

# 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"*



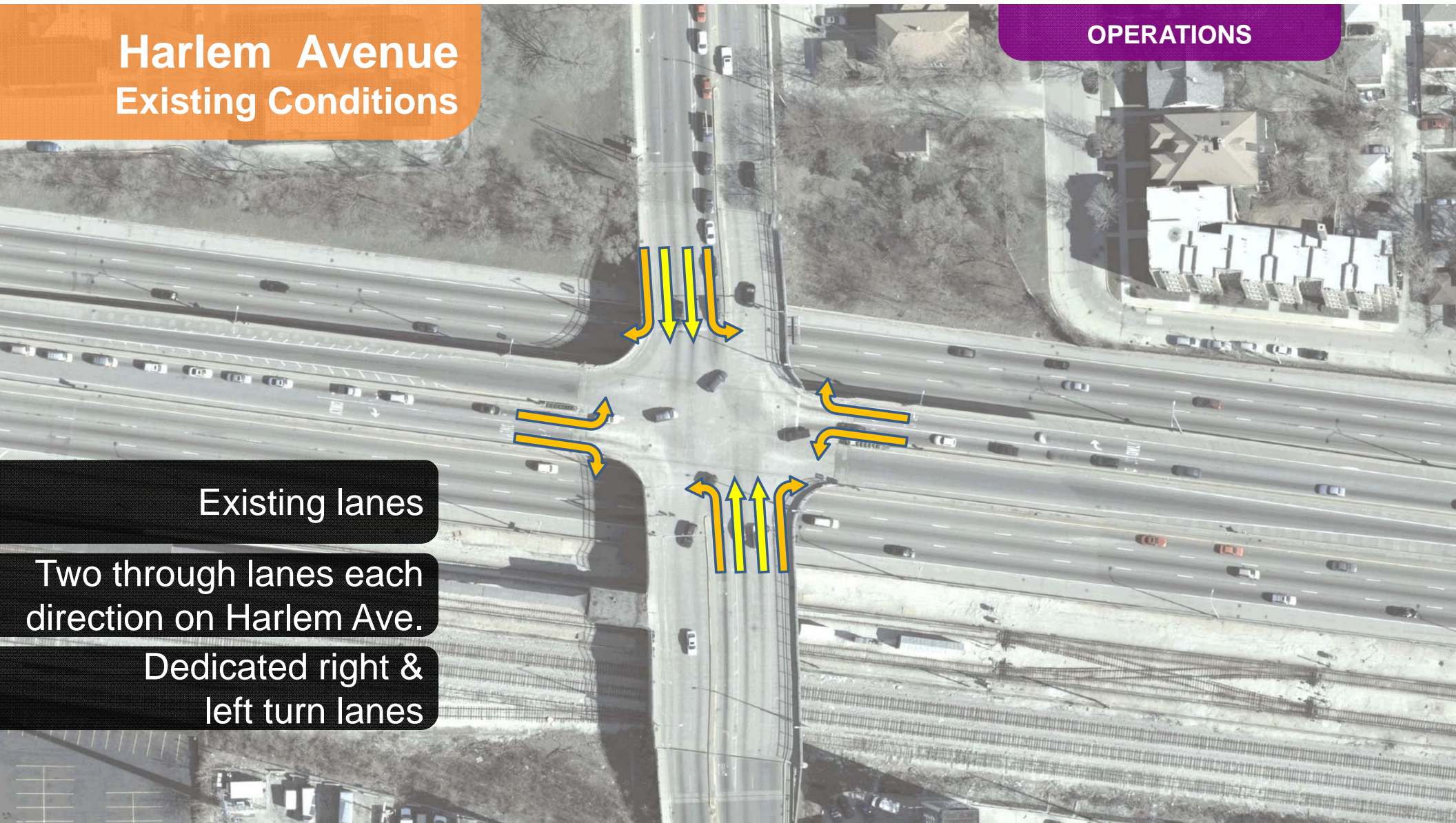
# Harlem Avenue Existing Conditions

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



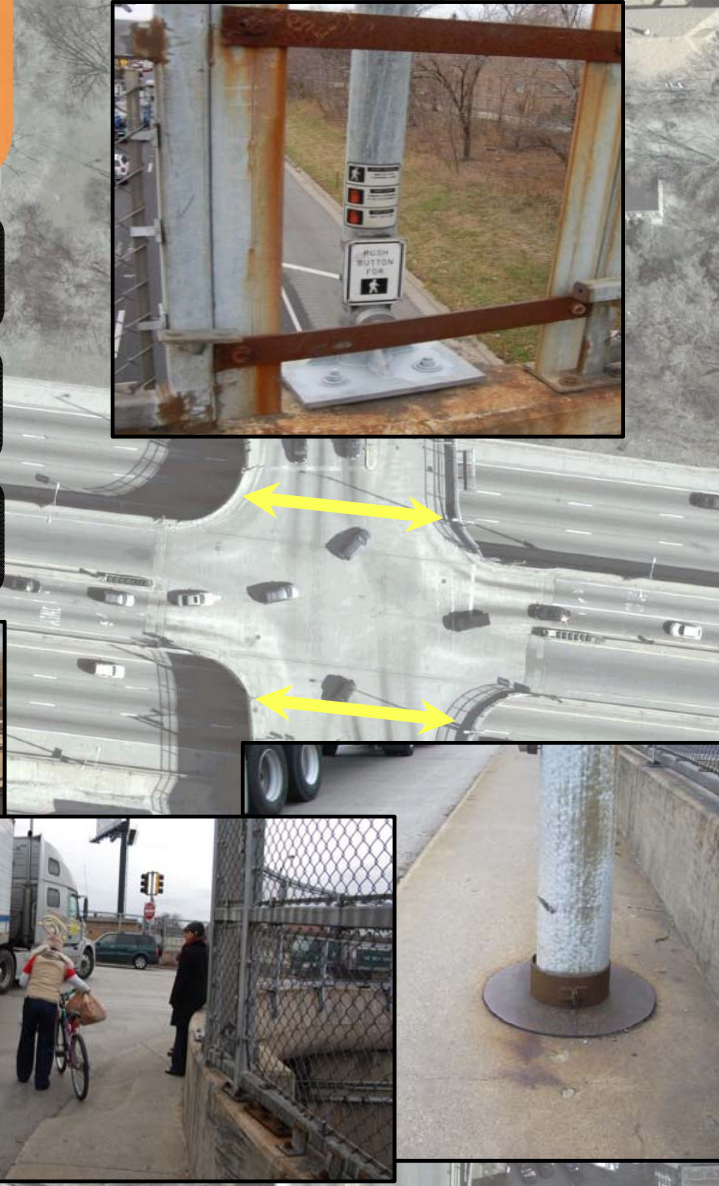


# Harlem Avenue Existing Conditions

Poor access to transit

Inadequate space for bike  
parking

NB bus stop/transfer located  
south of Garfield St.



## PEDESTRIAN ENVIRONMENT & TRANSIT ACCESS

Narrow sidewalks

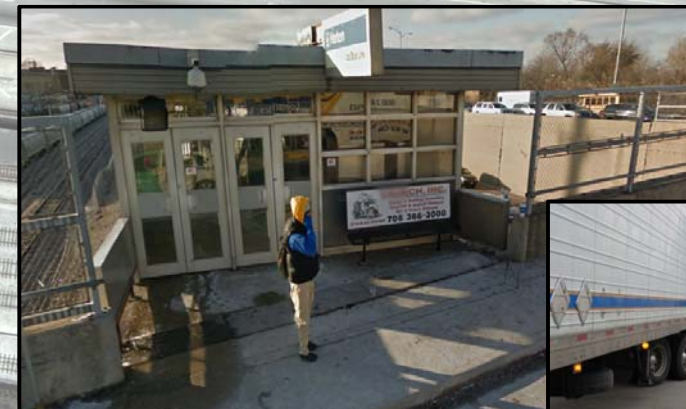
Non-ADA Compliant  
sidewalks & curb ramps

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Outdated/inadequate  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.)



CTA



# 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

## PEDESTRIAN & TRANSIT ACCESS IMPROVEMENTS



CTA

BUS STOP



# Harlem Avenue Proposed Improvements

## OPERATIONAL IMPROVEMENTS

Maintains central  
intersection location

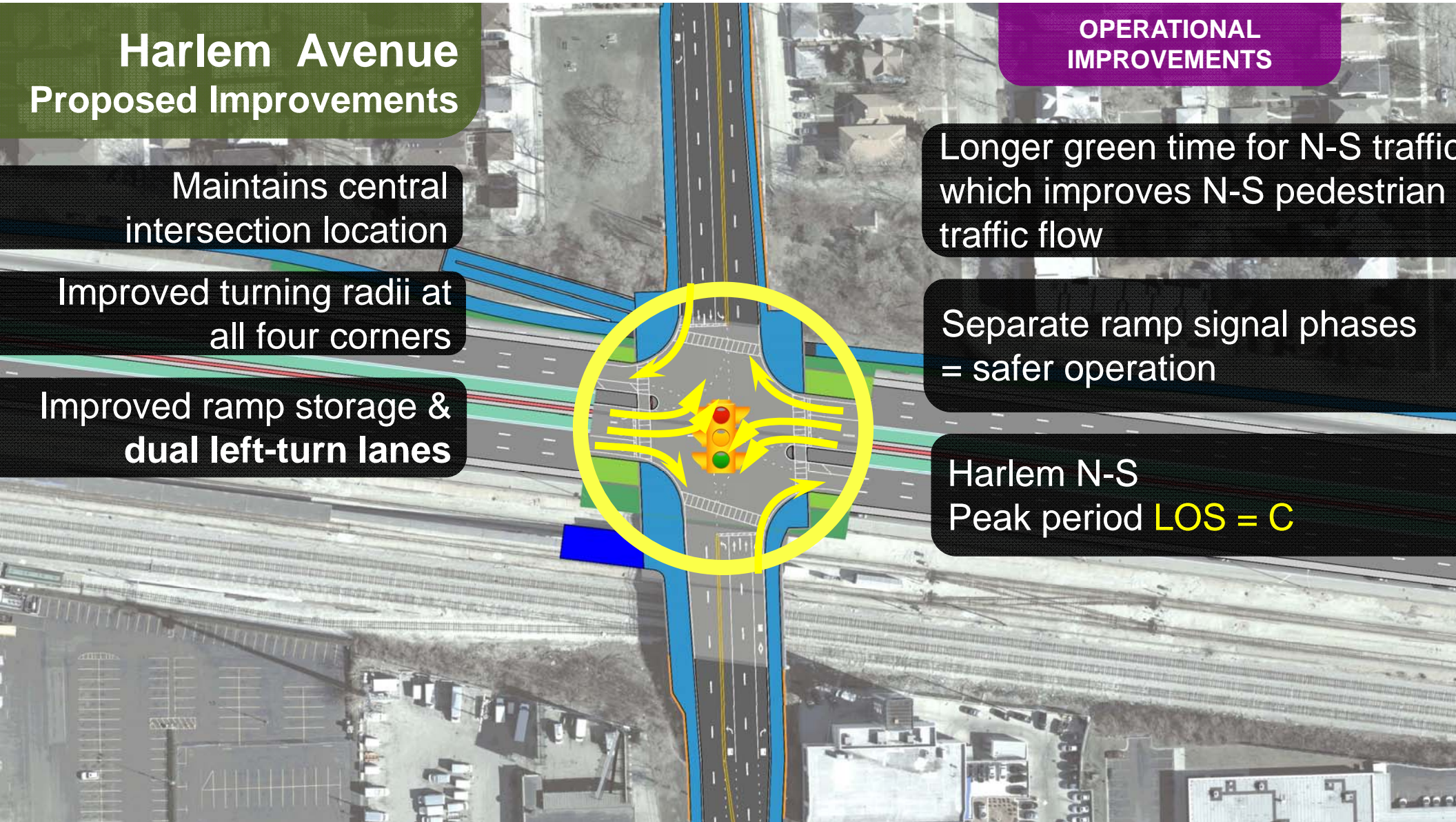
Improved turning radii at  
all four corners

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

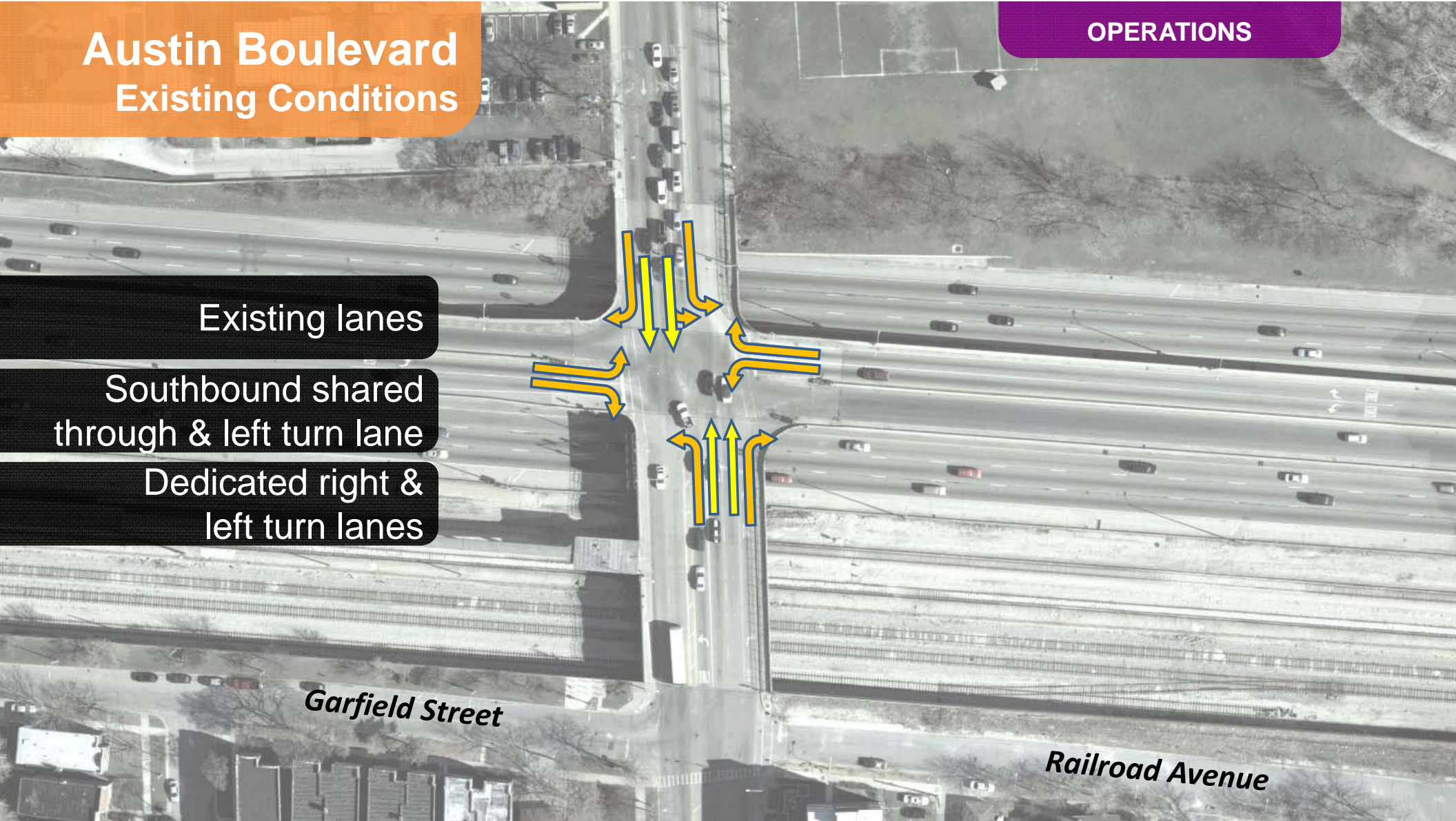
Existing lanes

Southbound shared  
through & left turn lane

Dedicated right &  
left turn lanes

*Garfield Street*

*Railroad Avenue*





# Austin Boulevard Existing Conditions

## OPERATIONS

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*

Inadequate ramp storage

More green time allocated to I-290 ramp traffic





# Austin Boulevard Existing Conditions

## OPERATIONS

Inadequate room for turning trucks at all four corners

Truck maneuvers block traffic  
reduce performance

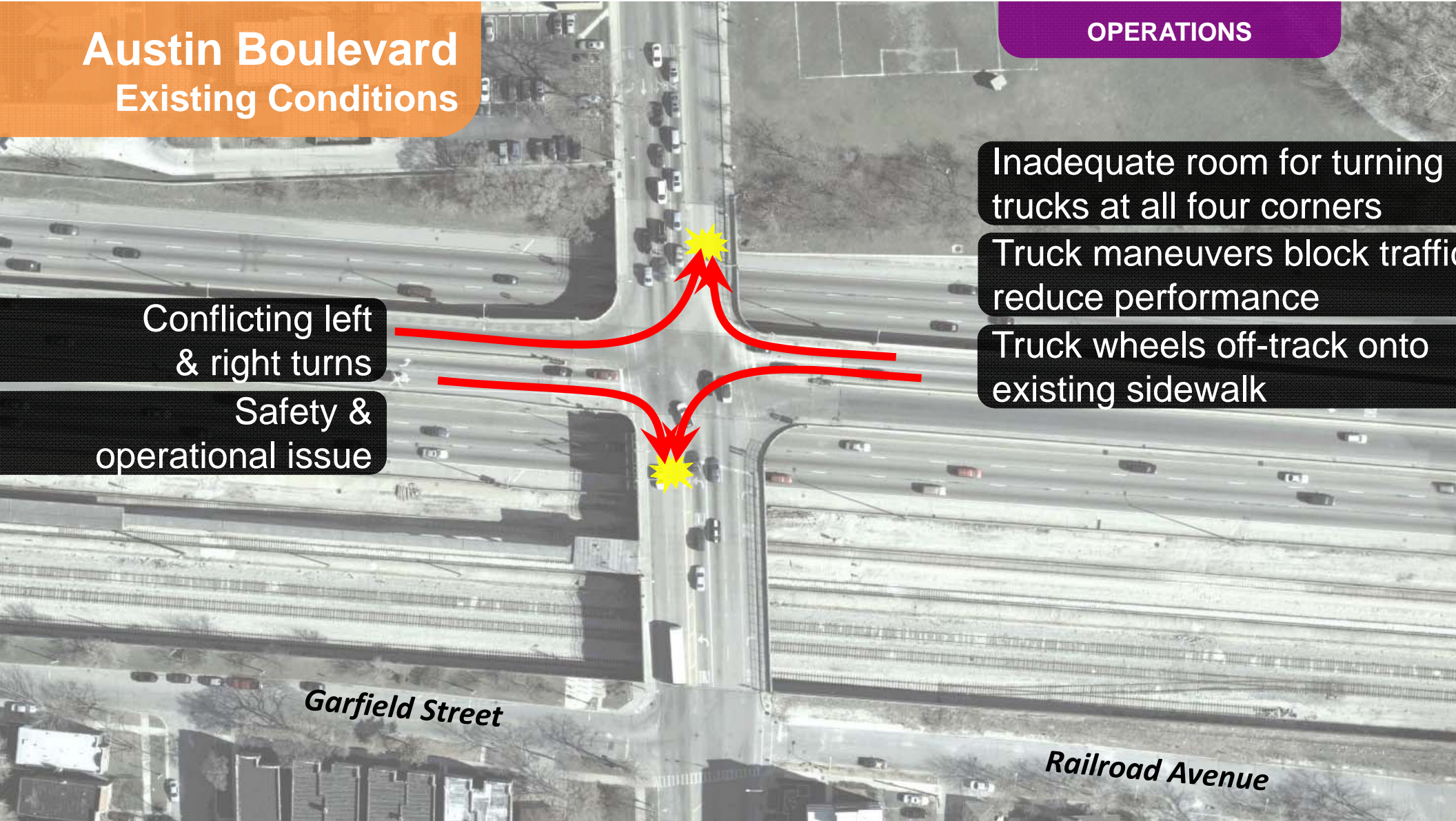
Truck wheels off-track onto  
existing sidewalk

Conflicting left  
& right turns

Safety &  
operational issue

*Garfield Street*

*Railroad Avenue*





# Austin Boulevard Existing Conditions

## GARFIELD STREET EXISTING ISSUES

Inadequate separation from I-290 ramps (130 ft.)  
NB Traffic queue blocks Garfield St. left turns

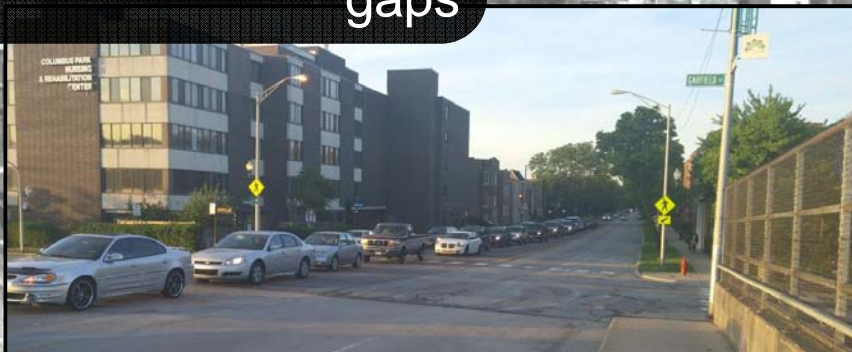
Disruptive weaving:  
Turning vehicles merge right to access I-290 EB

*Garfield Street*

Long delays for Garfield  
Left-turn traffic waiting for gaps

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

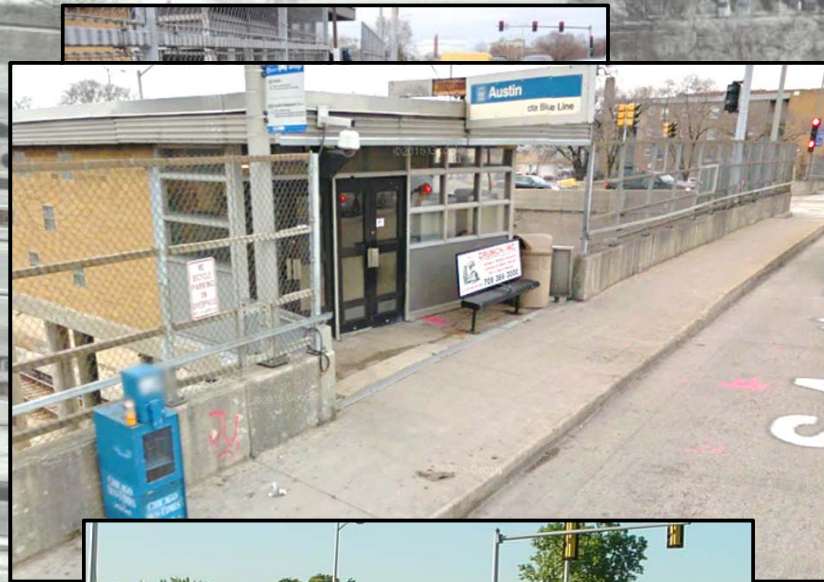
Lack of pedestrian/vehicle  
separation

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

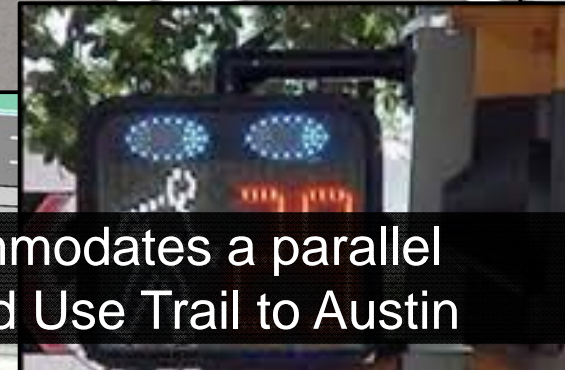
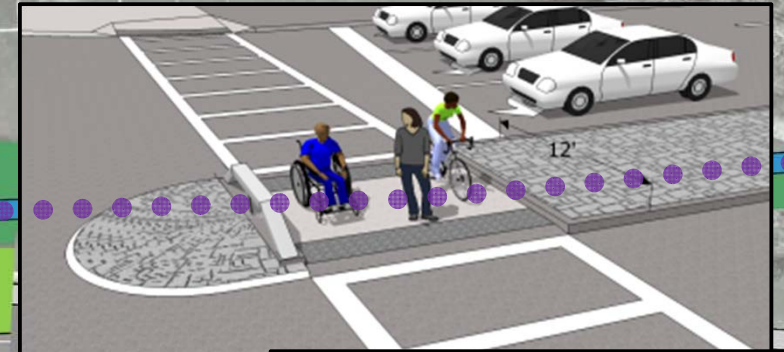
Pedestrian refuge islands between ramps

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

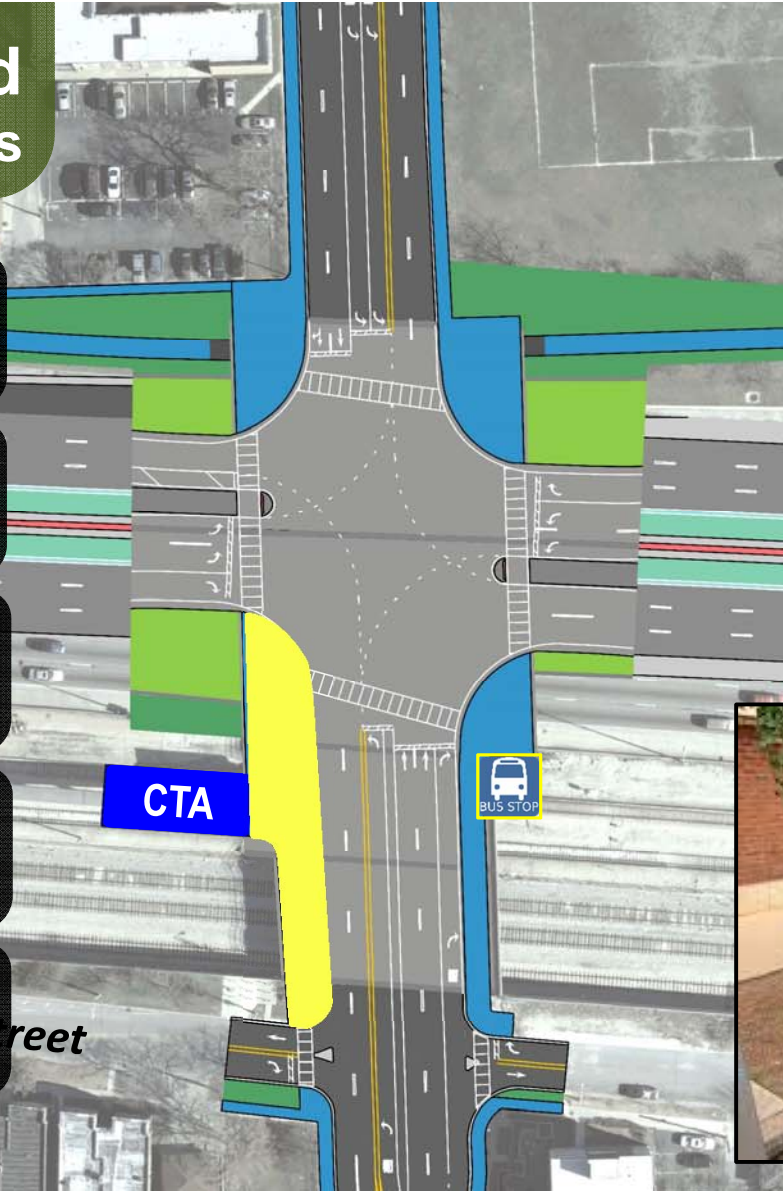
Improved accessibility  
to CTA station

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

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

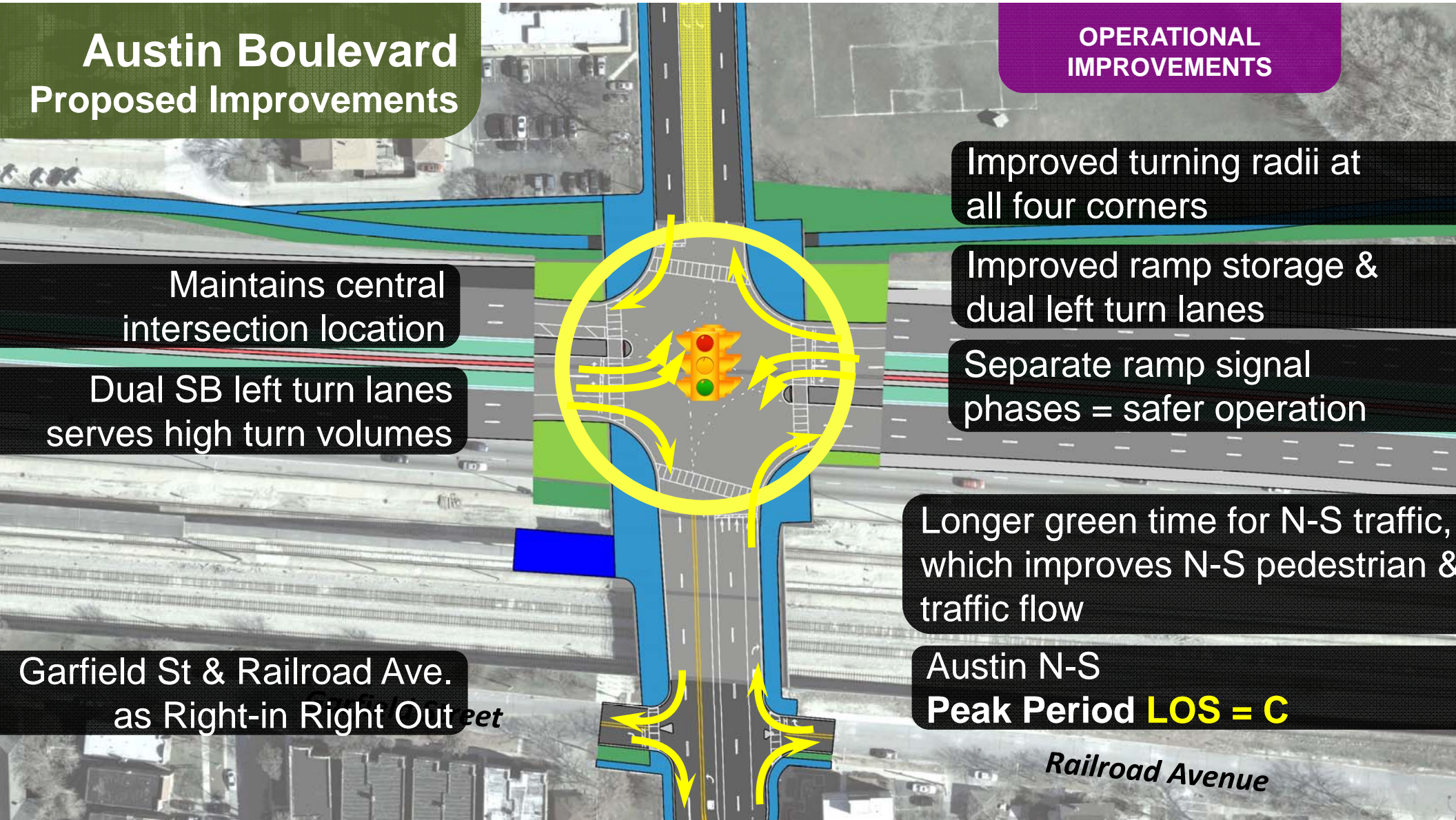
Austin N-S  
Peak Period **LOS = C**

*Railroad Avenue*

Maintains central intersection location

Dual SB left turn lanes serves high turn volumes

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





# Austin Boulevard Proposed Improvements

CTA

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)

Garfield Street

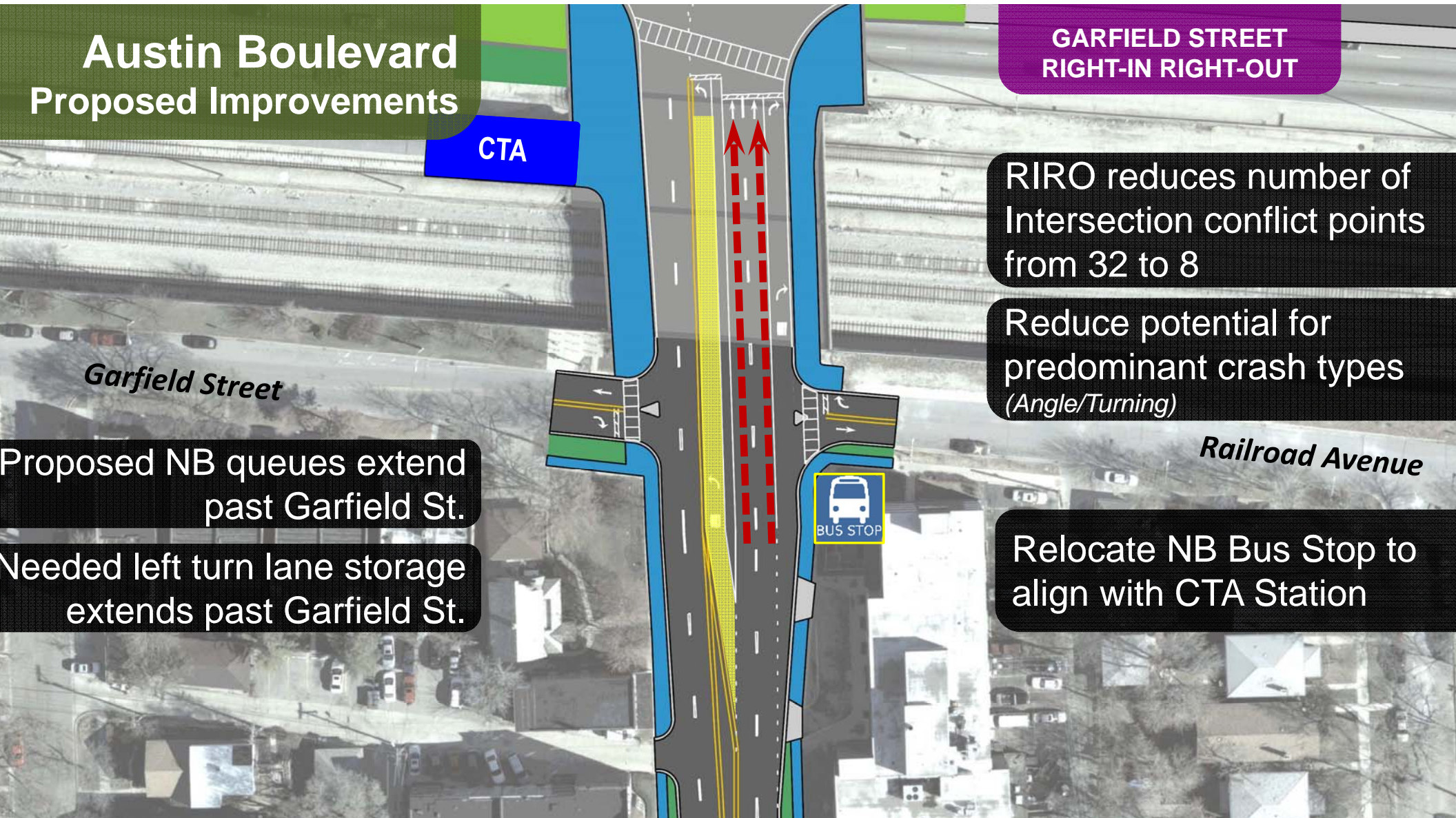
Railroad Avenue

Proposed NB queues extend  
past Garfield St.

Needed left turn lane storage  
extends past Garfield St.

BUS STOP

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%**

## LOCAL CIRCULATION





# 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

