



Corridor Advisory Group Meeting #21



October 15, 2015



- CAG #20 Recap
- Study Timeline
- Round 3 Wrap-Up/Results
 - Air Quality
 - Noise Analysis
 - Environmental Justice
- Preliminary Preferred Alternative Recommendation
- Noise Abatement Analysis
- ITS Concepts & Off-System Improvements
- Next Steps



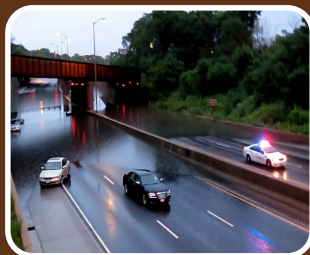
Crash Analysis Update

- *Eisenhower crash rate remains higher than comparable expressways*
- *Crash rate higher at lane drops, left hand ramps, closely spaced interchanges*



Access Changes Overview

25th Avenue to 1st Avenue



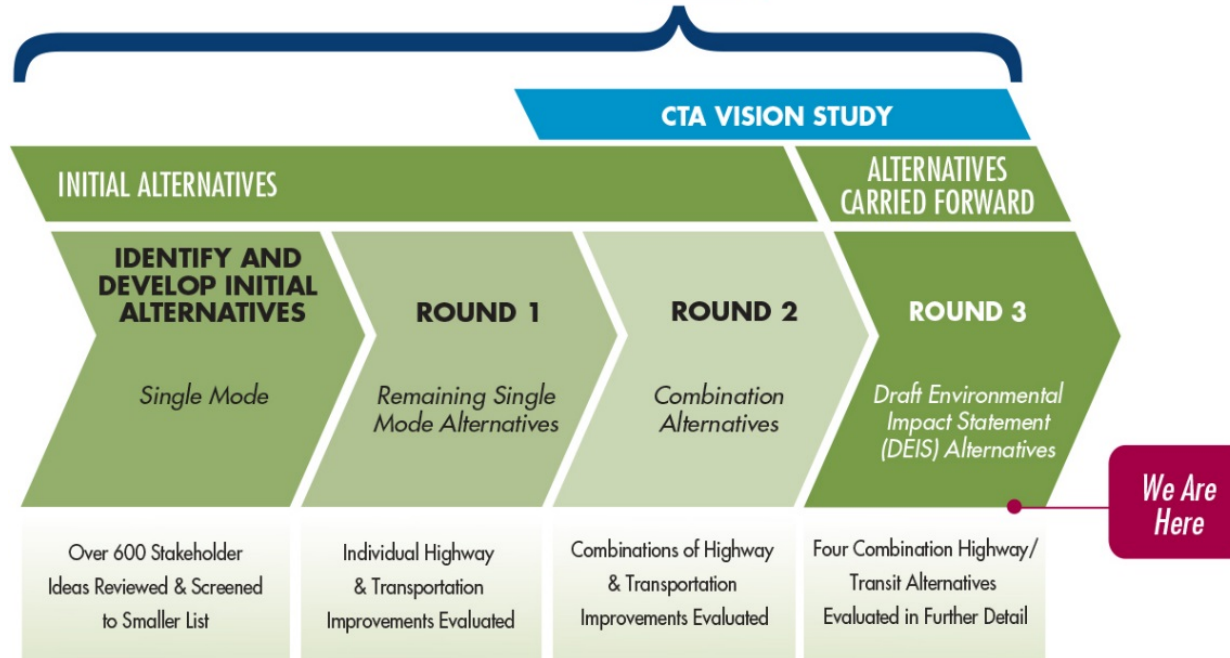
Air Quality and Noise Analysis

- *Sensitivity analysis*
- *CO analysis*
- *Noise abatement criteria*
- *Viewpoints solicitation*

Study Timeline



We Are Here

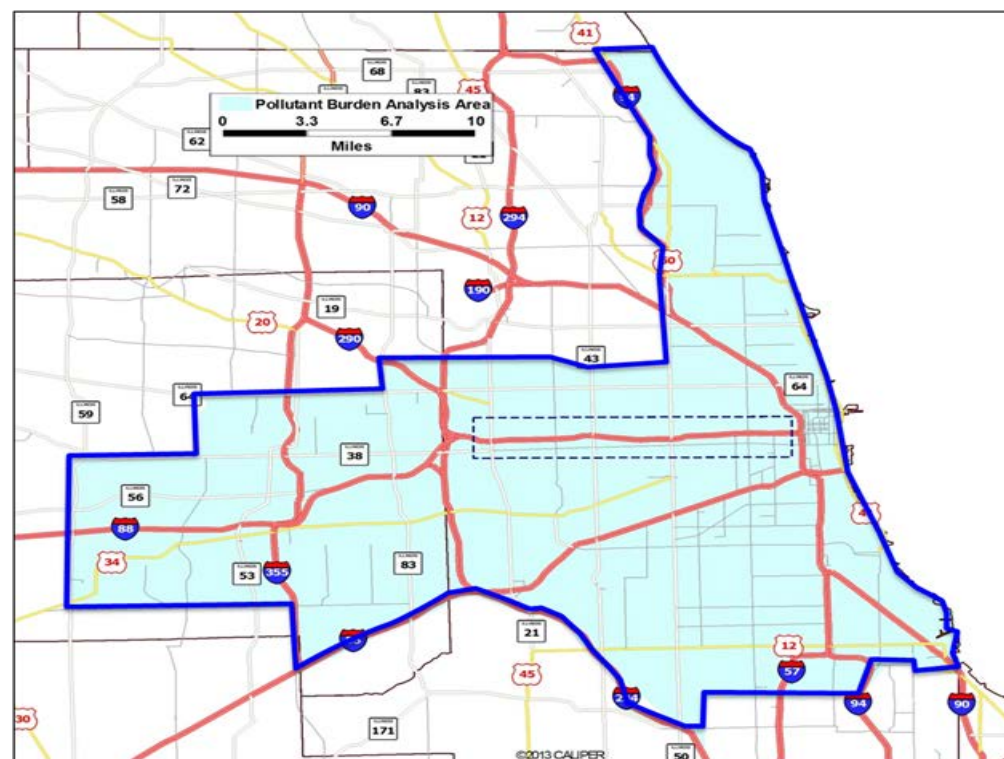




*ROUND 3 WRAP UP
AIR QUALITY SUMMARY*

Mobile Source Air Toxics (MSAT)

- Transportation related MSATs are caused by incomplete engine combustion
- USEPA's MOVES2014 was used to calculate the most common transportation related MSATs based on:
 - *traffic volumes and speeds*
 - *meteorological data*
 - *vehicle and fleet mix*
- The MSAT Analysis Area was identified based on comparisons between the No Build and proposed build alternatives highway network link volumes



Mobil Source Air Toxins (MSAT) Analysis

Pollutant	Burden (lbs)	% Change from No Build			
		No Build	GP Lane	HOV 2+	HOT 3+
Acrolein	6.39	-0.08%	-0.07%	-0.17%	-0.62%
Benzene	90.41	0.30%	-0.04%	-0.08%	0.05%
1,3 Butadiene	0.40	-0.20%	-0.08%	-0.20%	-0.83%
Diesel PM	274.54	0.10%	-0.13%	-0.16%	-1.11%
Formaldehyde	141.55	-0.07%	-0.07%	-0.17%	-0.60%
Naphthalene	11.94	-0.02%	-0.06%	-0.16%	-0.53%

- No standards for MSAT established by USEPA
- No significant change from no-build
- No significant change between alternatives

- **Examples of projects that require a PM_{2.5} Analysis**
 - New highways or expressways that serve a significant volume of diesel truck traffic (*I-290 project is an existing facility*)
 - New exit ramps or other improvements that connect to a bus, freight or intermodal freight facility (*no new access proposed*)
 - Significant increase in diesel transit buses or diesel trucks (*managed lane alternatives 70% to 90% below threshold*)
 - Expansion of an existing highway that connects to a congested intersection with significant increases in diesel trucks (*project improves interchange capacity, truck volumes 70% to 90% below threshold: 10,000*)

Result – Typical triggers for AQ analysis not present

■ Stakeholder Air Quality concerns: conduct sensitivity analyses

- COSIM: well below standard
- **Pollutant Burden:** major transportation-related pollutants, including PM and ozone show no significant change. Positive trends (lower pollutant levels than No Build) for managed lanes alternatives
- **MSAT:** no significant change, positive trends for managed lane alternatives
- **PM2.5 Analysis:** Given lack of negative trends in analysis, and project data that is well below the threshold that triggers detailed PM_{2.5} studies
- **Greenhouse Gas (GHG) Analysis:** Forthcoming





*ROUND 3 WRAP UP
NOISE ANALYSIS SUMMARY*



- Traffic Noise Levels evaluated for 4 Build Alternatives
- Number of impacted receptors for each build alternative determined.
- 288 representative receptors evaluated in corridor

	No-Build	GP Add Lane	HOV 2+	HOT 3+	HOT 3+ & Toll
Representative Receptors with Traffic Noise Impacts	227	230	228	229	220



Observations:

- Majority of existing corridor already above NAC
- No significant differences among alternatives:
 - Between the No-Build and the four Build alternatives
 - Between the four Build alternatives themselves
- Minimal differences at receptors:
 - between 98% & 99% of the receptors experience no change or imperceptible change compared to No Build
 - One receptor has barely perceptible noise increase
 - 3 or 4 receptors have barely or readily perceptible noise decrease



*ROUND 3 WRAP UP
ENVIRONMENTAL JUSTICE*

■ Environmental Justice (EJ) Executive Order 12898

Identify and address disproportionate effects of federal programs, policies, and activities on minority and low-income populations

■ Three fundamental EJ principles:

- *Avoid, minimize, or mitigate disproportionately high health and environmental effects, including social and economic effects, on minority and low-income populations*
- *Ensure full and fair participation by affected communities*
- *Provide equitable receipt of project benefits by minority and low-income populations*



- **Minority is defined as a person who is:**
 - Black
 - Hispanic or Latino
 - Asian American
 - American Indian and Alaskan Native
 - Native Hawaiian or Other Pacific Islander
- **Low income is defined as a person whose:**
 - Median household income is at or below USHHS poverty guidelines
- **Census data used to identify minority & low income populations**
- **EJ Areas of Analysis:**
 - Change in access
 - Expressway & arterial congestion relief
 - Tolling
 - Safety improvements
 - Non-motorized improvements
 - Public transit improvements



■ Change in access

- Change in travel distance calculated to/from I-290 to/from each property (7,400 individual parcels evaluated) using GIS
- Average distance changes for all directions: Less than 1/10th mile (+79 feet)

■ Expressway & arterial congestion relief

- Five EJ & two Non-EJ communities access (travel times) to Chicago CBD and 5 suburban employment clusters
- Within each alternative, there are no apparent accessibility differences in travel times between the EJ and non-EJ communities
- No disproportionate arterial impacts to the EJ populations given the overall improvement of arterial travel performance for GP, HOV 2+ & HOT 3+ (up to 1% improvement compared to No Build)
- HOT 3+ & TOLL results in up to 3% worse arterial performance than the No Build, due to the diversion of I-290 traffic to the arterial system

- **Increased cost of using the tolled lanes in HOT 3+ and HOT 3+ & TOLL Alternatives**
 - **Washington State study:** HOT lane use is not based on income levels or ability to pay the toll
 - **California study:** a slightly lower percentage of low-income people choose to pay for HOT lanes as higher income people
 - Monitoring programs on HOT lane facilities in other states have not demonstrated that low-income populations experience disproportionately high and adverse effects
 - Potential remedial strategies include increased promotion of carpooling or vanpooling to job centers from low-income populations, or a toll subsidy program for low-income households

■ Safety

- HOV 2+ and HOT 3+: similar overall safety benefits while not disproportionately favoring non-EJ populations
- HOT 3+ & TOLL: may disproportionately affect the safety of EJ populations due to an inclination for low-income EJ populations to favor the arterial network to avoid the tolls

■ Public Transportation

- Improved access to CTA Blue Line
- New express bus transit service
- Provision for Blue Line extension

■ Bicycle & Pedestrian

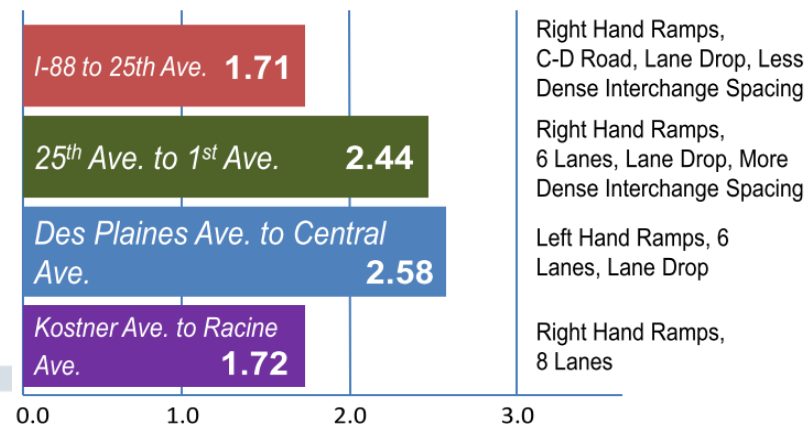
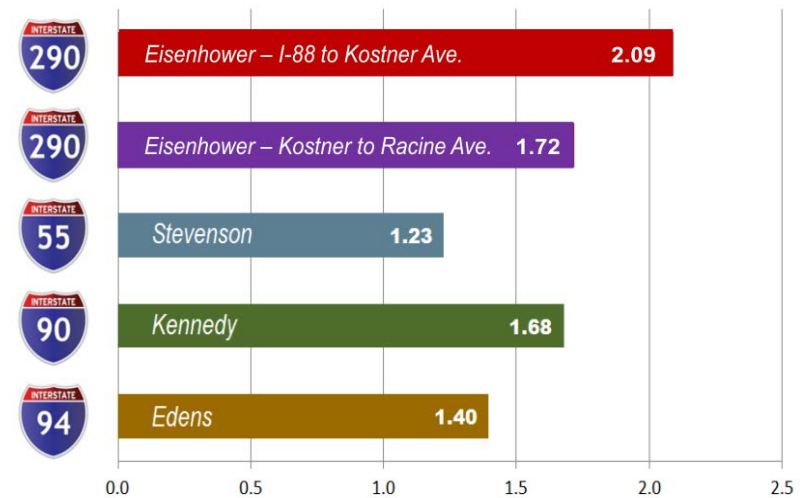
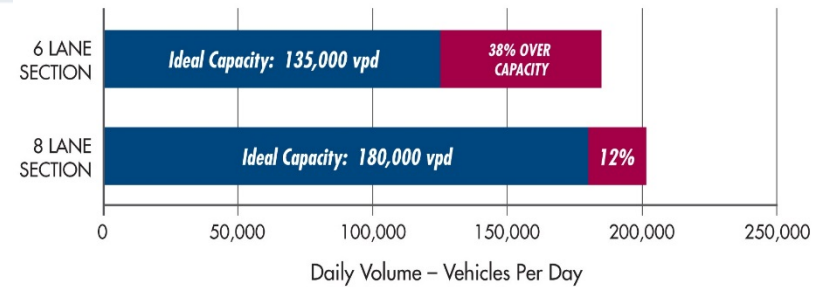
- Wider sidewalks on all cross-streets over I-290
- Wider pedestrian bridges
- Improved pedestrian safety
- East-west multi-use path



*PRELIMINARY PREFERRED
ALTERNATIVE RECOMMENDATION*

I-290 Purpose and Need - Recap

- **PURPOSE:** *to provide an improved transportation facility along the I-290 multimodal corridor*
- **NEED:** Five specific need points to be addressed:
 - *Improve regional and local travel*
 - *Improve access to employment*
 - *Improve safety for all users*
 - *Improve modal connections and opportunities*
 - *Improve facility deficiencies*





- 3 Rounds
- Early transit focus – Blue Line Extension
 - Alignment & termini variations
 - Conclusions:
 - Does not relieve I-290 congestion
 - Diverts some riders from other transit services
 - Envelope for extension preserved in I-290 Corridor
 - Transit plays a role in alternatives – improves access to jobs
- Blue Line Vision Study
 - CTA Partnership with IDOT
 - Focus on condition and renewal of existing facilities

- Highway alternatives evaluated
 - Tolling, carpool lanes
 - Widening and non-widening evaluated
 - Widening (capacity improvement) alternatives perform best
- Combination highway/transit mode alternatives carried forward



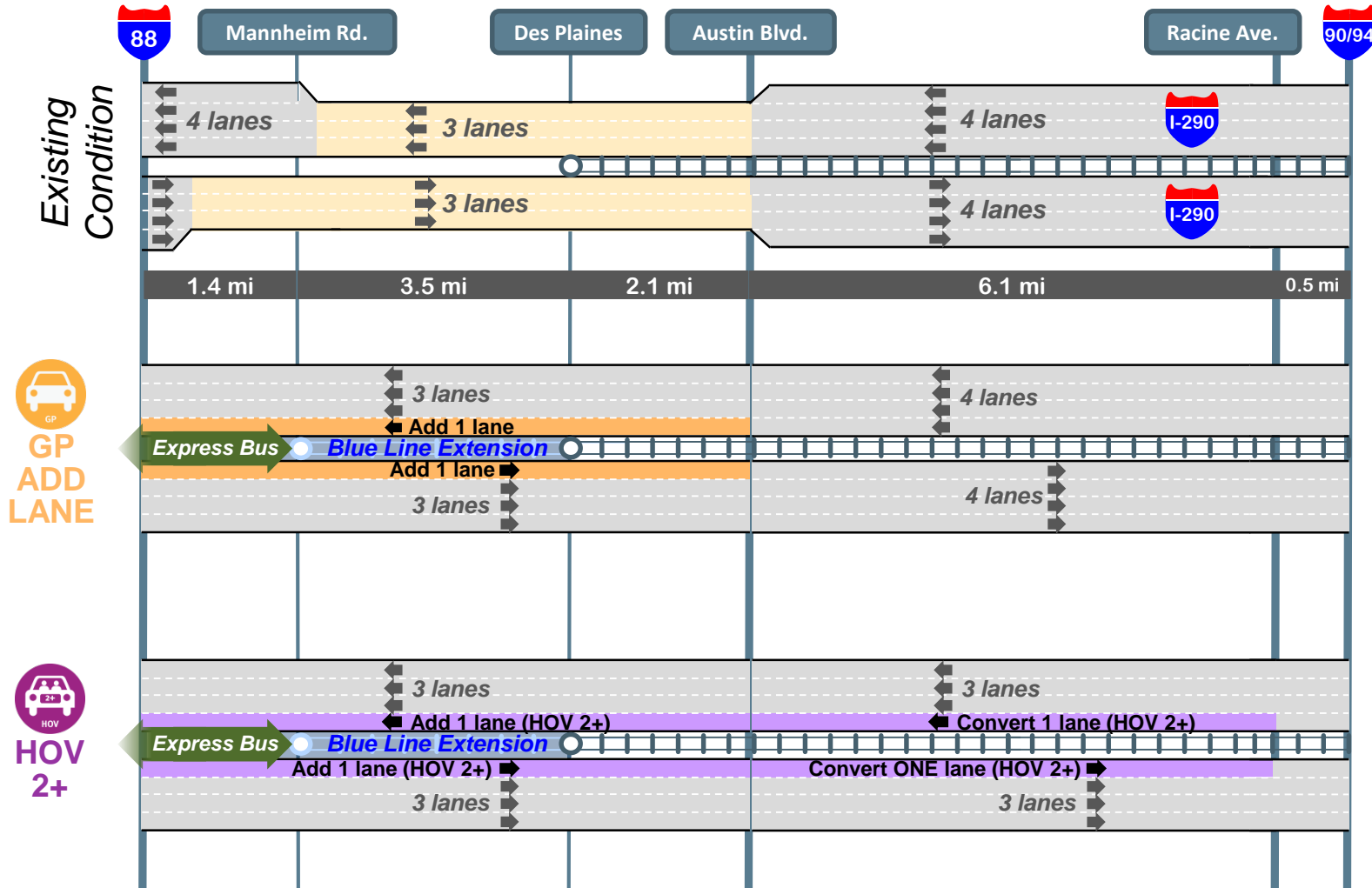
Vision Study Preliminary Findings



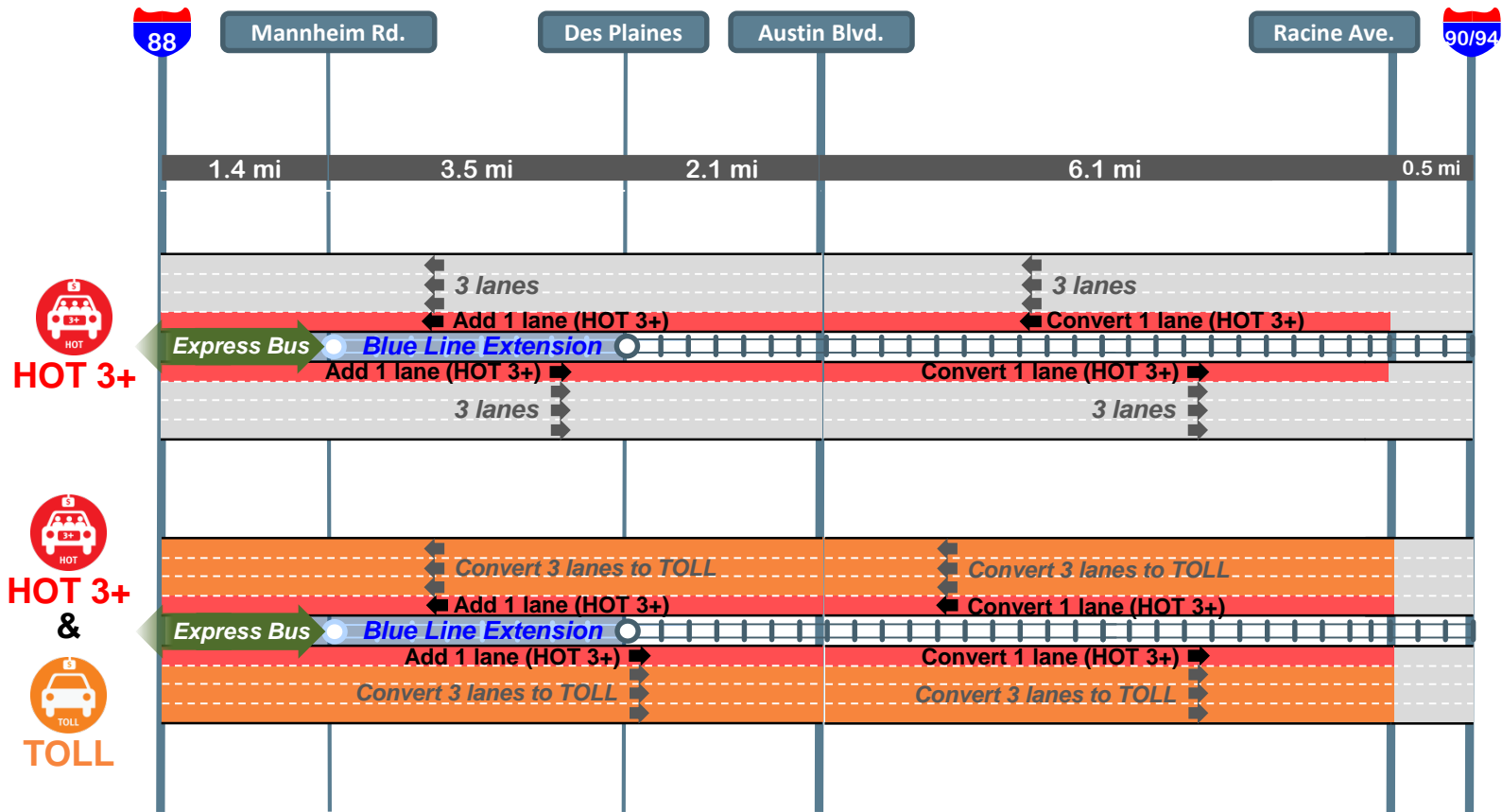
CTA BLUE LINE VISION STUDY

- CTA focus on modernization of existing facility – not planning for an extension at this time.
- Third express track not needed
 - Potential express service – limited time savings
 - Insufficient ROW to add third track and 24' wide platforms in trench
- Forest Park Terminal Modernization
 - Evaluating site for new terminal/yard/shop
 - Improved access to terminal bus/auto/pedestrians
- Recommendations to improve stations
 - Wider platforms
 - ADA accessibility
 - Improved weather and noise protection

Round 3 - DEIS Alternatives

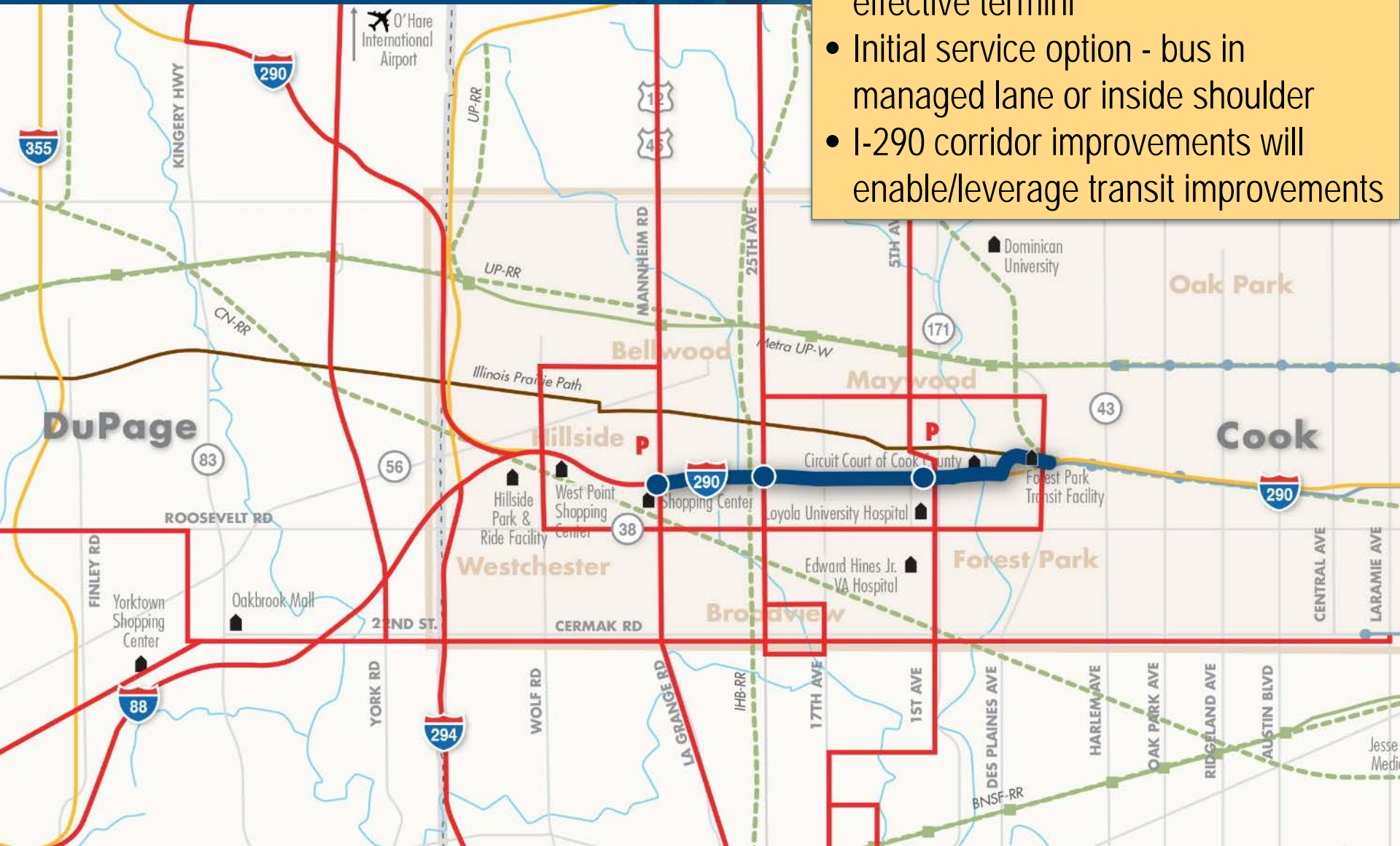


Round 3 - DEIS Alternatives

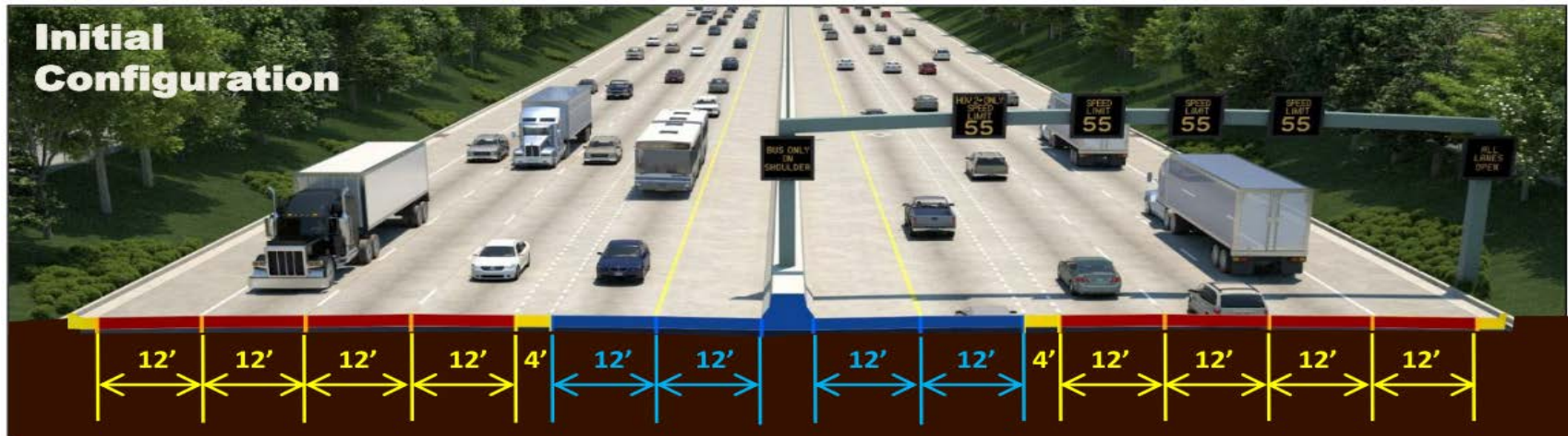


Blue Line Extension

- Common to all alternatives
- Extension to Mannheim – most effective termini
- Initial service option - bus in managed lane or inside shoulder
- I-290 corridor improvements will enable/leverage transit improvements



Convertible Transit Configuration



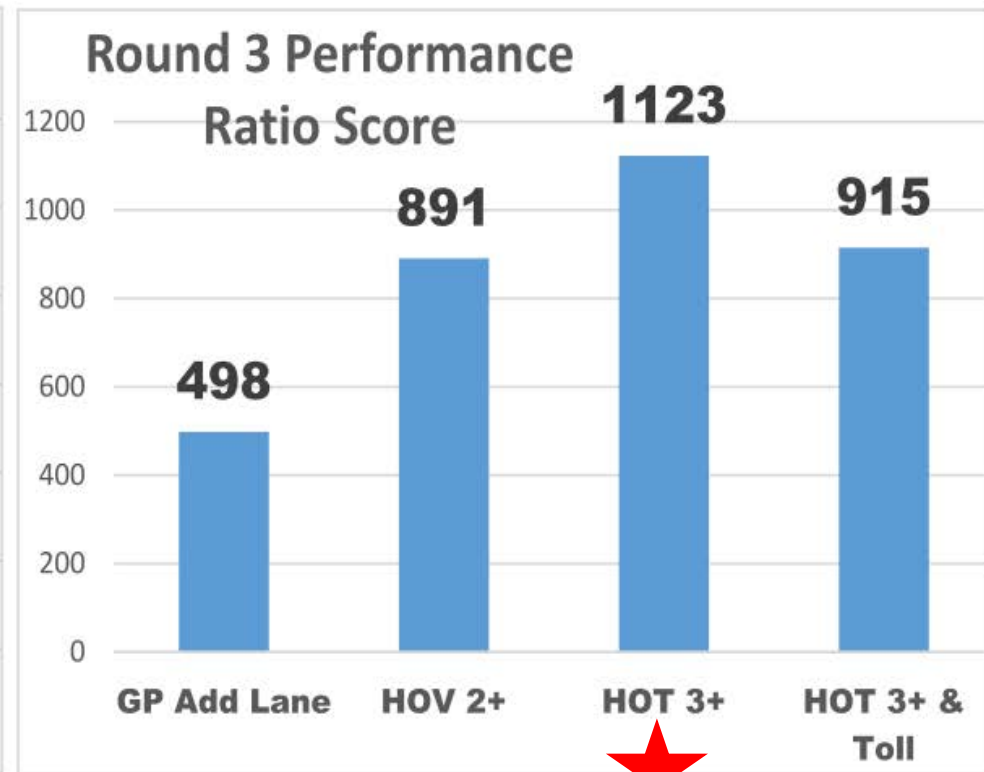
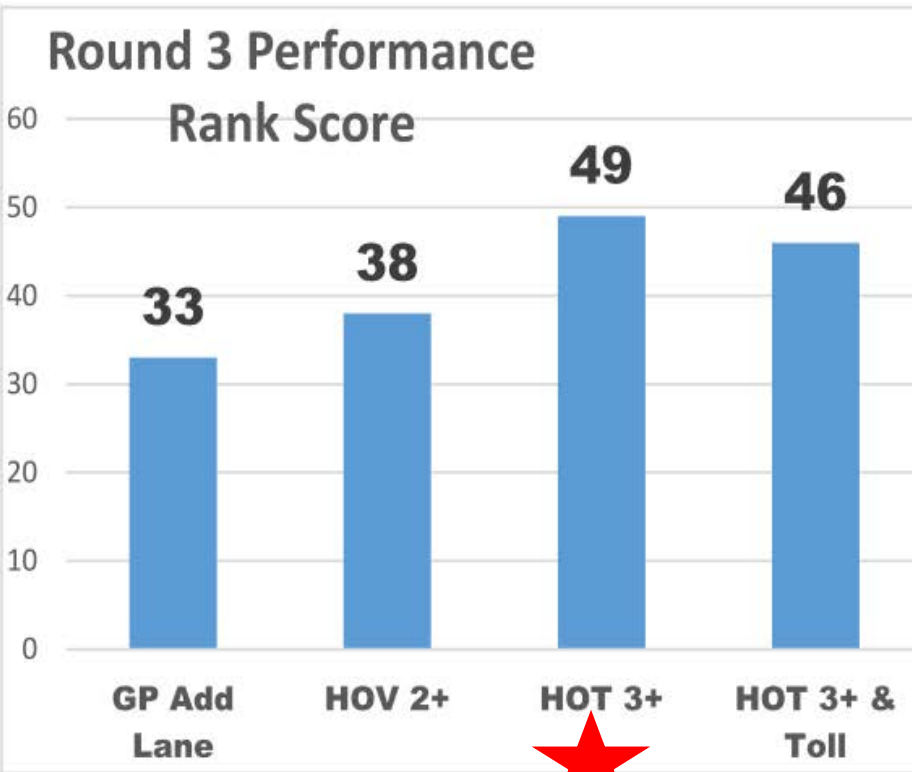
- **Travel Performance**
 - Tolling all lanes over manages traffic
 - General purpose add lane undermanages traffic
 - HOT 3+, HOV 2+ provide balance
 - HOT 3+ provides the best balance
- **Environmental**
 - Generally no substantial differences among build alternatives
 - Positive air quality trends with managed lane alternatives

Build Alternatives Comparison

- HOT 3+ Alternative is highest ranked by both rank & ratio scoring*

#	Round 3 DEIS Performance Measure	Unit	No-Build	GP Add Lane	HOV 2+	HOT 3+	HOT 3+ & Toll
1.1	Regional vehicle miles traveled (VMT)	miles	201,187,710	151,380	72,492	52,211	33,774
1.2	Regional vehicle hours traveled (VHT)	hours	8,067,709	-9,840	-9,773	-16,161	-17,300
1.3	I-290 Travel Time (GP Lane / Managed Lane)		30.7/NA	21.2/NA	23.2/13.7	23/13.5	14.8/12.6
1.4	Study Area Arterial VMT	miles	4,294,011	-24,560	6,944	-8,853	147,834
1.5	Study Area Arterial VHT	hours	255,282	-1,996	-967	-1,643	6,778
1.6	Person Throughput	persons	459,122	25,247	31,871	28,604	25,294
1.7	Job Accessibility	# of jobs	5,151,539	105,053	364,948	397,660	326,499
1.8	Overall Safety (crashes per million person miles per year)	rate	0.287	-4.86%	-6.44%	-6.21%	-4.65%
1.9	East-West Transit Trips	# of trips	76,950	4,375	2,150	4,425	8,425
2.01	Adverse travel at ramp consolidation (Parcel Average)	Feet	-	79	79	79	79
2.02	Traffic Diversion to Local Roads	VMT	4,294,011	-24,560	6,944	-8,853	147,834
2.03	Average Change in travel time to job destinations, EJ Communities	Min	-	-1 to -3	0 to -9	-2 to -10	-2 to -9
2.04	Average Change in travel time to job destinations, Non-EJ Communities		-	-2 to -2	-2 to -5	-2 to -5	-4 to -6
2.09	Construction related jobs created	#	-	18,904	18,904	18,980	18,980
2.10	Productivity (based on travel time savings)	\$B	-	\$ 1.6	\$ 1.6	\$ 2.7	\$ 2.8
6.1	Noise Receptors exceeding noise abatement criteria (NAC)		227	230	228	229	220
9.1	Round 3 Construction Cost Difference (\$ Millions)		\$ -	\$ -	\$ -	\$ 13	\$ 13
Rank Score (1 to 4)				33	38	49	46
Ratio Score (0 to 100)				498	891	1123	915

Build Alternatives Comparison



- HOT 3+ Alternative has highest score by rank or ratio method
- Travel performance, environmental, & cost factors considered

■ Non Motorized

- 2-mile long east-west trail extension
- Wider sidewalks on crossroad bridges
- Improved lighting, pedestrian signals, ADA accessibility, safety

■ Transit

- CTA head station improvements (reconstruction section)
- Improved access to transit
- Envelope for future Blue Line extension

■ Roadway

- Additional lane (HOT 3+) from Mannheim Rd. to Austin Blvd.
- Conversion of 4th lane to HOT 3+ from Austin Blvd. to Ashland Ave.
- Improved interchange designs, geometrics, traffic signals, ITS

High Occupancy Toll (HOT) Lane Considerations

- **National experience** – used by all income levels
- **Inside lane will be HOT 3+ Lane**
 - Transit vehicles and 3+ occupant carpools free access
 - Travel times improved by 25% in other GP Lanes
- **Overall corridor** – active lane management, ITS technologies
- **Legislation** – Value Pricing Pilot Program or HOV to HOT staged implementation
- **Implementation** – at end of construction



How Does the Preliminary Preferred Alternative Address Stakeholder Goals (CAG #1) & Problem Statement?

- **Congestion Relief/Mobility**
 - 56% travel time savings and improved reliability in HOT 3+ lane
 - Arterial relief
- **Safety**
 - 6.2% overall (expressway, arterial and transit) safety improvement
 - Improved non-motorized safety
- **Facility Design**
 - Improved community connections across I-290
 - Improved access to transit
- **Minimize or Avoid Community Impacts**
 - No displacements
 - Only 2.4 acres of ROW required at spot locations
- **Additional Travel Choices/Modal Options**
 - Managed lane for 3+ person carpools, transit vehicles and congestion priced tolling
 - New east-west multi-use trail



How Does the Preliminary Preferred Alternative Address Stakeholder Goals (CAG #1) & Problem Statement?

- **Connectivity/Community Cohesion**
 - Improved expressway & arterial travel times
 - Improved non-motorized connections across I-290
- **Integration of Transportation and Land Use**
 - Coordination with communities regarding existing and future land uses; compatibility of improvements with local and regional land use plans
- **Avoid and Minimize Impacts including Low Income and Minority Populations**
 - No disproportionate impacts; benefits equitably distributed; 2.4 acres total ROW; substantial portion of corridor eligible for noise abatement
- **Sustainability and Funding**
 - Sustainable project elements
 - HOT lane provides funding stream





NOISE ABATEMENT ANALYSIS



- **Traffic Noise Levels for Existing, Future No Build**
- **Traffic Noise Impacts from Preliminary Preferred Alternative**
- **Traffic Noise Abatement Analysis and Findings**
 - Recommended wall heights and locations
 - Locations benefitted by barriers
- **Viewpoints Solicitation and Noise Forums**



- **Noise studied at exterior locations of frequent human use**
 - Based upon outdoor conversations
- **Noise Abatement Criteria**
 - By land use type – noise sensitive uses
 - 67 dB(A) residential, park, school
 - 72 dB(A) restaurant, office



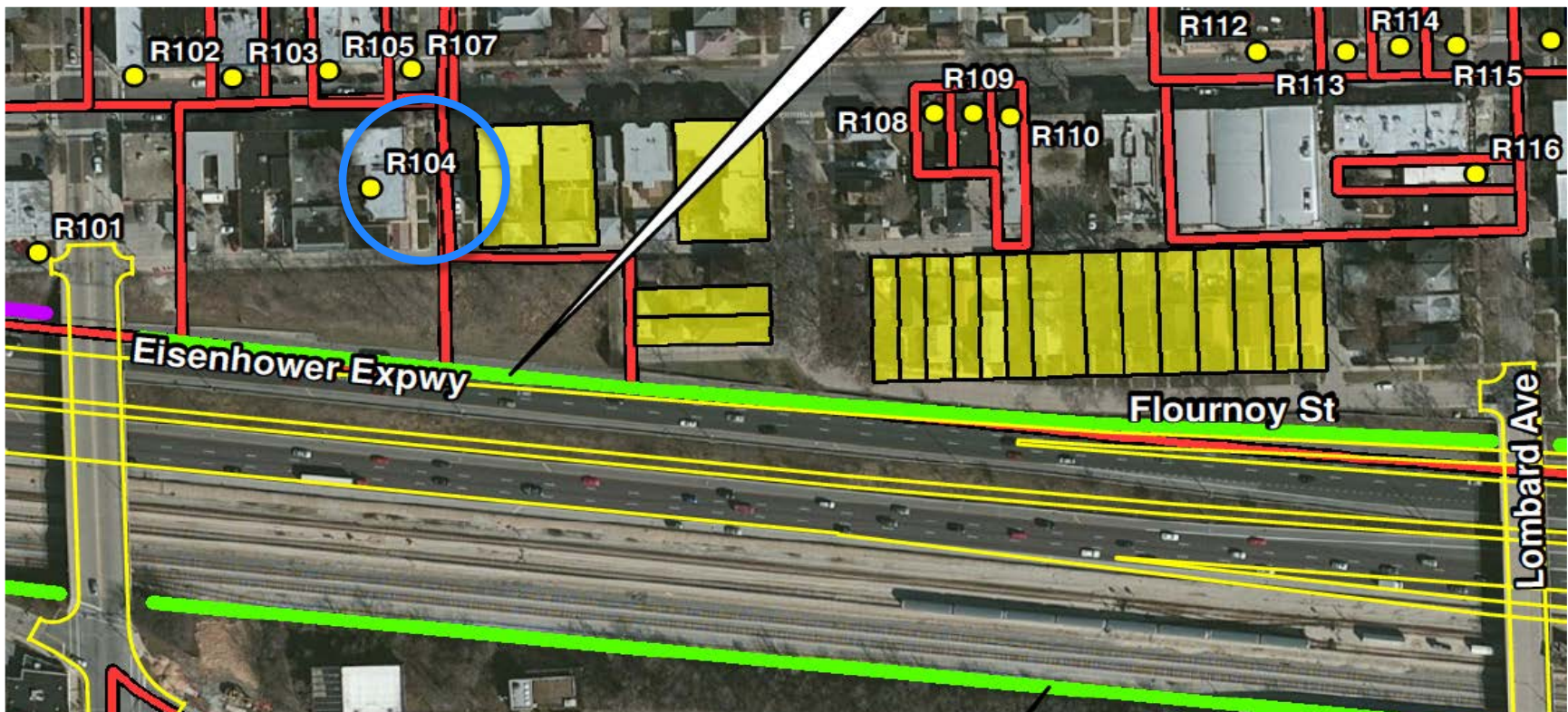
Noise Levels Approach/Meet/Exceed NAC

- Existing: 220
- Future No Build: 227
- Preliminary Preferred: 228
- Preliminary Preferred noise levels:
 - Perceptible increase from No Build at 1 receptor
 - Perceptible decrease from No Build at 4 receptors
 - I-290 lane shifts
 - Interchange reconfigurations
 - I-290 mainline elevation modifications

PERCEPTIBLE INCREASES IN NOISE



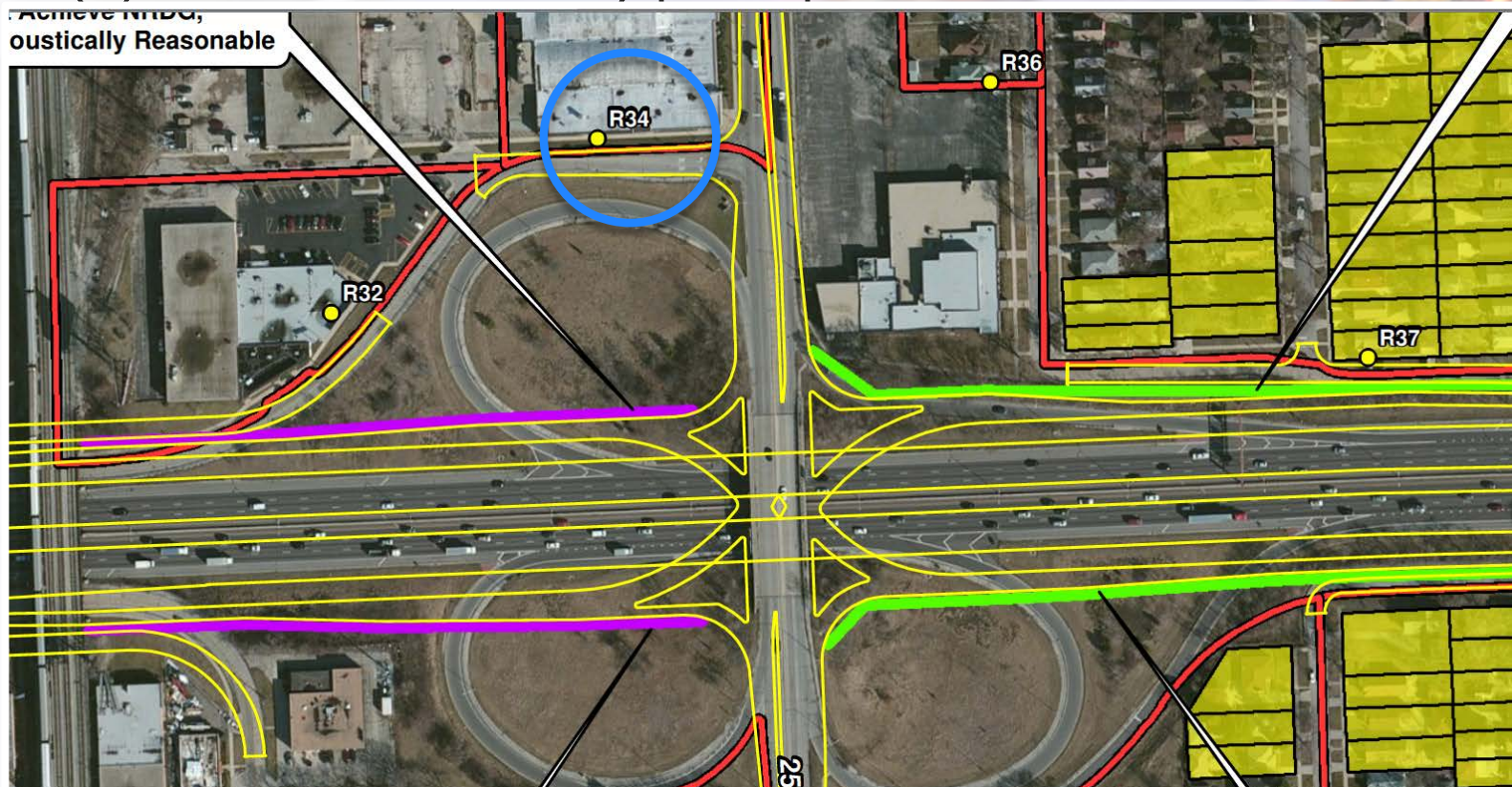
- Preliminary Preferred Alternative has barely perceptible increase in from No Build at 1 receptor (R104, Oak Park)
- 3 dB(A) increase = barely perceptible
- Third floor balcony location, traffic volume increase



PERCEPTIBLE DECREASES IN NOISE



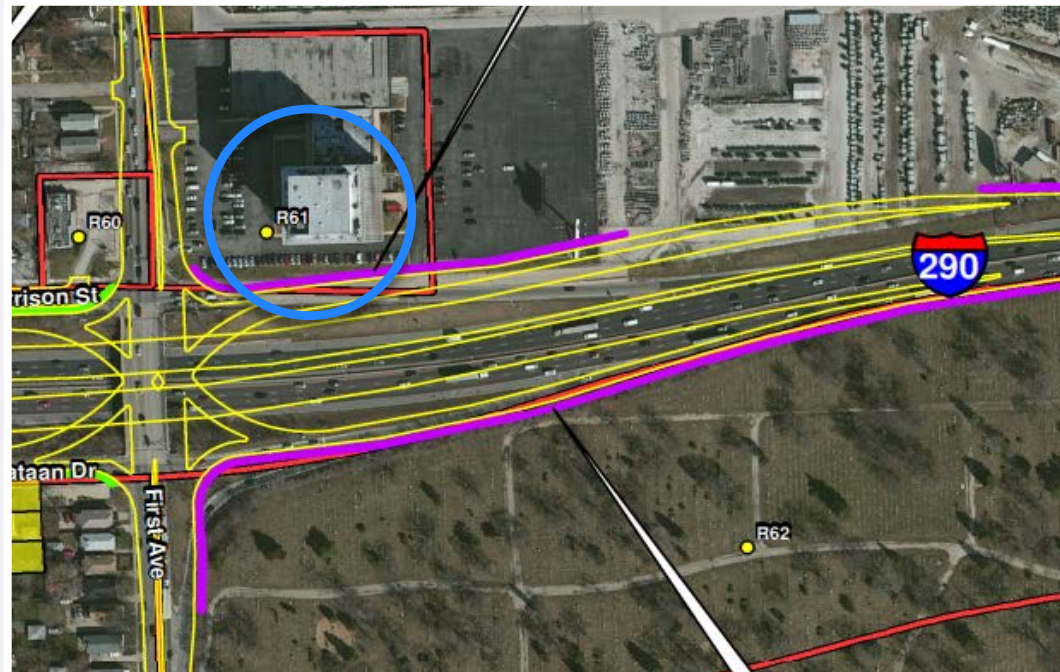
- Preliminary Preferred Alternative has readily perceptible decrease in from No Build at 4 receptors (R34, R61, R76, R126)
- R34: 25th Avenue interchange reconfiguration
- 7 dB(A) decrease = readily perceptible



PERCEPTIBLE DECREASES IN NOISE



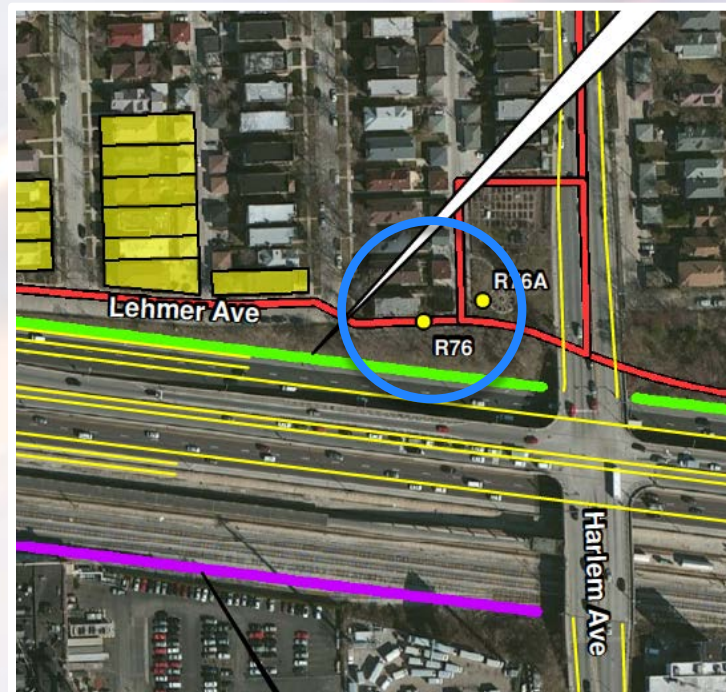
- Preliminary Preferred Alternative has barely perceptible decrease in from No Build at 4 receptors (R34, R61, R76, R126)
- R61: 1st Avenue interchange reconfiguration, mainline lowered
- 4 dB(A) decrease = barely perceptible



PERCEPTIBLE DECREASES IN NOISE



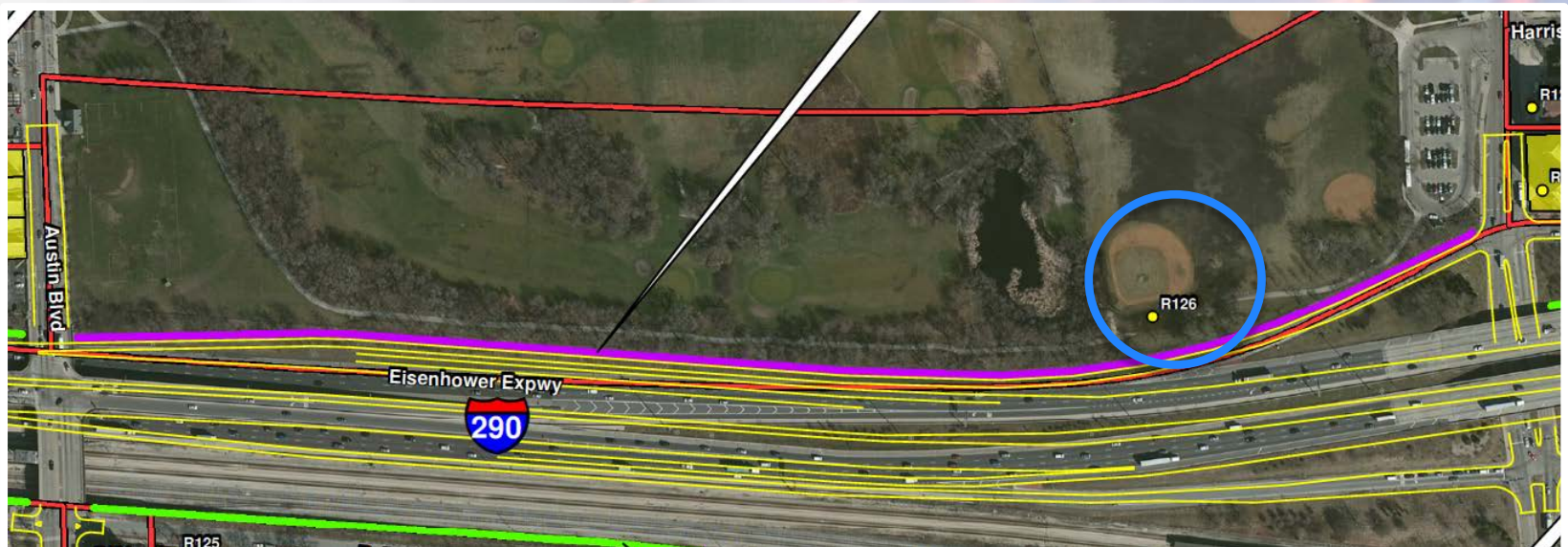
- Preliminary Preferred Alternative has barely perceptible decrease in from No Build at 4 receptors (R34, R61, R76, R126)
- R76: Harlem interchange reconfiguration
- 4 dB(A) decrease = barely perceptible



PERCEPTIBLE DECREASES IN NOISE



- Preliminary Preferred Alternative has barely perceptible decrease in from No Build at 4 receptors (R34, R61, R76, R126)
- R126: Interchange reconfigurations at Central and Austin, mainline shift south, mainline elevation decrease
- 3 dB(A) decrease = barely perceptible

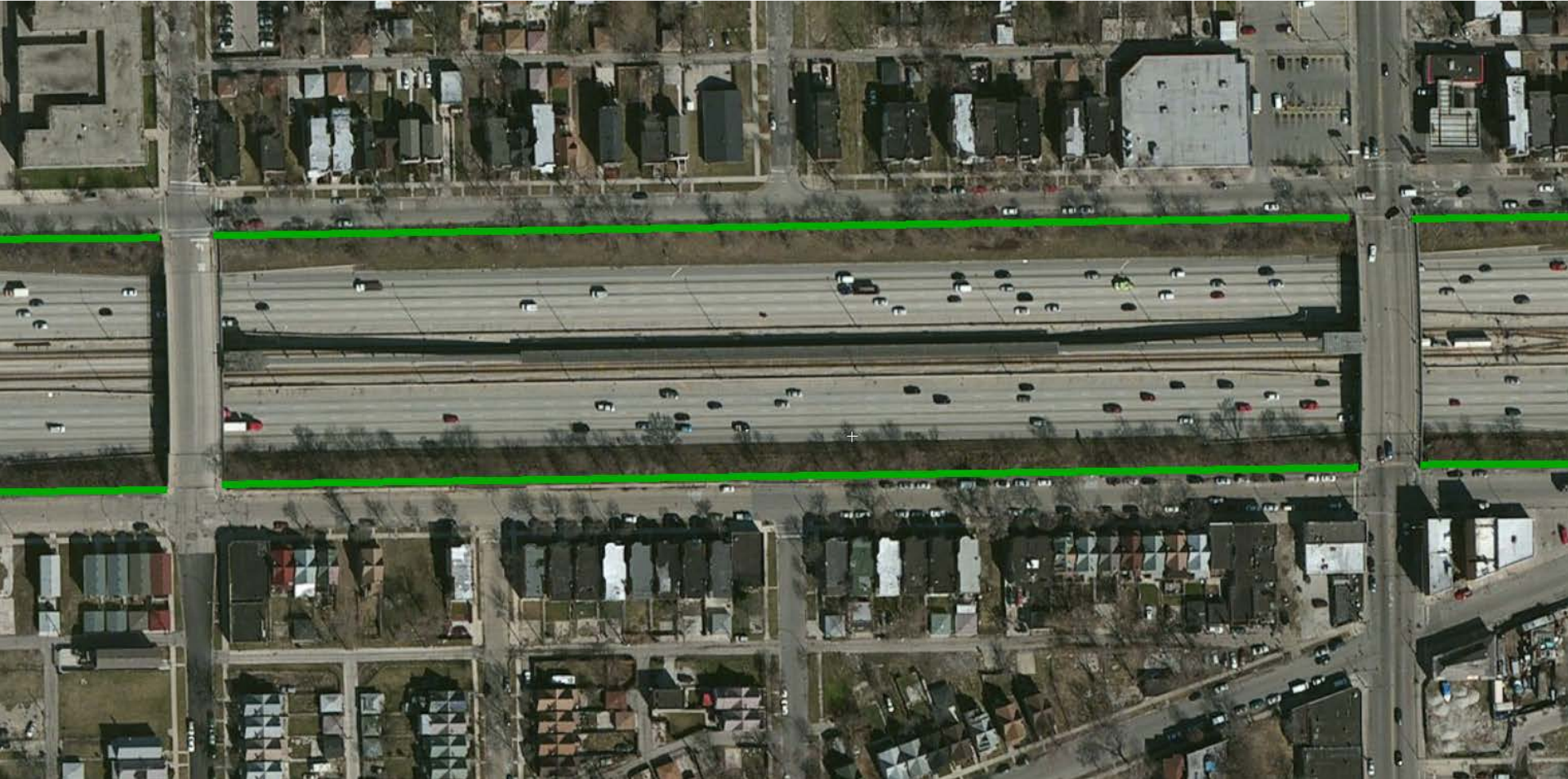




- Noise abatement identifies measures to abate (reduce) traffic noise
- Noise walls studied for I-290
- Completed for ALL receptors within a Common Noise Environment having an impacted representative receptor



LOCATIONS OF STUDIED BARRIERS





- Feasibility:
 - Reduce Traffic Noise by 5 dB(A) at one impacted receptor
 - Be Constructible
- Reasonableness:
 - Reduce Traffic Noise by 8 dB(A) at one benefited receptor
 - Be Cost-Effective
 - Be Supported by those Who Are Benefited

NOISE REDUCTION

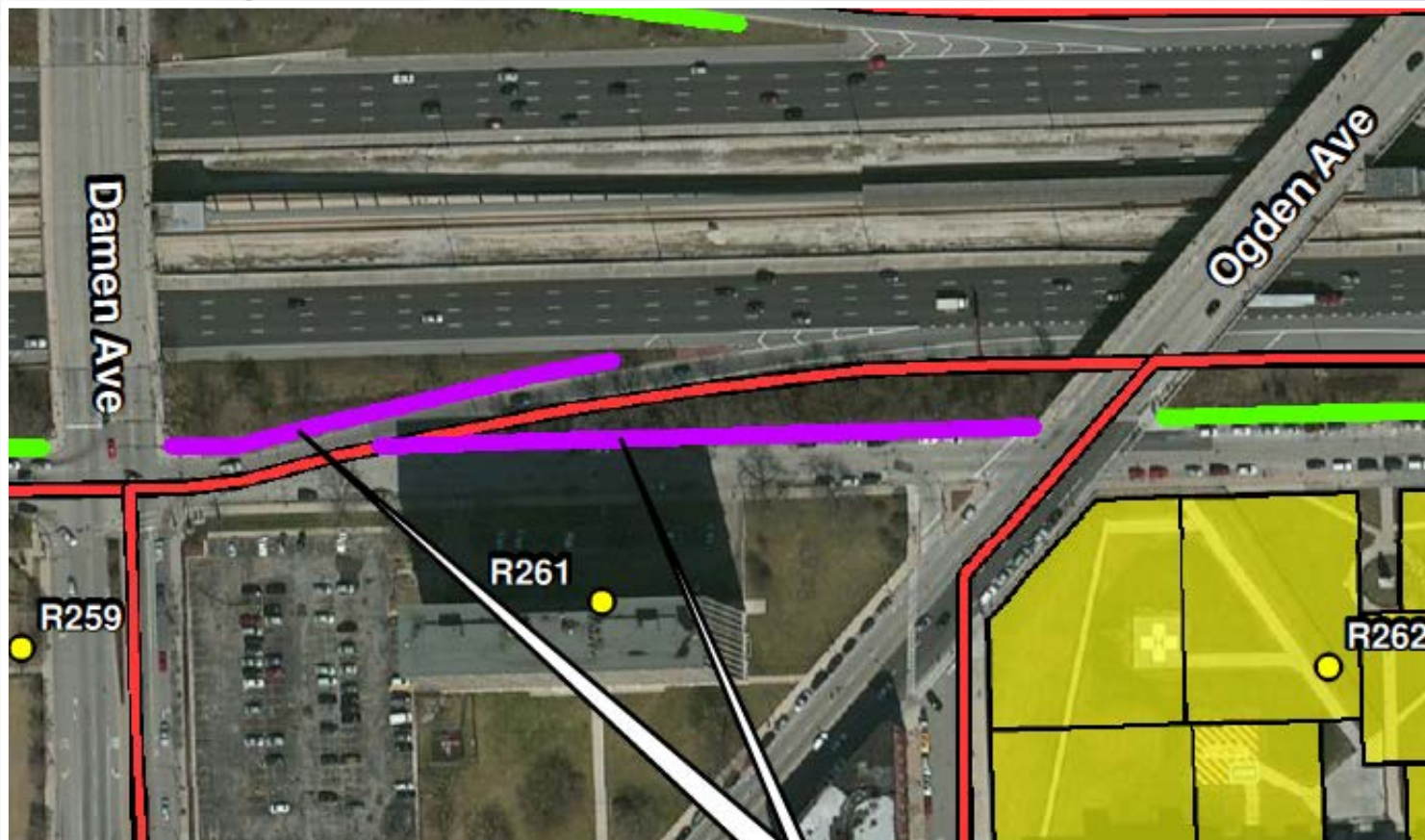


- Barrier would not achieve noise reductions to be considered feasible and/or reasonable
- Example of barrier that is not feasible: B50, Chicago



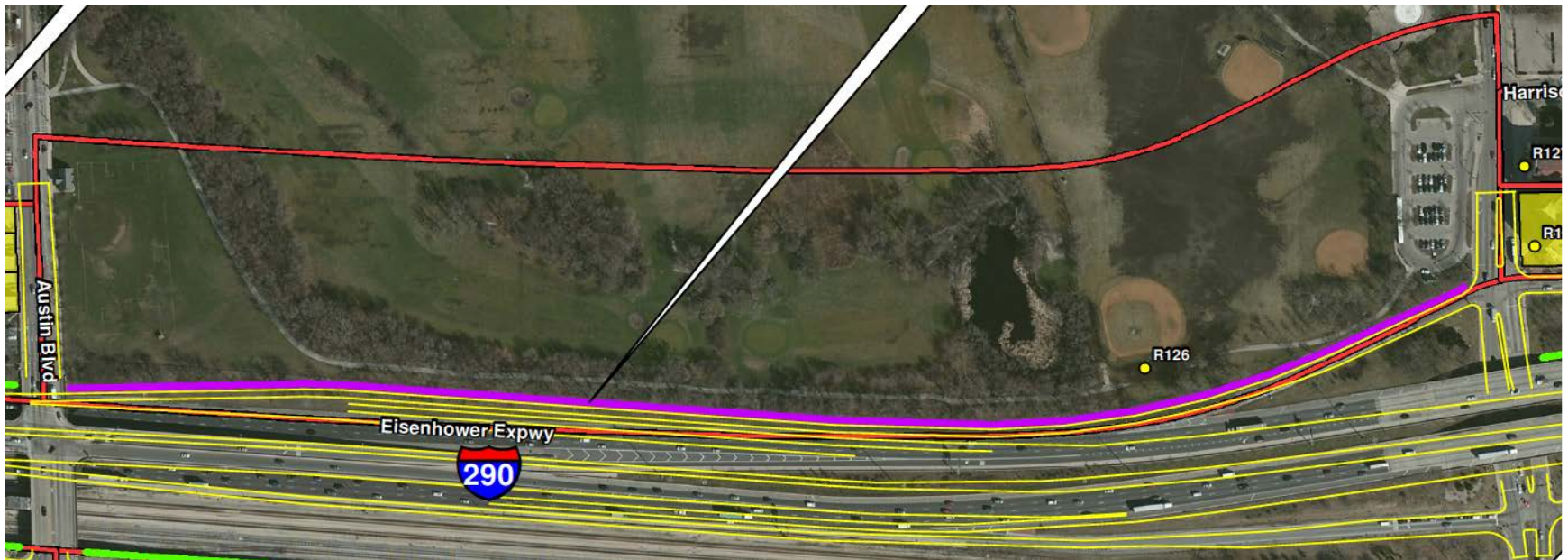


- Example of barrier that does not achieve the Noise Reduction Design Goal of 8 dB(A) (not reasonable): B82, Chicago





- The number of benefitted receptors was not high enough for the barrier to be cost-effective
- Cemeteries, some parks
- Example of barrier that is not cost effective: B43, Columbus Park, Chicago





■ Noise Wall Informational Forums:

- October 27 – Chicago Marriott at Medical District/UIC
- October 28 – Carleton Hotel of Oak Park
- October 29 – Best Western - Hillside

■ 5:30 to 7:30 pm

- Presentation and Q&A
- Exhibit Area

- *Residents benefitted by the proposed barriers will be formally invited, but meetings are open to anyone*



- **Response goal of 1/3 of benefitted receptors per proposed barrier**

If greater than 50% of votes for a barrier are in favor, the proposed abatement measure will be likely to be implemented

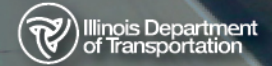
- **First row receptors**

- Two votes

- **Rental properties**

- One vote for tenant, one vote for owner (per unit)

Viewpoints Example Letter and Form



Illinois Department of Transportation

Division of Highways/Region One / District One
201 West Center Court/Schaumburg, Illinois 60196-1096

Project and Environmental Studies
I-55 at Weber Road
Weber Road from 135th Street/Romeo Road to 119th Street/Rodeo Drive
Will County

November 8, 2013

Re: Viewpoint Solicitation – First Notice
Noise Barrier Implementation

«fullname»
«Address1»
«Address2» «zip»

Dear Property Owner or Resident:

The Illinois Department of Transportation (Department) in cooperation with Will County Department of Highways (County) are currently engaged in preliminary engineering and environmental studies (Phase I) for Weber Road from 135th Street/Romeo Road to 119th Street/Rodeo Drive including the Weber Road interchange at I-55. The proposed improvements include reconstruction of the existing diamond interchange of I-55 at Weber Road to a diverging diamond interchange and widening of Weber Road from four lanes to six lanes. The I-55 at Weber Road improvements are included in the Department's FY 2014-2019 Proposed Multi-Modal Transportation Improvement Program contingent upon the sale of approximately 200 acres of unused property currently owned by the Illinois Department of Corrections as stipulated in Public Act 95-0019, and contingent upon local financial participation for improvements to adjacent highway facilities under local jurisdiction.

As part of the Phase I Study, traffic noise was evaluated for the proposed roadway improvements. The traffic noise analysis indicated that noise levels in your area warrant the consideration of noise abatement. Based on the noise abatement analysis, a noise wall approximately 10 feet high is warranted along the west side of Weber Road from approximately 300 feet north of Rodeo Drive to just north of Countryside Drive. See the enclosed figure for the location of the proposed noise wall. The proposed wall in your area is labeled as "B1B".

The Department is requesting your viewpoint regarding your desire for the noise wall proposed near your location. This letter has been provided to all property owners and tenants who would "benefit" from a noise barrier.

FILE COPY

Viewpoint Form

I-55 at Weber Road
Weber Road from 135th Street/Romeo Road to 119th Street/Rodeo Drive
Will County
Wall – B1B

Please provide your response by December 9, 2013.

I am in favor of a noise barrier:

Yes

No

Name: _____

Signature: _____

Owner: _____ OR Tenant: _____

Address: _____

Date: _____

Comments:



*ITS CONCEPTS – MAINLINE
& OFF-SYSTEM IMPROVEMENTS*

- Technology (ITS) is part of each alternative
- ITS manages the expressway in real time to improve efficiency, safety, and traffic flow
- ITS currently is used to manage traffic on expressway – but the alternatives would have enhanced ITS
- Expressway would become *“Highway of the Future”*

- ***Current ITS includes:*** ramp meters, sensors, message signs, communications, cameras
- ITS concepts for Preferred Alternative would enhance existing technology and add new types of technology
- Off system technology deployment would support traffic operations *during* and after construction of project



Enhanced Technology

- **Ramp meters** that respond to traffic conditions and ramps that store/manage more traffic
- **Fiber communications** adds redundancy and supports more devices
- **Message signs** to provide enhanced real time information (travel time info, incident information, tolling)
- **Cameras** to provide better management of the Expressway and local network
- **Automated ramp gates**
- **Systems** prepare the Expressway for Future Technology and Vehicles



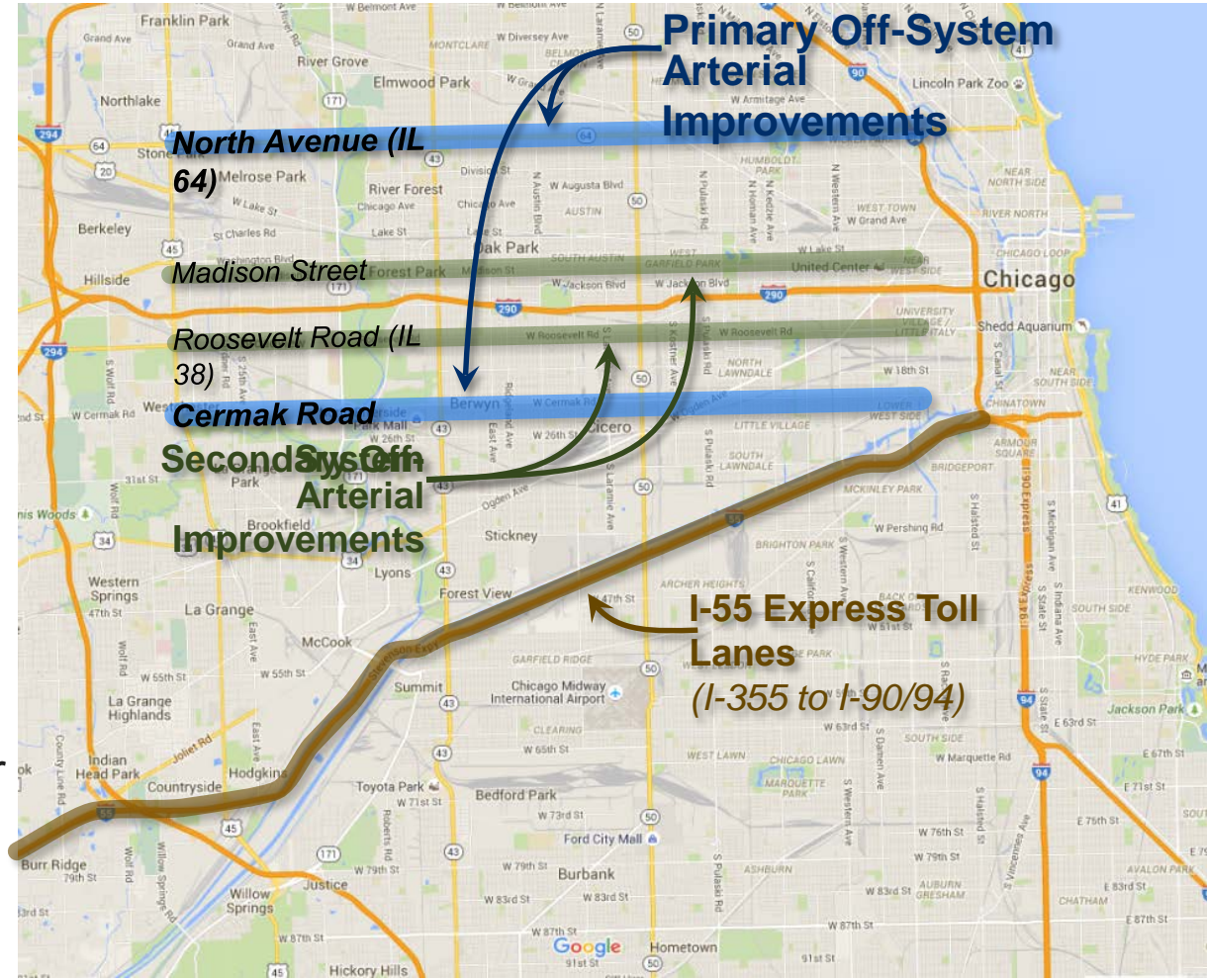
- Real time management of corridor and supporting transportation network
- Toll systems integrated with regional tolling
- Active Traffic Management System provides variable speed limits and lane by lane incident management



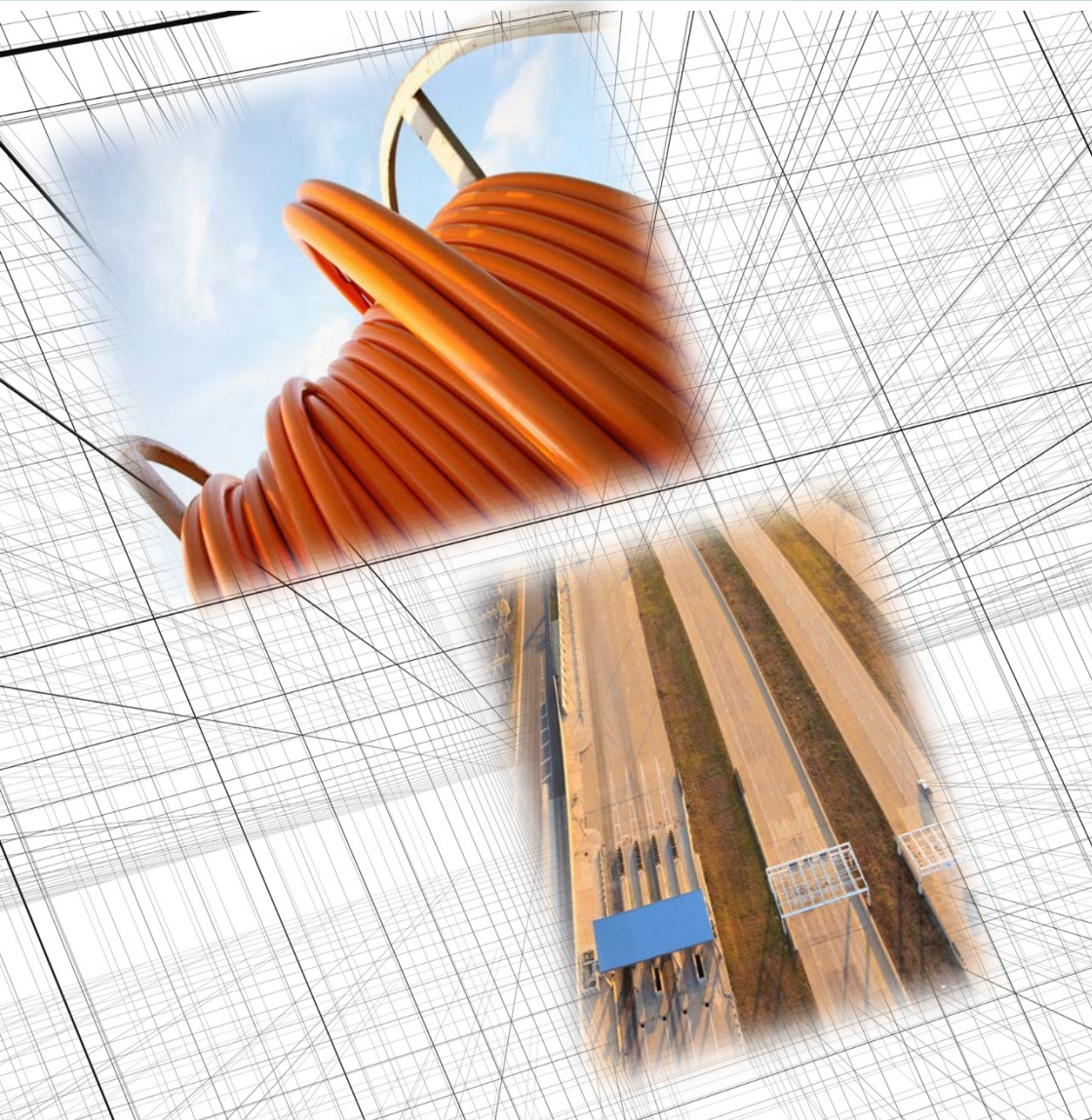
Example of Active Traffic Management Messages

Off-System Improvement Overview

- I-55 Express Toll Lanes
 - Operational before I-290 construction
- East-West Arterials
 - North Avenue
 - Madison Street – spot improvements
 - Roosevelt Road – spot improvements
 - Cermak Road
- Cook-DuPage Smart Corridor coordination



ITS Technology Components



- Communications (Fiber)
- Cameras
- Ramp Meters
- Sensors
- Message Signs
- Tolling Systems
- Active Traffic Management (ATM) – Variable Speed Limits and Incident Management
- Automated Gates
- Local Transportation Network ITS



NEXT STEPS

- Preferred Alternative refinements
 - CTA/CSX Right-of-Way and Design Coordination
 - Section 106 Coordination
 - Proposed Drainage Plan
 - Construction Staging
 - Sustainability
 - Funding



Public Involvement

- Community and agency meetings - **continued**
- Noise Wall Forums – **October 27, 28, 29**
- Noise Wall Viewpoints Solicitation Surveys - **November**
- CAG #22 – **February 2016**
- DEIS Release – **February 2016**
- DEIS Public Hearing – **March 2016**
- Final EIS/ROD – **Fall 2016**

