



# Traffic Synchronization

City of Tacoma | Public Works

Infrastructure, Planning and  
Sustainability Committee

June 13, 2018

ITEM #2



## Overview



- Traffic Signal 101
  - Timing: Fixed, Actuated, and Adaptive
  - Intelligent Traffic Systems (ITS)
- Tacoma's Signal System



1923

South 9<sup>th</sup> and  
Broadway

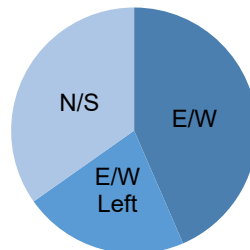
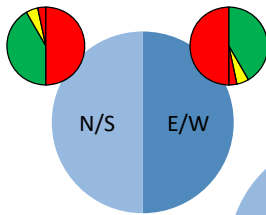


1927

## Timing: General

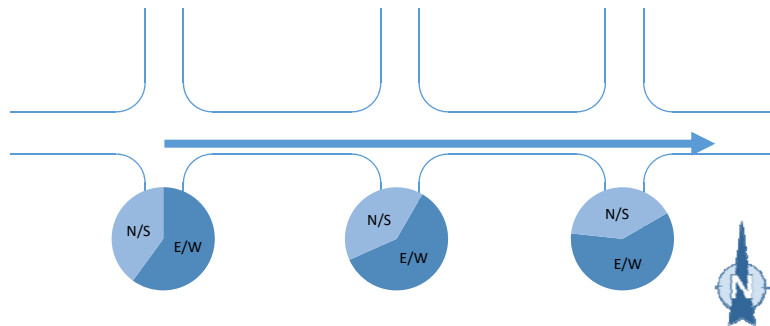


### Cycle Length, Phase, and Split



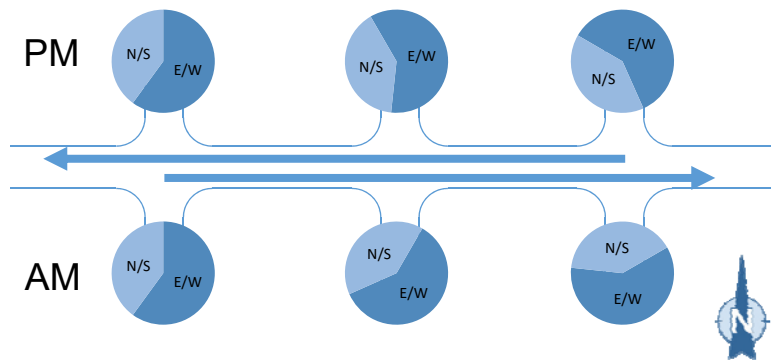
3

## Timing: Fixed

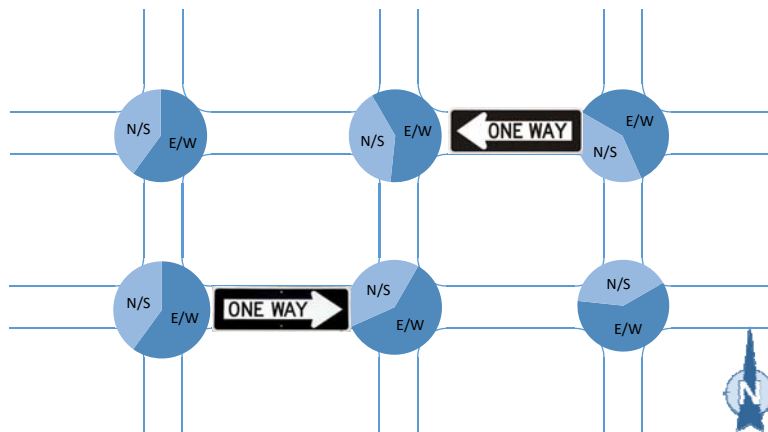


4

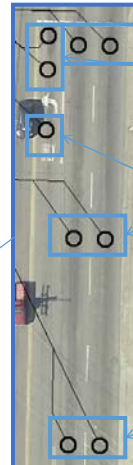
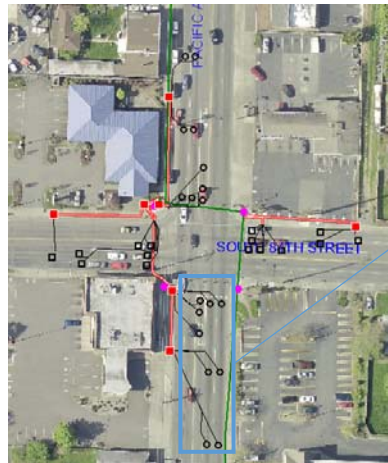
## Timing: Fixed



## Timing: Fixed



## Timing: Actuated



Stop Bar  
Detection

Timing  
Detection

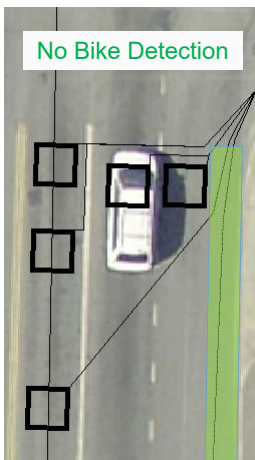
Advance  
Detection

7

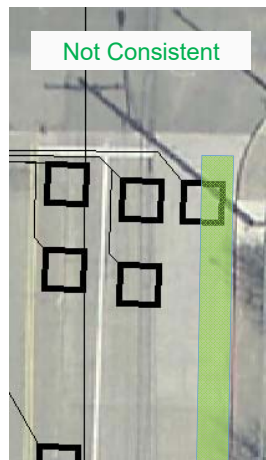
## Actuated: Bicycle Detection



No Bike Detection



Not Consistent



Traffic Impact



### Scenario 1:

Two Through Lanes with  
Left Turn Pocket and  
Parking Lane

### Scenario 2:

Two Through Lanes with  
Left Turn Pocket and No  
Parking Lane

### Scenario 3:

One Through Lane with  
Left Turn Pocket

8

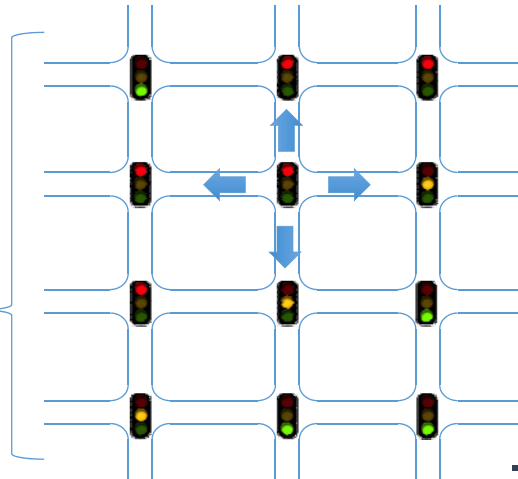
## Timing: Adaptive



- Always Adjusting
- Define Parameters
- Detection Required
- Network Connectivity Required
- Can be Implemented by Corridor



Centralized System



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## A Hypothetical Corridor



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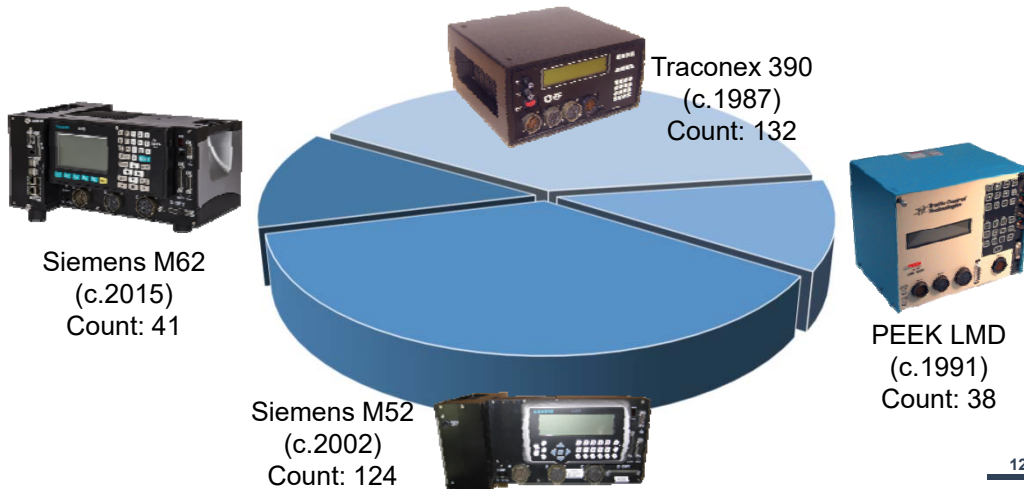
10

## Intelligent Traffic Systems



11

## Tacoma's Signal Controllers



12



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