

Greater Cleveland Regional Transit Authority

Radio Communication and CAD/AVL Replacement Program

Presented to: Operational Planning
and Infrastructure Committee
September 11, 2018

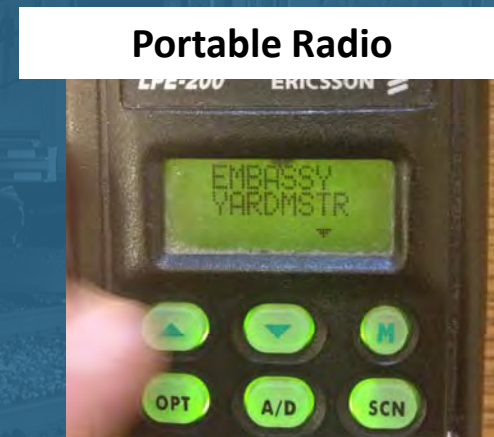
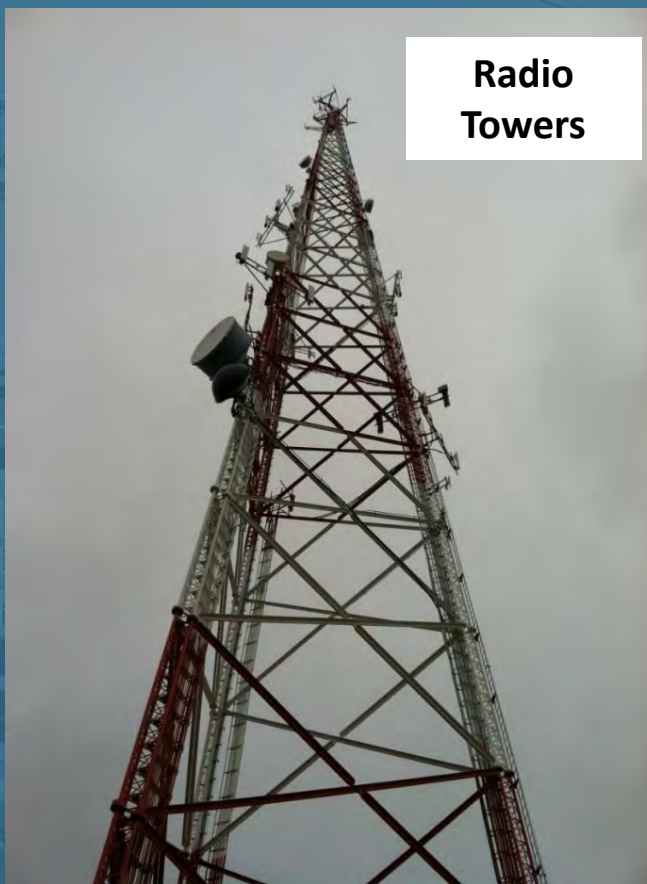
Greater Cleveland Regional Transit Authority



History of Current Radio System

- Current system installed in early 2000's
- Aging system with obsolete technology
 - Many parts are no longer sold and difficult to purchase/repair
- As parts fail, the radio coverage declines
 - Loss of communication with operators and supervisors (rail and bus)
 - Loss of visual location of each vehicle

Current Radio System Equipment



Recent Activity

- IBI Group's studied options and recommends MARCS radio and cellular carrier
- Federal Highway Administration awarded RTA a competitive \$11.60 million (50/50) grant
- RTA has allocated \$2.64 million of FTA formula funds (80/20)
- NOACA awarded \$0.76 million of section 5310 funds (80/20)

Project Scope

Three Pillars of the Project:

1. Radio Replacement

- Vehicle, handheld and dispatch consoles

2. ITS Computer Equipment

- Vehicle computers, real-time signage, routers

3. Radio and Cellular Service

- Agreements with radio and cellular providers

Radio Network



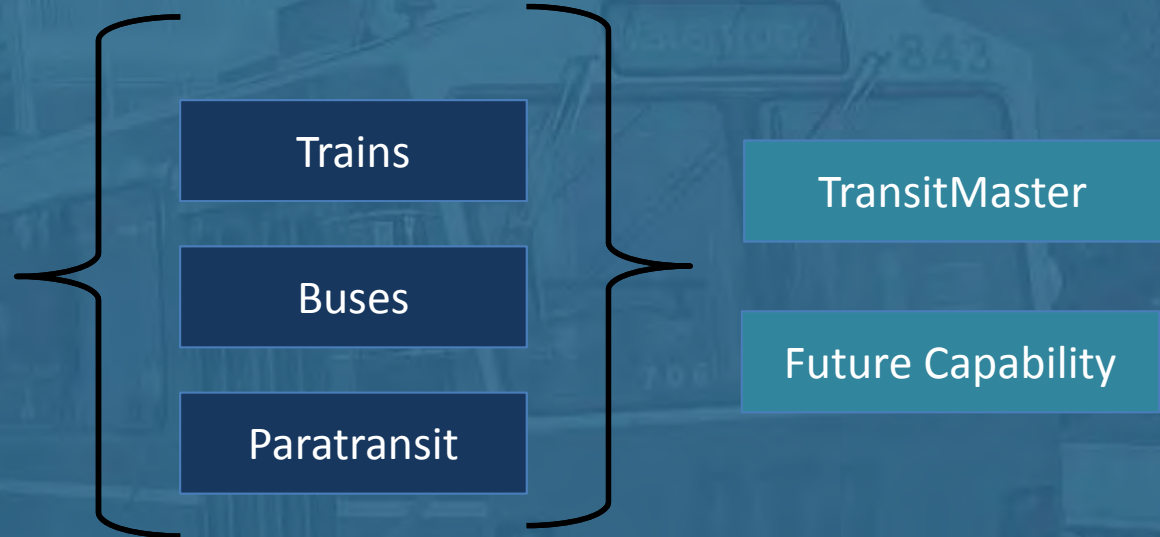
MARCS
13 Radio Towers



Cellular Network



Cellular Carrier



ITS Computer Equipment



Computer

MDT

Mobile Router

Mobile Radio

Vehicle Intelligence

Current Radio Coverage

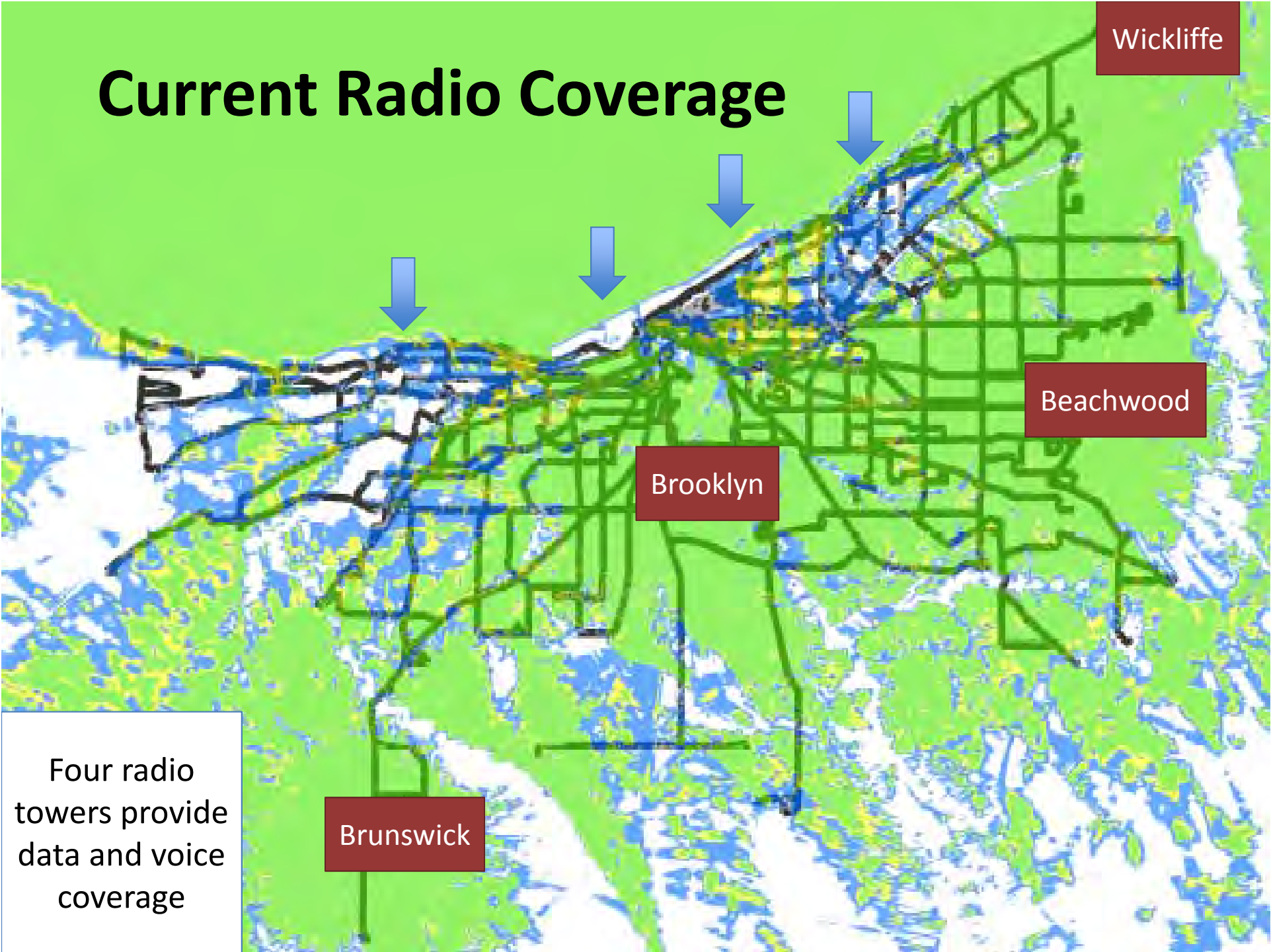
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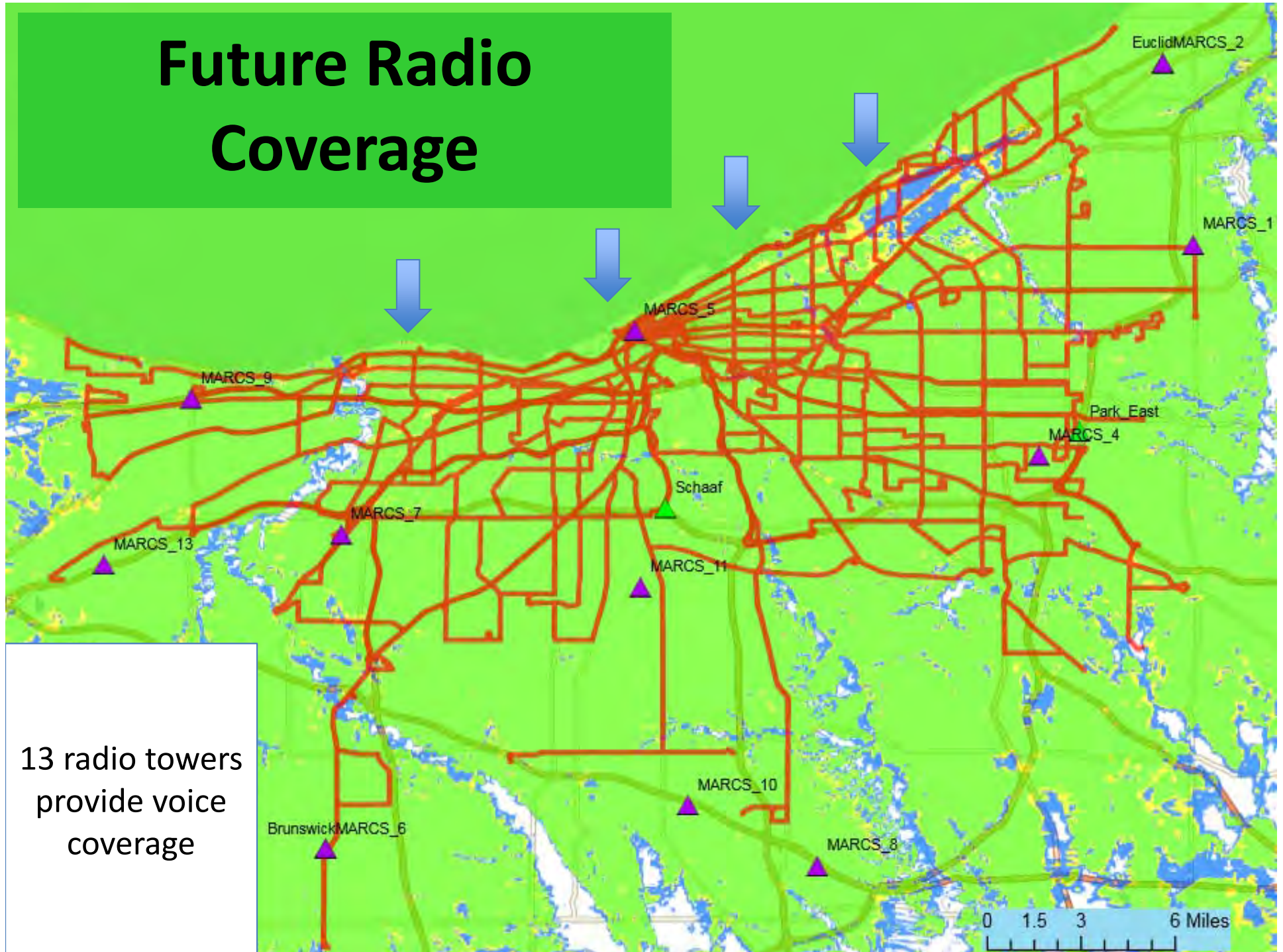
Brooklyn

Brunswick

Four radio towers provide data and voice coverage



Future Radio Coverage



Key New Features

Feature	Current Technology	Enhanced Technology
Vehicle Alarms	Covert alarms are audio only.	Coverts alarms are audio and visual
Navigation	No navigation available. Route books and maps are utilized.	Turn-by-turn navigation including re-routes, special events, etc.
Pre-Trip Inspection	Operators review their vehicle and complete paper forms for defects.	Operator performs the inspection on the new vehicle tablet (paperless)
Vehicle Location	Poll rate = 1 minute	Poll rate = 15 seconds
Field Supervision	Driver behavior is recorded manually and input into a database at a later time.	Field supervisors can use tablets to manage service in real-time (track vehicles, monitor on-time performance, submit coaching/accommodations)

Projected Project Schedule

Task	Start
Preliminary Design and Research	On-going
Hardware Procurement	November 2018
Project Pilot – Proof of Concept	December 2018
Final Design Review	February 2019
Hardware Installation and Testing	April 2019
Project Closeout	March 2020

Next Steps

Anticipated future board actions:

- October: Vehicle equipment (radios, routers)
- November: MOU with Cleveland State University: Transportation Center, Interagency Agreement with MARCS
- Q1 2019: Cellular Carrier

Questions

Greater Cleveland Regional Transit Authority

