interface. Since the MCC 7500 Console does not rely on centralized electronics, contact closures and input buffers required to interface to these devices are housed in Remote Terminal Units (RTUs). These RTUs can be physically located close to where they are needed or at any console or radio frequency (RF) site. The dispatch consoles and RTUs communicate with each other across the radio system's IP transport network.

ARCHIVING INTERFACE SERVER (AIS)

The AIS is a digital logging interface, comprised of a personal computer and a voice processor module (VPM). Each AIS works with an IP-based logging recorder. Audio and call control information is sent across the IP network between the AIS and recorder. Highly configurable, the MCC 7500 Console logging solution includes:

- Recorded audio quality equivalent to audio heard at console position
- Information associated with radio calls recorded in addition to the call audio.

- Dispatcher- and radio-initiated events on radio channels (such as changing the frequency, sending an alarm) are recorded.
- Recorder capacity based on the number of radio transmissions needed to record simultaneously, not on the number of channels it may record.
- Agency partitioning, enhancing control over which resources are recorded by what agency or department.
- Security and fault management centralized at the radio system's network manager.

CONSOLE TELEPHONY MEDIA GATEWAYS

Media gateways are used to provide dispatchers with access to analog POTS and/or T1/E1 phone lines directly from their MCC 7500 Console positions. The Session Initiation Protocol (SIP) is used to communicate with the media gateways across the console IP network. A rich set of telephony features is supported by the media gateways, enabling dispatchers to do their jobs more effectively and efficiently.

SPECIFICATIONS

System Compatibility	ASTRO® 25 System and PremierOne™ CAD Application	
Vocoder Algorithms supported	AMBE, IMBE, ACELP, G.728, G.711	
Encryption Algorithms supported	AES (256 bit), DES-OFB, DVI-XL, ADP (Advanced Digital Privacy), DES-XL, DVP-XL	
Monitor requirements		
With Mouse or Trackball	17" minimum, 20" recommended	
Touchscreen	20" minimum	
Voice Processor Module (VPM) connections	**Connector type**	**Device**
	RJ45	One desktop microphone, eight desktop speakers, one local logging recorder, one radio instant recall recorder, one console telephony instant recall recorder, one external telephone set, one external paging encoder, one footswitch
	DB15	Two headset jacks connectors
VPM mounting options	EIA 19" rack mount, console furniture mount, Desktop – supports monitor up to 80 lbs	
VPM audio inputs and outputs	600 Ohm, balanced and transformer coupled (except for microphone which is 2000 Ohm, balanced, and does not use a transformer)	
Speaker Mounting Options	Desktop, furniture mount, or wall mount (with bracket accessory)	
Dispatch Console Cable Lengths	VPM to Speaker cable	10.1 feet (3.09 meters) standard
	VPM to Headset Jack cable	6 feet (1.8 meters) standard
	Headset Jack Extension cable	6 feet (1.8 meters) standard
	VPM to Microphone cable	10 feet (3.05 meters) standard
	VPM to Footswitch cable	10 feet (3.05 meters) standard
Supported Console Site Link types	Fractional T1/E1, Single T1/E1, Multiple T1/E1s Redundant and non-redundant versions IP site links	
MCC 7500 Dispatch Console Capacities	Up to 60 simultaneous audio sessions per operator position Up to 60 simultaneous encryption/decryption sessions per secure capable operator position Up to 3 Multi-Select groups per operator position (with up to 20 members per Multi-Select group) Up to 16 Patch groups per operator position (with up to 20 members per Patch group) Up to 160 resources per operator position	
Conventional Channel Gateway	Rack mountable, 1 rack unit high T1R1, T2R2, T4R4, T8R8, T12R12, T14R14 channels Simple analog, MDC 1200 analog, pure digital, mixed mode (analog/digital) channels, consolettes Standard density CCGWs provide interfaces for up to four analog conventional channels High density CCGWs provide interfaces for up to eight analog conventional channels Each analog conventional channel interface contains the following inputs and outputs • 600 Ohm, balanced analog audio input - To accept radio audio from the channel. Can be configured to support AGC, DLM, or no input conditioning. • 600 Ohm, balanced analog audio output - To send console transmit audio to the channel • 600 Ohm, balanced analog audio output - To send console transmit and radio receive audio to a logging recorder • 1 Amp, 24 VDC relay output - For relay keying of the channel • Input buffer - To detect Carrier Operated Relay (COR) closure in the channel • Input buffer - To detect Line Operated Busy Light (LOBL) closure in the channel • Input buffer - To detect Coded/Clear closure on an Advanced Securenet channel Standard density CCGWs provide interfaces for up to four V.24 based ASTRO 25 conventional channels High density CCGWs provide interfaces for up to eight V.24 based ASTRO 25 conventional channels • V.24 to station or comparator. No Digital Interface Unit (DIU) required. Standard density CCGWs can support up to 24 conventional channels simultaneously (four analog + four V.24 based ASTRO 25 conventional + sixteen IP based ASTRO 25 conventional) High density CCGWs can support up to 32 conventional channels simultaneously (eight analog + eight V.24 based ASTRO 25 conventional + sixteen IP based ASTRO 25 conventional)	

PRODUCT SPEC SHEET
MCC 7500 IP DISPATCH CONSOLE

#272-16

SPECIFICATIONS

Auxiliary Input/Output Server Hardware	A simplified, user-friendly version of the MOSCAD SDM 3000 RTU is used to support most Aux I/O needs. The output relays are capable of switching 1A @ 24VDC or 1A @ 24VAC. Input buffers are capable of sensing a dry closure through 1000 feet or less (round trip) of 24 AWG wire. The RTU provides single pole Form A relay outputs. (Double pole, Form B or Form C relays must be implemented using external relays which are controlled by the RTU relays.)

Auxiliary Input/Output Capacities	Number of Output Relays	Number of Input Buffers
Single SDM 3000 RTU	16	48
Single SDM 3000 RTU with 1 expansion chassis	32	96
Single SDM 3000 RTU with 2 expansion chassis	48	144

Auxiliary Input/Output Mounting	Each SDM 3000 RTU and each SDM 3000 RTU Expansion Chassis is rack mountable in a standard 19 inch rack and is one rack unit high.
Console Telephony Media Gateway	The POTS version gateway supports up to eight analog POTS lines. The E1/T1 version gateway supports up to two E1 or two T1 connections. Each gateway is rack mountable in a standard 19 inch rack and is 1 rack unit high.

SIZE AND WEIGHT

Device	Height	Width	Depth	Weight
VPM	1.75 in (44.5 mm)	16.9 in (430 mm)	12.3 in (312 mm)	3.6 lbs (1.6 kg)
Speaker	4.9 in (124 mm)	4 in (102 mm)	Without bracket: 3.5 in (89 mm) With bracket: 5.8 in (146 mm)	0.7 lbs (0.3 kg)
Headset Jack	1.6 in (41 mm)	5 in (127 mm)	6 in (152 mm)	1.2 lbs (0.5 kg)
Microphone	Gooseneck at 90°: 4.5 in (114 mm) Gooseneck at 180°: 21.8 in (552 mm)	4.8 in (121 mm)	6.6 in (168 mm)	2.4 lbs (1.1 kg)

POWER AND CONSUMPTION THERMAL

Device	Power Input	Thermal Output
VPM	0.4 Amps at 120VAC 0.2 Amps at 240VAC	171 BTUs/hour
Speaker	Add 0.05 Amps per speaker to VPM power Input at 120VAC (0.025 Amps at 240VAC)	Add 15 BTUs/hour per speaker to VPM thermal output
Headset Jack & Microphone	negligible	negligible

CERTIFICATIONS

	The various hardware elements of the Motorola MCC 7500 IP Dispatch Console product line are certified to meet the requirements for CSA and CE.
Safety	CSA 60950-1-03 EN60950-1 2001
EMC Emissions & Immunity	FCC part 15 Class A ICES-003 EN55022 1998 + A1: 2001 + A2:2003 (CISPR-22 Class A) EN55024 + A1:2001 + A2:2003 EN61000-3-2 2000 EN61000-3-3 1995 + A1:2001
Energy Efficiency (PVM power supply only)	International Energy Efficiency Level V

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. **motorola.com/dispatch**

MOTOROLA

Intent to Cancel Memo

11/23/2010

CENTRACOM GOLD SERIES PRODUCT FAMILY
Intent to Cancel

Product Information:

CENTRACOM GOLD SERIES Product Family Cancellation – All Models & Options

Models & Options Impacted:

- All CENTRACOM Gold Series operator position software, hardware, and accessories
  - Includes the Console Interface Electronics (CIE)
- Central Electronics Bank (CEB)
- Ambassador Electronics Bank (AEB)

Orders for the CENTRACOM GOLD SERIES Product Family will be accepted per the below schedule:

Last Order Date: 9/30/2011
Last Ship Date: 12/31/2011

Last date for CENTRACOM GOLD SERIES Add-on console positions & CEBs for SMARTNET and SmartZone systems was December 2009. Orders for Consoles for these legacy systems will not be accepted.

Replacement Product:

The CENTRACOM GOLD SERIES console has been replaced by the MCC 7500 console.

Regional Impact:

The CENTRACOM GOLD SERIES Product Family cancellation is effective in ALL regions (North America, Latin America, Asia Pacific, Europe, Middle East, Africa, and Israel) where product models and corresponding hardware options and accessories are sold.

Systems Impact:

The CENTRACOM GOLD SERIES Product Family supports all of the systems listed below. ASTRO 25 and SmartX customers planning to use their CENTRACOM GOLD SERIES systems beyond the cancelation date will need to place all orders for CENTRACOM GOLD SERIES products prior to Last Order Date of 9/31/2011 stated above. The replacement products for each system type are listed below.

Intent to Cancel Memo

11/23/2010

- SMARTNET/SmartZone – MCC 7500 console with an ASTRO 25 core can provide a wireline interface for SN/SZ systems via the SmartX site converter. The MCC 5500 console and MIP 5000 console can provide wireless interfaces for these legacy 3600 systems.
- Analog Conventional – The MCC 7500, MCC 5500 and MIP 5000 consoles all support Analog Conventional interfaces.
- Conventional ASTRO 3.0/3.1 - The MCC 5500 console provides a wireline interface to Conventional ASTRO 3.0/3.1 with ACIM signaling to the DIU. The MIP 5000 console provides a wireless interface using control stations to this system. The MCC 7500 console provides a wireline interface to Conventional ASTRO 3.0/3.1 channels via a V.24 link to the channel.
- ASTRO 25 Trunking – MCC 7500 provides wireline connectivity to ASTRO 25 Trunking systems. The MCC 5500 and MIP 5000 consoles can provide wireless interface to ASTRO 25 systems via control stations.

Service Impact:

Commercially reasonable efforts will be made to provide aftermarket product support via the Customer Fulfillment Center for up to 7 years as follows:

Last Ship Date: 12/31/2011
Aftermarket Product Support End Date: 12/31/2018

Contacts:

For CENTRACOM GOLD SERIES product specific implications of this cancellation:

David Burton

david.burton@motorolasolutions.com

847.576.3603

For SMARTNET/SmartZone System implications of this cancellation:

Scott Segin

Scott.Segin@motorolasolutions.com

847.576.9065

For service / support related implications of this cancellation:

Customer Fulfillment Center

800.422.4210

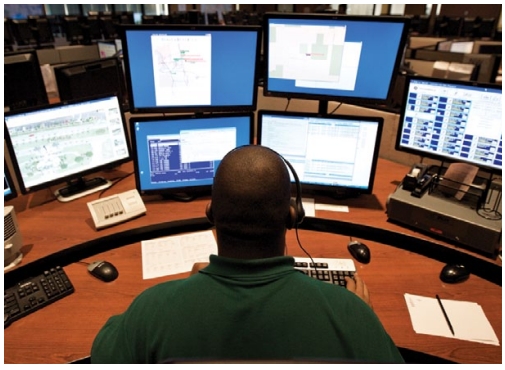
FY 2017-2021 by Priority

							ESCALATED COSTS (Costs in FY2016-2020 are escalated 3.5% a year)						
							Total	Total	Total	Total	Total	Total	Total
							$ 122,252,847	$ 65,294,177	$ 18,543,000	$ 23,979,915	$ 31,106,232	$ 44,843,203	$ 41,964,916
Priority	Dept	Project Title	Project Description / Justification	Est Cost in FY2017	Risk Factor	Funding Source	Approved Funding	FY 2016 To Be Docketed or Approved	FY 2017	FY2018	FY2019	FY2020	FY2021
1	Public Buildings	**City Hall - New Elevator and Accessibility Improvements**	New Elevator for the War Memorial	$ 1,140,000	66.7	Bonding	$ 1,140,000	$ -	$ -	$ -	$ -	$ -	$ -
2	Public Buildings	**Manet Road Communications Building**	Replace Emergency Communications Building at Manet Road	$ 750,000	63.9	Bonding	$ -	$ 750,000	$ -	$ -	$ -	$ -	$ -
3	Schools	**Angier School Replacement**	Opening in January 2016	$ 37,500,000	63.1	Bonding/MSBA	$ 37,500,000	$ -	$ -	$ -	$ -	$ -	$ -
4	Public Buildings	**City Hall Improvements - Heat Trace Wiring/ Ice Dam**	Use Heat trace wiring to prevent Ice Dams from forming during the winter.	$ 150,000	61.9	Bonding	$ -	$ 150,000	$ -	$ -	$ -	$ -	$ -
5	Schools	**Purchase Aquinas - Move Pre-School Program and Lincoln Eliot**	Purchase Aquinas/ Rennovate for Pre-K and Lincoln-Eliot students.	$ 52,850,000	61.7	Bonding/MSBA	$ 17,350,000	$ -	$ 1,000,000	$ 2,070,000	$ 13,390,313	$ 11,087,179	$ 11,475,230
6	Schools	**Zervas School - Renovation/ Replacement**	Project to address space needs due to growing enrollment, bldg systems, access.	$ 40,000,000	60.9	Bonding/ Override Stabilization Fund	$ 40,000,000	$ -	$ -	$ -	$ -	$ -	$ -
7	DPW/ Sewer	**Sewer Inflow /Infiltration Project - Project Area 3&4 - Chestnut Hill Area, Newton Center**	Part of 12 year program to remove excess inflow and infiltration into sewer system. 64% Sewer Funds 36% MWRA loan/grant	$ 10,068,000	60.6	Sewer/ MWRA	$ 10,068,000	$ -	$ -	$ -	$ -	$ -	$ -
8	Public Buildings / Sustainability	**Phase II Energy Efficiency Upgrades to City/School Buildings**	The objective of this project is to reduce energy use, energy costs and the carbon footprint of existing City owned buildings and schools.	$ 1,141,924	60.0	Energy Stabilization Fund	$ 1,141,924	$ -	$ -	$ -	$ -	$ -	$ -
9	Schools	**Cabot School Renovation**	Replace 92 yr old school due to poor condition, aging bldg systems and inadequate space per State Ed standards.	$ 45,000,000	59.6	Bonding/MSBA	$ 1,000,000	$ 44,000,000	$ -	$ -	$ -	$ -	$ -
10	Parks/Rec	**Replace Newton South High School Tennis Courts**	Replace 12 existing courts at this location.	$ 750,000	59.2	Bonding	$ 750,000	$ -	$ -	$ -	$ -	$ -	$ -
11	Fire Dept	**Replace Fire Dept Bucket Truck**	Replace 1996 F800 with 165K miles on it. Not cost effective to keep it on the road. Safety components are failing, putting personnel at risk.	$ 225,000	56.5	Bonding	$ 225,000	$ -	$ -	$ -	$ -	$ -	$ -
12	Fire Dept	**Fire Station #3 & HQs - Renovate/Replace Newton Centre Station**	Station #3 needs major repairs/upgrades. Co-located w/ Fire HQs. Upgrade systems for code compliance, access & female firefighters.	$ 18,500,000	55.1	Bonding	$ 3,920,823	$ 14,579,177	$ -	$ -	$ -	$ -	$ -
13	Fire Dept	**Replace Fire Department SCBA Gear**	Replace the department Self-Contained Breathing Apparatus (SCBA), purchased in FY 2007. GPS in equipment so that firefighters can be located in case of emergency.	$ 504,750	54.5	Bonding	$ 504,750	$ -	$ -	$ -	$ -	$ -	$ -
14	Parks/Rec	**Newton North Baseball Field - New Backstop and Nets**	New Backstop and Netting to reduce the number of baseballs hit into neighboring properties.	$ 350,000	54.3	Bonding	$ -	$ 350,000	$ -	$ -	$ -	$ -	$ -
15	DPW	**City-Wide Traffic Signalization Upgrades**	Improve upon safety, improved traffic flow, reduce congestion, meet ADA Compliance	$ 5,075,000	54.2	Bonding/Free Cash	$ 2,300,000	$ -	$ 650,000	$ 646,875	$ 535,613	$ 554,359	$ 573,762
16	Police	**Dispatch Center equipment**	All dispatch equipment has met it's life expectancy and must be upgraded	$ 700,000	53.1	Bonding	$ -	$ 700,000	$ -	$ -	$ -	$ -	$ -
17	DPW/ Water	**Manet Road Reservoir Gate Valve**	Repair Gate Valve	$ 400,000	51.2	Water Funds	$ -	$ 400,000	$ -	$ -	$ -	$ -	$ -
18	DPW/ Water	**Clean and Line Water Pipes to Improve Water Quality**	Cleaning and lining of water pipes to improve water quality, ensure pipe integrity and capacity. Precedes scheduled roadway paving.	$ 4,321,500	51.2	Water Funds	$ 4,321,500	$ -	$ -	$ -	$ -	$ -	$ -
19	DPW	**DPW Snow Equipment**	Purchase a Front end loader mounted snow blower to widen street for curb to curb snow clearance.	$ 150,000	51.1	Bonding	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ -
20	DPW/ Sewer	**Replace 1995 Sewer Jet Truck**	Replacement of vehicle/ equipment used to clear out blockages in the sewer system to prevent sewer backups. (#369).	$ 430,000	50.8	Sewer Funds	$ -	$ 430,000	$ -	$ -	$ -	$ -	$ -

#272-16

MCC 7500 IP DISPATCH CONSOLE FOR ASTRO® 25 RADIO SYSTEMS

STAY IN CONSTANT CONTACT WHEN IT MATTERS MOST



THE MOTOROLA MCC 7500 IP DISPATCH CONSOLE

Whether a large-scale event or a simple traffic light outage at a school crossing threatens the safety of citizens, you need to effectively communicate and coordinate a rapid response.

You need to have confidence in a dependable, always-available, complete communications system that keeps responders safe and constantly connected. You need the Motorola MCC 7500 IP Dispatch Console.

Seamlessly integrated into ASTRO® 25 radio systems, the MCC 7500 console provides interoperability, cost savings, and security advantages for today's critical communication needs. MCC 7500 consoles connect directly to the IP network without interface boxes, digital voice gateways or backroom electronics for an integrated mission critical system. Conventional channels link to the IP network and use the same audio transport as trunked audio.

ASTRO 25 SYSTEM INTEGRATION

Motorola IP systems are optimized to perform to robust customer specifications for mission critical voice and data communications. ASTRO 25 complies with Project 25 interoperability specifications while system interfaces based on standard IP bring additional value to the system.

The MCC 7500 IP Dispatch Console features:

- Prioritized emergency calls get through no matter how busy the system.
- Voice quality and intelligibility optimized to eliminate clipped or degraded audio.
- High-quality audio maintained despite increasing traffic loads.
- Call setup in a fraction of a second.
- Voice messages consistently delivered in the shortest possible time.
- Quick re-routing of call traffic in the event of an IP network path failure, minimizing lost audio and any impact on the end user.
- Enhanced dispatch performance and improved bandwidth efficiency using IP multicast technology.
- Conventional channels linked to the IP network using the same audio transport as trunked audio.
- Simplified dispatch operations and optimized operational efficiencies when integrated with PremierOne™ CAD.

MEETS YOUR DEMAND TO PROTECT, PREVENT AND RESPOND TO MISSION CRITICAL OPERATIONS.

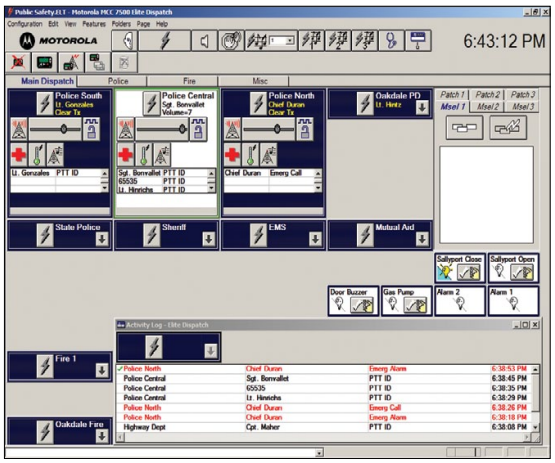
True End-to-End Encryption from the radio all the way through the console position. The MCC 7500 IP Dispatch Console goes beyond vocoded audio and uses true encryption technology, the only reliable means to keep your critical communication secure. Each MCC 7500 console supports up to six encryption algorithms simultaneously.

With Agency Partitioning, departments or agencies can share a system for cost savings and interoperability, yet manage and maintain control over their own resources, such as talkgroups, encryption keys, and configuration data.

Centralized System Configuration and Fault Management of dispatch positions allow changes to be automatically distributed throughout the system, providing vital efficiency. Access to the system manager from multiple remote locations via standard IP methods means users can still have convenient access while enjoying the benefits of centralized management.

Enhanced, Integrated Logging Recorder is available for the MCC 7500 Console providing digital recorded audio at the same high-quality level as heard through the dispatch positions. Digital recorders integrated into the radio system reap the benefits of agency partitioning, centralized management and system security, meeting a wide range of ASTRO® 25 customer requirements.

PremierOne™ CAD Integration further simplifies dispatch operations, improves data accuracy and enhances operational efficiencies by combining the common, intuitive user interface of PremierOne CAD with the reliable field personnel communications capabilities of the MCC 7500. Agencies that choose to integrate the MCC 7500 Console features with the PremierOne CAD common platform will gain the ability to automate common operations and get a real-time, comprehensive view of the personnel and equipment being supported in the field.



Customer Accepted Interface

Efficient, easy to use and intuitive, having been refined and proven through years of use in public safety dispatch centers around the world.

COMMAND AND CONTROL SOLUTIONS DESIGNED AROUND YOU

The MCC 7500 IP Dispatch Console is part of Motorola's extensive portfolio of communications and information solutions designed to address mission-critical public safety and security requirements worldwide. The MCC 7500 dispatch solution meets Motorola's rigorous quality standards to bring you peace of mind.

- Compatible with existing ASTRO® 25 radio systems with forward migration to protect and leverage your investment.
- Converges with PremierOne™ CAD to further simplify dispatch operations, improve data accuracy and enhance operational efficiencies.
- Software-based upgrades ease system and feature expansion. Re-use of the Elite Graphical User Interface (GUI) helps minimize dispatcher training.
- Works together with CENTRACOM™ Elite Console for robust feature interaction.
- Installation is simplified and site costs are reduced since the console operator position functions without backroom electronics.
- Console configuration is performed at a centralized network manager client, with changes distributed automatically, saving valuable technician and administrator time.
- More robust service logs, containing real-time information, facilitate maintenance activities.
- Integration into the system's central fault standard event monitoring protocols means fewer site visits.
- Flexible bandwidth requirements minimize operating costs for all remote console locations.
- Conventional audio is transported by the same IP network, eliminating the need for channel banks or a separate circuit switch system.

For more information about how the MCC 7500 IP Dispatch Console can meet your critical communication needs, contact your Motorola representative or visit motorola.com/ASTRO25

MOTOROLA

QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (DUP)	EXT LIST (DUP)	ITT-57 UNIT COST	ITT-57 EXTENDED
		NEWTON POLICE DISPATCH CENTER				
		NEWTON POLICE DEPARTMENT				
		1321 WASHINGTON STREET				
		NEWTON, MA 02465				
		ATTN. STEVE SMITH				
		DATE: JULY 25, 2016				
		QUOTE PER MOTOROLA ITT-57 STATE CONTRACT				
		PREPARED BY: JOHN P CONNOLLY - CYBER COMMUNICATIONS (MOTOROLA MR)				
		PHONE: 781-647-1010/ CELL # 617-839-1990				
		K2 Core System				
1	SQM01SUM0236	SINGLE ZONE CONV RED CORE -K2	$ 43,500.00	$ 43,500.00	$ 36,975.00	$ 36,975.00
1	CA01663AB	ADD: RACK	$ 495.00	$ 495.00	$ 420.75	$ 420.75
4	SQM01SUM0205	GGM 8000 GATEWAY	$ 4,200.00	$ 16,800.00	$ 3,612.00	$ 14,448.00
4	CA01616AA	ADD: AC POWER	$ -	$ -	$ -	$ -
4	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY	$ 6,000.00	$ 24,000.00	$ 5,160.00	$ 20,640.00
1	THN1012	RACK 7' OPEN	$ 470.00	$ 470.00	$ 380.70	$ 380.70
			$ -	$ -	$ -	$ -
1	DS110110711	PDU, AC EDGE RACK MOUNT DISTRIBUTIO	$ 2,450.00	$ 2,450.00	$ 2,278.50	$ 2,278.50
1	DS3750285	BREAKER KIT 3 EACH AIRPAX 15AMP SNA	$ 102.00	$ 102.00	$ 94.86	$ 94.86
1	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A P	$ 400.00	$ 400.00	$ 372.00	$ 372.00
			$ -	$ -	$ -	$ -
		Core Spares	$ -	$ -	$ -	$ -
1	SQM01SUM0205	GGM 8000 GATEWAY	$ 4,200.00	$ 4,200.00	$ 3,612.00	$ 3,612.00
1	CA01616AA	ADD: AC POWER	$ -	$ -	$ -	$ -
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY	$ 6,000.00	$ 6,000.00	$ 5,160.00	$ 5,160.00
1	CLN1856	2620-24 ETHERNET SWITCH	$ 2,250.00	$ 2,250.00	$ 1,935.00	$ 1,935.00
1	DLN6569	FRU: GCP 8000/GCM 8000	$ 5,000.00	$ 5,000.00	$ 4,050.00	$ 4,050.00
1	DLN6781	FRU POWER SUPPLY	$ 2,200.00	$ 2,200.00	$ 1,782.00	$ 1,782.00
1	DLN1338	FAN MODULE	$ 206.00	$ 206.00	$ 166.86	$ 166.86
			$ -	$ -	$ -	
		MCC7500 Dispatch Consoles - Police Dispatch	$ -	$ -	$ -	
		Monitors are not included - customer will be responsible for providing them in field	$ -	$ -	$ -	
1	B1905	MCC 7500 ASTRO 25 SOFTWARE	$ 250.00	$ 250.00	$ 202.50	$ 202.50
7	B1933	MOTOROLA VOICE PROCESSOR MODULE	$ 11,920.00	$ 83,440.00	$ 9,655.20	$ 67,586.40
7	CA01642AA	ADD: MCC 7500 BASIC CONSOLE FUNCTIONALITY SOFTWARE LICENSE	$ 12,000.00	$ 84,000.00	$ 9,720.00	$ 68,040.00
7	CA01644AA	ADD: MCC 7500 /MCC 7100 ADV CONVL OPERATION	$ 3,000.00	$ 21,000.00	$ 2,430.00	$ 17,010.00
7	CA00140AA	ADD: AC LINE CORD, NORTH AMERICAN	$ -	$ -	$ -	$ -
7	TT2833	HP Z440 CERTIFIED WORKSTATION WINDOWS 7 64-BIT	$ 2,950.00	$ 20,650.00	$ 2,655.00	$ 18,585.00
7	T7449	WINDOWS SUPPLEMENTAL TRANS CONFIG	$ 50.00	$ 350.00	$ 43.00	$ 301.00
7	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A PLUG-IN W/ (6) 15A NEMA 5-15 OUTLETS	$ 400.00	$ 2,800.00	$ 340.00	$ 2,380.00

QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (DUP)	EXT LIST (DUP)	ITT-57 UNIT COST	ITT-57 EXTENDED
28	B1912	MCC SERIES DESKTOP SPEAKER	$ 450.00	$ 12,600.00	$ 364.50	$ 10,206.00
7	B1914	MCC SERIES DESKTOP GOOSENECK MICROPHONE	$ 250.00	$ 1,750.00	$ 202.50	$ 1,417.50
7	B1913	MCC SERIES HEADSET JACK	$ 200.00	$ 1,400.00	$ 162.00	$ 1,134.00
7	RLN6099A	HDST MODULE BASE W/PTT, 25' CBL	$ 242.00	$ 1,694.00	$ 166.98	$ 1,168.86
0	RMN5078B	SUPRAPLUS NC SINGLE MUFF HEADSET	$ 149.00	$ -	$ 126.65	$ -
7	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH FOR USE WITH MOTOROLA MCC 7500 DISP	$ 273.00	$ 1,911.00	$ 245.70	$ 1,719.90
7	T7885	MCAFEE WINDOWS AV CLIENT	$ 165.00	$ 1,155.00	$ 148.50	$ 1,039.50
7	DDN1245	DUAL IRR SW USB HASP WITH LICENSE (VERSION 45)	$ 2,648.00	$ 18,536.00	$ 2,144.88	$ 15,014.16
7	DDN1118	PCI EXPRESS SOUND BLASTER X-FI XTREME AUDIO	$ 169.00	$ 1,183.00	$ 136.89	$ 958.23
			$ -	$ -	$ -	
7	CDN6673	CREATIVE LABS INSPIRE A60 - IRR (INSTANT RECALL RECORDER)	$ 46.00	$ 322.00	$ 41.40	$ 289.80
		MCC7500 Dispatch Consoles - Fire Dispatch	$ -	$ -		
		Monitors are not included - customer will be responsible for providing them in field	$ -	$ -		
1	B1905	MCC 7500 ASTRO 25 SOFTWARE	$ 250.00	$ 250.00	$ 202.50	$ 202.50
4	B1933	MOTOROLA VOICE PROCESSOR MODULE	$ 11,920.00	$ 47,680.00	$ 9,655.20	$ 38,620.80
4	CA01642AA	ADD: MCC 7500 BASIC CONSOLE FUNCTIONALITY SOFTWARE LICENSE	$ 12,000.00	$ 48,000.00	$ 9,720.00	$ 38,880.00
4	CA01644AA	ADD: MCC 7500 /MCC 7100 ADV CONVL OPERATION	$ 3,000.00	$ 12,000.00	$ 2,430.00	$ 9,720.00
4	CA00140AA	ADD: AC LINE CORD, NORTH AMERICAN	$ -	$ -	$ -	$ -
4	TT2833	HP Z440 CERTIFIED WORKSTATION WINDOWS 7 64-BIT	$ 2,950.00	$ 11,800.00	$ 2,655.00	$ 10,620.00
4	T7449	WINDOWS SUPPLEMENTAL TRANS CONFIG	$ 50.00	$ 200.00	$ 43.00	$ 172.00
4	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A PLUG-IN W/ (6) 15A NEMA 5-15 OUTLETS	$ 400.00	$ 1,600.00	$ 372.00	$ 1,488.00
16	B1912	MCC SERIES DESKTOP SPEAKER	$ 450.00	$ 7,200.00	$ 364.50	$ 5,832.00
4	B1914	MCC SERIES DESKTOP GOOSENECK MICROPHONE	$ 250.00	$ 1,000.00	$ 202.50	$ 810.00
4	B1913	MCC SERIES HEADSET JACK	$ 200.00	$ 800.00	$ 162.00	$ 648.00
4	RLN6099A	HDST MODULE BASE W/PTT, 25' CBL	$ 242.00	$ 968.00	$ 205.70	$ 822.80
0	RMN5078B	SUPRAPLUS NC SINGLE MUFF HEADSET	$ 149.00	$ -	$ 126.65	$ -
4	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH FOR USE WITH MOTOROLA MCC 7500 DISP	$ 273.00	$ 1,092.00	$ 245.70	$ 982.80
4	T7885	MCAFEE WINDOWS AV CLIENT	$ 165.00	$ 660.00	$ 148.50	$ 594.00
4	DDN1245	DUAL IRR SW USB HASP WITH LICENSE (VERSION 45)	$ 2,648.00	$ 10,592.00	$ 2,144.88	$ 8,579.52
4	DDN1118	PCI EXPRESS SOUND BLASTER X-FI XTREME AUDIO	$ 169.00	$ 676.00	$ 136.89	$ 547.56
			$ -	$ -	$ -	
4	CDN6673	CREATIVE LABS INSPIRE A60 - IRR (INSTANT RECALL RECORDER)	$ 46.00	$ 184.00	$ 41.40	$ 165.60
		MCN SERVER 8000 - COMPARATOR DISPLAY				
1	DDN1289	MCN SERVER 8000 SOFTWARE LICENSE 4	$ 9,556.00	$ 9,556.00	$ 7,740.36	$ 7,740.36
2	DDN1288	MCN SERVER 8000 SOFTWARE LICENSE 4 ADDITIONAL	$ 2,100.00	$ 4,200.00	$ 1,701.00	$ 3,402.00
2	DDN2123	HIB-IP 8002 NETWORK INTERFACE FOR MCN SERVER	$ 3,066.00	$ 6,132.00	$ 2,483.46	$ 4,966.92
2	Z491	POWER SUPPLY	$ 69.00	$ 138.00	$ 55.89	$ 111.78
2	Z550	PUNCH BLOCK	$ 146.00	$ 292.00	$ 118.26	$ 236.52
2	CDN6121	CIB COMPARATOR INTERFACE MODULE	$ 962.00	$ 1,924.00	$ 817.70	$ 1,635.40
2	CDN6116	POWER SUPPLY	$ 66.00	$ 132.00	$ 56.10	$ 112.20
1	CDN6112	RACK MOUNT - 4 UNITS	$ 92.00	$ 92.00	$ 78.20	$ 78.20
		AUX I/O	$ -	$ -	$ -	

QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (DUP)	EXT LIST (DUP)	ITT-57 UNIT COST	ITT-57 EXTENDED
		96 High Inputs and 48 Outputs	$ -	$ -	$ -	
1	F4543	SITE MANAGER BASIC	$ 1,855.00	$ 1,855.00	$ 1,669.50	$ 1,669.50
1	VA00212	SDM3000 MCC 7500 AUX IO F/W FOR A7.13	$ 175.00	$ 175.00	$ 157.50	$ 157.50
1	V266	ADD: 90VAC TO 260VAC PS TO SM	$ 120.00	$ 120.00	$ 108.00	$ 108.00
3	V592	AAD TERM BLCK & CONN WI	$ 90.00	$ 270.00	$ 81.00	$ 243.00
2	F4547	SM IO EXPANSION BASIC	$ 900.00	$ 1,800.00	$ 810.00	$ 1,620.00
2	V266	ADD: 90VAC TO 260VAC PS TO SM	$ 120.00	$ 240.00	$ 108.00	$ 216.00
6	V592	AAD TERM BLCK & CONN WI	$ 90.00	$ 540.00	$ 81.00	$ 486.00
			$ -	$ -	$ -	
			$ -	$ -	$ -	
		ADDITIONAL HARDWARE	$ -	$ -	$ -	
12	BLN6884	PUNCH BLOCK	$ 217.00	$ 2,604.00	$ 175.77	$ 2,109.24
4	DSGS1209436114	GROUND STRAP 1/2 X 094 X 36 1-HOLE 1/4 IN LUG	$ 35.00	$ 140.00	$ 32.55	$ 130.20
4	DSGS1209424114	GROUND STRAP 1/2X094X24 1-HOLE 1/4	$ 25.00	$ 100.00	$ 23.25	$ 93.00
12	DSCS46B	1/4-20 X 3/4 HHCS BRONZE	$ 0.80	$ 9.60	$ 0.74	$ 8.93
12	DSN420S	1/4-20 HEX NUT 18-8 SS (SOLD INDIVIDUALLY)	$ 0.15	$ 1.80	$ 0.14	$ 1.67
12	DSLW4S	1/4 LOCK WASHER 18-8 SS (SOLD INDIVIDUALLY)	$ 0.10	$ 1.20	$ 0.09	$ 1.12
2	DSRGBVKIT145872A	1/4X5/8X72 RACK GRD BAR KIT VERTICAL	$ 120.00	$ 240.00	$ 111.60	$ 223.20
			$ -	$ -	$ -	
			$ -	$ -	$ -	
		MKM7000	$ -	$ -	$ -	
1	BVN1013	MKM 7000 Console Alias Manager Soft	$ 250.00	$ 250.00	$ 202.50	$ 202.50
1	TT2833	HP Z440 CERTIFIED WORKSTATION WINDOWS 7 64-BIT	$ 2,950.00	$ 2,950.00	$ 2,507.50	$ 2,507.50
1	T7885	MCAFEE WINDOWS AV CLIENT	$ 165.00	$ 165.00	$ 140.25	$ 140.25
1	T7449	WINDOWS SUPPLEMENTAL TRANS CONFIG	$ 50.00	$ 50.00	$ 42.50	$ 42.50
1	DDN9748	19 INCH BLACK SHELF	$ 249.00	$ 249.00	$ 231.57	$ 231.57
			$ -	$ -	$ -	
1	DSCL5808NCKIT	8 PORT LCD KVM 8 USB-PS 2 COMBO CABLES	$ 3,900.00	$ 3,900.00	$ 3,315.00	$ 3,315.00
			$ -	$ -	$ -	
			$ -	$ -	$ -	
		UPS / Added per DDR	$ -	$ -	$ -	
		UPS for K Core rack - 5 minute run time/ per MR's input / 2 RU	$ -	$ -	$ -	
1	DS9130R1800N006	UPS, 9130 RACKMT, 2KVA/1.8KW, 6 MINS RUNTIME	$ 2,560.00	$ 2,560.00	$ 2,380.80	$ 2,380.80
			$ -	$ -	$ -	
			$ -	$ -	$ -	
		Console Spares	$ -	$ -	$ -	
1	B1912	MCC SERIES DESKTOP SPEAKER	$ 450.00	$ 450.00	$ 364.50	$ 364.50
1	B1914	MCC SERIES DESKTOP GOOSENECK MICROPHONE	$ 250.00	$ 250.00	$ 202.50	$ 202.50
1	B1913	MCC SERIES HEADSET JACK	$ 200.00	$ 200.00	$ 162.00	$ 162.00
1	TT2833	HP Z440 CERTIFIED WORKSTATION WINDOWS 7 64-BIT	$ 2,950.00	$ 2,950.00	$ 2,655.00	$ 2,655.00
1	B1934	MCC 7500 VOICE PROCESSOR MODULE FRU	$ 11,830.00	$ 11,830.00	$ 9,582.30	$ 9,582.30
			$ -	$ -	$ -	
		FRU POWER SUPPLY/CORD AND DC CABLE/ Added per DDR	$ -	$ -	$ -	
1	01009513002	PWR SPLY 108W AC INP 12VDC OUT W18	$ 150.00	$ 150.00	$ 121.50	$ 121.50
1	3082933N08	GR500 AC POWER CORD	$ 16.00	$ 16.00	$ 11.04	$ 11.04
1	30009351001	DC CABLE ASSY	$ 32.00	$ 32.00	$ 25.92	$ 25.92

QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (DUP)	EXT LIST (DUP)	ITT-57 UNIT COST	ITT-57 EXTENDED
			$ -	$ -	$ -	
1	CLN1856	2620-24 ETHERNET SWITCH	$ 2,250.00	$ 2,250.00	$ 1,935.00	$ 1,935.00
1	SVC-209	MOTOROLA SERVICES WHICH INCLUDES CCSI FACTORY STAGING, R56 AUDIT, ST SERVICES				$ 190,784.00
		FOR OPTIMIZATION AND ONE YEAR 24 X 7 WARRANTY WRAP.				
		NEWTON POLICE SYSTEM ASSUMPTIONS:				
		K2 Core System				
		11 MCC7500 OP's (7 POSITIONS FOR POLICE & 4 POSITIONS FOR FIRE)				
		26 analog resources / dual RX boards counted as 2 BIMS				
		96 High Inputs and 48 Outputs				
		No encryption				
		Logger not required / exisitng analog logger				
		Netclock not required				
		UPSs not required				
		Furniture not required				
						Total
						$ 658,069

#80-16

RE: Brian Yates

Shane Mark

Wed 9/7/2016 11:31 AM

To: Brian E. Yates <byates@newtonma.gov>;

Cc: Terry Crowley <tcrowley@newtonma.gov>; James Mcgonagle <jmcgonagle@newtonma.gov>; Louis M. Taverna <ltaverna@newtonma.gov>; John Daghlian <jdaghlian@newtonma.gov>; Shane Mark <smark@newtonma.gov>;

Councilor Yates,

The signs you see are part of the add-a-lane project administered by MassDot. As part of the project the Highland Avenue Bridge is being replaced and the old/existing bridge has to be removed/demolished. When this happens the bridge will be closed and traffic will be detoured. The Highland Avenue Bridge is currently part of the detour route for the City's Elliot Street Bridge project. As such there will be a double detour on two separate dates starting around November 15th These will be weekend closures beginning at 8:00pm on a Friday, lasting 16 to 18 hours each with the bridge reopening around 3:00pm on the Saturday. MassDot is working on solidify their detours and the dates. As soon as we know we will communicate it through our website, message boards etc.

Respectfully,
Shane L. Mark M.S.
Director of Operations
Department of Public Works
City of Newton
1000 Commonwealth Ave.
Newton Centre, MA 02459
Office: 617-796-1494
Cell: 617-992-1553
smark@newtonma.gov

From: Terry Crowley
Sent: Tuesday, September 6, 2016 3:04 PM
To: Shane Mark
Subject: Brian Yates

Councilor Yates called with questions regarding signage at the following locations:
2 signs at Chestnut
2 signs at Chestnut/Route 9
3 signs at Oak Street

He says the signs are ½ covered in plastic and wants to know what they/will say?

Terry A. Crowley
Citizen Assistance Officer
Office of Mayor Setti D. Warren
617-796-1102

ITEM # 197-15(2): DRAFT ORDINANCE FOR DISCUSSION PURPOSES

Add the following new section:

Sec. 20-64. Pilotless Aircraft Operation.

Purpose: The use of pilotless aircraft is an increasingly popular pastime as well as learning tool. It is important to allow beneficial uses of these devices while also protecting ~~has become increasingly prevalent and has a significant impact on the safety and security of the people of the City of Newton. In order to protect~~ the privacy of residents throughout the City, and to prevent nuisances and other disturbances of the enjoyment of both public and private space, regulation of pilotless aircraft is required. The following section is intended to promote the public safety and welfare of the City and its residents. In furtherance of its stated purpose, this section is intended to be read and interpreted in harmony with all relevant rules and regulations of the Federal Aviation Administration, and any other federal, state and local laws and regulations.

(1) Definitions:

Pilotless Aircraft – an unmanned, powered aerial vehicle, weighing less than 55 pounds, that is operated without direct human contact from within or on the aircraft.

(2) Registration: The owner of a pilotless aircraft shall register each pilotless aircraft with the City Clerk's office, prior to operation. The cost of ~~registering a pilotless aircraft~~registration shall be $~~TBD~~10.00 per Owner and such cost of registration shall include all pilotless aircraft owned by the Owner. Owners must have proof of registration in their possession when operating a pilotless aircraft. Owners shall be required to renew registration every three (3) years. Registration shall include the following:

(a) The owner's name, address, email address and phone number;

(b) The make, model, and serial number of each pilotless aircraft to be registered;

(c) A copy of the Owner's Federal Aviation Administration Certificate of Registration for pilotless aircraft;

(d) A photograph of each pilotless aircraft, clearly indicating that each pilotless aircraft is marked with the Federal Aviation Administration registration number;~~.~~

(e) For those pilotless aircraft for which identifying information such as a make, model, serial number and/or Federal Aviation Administration registration number is unavailable, the Owner shall provide a photograph of the pilotless aircraft.

(3) Operating Prohibitions. The use and operation of all pilotless aircraft within the City shall be subject to the following prohibitions.

(a) No pilotless aircraft shall be operated:

(i) over private property at an altitude below 400 feet without the express permission of the owner of said private property;

(ii) at a distance beyond the visual line of sight of the Operator;

(iii) in a manner that interferes with any manned aircraft;

(iv) in a reckless, careless or negligent manner;

(v) over any school, school grounds, or other City property or sporting event without prior permission from the City, unless a permit is required as in Section 4, below;

(vi) for the purpose of conducting surveillance unless expressly permitted by law or court order;

(vii) for the purpose of capturing a person's visual image, audio recording or other physical impression in any place where that person would have a reasonable expectation of privacy;

(viii) over any emergency response efforts;

(ix) with the intent to harass, annoy, or assault a person, or to create or cause a public nuisance;

(x) in violation of federal or state law, or any Ordinance of the City of Newton.

(b) The Chief of Police, or designee, may prohibit the use or operation of pilotless aircraft where it is allowed, or allow the operation of pilotless aircraft where it is prohibited, during an impending or existing emergency, or when such use or operation would pose a threat to public safety.

(4) Permit May be Required:

(a) Individual Permits: A permit may be required to use land maintained by the Parks and Recreation Department or the Conservation Commission to launch or land a pilotless aircraft. Such permits may be issued by the Parks and Recreation Department Head or the Conservation Commission, or designee. Individual operators shall adhere to the registration requirements of Section 2 above.

(b) Event Permits: The Parks and Recreation Department or the Conservation Commission may issue Permits for groups and special events. Such Event Permits will be issued to a responsible person who will insure that all operators participating in the event adhere to the

requirements of this ordinance, except that individual participants in an event under this subsection are not required to register in accordance with Section 2.

(5) Noise Ordinance: All Operators shall comply with the Noise Ordinance at Section 20-13, as amended, at all times while operating pilotless aircraft within the City.

(6) Penalties: A violation of any section of this Ordinance shall result in a warning for the first offense and shall be punishable by a fine of $50.00 for each offense thereafter.

(7) Separate Violations: Action taken pursuant to this section shall not bar any separate action by any other City Department for any other violations.

(8) Severability: If any provision of this section is held to be invalid by a court of competent jurisdiction then such provision shall be considered severable from the remaining provisions, which shall remain in full force and effect.

(9) Regulations: The City and its Departments may promulgate rules, regulations and policies for the implementation of this Ordinance.

#197-15(2)
09-01-16

DRONE FAQs

I already registered my drone with the FAA, why do I have to register again?

- The Newton registration process includes a significant educational component that will help owners and operators better understand how and where to fly drones in a safe and careful manner.

- Newton has created and will maintain a local database for enforcement of its Ordinance

- The registration process in Newton includes some information that the FAA does not require, in order to assist law enforcement with tracking drones to their operators.

Does the FAA also regulate drones?

- Yes they do!

- The FAA regulates any aircraft that operates in navigable airspace, which can include drones.

- In general, the FAA is concerned with protecting public safety, and focuses its regulations on aircraft that operate above 400 feet and that share the airspace with airplanes and helicopters.

- The City of Newton ordinance only regulates drones that fly under 400 feet, in the airspace that the FAA permits cities and towns to oversee.

Do all drones need to be registered?

- The FAA requires you to register your drone if it weighs more than 0.55 pounds and less than 55 pounds. Currently, the City of Newton will require registration of all drones under 55 pounds.

- In Newton, all drones, including small drones under 0.55 pounds must be registered with the City Clerk's office.

- If you have a drone that is not registered with the FAA because it weighs less than 0.55 pounds, you will need to submit a picture of the drone to the Clerk's office as part of your registration.

- After you are registered, don't forget to update the Clerk's office with information about your new drones.

What if I don't live in Newton – will I still have to register my drone?

- Yes. If you are going to fly your drone within the City of Newton you will be required to register your drone with the Clerk's office, unless you are participating in an event with a special event or group permit.

- For special events, like races or group demonstrations, a responsible person may be given a permit from the Parks and Recreation Department or Conservation Commission that would allow unregistered owners to operate drones within the City for the event.

Where can I fly my drone?

- On your own property
- On private land with permission from the landowner if the drone is flown below 400 feet.
- On public land with permission. Sometimes a permit may be required from the Parks and Recreation Department In order to obtain a permit to fly your drone on public land, please contact the Parks and Recreation Department. The Department will allow the flying of drones where there is sufficient space. Locations will vary depending on the time of year to allow for various types of recreation activities for the public.
- You are not allowed to fly your drone over any school, City property, or sporting event without prior permission from the City. You also may not fly the drone over any emergency response situation.

How do I get a permit to launch or land my drone from public property in Newton?

- Contact the Parks and Recreation Department at via telephone at 617-796-1500 or via email at parks@newtonma.gov. You can also visit their website at http://www.newtonma.gov/gov/parks/default.asp.

What is a Federal No Fly Zone?

- According to the FAA regulations, there are no-fly zones where you may not fly your drone. These federal no-fly zones include restricted or special use airspace, stadiums and sporting events including MLB, NFL, and NCAA Division One Football, wildfires, airports, and emergency response efforts.

- If you are within 5 miles of an airport, the FAA requires you to notify the airport operator and control tower. For exact locations on where you are not allowed to fly your drone, there are several mobile phone applications that you may download that will help you decide where to fly.

Are there any Federal No Fly Zones in Newton?

- No Fly Zones include: national parks, military bases, and within 5 miles of any medium or large sized airport.

- Currently there are no existing Federal No Fly Zones in Newton, but the Newton Ordinance imposes its own restrictions on where drones may be flown.

May I fly my drone at night?

- No. FAA Regulations limit flying to daylight only operations or civil twilight (30 minutes before sunrise and 30 minutes after sunset).

- All model aircraft must be flown within visual line of sight of the person operating the aircraft. This means that the operator must be able to use his/her natural vision to see the aircraft at all times. The operator may not use vision-enhancing devices such as binoculars or night vision goggles to satisfy this requirement.

Will the FAA issue fines for operation of drones?

- The FAA can issue fines and have done so in cases where people have carelessly and recklessly operated drones in an unsafe manner in the airspace in the jurisdiction of the FAA. The FAA may assess civil penalties up to $27,500 for not registering your drone and criminal penalties of up to $250,000 in fines and/or three year imprisonment. However, there are no set standards for administering fines. The FAA will consider the nature of the violation.

- The City of Newton will give an offender a warning for the first offense and then a $50.00 fine for each subsequent offense that violates the Drone Ordinance.

Am I able to audio record with my drone?

- According to the Massachusetts wiretap statute (M.G.L c. 272 §99), a person may not secretly record any oral communications or conversations with the use of a device. The

statute does not distinguish between public and private oral communications so even speech in public can be considered private and not available to record, without permission.

What is the price of registration?

- Registration with Newton is $10 per owner, and registration with the FAA is $5.

Am I required to renew my registration with the City of Newton?

- Yes. Registration with the FAA and with the City of Newton will require renewal every three years.

Is there a limit on the number of drones I can register with Newton?

- No, as long as every drone you own is registered with the City, there is no limit on the number that one person is allowed to register.

What do I do if I see a drone in my backyard?

- Please take a picture of the drone and contact the City of Newton Police Department. We are asking the citizens of Newton not take the matter into their own hands.

Are there any useful Drone applications for my mobile phone?

- There are many useful apps on the market. Check out your smart phone's app store!

How do I register my drone if it doesn't have a serial number because it is home-made?

- If this is the only drone you own and it is too small for the FAA to require registration, please provide a picture of the drone to the Clerk's Office.

- If you have other drones that do in fact have a serial number and have an FAA registration number please provide a picture of the home-made drone, the FAA number of the other qualifying drone you own

Danielle Delaney

To: Danielle Delaney
Subject: FW: Proposed drone ordinance

From: Emily Norton [mailto:emily@emilynorton.org]
Sent: Thursday, September 08, 2016 5:08 AM
To: Ruthanne Fuller; Richard Lipof; James R. Cote; Allan Ciccone Jr.; Richard B. Blazar; Brian E. Yates; John W. Harney
Cc: Emily Norton; Danielle Delaney
Subject: FW: Proposed drone ordinance

Greetings all,

Please see the email from Mr. Samuels that raised enough details that I thought it warranted putting off our vote to regulate drones. I am sorry I did not have time to share it with you before our meeting. (I got Mr. Samuels' permission before sharing it.) I have shared this email with Susan, Lisle and Maura. My preference is to include Mr. Samuels in a meeting to get immediate feedback on ordinance language, NOT to draft it exactly as he would like, but because he is simply very knowledgeable on this topic. As I said in our meeting, I think it is more important to get this right than to move quickly.

Thank you,
Emily

From: Howard Samuels <
Date: Tuesday, September 6, 2016 at 8:29 AM
To: apple <emily@emilynorton.org>
Subject: Proposed drone ordinance

Good morning Emily,

Please take a few minutes to read my input on the modified proposed ordinance before tomorrow's vote. I've also taken the liberty of forwarding this email to the AMA, and may have some additional feedback.

Registration Requirement

I was hopeful that the redundant and burdensome registration requirement would have been eliminated. Did Chief MacDonald say that the FAA database was insufficient to identify the owner of a drone, and did he request a city database? I recognize the desire to inform owners of the ordinance, which is apparently the 'significant educational component.' Is there anything else in the educational component than the presentation of the ordinance, or the FAQs listed below the draft? Are there any other ordinances with registration requirements whose purpose is to inform registrants of the ordinance? It really seems like a circular argument, whose main purpose is to discourage people from owning or using drones.

The FAA implemented the long-awaited commercial drone regulations on August 29th. Has anybody involved with this proposed ordinance looked at that? Would a news crew from one of the local TV stations have to go to City Hall (assuming it were open at the time of the event) before filming? Would they have to pre-register, keeping tabs on the requirements of every city and town? This is precisely why the FAA maintains control over the airspace - to prevent fragmentation of regulations. How about wedding photographers? Real estate agents?

The registration requirement is particularly difficult for the population the ordinance is hoping to support - students learning and experimenting. When they build a new drone over the weekend, they cannot fly it until somebody gives them a ride to City Hall - during its open hours.

The information required for the registration seems to be targeted at identifying the owner should the police recover a drone that was involved in some illegal activity, or involved in some sort of personal or property damage. As we've discussed, the FAA and/or AMA numbers on the drone provide sufficient identification.

It doesn't seem that the people drafting this ordinance have ever seen a drone, or had a demonstration such as the one I did for you. If law enforcement officers are present when a drone is flying outside of the framework of the ordinance (or FAA laws) then they can just wait a few minutes until the battery dies. The pilot has a choice - ditch an expensive drone someplace to let the police recover it, or bring it back home, in which case the police can identify the pilot immediately. And due to the LOS (line-of-sight) requirement, they don't even have to wait for the thing to land. Just look for the person staring at the drone, holding a radio.

All that being said, is there any reason to require owners to go to City Hall whenever they purchase or build a new drone other than obstructionism? Could the information be sent electronically, either by email or a web form? Even the FAA registration is simple - fill out your name and address, make a $5 payment, and receive a registration card and number by email. You don't have to keep going back to register each new drone.

If the city is still adamant about having a local registration database, why not model it on the AMA or FAA systems? Send an email with a copy of the AMA membership or FAA registration, and the owner's name and address. The 'significant educational' information could be sent along with the email confirmation. That way the city would be able to identify the owner by the registration number without even having to contact the AMA or the FAA. Because nobody has to deal with images of the aircraft, nobody has to sit at a desk at City Hall, the fee would seem to be superfluous.

Operating Prohibitions

These are largely in line with federal regulations. But I'm surprised to see that operation over a sporting event is allowed with permission! AMA and FAA rules prohibit that except under very specific circumstances.

Audio recording - this is another point which seems to be created by a well-intentioned but uninformed committee. Do you remember how loud my small drone was? About as loud as a passing car, right? Now imagine putting a microphone on it with the intent of audio recording. The proximity to the propellers would obscure any external audio signals. Look around on YouTube for any audio surveillance recordings made by drones. There aren't any. The only ones that include recorded audio present the sounds of the drone itself. Here's one I made this summer in Needham: https://www.youtube.com/watch?v=Q-GofzfBkQU

Permit May Be Required

Thank you for adding part b for Event Permits, and also for not requiring event participants to register.

The Parks and Rec department and Conservation Commission can provide permits for use of the parcels of land over which they have control. What about schools? Can residents request permission to fly at a school from the school itself? Would that permission come from a teacher, or would this be an additional responsibility of the Principal? Presumably the permit would have language about prohibitions when there are any organized activities at the field, etc. How will the people responsible for issuing permits be trained?

There's no language about whether a permit is for a specific time, or whether a student or resident may fly when others are not using the field.

FAQs

One claim is that the FAA permits cities and towns to oversee the airspace under 400 feet. Would you kindly point me to any documentation supporting that?

I thought that the requirement for registering drones under 0.55 pounds was an error. Seriously, what is the concern about those toys?

Why is there a prohibition on night flying? Night time is ideal - the wind is usually low, and there is very little competition for park and playground space from other residents. Of course, lighting on the model is required for visibility. Please see section B8: https://www.modelaircraft.org/files/105.PDF

The visual line of sight FAQ also seems to have been written by an uninformed individual. The AMA/FAA VLOS requirement refers to direct (non-electronic) view of the aircraft by either the pilot or by a spotter. It has nothing to do with binoculars or night-vision goggles. I've never heard of anybody trying to fly using binoculars or night vision goggles - there is no way to hold them while also piloting the aircraft. And please notice the option of using a spotter - somebody else, not flying the craft, to keep it in VLOS, and to inform the pilot of any situation such as somebody wandering onto the field while the aircraft is flying. This is a key element in drone racing. And many of the kids in the club have FPV (first-person video) systems which allow them to fly in that manner even if they aren't participating in a race. I'm assuming this FAQ was created under a misconception about the meaning of VLOS, rather than an attempt to prohibit an activity which both the FAA and the AMA consider to be perfectly safe and legal.

Also, the FAQs about VLOS and night flying are not mentioned in the ordinance itself. Is the FAQ intended to be a supplement to the ordinance, or just to clarify points in the ordinance? Is that even legal?

Docket #187-16

I was surprised to see a docket item regarding training of police in 'downing' drones. Since they only fly for a few minutes, what are the chances that a police officer can arrive at a scene and deploy some unspecified equipment to knock a drone out of the sky before the battery runs out? How can a discussion with the chief of police even be conducted without any of the participants being knowledgeable about drones? in any case, I don't have a problem as a drone owner if the police want to invent some sort of projectile net to capture drones, or to shoot them out of the sky with a shotgun. As a taxpayer and resident, I am quite concerned!

In a related topic, are there any plans to educate police officers on the existing laws, and even on the proposed ordinance, about drones?

Best regards,

Howard