

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

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TITLE:

Neutral Host

PURPOSE:

To obtain Board approval to issue a Request for Proposals a master license to design, build, operate, and maintain a Wireless Communication Infrastructure throughout Metro`s underground stations and tunnels.

DESCRIPTION:

In 1993, Metro entered into an agreement with Bell Atlantic (now Verizon) to install wireless communications in Metro`s underground stations and tunnels. This wireless network, currently owned and maintained by Verizon, only supports Verizon cell phones. Sprint phones must roam onto this network for access. TMobile and AT&T phones have no current access. In addition, the existing wireless infrastructure is old and does not have the technical sophistication to even provide Verizon`s own broadband data service offerings.

Metro is looking to provide a common, open, comprehensive wireless communication infrastructure, using state-of-the-art technology, in order to achieve the following objectives:

- Establish reliable, seamless wireless communications coverage in all of Metro`s 47 underground stations and all 50.5 miles of tunnels
- Improve the safety, security, and information opportunities for the Metro ridership
- Maximize the revenue to Metro with minimal operational complexity and impact to transit operations
- Leverage the economic value of Metro`s facilities, infrastructure, ridership, and presence within the Washington Metropolitan Area
- Allow for Metro use of wireless communications for its own operational and administrative needs

Metro plans to invite qualified firms to submit proposals for a license to design, build, operate, and maintain an open wireless communication infrastructure-at no cost to Metro-that will enable wireless cellular phone and data services, as well as other enhanced wireless services, throughout the underground network.

The successful proposer will act under a Master License Agreement as the non-exclusive intermediary-or-"Neutral Host"-between participating telecommunications service providers and the consumers of their services. Metro anticipates that the Master Licensee will execute sub-license agreements with wireless voice and data service providers who will want to obtain access and use of the underground wireless infrastructure. This common wireless infrastructure will support a wide range of existing and future planned frequencies to serve consumer needs and allow Metro to support its own wireless operational, administrative, and public safety needs.

The Master Licensee will pay to Metro those concessions, rents, royalties, fees, and commissions as defined in the executed Master License Agreement.

FUNDING IMPACT

The wireless communications infrastructure will be implemented at no cost to WMATA. All proposals must include compensation offers that include a minimum annual guarantee, with escalators, against a percentage of revenue generated that provides Metro a progressive revenue stream during the term of the agreement. No "zero" revenue compensation offers will be accepted.

RECOMMENDATION

That the Board grant approval to issue a Request for Proposals for a master license to design, build, operate, and maintain a Wireless Communication Infrastructure throughout Metro`s underground stations and tunnels.

REVISED

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SUPPLEMENT:

Success Factors

1. **Deployment:** Delivery of the network on contractually agreed timeframes, with minimal disruption to passengers, and in a manner consistent with the terms of the contract. Success will be measured by:

1. The Initial Build phase will be completed no later than one (1) year after notice to proceed, in the 20 underground rail station platforms with the highest volume of traffic.
2. The Full Build phase will be completed no later than four (4) years after notice to proceed, throughout the entire 47-station, 50.5 miles-of-tunnel Underground Network.

2. **Technical:** Delivery of a carrier class network that provides secure, robust, reliable wireless services (including coverage) across Metro’s underground system. Success will be measured by:

1. 95% or more of WMATA’s publicly accessible Underground Network will be provided coverage from the Neutral Host system as measured by the following RFP acceptance criteria:

Parameter 800M	Hz Services	1900MHz Services
Downlink power/carrier (FRU Output)	1dBm	4dBm
Uplink mobile transmit power	21dBm	21dBm
Downlink signal level (RSSI)	≥ -90dBm	≥ -90dBm
Uplink Carrier-to-interference (C/N) ratio	≥ 20dB	≥ 20dB
Coverage Probability for balanced uplink and downlink	≥ 95%	≥ 95%

2. The accepted system will support frequencies of all four major public cellular phone carriers.
3. Annual availability (uptime) of the system will be measured at 99.5%, as reported to WMATA by the Neutral Host licensee's network performance management system.

3. **Business:** Multiple wireless providers sublicense with the licensee to provide their services on the system, generating increased revenue for the Authority. Success will be measured by:

1. At least two major cellular carriers will provide service in the WMATA network, on the new system, within four (4) years of contract award.
2. WMATA revenues from cellular carriers will increase from their current annual \$27,000 payment from Verizon Wireless to a minimum of \$200,000 annually.
3. WMATA will be compensated for ongoing operational expenses associated with the Neutral Host, including escort fees (the current agreement with Verizon Wireless does not compensate WMATA for these costs).

4. **Enhanced Rider Experience:** Riders report through regular surveys that their trip/experience has been improved. This positive survey information is confirmed by regular RAC feedback. Success will be measured by:

1. A survey of ridership satisfaction related to cellular coverage in WMATA's Underground Network taken after completion of the Initial Build, compared to a baseline survey of ridership satisfaction taken prior to project inception, will indicate a 20% improvement in customer satisfaction for customers of carriers for whom WMATA is providing cellular service.
2. A survey of ridership satisfaction taken after completion of the Full Build, compared to the Initial Build survey of ridership satisfaction, will indicate a 50% improvement in customer satisfaction for customers of carriers utilizing the Neutral Host.

5. **Public Safety:** The safety of passengers has improved because of the deployment of the neutral host and the neutral host's capability to transmit/receive emergency incident information across Metro's underground system. Success will be measured by:

1. Within four (4) years of contract award, emergency E911 calls can be placed from WMATA's entire Underground Network by at least two major cellular carriers providing service in the network.

The vendor chosen must be able to meet the following Metro objectives:

1. Establish reliable, seamless wireless communications coverage through the creation of an open, common, non-discriminatory, comprehensive communications infrastructure system using state-of-the-art technology within the underground network
2. Enable equal access to all qualified wireless service providers
3. Provide a Wireless Communication Infrastructure (WCI) that maximizes the revenue to Metro with minimal operational complexity and impact to transit operations
4. Provide comprehensive WCI coverage in all 47 underground stations and all 50.5 miles of tunnels for use by Metro customers
5. Accommodate the current technological and capacity requirements of the WCI
6. Provide efficient administration and reporting among Metro, the successful proposer, and carriers
7. Provide serving arrangements of value to carriers and their subscribers
8. Limit regulatory risks that could impede WCI implementation or operation
9. Provide for the addition of future communication services and technology enhancements that will increase the value of the WCI to the carriers and Metro
10. Leverage the economic value of Metro's facilities, infrastructure, and ridership and its presence within the Washington Metropolitan Area
11. Deploy technology that will support new spectrum allocations and capabilities for both licensed and un-licensed spectra
12. Improve safety, security, and information opportunities for the Metro ridership
13. Allow for Metro use of Wi-Fi spectra for its own operational and administrative needs including wireless communications between stations and trains and the riding public.
14. Provide a WCI with the ability to distribute the 700-800 MHz Public Safety radio frequencies