



LAWRENCE TRANSIT STUDY



THE UNIVERSITY OF KANSAS
CITY OF LAWRENCE



Public Meetings

October, 2016



Mobility | Accessibility | Sustainability

Project Background



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- Transit has evolved very quickly in Lawrence
 - City-wide fixed-route service began in 2000
 - City and KU began coordinating service in 2009
 - Routes have been tweaked incrementally over the years

- Coordination efforts and restructuring of routes have led to ridership growth
 - 157% growth between 2008-2014
 - Ridership growth has helped demonstrate the value of transit to the community

- Time is right to take a comprehensive look at transit in Lawrence for the first time in 15 years
 - 10-year funding authorization expires in 2018

Study Goals



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- Identify strengths and weaknesses of existing system
 - Review travel patterns
 - Assess system efficiency
 - Identify unmet transit needs

- Recommend service improvements
 - Serve existing riders better
 - Attract new riders
 - Improve over-all system productivity

Guiding Principles



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- **Service Should be Simple:**
 - For people to use transit, service should be designed so that it is easy to use and intuitive to understand

- **Service Should Operate at Regular Intervals:**
 - In general, people can easily remember repeating patterns, but have difficulty remembering irregular sequences.

- **Routes Should Operate Along a Direct Path:**
 - The fewer directional changes a route makes, the easier it is to understand. Circuitous alignments are disorienting and difficult to remember.

- **Routes Should be Symmetrical:**
 - Routes should operate along the same alignment in both directions to make it easy for riders to know how to get back to where they came from.

- **Routes Should Serve Well Defined Markets:**
 - Routes should include strong anchors, and a mix of origins and destinations.

- **Service Should be Well Coordinated:**
 - At major transfer locations, schedules should be coordinated to the greatest extent possible to minimize connection times for the predominant transfer flows.

Guiding Principles



Service Should Operate at Regular Intervals:

- In general, people can easily remember repeating patterns, but have difficulty remembering irregular sequences.

29 27th & Wakarusa to KU

Eastbound	Westbound	Calendar	Download
A	B	C	
24th & Crossgate	Clinton & Kasold	Kansas Union	
7:00	7:05	7:20	
7:20	7:25	7:40	
7:40	7:45	8:00	
8:00	8:05	8:20	
8:20	8:25	8:40	
8:40	8:45	9:00	
9:00	9:05	9:20	
9:20	9:25	9:40	
9:40	9:45	10:00	
10:00	10:05	10:20	
10:20	10:25	10:40	
10:40	10:45	11:00	
11:00	11:05	11:20	
11:20	11:25	11:40	
11:40	11:45	12:00	
12:00	12:05	12:20	
12:20	12:25	12:40	
12:40	12:45	1:00	
1:00	1:05	1:20	
1:20	1:25	1:40	
1:40	1:45	2:00	
2:00	2:05	2:20	
2:20	2:25	2:40	
2:40	2:45	3:00	
3:00	3:05	3:20	
3:20	3:25	3:40	
3:40	3:45	4:00	
4:00	4:05	4:20	
4:20	4:25	4:40	
4:40	4:45	5:00	
5:00	5:05	5:20	
5:20	5:25	5:40	
5:40	5:45	6:00	

1 Downtown to East Lawrence

Northbound	Southbound	Calendar	Download
A	B	C	D
25th & Franklin	Harper & 23rd	Haskell & 19th	7th & Vermont
6:05	6:12	6:17	6:27
6:35	6:42	6:47	6:57
7:05	7:12	7:17	7:27
7:35	7:42	7:47	7:57
8:05	8:12	8:17	8:27
8:35	8:42	8:47	8:57
9:05	9:12	9:17	9:27
9:35	9:42	9:47	9:57
10:05	10:12	10:17	10:27
10:35			
11:05			
11:35			
12:05			
12:35			
1:05			
1:35			
2:05			
2:35			
3:05			
3:35			
4:05			
4:35			
5:05			
5:35			
6:05			
6:35			
7:05			
7:35			

15 Downtown to Peaslee Center

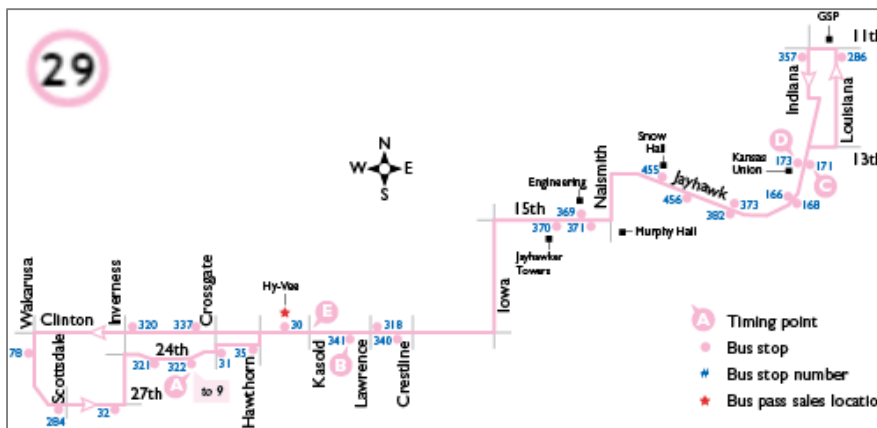
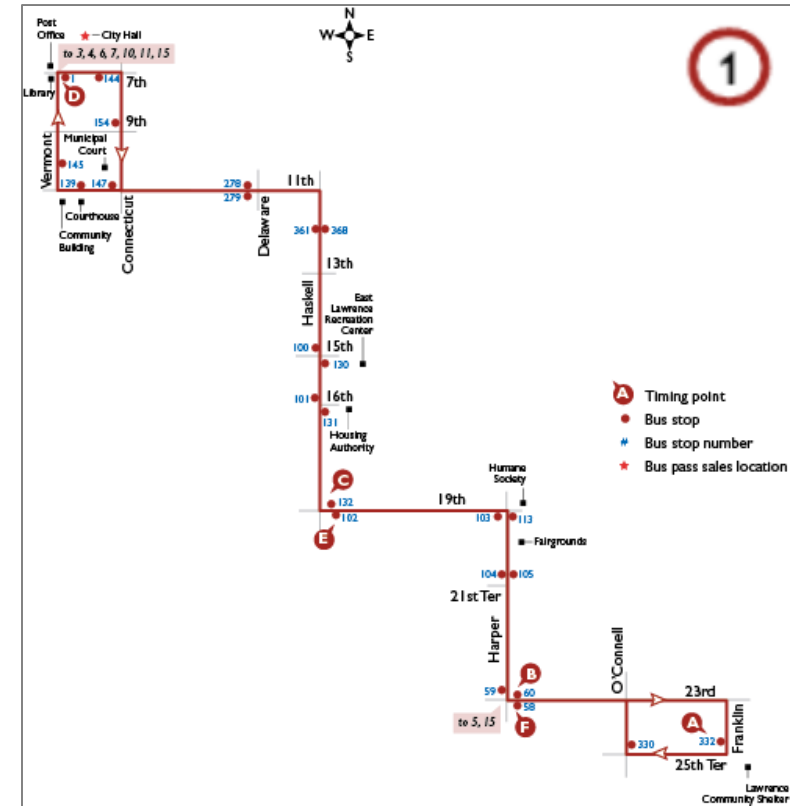
Northbound	Southbound	Calendar	Download	
A	B	C	D	E
East Hills	23rd & Harper	Peaslee Center	19th & Haskell	7th & Vermont
6:33	6:39	6:44	6:49	6:56
7:33	7:39	7:44	7:49	7:56
8:33	8:39	8:44	8:49	8:56
9:33	9:39	9:44	9:49	9:56
10:33	10:39	10:44	10:49	10:56
11:33	11:39	11:44	11:49	11:56
12:33	12:39	12:44	12:49	12:56
1:33	1:39	1:44	1:49	1:56
2:33	2:39	2:44	2:49	2:56
3:33	3:39	3:44	3:49	3:56
4:33	4:39	4:44	4:49	4:56
5:33	5:39	5:44	5:49	5:56
6:33	6:39	6:44	6:49	6:56
7:33	7:39	7:44	7:49	7:56

Guiding Principles



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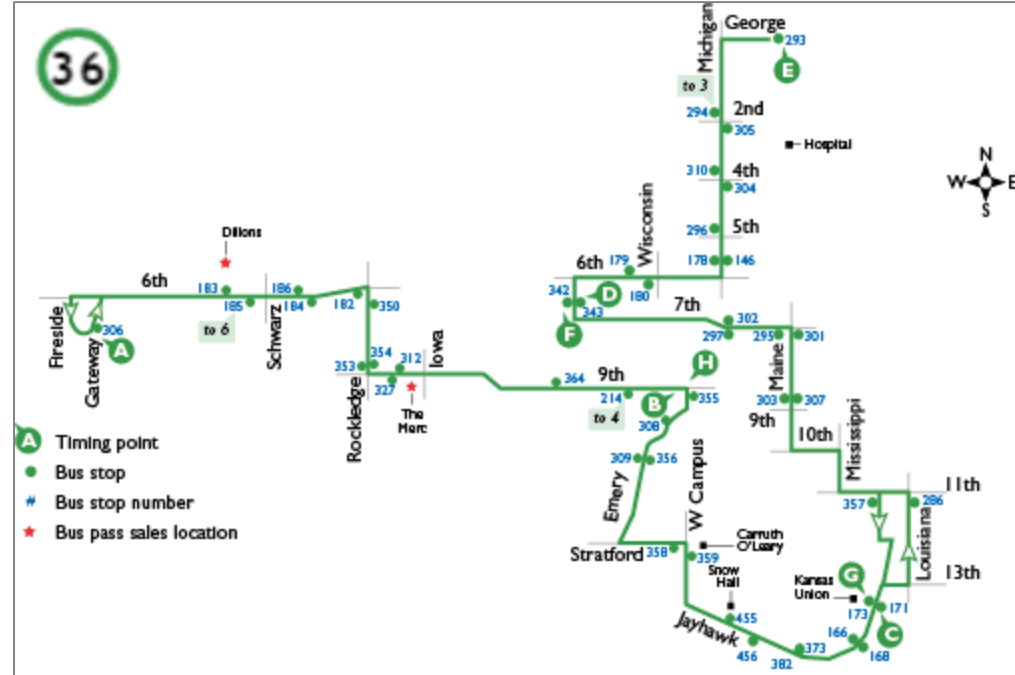
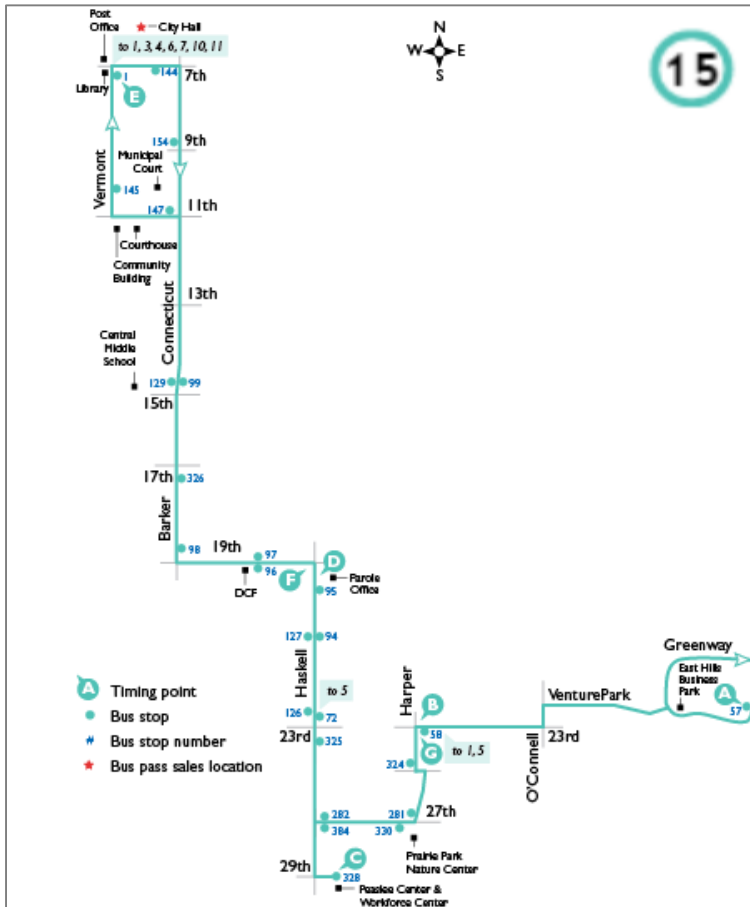


Guiding Principles



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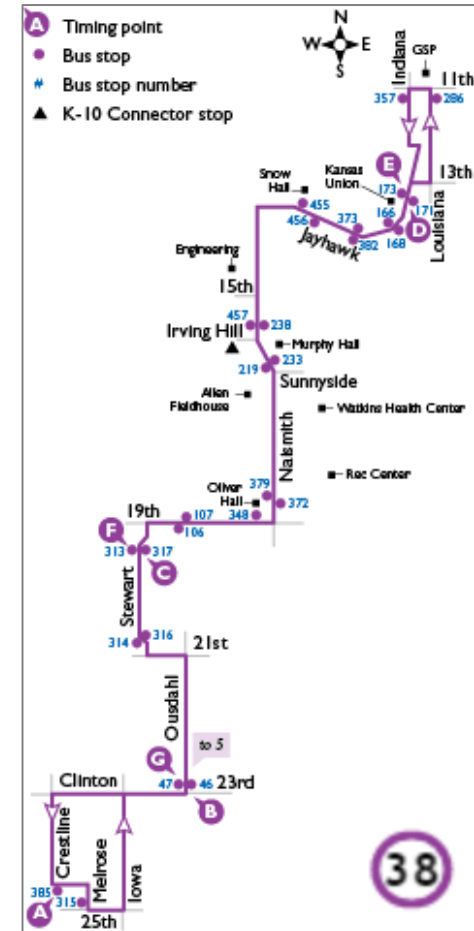
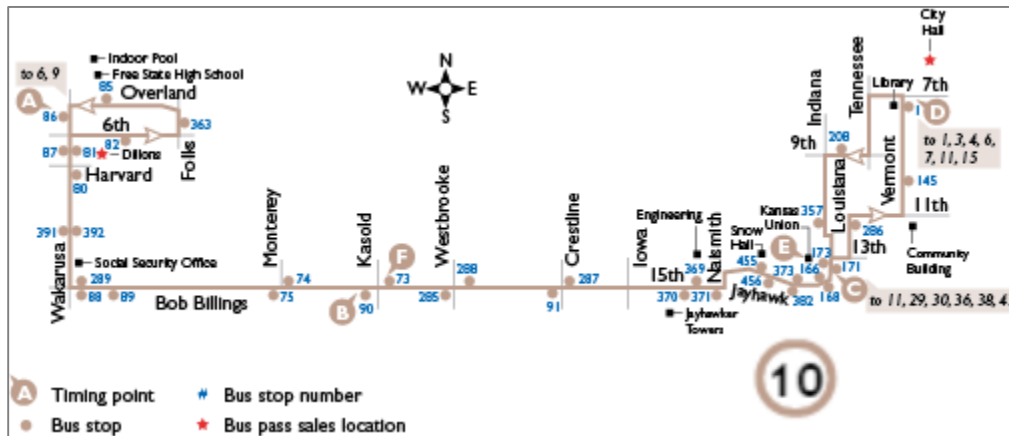


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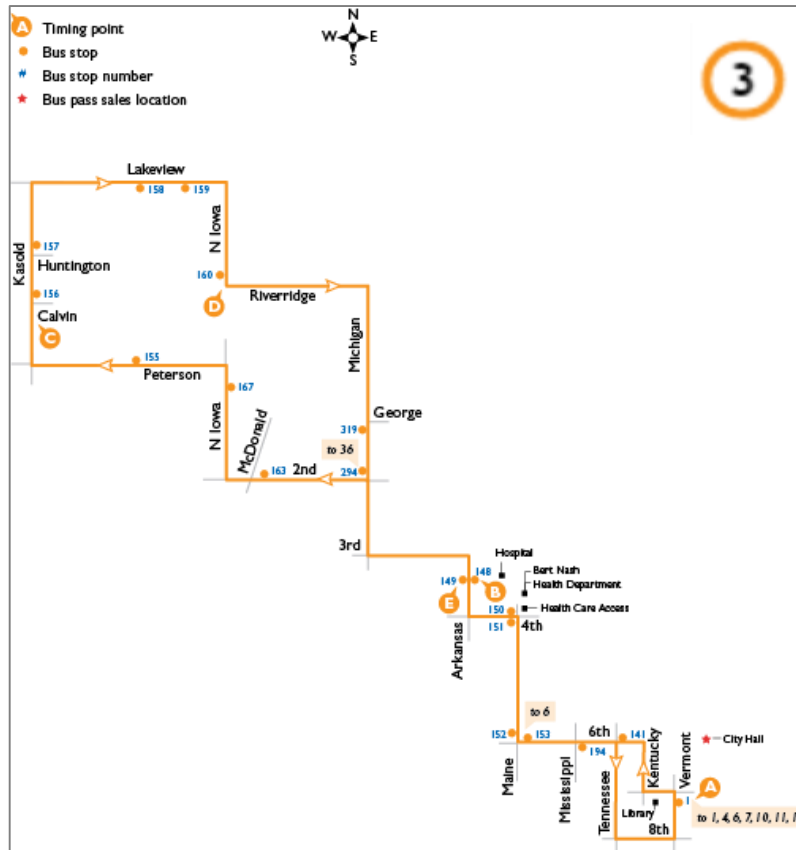


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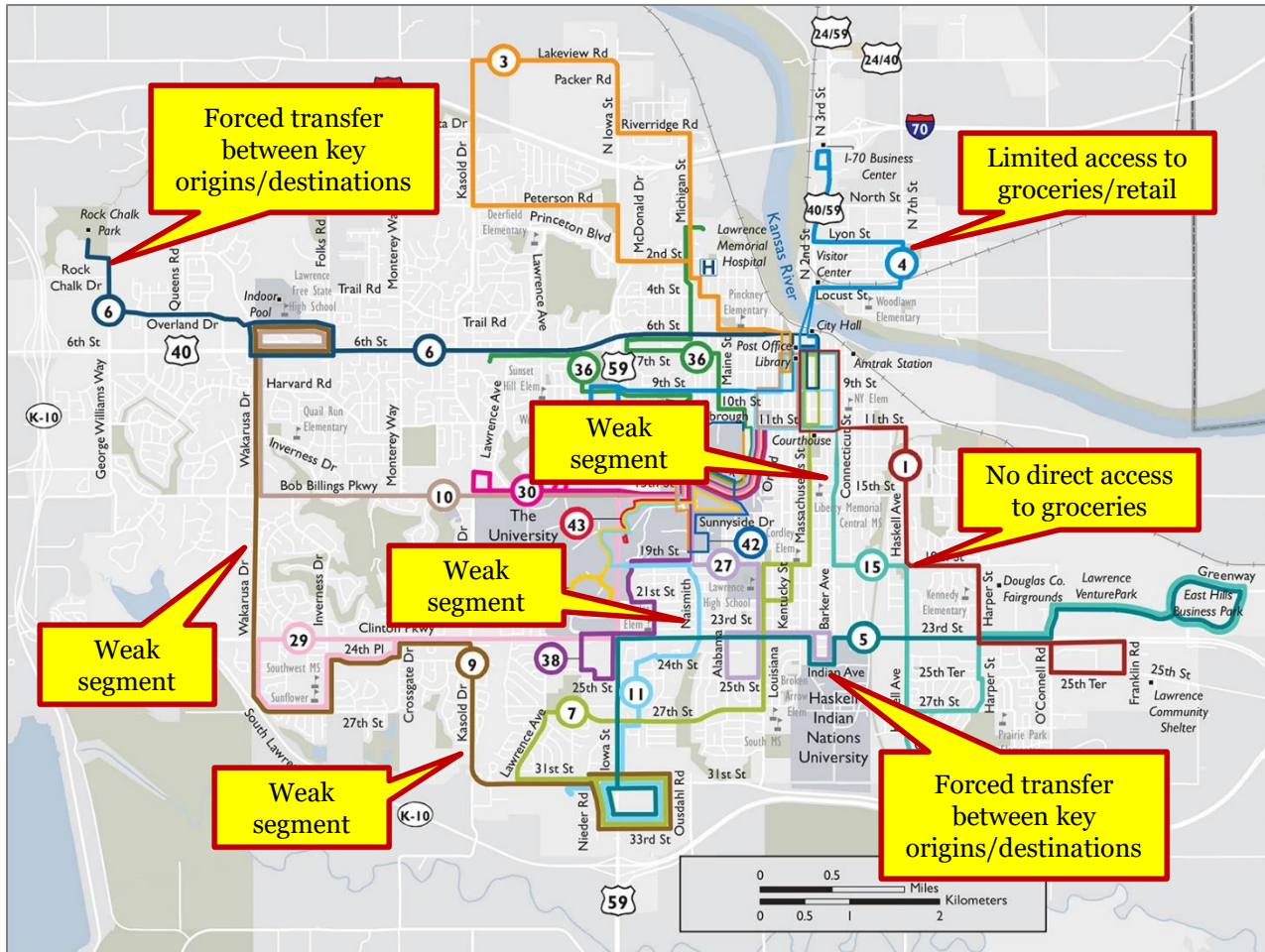


Guiding Principles



Routes Should Serve Well Defined Markets:

- Routes should include strong anchors, and a mix of origins and destinations.



Guiding Principles



Service Should be Well Coordinated:

- At major transfer locations, schedules should be coordinated to the greatest extent possible to minimize connection times for the predominant transfer flows.

43 Campus Circulator (Red)

Route Times	Calendar	Download
A Oswald		B GSP
7:20 AM - 12PM		Every 6 minutes
12 - 1:30 PM		Every 7 minutes
1:30 - 5:30 PM		Every 9 minutes
5:30		5:45
6:00		6:15
6:30		6:45
7:00		7:15
7:30		7:45
8:00		8:15
8:30		8:45
9:00		9:15
9:30		9:45
10:00		10:15
10:30		
Route 42 service ends at 7 p.m. on Fridays.		

15 Downtown to Peaslee Center

Northbound Southbound Calendar Download

1 Downtown to East Lawrence

Northbound Southbound Calendar Download

A	B	C	D	E
25th & Franklin	Harper & 23rd	Haskell & 19th	7th & Vermont	Haskell 7th & Vermont
6:05	6:12	6:17	6:27	6:56
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7:05	7:12	7:17	7:27	8:56
7:35	7:42	7:47	7:57	9:56
8:05	8:12	8:17	8:27	10:56
8:35	8:42	8:47	8:57	11:56
				12:56
				1:56
				2:56
				3:56
				4:56
				5:56
				6:56
				7:56

4 North Lawrence to 9th & Iowa

Northbound Southbound Calendar Download

A	B	C	D	E
Harvard & Centennial	9th & Emery	7th & Vermont	7th & Lyon	DMV
6:13	6:18	6:31	6:41	6:46
7:13	7:18	7:31	7:41	7:46
8:13	8:18	8:31	8:41	8:46
9:13	9:18	9:31	9:41	9:46
10:13	10:18	10:31	10:41	10:46
11:13	11:18	11:31	11:41	11:46
12:13	12:18	12:31	12:41	12:46
1:13	1:18	1:31	1:41	1:46
2:13	2:18	2:31	2:41	2:46
3:13	3:18	3:31	3:41	3:46
4:13	4:18	4:31	4:41	4:46
5:13	5:18	5:31	5:41	5:46
6:13	6:18	6:31	6:41	6:46
7:13	7:18	7:31	7:41	7:46

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- At major transfer locations, schedules should be coordinated to the greatest extent possible to minimize connection times for the predominant transfer flows.

Other Factors Considered



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- Market Analysis
 - Population and employment density
 - Population characteristics
 - Land-use and the built environment
 - Regional travel patterns

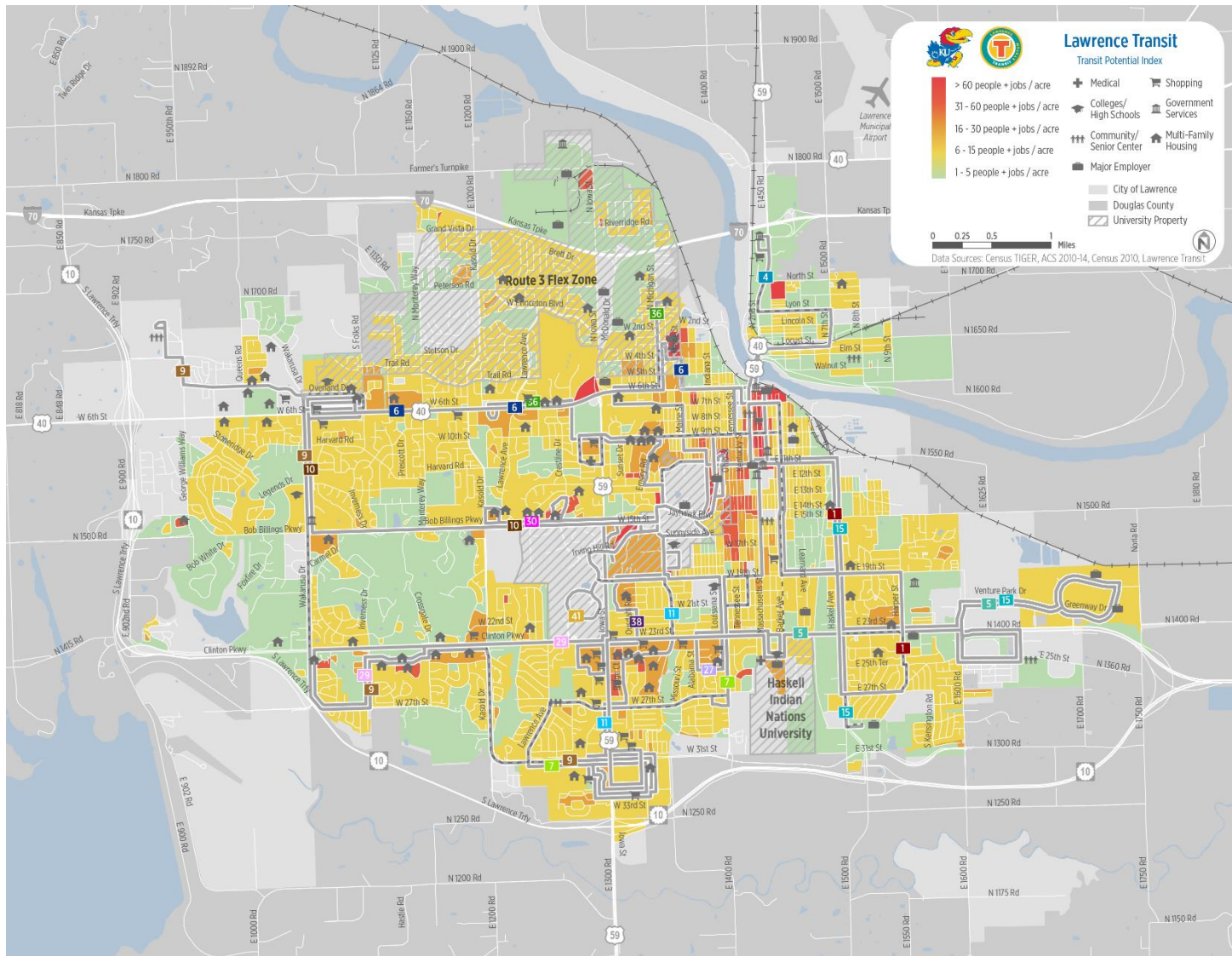
- Service Analysis
 - Ridership
 - Productivity
 - On-time Performance

- Stakeholder Input
 - Riders
 - Non-riders
 - Staff
 - Stakeholders

Market Analysis



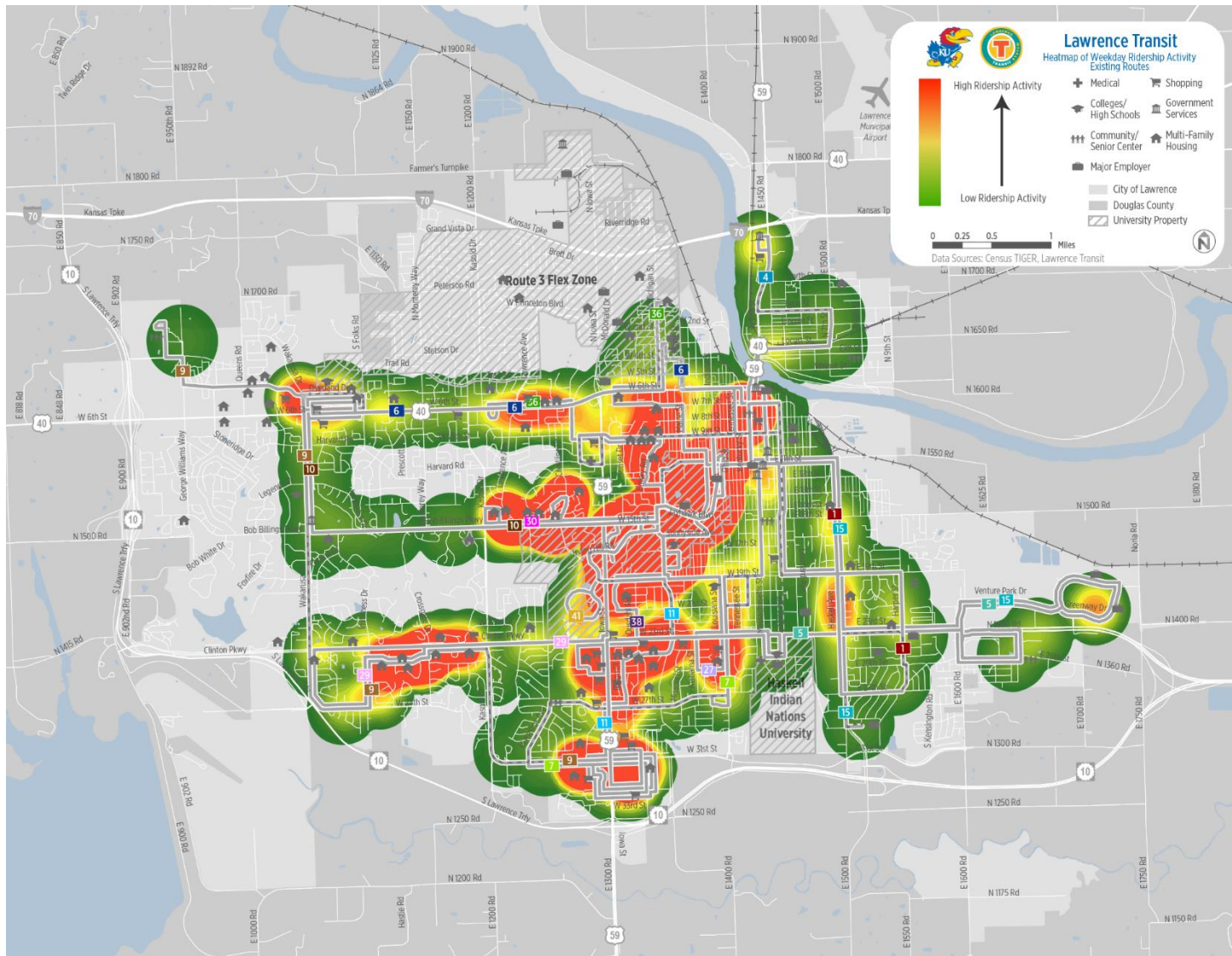
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Service Analysis



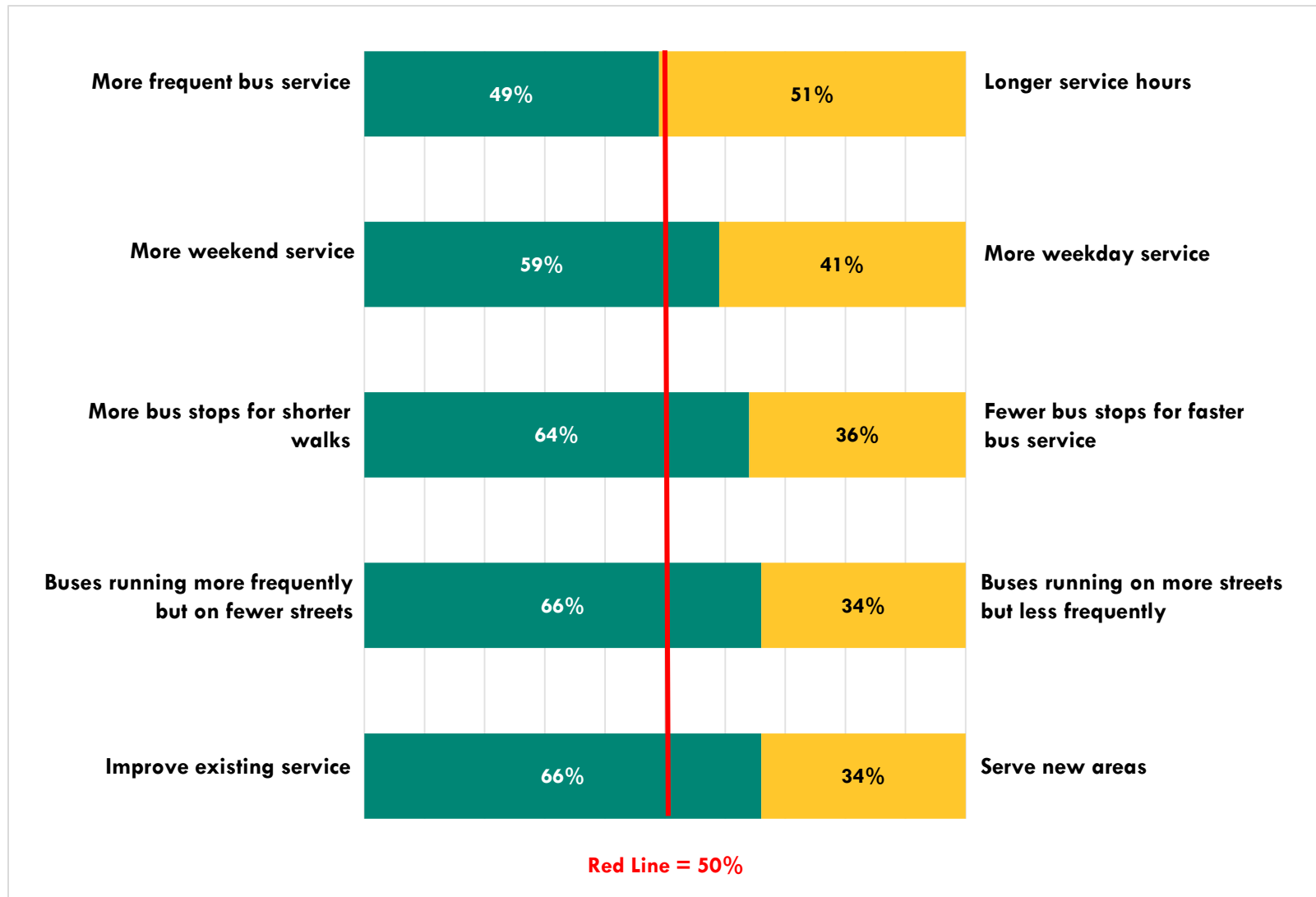
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Stakeholder Input



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- Approach:
 - Follow guiding principles
 - Incorporate technical findings and stakeholder input
 - Provide options

Scenario 1



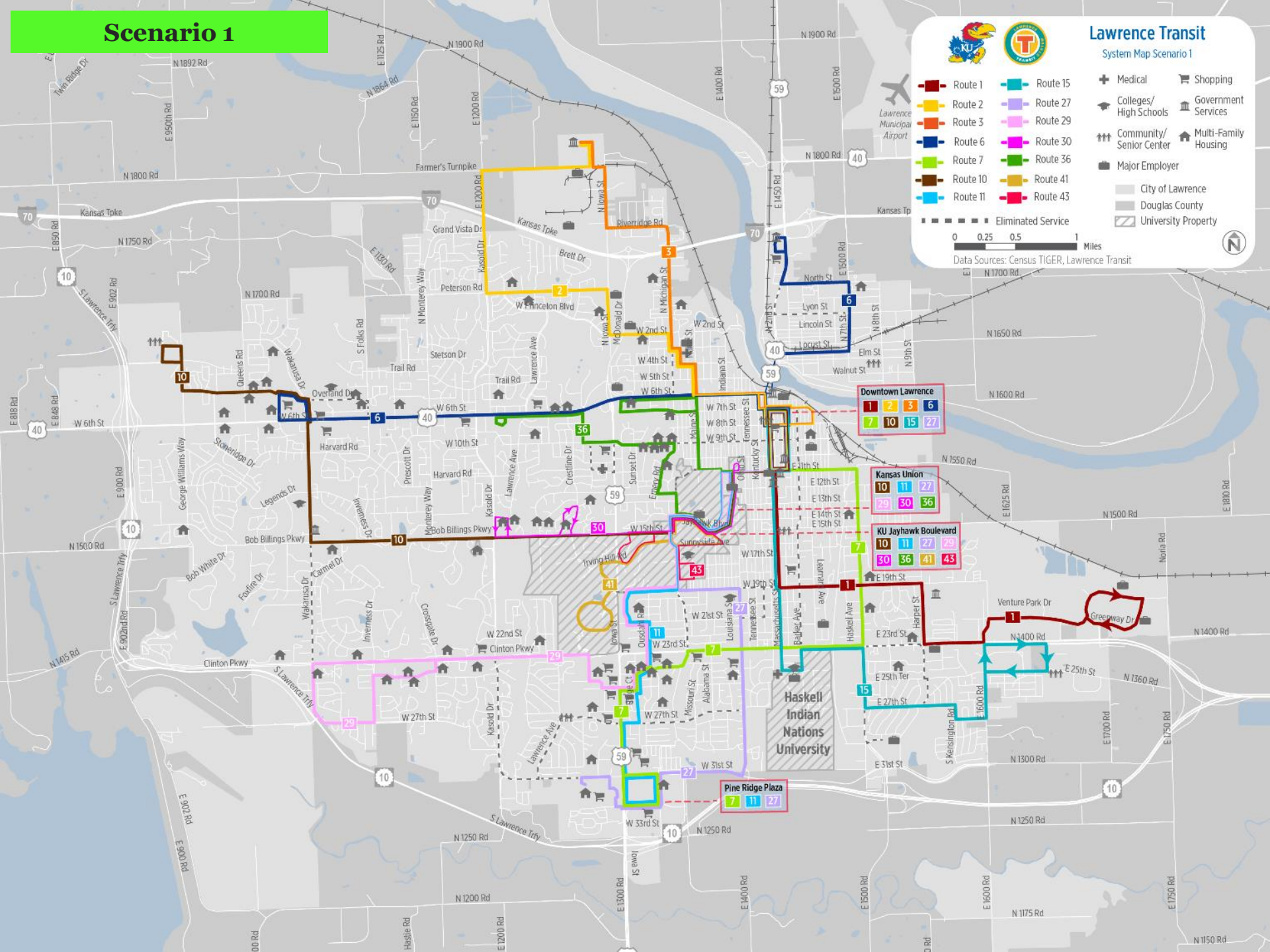
Lawrence Transit

System Map Scenario 1

- Route 1
- Route 2
- Route 3
- Route 6
- Route 7
- Route 10
- Route 11
- Route 15
- Route 27
- Route 29
- Route 30
- Route 36
- Route 41
- Route 43
- Medical
- Colleges/High Schools
- Community/ Senior Center
- Major Employer
- Shopping
- Government Services
- Multi-Family Housing
- City of Lawrence
- Douglas County
- University Property

0 0.25 0.5 1 Miles

Data Sources: Census TIGER, Lawrence Transit



Scenario 1



Lawrence Transit

System Map Scenario 1

- Route 1
- Route 2
- Route 3
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City of Lawrence
 Douglas County
 University Property

0 0.25 0.5 1 Miles
 Data Sources: Census TIGER, Lawrence Transit

Bi-directional Service

Streamlined Service

Improved Origins/Destinations Mix

Improved Origins/Destinations Mix

Service Consolidation

Simplified Alignments

Improved Origins/Destinations Mix

Re-invested Resources

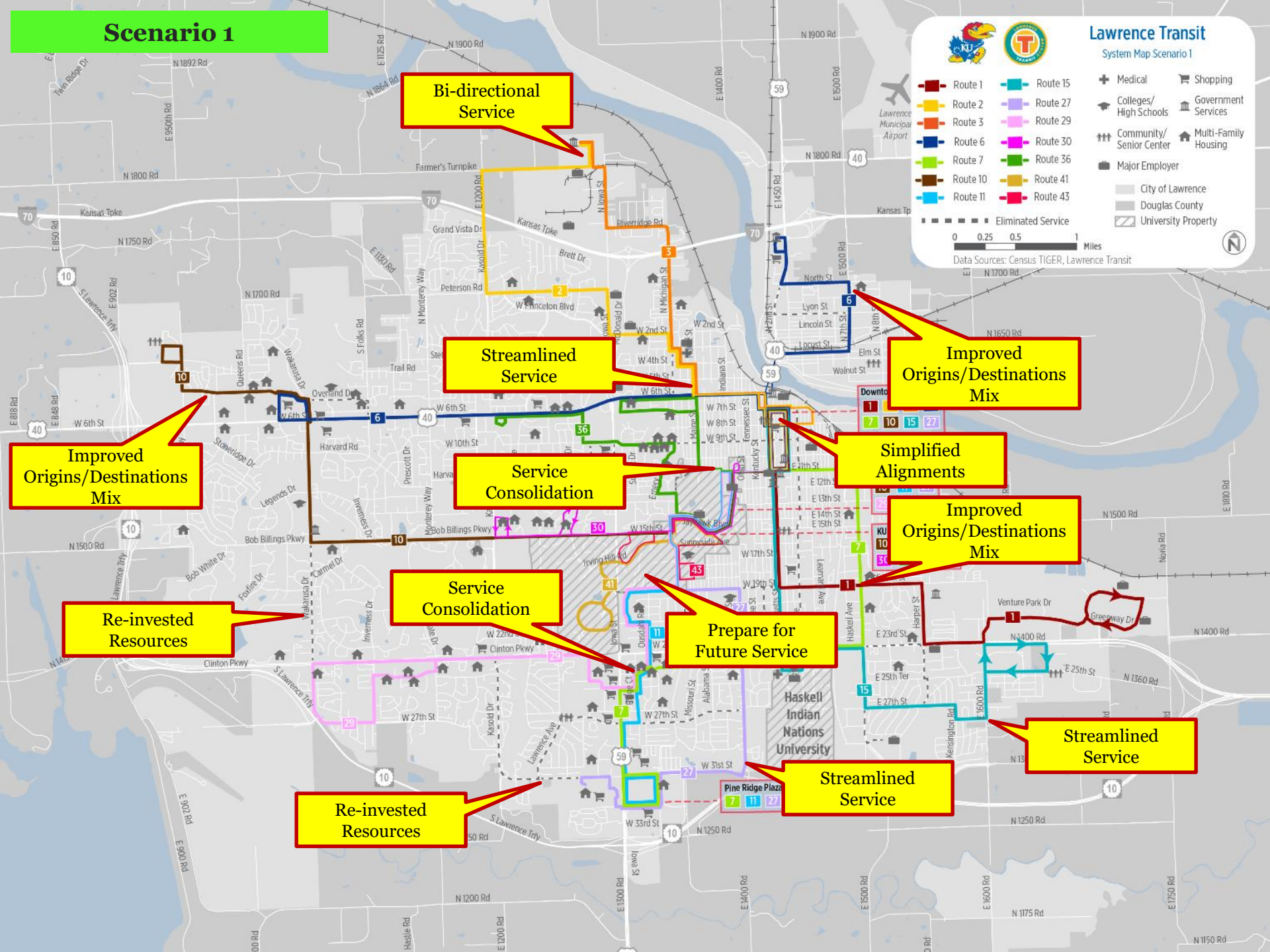
Service Consolidation

Prepare for Future Service

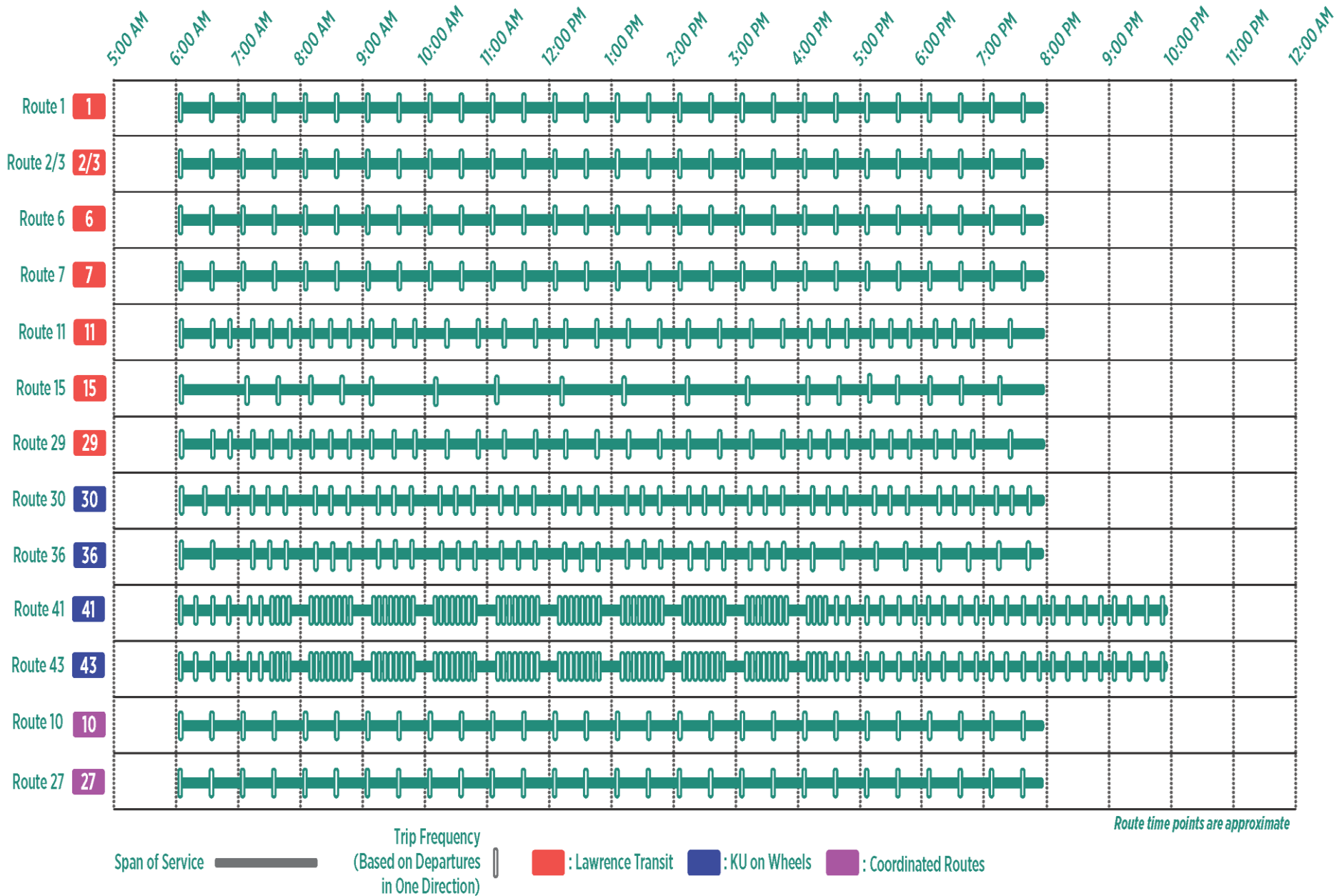
Re-invested Resources

Streamlined Service

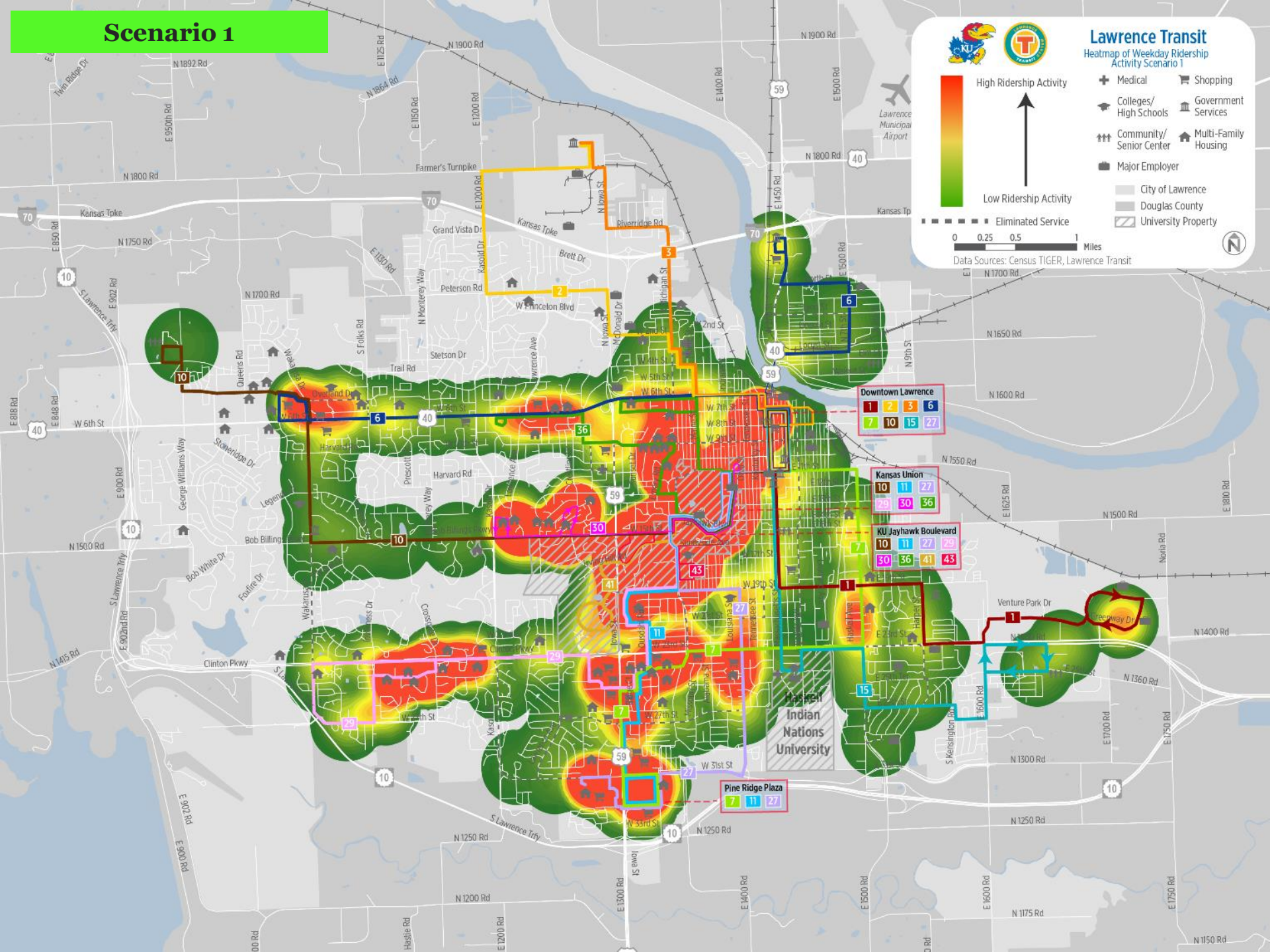
Streamlined Service



Scenario 1: Lawrence Transit/KU on Wheels Proposed Schedule and Frequency



Scenario 1



Scenario 1



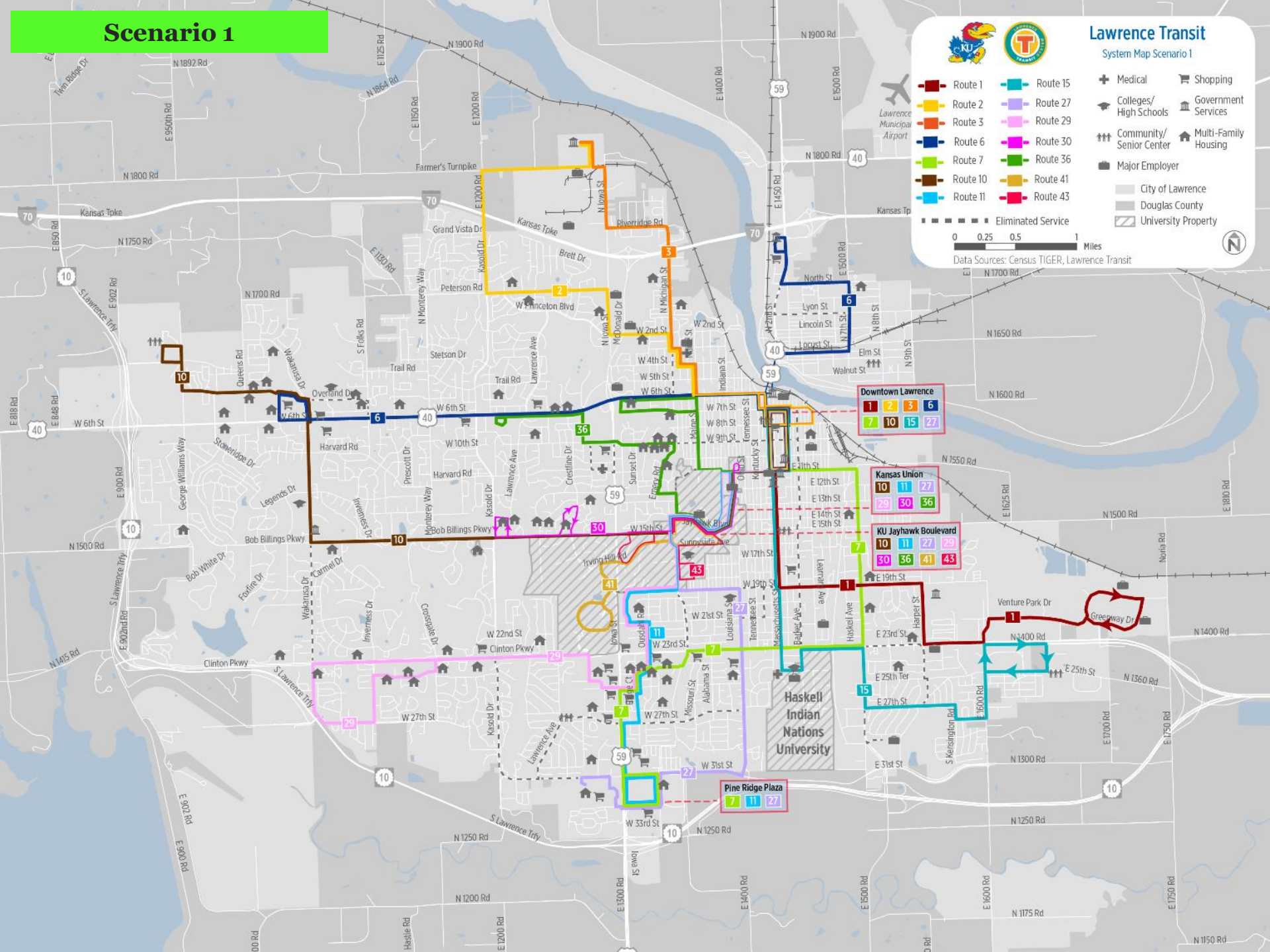
Lawrence Transit

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- Route 29
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- Route 41
- Route 43
- Medical
- Colleges/High Schools
- Community/Municipal Center
- Major Employer
- Shopping
- Government Services
- Multi-Family Housing
- City of Lawrence
- Douglas County
- University Property

0 0.25 0.5 1 Miles

Data Sources: Census TIGER, Lawrence Transit



Downtown Lawrence

1	2	3	6
7	10	15	27

Kansas Union

10	11	27
29	30	36

KU Jayhawk Boulevard

10	11	27	29
30	36	41	43

Pine Ridge Plaza

7	11	27
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Scenario 2

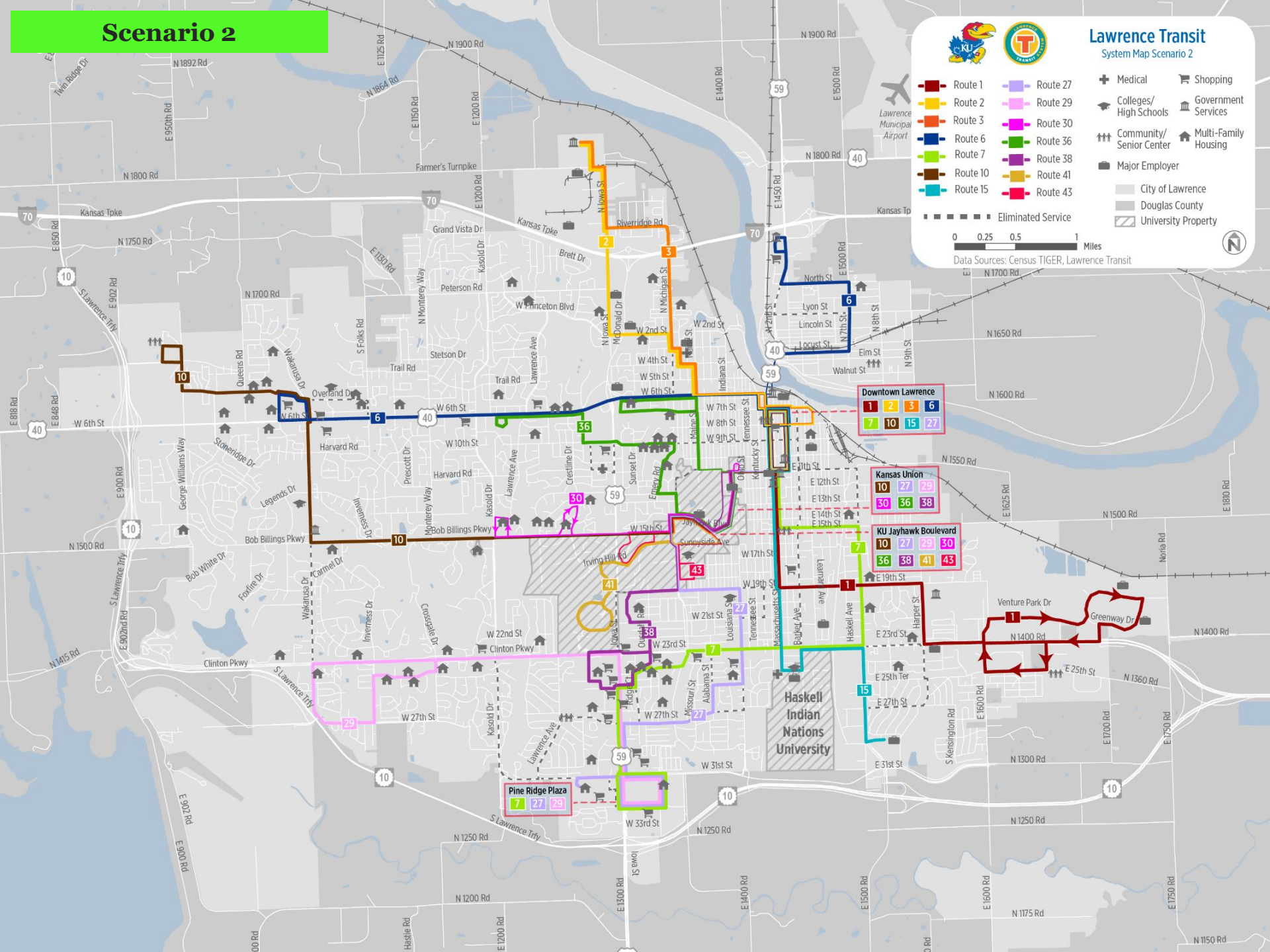


Lawrence Transit System Map Scenario 2

- Route 1
 - Route 2
 - Route 3
 - Route 6
 - Route 7
 - Route 10
 - Route 15
 - Route 27
 - Route 29
 - Route 30
 - Route 36
 - Route 38
 - Route 41
 - Route 43
- Medical
 - Colleges/High Schools
 - Community/ Senior Center
 - Major Employer
 - Shopping
 - Government Services
 - Multi-Family Housing
- City of Lawrence
 - Douglas County
 - University Property
- Eliminated Service

0 0.25 0.5 1 Miles

Data Sources: Census TIGER, Lawrence Transit



Scenario 2

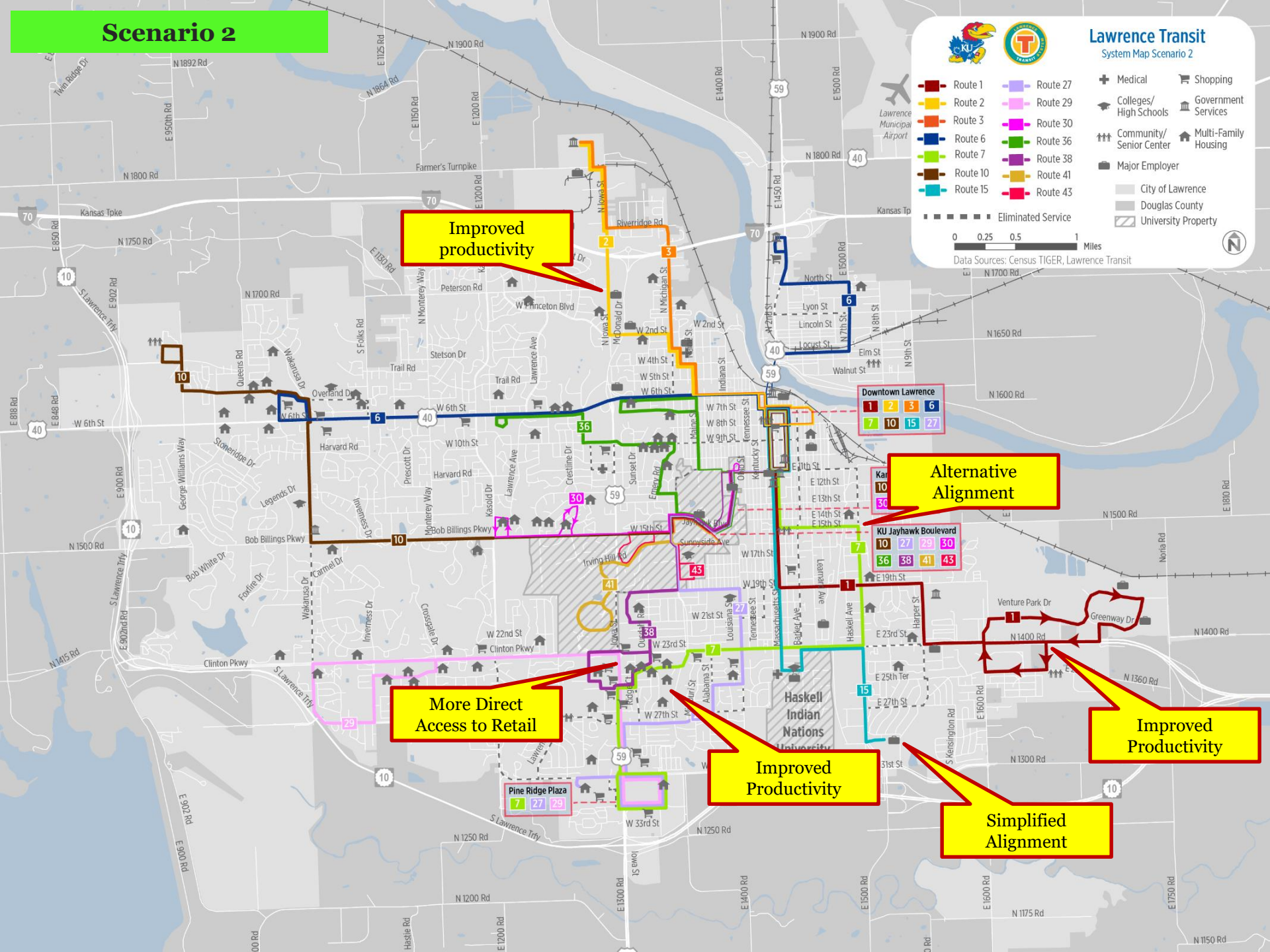


Lawrence Transit System Map Scenario 2

- Route 1
 - Route 2
 - Route 3
 - Route 6
 - Route 7
 - Route 10
 - Route 15
 - Route 27
 - Route 29
 - Route 30
 - Route 36
 - Route 38
 - Route 41
 - Route 43
- + Medical
 - ✎ Colleges/High Schools
 - + Community/ Senior Center
 - Major Employer
 - + Shopping
 - ✎ Government Services
 - + Multi-Family Housing
- City of Lawrence
 Douglas County
 University Property



Data Sources: Census TIGER, Lawrence Transit



Improved productivity

Downtown Lawrence
1 2 3 6
7 10 15 27

Alternative Alignment

KU Jayhawk Boulevard
10 27 29 30
36 38 41 43

More Direct Access to Retail

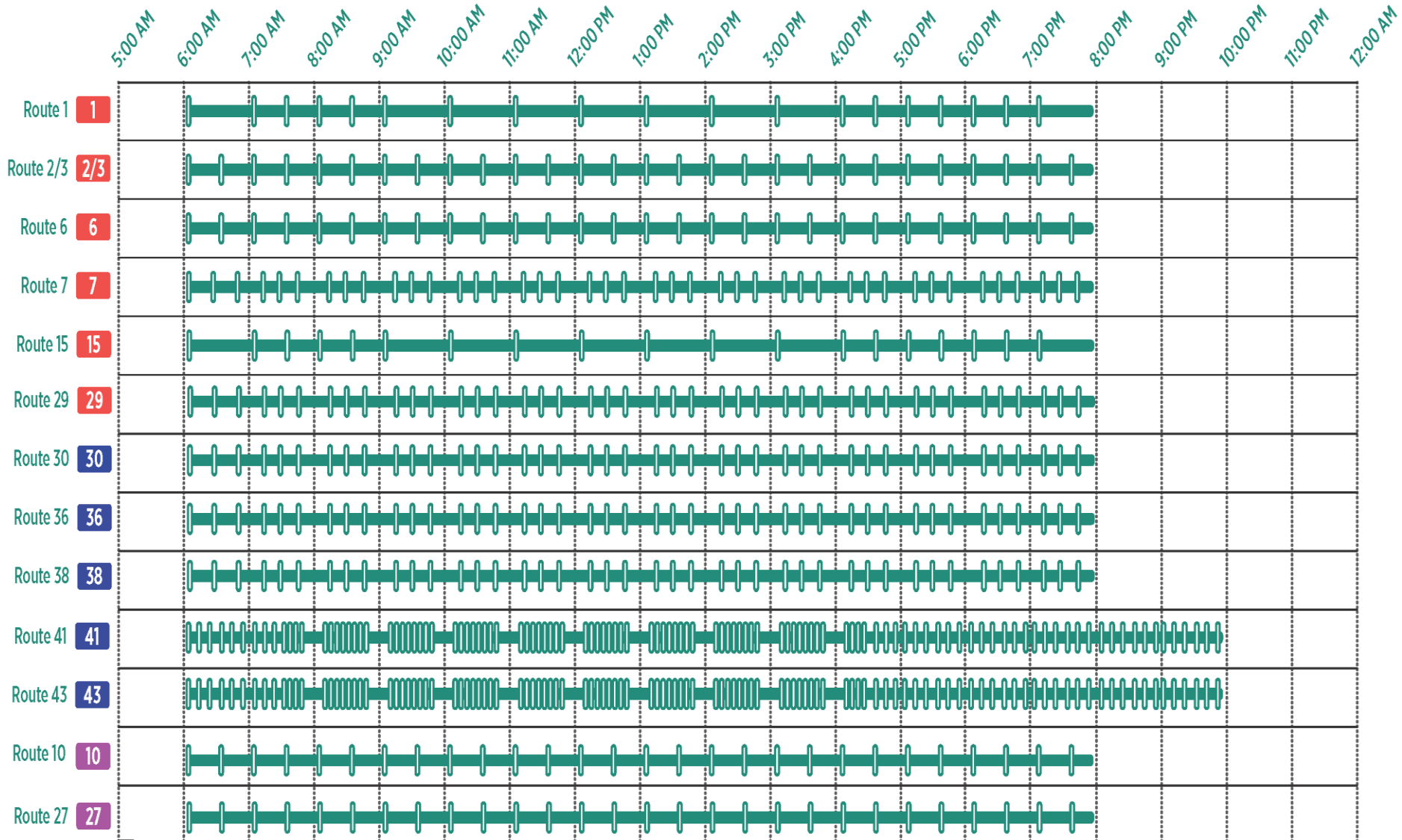
Improved Productivity

Simplified Alignment



Improved Productivity

Pine Ridge Plaza
7 27 29

Scenario 2: Lawrence Transit/KU on Wheels Proposed Schedule and Frequency



Route time points are approximate

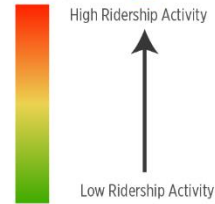
Span of Service  Trip Frequency (Based on Departures in One Direction)   : Lawrence Transit  : KU on Wheels  : Coordinated Routes

Scenario 2



Lawrence Transit

Heatmap of Weekday Ridership Activity Scenario 2

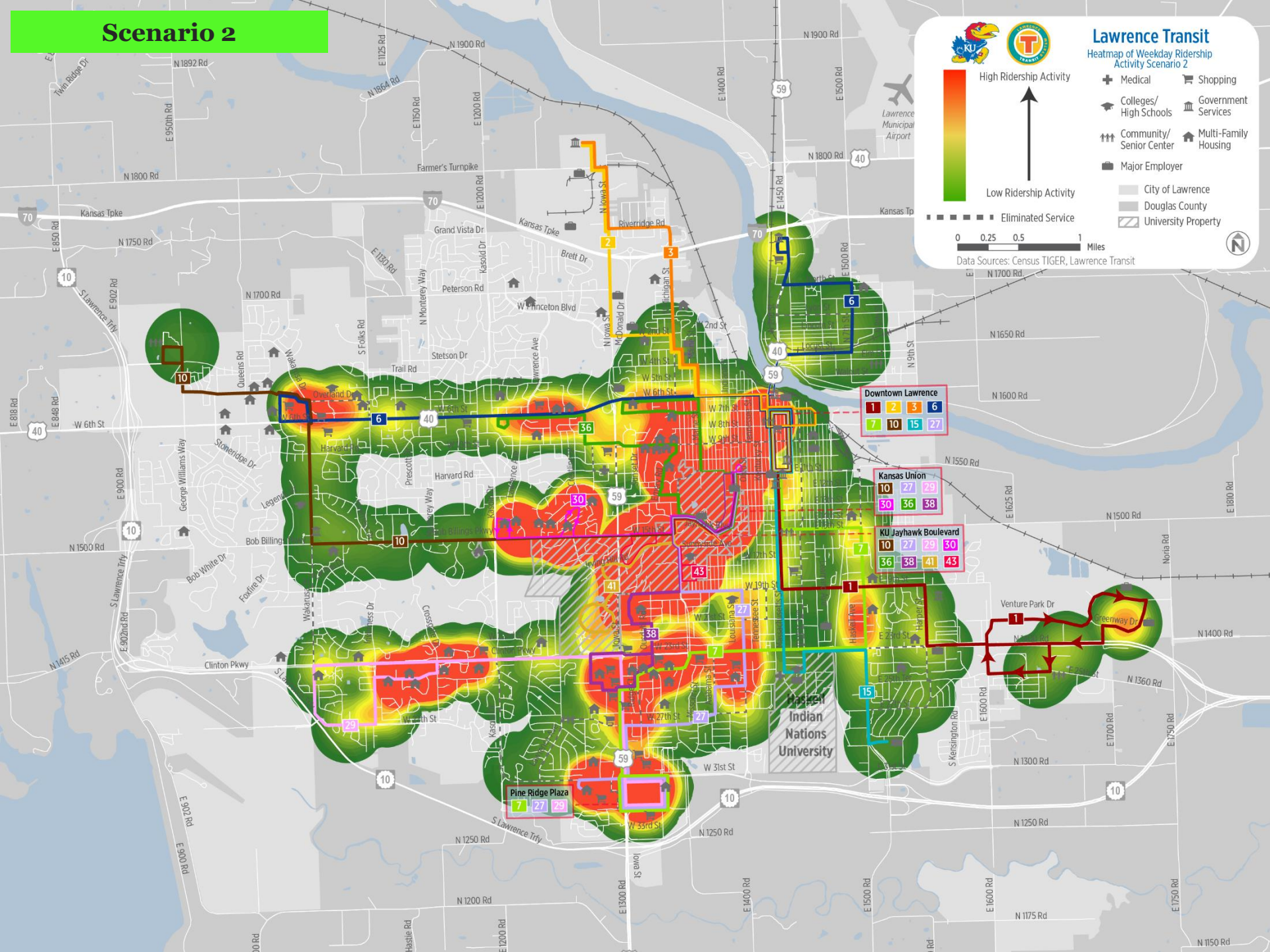


- Medical
- Shopping
- Colleges/High Schools
- Government Services
- Community/Senior Center
- Multi-Family Housing
- Major Employer



Data Sources: Census TIGER, Lawrence Transit

--- Eliminated Service



Downtown Lawrence

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7	10	15	27

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36	38	41	43

Pine Ridge Plaza

7	27	29
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Indian Nations University



Lawrence Municipal Airport



North

Subsidized TNC Service



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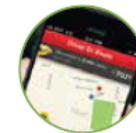
- Transit agencies are beginning to explore innovative ways to provide first/last mile connections in lower-density areas
- Flex service is a more cost-effective approach than fixed-route service, but it is still inherently inefficient
- Transportation Network Companies (TNC) such as Uber and Lyft have proven their ability to provide timely service at affordable prices in metro areas
- TNCs have recently begun partnering with public and private partners to facilitate subsidized service, making trip costs comparable to transit fares

TAKING YOU PLACES

TRANSPORTATION ALTERNATIVE

PSTA is partnering with Uber and United Taxi to provide access to the public transit network in underserved areas. PSTA will pay half the fare, up to \$3 per ride to and from designated stops within the zone.

Wheelchair van service is available for those unable to ride in a sedan by calling 727-536-7433 x1 and asking for same-day PSTA service



NO WONDERING



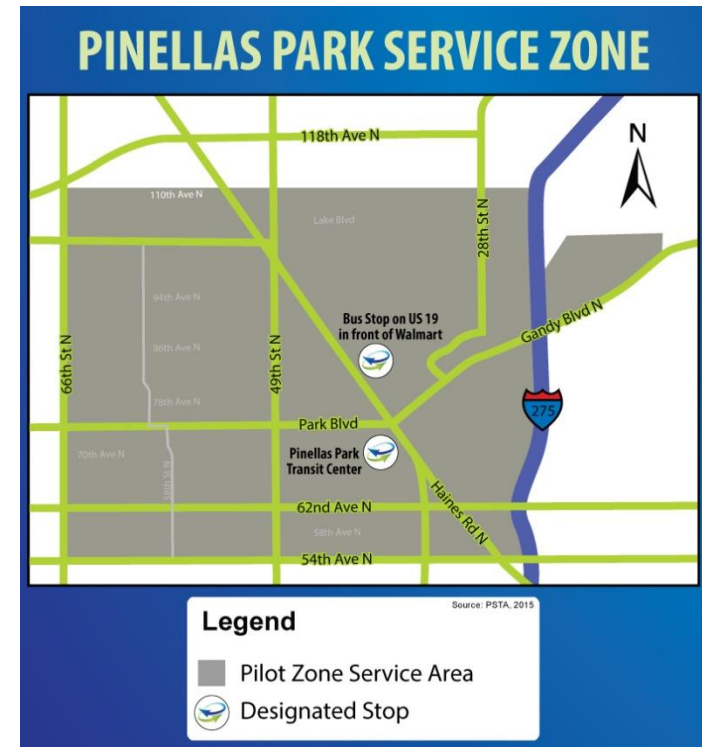
NO WAITING

Subsidized TNC Service



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- *Case Study – St. Petersburg, FL*
 - Alternative Uber/taxi service to neighborhoods underserved by fixed-route transit
 - Transit agency pays half the Uber/taxi fare up to \$3 per ride between designated bus stops and the neighborhood service zone
 - Customers enter code in Uber app to receive subsidy OR call taxi provider to request a subsidized trip





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Thank you!
Please visit www.lawrencetransitstudy.com
for more information.

N NELSON
NYGAARD

Mobility | Accessibility | Sustainability

Presented by: Boris Palchik &
Gretchen Johnson