

# Video Detection

## Preventive and Annual Maintenance



# Video Detection Program Outline:

- Identifying Detection Objectives
- Factors That Influence Detection Performance
- Rules of Thumb
- Field of View – Bitmap Analysis
- Annual Maintenance

# *Video Detection Preventive Maintenance:*

## **Define/Identify Desired Control Strategies:**

- **What is the desired result?**
- **What types of data is expected?**

## **Understanding Detection Requirements:**

- **Define detector zones**
- **Define interface between controller  
and video detection system**
- **Define locations, quantities and  
types of peripherals**

# *Video Detection System Engineering:*

- **Perform Site Survey**
  - **Identify existing infrastructure**  
**Identify items that may cause FOV obstructions**
  - **Identify possible camera locations, take advantage of existing infrastructure**
  - **Define camera mounting height**
  - **Update site drawing**

# *Video Detection System Engineering:*

## **Define Placement Strategy**

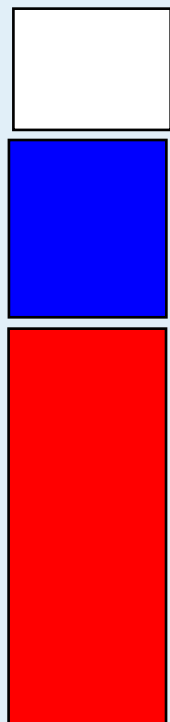
- Define camera locations**
- Estimate FOV Footprints**
- Define cabling requirements  
(connectors, cable length,  
crimping tools)**

# Designing for Video Detection

- What are the factors that influence detection performance?



## Factors Influencing Performance

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- Decisions made in drawing detectors 10-15%
  - Decisions made during installation 20 - 25%
  - Decisions made by Engineer on the drafting table 50 - 60%

# Designing for Video Detection

## Video Detection System Engineering



- Define Detection Objectives:

Data Collection,  
Pedestrians, Freeway  
Data, Stop Bar and/or  
Advance Detection?

- Perform Site Survey

Identify: existing  
infrastructure,

Instructions to field of view,  
Anticipate site drawing  
modifications



# Video Detection System Engineering



## RULES OF THUMB

1. Place camera as high as possible -Center camera over the traffic flow as much as possible
2. Camera should be placed at least 30 feet above critical detection area
3. For every foot in height, camera can "see" about 10 feet. Across lanes of traffic camera can see about 2.5 feet for every foot in height

# Video Detection System Engineering



## RULES OF THUMB

4. Select camera location to minimize occlusion  
Downlane, Crosslane, Cross Street
5. Camera should be aimed more than 5 degrees below the horizon
6. Select camera mounting location so that camera vibration or motion is minimized whenever possible

# Video Detection System Engineering



- Downlane occlusion - a vehicle is blocked from view by a taller vehicle in front of it.
- Crosslane occlusion - a vehicle is blocked from view by a taller vehicle in the next lane.
- Cross Street occlusion - cross traffic blocks the view

# FOV EXAMPLES:



# FOV EXAMPLES:



# Annual Maintenance

- Clean Lens
- Update Software
- Verify Video and Detector Zones are Aligned w/  
Roadway

Questions?

Thank You!

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