Intelligent Transportation Systems

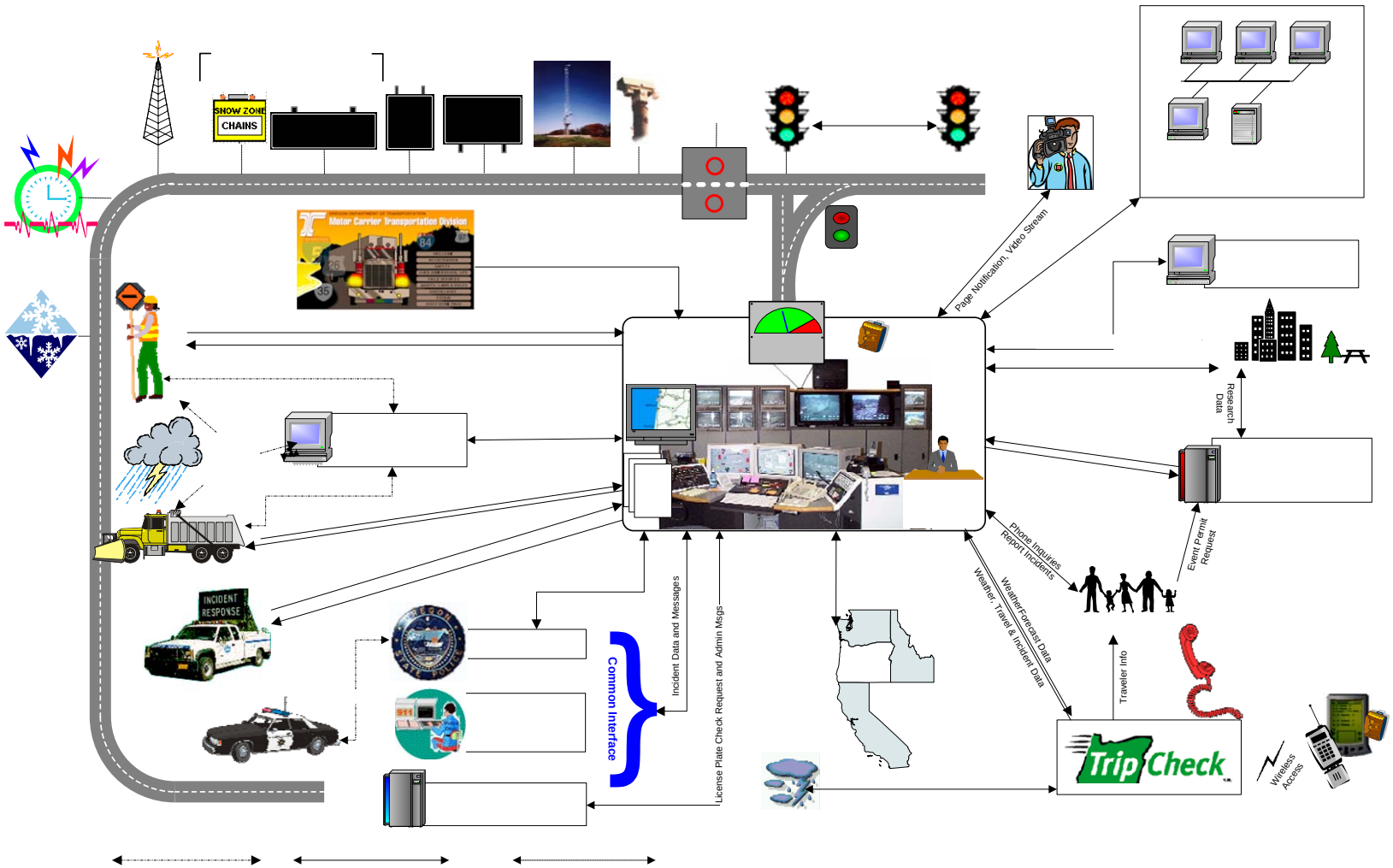
Network Discussion

Background

- ITS was excluded from SDC consolidation
  - Ben Berry presentation Nov. 2005
- This means
  - It is not a simple matter of in or out
  - Delayed implementation. Evaluate after 1 year
  - ODOT will house and support several servers
- Open Action Item: Determine details of network as it applies to SDC exclusion.

The Challenge

How do we create a process control network that meets the business needs of ITS, the goals of CNIC, and achieve the outcomes of the exclusion?


SNOW ZONE
CHAINS
Motor Carrier Transportation Division
Page Notification, Video Stream
Research Data
Phone Inquiries
Report Incidents
Event Permit Request
Weather- Travel & Incident Data
WeatherForecast Data
Traveler Info
INCIDENT RESPONSE
Common Interface
Incident Data and Messages
License Plate Check Request and Admin Msgs
TripCheck
Wireless Access

ITS Needs

- **Capacity:** High speed, high bandwidth connections between 5 regional locations.
- **Unique Devices:** Connection to 500 remote devices that connect in a variety of ways, and have requirements much different than standard network connections.
- **External Agency connections:** This includes connections to law enforcement agencies with CJIS security requirements, and local Multi agency WAN's connections that requires managing interagency agreements.
- **Capital vs. Operation costs:** ODOT has invested heavily into infrastructure to reduce operating costs. Cost models must recognize these investments. Customers can't absorb more operating costs for same amount of service.
- **Public:** Accurate and highly available. Data is highly visible to the public.
- **User Transparent:** ODOT workstations need access to the ITS data and systems. The ITS network and ODOT networks must be able to access each other.
- **Maintenance windows:** Standard maintenance windows do not work for ITS. Standard maintenance window times are often the worst time for ITS.
- **Device Support:** Some ITS devices are considered traffic control devices. This restricts who can access and design equipment in the Cabinet.
- **Frequent Change:** System is growing a very fast rate. Both in #'s and kinds of technology's used.

CNIC Goal

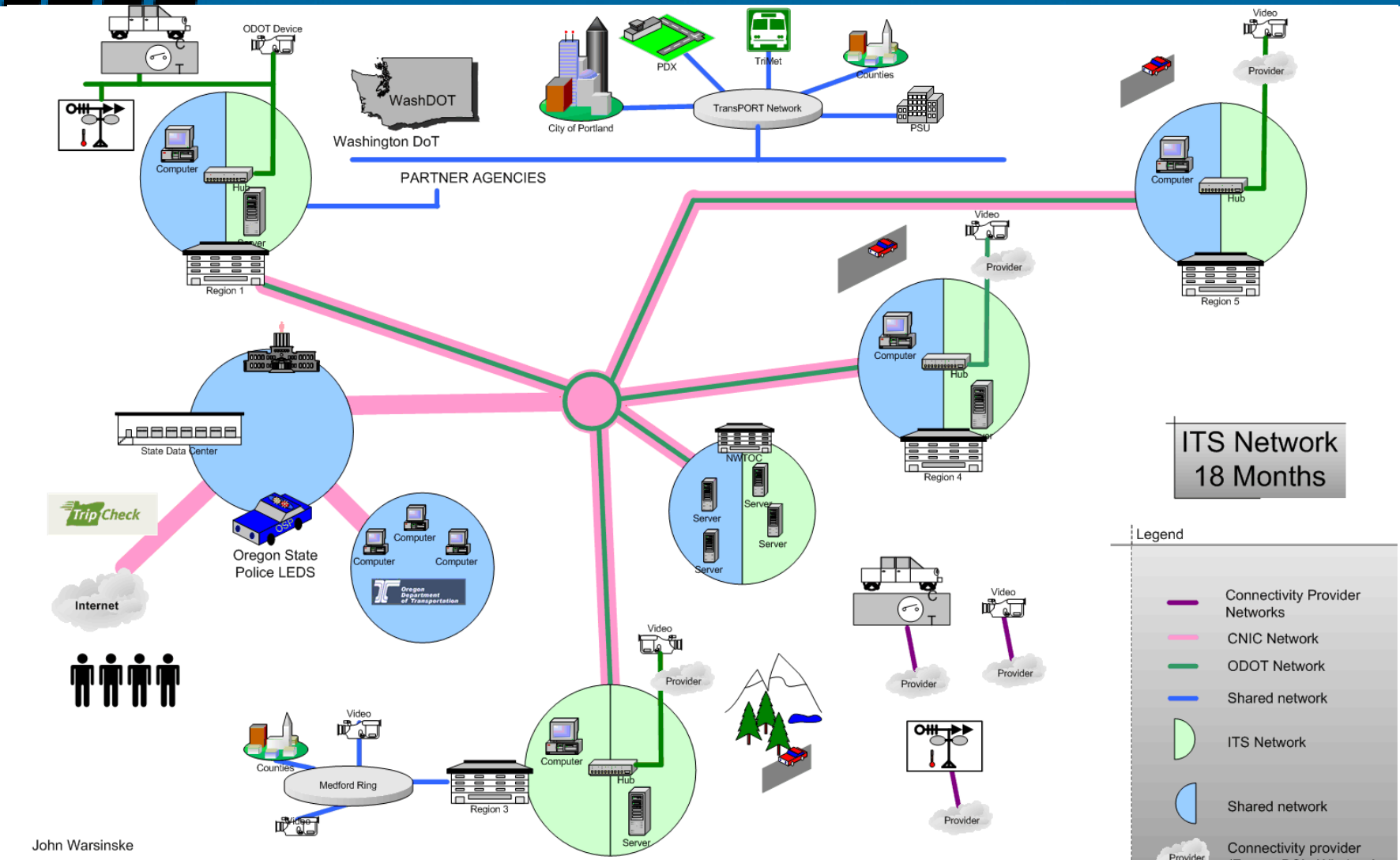
Reduce costs while maintaining or improving service levels

Exclusion Objective

Delay implementation of ITS into the SDC to reduce risk to service delivery and ensure SDC and ODOT do not have increased costs to operate

Our Proposal

- SDC to manage most of the ITS Network, but the responsibility is shared, with clear delineation points.
- A single network, with a defined ITS component.



John Warsinske

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The Components of the ITS network

- The Current ODOT network and/or future SDC
- A virtual WAN that rides on top of existing Infrastructure
- A LAN at each region location. (Salem, Medford, Bend, Portland, plus LaGrande)
- Connections to Devices
- Connections to Local Agency WANs and Partners

Supported by

Component	SDC	ODOT
ODOT network	X	
ITS WAN	X	
LAN in Region Location	X	X
Security / Firewall	X	X
Device to TOC connections		X
Connections to Partners		X

Benefits

- Meets Need of ITS, Goals of CNIC, and Exclusion Objectives
- ITS Bandwidth can be regulated and controlled, yet it is able to expand
- ITS Connections and security risks can be isolated and controlled
- Eliminates need for SDC to develop multiple standards and modify procedures and manage agreements

Other Justification

- This is not unprecedented. Other states Isolate their ITS networks. Private enterprises often separate their process control networks from office networks.
- First 2 maintenance events presented challenges to our customers because they were scheduled weekend mornings, this is a peek travel time, when ITS systems are most critical.