Transit and How to Plan It

Serving Suburbia with the STAR Line

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Transportation Research Board
Transportation Planning Applications Conference
Reno, Nevada
Monday, May 9, 2011

Learning Objectives

1. Unique Nature of Suburb-to-Suburb Transit
2. STAR Line Characteristics and Issues
3. Moving forward a project affecting multiple agencies toward common and disparate goals

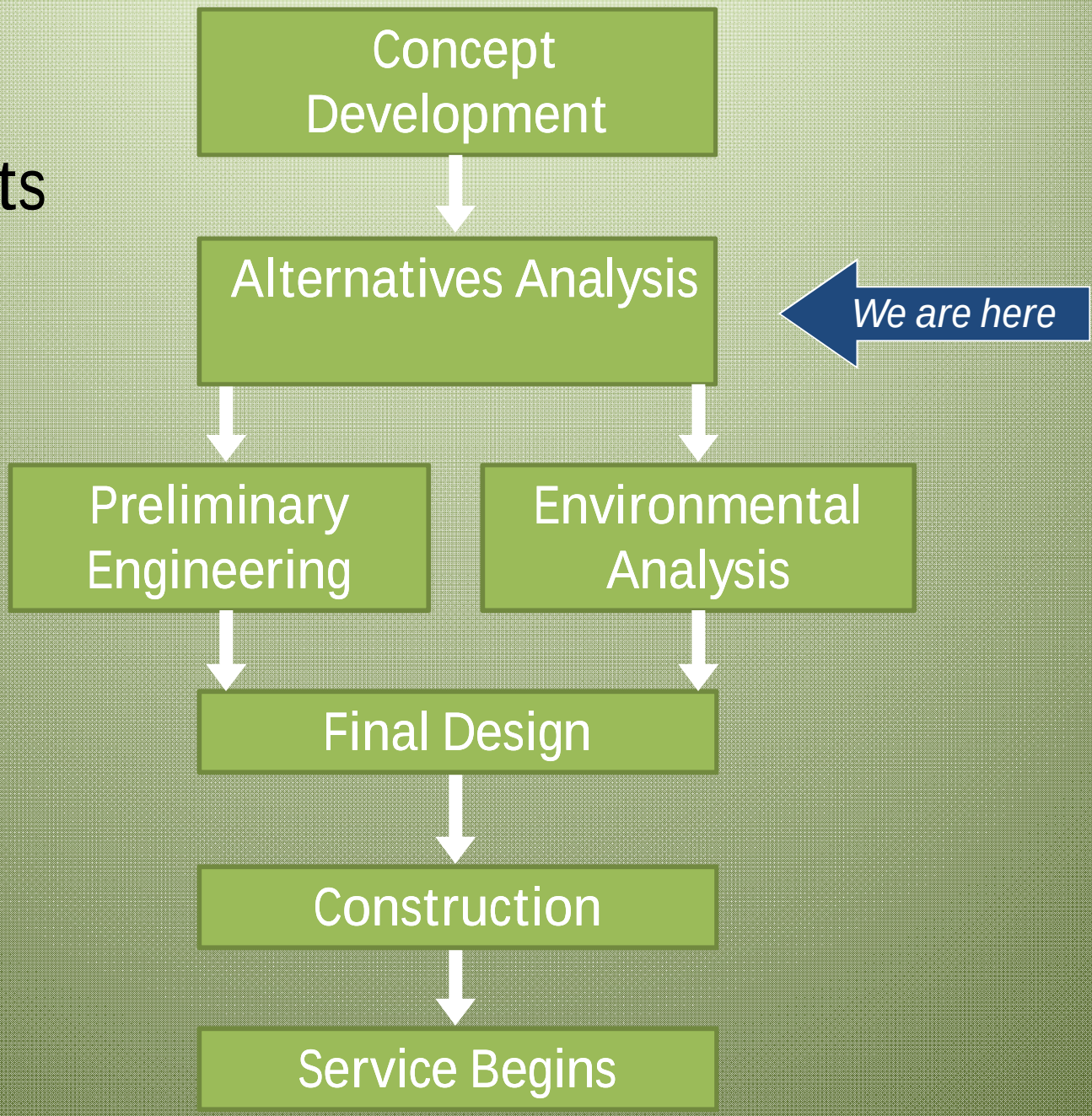
Overview

- Background
- STAR Line Alternatives Analysis
- Interagency Challenges
- Solutions
- Conclusions
- Q&A

Background

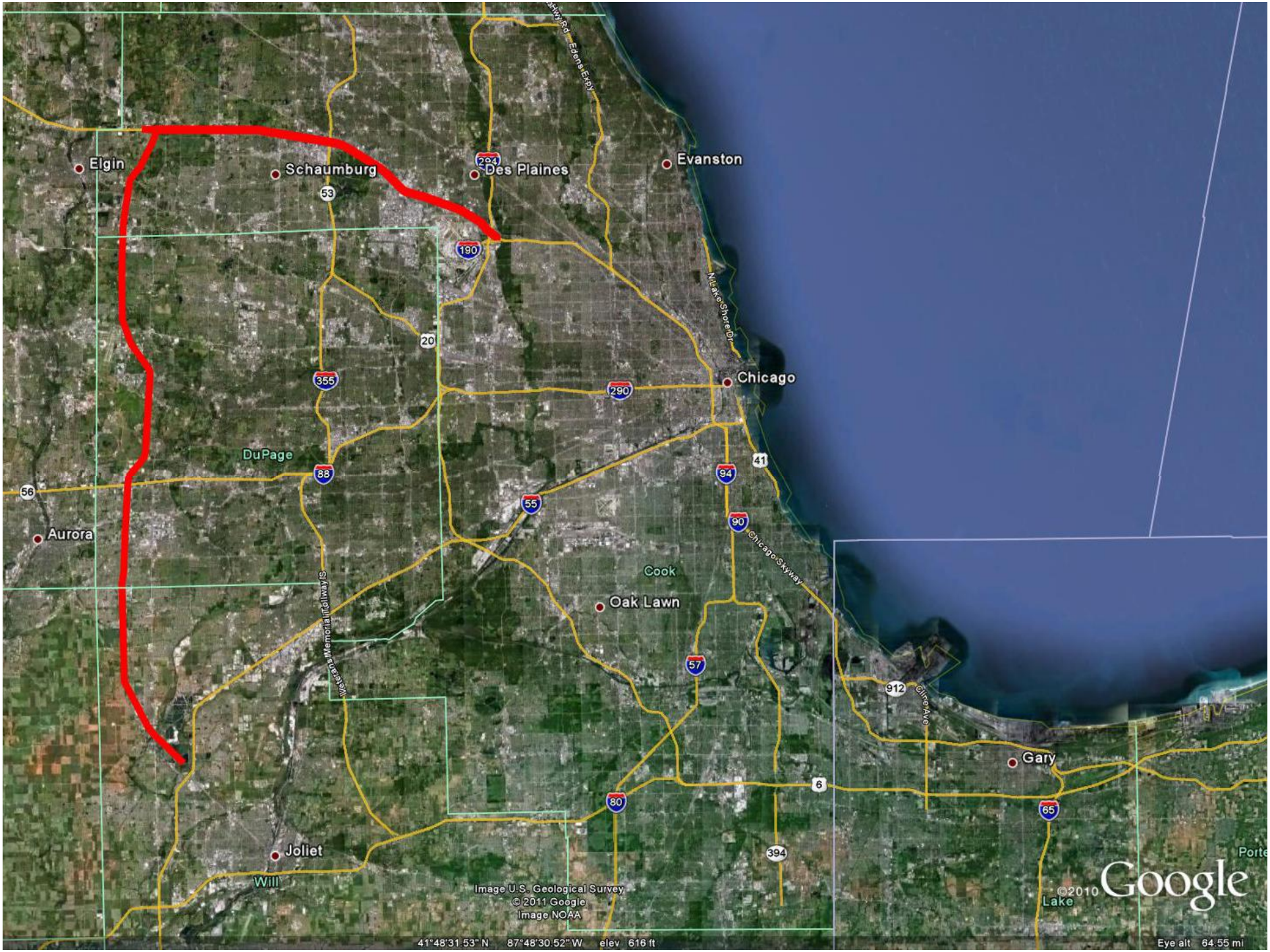
- Growth in Suburban job markets
  - AT&T
  - Motorola
  - Sears Holdings
- Increasing congestion on Northwest Tollway
  - More suburb-to-suburb trips
  - Growth in reverse Commute
- Need for Transit to serve new non-Loop markets
  - RTA Support
  - Business Support
- Land uses and built environment
- ROW and Tollway existing conditions

FTA New Starts Process



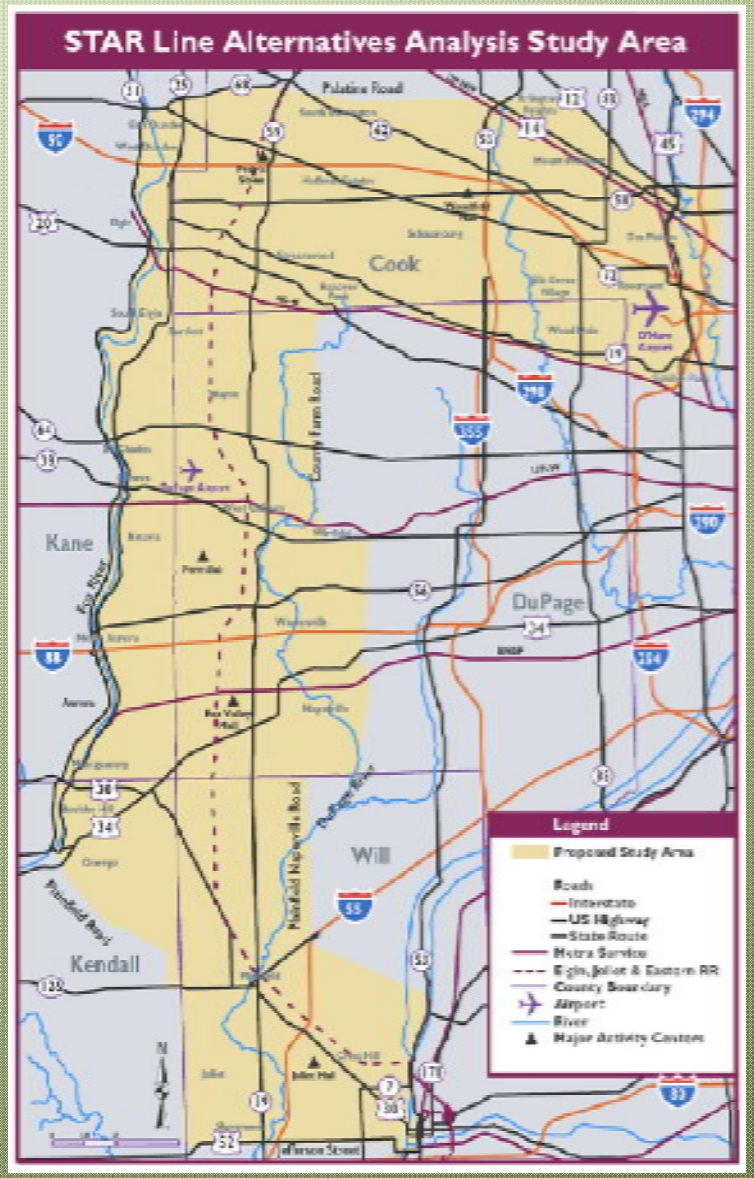
Circumferential ICS, OCS

- Inner Circumferential Service
- Outer Circumferential Service


Elgin
Schaumburg
Des Plaines
Evanston
Chicago
Aurora
DuPage
Cook
Oak Lawn
Joliet
Will
Gary
Lake
Edens Expy
Tri-State Tollway
Lake Shore Dr
Chicago Skyway
Calumet Ave
53
294
190
20
355
290
88
56
55
94
41
90
57
912
80
6
65
394
Image U.S. Geological Survey
© 2011 Google
Image NOAA
41°48'31.53" N 87°48'30.52" W elev 616 ft
©2010 Google
Eye alt 64.55 mi

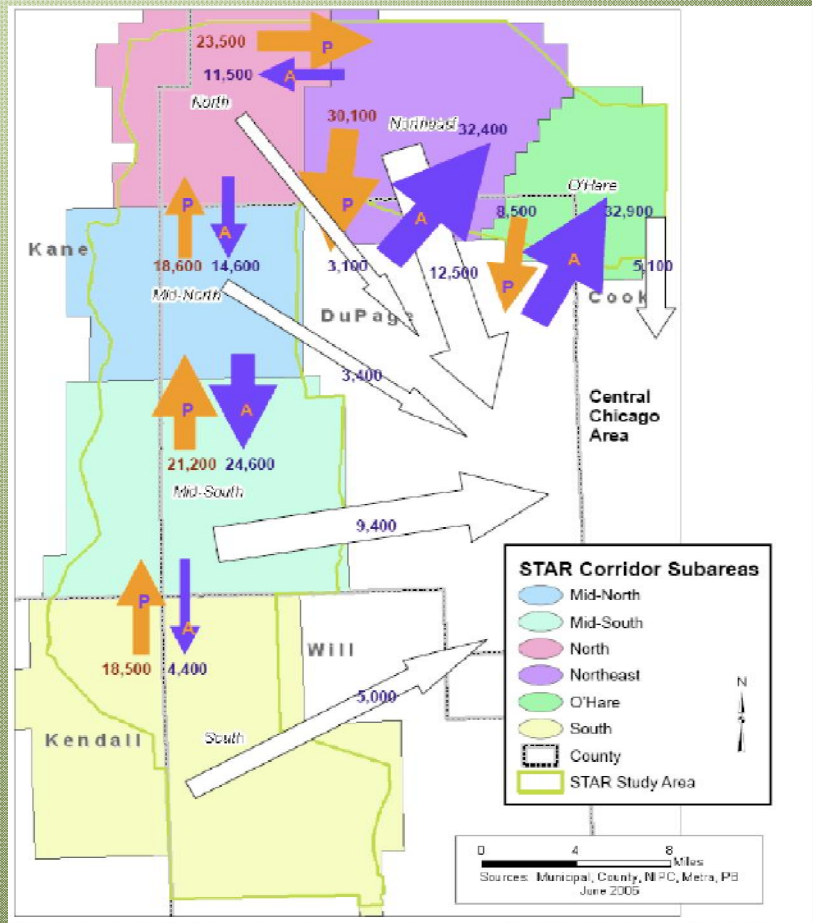
STAR Line

- Study Area Map



Purpose & Need

- Suburb-to-suburb travel large and growing
  - More trips within suburbs than trips to Chicago
  - Jobs and housing located in different places
- Poor transit in corridor



P denotes "productions" - indicates the number of trips that are produced (begin) in that subarea and destined to the balance of the STAR corridor
A denotes "attractions" - indicates the number of trips that are attracted (destined) to that subarea from the balance of the STAR corridor

Exhibit 8 Work Trips Produced by and Attracted to STAR Subareas

Goals & Objectives

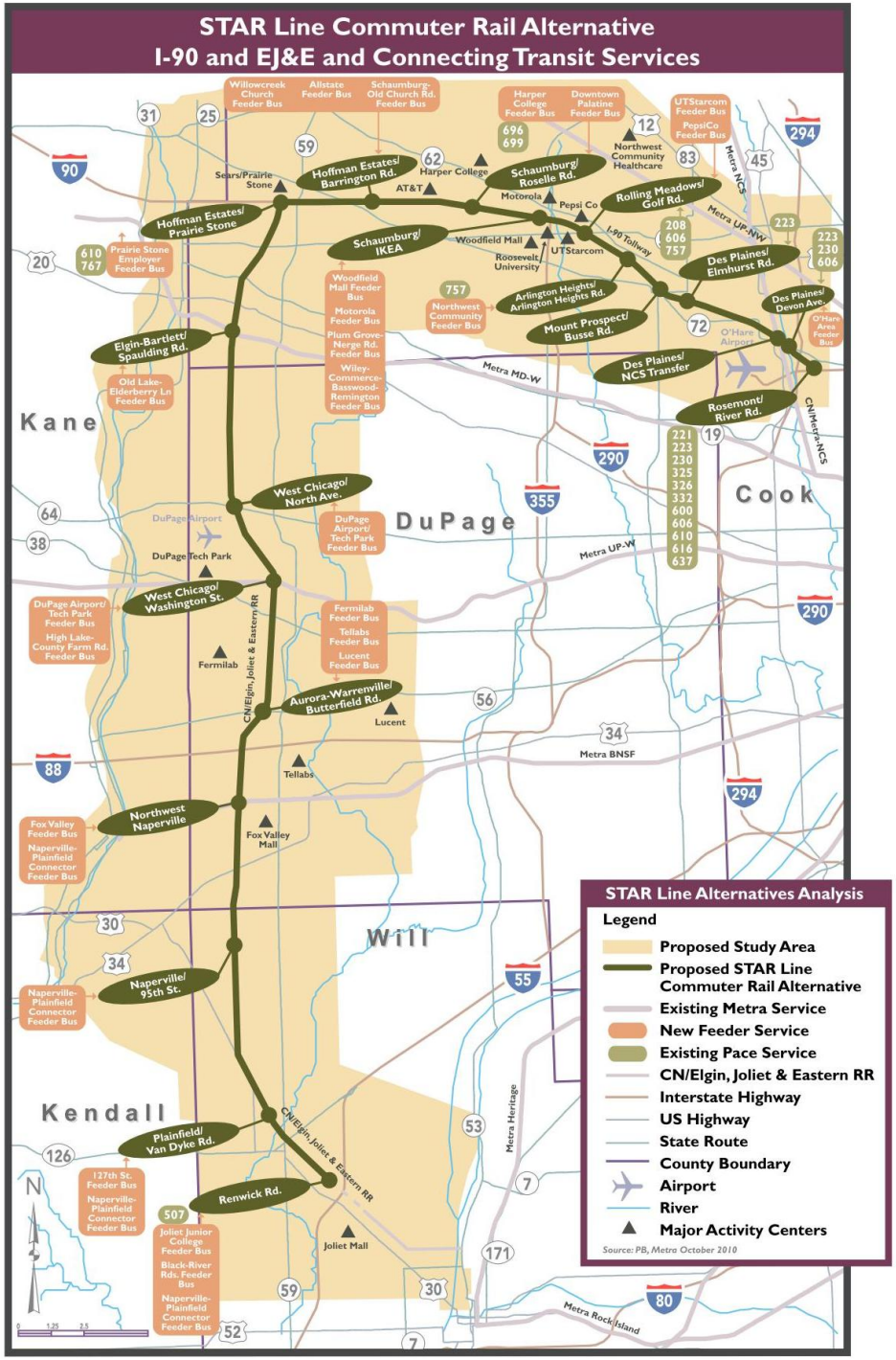
- Improve mobility
- Provide reliable, competitive travel choice
- Connect population and employment
- Support economic development
- Preserve and protect the environment

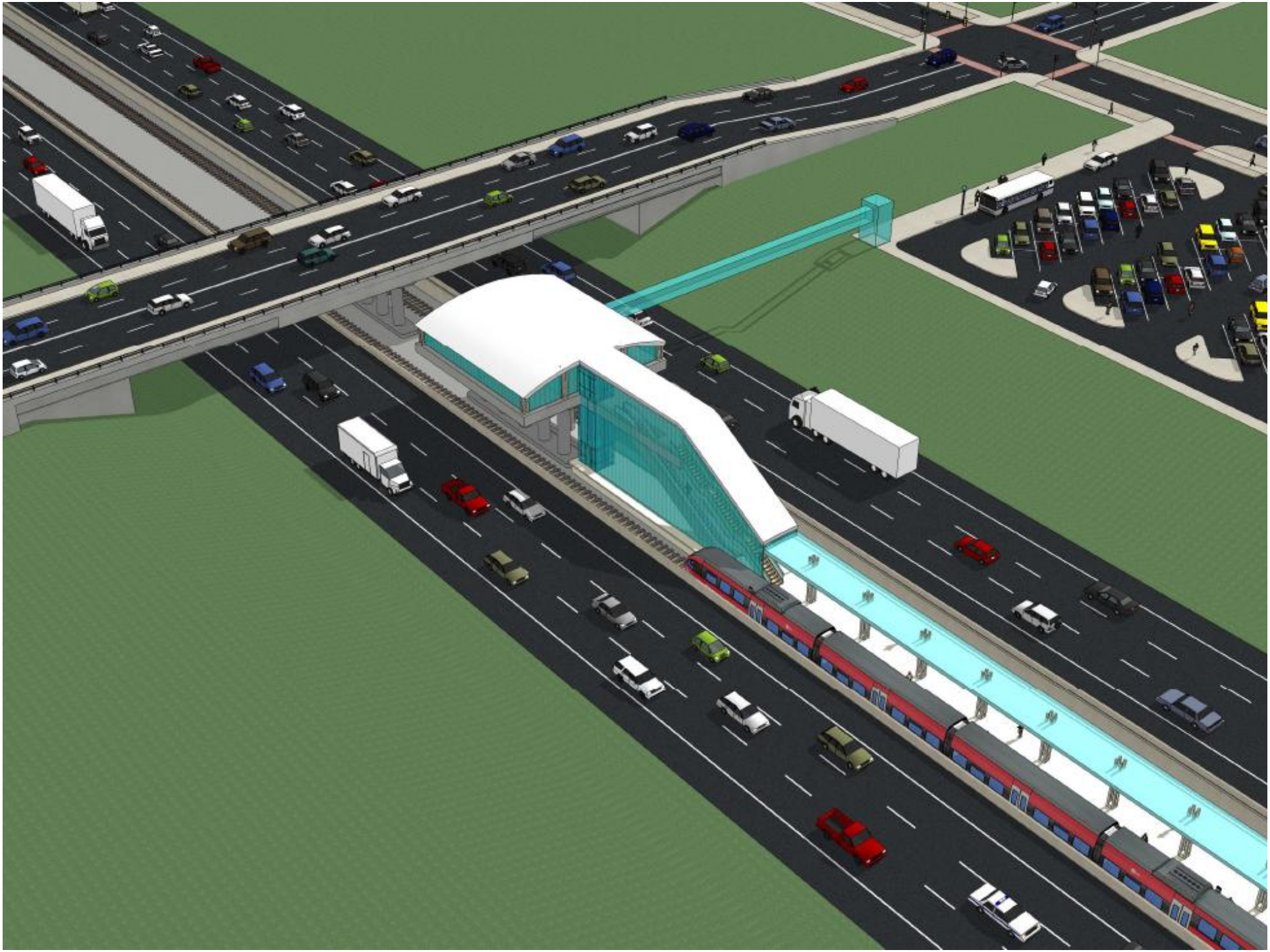
Stakeholders

- Regional Planning Agencies
- Local Governments
- Business Community
- State and Federate Resource Agencies
- Transportation Providers
- Regional Transportation Authority
- Potential Funding Partners
- General Public

Locally Preferred Alternative

- Commuter Rail (DMUs)
  - East-West in median of I-90 (Jane Addams Tollway)
  - North-South on CN / EJ&E Railway
- Countless technical issues have been addressed at current stage, though parameters and assumptions must be adaptable due to ever-changing environment


STAR Line Commuter Rail Alternative
I-90 and EJ&E and Connecting Transit Services
Willowcreek Church Feeder Bus
Allstate Feeder Bus
Schaumburg-Old Church Rd. Feeder Bus
Harper College Feeder Bus
Downtown Palatine Feeder Bus
696
699
UTStarcom Feeder Bus
PepsiCo Feeder Bus
Northwest Community Healthcare
Metra NCS
Metra UP-NW
Sears/Prairie Stone
Hoffman Estates/ Barrington Rd.
AT&T
Harper College
Schaumburg/ Roselle Rd.
Motorola
Pepsi Co
Rolling Meadows/ Golf Rd.
Hoffman Estates/ Prairie Stone
Schaumburg/ IKEA
Woodfield Mall
Roosevelt University
UTStarcom
I-90 Tollway
208
606
757
223
223
230
606
Des Plaines/ Elmhurst Rd.
610
767
Prairie Stone Employer Feeder Bus
Woodfield Mall Feeder Bus
Motorola Feeder Bus
Plum Grove-Nerge Rd. Feeder Bus
Wiley-Commerce-Basswood-Remington Feeder Bus
757
Northwest Community Feeder Bus
Arlington Heights/ Arlington Heights Rd.
Des Plaines/ Devon Ave.
Mount Prospect/ Busse Rd.
O'Hare Airport
O'Hare Area Feeder Bus
Elgin-Bartlett/ Spaulding Rd.
Old Lake-Elderberry Ln Feeder Bus
Metra MD-W
Des Plaines/ NCS Transfer
Rosemont/ River Rd.
CN/Metra-NCS
Kane
DuPage
Cook
221
223
230
325
326
332
600
606
610
616
637
West Chicago/ North Ave.
DuPage Airport
DuPage Airport/ Tech Park Feeder Bus
DuPage Tech Park
Metra UP-W
West Chicago/ Washington St.
DuPage Airport/ Tech Park Feeder Bus
High Lake-County Farm Rd. Feeder Bus
Fermilab
CN/Elgin, Joliet & Eastern RR
Fermilab Feeder Bus
Tellabs Feeder Bus
Lucent Feeder Bus
Aurora-Warrenville/ Butterfield Rd.
Lucent
Metra BNSF
Tellabs
Northwest Naperville
Fox Valley Feeder Bus
Naperville-Plainfield Connector Feeder Bus
Fox Valley Mall
Will
Naperville/ 95th St.
Naperville-Plainfield Connector Feeder Bus
Kendall
Plainfield/ Van Dyke Rd.
CN/Elgin, Joliet & Eastern RR
Metra Heritage
127th St. Feeder Bus
Naperville-Plainfield Connector Feeder Bus
Renwick Rd.
507
Joliet Junior College Feeder Bus
Black-River Rds. Feeder Bus
Naperville-Plainfield Connector Feeder Bus
Joliet Mall
Metra Rock Island
N
STAR Line Alternatives Analysis
Legend
Proposed Study Area
Proposed STAR Line Commuter Rail Alternative
Existing Metra Service
New Feeder Service
Existing Pace Service
CN/Elgin, Joliet & Eastern RR
Interstate Highway
US Highway
State Route
County Boundary
Airport
River
Major Activity Centers
Source: PB, Metra October 2010




BUS ONLY
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Interagency Coordination

- Agencies
  - Metra
  - Illinois Tollway
  - IDOT
  - O'Hare Int'l Airport
  - CTA
  - Pace
  - RTA
- Issues
  - Timelines
  - Funding flows
  - Immediate needs
  - Environmental issues
  - Regulatory issues
  - Political issues

Pavement Issue

Improving Jane Addams Memorial Tollway (I-90)

The Tollway has developed nine potential approaches for improving I-90. This document provides a detailed description of the options and outlines the benefits, impacts and costs of each.

Current Conditions

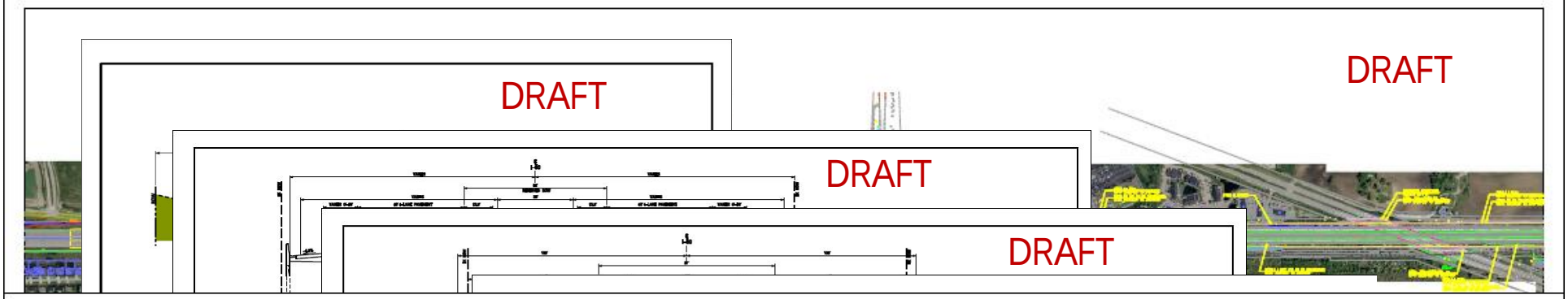
These photos reflect the current pavement conditions on I-90 between I-39 and the Kennedy Expressway.

Photos were taken October 23, 2009.

Illinois Tollway

February 25, 2010

Cover photo taken on October 23, 2009 on I-90 near IL Route 53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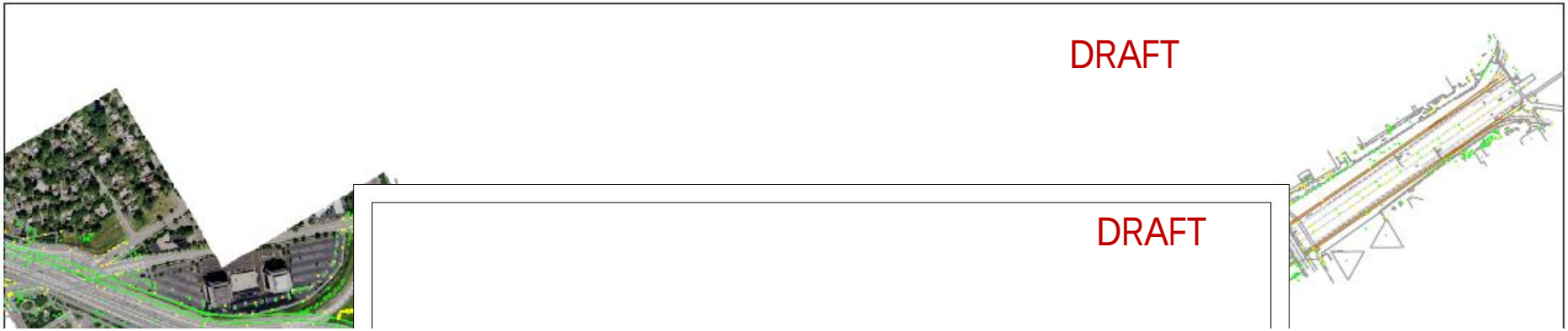
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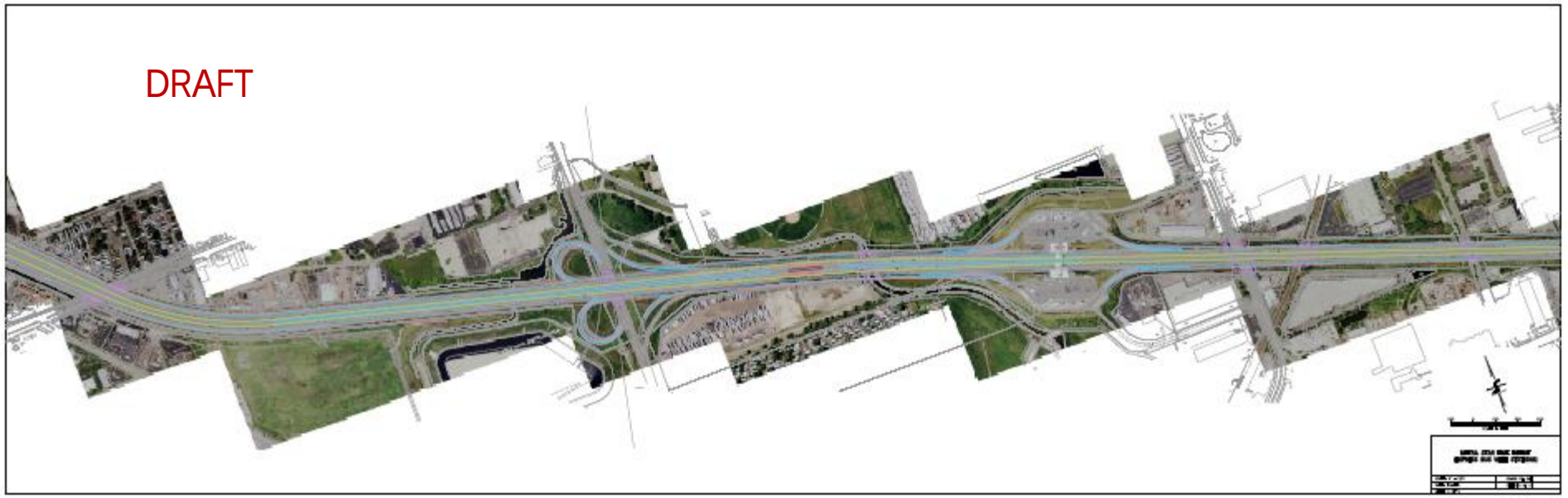
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Cost Estimates (DRAFT)

Metra STAR Line Alternatives Analysis

FTA Category	Item No.	Description	Unit	Unit Cost 2006 $	Units	Base Year Cost w/o Contingency 2006 $	Base Year Allocated Contingency 2006 $ %	Base Year Allocated Contingency 2006 $ Cost	4% Escalation per year from 2006 $ to 2009 $ W/ Contingency	Base Year Total 2009 $	4% Escalation per year from 2006 $ to 2009 $ w/o Contingency W/O Contingency	Line Item Contingency 2009 $	Base Year Total 2009 $ W/O Contingency	Base Year Total 2009 $	COMPARE:	8/07/08 Revised STAR Estimates Based on Tollway Master Plan Review: Base Year Total 2007 $	4/1/08 STAR Line Estimate Prior to Tollway Master Plan: Base Year Total 2007 $	Difference Between 4/1/08 and 8/7/09 Cost Estimates: Difference by cost category (grouped) 2007 $
MMA HIGHWAY-RELATED IMPROVEMENTS																		
10.00	Running Way Elements						30%											
10.01	B10.01.03b	Reconstruction Overhead Bridges (above Tollway resp.)	LS		1	$9,564,952		$2,869,486	$1,552,614	$13,987,051	$1,194,318	$3,227,781	$10,759,270	$13,987,051	Mainline & Overhead Bridge Mods/Reconstruction/Extend	$13,987,051		
10.01	B10.01.03c	Bridge Reconstruction - Route 59 (100% Metra)	SF	$ 250	64,788	$16,197,000		$4,859,100	$2,629,149	$23,685,249	$2,022,422	$5,465,827	$18,219,422	$23,685,249		$23,685,249		
10.01	B10.01.03d	Bridge Reconstruction - Barrington Road (100% Metra)	SF	$ 250	27,630	$6,907,500		$2,072,250	$1,121,248	$10,100,998	$862,498	$2,330,999	$7,769,998	$10,100,998		$10,100,998		
10.01	B10.01.03e	Bridge Reconstruction - Route 53 (100% Metra)	SF	$ 300	97,750	$29,325,000		$8,797,500	$4,760,128	$42,882,628	$3,661,637	$9,895,991	$32,986,637	$42,882,628		$42,882,628		
10.01	B10.01.05	Bridge Widening - Arlington Heights Road (100% Metra resp.)	SF	$ 250	36170	$9,042,500		$2,712,750	$1,467,808	$13,223,058	$1,129,083	$3,051,475	$10,171,583	$13,223,058		$13,223,058	$40,560,000	
10.01	B10.02.05a	Ramp Adjustments	EA	$ 300,000	21	$6,300,000		$1,890,000	$1,022,636	$9,212,636	$786,643	$2,125,993	$7,086,643	$9,212,636	Interchange Mods / C-D Roads / Ramp Adjustments & Mods	$9,212,636	$250,120,000	-$156,099,930
10.01	B10.02.05b	Ramp Reconstruction	EA	$ 1,200,000	16	$19,200,000		$5,760,000	$3,116,605	$28,076,605	$2,397,389	$6,479,217	$21,597,389	$28,076,605		$28,076,605		
10.01	B10.02.05c	Crossroad Profile Revisions (above Tollway resp.)	LN MI	$ 2,500,000	5.5	$13,750,000		$4,125,000	$2,231,944	$20,106,944	$1,716,880	$4,640,064	$15,466,880	$20,106,944		$20,106,944		
10.01	B10.08.15	Interstate Profile Revisions at IL 53	LN MI	$ 2,900,000	2.3	$6,670,000		$2,001,000	$1,082,696	$9,753,696	$832,843	$2,250,853	$7,502,843	$9,753,696		$9,753,696		
10.01	*B10.03.09*	Collector-Distributor Road Reconstruction	LN MI	$ 4,200,000	3.5	$14,700,000		$4,410,000	$2,386,151	$21,496,151	$1,835,501	$4,960,650	$16,535,501	$21,496,151		$21,496,151		
10.01	B10.02.05c	Frontage/Access Road Reconstruction	LN MI	$ 1,750,000	2.1	$3,675,000		$1,102,500	$596,538	$5,374,038	$458,875	$1,240,163	$4,133,875	$5,374,038		$5,374,038		
10.08	10.08.15	Raise Tollway lanes & shoulders for Prairie Stone underpass - Metra resp	LN MI	$ 2,900,000	6	$17,400,000		$5,220,000	$2,824,424	$25,444,424	$2,172,634	$5,871,790	$19,572,634	$25,444,424	Raise Tollway Lanes	$25,444,424	$23,524,800	$1,919,624
															Running Way Subtotal	*$298,261,764*	*$362,876,800*	*-$64,615,036*
40.00	Sitework & Special Conditions						30%											
40.02	40.02.01	Other Utility relocation / protection	% of 10 - 30	3%		$6,244,347		$1,873,304	$1,013,602	$9,131,253	$779,694	$2,107,212	$7,024,041	$9,131,253	Utilities	$9,131,253	$12,103,104	$129,178,664
40.02	40.02.02a	Major, specialized utilities - ComEd high-tension tower relocations	EA	$ 2,500,000	19	$47,500,000		$14,250,000	$7,710,352	$69,460,352	$5,931,040	$16,029,312	$53,431,040	$69,460,352		$69,460,352	$54,080,000	
40.02	40.02.02b	Major, specialized utilities - NiCor relocation - 22"	LF	$ 2,500	9,400	$23,500,000		$7,050,000	$3,814,595	$34,364,595	$2,934,304	$7,930,291	$26,434,304	$34,364,595		$34,364,595		
40.02	40.02.02c	Major, specialized utilities - NiCor relocation - 36"	LF	$ 3,000	4,700	$14,100,000		$4,230,000	$2,288,757	$20,618,757	$1,760,582	$4,758,175	$15,860,582	$20,618,757		$20,618,757		
40.02	40.02.02d	Major, specialized utilities - JAWA/watermain relocation - 20"	LF	$ 400	11,225	$4,490,000		$1,347,000	$728,831	$6,565,831	$560,639	$1,515,192	$5,050,639	$6,565,831		$6,565,831		
40.02	40.02.02e	Major, specialized utilities - JAWA/watermain relocation - 30"	LF	$ 600	4,870	$2,922,000		$876,600	$474,308	$4,272,908	$364,853	$986,056	$3,286,853	$4,272,908		$4,272,908		
40.02	40.02.02f	Major, specialized utilities - JAWA/watermain relocation - 36"	LF	$ 720	13,600	$9,792,000		$2,937,600	$1,589,469	$14,319,069	$1,222,668	$3,304,400	$11,014,668	$14,319,069		$14,319,069		
40.02	40.02.02g	Major, specialized utilities - JAWA/watermain relocation - 48"	LF	$ 960	4,075	$3,912,000		$1,173,600	$635,008	$5,720,608	$488,468	$1,320,140	$4,400,468	$5,720,608		$5,720,608		
40.02	40.02.02h	Major, specialized utilities - JAWA/watermain relocation - 54"	LF	$ 1,080	12,125	$13,095,000		$3,928,500	$2,125,622	$19,149,122	$1,635,094	$4,419,028	$14,730,094	$19,149,122		$19,149,122		
40.02	40.02.02i	Major, specialized utilities - JAWA/watermain relocation - 60"	LF	$ 1,200	2,900	$3,480,000		$1,044,000	$564,885	$5,088,885	$434,527	$1,174,358	$3,914,527	$5,088,885		$5,088,885		
40.02	40.02.02j	Major, Specialized Utilities - fiber optic relocation	LF	$ 130	28,950	$3,763,500		$1,129,050	$610,903	$5,503,453	$469,926	$1,270,028	$4,233,426	$5,503,453		$5,503,453		
40.02	40.02.02k	Major, Specialized Utilities - sanitary sewer relocation - 10"	LF	$ 120	6,650	$798,000		$239,400	$129,534	$1,166,934	$99,641	$269,292	$897,641	$1,166,934		$1,166,934		
40.04	40.04.02	Wetland Mitigation	ACRES	$ 55,000	8.3	$456,500		$136,950	$74,101	$667,551	$57,000	$154,050	$513,500	$667,551	Environmental	$667,551	$20,171,840	-$4,285,535
40.04	40.04.01	Other Environ. Mitigation (haz waste, T&E species, etc)	% of 10 - 30	5%		$10,407,244		$3,122,173	$1,689,337	$15,218,755	$1,299,490	$3,512,020	$11,706,734	$15,218,755		$15,218,755		
40.05	B40.05.01	Retaining Walls New - Metra resp	SF	$ 63	422,922	$26,644,086		$7,993,226	$4,324,953	$38,962,265	$3,326,887	$8,991,292	$29,970,973	$38,962,265	Retaining Walls	$38,962,265	$40,560,000	$36,826,697
40.05	B40.05.02	Retaining Walls Additional Height - Metra resp	SF	$ 63	417,084	$26,276,292		$7,882,888	$4,265,252	$38,424,431	$3,280,963	$8,867,176	$29,557,255	$38,424,431		$38,424,431		
40.05	B40.05.03	Noise Abatement - Sound Walls New - Metra resp	SF	$ 35	61,494	$2,152,290		$645,687	$349,367	$3,147,344	$268,744	$726,310	$2,421,034	$3,147,344	Noise Abatement	$3,147,344		$5,851,252
40.05	B40.05.04	Noise Abatement - Sound Walls Additional Height - Metra resp	SF	$ 35	52,830	$1,849,050		$554,715	$300,144	$2,703,909	$230,880	$623,979	$2,079,930	$2,703,909		$2,703,909		
40.08	40.08.01a	Replace Tollway Oasis	EA	$ 36,982,249	1	$36,982,249		$11,094,675	$6,003,077	$54,080,000	$4,617,751	$12,480,000	$41,600,000	$54,080,000	Tollway Oasis	$54,080,000	$13,520,000	$71,765,977
40.08	40.08.01b	Tollway Facility - Mainline Plaza	EA	$ 10,000,000	1	$10,000,000		$3,000,000	$1,623,232	$14,623,232	$1,248,640	$3,374,592	$11,248,640	$14,623,232		$14,623,232		
40.08	40.08.01c	Tollway Facility - Ramp Plaza (WB Barrington, EB IL 53, WB Arlington Hts Rd)	EA	$ 3,500,000	3	$10,500,000		$3,150,000	$1,704,394	$15,354,394	$1,311,072	$3,543,322	$11,811,072	$15,354,394		$15,354,394		
40.08	40.08.01d	Tollway Facility - Out-Building	EA	$ 800,000	1	$800,000		$240,000	$129,859	$1,169,859	$99,891	$269,967	$899,891	$1,169,859		$1,169,859		
40.08	40.08.01e	Tollway Facility - Parking Lot	EA	$ 20,000	2	$40,000		$12,000	$6,493	$58,493	$4,995	$13,498	$44,995	$58,493		$58,493		
															Sitework & Spec. Cond.Subtotal	*$379,713,507*	*$140,434,944*	*$239,278,563*
"C"	Construction Sub-Total					$467,849,443		$140,354,833	$75,942,819	$678,033,763	$58,417,553	$151,766,767	$526,266,996	$678,033,763	Construction Total	$678,033,763	$503,311,744	$174,722,019
60.01	ROW, Land, Existing Improvements						30%											
60.01	60.01.01	Land Acquisition related to Tollway relocation	ACRES	$ 120,000	16.9	$2,028,000		$608,400	$329,191	$2,965,591	$253,224	$684,367	$2,281,224	$2,965,591		$2,741,856		$2,741,856
80.00	Professional Services (Soft Costs)																	
	80.01.01	Preliminary Engineering	% of C	3.5%		$16,374,731				$23,731,182	$2,044,614	$5,311,837	$18,419,345	$23,731,182		$23,731,182	$17,615,911	$6,115,271
	80.02.01	Final Design	% of C	7.0%		$32,749,461				$47,462,363	$4,089,229	$10,623,674	$36,838,690	$47,462,363		$47,462,363	$35,231,822	$12,230,541
	80.03.01	Project Management for Design and Const.	% of C	1.0%		$4,678,494				$6,780,338	$584,176	$1,517,668	$5,262,670	$6,780,338		$6,780,338	$5,033,117	$1,747,221
	80.04.01	Construction Admin. & Management	% of C	8.0%		$37,427,955				$54,242,701	$4,673,404	$12,141,341	$42,101,360	$54,242,701		$54,242,701	$40,264,940	$13,977,761
	80.05.01	Insurance / Legal / Permits / Review Fees	% of C	1.0%		$4,678,494				$6,780,338	$584,176	$1,517,668	$5,262,670	$6,780,338		$6,780,338	$5,033,117	$1,747,221
	80.06.01	Survey / Testing / Investigation / Inspection	% of C	0.2%		$935,699				$1,356,068	$116,835	$303,534	$1,052,534	$1,356,068		$1,356,068	$1,006,623	$349,445
	80.07.01	Agency Force Account Work	% of C	2.0%		$9,356,989				$13,560,675	$1,168,351	$3,035,335	$10,525,340	$13,560,675		$13,560,675	$10,066,235	$3,494,440
80.00	Non-Construction Sub-Total												$121,743,832		Non-Constr. Subtotal	$156,655,520	$114,251,765	$39,661,899
90.00	Project Reserve Contingency																	
	90.00.01	Project Reserve Contingency (% of 10-80)	%	5%		$28,803,963				$41,745,651		$41,745,651		$41,745,651		$41,745,651	$30,878,175	$10,867,476
	Base Year Total					$604,883,230				$876,658,670	$71,931,562	$228,647,841	$648,010,829	$876,658,670	Base Year Total	$876,434,934	$648,441,684	$227,993,250
																		$227,993,250

$250,000.00

$350,000.00

Draft 10/23/09 LF Cost for use in Master Cost Sheet

LF Cost for use in Master Cost Sheet

OST COMPAR ALL ALTS 20091026_Tollway 2 EEB costs

Solutions

- Utilize frequent and differing types of meetings
  - Big picture vs. detail oriented
  - Large vs. small group
  - Action oriented vs. working meetings
- Compromises will be required
  - Both sides must make compromises and adjust assumptions

Conclusions

- Serving suburb-to-suburb travel markets with rail offers unique challenges
- Only built-out or densely developed areas lend themselves to rail, which constrains construction and alignments
- Intensive interagency coordination is required to utilize existing transportation or utility corridors to avoid costly underground or elevated construction
- Compromises must be made for mutual benefit among various parties

Q & A

What we achieved today:

Serving Suburb-to-Suburb Markets	Understand nature of market to justify rail
STAR Line Specifics	Constrained ROW requires innovative solutions
Interagency Issues	Insight on flexibility and perseverance to yield mutually beneficial outcomes

Thank You

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