

Connect

Develop

# Year 1 in Review

Kansas City Streetcar Authority



Thrive

Sustain



APTA JUNE 2017

TOM GEREND, EXECUTIVE DIRECTOR- OVERVIEW  
KC STREETCAR AUTHORITY

JASON WALDRON, STREETCAR PROGRAM MANAGER- BLOCK RAIL  
KANSAS CITY, MISSOURI







# KC Streetcar - By the Numbers

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- 1 year in service
- 2,000,000 passenger trips (most by any streetcar start-up in year 1)
- \$2,000,000,000+ in adjacent development
- 10 surface parking lot conversions to new active uses
- 42% of KCMO residents have ridden, 60% in Council District 4
- 40% increase in downtown residential density under construction within 3 blocks
- 58% increase in TDD Sales Tax Revenues since start of construction
- 77% of riders are satisfied or very satisfied with service
- 229 New business licenses issued in TDD since the beginning of construction





# RIDERSHIP & USAGE

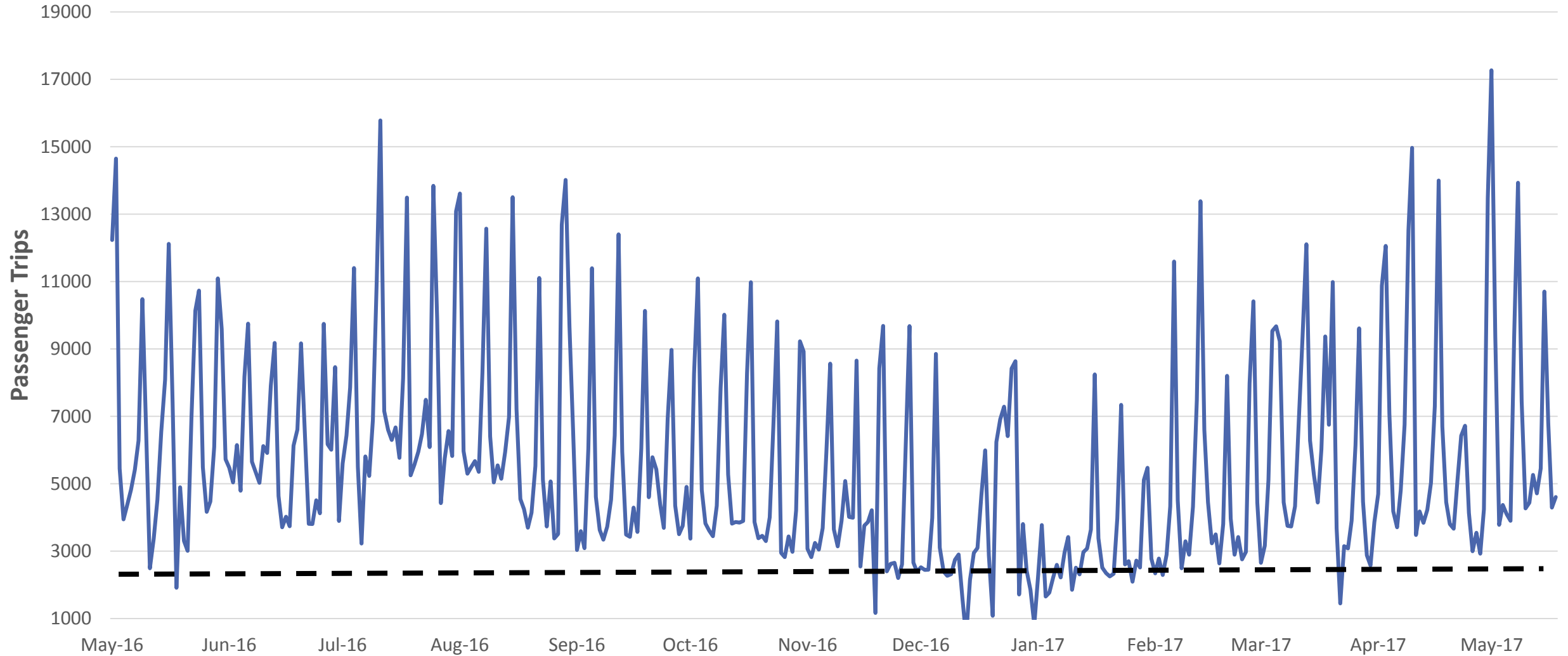


# RIDERSHIP FACTS

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- TOTAL RIDERSHIP AS OF 5.11.17: 2,137,196
- CUMULATIVE DAILY AVG 2016-2017: 5,580

# RIDERSHIP TRENDS



# TOP 10 RIDERSHIP DAYS SINCE MAY 6, 2016

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- 1. May 6, 2017: 17,267**
2. July 16, 2016: 15,780
3. April 15, 2017: 14,965
4. May 7, 2016: 14,648
5. Sept. 3, 2016: 14,013
6. April 22, 2017: 13,998
7. July 30, 2016: 13,841
8. August 6, 2016: 13,610
9. August 20, 2016: 13,504
10. July 23, 2016: 13,491

**Streetcar stop boarding numbers:  
May 6, 2016 – March 31, 2017**

<b>Streetcar Stop</b>	<b>Boarding %</b>	<b>Boarding Numbers</b>
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City Market	10.2%	184,071
River Market North	9.5%	170,356
River Market West	7.7%	138,271
North Loop NB	7%	12,434
North Loop SB	1.4%	24,345
Library NB	2.6%	47,240
Library SB	4.1%	73,629
Metro NB	5.5%	99,380
Metro SB	4.5%	80,309
Power & Light NB	5.1%	91,342
Power & Light SB	7.1%	128,501
Kauffman NB	4.2%	75,607
Kauffman SB	1.5%	27,005
Crossroads NB	6.8%	122,245
Crossroads SB	1.6%	29,270
Union Station	27.4%	492,722

<b>TOTAL</b>	<b>100%</b>	<b>1,797,727</b>
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BEFORE



DURING



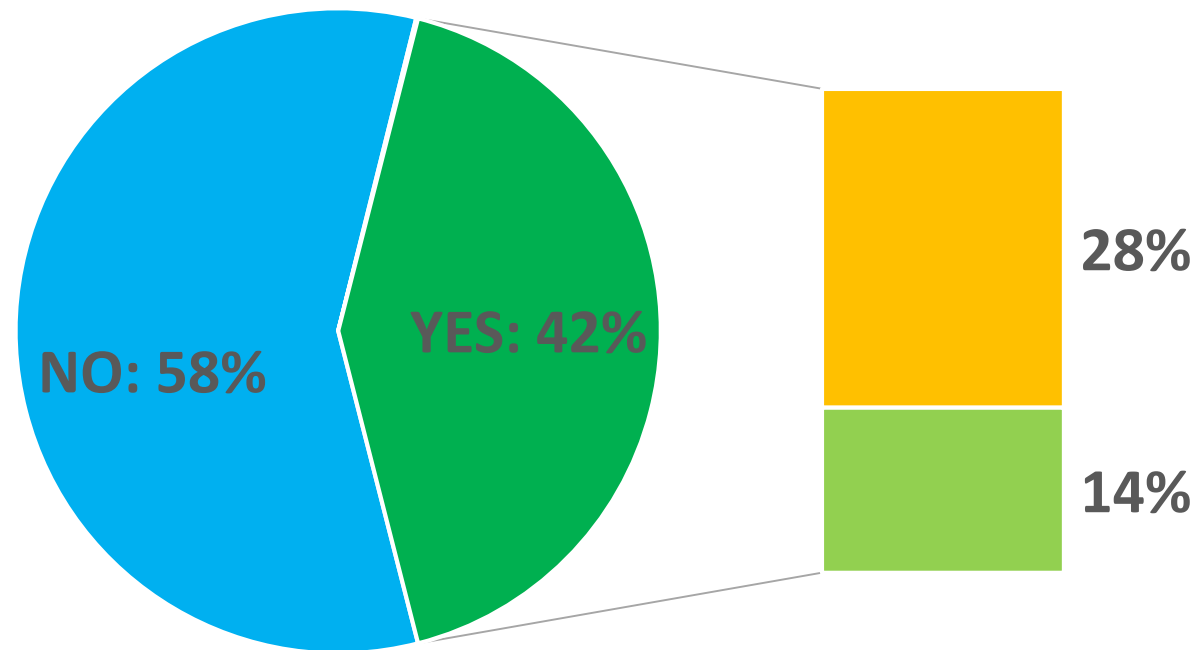
AFTER





# Have you ridden the KC Streetcar in the previous year (Q4)?

■ No    ■ Yes (only streetcar)    ■ Yes (bus also)



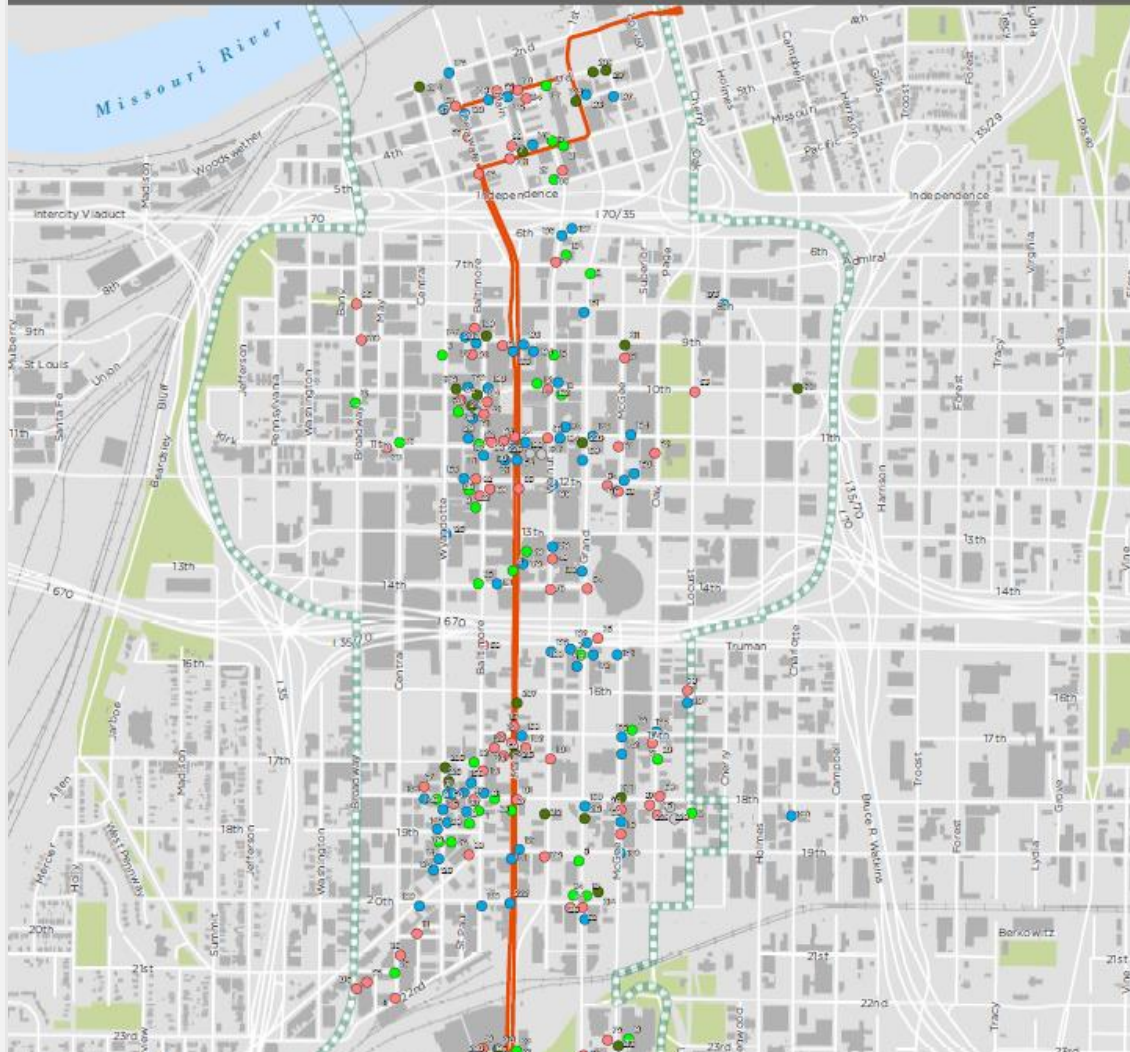
Q1:	26%
Q2:	31%
Q3:	35%
Q4:	42%

# New Business Licenses within Downtown TDD

May 2014 - April 2017

0 0.25 0.5 Miles

- 2014
  - 2015
  - 2016
  - 2017
  - Announced / Under Construction
- Streetcar Track  
TDD Boundary



## Number of New Business Licenses

- \* 2014 - 40
- \* 2015 - 80
- \* 2016 - 79
- \* 2017 (to May) - 26
- \* Announced / Under Construction - 4

Total - 229

# New Business Licenses within TDD

<b>2014:</b>	<b>40</b>
<b>2015:</b>	<b>80</b>
<b>2016:</b>	<b>79</b>
<b>2017 (to May):</b>	<b>26</b>
<b>Announced/ Under Construction:</b>	<b>4</b>
<b>Total -</b>	<b>229</b>







HAPPY BIRTHDAY  
KC STREETCAR



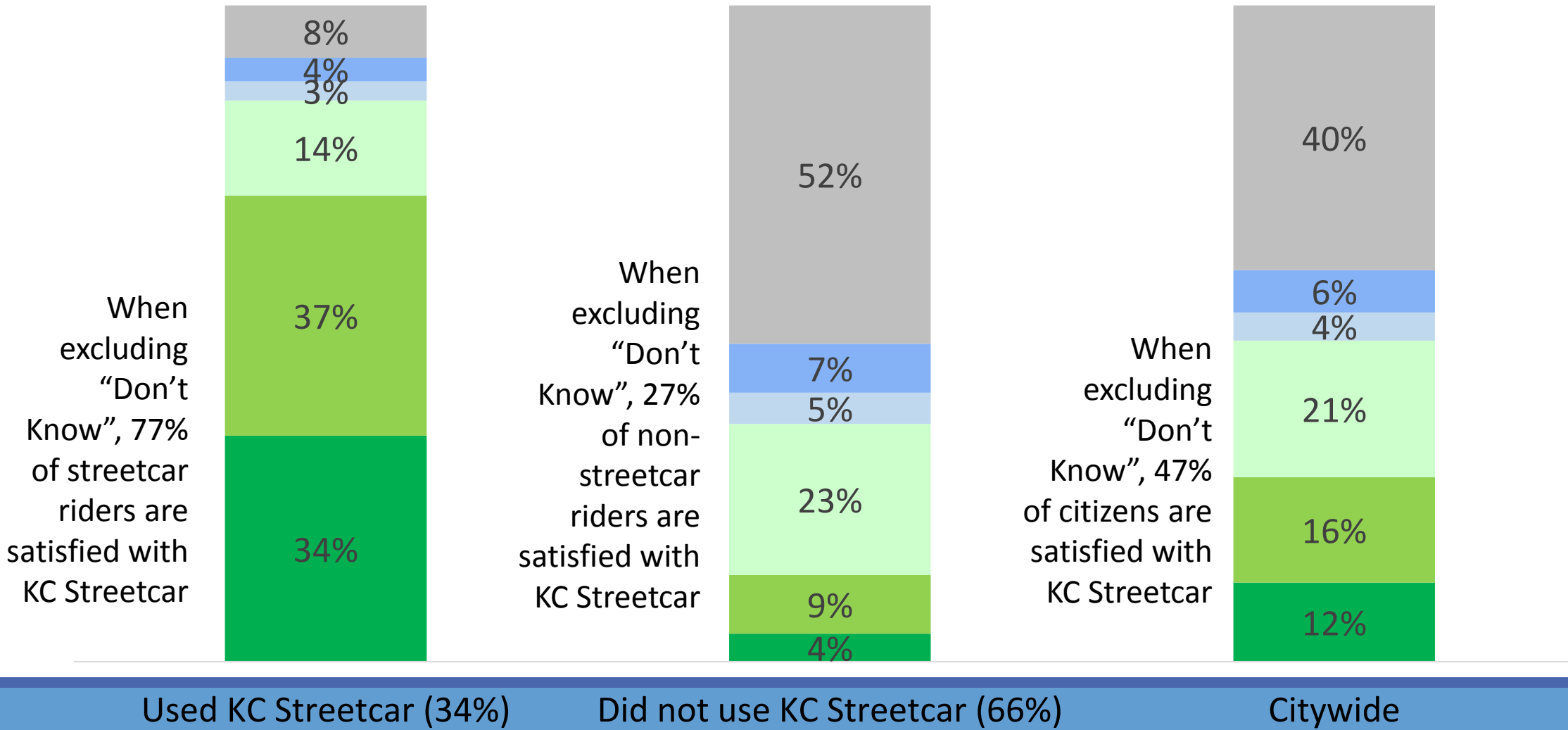
Streetcar Sessions  
w/ Sky Smeed

#PHOTOFY

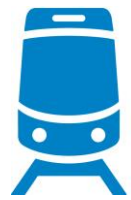


# Satisfaction with KC Streetcar by User Groups (Annual)

■ Very Satisfied  
 ■ Satisfied  
 ■ Neutral  
 ■ Dissatisfied  
 ■ Very Dissatisfied  
 ■ Don't Know







RideKC  
STREETCAR™

# ...MOVING FORWARD

## Through Regional Partnerships Advance Planning for System Growth and Expansion

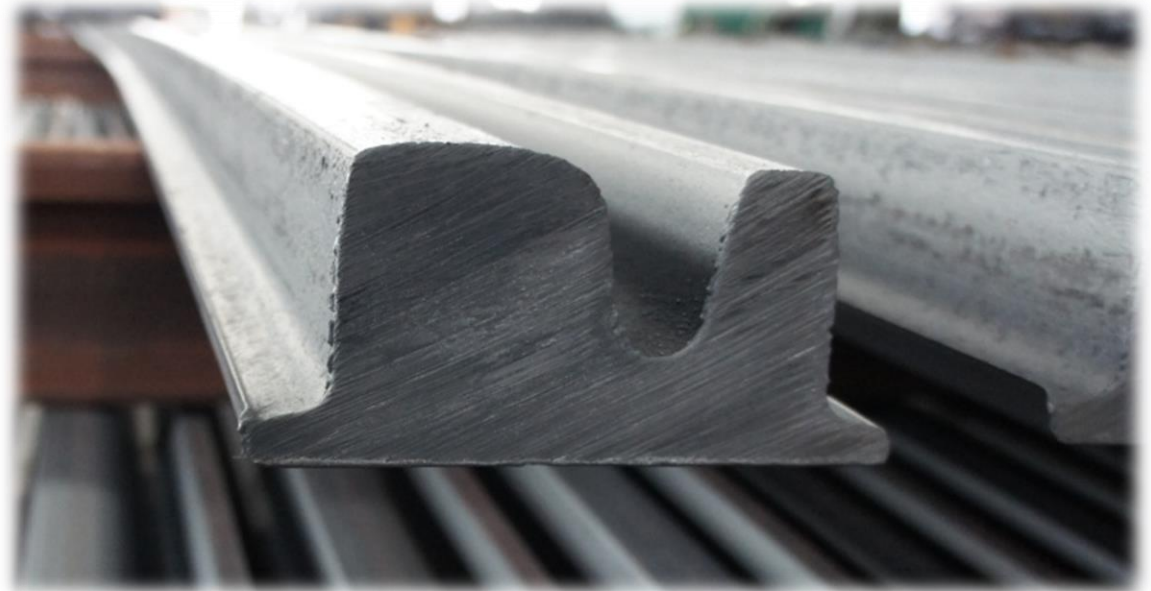
- Southern Extension- UMKC Due Diligence (KCATA Partnership)
- Riverfront Extension Due Diligence (Port KC & KCATA Partnership)



# Block Rail

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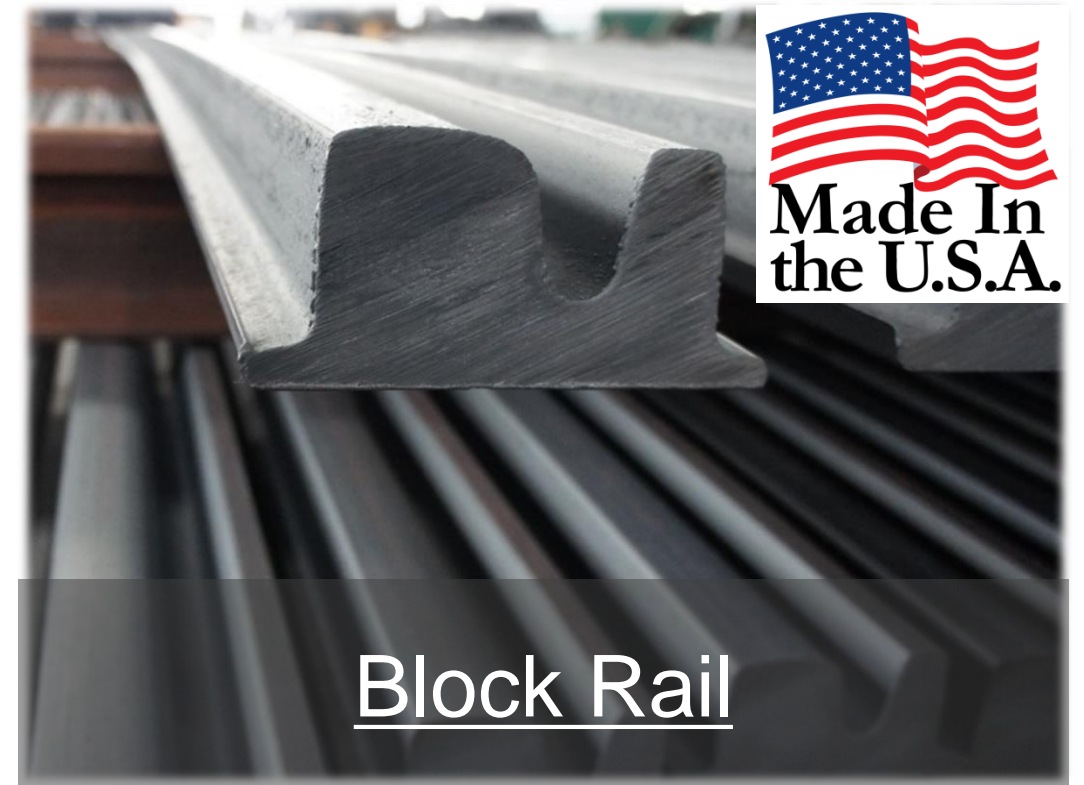
- General Background
- Decision Factors
- Design/Construction
- Lessons Learned
- Cost Comparison



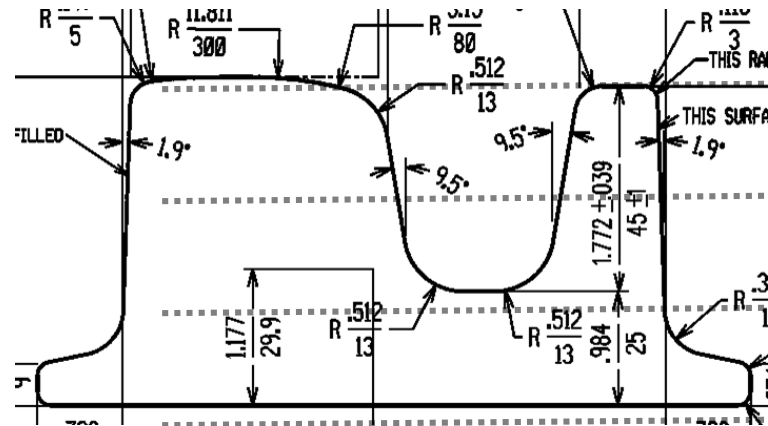


# General Background - Rail Options

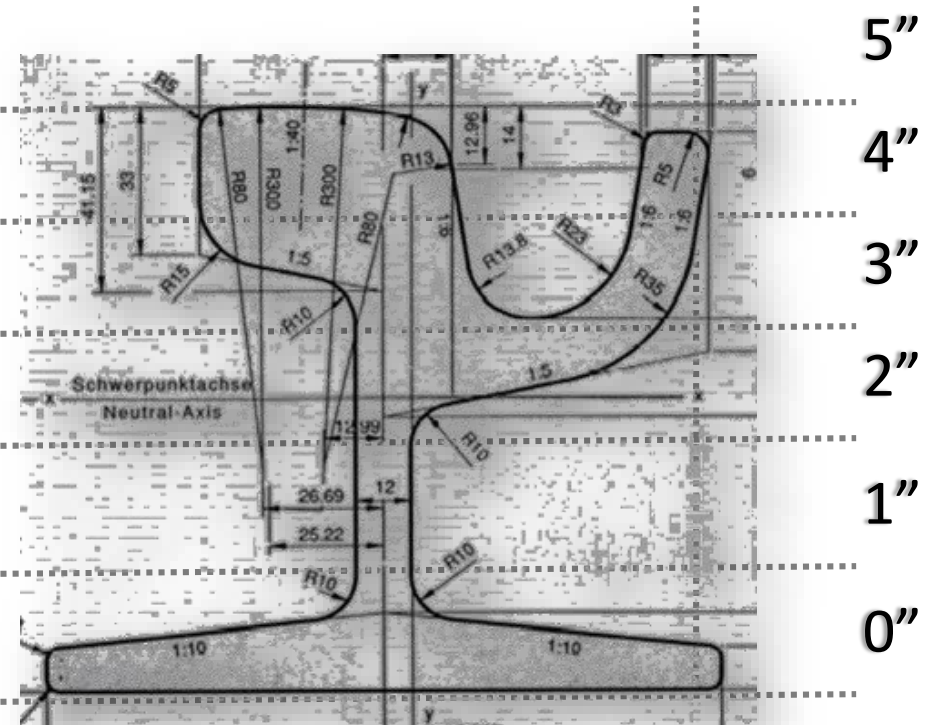
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# General Background – Size Comparison



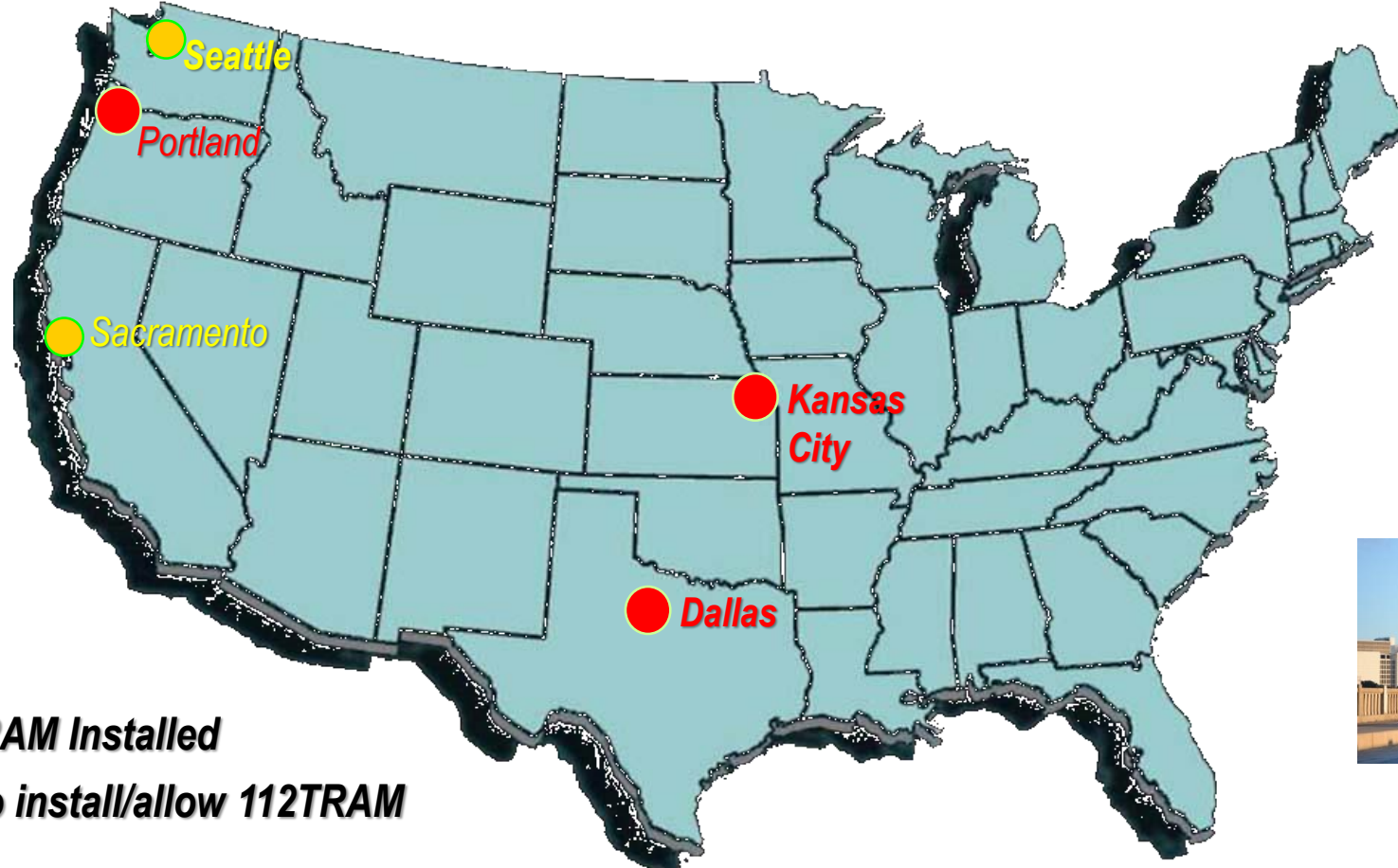
Block Rail – 112TRAM



Girder Rail – 51R1



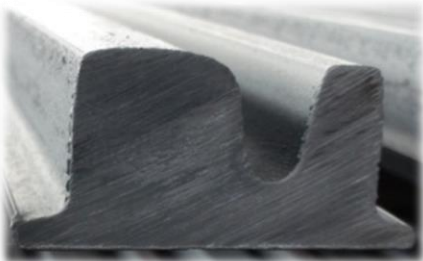
# General Background – Systems Using



- **Systems with 112TRAM Installed**
- **Systems planning to install/allow 112TRAM**

# Decision Factors – Buy America

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*Federal  
Funding*





# Decision Factors - Durability

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Metal Flange



Concrete Flange

# Decision Factors – Shallow Crossings

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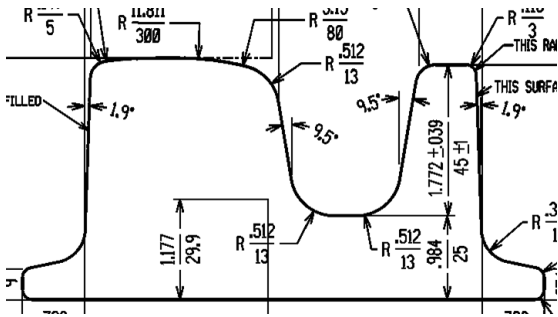


- Shallow Utility Crossings

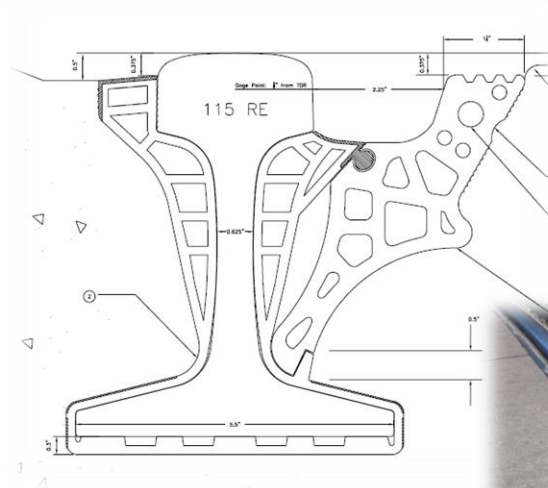


# Decision Factors – Flangeway Width

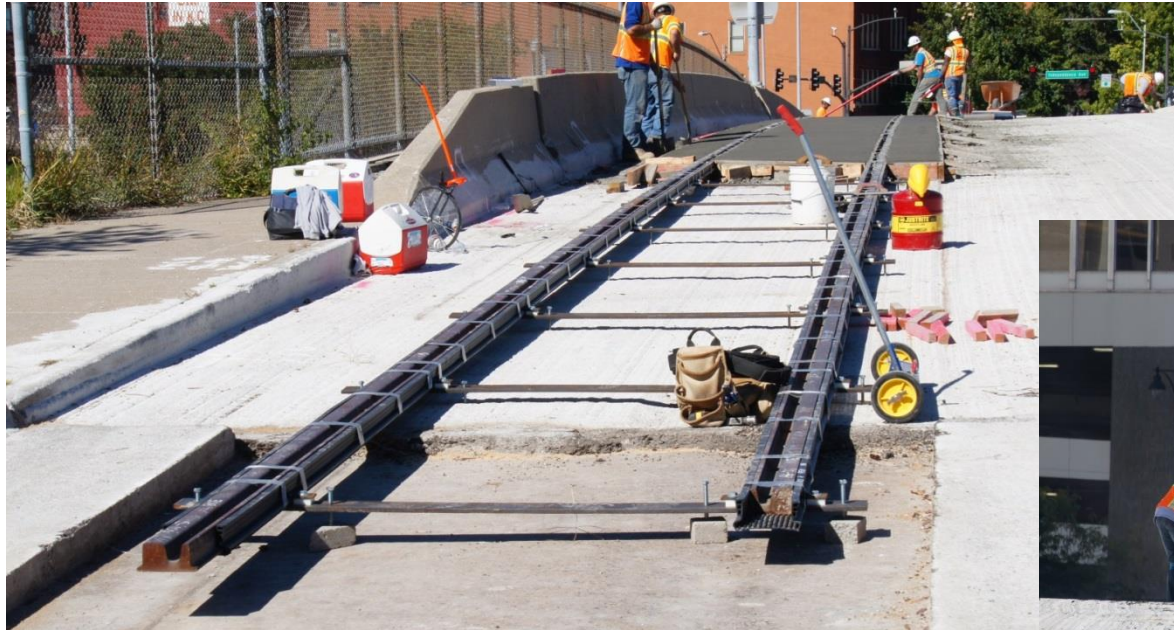
1 – 5/8"



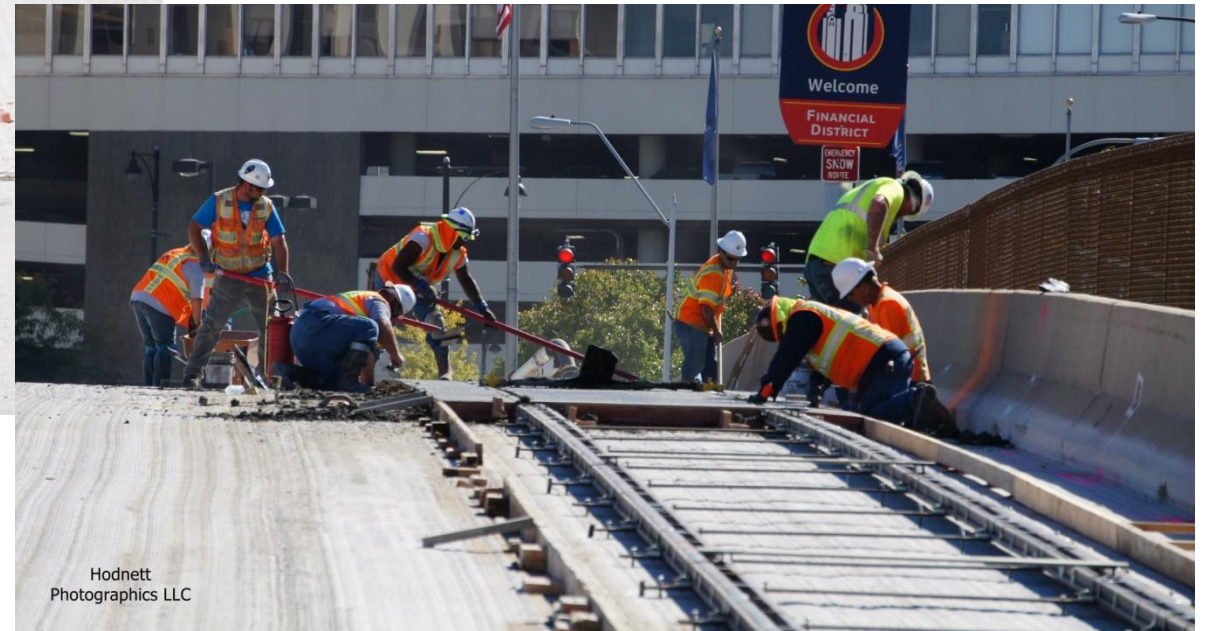
2 – 1/4"



# Decision Factors – Slab on Structure

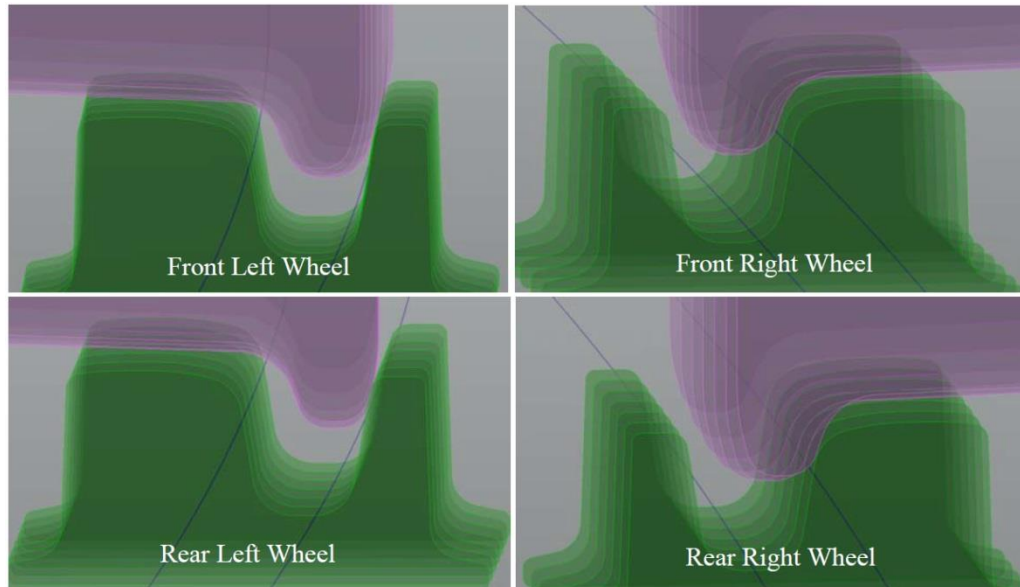


- Shorter Profile Allows for Shallow Track Slab

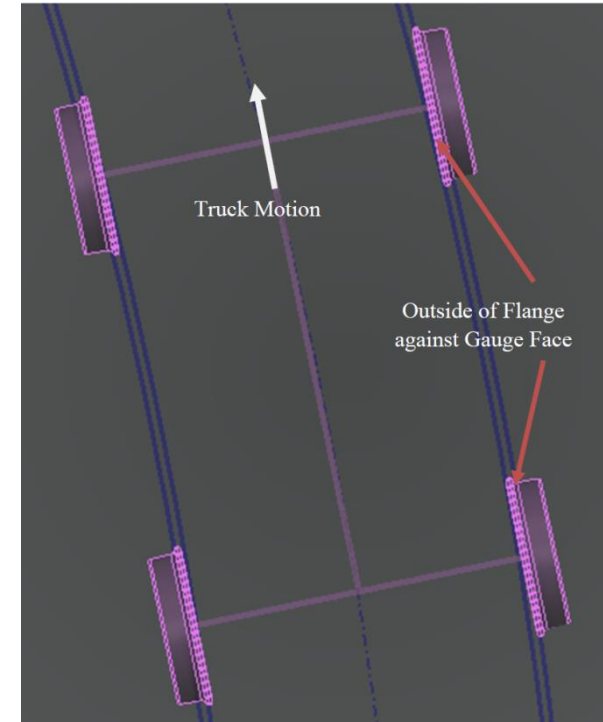




# Design – Wheel Profile



*Figure 5: Wheels of truck in 65.56' radius curve, 56" rail gauge*



*Figure 4: Curve Check Situation*

- Steel Flangeway Requires Coordination with Vehicle Manufacturer

# Construction – Lead Time & Transport

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- Shorter Sticks Allow for Transport Options



- Specialty Mill Can Result in Shorter Lead Times

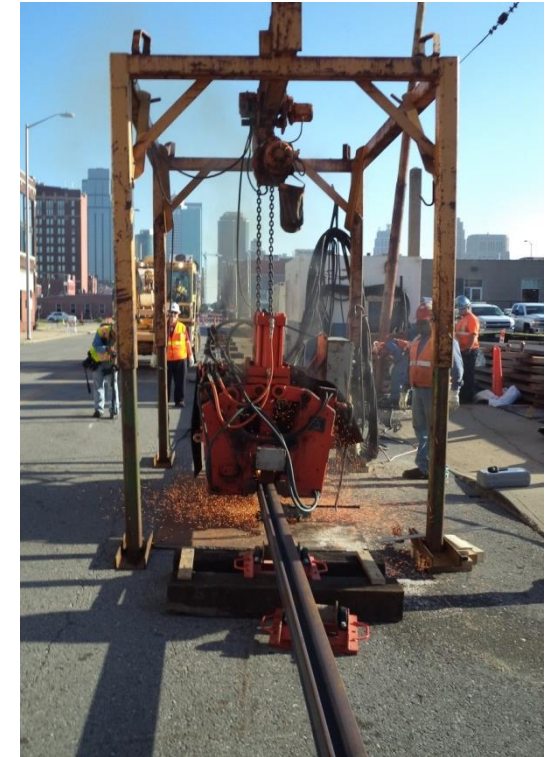


# Construction – Welds

- More Welds
  - Shorter Sticks
  - Special Track Work
- Thermite
- Flash Point (Stronger)



Thermite



Flash Point

# Construction – Installation

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- Clips hold rail and gauge
- Leveling Screws
- Special Ties (w/Two Angle Irons)
- Tie Spacing
  - 7.5' – 10' Tangent
  - 5' Tight Curves





# Construction – Special Trackwork

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- Stock Tee Rail Welded to Machined Transitions



# Lessons Learned

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- Rail Staging
- Point Bending
- Insulated Joint Design





# Cost Comparison by Rail Type

	112 Tram Rail	115RE w/Boot Flangeway	Ri59 Girder Rail
Weight / Yard	112 lbs	115 lbs	119 lbs
Rail Cost/Ton	\$1750 / ton	\$1000 / ton	\$1800 / ton
Boot	\$8 / LF	\$18 / LF	\$10 / LF
Ties	\$115 / EA	\$105 / EA	\$115 / EA
Transition Rails	\$13,000 / pair	n/a	\$8000 / pair
Insulated Joint	\$8000 / each	\$2000 / each	\$3000 / each
Concrete	\$41 / TF (12")	\$48 / TF (14")	\$48 / TF (14")
2 Miles System w/ 2 T/O's and 4 IJ's.	\$1.56 Million	\$1.41 Million	\$1.65 Million

- Costs based on streetcar projects in Portland, Dallas, and Kansas City
- Additional turnouts would have a greater cost impact on block rail

# Thank You



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**Tom Gerend**  
Executive Director  
Kansas City Streetcar Authority

**Jason Waldron**  
Streetcar Program Manager  
Kansas City, Mo