US 30 (Baseline Road)
IL 47 to IL 31
Community Advisory Group Meeting

July 25, 2013

Illinois Department of Transportation

Meeting Agenda

- **New Staff Introductions**
- **Project Overview - Review**
- **Summary of CAG Meeting #1**
- **Project Problem Statement**
- **Purpose & Need**
- **Introduction to Engineering and Cross Section**
- **Group Exercise**
- **Next Steps**

IDOT Management Team

- **Kimberly Murphy**

Consultant Studies
Unit Head

- **Marty Morse**

Project Manager

- **Ken Doll**

Project Engineer

Project Overview

Study Location Map

Project Development Process

Phase II & Phase III are not included in IDOT's FY 2014-2019 Multi-Modal Transportation Program

Phase I Process

2012	2013	2014

Data Collection

Develop Purpose & Need

Alternatives Analysis

Preferred Alternative

Public Involvement

Public Meeting 1 Sept. 2012

Public Meeting 2 Fall / Winter 2013

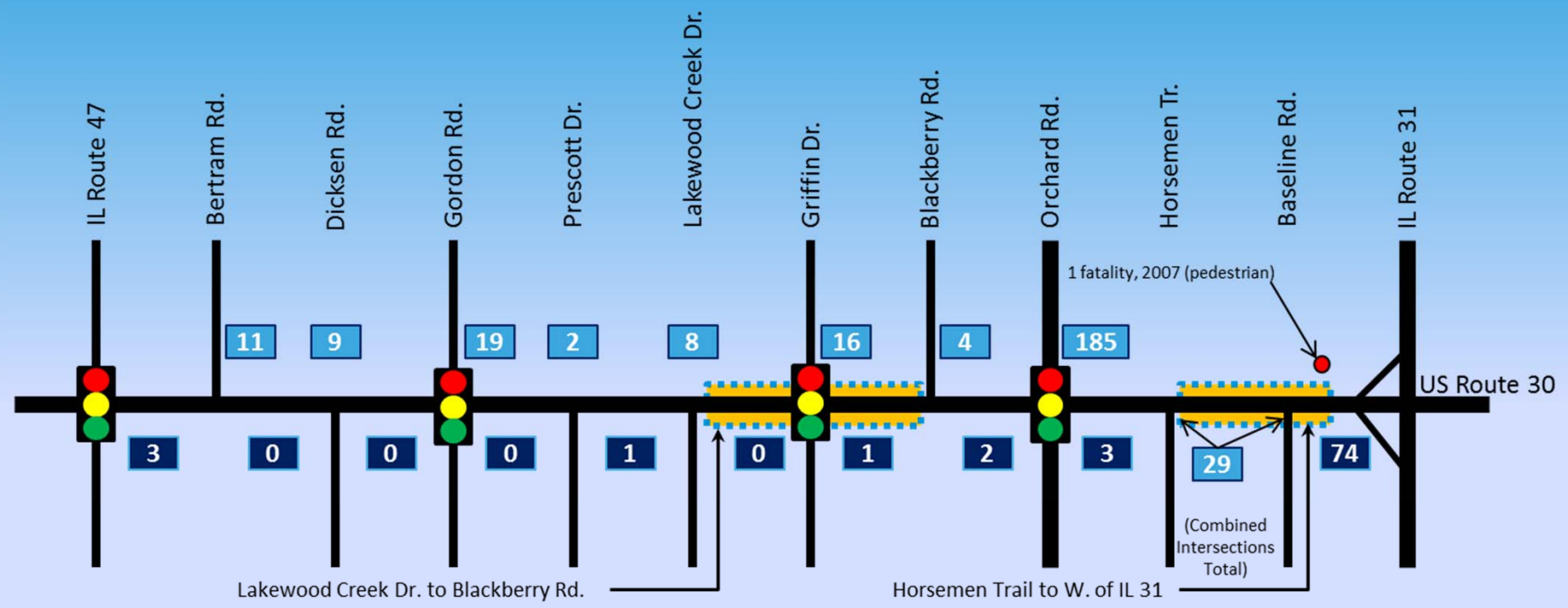
Public Hearing Spring / Summer 2014

★ - Community Advisory Group Meeting

Existing Conditions & Future Demands

Safety Review

Crash Locations



Five-Year Crash Totals (2007-2011)

00 At Intersections

00 Between Intersection

Existing Signalized Intersection

Illinois Top 5% Crash Locations

2009 Top 5% Location

Crash Types

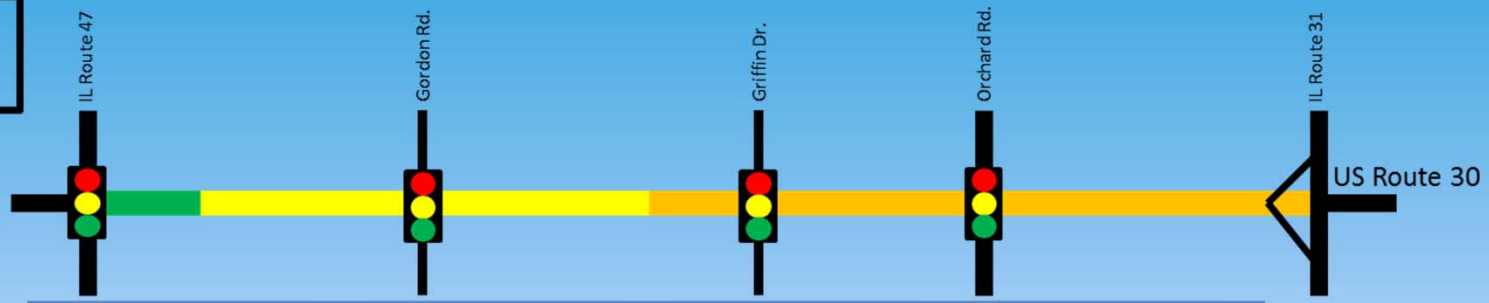
COLLISION TYPE	YEAR					TOTAL	% OF TOTAL CRASHES
	2007	2008	2009	2010	2011		
Rear End	46	52	28	28	36	190	51.8%
Turning	28	19	11	13	12	83	22.6%
Fixed Object	6	5	11	5	2	29	7.9%
Head-on	4	6	6	2	1	19	5.2%
Angle	4	5	0	2	3	14	3.8%
Sideswipe (Same Direction)	6	3	2	1	1	13	3.5%
All Other	2	9	5	2	1	19	5.2%
TOTAL	**96**	**99**	**63**	**53**	**56**	**367**	**100%**

CRASH SEVERITY	YEAR					TOTAL
	2007	2008	2009	2010	2011	
"A" Injury (Incapacitating)	3	5	2	9	5	24
"B" Injury (Non-incapacitating)	34	15	13	10	7	79
"C" Injury (Reported, not apparent)	20	10	16	22	17	85
"K" (Fatality)	1	0	0	0	0	1
TOTAL	**58**	**30**	**31**	**41**	**29**	**189**

Capacity Review

Level of Service

Existing Conditions



LEVEL OF SERVICE A
No congestion
Traffic flows smoothly, speeds can be maintained, vehicles can maneuver freely, and vehicles can enter the roadway with little problem.

LEVEL OF SERVICE B
No congestion
Traffic flows smoothly. Speeds can generally be maintained, and the ability of a vehicle to maneuver is only slightly restricted.

LEVEL OF SERVICE C
Minimal congestion
Congestion begins to emerge as traffic flow and speeds are slightly restricted. Drivers must be more vigilant when changing lanes and passing.

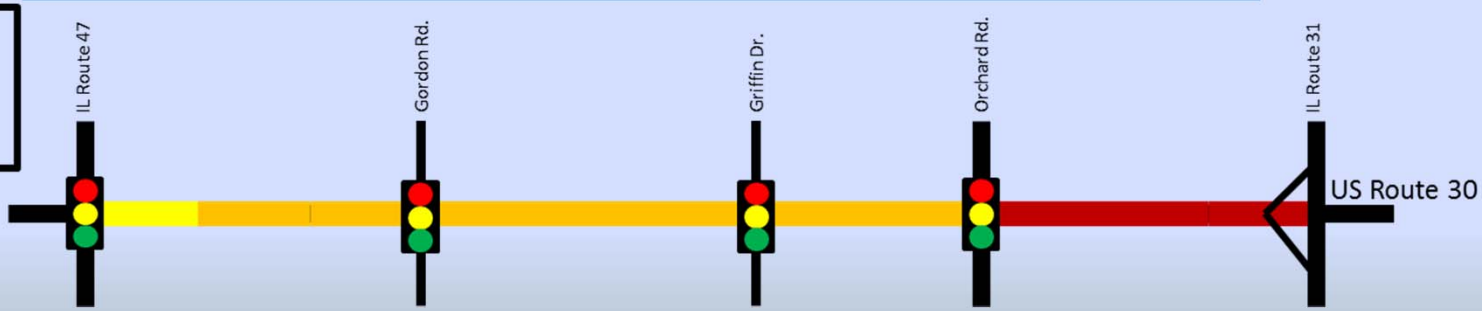
LEVEL OF SERVICE D
Moderate congestion
Speeds and distances between vehicles are reduced, constricting traffic flow. Maneuvering within traffic stream is noticeably limited.

LEVEL OF SERVICE E
Severe Congestion
The roadway is reaching capacity. Vehicle speeds and spacing are severely restricted.

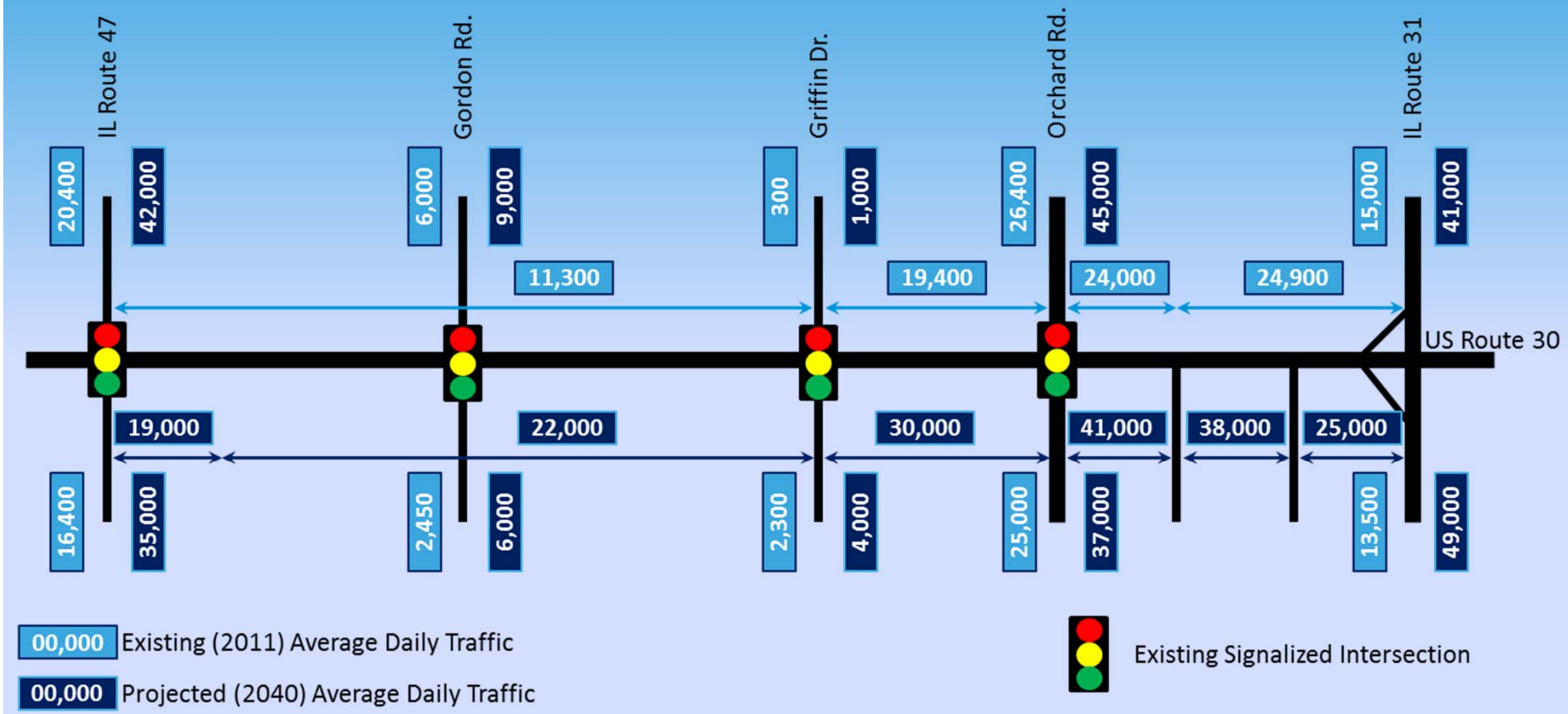
LEVEL OF SERVICE F
Extreme Congestion
Stop and go, bumper-to-bumper traffic. Passing on two-lane roadway is virtually impossible and opportunities for entering the roadway from a side road are extremely limited.

Existing Signalized Intersection

2040 No-Build Condition



Average Daily Traffic Volumes



Mobility & Operations Review

IL 47 to IL 31

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Mobility & Operations

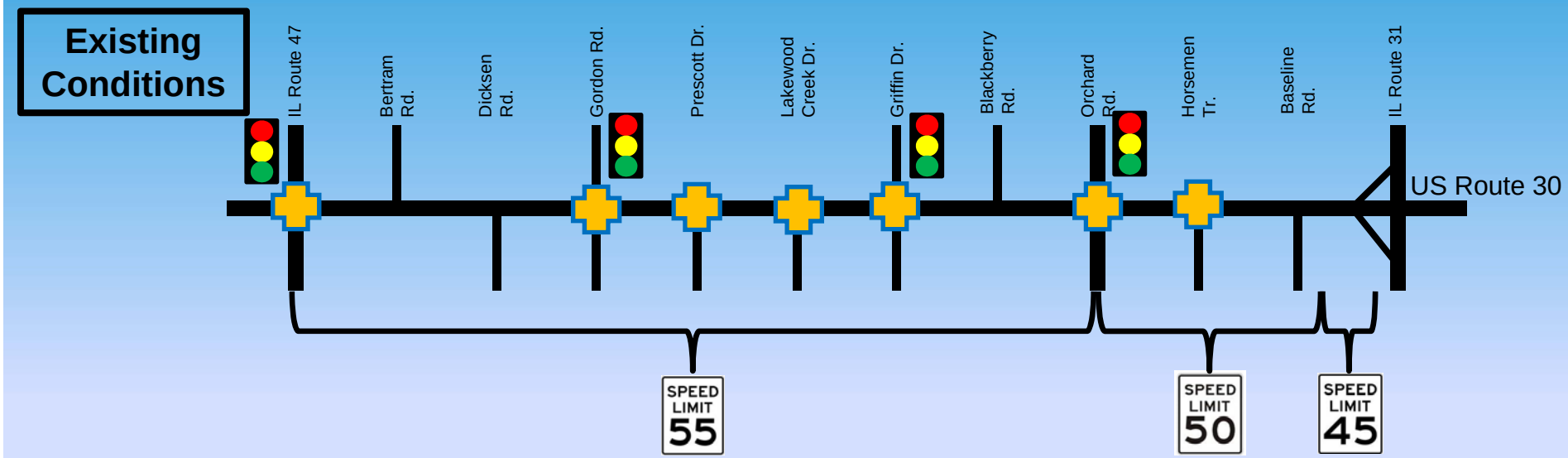
- **Mobility -**

  Ability of traffic to move through an intersection or on a roadway section

- **Operations -**

  Efficiency of moving traffic through intersections or on a roadway section

Factors Affecting Mobility & Operations



Mobility

- Intersection with Turn Lanes
- Cross roads and entrances
- Access to roadway network
- Pedestrians and Bicycle Paths

Operations

- Speed Limit
- Traffic Signals
- # of Lanes
- Terrain such as Curves and Hills (Horizontal and Vertical Alignment)

Potential Ideas for Improvement

- **Safety**
  - **Rear-End Collisions**
  - **Turning Collisions**

- **Add through and turn lanes**
- **Provide median refuge**
- **Improve sight distance**

- **Capacity**
  - **Long Delays at Intersections (Level of Service)**

- **Add through and turn lanes**
- **Optimize and coordinate traffic signals**

- **Mobility & Operations**
  - **Lack of pedestrian & bicycle facilities**

- **Provide continuous sidewalks**
- **Provide shared use path per Complete Streets Law/IDOT policy**

Pedestrians & Bicycles

- **Existing lack of pedestrian and bicycle facilities**
  - **No sidewalks along corridor**
  - **No shared use paths or bicycle lanes**
- **IDOT Policy – Complete Streets Law:**
  - **Pedestrian and bicycle facilities shall be given full consideration**
  - **Based upon ADT and posted speed limit, an off-road shared-use path is appropriate**

Economic Development Review

IL 47 to IL 31

Illinois Department of Transportation

Accommodate Future Growth

- **Various land uses along U.S. 30: residential, public/institutional, commercial, and agricultural**
- **CMAP's 2040 forecasts show continued increases in population and employment**
- **Increased population and employment will increase travel demand through the US 30 corridor**

Forecast Growth in Population and Employment

CMAP Population and Employment Forecasts

	Population			Employment		
	2010 [a]	2040 Forecast[b]	% Change	2010 [a]	2040 Forecast[b]	% Change
Kane County	508,482	802,231	57.8	190,527	368,493	93.4
Kendall County	114,528	207,716	81.4	22,013	73,190	232.5
Village of Montgomery	25,144	43,731	73.9	6,159	16,533	168.4
City of Yorkville	22,942	38,561	68.1	5,093	17,791	249.3

Source: CMAP *2040 Forecast of Population, Households, and Employment* (developed as part of the *GO TO 2040 Comprehensive Regional Plan)*.

[a] 2010 Census households and 2010 (2012 update) Census employment, summarized to Subzone, by CMAP.

[b] Per CMAP, aggregation of forecast data to the municipal and township level was created through a GIS-based exercise, where whole subzones were assigned to municipalities and townships based on the proximity of each subzone's central point (centroid) to current municipality/township boundaries. Therefore, these summaries do not exactly account for population residing within existing municipal boundaries; they are approximate. Refer to the PDF maps available on the CMAP website for depictions of "assigned" municipal and township boundaries used to generate these summaries. These subzone aggregations were created for tabulation purposes only, and are not intended to suggest or predict the future extent of any community.

Accommodate Future Growth

- **Comprehensive Plans show additional commercial and residential development throughout the corridor**
- **In the west end of the corridor, much of the land currently in agricultural use is planned for retail/commercial development**
- **US 30 improvements should accommodate the potential changes in travel characteristics associated with planned future development**

Environmental Impacts

Environmental Impacts

All IDOT projects follow the National Environmental Policy Act (NEPA) process, which requires the following:

- ***Avoid*** **sensitive resources if reasonably possible**
- ***Minimize*** **impacts if resources cannot be avoided**
- ***Mitigate*** **resources if necessary**

Potentially Affected Resources

- **Right-of-Way**
- **Privately owned property: land**
- **Privately owned property: buildings**
- **Wetlands**
- **Publicly owned properties [designated as Section 4(f)]**

Summary of Meeting #1

IL 47 to IL 31

Illinois Department of Transportation

Meeting #1

- **Project Overview**
- **IDOT's Context Sensitive Solutions Process**
- **PIM Overview & Feedback**
- **CAG Ground Rules**
- **Transportation Needs Identified to Date**
- **Group Exercise – Identifying & Prioritizing Issues**

General Understanding of Agreement

A general understanding of agreement has been reached when the stakeholders agree that their input has been heard and duly considered and the process as a whole was fair.

Key Ground Rules and Decision-Making Authority

- **The project must progress at a reasonable pace, based on the project schedule. Final decisions will not be revisited.**
- **CAG members should commit to attend all CAG meetings.**
- **Final project decisions will be made by IDOT and FHWA. Input is sought from CAG members prior to major milestone decisions.**

Group Exercise Results

- The horizontal curve west of IL 31
- Eliminate the characteristics that encourage drag racing
- Lack of shoulders
- Drop-off at shoulders cause crashes
- Travel speeds are too high
- Insufficient lighting between IL 31 and Orchard Road
- Only one entrance to the subdivisions at Gordon Road
- Turning delays at Orchard Road
- Access to Stuart Sports Complex
- Safe and efficient solution to meet needs of drivers and pedestrians
- Project corridor that considers the needs and safety of all users
- Solution that reduces flooding and the impact on the environment
- Solution that addresses the current and future travel demands in the corridor
- Turn lanes/access issues
- Blackberry subdivision only access point at US 30
- Minor drainage concerns – various locations
- US 30 creates dam – flooding ¼ mile east of Orchard Road.
- Congestions – particularly at US 30 and Orchard Road
- Pedestrians crossing US 30 near Wal-Mart
- Pedestrian access and need for crossing in general
- A pedestrian crossing (underpass/overpass) is being considered across US 30 east of ComEd
- Protection of Village utilities
- The NE corner of Orchard Road is being developed and will be requesting a right-in, right-out along US 30.
- Railroad and drainage restrictions near IL 31
- Consider near term improvements to address more immediate concerns (shoulders)
- Traffic projections seem high

Project Problem Statement

Regional growth, increased travel demand and development along U.S. Route 30 (US 30) in Kane and Kendall Counties have resulted in safety and capacity issues between IL 31 and IL 47. The insufficient capacity creates congestion, negatively impacts intersection operations along this segment, and leads to safety issues for motorists and pedestrians. The lack of pedestrian access along the existing corridor limits access to adjacent land uses, including recreational facilities and schools. The solutions need to address the growing demands of all users along and crossing the US 30 corridor, while minimizing impacts to the surrounding environment.

Purpose & Need

Purpose & Need

The purpose of the project is to improve vehicular, pedestrian, and bicycle safety along the corridor, improve roadway and intersection capacity and efficiency, and meet existing and future growth development in the area.

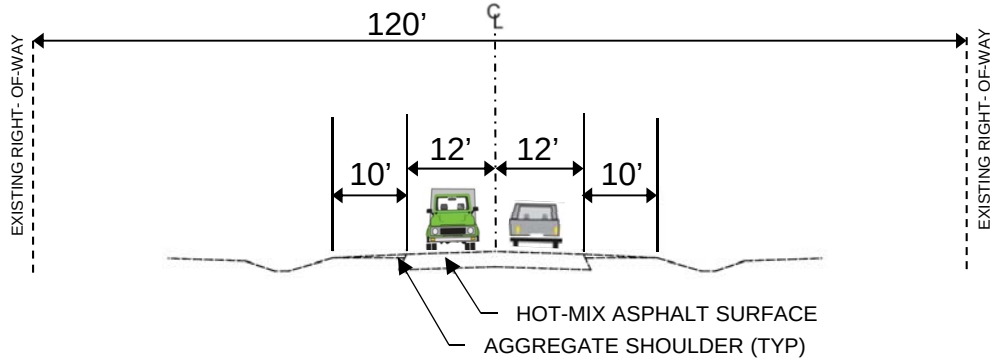
Purpose & Need

The proposed action is needed to:

- **Improve safety**
- **Improve capacity**
- **Accommodate community growth**

Engineering 101

Existing Cross Section



EXISTING U.S. RTE. 30
TYPICAL SECTION

- **One 12-foot travel lane in each direction**
- **10 foot aggregate shoulders**
- **Ditches**
- **120 foot right of way**
- **No sidewalks or bike paths**
- **Turn lanes in certain locations**

Access Control

- **Access Control : the condition where the public authority regulates the right of abutting owners to have access to and from a public highway through the purchase of access rights or right-of-way, driveway controls, turning restrictions, or geometric design (e.g., grade separations)**

Access Control

US 30 is a Controlled Access Highway

(access rights acquired in 1950's)

Existing Driveways grandfathered in. Proposed changes in use or new access locations require coordination with IDOT thru the permit process.

Cross Section Elements
Number of Lanes

Two Lanes (55 mph max)

- Rural (shown) or urban section
- Rule of thumb: Accommodates up to 14,000 to 18,000 vehicles per day

Four Lanes (55 mph max)

- Rural section with depressed median, shoulders, ditches
- Rule of thumb: Accommodates up to 28,000 to 36,000 vehicles per day

Cross Section Elements
Median Treatment

No Median (55 mph max)

- Double yellow centerline

Depressed Median (55 mph max)

- Typically 50’ to 74’ wide
- Width can vary due to anticipated future expansion and future median treatment

Cross Section Elements
Edge Treatment

Paved Shoulder with Ditches (55 mph max)

- **Typically 10’ wide**
- **Accommodates stopped vehicles for emergency use.**

Cross Section Elements
Turn Lanes

Left Turn Lanes

- Two Lane Roads
  - Volume guidelines - Charts
- Multi-Lane Roads with Median
  - Provide at all major intersections.

Dual Left Turn Lanes

- Volume Guidelines
  - Left turn volume > 300 vph

Right Turn Lanes

- Volume Guidelines
  - Unsignalized
    - Charts
  - Signalized
    - Right turning volume > 150 vph and > 300 vph per lane on mainline
- Uniformity
- Other Factors
  - Crash Experience
  - Sight distance restrictions

Cross Section Elements
Turn Lanes

Left Tu

- **Two La**
  - **Vol**
- **Multi-L**
  - **Prov**

0 vph and > 300

Dual Le

- **Volum**
  - **Left**

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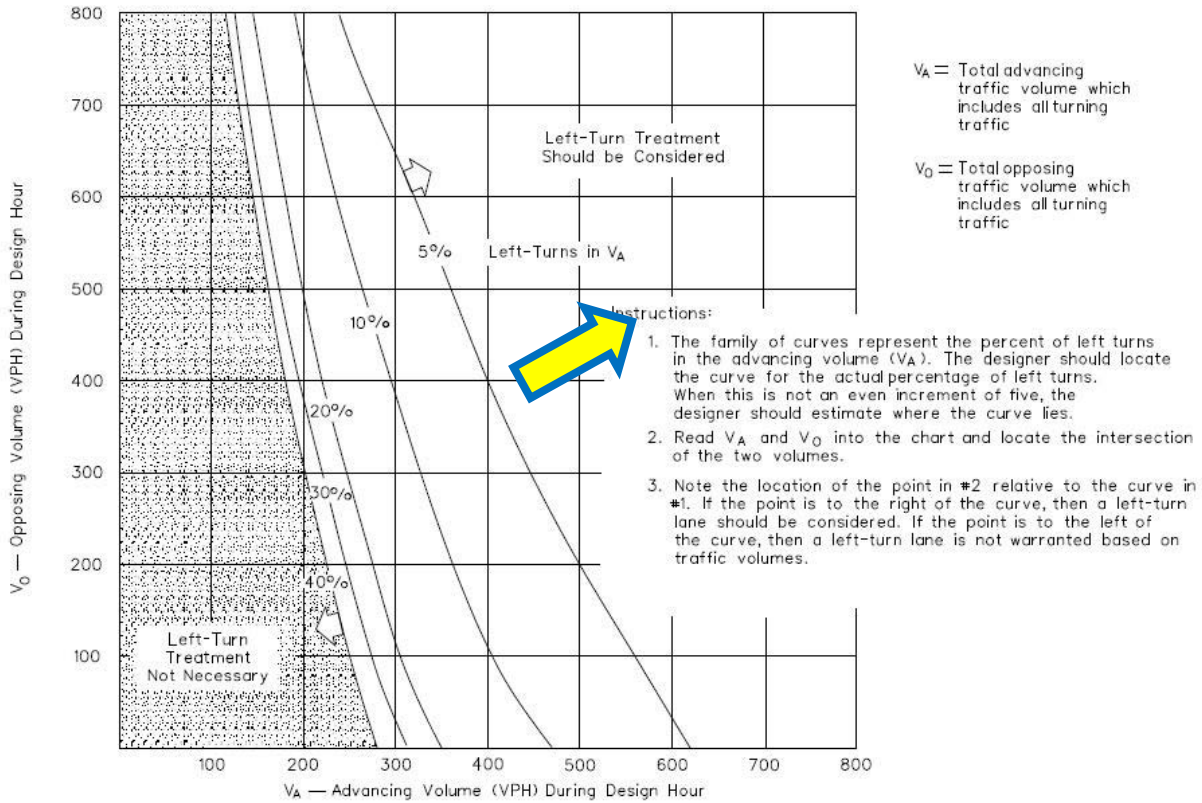


VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (55 mph Design Speed)

Figure 36-3.D

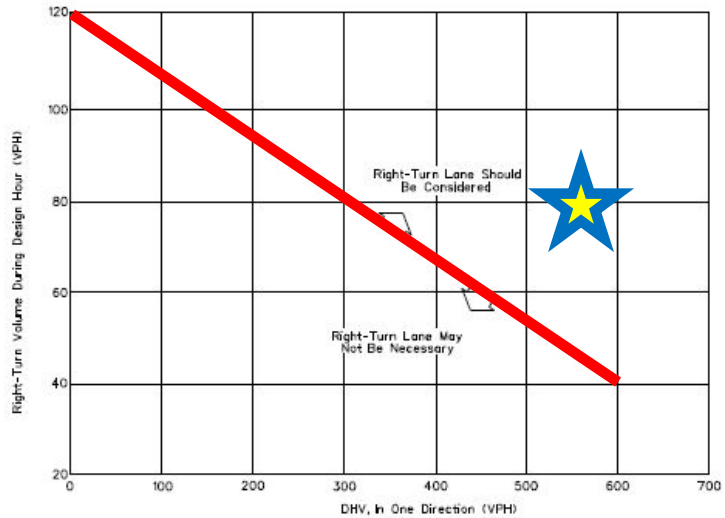
Cross Section Elements
Lanes

Le

-
-

D

-



Note: For highways with a design speed below 50 mph (80 km/h), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

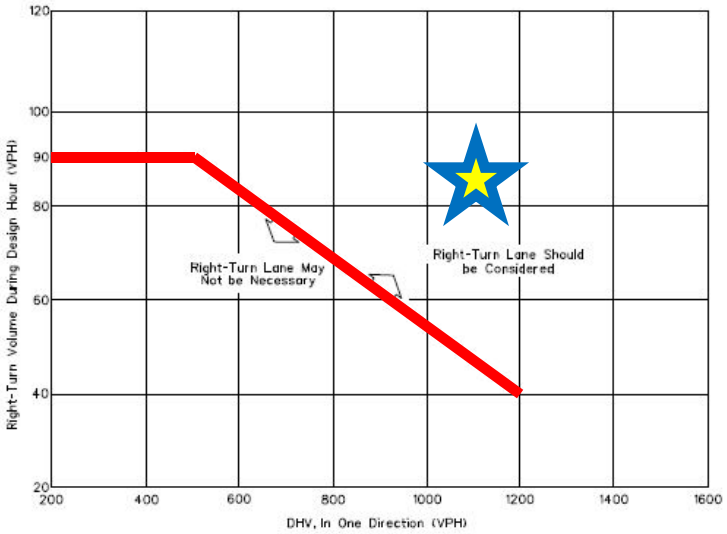
Given:	Design Speed	=	35 mph (60 km/h)
	DHV (in one direction)	=	250 vph
	Right Turns	=	100 vph

Problem: Determine if a right-turn lane is warranted.

Solution: To read the vertical axis, use 100 - 20 = 80 vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A

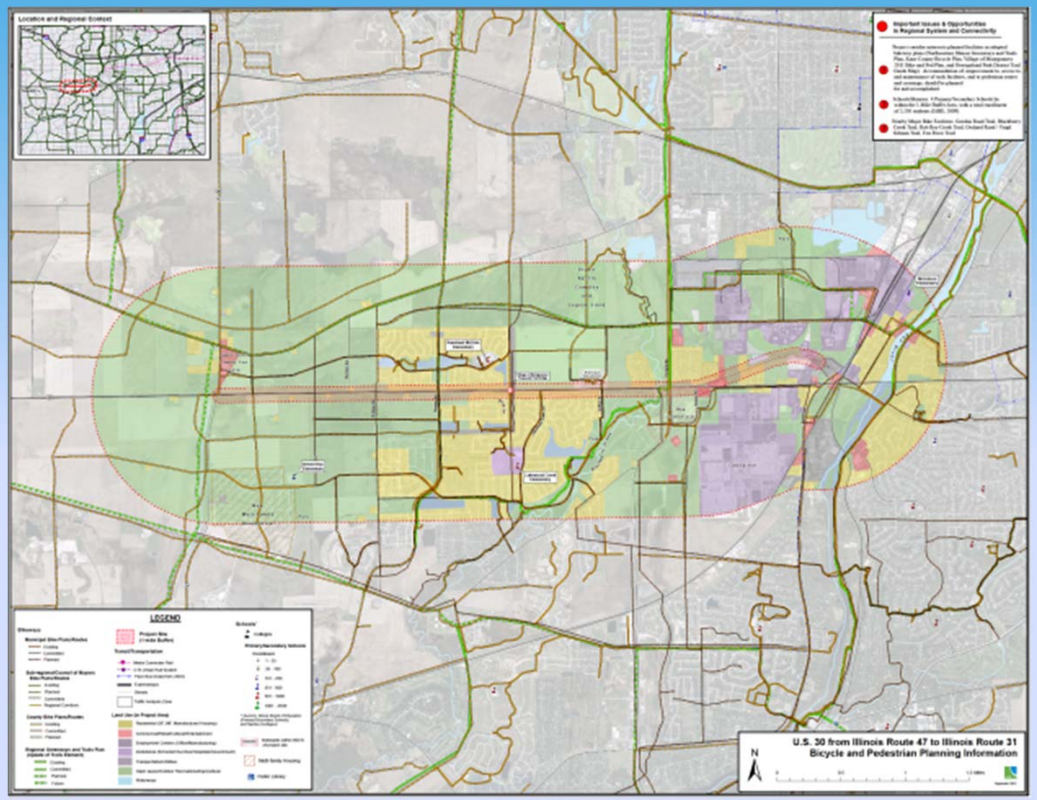


Note: For speeds less than 50 mph (80 km/h), see Section 36-3.01(a).

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION ON FOUR-LANE HIGHWAYS (Design Speed of 50 mph (80 km/h) or Greater)

Figure 36-3.B

Pedestrian / Bicycle Accommodations



- **Complete Streets Law**
- **Cost participation by other agencies**
- **Location based on generators**
- **Best way to safely cross pedestrians and bikes is at intersections**
- **All tunnel or bridge costs (implementation and maintenance) by local agencies**

Pedestrian / Bicycle Accommodations

- **Types of Bicycle Accommodations**
  - **Rural**
    - **Paved Shoulders**
    - **Side Path (off-road bidirectional shared-use path)**
  - **Urban**
    - **Bicycle Lane (includes curb & gutter)**
    - **Side Path (off-road bidirectional shared-use path)**
- **Bicycle Facility Selection:**
  - **Roadway characteristic (rural or urban)**
  - **Posted speed limit**
  - **Design year ADT**

Roadway Characteristics	Bicycle Accommodation Required			
	Paved Shoulders (inclusive of rumble strip)	Outside Curb-lane Width	Bicycle Lane (includes gutter pan)	Side Path Bidirectional
Rural Roadways < 30 mph Posted				
Design Year ADT under 2000	None			
Design Year ADT 2000 – 8000	4 ft (1.2 m)			optional
Design Year ADT > 8000	4 ft (1.2 m)			optional
Rural Roadways 30 – 35 mph Posted				
Design Year ADT under 2000	4 ft (1.2 m)			optional
Design Year ADT 2000 – 8000	4 ft (1.2 m)			optional
Design Year ADT > 8000	6 ft (1.8 m)			optional
Rural Roadways 36 – 44 mph Posted				
Design Year ADT under 2000	6 ft (1.8 m)			optional
Design Year ADT 2000 – 8000	6 ft (1.8 m)			optional
Design Year ADT > 8000	6 ft (1.8 m)			optional
Rural Roadways > 44 mph Posted				
Design Year ADT under 2000	6 ft (1.8 m)			optional
Design Year ADT 2000 – 8000	8 ft (2.4 m)			optional
Design Year ADT >8000				10–12 ft (3.0 m – 3.6 m)
Urban Roadways < 30 mph Posted				
Design Year ADT under 2000		None		optional
Design Year ADT 2000 – 8000		13 ft – 14 ft (4.0 m – 4.3 m)		optional
Design Year ADT > 8000			5 ft (1.5 m)	optional
Design Year ADT > 15,000			optional 6 ft (1.8 m)	10–12 ft (3.0 m – 3.6 m)
Urban Roadways 30 - 35 mph Posted				
Design Year ADT under 2000			5 ft (1.5 m)	optional
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BICYCLE FACILITY SELECTION

Figure 17-2.A

Policy Cross-Section

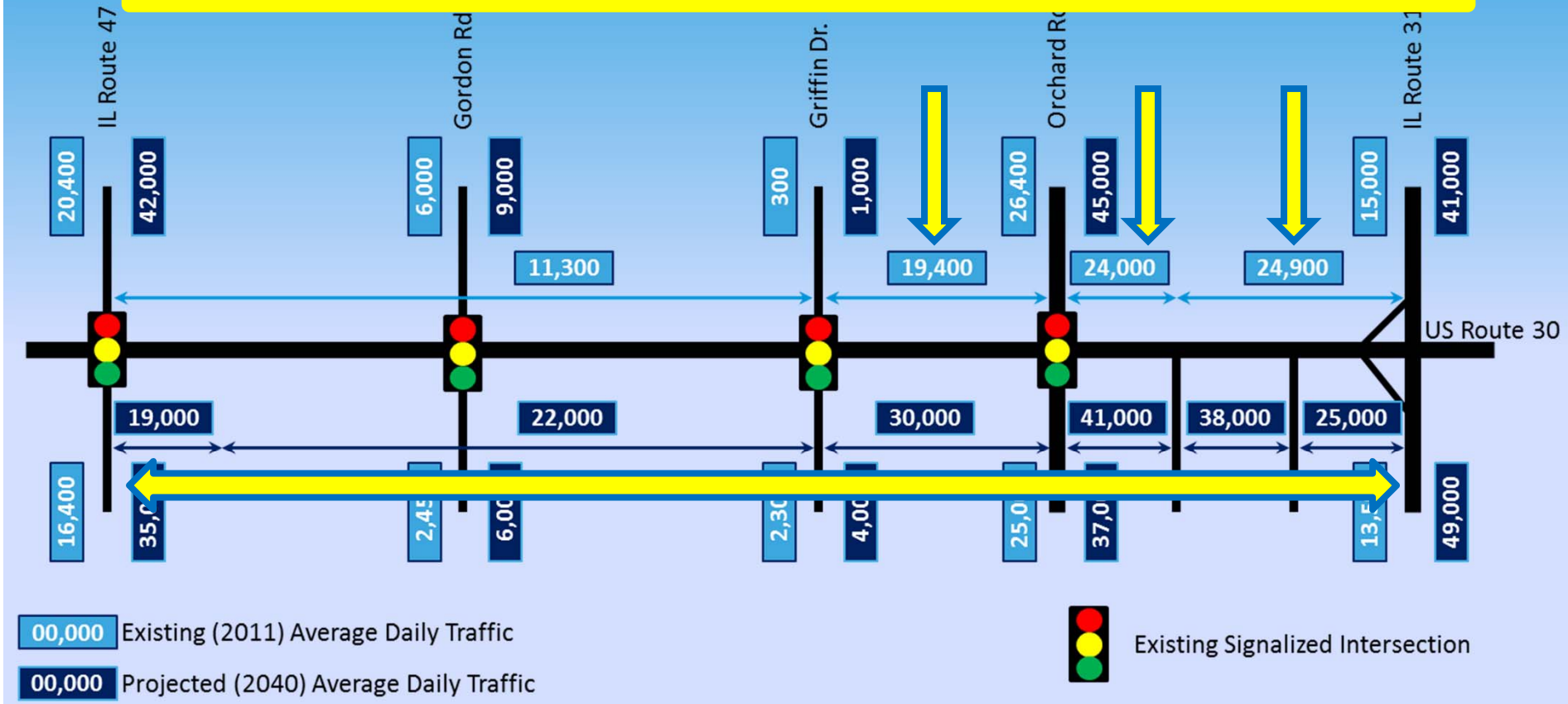
Policy Cross Section Basis

- **Roadway Classification: Rural Strategic Regional Arterial**
- **Design Speed: 60 MPH**

  (existing speed limit 55 mph west of Orchard / 50 mph east of Orchard)
- **Future traffic volumes**

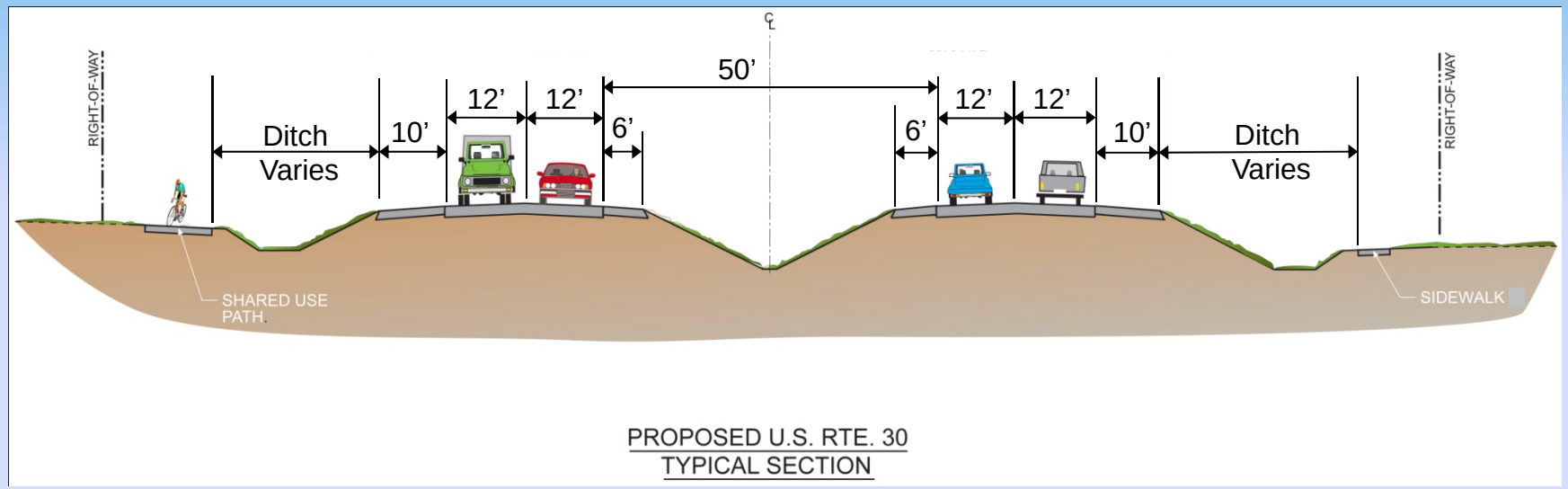
A s

Rule of Thumb: Two Lanes up to 14,000 to 18,000



Policy Cross Section

- **Rural cross-section**
- **Two lanes in each direction (Lane width = 12’)**
- **Separated by median (50’)**
- **Shoulders and ditches (10’ outside shoulders / 6’ inside)**



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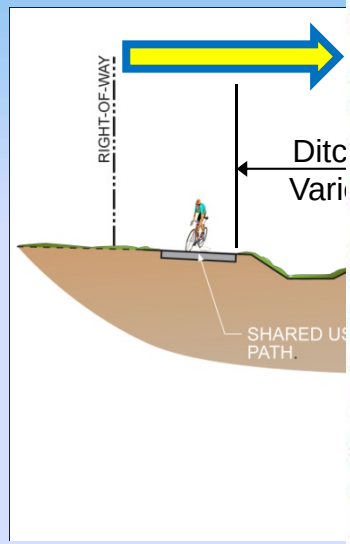
- Rural cross-s
- Two lanes in
- Separated b
- Shoulders ar



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Urban Roadways 30 - 35 mph Posted				
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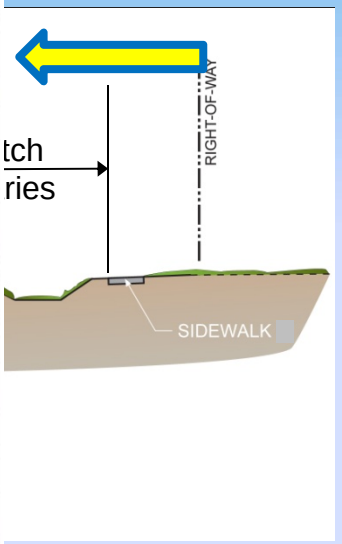
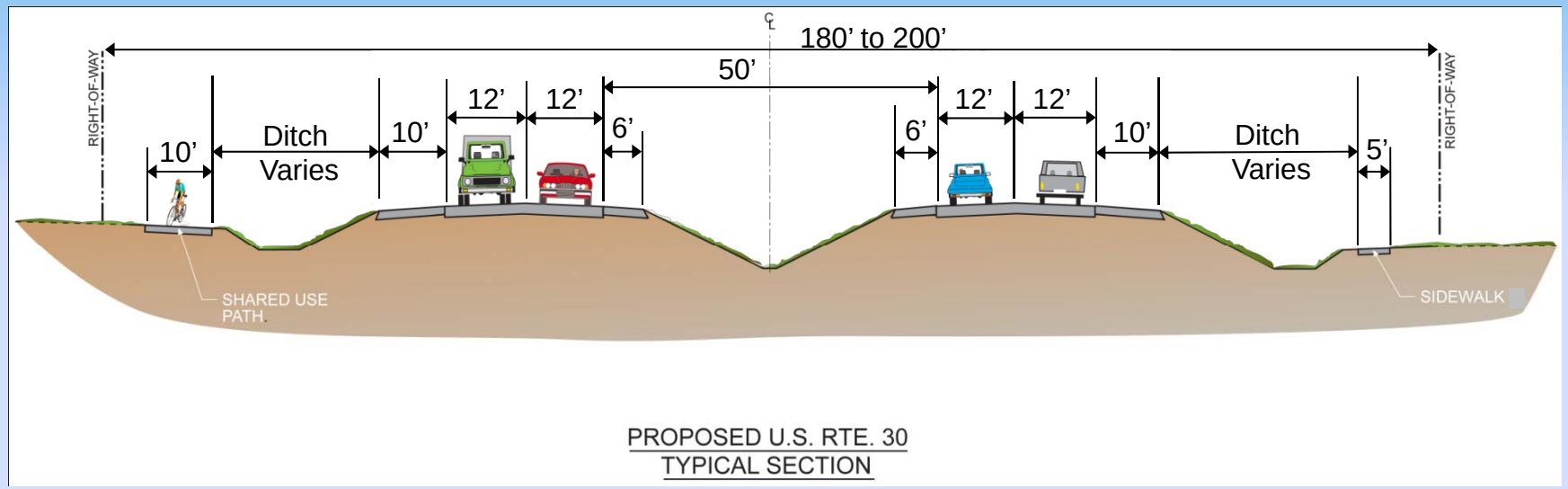


BICYCLE FACILITY SELECTION

Figure 17-2.A

Policy Cross Section

- **Rural cross-section**
- **Two lanes in each direction (Lane width = 12’)**
- **Separated by median (50’)**
- **Shoulders and ditches (10’ outside shoulders / 6’ inside)**



- **Separate shared use path (10’) and sidewalk (5’)**
- **Right of way (180’ to 200’)**

Attempt to balance equally on both sides of centerline.

Group Exercise

- **Apply Policy Alternative To Aerial Exhibit**
  - **Four groups / assigned areas**
  - **Overlay transparencies on aerial mosaic.**
  - **Note observations & concerns**
  - **Suggest potential ideas to reduce impacts**
  - **Report findings**

Next Steps

What's Next?

Outreach & Coordination	Technical Work
Public Meeting	Refine Alternatives
CAG Meeting #3	Evaluate Alternatives/ Define Impacts

Questions?