

# Village Board Study Session

*Traffic and Operational Analysis of  
Harlem Ave & Austin Blvd  
Interchanges with I-290*



July 13, 2015

# Traffic & Operations at Interchanges

- Harlem Ave & I-290 Interchange
  - Existing & Proposed Operations of Interchange
  - Traffic Analysis
- Austin Blvd & I-290 Interchange
  - Existing & Proposed Operations of Interchange
  - Traffic Analysis
- Introduction of future topics



*Village of Oak Park ~ “Eye on the Ike”*



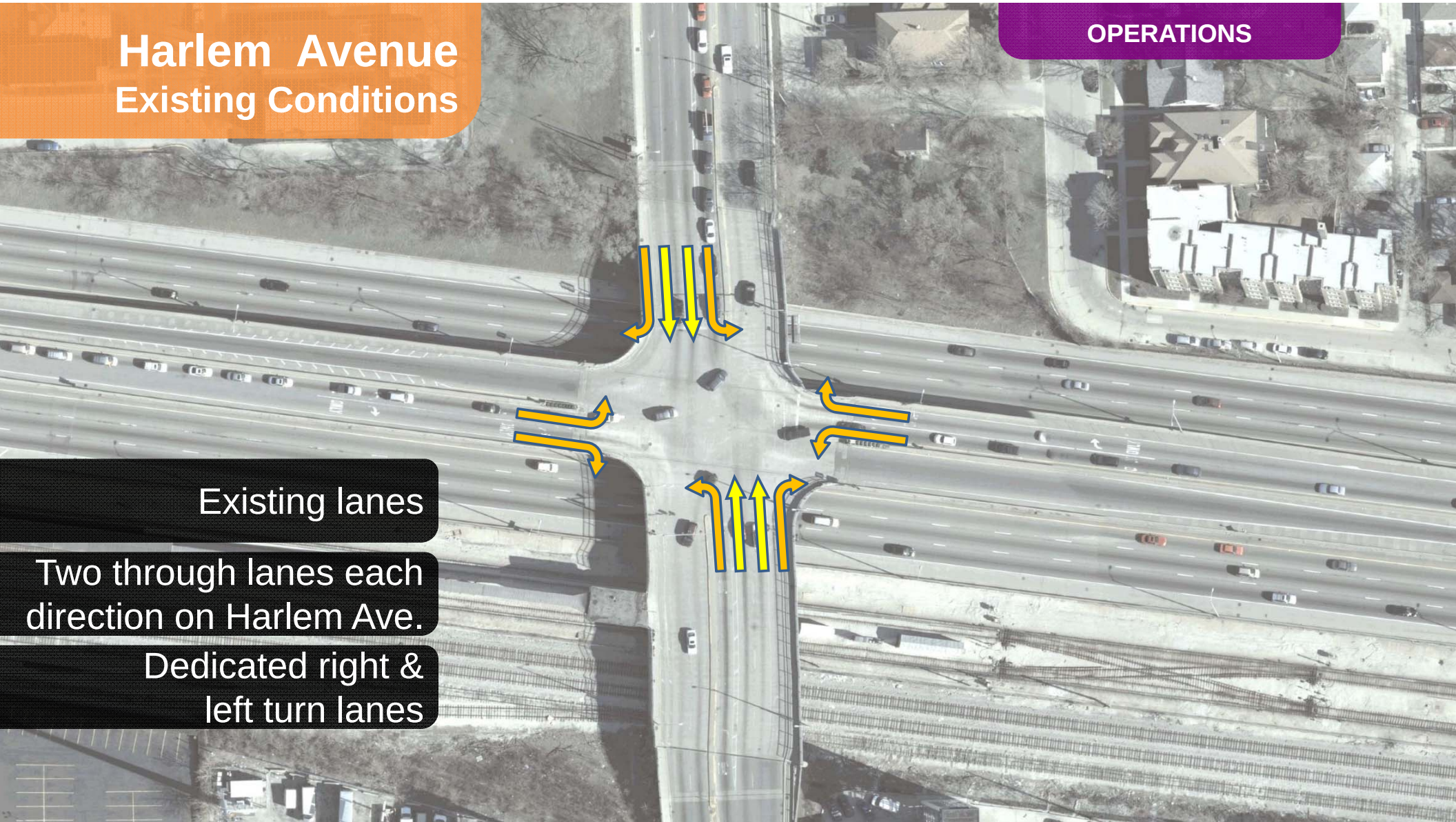
# Harlem Avenue Existing Conditions

OPERATIONS

Existing lanes

Two through lanes each  
direction on Harlem Ave.

Dedicated right &  
left turn lanes





## Harlem Avenue Existing Conditions

Inadequate ramp storage

More green time allocated  
to I-290 ramp traffic

### OPERATIONS

Less green time available for  
Harlem traffic

Inadequate left turn lane  
storage on Harlem

Turning traffic backs up &  
blocks through traffic

Traffic backs up beyond  
Jackson Blvd. & Garfield St.

Harlem N-S

Peak period **LOS = F**





# Harlem Avenue Existing Conditions

## OPERATIONS

Inadequate room for turning trucks at all four corners

Truck maneuvers block traffic & reduce performance

Truck wheels off-track onto existing sidewalk

Conflicting left & right turns  
Safety & operational issue





# Harlem Avenue Existing Conditions

Poor access to transit

Inadequate space for bike  
parking

NB bus stop/transfer located  
south of Garfield St.

## PEDESTRIAN ENVIRONMENT & TRANSIT ACCESS

Narrow sidewalks

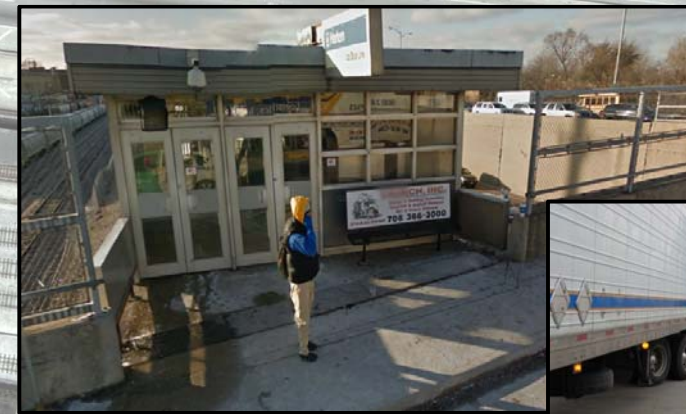
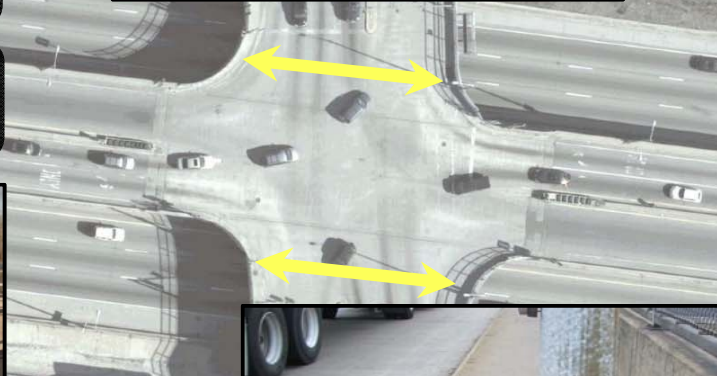
Non-ADA Compliant  
sidewalks & curb ramps

Sidewalk encroachments

Lacks pedestrian/vehicle  
separation

No signalized E-W ped  
crossings

Outdated/inadequate  
ped signal equipment





# Harlem Avenue Proposed Improvements

Improved sidewalks & pedestrian plazas

Pedestrian refuge islands between ramps

4-Way, high visibility pedestrian crossings

New pedestrian signals & countdown timers

Signalized crossing of north & south legs

## PEDESTRIAN & TRANSIT ACCESS IMPROVEMENTS



Accommodates a parallel  
Shared Use Trail  
(under Harlem Ave.)





# Harlem Avenue Proposed Improvements

Improved accessibility  
to CTA station

Transit plaza area

Space for bike parking

Northbound bus stop  
across from CTA Station

Space for bus stop  
shelters/waiting area

CTA



## PEDESTRIAN & TRANSIT ACCESS IMPROVEMENTS





# Harlem Avenue Proposed Improvements

## OPERATIONAL IMPROVEMENTS

Maintains central  
intersection location

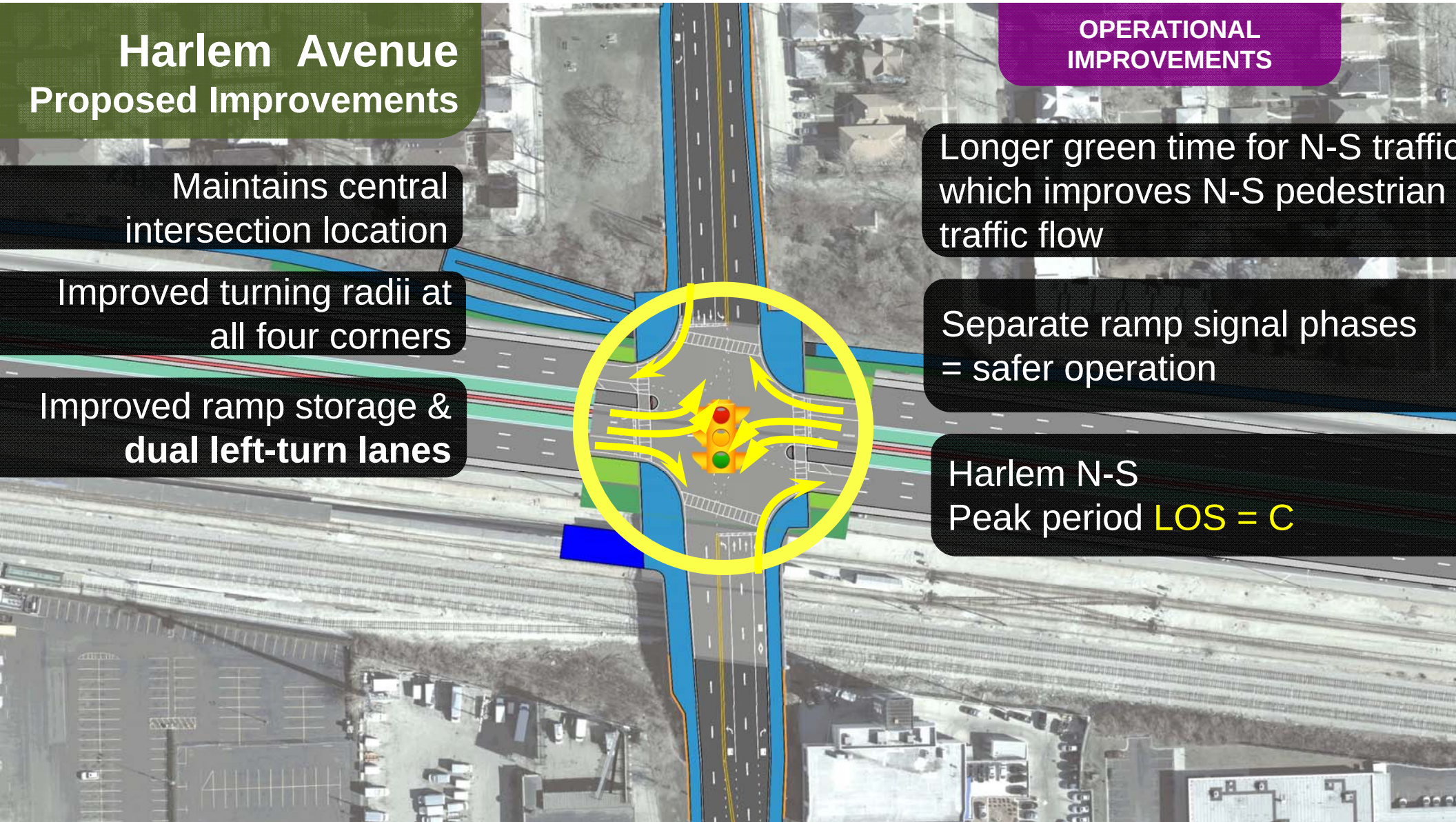
Improved turning radii at  
all four corners

Improved ramp storage &  
**dual left-turn lanes**

Longer green time for N-S traffic  
which improves N-S pedestrian  
traffic flow

Separate ramp signal phases  
= safer operation

Harlem N-S  
Peak period **LOS = C**





# Harlem Avenue Proposed Improvements

## Before & After Traffic Simulation





# Harlem Avenue Proposed Improvements

## Before & After Traffic Simulation





# Austin Boulevard Existing Conditions

OPERATIONS

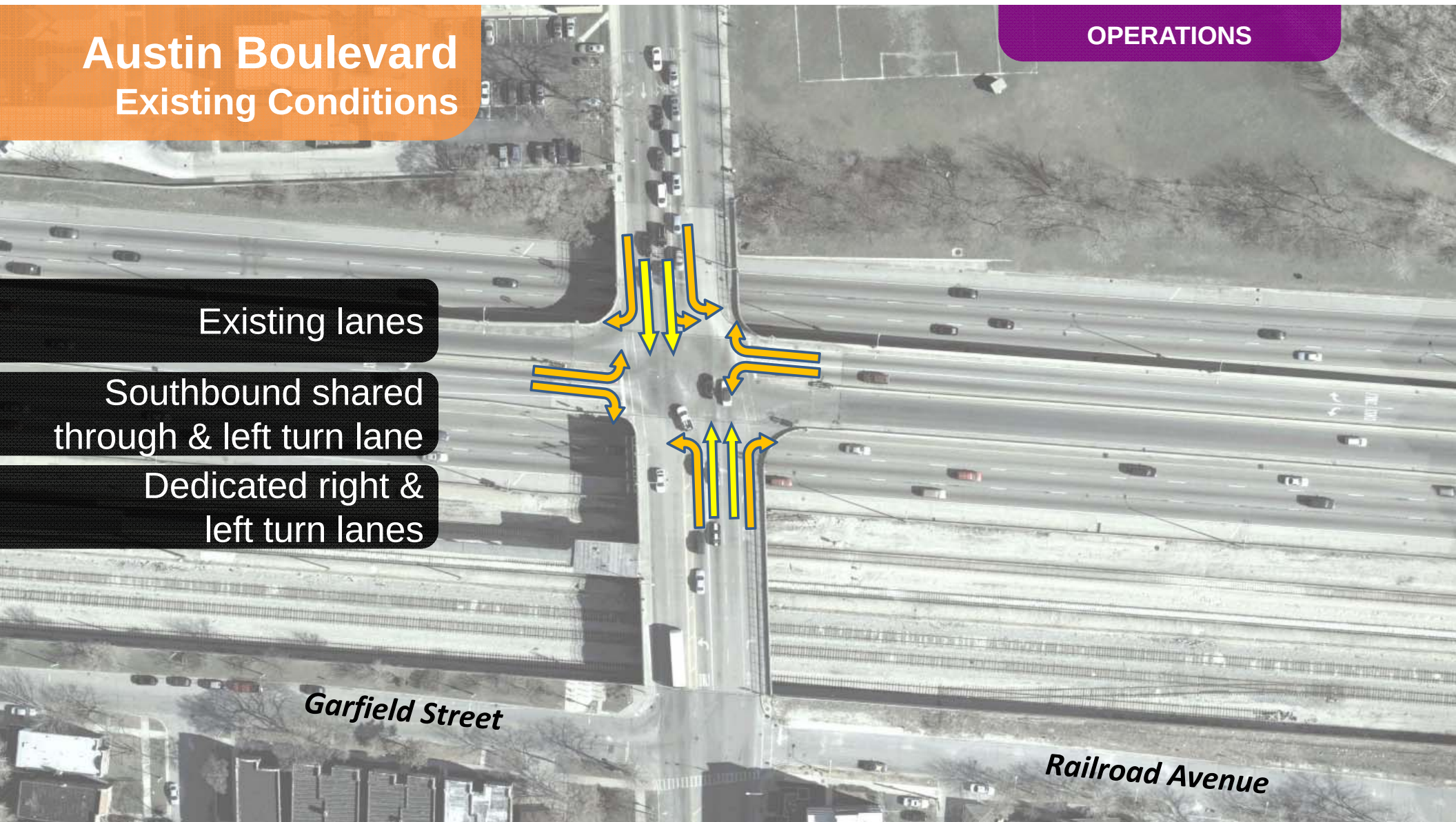
Existing lanes

Southbound shared  
through & left turn lane

Dedicated right &  
left turn lanes

*Garfield Street*

*Railroad Avenue*





## Austin Boulevard Existing Conditions

### OPERATIONS

Inadequate ramp storage  
More green time allocated  
to I-290 ramp traffic

Less green time available for  
Austin Blvd. traffic  
Inadequate left turn lane  
storage on Austin Blvd.  
Traffic backs up beyond  
Garfield St. & Harrison St.



Austin N-S  
Peak period **LOS = E**

*Railroad Avenue*



## Austin Boulevard Existing Conditions

### OPERATIONS

Conflicting left  
& right turns

Safety &  
operational issue

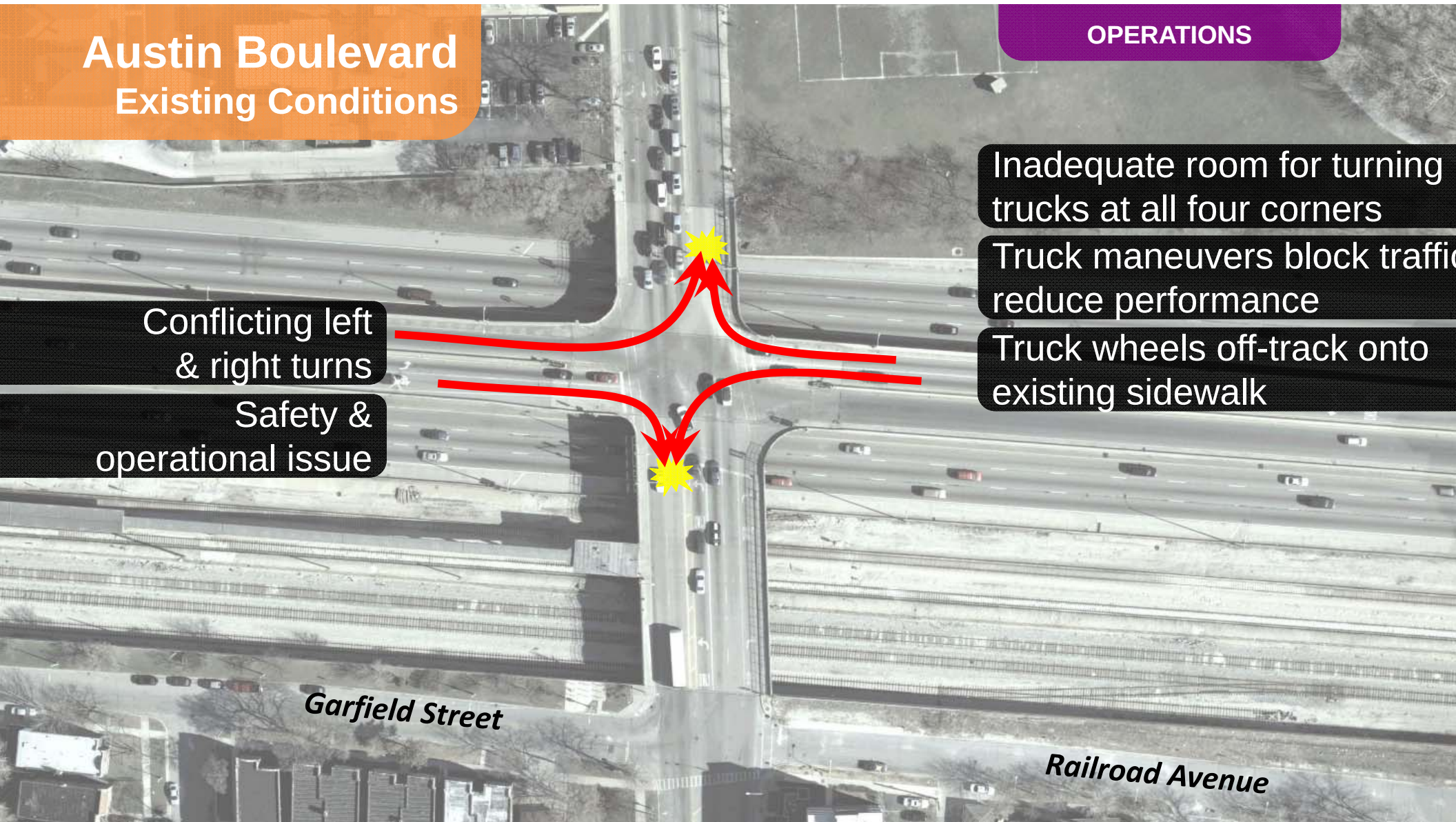
Inadequate room for turning  
trucks at all four corners

Truck maneuvers block traffic  
reduce performance

Truck wheels off-track onto  
existing sidewalk

*Garfield Street*

*Railroad Avenue*





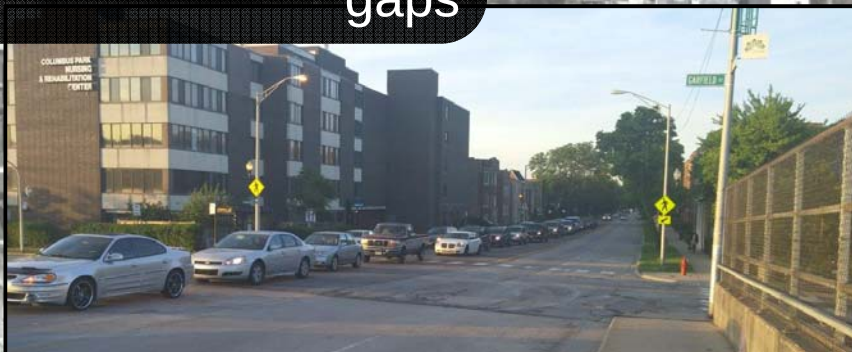
## Austin Boulevard Existing Conditions

Inadequate separation from  
I-290 ramps (130 ft.)

NB Traffic queue blocks  
Garfield St. left turns

*Garfield Street*

Long delays for Garfield  
Left-turn traffic waiting for  
gaps



## GARFIELD STREET EXISTING ISSUES

Disruptive weaving:  
Turning vehicles merge right to  
access I-290 EB

Allowing left turns :  
- increases crash exposure  
- adversely affects operations

Safety Concern:  
82% of crashes related to  
left turns and through traffic  
(2012-2013 data)



# Austin Boulevard Existing Conditions

## PEDESTRIAN ENVIRONMENT & TRANSIT ACCESS

Narrow & Non-ADA  
compliant sidewalks

Sidewalk encroachments

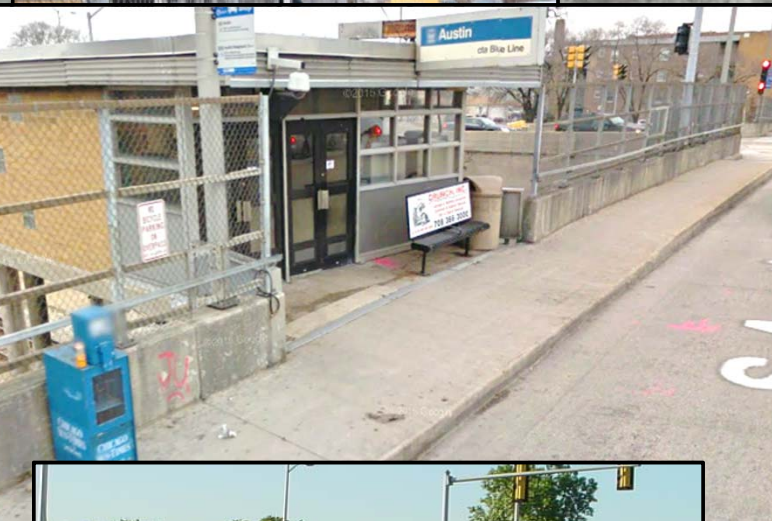
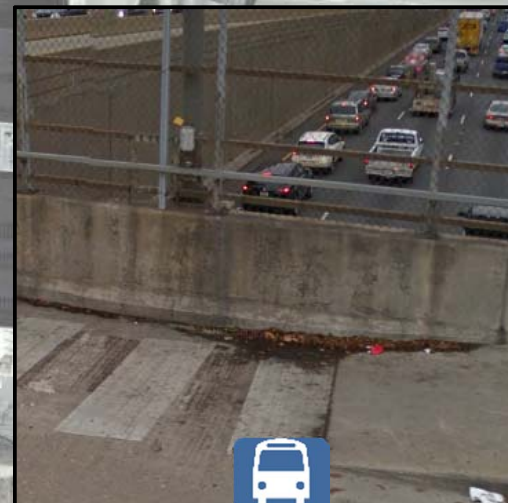
Lack of pedestrian/vehicle  
separation

Poor access to transit

No signalized E-W  
pedestrian crossings

Inadequate space for bike  
parking

NB bus stop/transfer located  
south of Railroad Ave.



Outdated/inadequate  
pedestrian signal equipment



# Austin Boulevard Proposed Improvements

Improved sidewalks &  
new pedestrian plazas

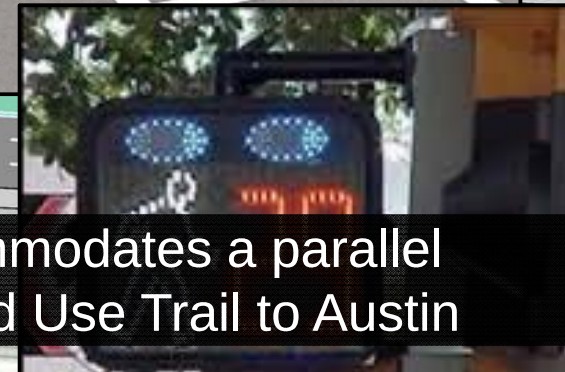
Pedestrian refuge  
islands between ramps

4-Way, high visibility  
pedestrian crossings

New pedestrian signals  
& countdown timers

Signalized crossing of  
north & south legs

## PEDESTRIAN & TRANSIT ACCESS IMPROVEMENTS



Accommodates a parallel  
Shared Use Trail to Austin

Potential Shared Use Trail  
connection to Columbus Park

Street

Railroad Avenue



# Austin Boulevard Proposed Improvements

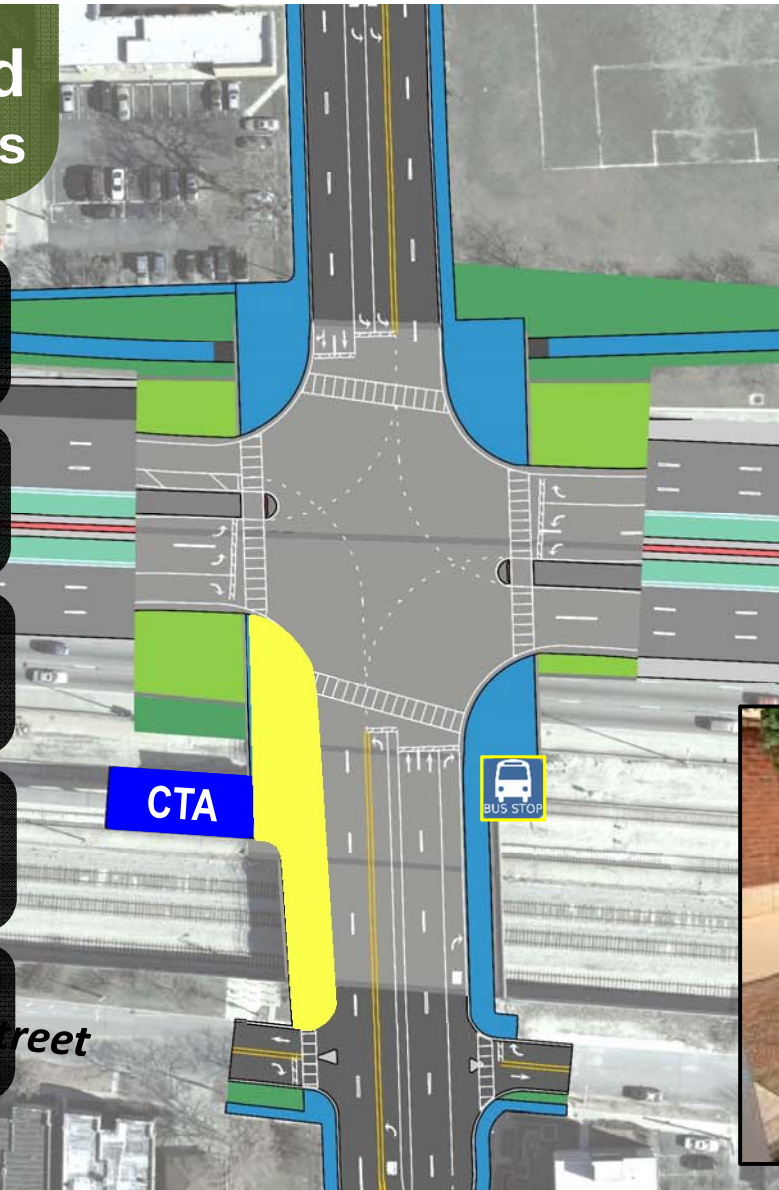
Improved accessibility  
to CTA station

New transit plaza area

Space for bike parking

Northbound bus stop  
across from CTA Station

Space for bus stop  
shelters/waiting area



## PEDESTRIAN & TRANSIT ACCESS IMPROVEMENTS





# Austin Boulevard Proposed Improvements

## OPERATIONAL IMPROVEMENTS

Maintains central  
intersection location

Dual SB left turn lanes  
serves high turn volumes

Improved turning radii at  
all four corners

Improved ramp storage &  
dual left turn lanes

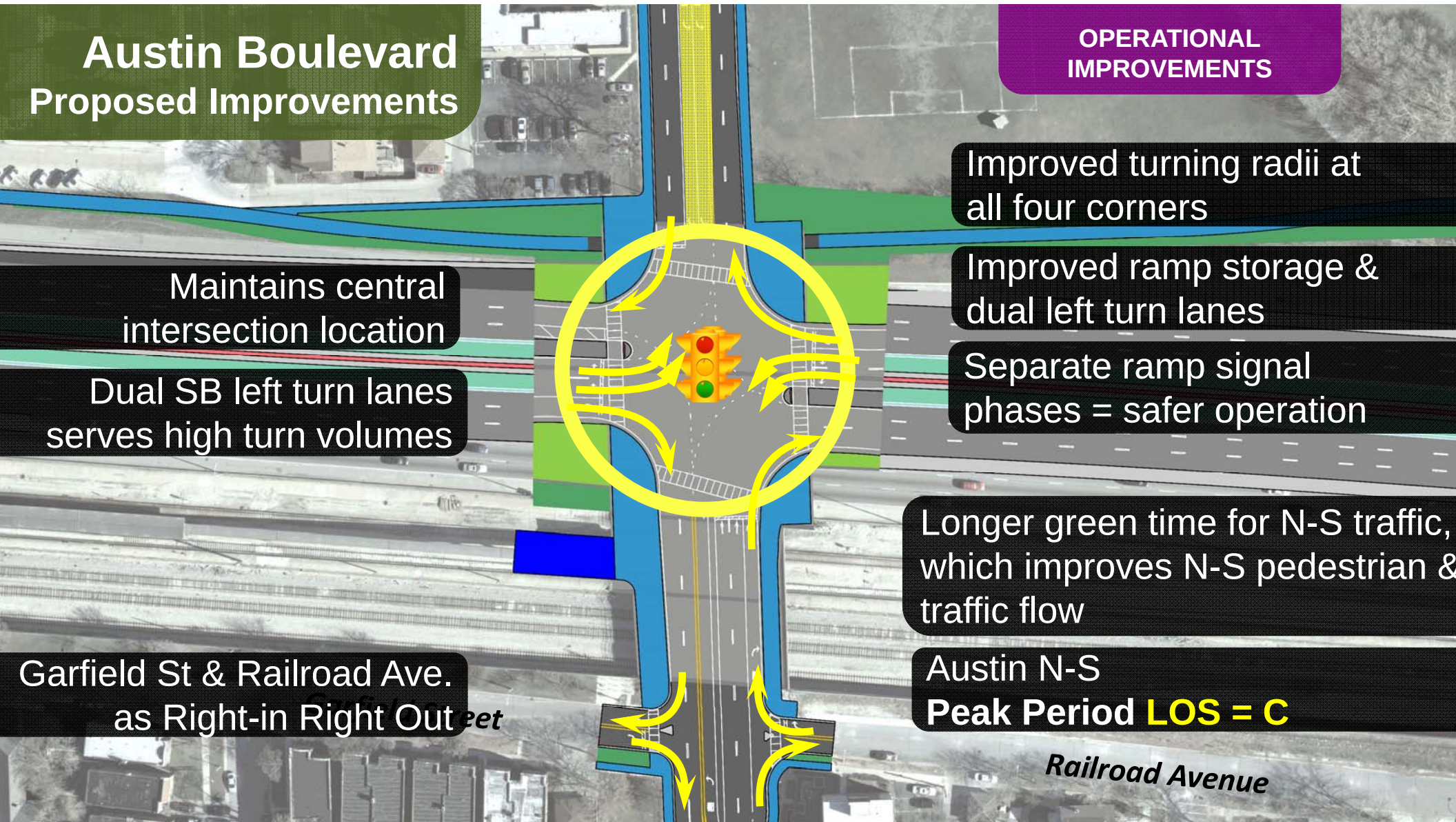
Separate ramp signal  
phases = safer operation

Longer green time for N-S traffic,  
which improves N-S pedestrian &  
traffic flow

Austin N-S  
Peak Period **LOS = C**

*Railroad Avenue*

Garfield St & Railroad Ave.  
as Right-in Right Out *street*





# Austin Boulevard Proposed Improvements

CTA

*Garfield Street*

Proposed NB queues extend  
past Garfield St.

Needed left turn lane storage  
extends past Garfield St.

GARFIELD STREET  
RIGHT-IN RIGHT-OUT

RIRO reduces number of  
Intersection conflict points  
from 32 to 8

Reduce potential for  
predominant crash types  
(Angle/Turning)

*Railroad Avenue*



Relocate NB Bus Stop to  
align with CTA Station



# Austin Boulevard Proposed Improvements

Currently 200 left turning cars  
in peak period

100 cars assumed to divert to  
Harrison St. & Harvard St.

Harrison St. signal evaluated  
as part of interchange system

Even with redistributed traffic,  
Harrison St. operations improve:

Delay reduced up to **79%**

Queues reduced up to **54%**





# Austin Boulevard Proposed Improvements

## Before & After Traffic Simulation





# Austin Boulevard Proposed Improvements

## Before & After Traffic Simulation





# Summary of Interchange Improvements

## Harlem Avenue & Austin Boulevard

- Improved access to transit and transfers
- Wider sidewalks
- ADA Accessibility throughout
- Improved and safer ramp pedestrian crossings
- Improved signals and pedestrian countdown timers
- Bike accommodations at transit stations
- East-west shared use path connections
- Improved truck turn accommodations



*Village of Oak Park ~ “Eye on the Ike”*





# Harlem Ave Traffic Operations

## Harlem Avenue Operations

- Overall LOS from F to D
- N-S Queue at Harlem/Garfield reduced up to 61%
- E-W Queue at Harlem/Garfield reduced up to 59%
- E-W Queue at Harlem/Jackson reduced up to 35%
- N-S Delay reduced up to 86%



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# Austin Blvd Traffic Operations

## Austin Boulevard Operations

- Overall LOS from E to C
- EB Queue at Austin/Harrison reduced up to 70%
- E-W Queue at Austin/I-290 ramps reduced up to 70%
- E-W Queue at Austin/Garfield reduced up to 92%
- N-S Queue at Austin/Garfield reduced up to 73%
- N-S Delay reductions up to 76%



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# Future Study Session Topics

- Harlem Ave Interchange Design Discussion
- Traffic Noise Analysis
- Public Presentation of 3D Model

