Virtual Weigh Stations
Technology Best Practices– Roy Czinku, IRD
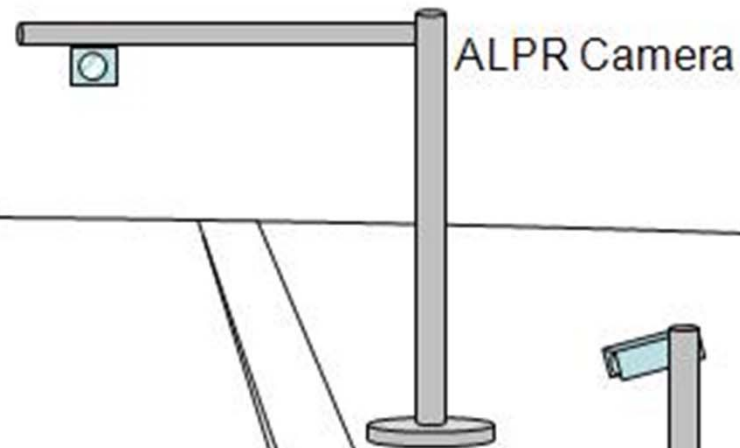
ird

INTERNATIONAL ROAD DYNAMICS INC.

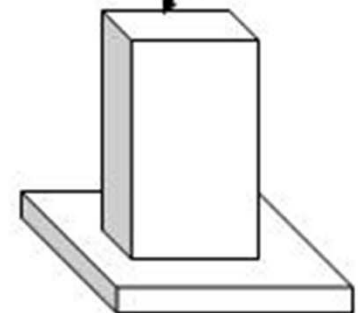# What is a Virtual Weigh Station?

Communication include options: Wi-Fi, Cellular, DSL, T1, Satellite

Network Connection

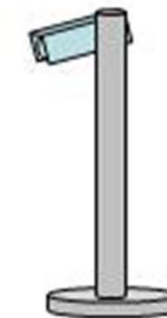Site can also include AVI Readers for E-Screening
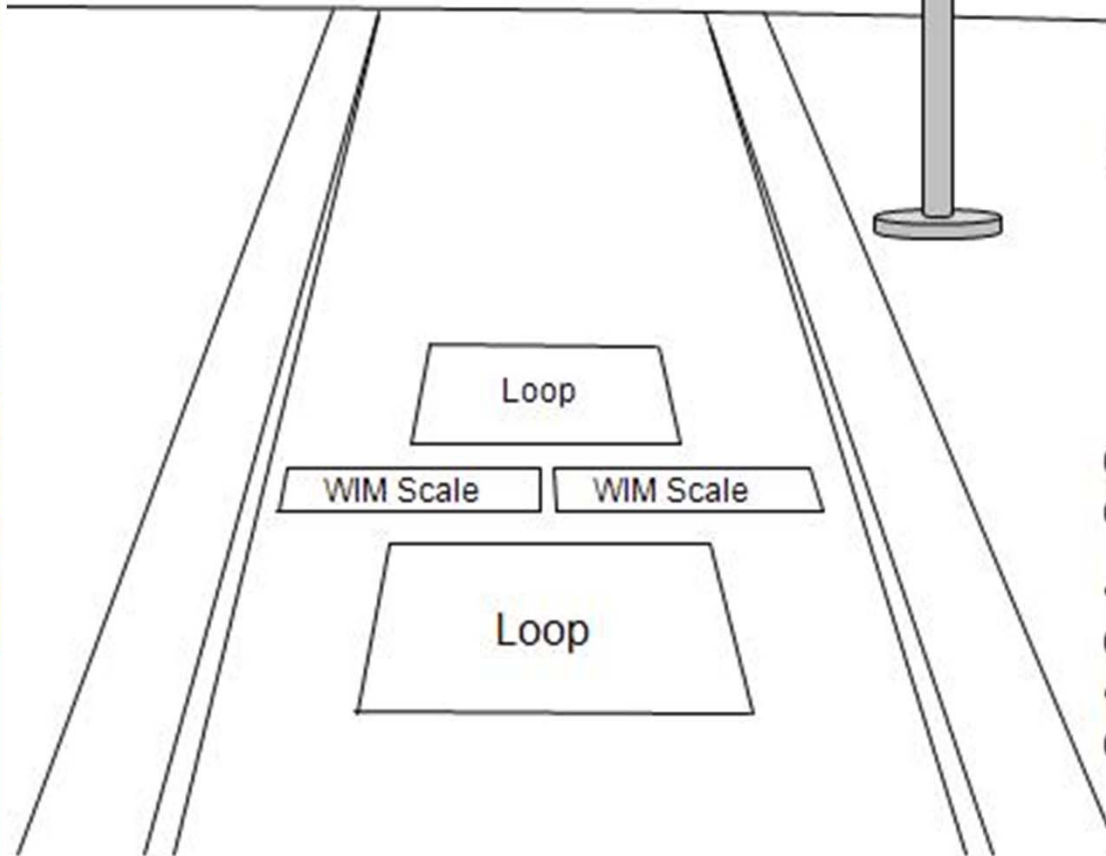
ALPR Camera

Loop

WIM Scale   WIM Scale

Loop

Camera Options:

•Side View Camera,
•USDOT Camera

Electronics Cabinet

Not to scale

Virtual Weigh Station WIM Site

VWS Real-time in Station
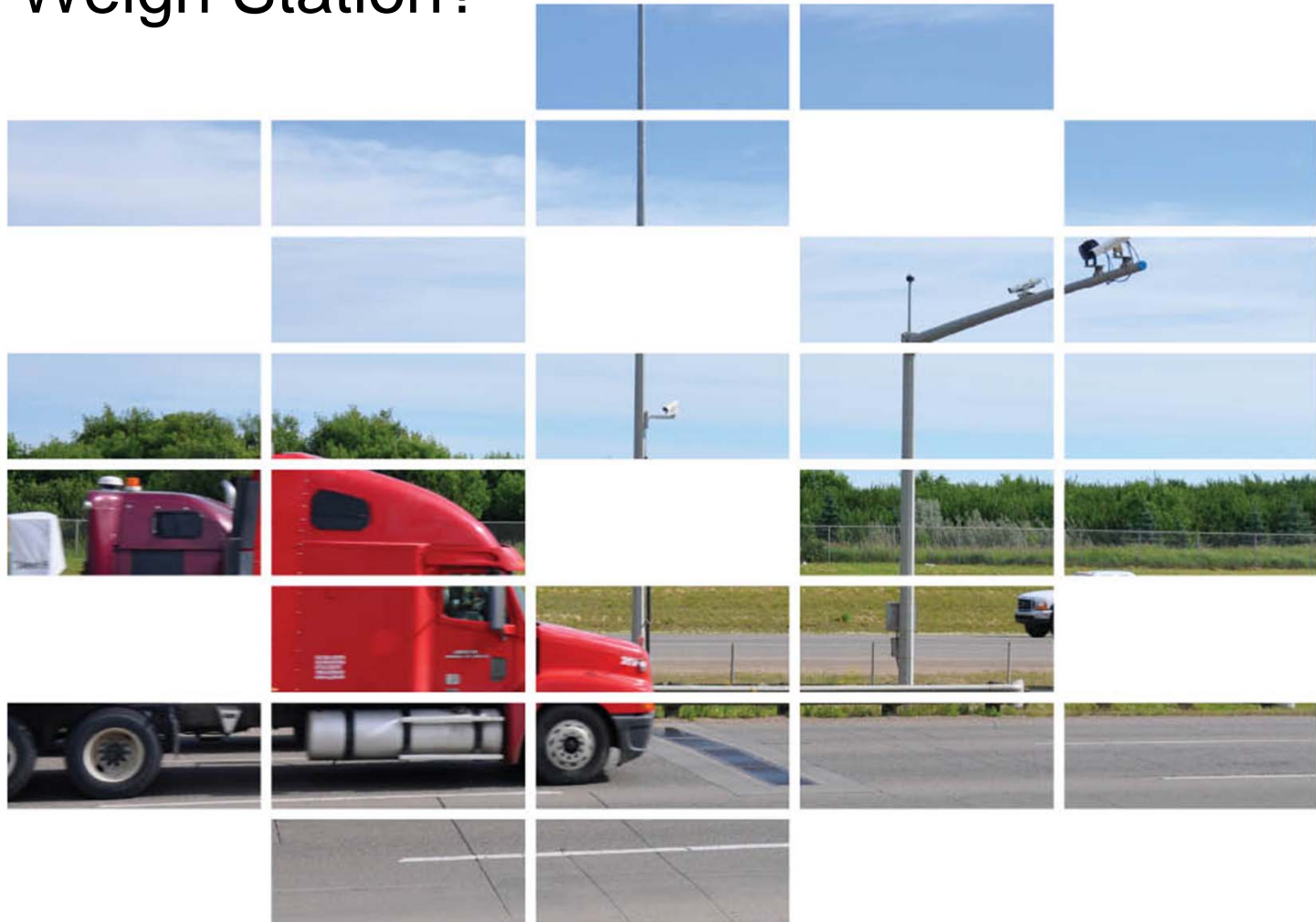
VWS Real-time Remote App

Mobile enforcement requirements

VWS Considerations

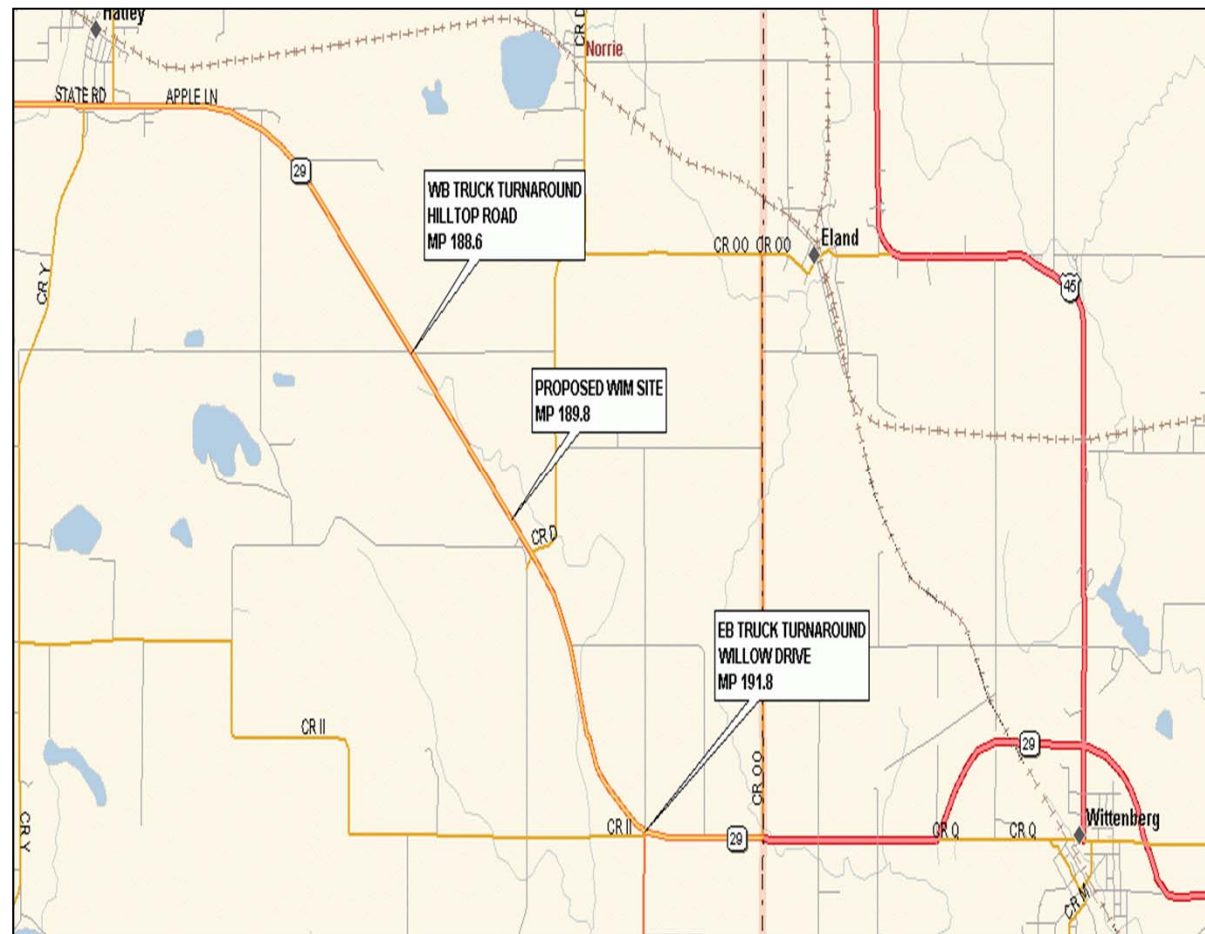- What are the Building Blocks of a Virtual Weigh Station?

1. Location

- Determine the best location for the system

2. Communications

Communications options:

- Phone line modem
- Cellular modem
- IP address cellular
- Network connection
- USB & serial ports

3. Power

- Keep your power options open!

4. Controller

The Virtual Weigh Station (VWS) is built around an electronic controller

The controller should offer:

- Flexibility
- Expansion capability

Controller - continued

- Hardened electronics - outdoor durability, wide temperature range
- Resistance to lightning/surges
- Accommodate wide variety of WIM Sensors

5. In Road WIM Sensors

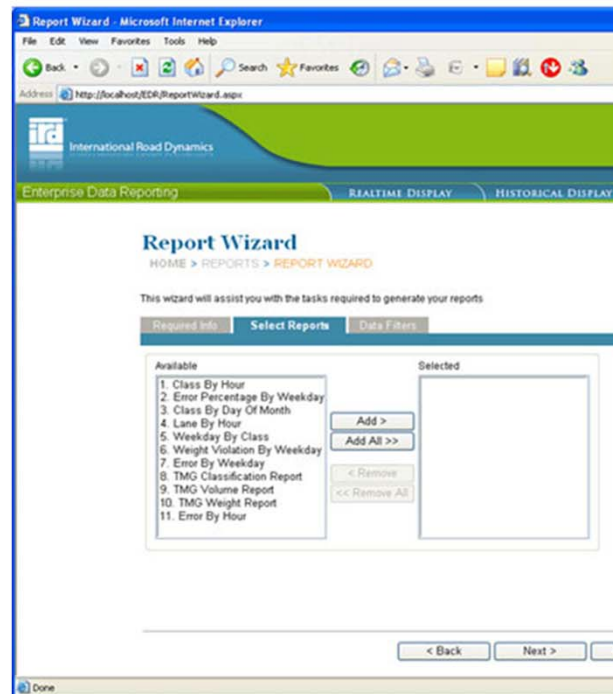Consider accuracy and service life.

Piezoelectric

Bending Plate
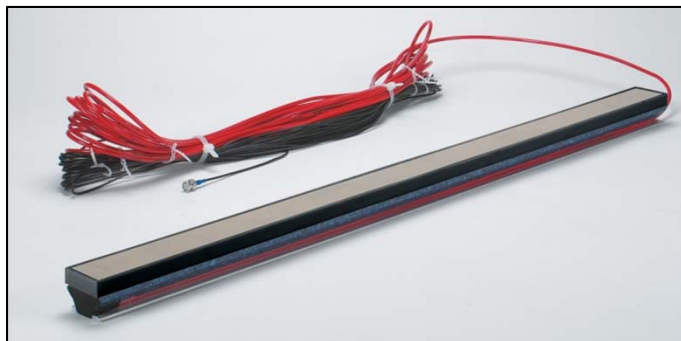
Quartz

Single Load Cell

6. Data Output

- Historical
- Reporting
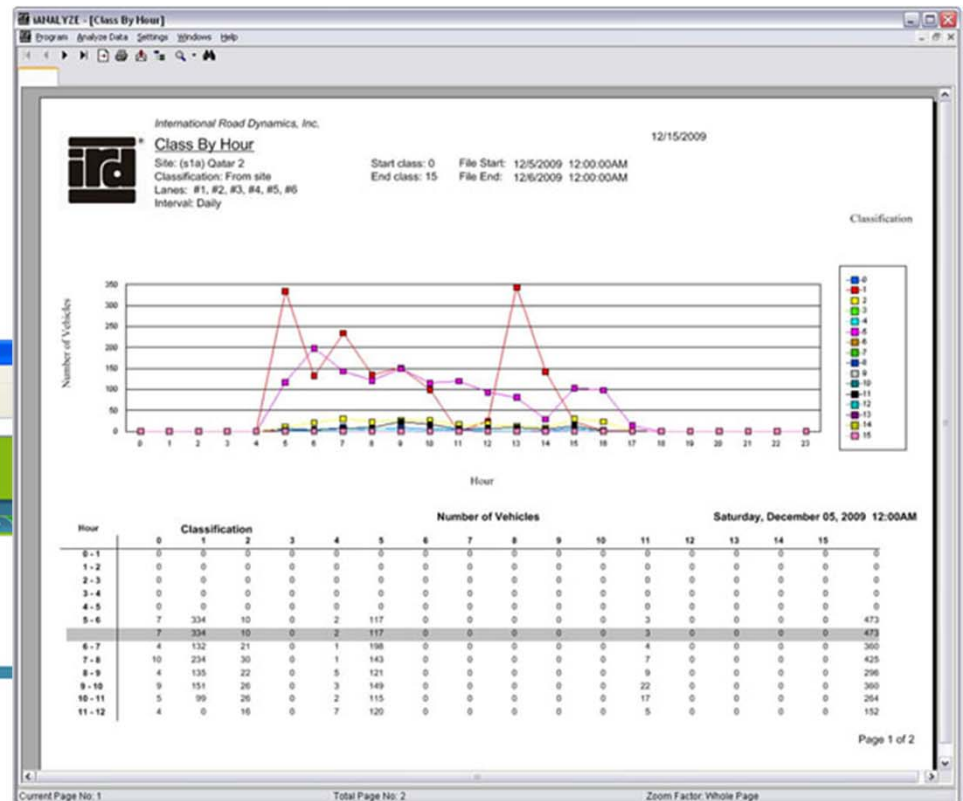
Data Output – continued

- Real-time Access
- Viewing records in real time requires a server and remote access solution.

7. Cameras – Link Image to Data

- Overview
- Side fire
- LPR
- USDOT

SIDE VIEW CAMERA

LICENSE PLATE CAMERA

8. Vehicle ID options-Data String

Individual vehicle identification may be provided through one or more ID sub-systems:

- Vehicle Side View Photos
- License Plate Images
- Optical Character Recognition
- AVI transponders
- USDOT Number Reading

9.Credential Database Screening

Credential Systems:

Credential Screening - continued

Credential Screening - continued

Credential Screening - continued

10. Credential Database Hosting

- Local Database Server:
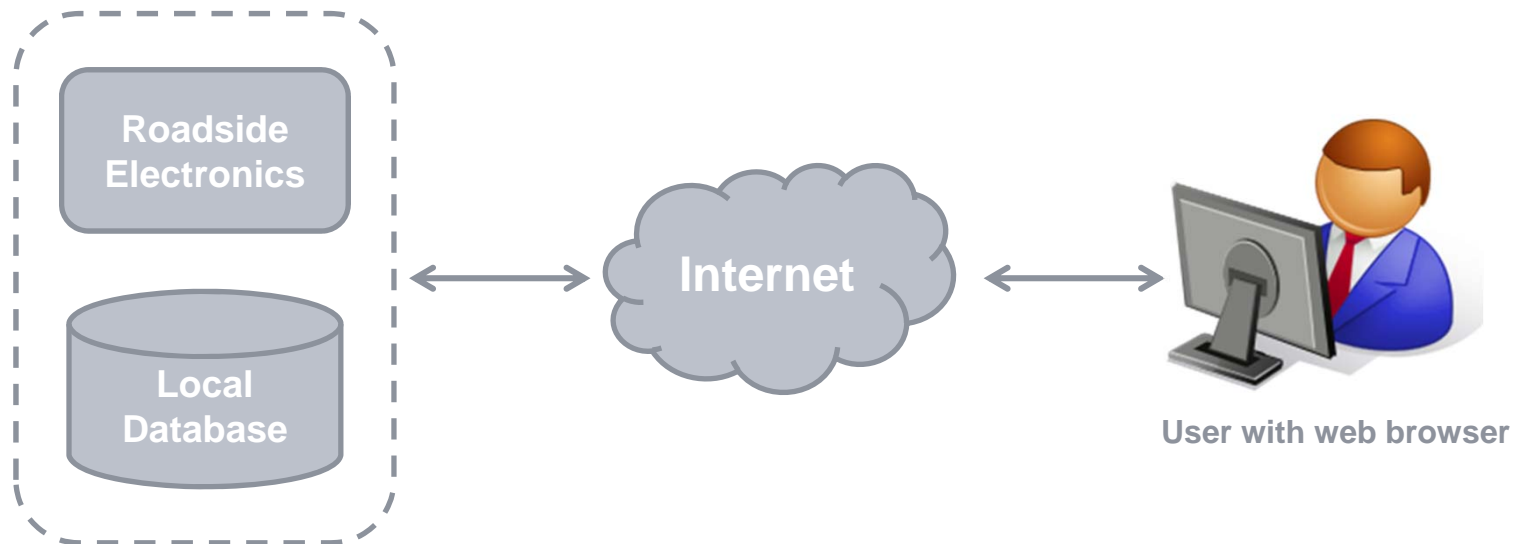
Credential Database Hosting

- Central Database Server:

Central Server

Internet

User with web browser

Internet

Roadside Electronics

Roadside Electronics

Roadside Electronics

Roadside Electronics
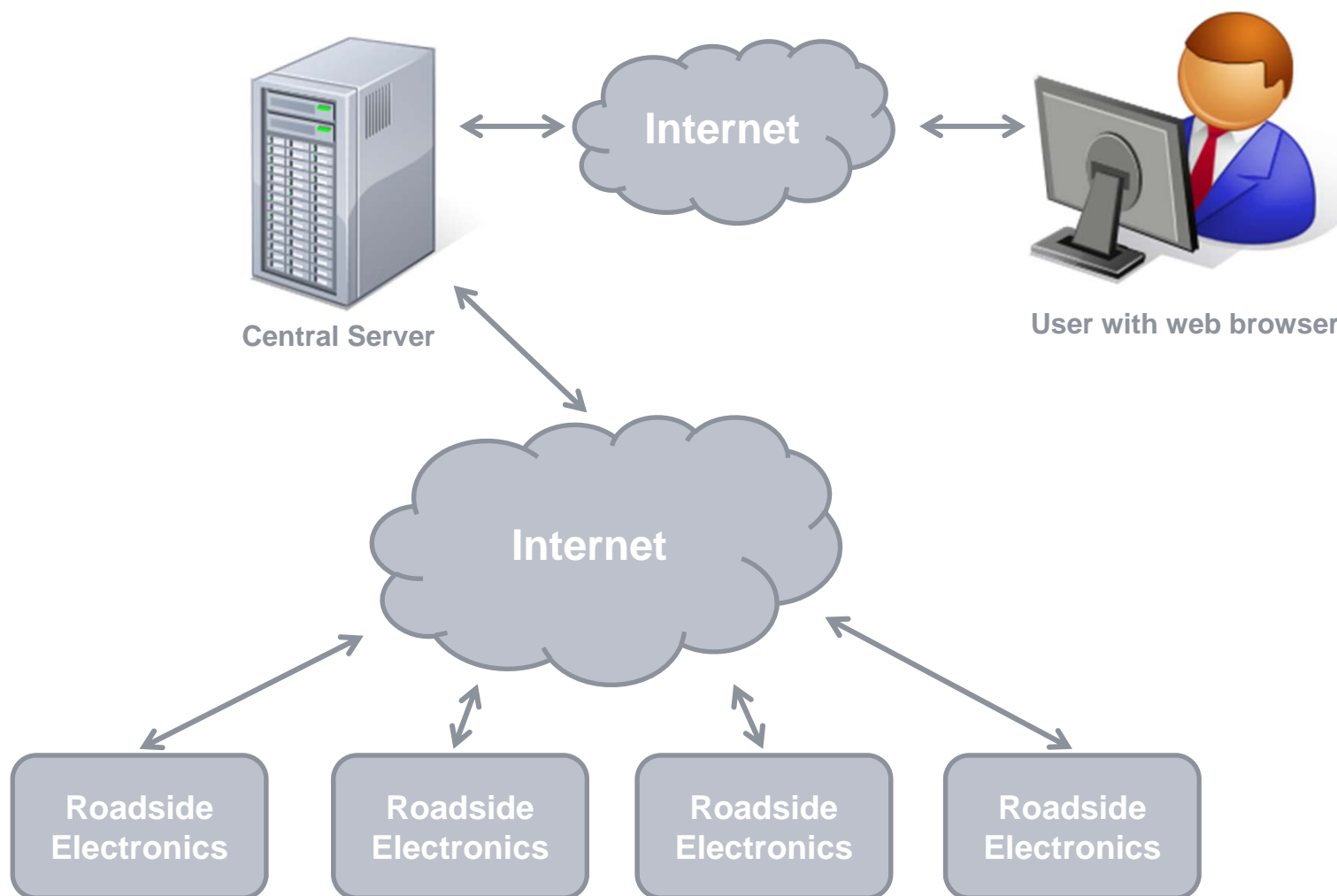
Conclusion

- A VWS can be a basic "WIM only" system or be "WIM and Credential" based.

- Always consider the Building Blocks when designing your VWS system

- Always plan for growth and for the future

- Buy only what you need today (but confirm that you can easily upgrade tomorrow)

Thank You!

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