GO NORMAN TRANSIT PLAN

Final Report

June 2021

Resolution

R-2021-130

A RESOLUTION OF THE COUNCIL OF THE CITY OF NORMAN ADOPTING THE GO NORMAN TRANSIT PLAN AMENDING THE 2014 COMPREHENSIVE TRANSPORTATION PLAN AND ESTABLISHING A FRAMEWORK FOR PUBLIC TRANSPORTATION DECISIONS AND IMPROVEMENTS THAT ARE PLANNED, DESIGNED, AND MAINTAINED TO ENHANCE PUBLIC TRANSPORTATION SERVICE WHILE PROMOTING SAFE AND EFFICIENT OPERATIONS.

§ 1. WHEREAS, the Norman City Council adopts the Go Norman Transit Plan; and

§ 2. WHEREAS, the Go Norman Transit Plan expands on the work in the Norman Comprehensive Transportation Plan from a transit perspective; and

§ 3. WHEREAS, City staff will be able to use the Go Norman Transit Plan as a tool to properly design, coordinate, and implement transit improvements; and

§ 4. WHEREAS, the City held numerous public and informational meetings, supported by a project website, to solicit input for the Go Norman Transit Plan, and citizens and stakeholders who attended provided comments and those were acknowledged by the project team; and

§ 5. WHEREAS, the Go Norman Transit Plan is intended to be used as a guide in the day-to-day decisions affecting transit in Norman and will be updated periodically to reflect the growth in the community; and

§ 6. WHEREAS, the Go Norman Transit Plan contains 6 Chapters with Chapter 1 containing the Executive Summary, Chapter 2 contains information on Existing Conditions, Chapter 3 contains the Service Plan, Chapter 4 contains the Capital Plan. Chapter 5, contains the Financial Plan, and Chapter 6 contains information on Next Steps; and

§ 7. WHEREAS, the Go Norman Transit Plan contains 4 Appendices with Appendix A containing the Existing Conditions Report, Appendix B contains the Fare Analysis, Appendix C contains the Transit Supportive Design Toolkit, and Appendix D contains the Community Outreach Summary; and

§ 8. WHEREAS, the acceptance of the data and maps and adoption of the Go Norman Transit Plan does not commit the City of Norman to any specific funding strategy; and

§ 8. WHEREAS, nothing in the Go Norman Transit Plan is intended to negate or prevent future planning efforts.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORMAN, OKLAHOMA, AS FOLLOWS:

§ 9. THAT the Go Norman Transit Plan, dated 6-22, 2021, as included in Exhibit A to this Resolution, is hereby adopted.

PASSED AND ADOPTED this 22nd day of June, 2021.

Mayor

ATTEST:

Brenda Hall

City Clerk

CITY OF NORMAN CORPORATE SEAL OKLAHOMA

Acknowledgments

Norman City Council

Mayor Breea Clark

Councilmember Brandi Studley, Ward 1

Councilmember Lauren Schueler, Ward 2

Councilmember Alison Petrone, Ward 3

Councilmember Lee Hall, Ward 4

Councilmember Michael Nash, Ward 5

Councilmember Elizabeth Foreman, Ward 6

Councilmember Stephen Holman, Ward 7

Councilmember Matthew Peacock, Ward 8

City of Norman Staff

Shawn O'Leary, Director of Public Works

Taylor Johnson, Public Transit Coordinator

Cydney Karstens, Management Analyst

Annahlyse Meyer, Chief Communications Officer

Lora Hoggatt, Planning Services Manager

EMBARK

Michael Scroggins, Marketing & IT Manager

Consultant Team

Nelson\Nygaard

James Gamez, Project Manager

Peter Soderberg, Deputy Project Manager

Alex Mercuri, Planner

Ayaka Habu, Planner

Jungwha Yuh, Designer

Michael Carraher, Analyst

Paris Latham, Analyst

Ulises Hernandez-Jimenez, Analyst

Tanya Shah, Analyst

Jacob DeGeal, Designer

Anglin PR

Jody Britt, Public Relations

Becky Cavnar, Public Relations

Table of Contents

1 EXECUTIVE SUMMARY

INTRODUCTION

The Go Norman Transit Plan is a roadmap for optimizing and expanding transit service within the City of Norman. The plan is the outcome of a nearly year-long study that included a comprehensive review of the City of Norman's existing transit service and numerous community engagement activities. The Go Norman Transit Plan provides detailed and prioritized recommendations for improving and expanding transit.

BACKGROUND

Transition from the University of Oklahoma to City of Norman

In July 2019, the public transportation system was transitioned from the University of Oklahoma to the City of Norman. The City of Norman partners with EMBARK, the transit provider for the Oklahoma City metro area, to operate its transit and paratransit services.

The University of Oklahoma (OU) continues to operate Campus Area Rapid Transit (CART), a shuttle system designed to transport OU students from adjacent student housing to campus, as well as provide intra-campus circulation.

Investments in Public Transportation

In November 2019, 70% of Norman voters passed a 1/8th percent sales tax to fund public transportation. The sales tax ensured that the City could fill a projected funding gap and continue operating the system as it was transition from the University.

In November 2020, the City of Norman began construction of a facility that will house the public transportation fleet maintenance and operations activities. In March 2021, the Norman City Council approved the purchase of the city's first battery electric vehicle, a transit bus.

Community Benefits of Transit

The City of Norman's primary goals for public transit are to:

- Provide a safe, reliable, and efficient public transit service to citizens and visitors to increase access to and from destinations in Norman.
- Provide exceptional customer service to citizens and visitors of Norman to provide a more positive experience when using public transit.

As the City of Norman recovers from COVID-19 and resumes the rapid growth of recent years, public transportation will remain an essential element of the local transportation system. Transit will also play a crucial role in helping the city achieve affordability, equity, and sustainability goals.

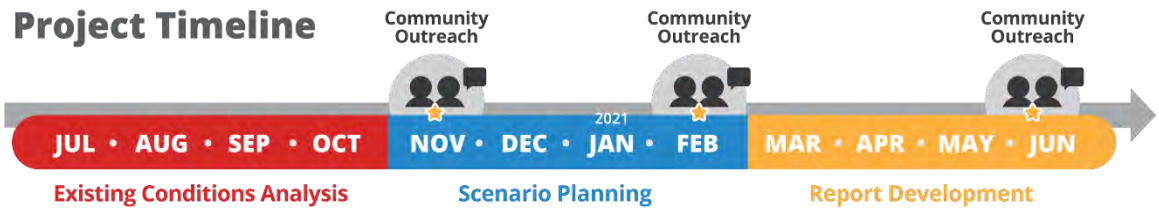
A robust transit system makes Norman a better place to live and visit by supporting economic growth and increasing access to opportunity.

STUDY OVERVIEW

In July 2020, the City of Norman initiated a comprehensive transit study with several objectives:

- Assessing the existing route network design
- Recommending the location and characteristics of a future downtown transit center
- Developing a detailed plan to guide service improvements and capital investments
- Actively engaging the public and community stakeholders throughout the study

The nearly year-long study examined existing transit and market conditions. The study also included robust and dynamic community and stakeholder outreach. The outcome of the study is an implementable long-range plan to optimize and expand public transit in Norman.



EXISTING CONDITIONS

The initial phase of the study was a comprehensive analysis of existing conditions. The purpose of the analysis was to summarize the background conditions in which the City's transit system operates.

Service Analysis

The analysis covered existing route design, schedules, ridership trends, and paratransit travel patterns. The service analysis revealed the following key findings:

- EMBARK Norman provides extensive coverage, serving most high-density residential areas, as well as most major employment, education, shopping, and medical destinations.
- East Norman has high ridership and warrants an increased level of service.
- Northwest Norman does not have sufficient ridership to justify 30-minute service.
- Ridership activity varies significantly across existing routes.
- System ridership has steadily increased since April 2020, when service reductions and policies associated with COVID-19 pandemic were put into place.

Market Analysis

Local demographic and socio-economic characteristics were examined to identify population groups most likely to use transit and how well they are currently served by transit. This exercise revealed a diverse set of rider types, each of which has unique transit needs and preferences.

Families without a car

Employees without a car

Seniors who do not drive

Students

Commuters to/from OKC

Employment density and commute patterns were also analyzed to highlight corridors that can support transit. Existing conditions were summarized in a report that served as the foundation for the development of service, capital, and policy recommendations.

COMMUNITY OUTREACH

Community participation was essential to the development of this plan. Outreach activities were conducted at three stages of the project and consisted virtual and in-person public meetings, stakeholder discussions, a project website, online surveys, social media, press releases, and project information sheets mailed with utility bills. The first round of outreach focused on receiving comments on existing transit service and opportunities for improvement. The second round of outreach introduced potential changes to the existing route network. Plan recommendations were presented during the third round of community meetings.

Community Feedback

Online outreach activities were extremely successful in obtaining community feedback. Online surveys conducted during the first and second round of community outreach generated a combined 900 responses. Survey respondents expressed a need for the following:

- The addition of Sunday service
- Longer hours of service
- Increased frequencies
- Bus stop improvements
- New service to Moore Norman Technology Center and Norman Public Library East

Community feedback was instrumental in the development and refinement of service recommendations.

Stakeholder Engagement

Representatives of several organizations with an interest in transit were invited to participate in virtual group discussions. Participating stakeholders included:

- ABLE Council for Developmental Disabilities
- Association of Central Oklahoma Governments
- Cleveland County Family YMCA
- EMBARK
- Moore Norman Technology Center
- Norman Chamber of Commerce
- Norman Citizen's ADA Advisory Committee
- Norman Economic Development Coalition
- Norman Next
- Norman Regional Health System
- Oklahoma Civil Air Patrol
- Oklahoma Department of Transportation
- Oklahoma Department of Veterans Affairs
- Oklahoma Transit Association
- Pioneer Library System
- Regional Transportation Authority of Central Oklahoma
- Thunderbird Clubhouse
- University of Oklahoma Campus Area Rapid Transit

Stakeholder representatives identified important destinations not currently served by transit and potential service improvements that would benefit their constituents. Stakeholder representatives also provided feedback on proposed route network changes and future expansion opportunities.

RECOMMENDATIONS

Update and streamline the route network

Realign bus routes to better serve the needs of existing and potential transit riders by improving access to key destinations and reducing travel time.

Establish a Downtown Transit Center

Relocate the local route transfer hub from the OU campus to downtown Norman to maximize efficiency and allow for future service expansion.

Strategically expand bus service

Extend routes to serve emerging destinations, offer longer hours and more frequent service, and operate on Sundays.

Upgrade and standardize the fleet

Replace aging vehicles and assemble a uniform fleet to minimize maintenance costs. Pursue Federal Transit Administration (FTA) grants for replacement buses.

Continue to operate fare-free

Avoid costly fare collection equipment on new buses. Allow riders to adjust to route changes and the local economy to recover from the pandemic before re-evaluating the fare policy.

Promote transit supportive land use

Make transit easier to access and encourage more sustainable development. Maximize rider safety, comfort, and convenience.

2 EXISTING CONDITIONS

FIXED-ROUTE TRANSIT

Service Availability

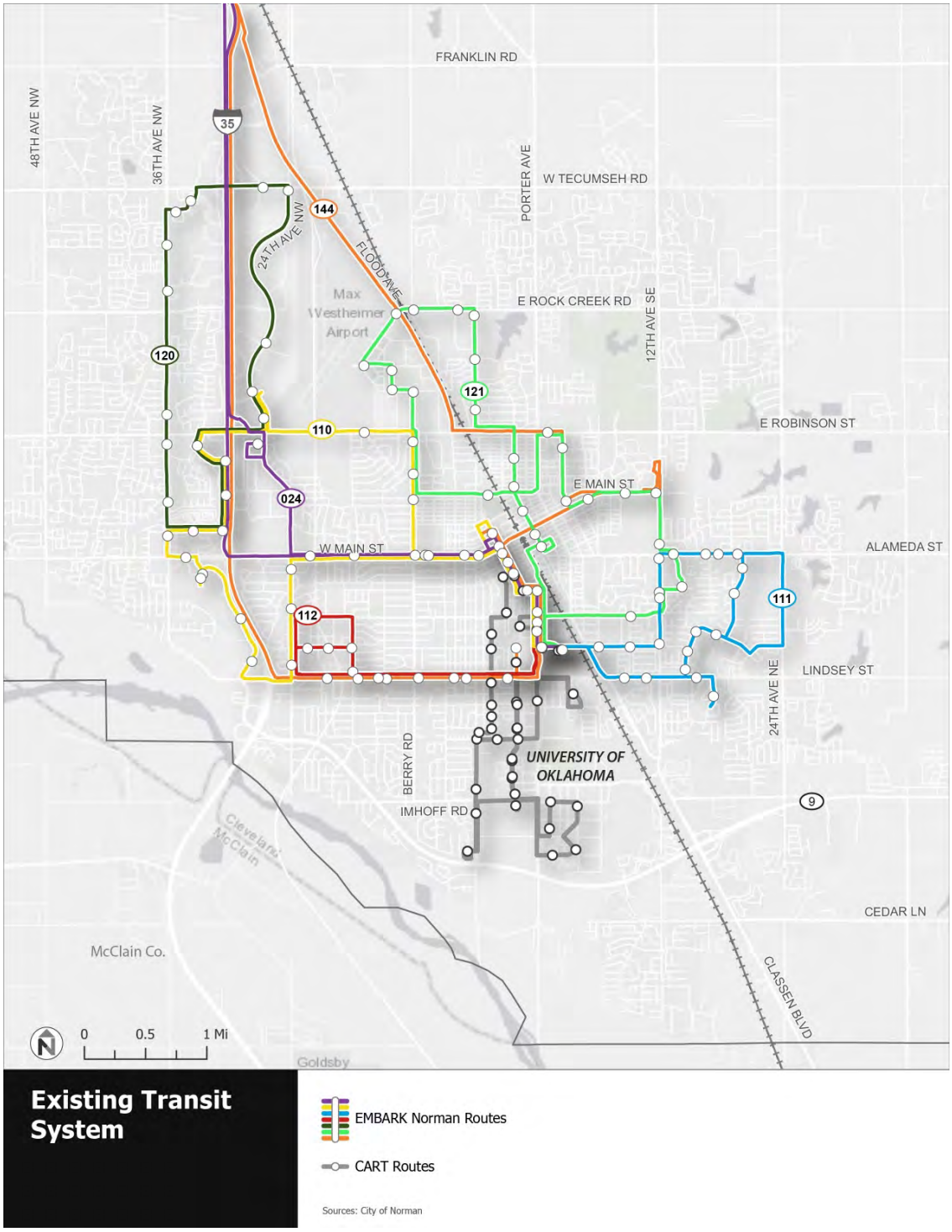
The City of Norman operates fare-free, fixed-route bus service Monday through Saturday. Branded as EMBARK Norman, the transit network is comprised of five local routes and one limited stop route. EMBARK Norman Routes 110, 111, 112, and 121 operate from 7:00 a.m. to 10:00 p.m. on weekdays and from 10:00 a.m. to 7:00 p.m. on Saturdays. EMBARK Norman Route 120 operates from 10:15 a.m. to 5:28 p.m. on weekdays only. EMBARK Norman Route 144 provides two round trips between Norman and the Social Security office in Moore.

EMBARK Oklahoma City Route Route 024 Norman Express provides nine round trips between Norman and Downtown Oklahoma City on weekdays only.

Service Span and Trip Frequencies of EMBARK Norman and EMBARK OKC Routes

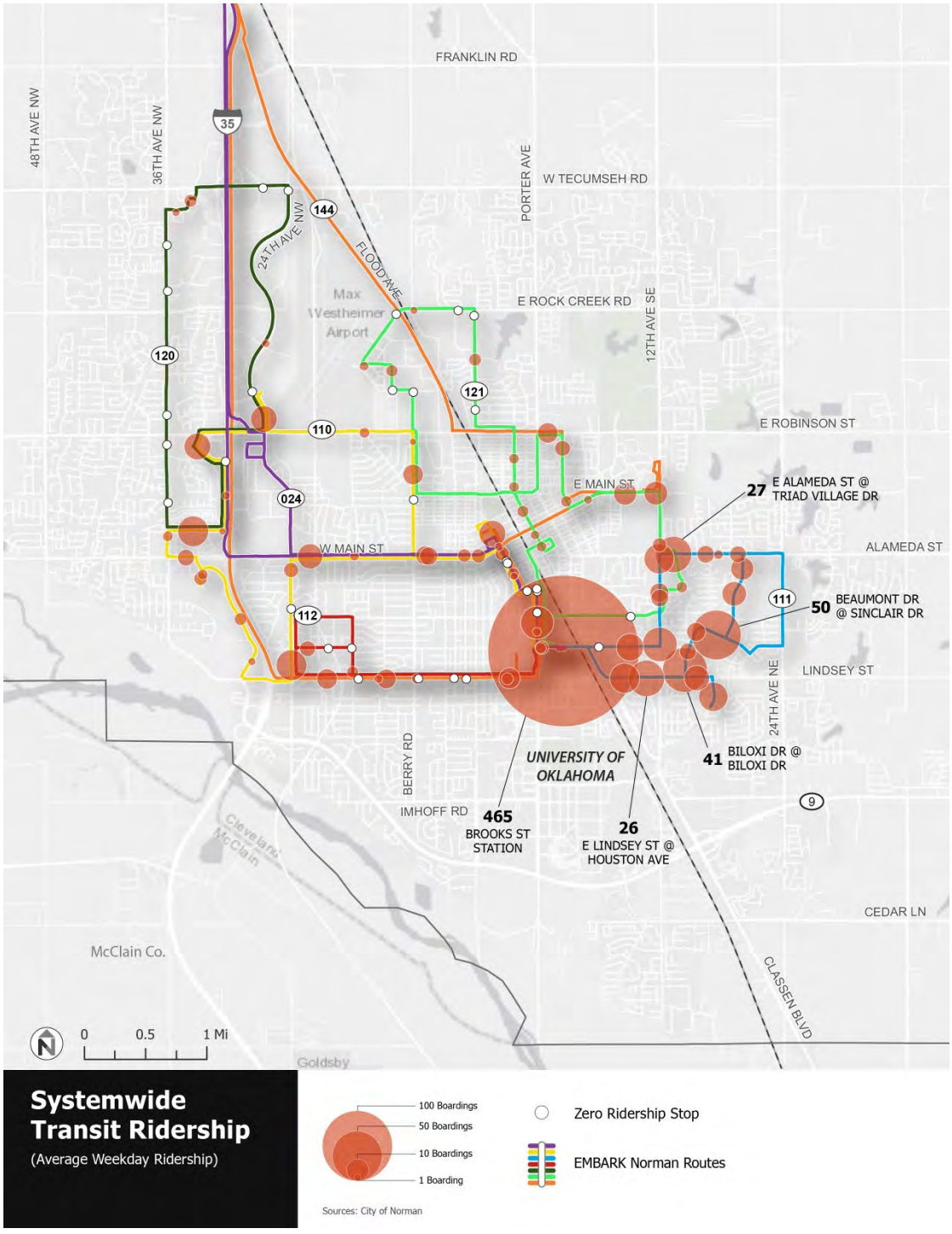
System Design

While the EMBARK Norman route network provides extensive coverage, most routes operate in loop, resulting in indirect travel for riders. Routes have a timed connection at the Brooks Street Transfer Station on the OU campus. Route 120 intersects with Route 110 at University Town Center and Sooner Mall, however, the connection between these routes is not timed.



Ridership Activity

Approximately 70% of EMBARK Norman riders make connections at Brooks Street Transfer Station. Nearly 45% of riders live within a one-square mile area of East Norman between Alameda Street and Lindsey Street. Major transit destinations include the University of Oklahoma, Sooner Mall, City Hall, University Town Center, and the Community Services Building.

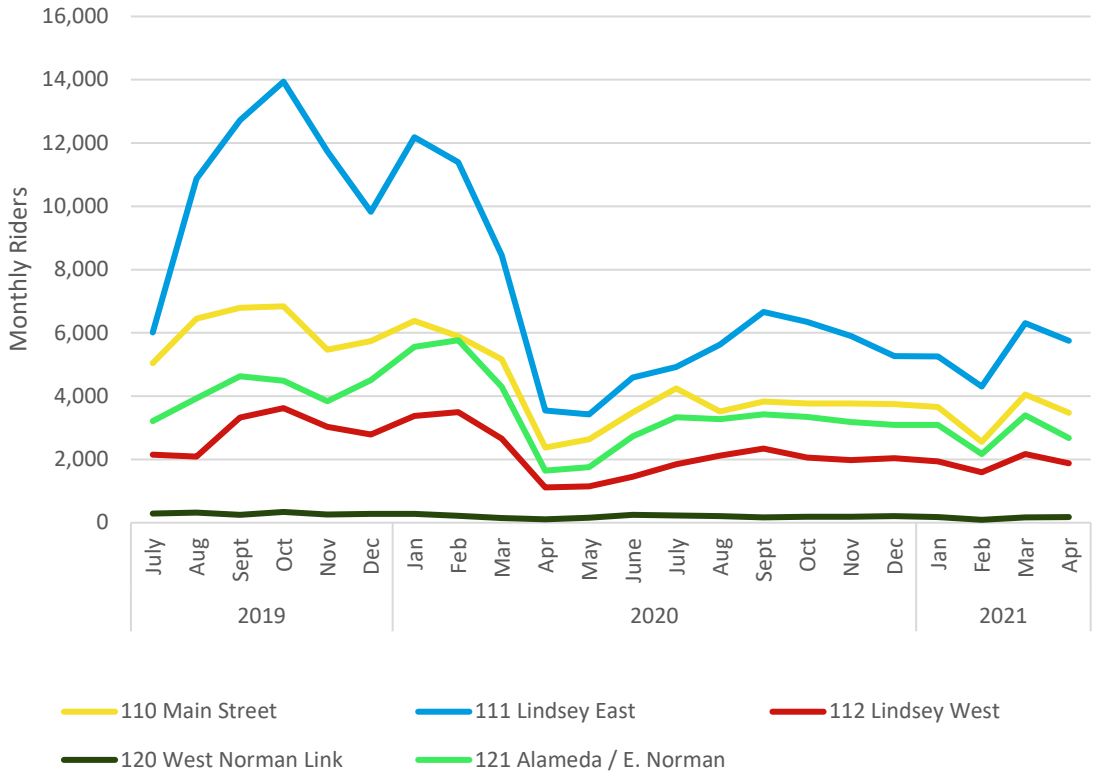


Historical Ridership

System ridership on EMBARK Norman local routes peaked in late 2019 and reached a low point in April 2020 during the early stages of the COVID-19 pandemic. System ridership has steadily increased since that period, however, ridership in April 2021 was approximately 50% less than October 2019.

Route 111 Lindsey East carries far more riders than other EMBARK Norman local routes, particularly when OU is in session. On the other end of the spectrum, Route 120 West Norman Link generates minimal ridership activity. Route 120 ridership is comparable to EMBARK Plus Norman paratransit service in terms of riders per hour.

Historical EMBARK Norman Transit Local Route Monthly Ridership



PARATRANSIT

Service Eligibility

The City of Norman provides fare-free, curb-to-curb complementary paratransit service, branded as EMBARK Plus, for qualifying individuals with disabilities who are unable to functionally ride the fixed-route system. EMBARK Plus riders are required to submit an application and relevant documentation to determine eligibility and must recertify eligibility every three years.

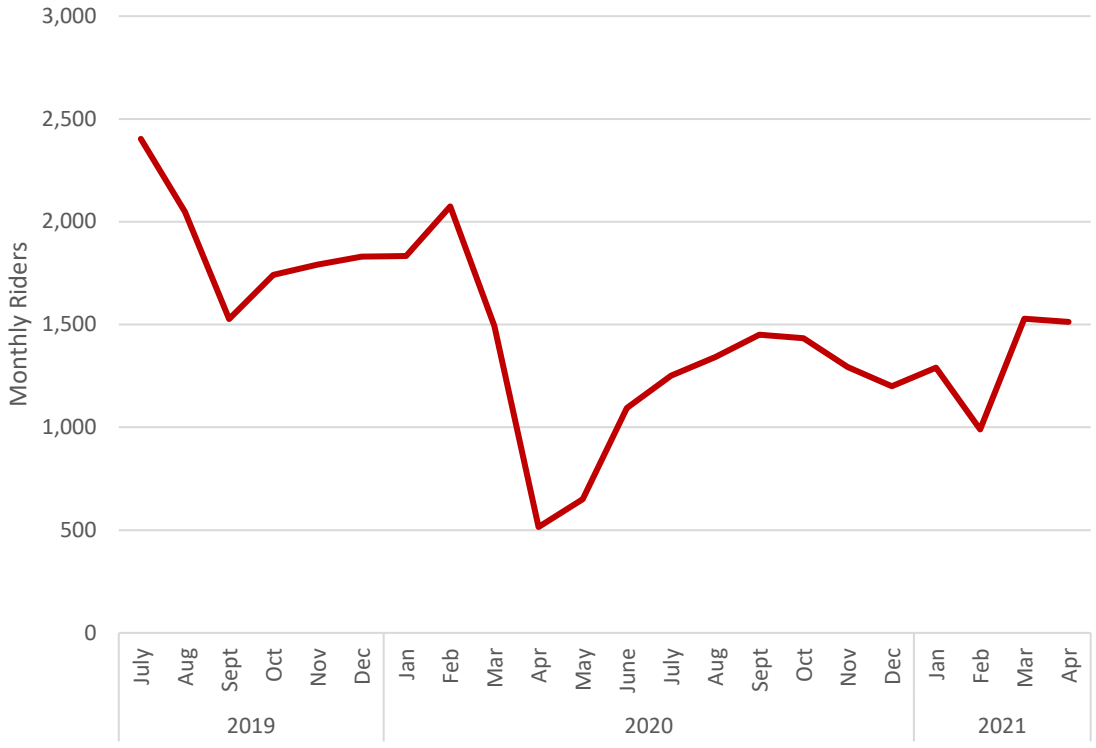
Service Availability

EMBARK Plus consists of two service zones. Zone 1 extends ¾ mile beyond the fixed-route network and is available from 7:00 a.m. to 10:00 p.m. on weekdays and from 10:00 a.m. to 7:00 p.m. on Saturdays. Zone 2 extends to city limits and is available from 7:00 a.m. to 7:00 p.m. on weekdays only.

Historical Ridership

Similar to fixed-route service, EMBARK Plus Norman paratransit ridership reached a low point in April 2020 and has steadily increased since that period. Ridership in April 2021 was approximately 37% less than the highest point in July 2019.

Historical EMBARK Plus Norman Paratransit Monthly Ridership



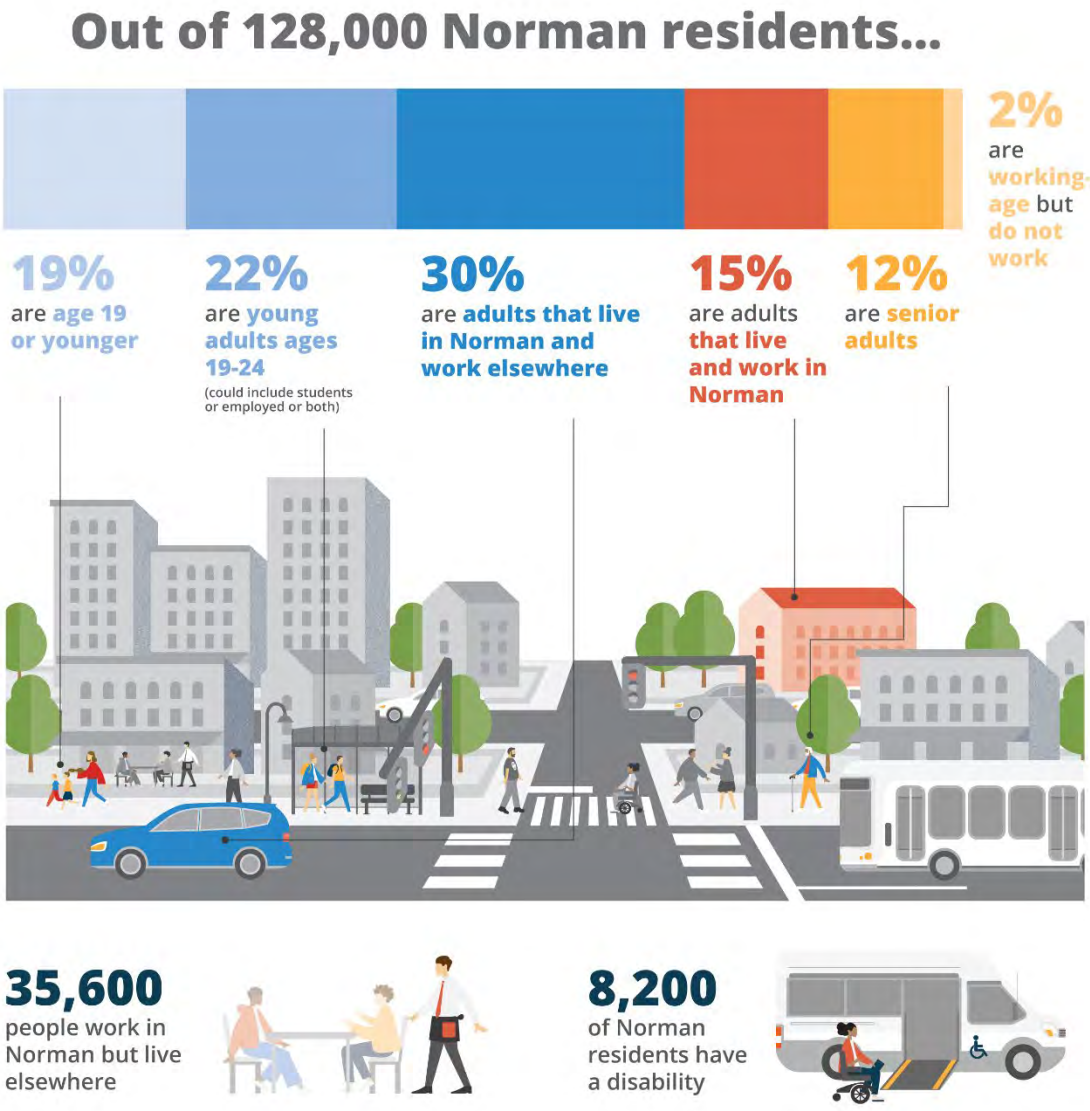
Ridership Activity

EMBARK Plus Norman paratransit riders have trip patterns. Major destinations include Norman Senior Citizens Center, Cleveland County Family YMCA, Norman Housing Authority, Full Circle Adult Day Center, Walmart Supercenter, and Crest Fresh Market.

POPULATION AND EMPLOYMENT

Community Profile

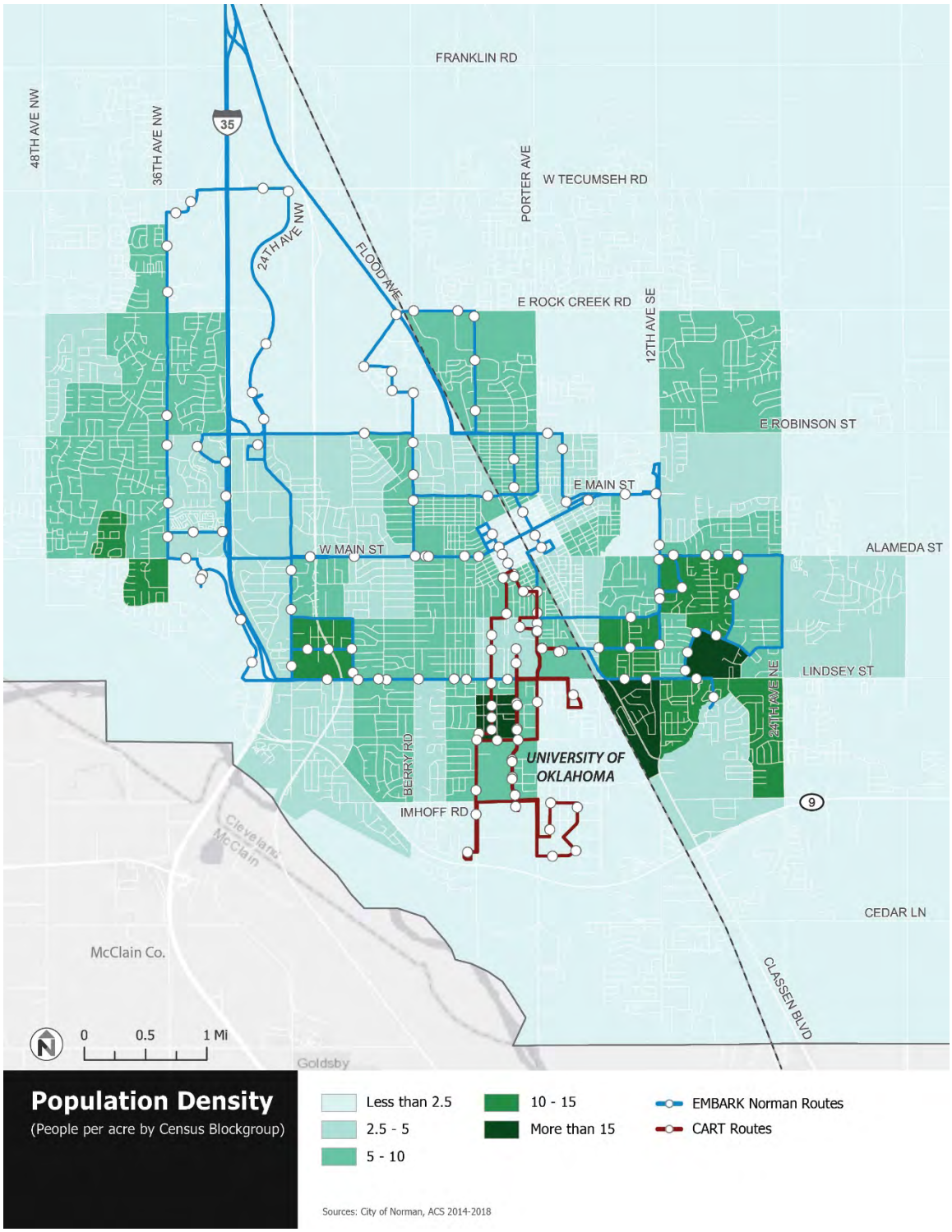
Norman has a high young adult population due to the presence of the University of Oklahoma. Approximately 63% of working-age Norman residents commute to workplaces outside of the city while 32% of working-age residents live and work within the city. Nearly 65% of people employed in Norman commute into the city from other communities.



Source: ACS 2014-2018

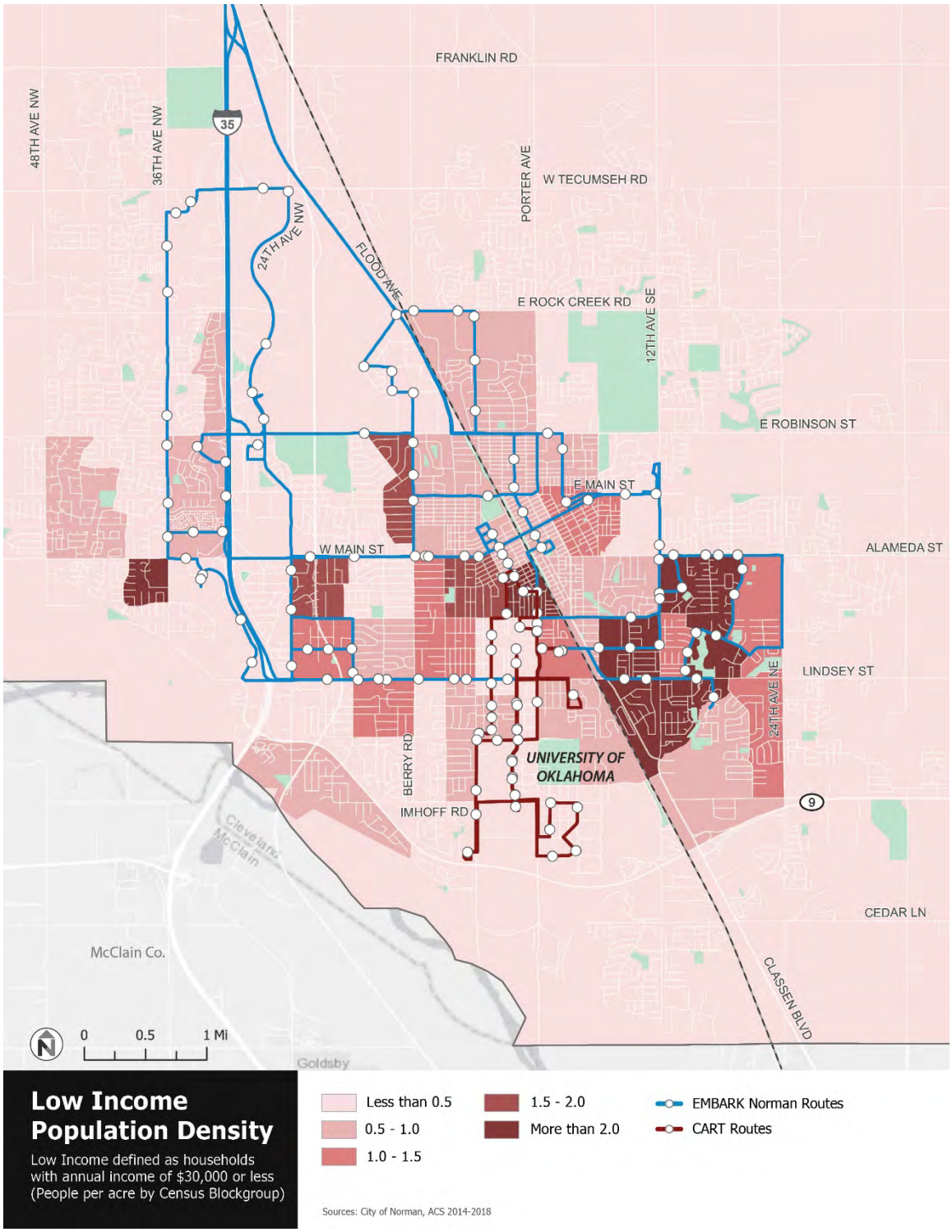
Population Density

Population density is a strong indicator for transit demand as residential areas must have a high concentration of residents to support transit. The most densely populated areas of the city include East Norman and the University of Oklahoma campus.



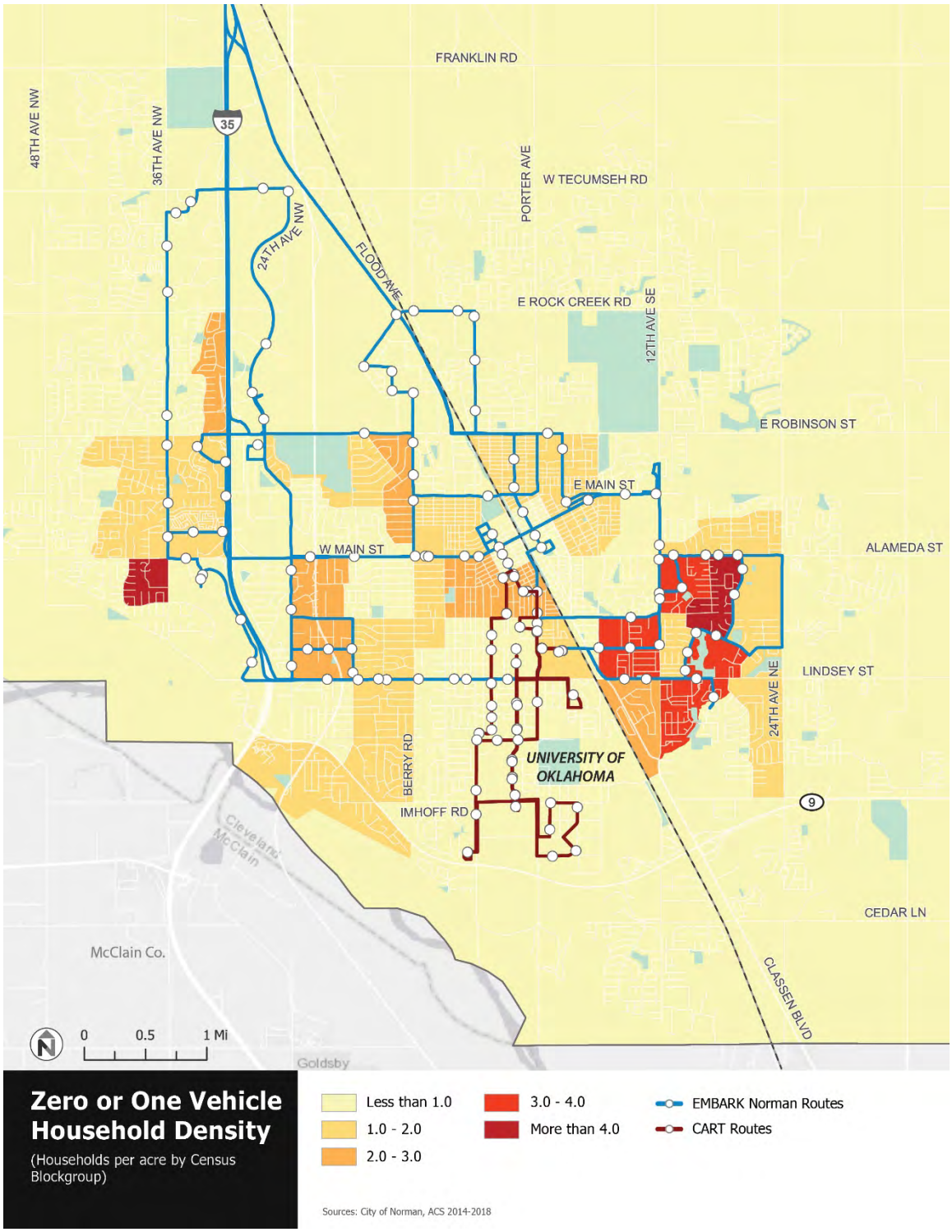
Low-Income Population

Low-income populations are generally highly correlated with transit demand due to the costs associated with owning and operating a vehicle. East Norman scores higher and the University neighborhood have the highest concentrations of low-income population.



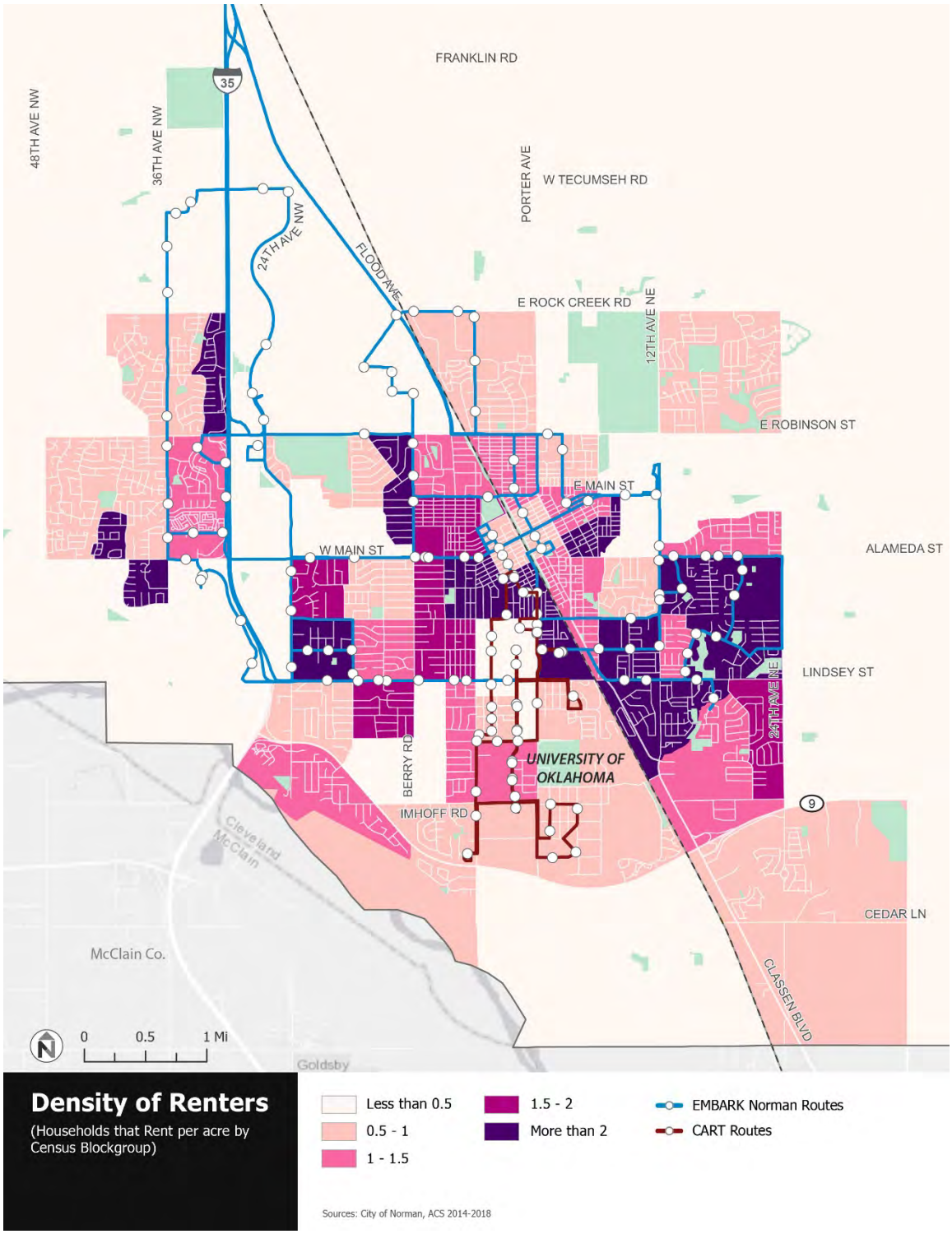
Limited-Vehicle Households

Households with limited or no access to a vehicle are among those most likely to need transit to access shopping, employment, medical, educational, recreational destinations. In Norman, East Norman has the highest densities of households with limited or no access to a vehicle.



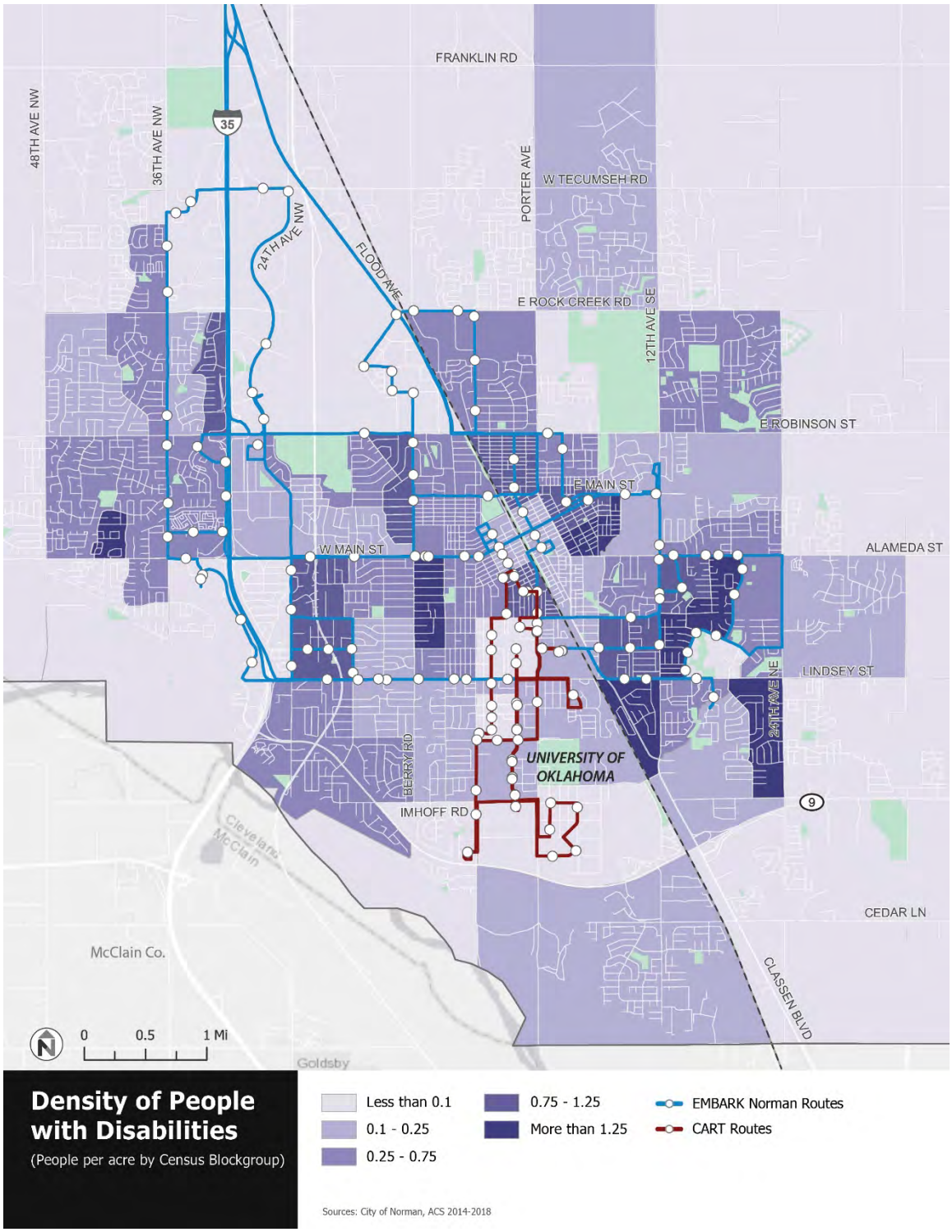
Renter Population

Areas with a high renter population typically have a higher need for public transit than areas that are predominately owner-occupied. Norman has a high renter population in many areas with the densest concentrations in East Norman and northeast of 24th Ave SW and West Lindsey Street.



People with Disabilities

Although some people with disabilities qualify for and use paratransit, many do not or prefer to use fixed-route bus service. People with disabilities are generally clustered in East Norman, neighborhood surrounding downtown Norman, and apartment communities in West Norman.



Major Employers

The University of Oklahoma is by far the largest employer in the city, with nearly 11,000 employees. Other major employers include Norman Regional Hospital, Norman Public Schools, and Johnson Controls.

Major Employer	Employees
The University of Oklahoma	10,745
Norman Regional Hospital	3,147
Norman Public Schools	1,972
Johnson Controls	1,225
Walmart Supercenters	1,170
City of Norman	874
Oklahoma Department of Mental Health and Substance Abuse Services	551
USPS National Center for Employee Development	500
National Oceanic & Atmospheric Administration	400
Cleveland County	396
Super Target	380
Oklahoma Veterans Center	390

Sources: City of Norman, Norman Economic Development Coalition, University of Oklahoma

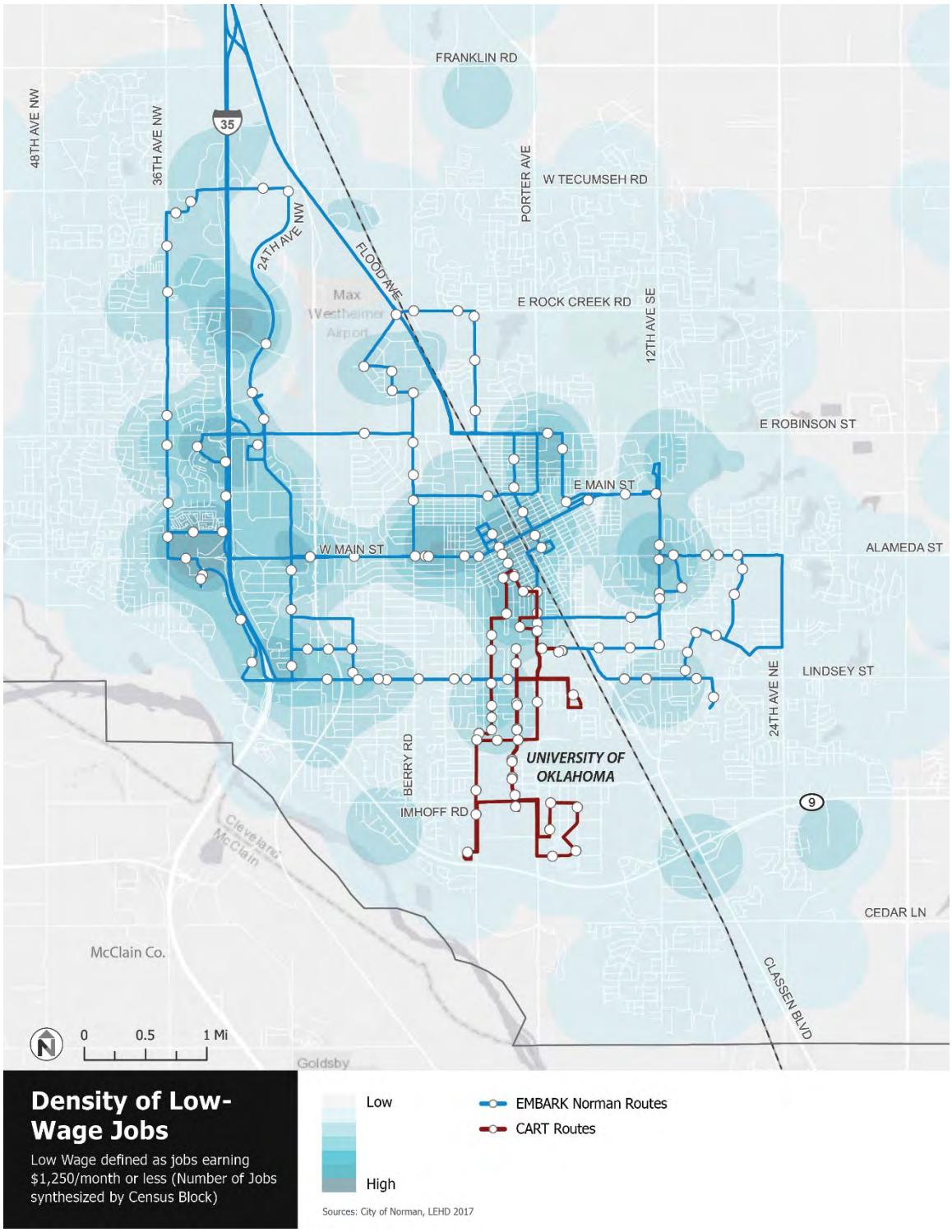
However, it should be noted that nearly half of OU employees are graduate assistants, student employees, or temporary employees.

OU Employee Type	Employees
Faculty	1,996
Staff	3,641
Graduate Assistants	1,614
Student Employees	2,569
Temporary Employees	925
Total	10,745

Source: University of Oklahoma

Low-Wage Employment

Retail centers along 36th Ave NW, I-35, and 24th Ave NW have the highest concentrations of low-wage employment in the city along with downtown, Campus Corner, and Norman Regional Hospital.



3 SERVICE PLAN

ROUTE NETWORK REDESIGN

The objective of the network redesign is to optimize EMBARK Norman routes and provide a foundation for future expansion. The recommended route network improves access to places people want to go such as grocery stores, shopping centers, and recreation centers by streamlining routes and reducing inconvenient loops. New and upgraded routes make it easier to take transit to work, school, and medical appointments.

The recommended routes converge in downtown Norman, reorienting transit service to the heart of the city and re-establishing the Depot as a vital transportation hub.

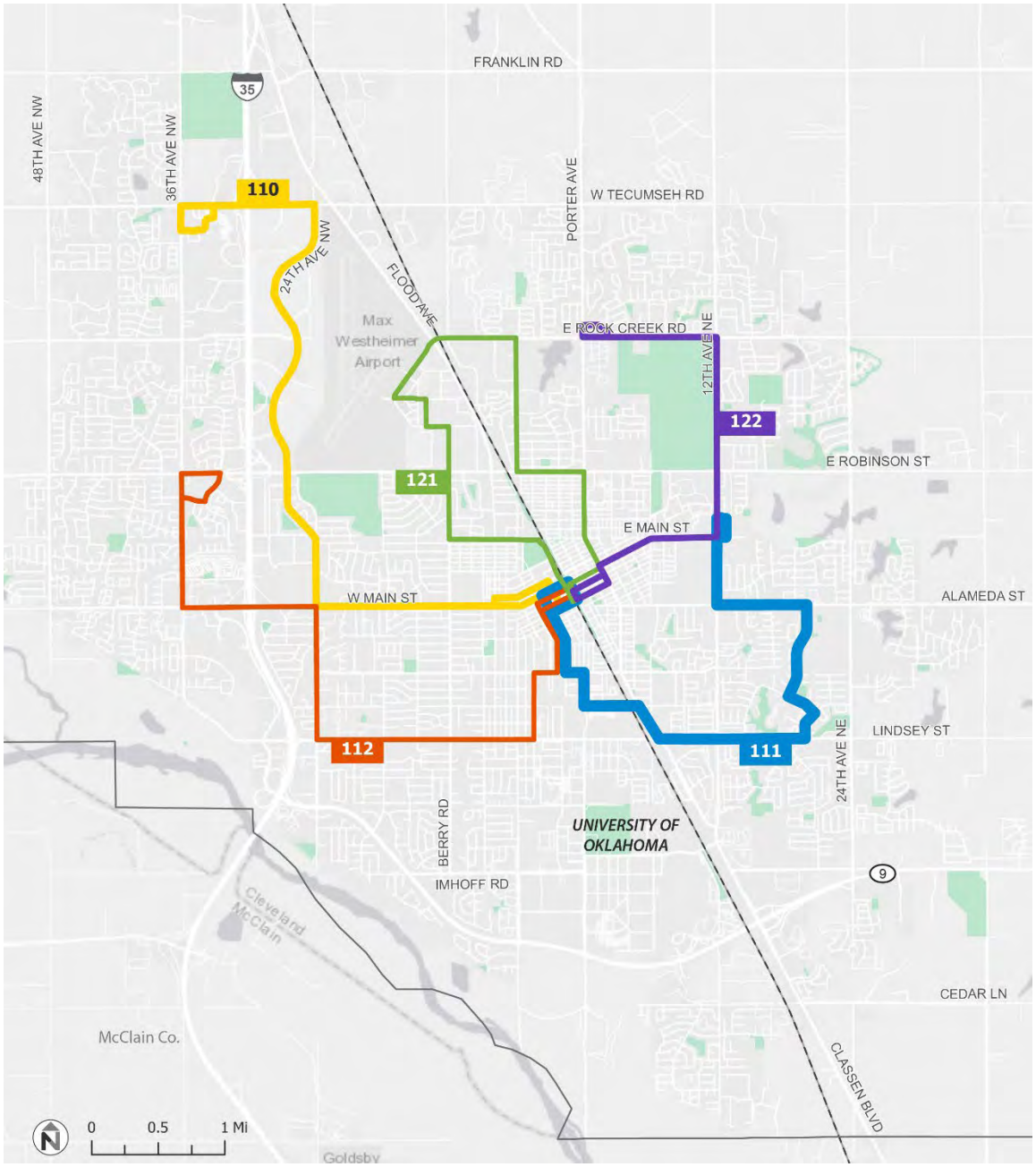
The service span (hours of operation) of all routes would be extended to improve access to employment. Weekday service would start one hour earlier at 6:00 a.m. and Saturday service would start two hours earlier at 8:00 a.m. and end one hour later at 8:00 p.m.

The recommended route network redesign does not require any additional buses, however, an increase of 4,500 annual service hours is required to extend service spans and operate all five routes on Saturday.

Recommended Route Characteristics

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	60	8:00am-8:00pm	60	-	-
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	-	-
112 West Lindsey	6:00am-10:00pm	60	8:00am-8:00pm	60	-	-
121 Airport	6:00am-10:00pm	60	8:00am-8:00pm	60	-	-
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	-	-

Recommended Route Network

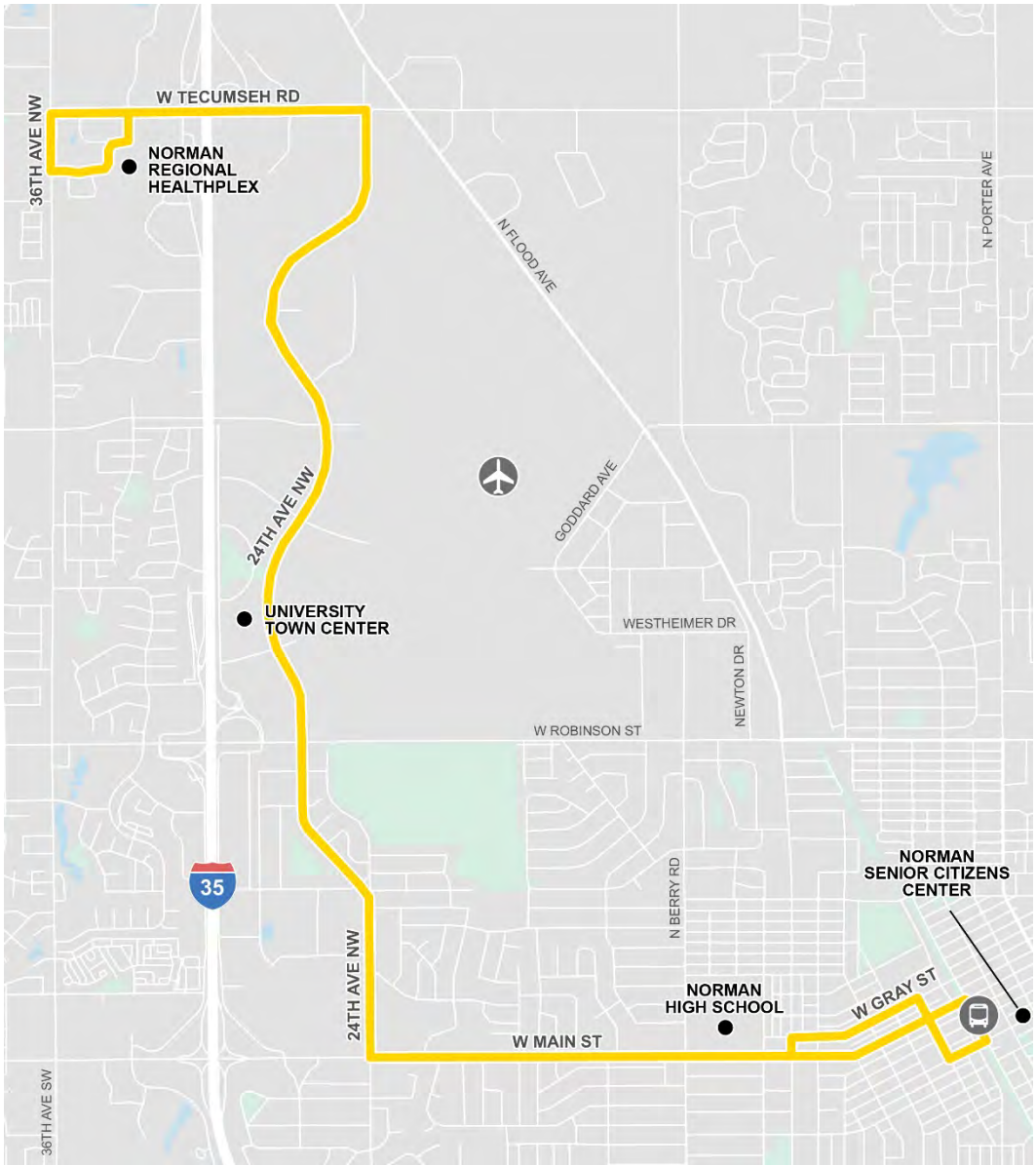


Route 110 24th Ave NW

Route 110 is upgraded from a meandering hour-long loop to a simple and direct route that serves West Main Street, 24th Avenue NW, and Tecumseh Road. Major destinations on recommended Route 110 include University Town Center, Norman Regional HealthPlex, and Norman High School.

Route 110 would maintain its 60-minute trip frequency. As additional infill development occurs along 24th Avenue NW between Tecumseh Road and Robinson Street, the trip frequency of Route 110 should be upgraded to every 30 minutes.

Recommended Route 110

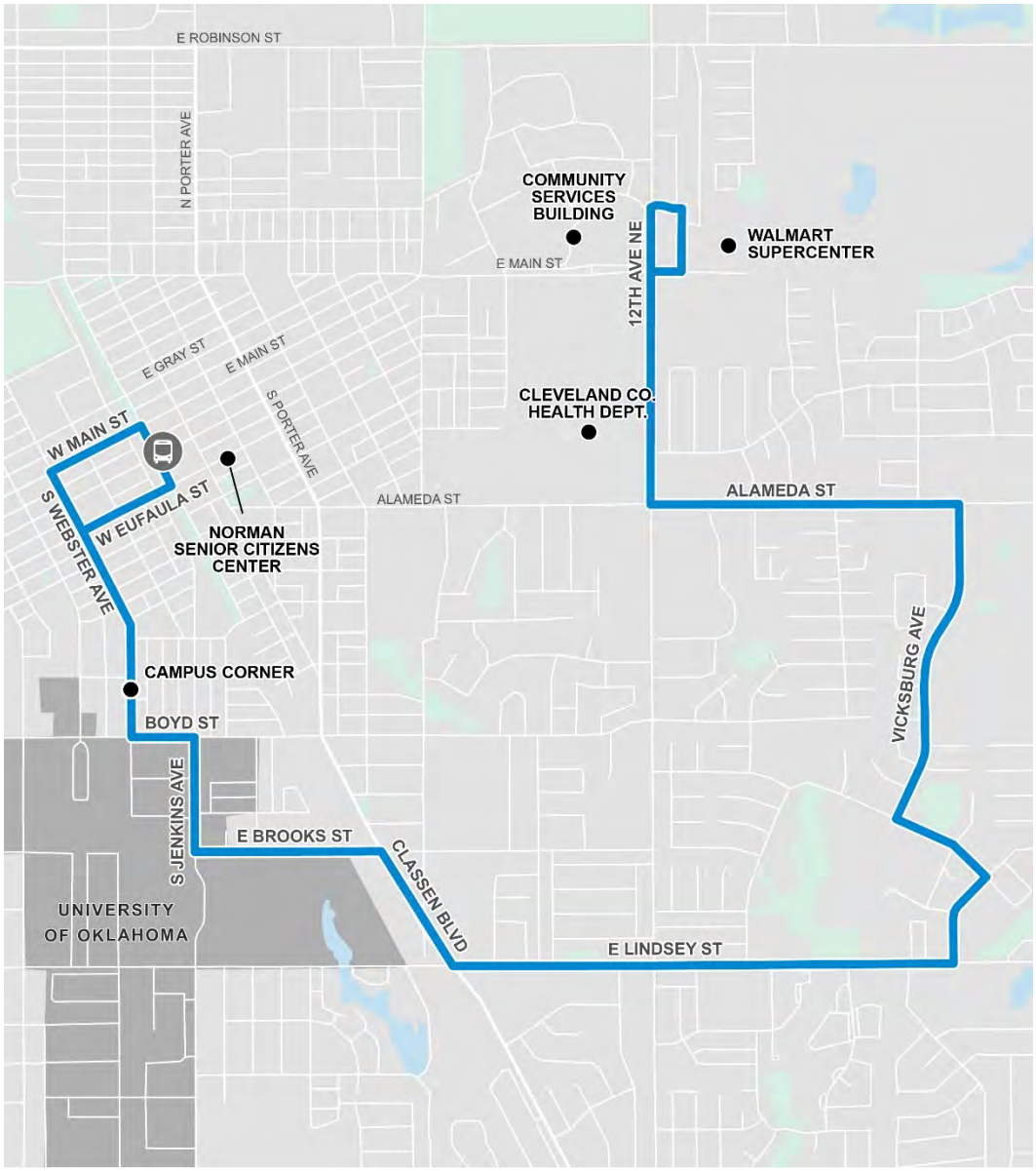


Route 111 East Lindsey

Route 111 maintains its primary purpose of transporting university students living near East Lindsey Street to the OU campus. However, Route 111 is also extended north along 12th Ave NE to provide a direct one-seat ride to Walmart Supercenter, Community Service Building, and Cleveland County Health Department. This extension would eliminate the need for East Lindsey riders to take two buses to reach a grocery store.

Route 111 would maintain its 30-minute frequency. As ridership increases, the trip frequency of Route 111 should be upgraded to every 15 minutes.

Recommended Route 111

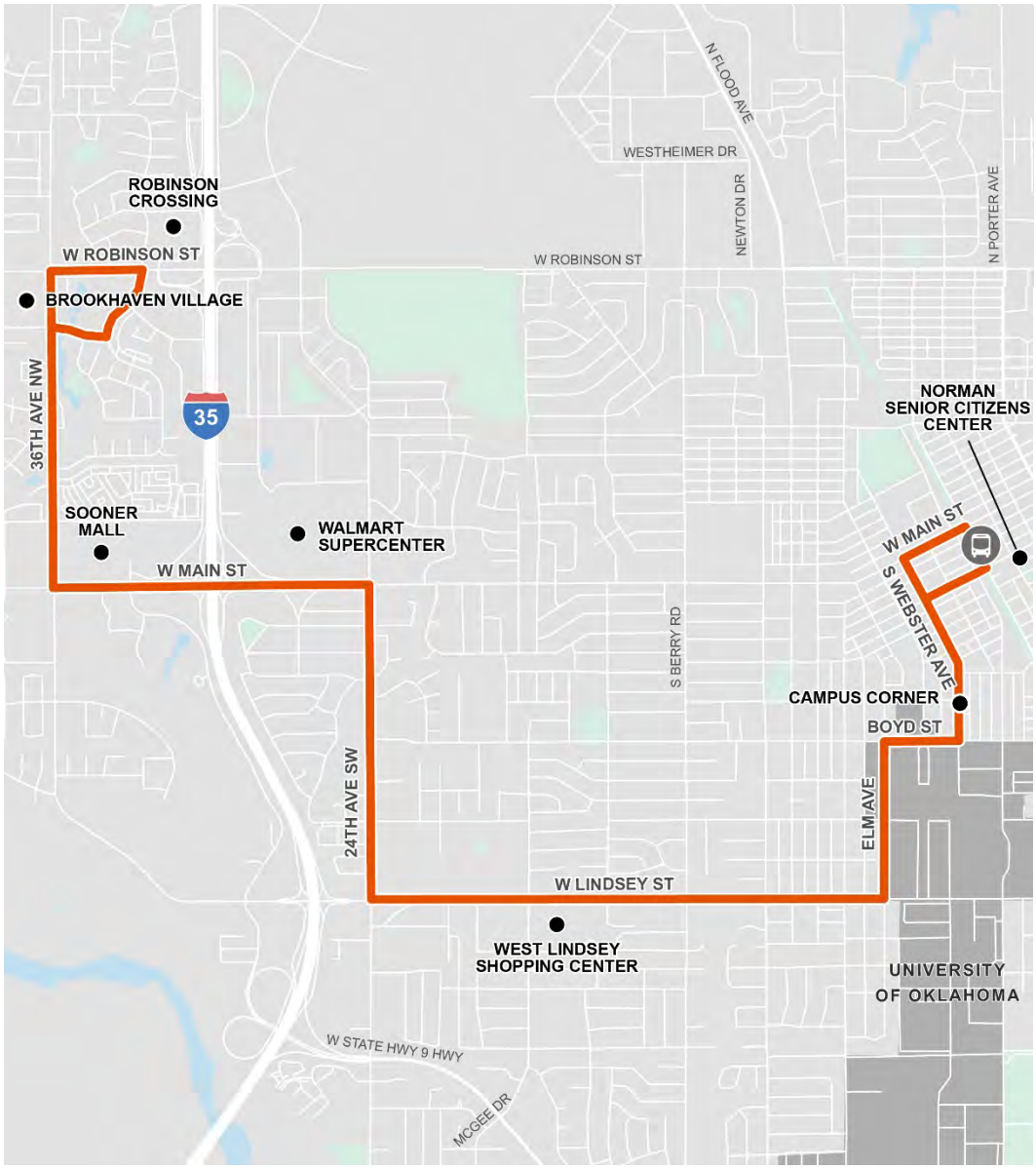


Route 112 West Lindsey

Route 112 is extended from 24th Ave SW to several shopping and employment destinations along West Main Street, 36th Avenue NW, and West Robinson Street, such as Walmart Supercenter, Sooner Mall, Brookhaven Village, and Robinson Crossing.

The extension of Route 112 would reduce its trip frequency to every 60 minutes. However, as ridership increases, the trip frequency of Route 112 should be upgraded to every 30 minutes.

Recommended Route 112

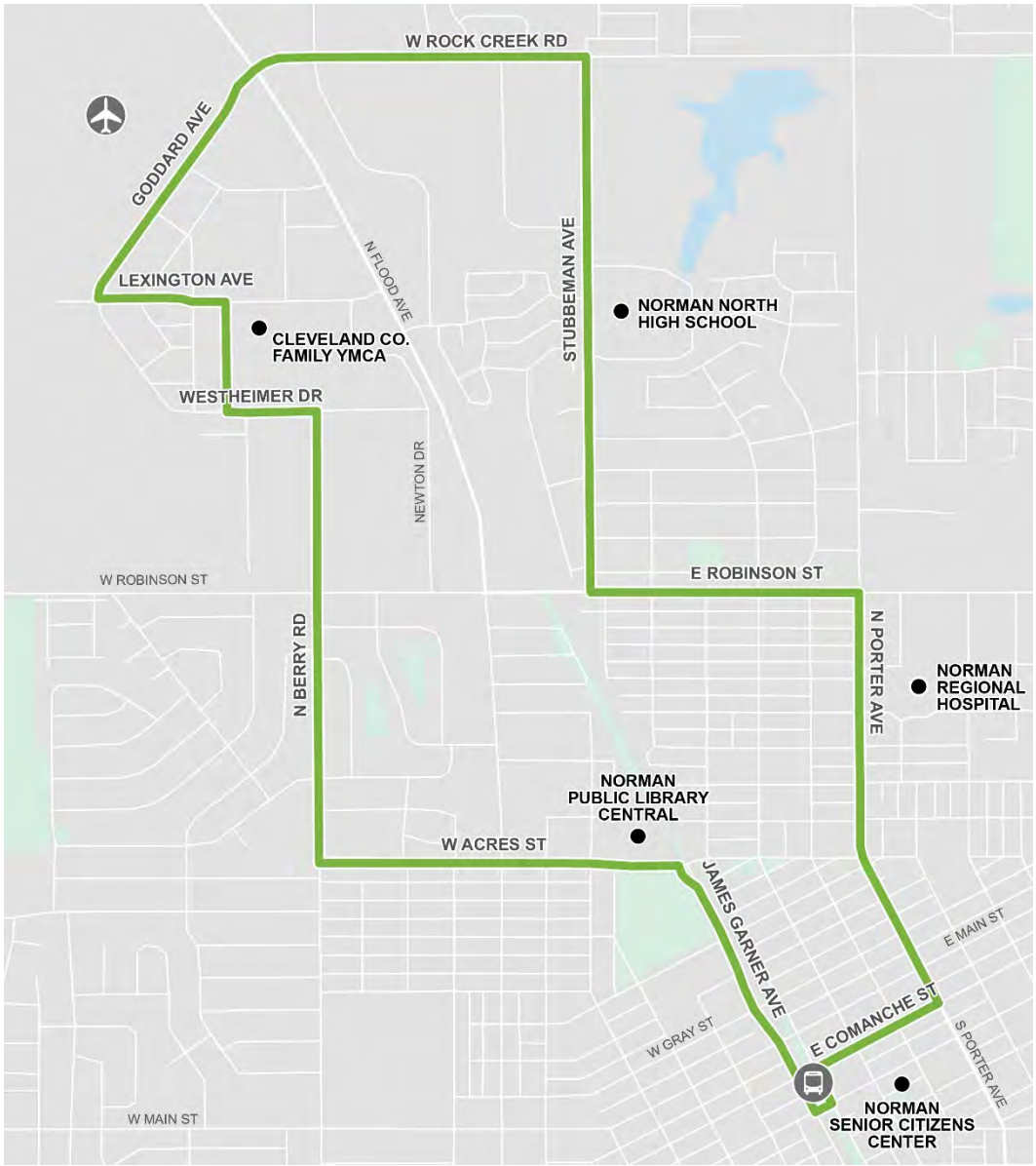


Route 121 Airport

Route 121 is shortened from an hour-long figure-8 alignment to an efficient, 30-minute clockwise loop. Route 121 would maintain a similar alignment along Acres Street, North Berry Road, Rock Creek Road, and Stubbeman Avenue. Route 121 would shift from Peters Avenue to North Porter Avenue to provide direct access to Norman Regional Hospital. Additional major destinations along the route include Norman Public Library Central and Cleveland County YMCA.

Route 121 would maintain its 60-minute trip frequency and be linked with Route 122. As a result, riders can connect between Route 121 and Route 122 without transferring buses.

Recommended Route 121

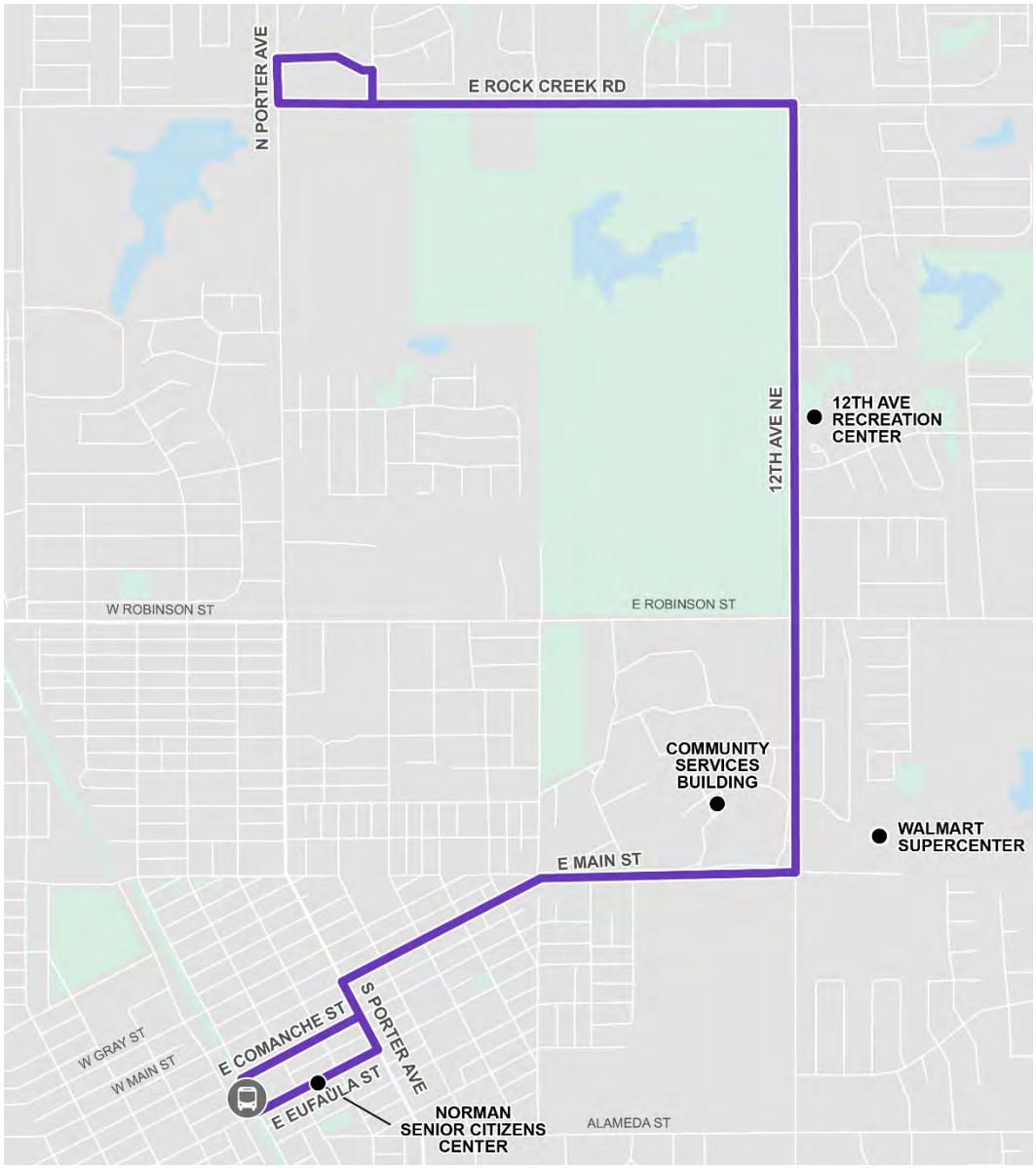


Route 122 12th Ave NE

Route 122 is a new route that introduces transit service to 12th Avenue NE and East Rock Creek Road in Northeast Norman. Route 122 would directly serve the Community Services Building and Walmart Supercenter. Route 122 would also introduce service to the 12th Ave Recreation Center and Garland Square.

Route 122 would have a 60-minute trip frequency and be linked with Route 121. As a result, riders can connect between Route 121 and Route 122 without transferring buses.

Recommended Route 122



SERVICE EXPANSION

Priority 1 – Sunday Service

This service expansion responds to rider requests for Sunday service. Sunday service span and trip frequencies would match Saturday service levels.

This improvement requires an additional 3,000 annual service hours but do not require any additional fixed-route buses. It is anticipated that the creation of Route 122 12th Ave NE will increase paratransit demand by extending EMBARK Plus Norman Zone 1. In addition, the increase in fixed-route hours of service would increase paratransit hours of service. Based on these assumptions, an additional paratransit vehicle and 2,500 annual paratransit service hours would be required.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
112 West Lindsey	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
121 Airport	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

Priority 2 – Upgrade Route 112

This service expansion upgrades the trip frequency of Route 112 from 60 minutes to 30 minutes. Ridership on the West Lindsey route is projected to grow rapidly with the extension to Sooner Mall and other retail destinations.

This improvement requires an additional 5,000 annual service hours and one additional bus.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
121 Airport	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

Priority 3 – Upgrade Route 110

This service expansion upgrades Route 110 which operates along 24th Ave NW, a corridor slated for significant development.

This improvement requires an additional 5,000 annual service hours and one additional bus.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
121 Airport	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

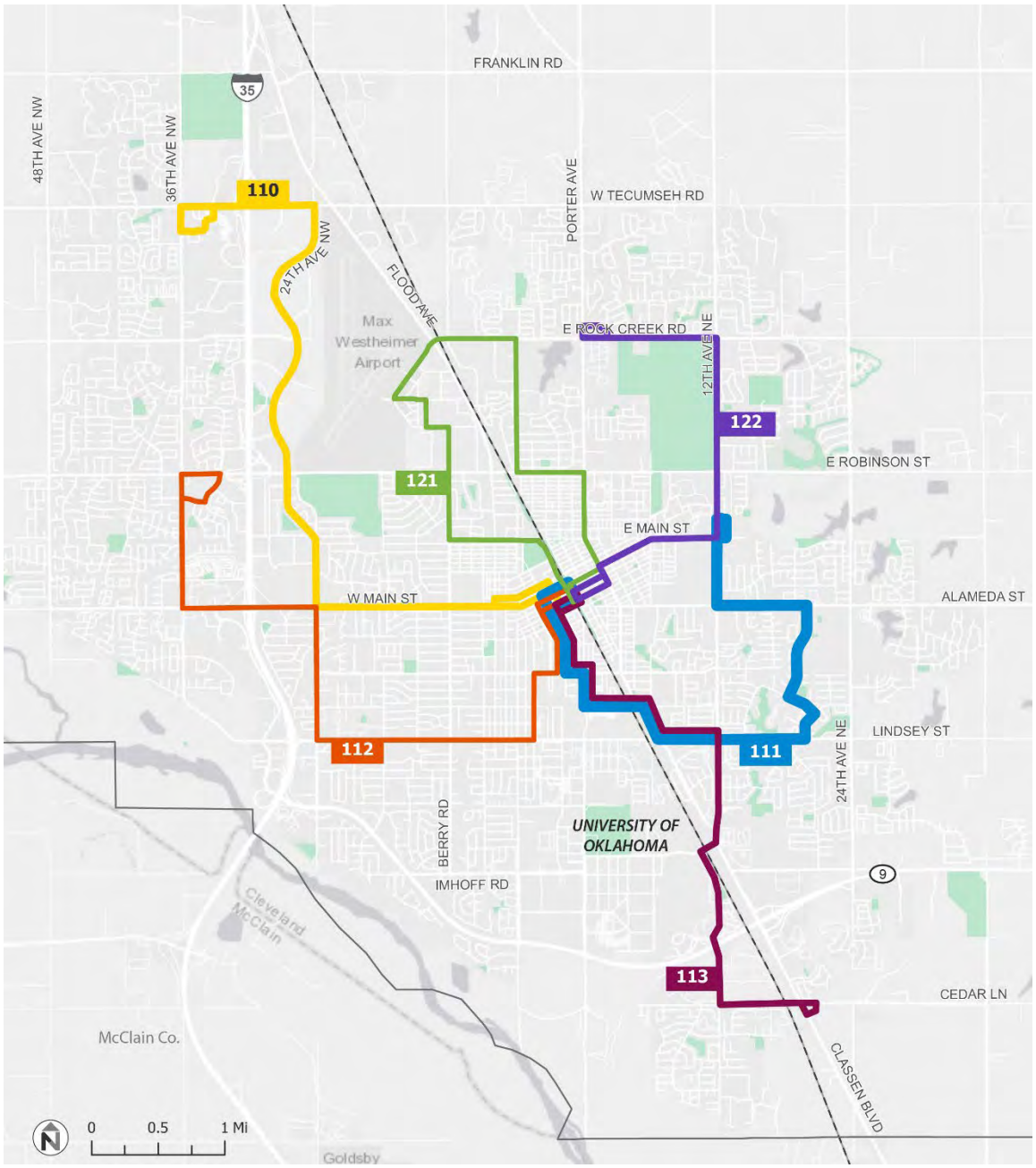
Priority 4 – Add Route 113

This service expansion adds a new route in rapidly growing Southeast Norman. The route parallels Classen Blvd, operating along 12th Ave SE and Cedar Ln and terminates at Walmart Supercenter.

This improvement requires an additional 6,000 annual service hours and one additional bus. It is also anticipated that adding a new route would increase paratransit demand by extending EMBARK Plus Norman Zone 1. Based on this assumption, an additional paratransit vehicle and 2,500 annual paratransit service hours would be required.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
121 Airport	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
123 Classen	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

Updated Route Network with Route 113



Priority 5 – Add East Alameda route; Extend Route 121

This service expansion adds a new Route 114 East Alameda, which deviates to Triad Village Drive and terminates at the East Branch Library.

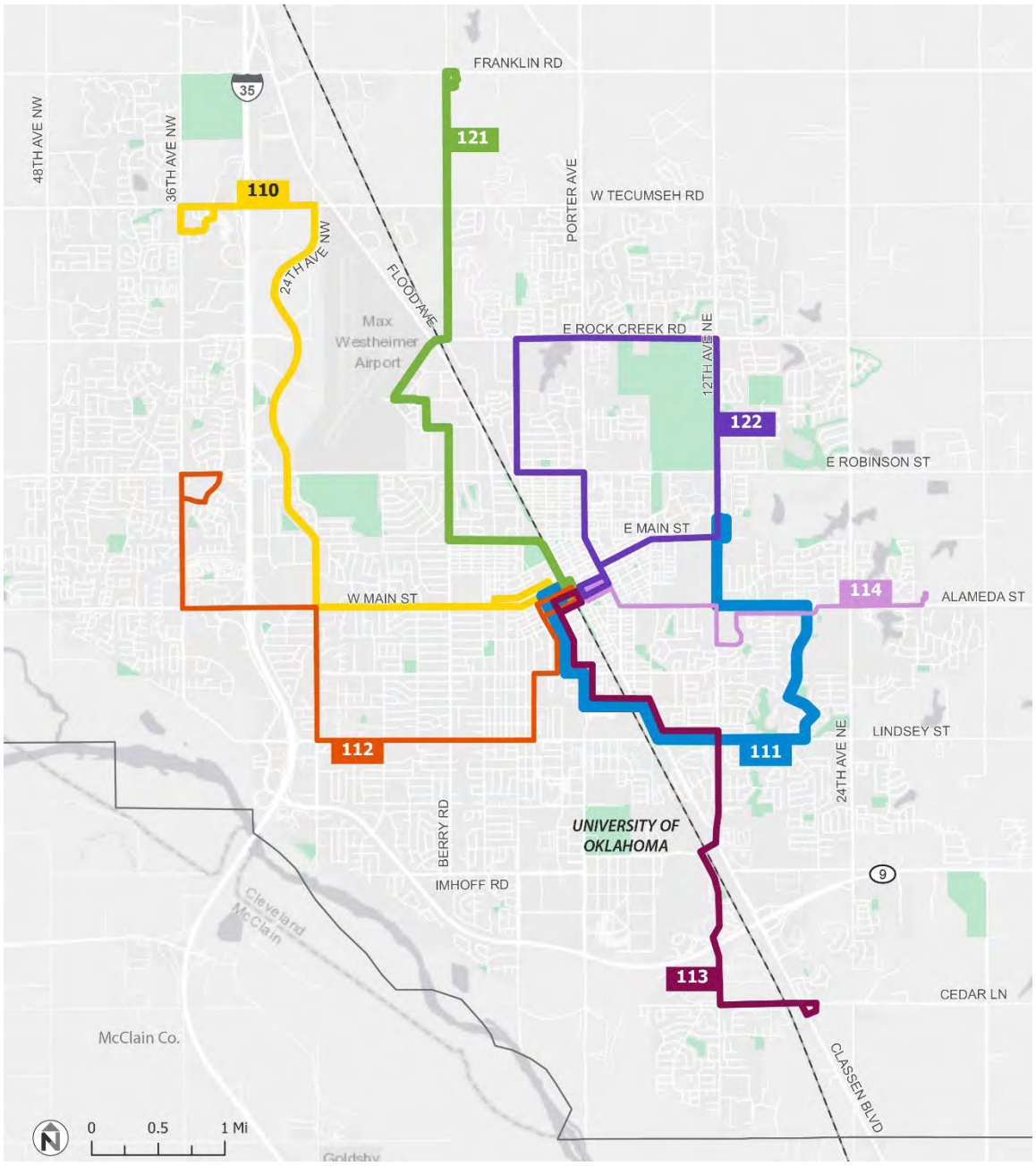
This service expansion also includes the extension of Route 121 north to Moore Norman Technology Center at the intersection of Franklin Road and 12th Ave NW.

This improvement requires an additional 5,000 annual service hours and one additional bus.

It is also anticipated that adding a new route would increase paratransit demand by extending EMBARK Plus Norman Zone 1. Based on this assumption, an additional paratransit vehicle and 2,500 annual paratransit service hours would be required.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
114 East Alameda	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
121 Airport/MNTC	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
123 Classen	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

Updated Route Network with Route 114



Priority 6 – Upgrade Route 111

This service expansion upgrades the trip frequency of the high-ridership Route 111 from every 30 minutes to every 15 minutes. This improvement requires an additional 8,000 annual service hours and two additional buses.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	15	8:00am-8:00pm	15	8:00am-8:00pm	15
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
114 East Alameda	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
121 Airport/MNTC	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
123 Classen	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60

Priority 7 – Upgrade Routes 121 and 123

This service expansion upgrades the trip frequencies of Routes 121 and 123 from every 60 to 30 minutes. This improvement requires an additional 11,000 annual service hours and two additional buses.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	15	8:00am-8:00pm	15	8:00am-8:00pm	15
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
114 East Alameda	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
121 Airport/MNTC	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
122 12th Ave NE	6:00am-10:00pm	60	8:00am-8:00pm	60	8:00am-8:00pm	60
123 Classen	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30

Priority 8 – Upgrade Routes 114 and 122

This service expansion upgrades the trip frequencies of Routes 114 and 122, bringing all EMBARK Norman transit routes to every 30 minutes or better. This improvement requires an additional 5,000 annual service hours and one additional bus.

Route	Weekday		Saturday		Sunday	
	Span	Frequency	Span	Frequency	Span	Frequency
110 24th Ave NW	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
111 East Lindsey	6:00am-10:00pm	15	8:00am-8:00pm	15	8:00am-8:00pm	15
112 West Lindsey	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
114 East Alameda	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
121 Airport/MNTC	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
122 12th Ave NE	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30
123 Classen	6:00am-10:00pm	30	8:00am-8:00pm	30	8:00am-8:00pm	30

SERVICE PLAN SUMMARY

Annual service hours and bus needs for each step of the service plan are listed in the table below. Peak buses refer to buses in service while total buses include necessary spare buses.

EMBARK Norman and EMBARK Norman Plus Long-Range Service Plan

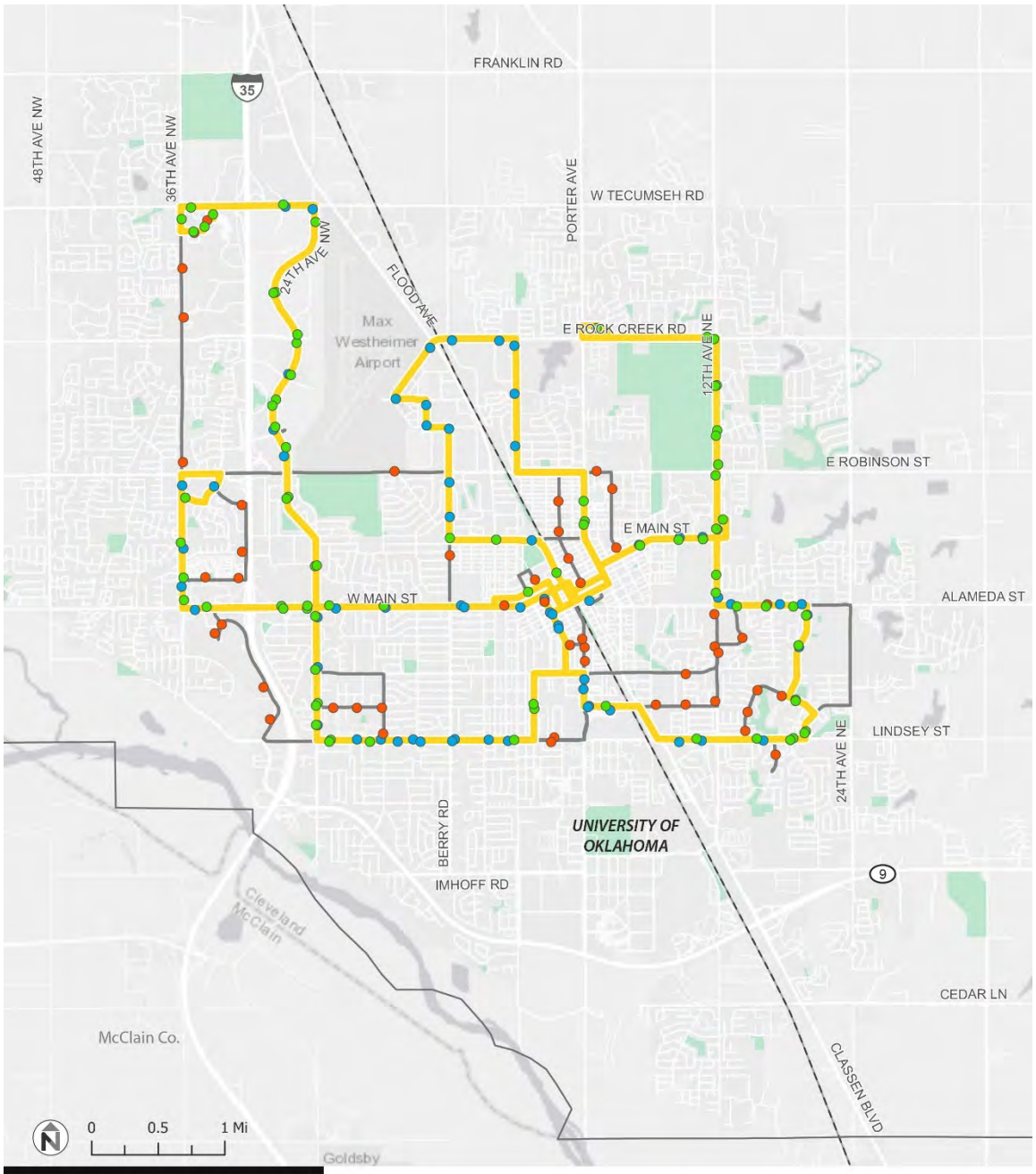
Phase	Fixed-Route			Paratransit		
	Annual Hours	Peak Buses	Total Buses	Annual Hours	Peak Buses	Total Buses
Existing Service	19,000	5	8	20,000	8	11
Network Redesign	24,000	5	8	22,500	9	12
Future Expansion						
Priority 1 - Add Sunday service	27,000	5	8	25,000	9	12
Priority 2 - Upgrade Route 112	32,000	6	9	25,000	9	12
Priority 3 - Upgrade Route 110	37,000	7	10	25,000	9	12
Priority 4 - Add Route 113	43,000	8	11	27,500	10	13
Priority 5 - Add East Alameda route; Extend Route 121	48,000	9	12	30,000	11	14
Priority 6 - Upgrade Route 111	56,000	11	14	30,000	11	14
Priority 7 - Upgrade Routes 121 and 123	67,000	13	17	30,000	11	14
Priority 8 - Upgrade Routes 114 and 122	72,000	14	18	30,000	11	14

4 CAPITAL PLAN

BUS STOPS

New and Discontinued Stops

Implementation of the route network redesign requires the installation of 80 new stops and the discontinuation of 49 existing stops. 63 existing stops would not be changed, resulting in a total of 143 stops. New signage should be installed at all new stop locations.


FRANKLIN RD
35
48TH AVE NW
36TH AVE NW
24TH AVE NW
FLOOD AVE
PORTER AVE
W TECUMSEH RD
Max Westheimer Airport
E ROCK CREEK RD
12TH AVE NE
E ROBINSON ST
E MAIN ST
W MAIN ST
ALAMEDA ST
LINDSEY ST
24TH AVE NE
BERRY RD
UNIVERSITY OF OKLAHOMA
IMHOFF RD
9
Cleveland McClain
CEDAR LN
McClain Co.
CLASSEN BLVD
0
0.5
1 Mi
Goldsby
Proposed Bus Stop Changes
Stop Retained
Stop Added
Stop Removed
Proposed Routes
Existing Routing no Longer Served

DOWNTOWN TRANSIT CENTER

Screening Process

The initial step of the downtown transit center site selection involved a high-level screening process. Parcels were further evaluated if they were City-owned, within ½ mile of the Norman Amtrak Station (The Depot) and were either vacant or retrofittable.

Potential sites included:

- Option A – Norman Amtrak Station (The Depot)
- Option B – Gray Street Parking Lot
- Option C – Northeast corner of James Garner Avenue and Gray Street
- Option D[1] – Former drive-thru bank at the corner of Comanche Street and Porter Avenue
- Option E – Vacant parcels along Gray Street west of James Garner Avenue

Potential Downtown Transit Center Sites

Option D was eliminated due to environmental cleanup concerns. Option E was eliminated to due its inadequate size to accommodate the existing and planned fleet.

[1] Option D is not a city-owned property. The City of Norman began exploring this site in early 2020.

Evaluation Criteria

Options A, B, and C were further evaluated based the following criteria:

- Proximity to The Depot/Norman Amtrak Station for future commuter rail connectivity
- Pedestrian access
  - Supportive existing infrastructure
  - Potential for enhanced pedestrian access
- Compatibility with adjacent land uses
- Operational efficiency
  - Access to arterials
  - Bus capacity
  - Railroad impacts

Evaluation Scoring for Finalist Sites

Evaluation Criteria	Proximity to the Depot	Pedestrian Access	Adjacent Land Uses	Operational Efficiency
Option A – The Depot / Norman Amtrak Station	Good	Good	Good	Good
Option B – Gray Street Parking Lot	Moderate	Moderate	Poor	Moderate
Option C – NE corner of James Garner Ave and Gray St	Moderate	Good	Moderate	Moderate

Recommended Downtown Transit Center Location

The Depot/Norman Amtrak Station is the recommended location for a future downtown transit center after scoring well on each evaluation metric. This site spans two city blocks and measures approximately 700 feet from the crosswalk on Main Street to the crosswalk on Eufaula Street. The east-facing curb is nearly interrupted with five perpendicular parking spaces north of the Depot.

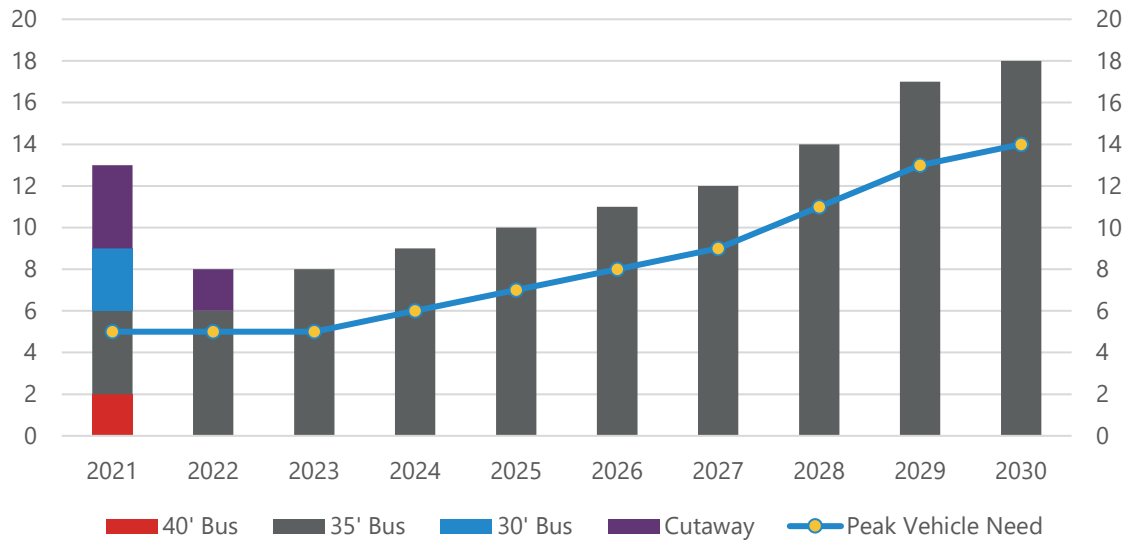
The site is within close proximity of several local destinations, including Main Street businesses, City Hall, Cleveland County Complex, United State Postal Service, Norman Senior Citizens Center and the future Cleveland County Wellness Square. The site also promotes multimodal connectivity with direct access to the Legacy Trail, Amtrak intercity rail service, and future RTA commuter rail.

Recommended Downtown Transit Center Location

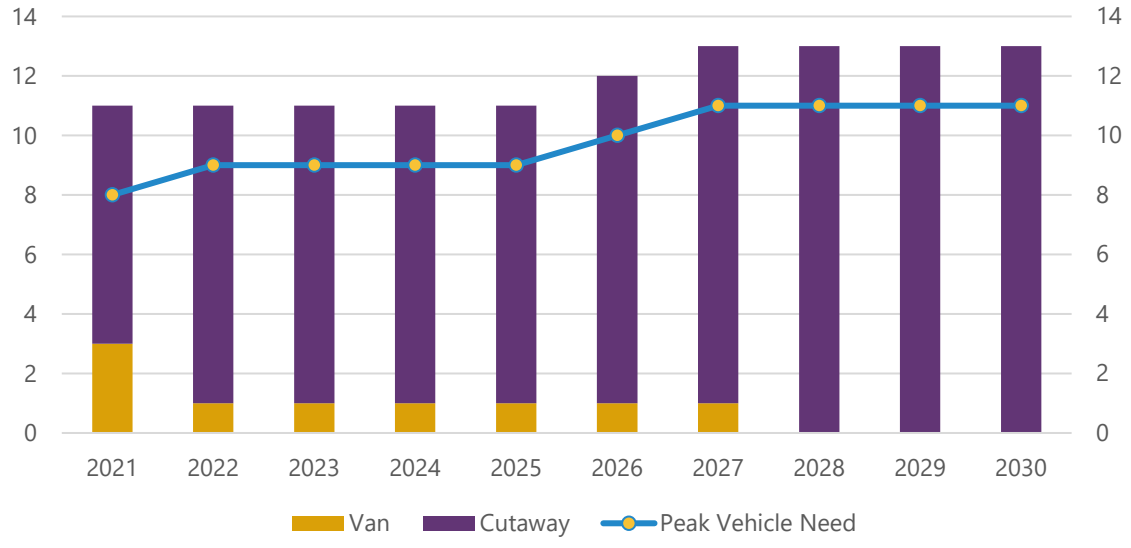
FLEET

The City of Norman obtained an aged and assorted fleet when the transit system was transitioned from OU. Over time, the City of Norman should strive to amass a more uniform fleet of low-floor heavy-duty buses to operate its fixed-route transit service and cutaway buses to operate its paratransit service.

Fixed-Route Fleet



Paratransit Fleet



5 FINANCIAL PLAN

OPERATIONAL COSTS

An hourly rate of $100 is assumed for each hour of contracted fixed-route and paratransit service. This hourly rate also includes costs for maintenance to be performed on the vehicles.

Projected Fixed-Route and Paratransit Operational Capital Costs

Phase	Fixed-Route Annual Hours	Paratransit Annual Hours	Total Annual Hours	Total Cost
Existing Service	19,000	20,000	39,000	$3,900,000
Network Redesign	24,000	22,500	46,500	$4,650,000
Priority 1 - Add Sunday service	27,000	25,000	52,000	$5,200,000
Priority 2 - Upgrade Route 112	32,000	25,000	57,000	$5,700,000
Priority 3 - Upgrade Route 110	37,000	25,000	62,000	$6,200,000
Priority 4 - Add Route 113	43,000	27,500	70,500	$7,050,000
Priority 5 - Add East Alameda route; Extend Route 121	48,000	30,000	78,000	$7,800,000
Priority 6 - Upgrade Route 111	56,000	30,000	86,000	$8,600,000
Priority 7 - Upgrade Routes 121 and 123	67,000	30,000	97,000	$9,700,000
Priority 8 - Upgrade Routes 114 and 122	72,000	30,000	102,000	$10,200,000

CAPITAL COSTS

Fleet Replacement

The following fleet replacement schedule incorporates the following:

- New 35' buses replacing retiring fixed-route buses
- New 35' buses for new fixed-routes
- New 35' buses for extending existing fixed-routes
- New 35' buses for upgrading the frequency of existing fixed-routes
- New cutaway buses replacing retiring paratransit buses
- New cutaway buses for expanding the paratransit service area

A unit cost of $550,000 is assumed for a 35' low-floor, heavy-duty bus, which has an average life span of 12 years. A unit cost of $110,000 is assumed for a cutaway, light-duty bus, which has an average life span of 7 years.

Projected Fleet Replacement Costs

Phase	New 35' Buses	35' Bus Cost	New Cutaways	Cutaway Cost	Total Cost
Existing Service	-	$0	-	$0	$0
Network Redesign	2	$1,100,000	2	$220,000	$1,320,000
Priority 1 - Add Sunday service	2	$1,100,000	2	$220,000	$1,320,000
Priority 2 - Upgrade Route 112	3	$1,650,000	2	$220,000	$1,870,000
Priority 3 - Upgrade Route 110	1	$550,000	2	$220,000	$770,000
Priority 4 - Add Route 113	1	$550,000	3	$330,000	$880,000
Priority 5 - Add East Alameda route; Extend Route 121	1	$550,000	1	$110,000	$660,000
Priority 6 - Upgrade Route 111	2	$1,100,000	1	$110,000	$1,210,000
Priority 7 - Upgrade Routes 121 and 123	5	$2,750,000	2	$220,000	$2,970,000
Priority 8 - Upgrade Routes 114 and 122	1	$550,000	2	$220,000	$770,000

Bus Stop Amenities

The recommended network redesign requires the installation of 80 new bus stops. A unit cost of $2,000 is assumed for a typical bus stop. This cost includes a pole, signage, and minor concrete flatwork. New and extended routes in the future will require additional new bus stops.

In addition to constructing new bus stops, it is also recommended that the City of Norman explore the potential of investing in city-owned bus stop shelters to provide additional locations for passengers.

Currently, the City of Norman partners with a retail outdoor advertising company that installs and maintains bus stop shelters and benches. Under this agreement, the advertising company handles the selling of advertisements and the City of Norman receiving a percentage of the proceeds from those sales. Locations for advertising shelters and benches are based on a combination of ridership and customer visibility.

A unit cost of $10,000 is assumed for the purchase and installation of a typical bus stop shelter. This cost does not include routine trash collection and general maintenance.

Projected Bus Stop Capital Costs

Phase	New Bus Stops	Bus Stop Cost	New Shelters	Shelter Cost	Total Cost
Existing Service	-	-	-	-	$0
Network Redesign	80	$160,000	15	$150,000	$310,000
Priority 1 - Add Sunday service	-	-	-	-	$0
Priority 2 - Upgrade Route 112	-	-	-	-	$0
Priority 3 - Upgrade Route 110	-	-	-	-	$0
Priority 4 - Add Route 113	15	$30,000	5	$50,000	$80,000
Priority 5 - Add East Alameda route; Extend Route 121	10	$20,000	5	$50,000	$70,000
Priority 6 - Upgrade Route 111	-	-	-	-	$0
Priority 7 - Upgrade Routes 121 and 123	-	-	-	-	$0
Priority 8 - Upgrade Routes 114 and 122	-	-	-	-	$0

EXISTING FUNDING SOURCES

Funding Source	Description	FTA/ODOT Share
FTA Section 5307 and 5339 Formula Funds	Funding for transit capital and operating assistance.	Not to exceed 80% of the net project cost for capital expenditures. Not to exceed 50% of the net project cost of operating assistance.
FTA 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Formula Funds	Funding to improve mobility and remove barriers to transportation for seniors.	Not to exceed 80% of the net project cost for capital expenditures. Not to exceed 50% of the net project cost of operating assistance.
FTA Section 5339 Bus and Bus Facilities Discretionary Program	Funding for replacement, purchase, or rehabilitation of buses, bus related equipment, and bus facilities.	Not to exceed 80% of the net project cost for capital expenditures.
ODOT Public Transit Revolving Funds	Funding for establishing, expanding, improving, and maintaining rural and urban public transit services.	Must spend 50% of the award for services for elderly and disabled persons.
Coronavirus Aid, Relief, and Economic Security (CARES) Act	Funding to support operating, capital, and planning expenses to prevent, prepare for, and respond to COVID-19.	No match required.
Local Funding	Dedicated public transit sales tax funding to support transit operations and capital expenditures. Funding allocated from City General Fund and Capital Fund to support transit operations and capital expenditures.	N/A

POTENTIAL FUNDING SOURCES

Funding Source	Description	FTA/ODOT Share
FTA Section 5307 Small Transit Intensive Cities Formula Funds	Funding for transportation service for UZAs with a population between 200,000-999,000 that meet or exceeds the industry average in one or more specific performance criteria.	Not to exceed 80% of the net project cost for capital expenditures. Not to exceed 50% of the net project cost of operating assistance.
FTA 5339 Low or No Emissions Bus Discretionary Program	Funding for replacement, purchase, or rehabilitation of buses, bus related equipment, and bus facilities.	Not to exceed 80% of the net project cost for capital expenditures.
Regional Transportation Authority of Central Oklahoma	Potential funding for bus service that supports future commuter rail.	N/A

FARE POLICY

The transfer of operations to the City of Norman, declining ridership, increasing operating costs, and financial constraints associated with the ongoing COVID-19 Pandemic have led the City of Norman to evaluate the potential benefits and costs associated with instituting fares.

Benefits of Implementing a Fare

In the current fiscally-constrained environment, transit agencies around the country are looking for any and all opportunities to increase their operating revenue by securing new funding sources and increasing or introducing transit fares. The need for additional revenue is a key factor behind the City of Norman's decision to reevaluate its policy of providing fare free service. Some of the key benefits of introducing a fare include:

- Increasing revenue to help close a funding gap.
- Reducing reliance on federal and state funding.
- Supporting the perception that the public helps pay for public services
- Addressing potential problems with individuals who may ride the bus seeking shelter or for other non-transportation reasons, particularly when COVID-19 related onboard capacity constraints are limiting service reliability.

Costs of Implementing a Fare

While offering potential for increased revenue, instituting a fare would require capital investments, create new or expanded responsibilities for staff, and increase operating costs for the City of Norman. Some of the significant challenges the City of Norman would face if a fare were introduced include:

- Investment in fare collection hardware and office/accounting infrastructure
- Increase in staff responsibilities
- Increased dwell times
- Development of fare validation and enforcement policies
- Consideration of Title VI impacts
- Training operators and supervisors
- Potential conflicts between operators and passengers
- Increased customer complaints

Fare Policy Recommendations

- Continue operating fare free for at least two years
  - Allow riders to adjust to recommended route alignment changes
  - Allow ridership to recover from the COVID-19 pandemic
- Re-evaluate the potential for fare implementation in mid-2023 or later
  - Continue operating fare free, or
  - Implement a new fare policy
    - Establish a fare structure with low base fares to mitigate potential ridership loss
    - Partner with the University of Oklahoma on student pass program
    - Adopt fare technology that includes magnetic swipe cards, RFID smart cards, and mobile ticketing
    - Explore alignment with EMBARK Oklahoma City

STAFFING

Administrative Transit Support

Additional administrative assistance may be needed as the City implements the recommended route network redesign and expands service to provide assistance in the following categories:

- Bus stop review and data collection
- GIS analysis and mapping
- Community outreach
- Public meetings
- Rider alerts
- Social media posts
- Survey administration
- Ridership and survey data analysis
- Federal and State reporting assistance

As the need for additional assistance is refined, the City should explore whether additional administrative support would be of greater benefit as a City employee or as an EMBARK employee. In addition to operating service, EMBARK currently provides support with marketing, project implementation, reporting, and grant management.

Fleet Maintenance Staff

The existing fleet maintenance team routinely struggles to get vehicles repaired and returned to service due to an aging fleet and an inadequate maintenance facility. The future City of Norman facility that will house the public transit maintenance and operations activities will provide immediate relief upon completion and occupancy. However, additional vehicle maintenance staff may be required to support maintenance of the existing fleet until it is updated, as additional vehicles are brought into service with the recommended service expansion, and as additional days and hours of service are added to the service.

6 NEXT STEPS

Route Network Redesign

Fulfilling the Go Norman Transit Plan begins with implementing the recommended route network redesign, which will better serve the needs of existing and potential transit riders by improving access to key destinations and reducing travel time.

Implementation of the recommended route network redesign is most dependent upon the establishment of a Downtown Transit Center. While it is possible that a temporary Downtown Transit Center would facilitate route connections, a permanent facility will ensure consistent operations without service interruptions due to construction or relocation.

Coordination with EMBARK is also crucial throughout the service change process, particularly regarding marketing materials, rider outreach, and operations (scheduling, safety, training, etc.).

Route Network Redesign Implementation Timeline

Action	2021							2022							
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
City Council meeting approval	●														
Complete and occupy Maintenance Facility					●										
Establish a Downtown Transit Center															
Update rider information															
Perform rider outreach															
Make necessary operational changes															
Install new bus stops															
Implement recommended route network															●

Downtown Transit Center

Relocating the EMBARK Norman transfer hub from the OU Campus to downtown Norman will immediately enhance route connectivity, maximize operational efficiency, and improve access to major destinations. A transit center in the heart of the city will also help create a more vibrant downtown.

GO NORMAN TRANSIT STUDY

Appendix A - Existing Conditions Report

FINAL

January 2021

NELSON NYGAARD

Table of Contents

1 INTRODUCTION

STUDY OVERVIEW

In July 2020, the City of Norman commissioned Nelson\Nygaard Consulting Associates to conduct a comprehensive transit study that will evaluate existing conditions and identify opportunities for improvement and expansions. The Go *Norman Transit Study* includes numerous opportunities for community input and will culminate in the development of a 20-year strategic transit plan.

Figure 1-1 Study Timeline

EXISTING CONDITIONS REPORT

This Existing Conditions Report is the first element of the Go *Norman Transit Study*. The purpose of this report is to summarize the background conditions in which the City's transit system operates and provide a comprehensive evaluation of existing service design and performance. The report is intended to serve as the foundation for the development of service, capital, and policy recommendations. The remainder of this document consists of the following:

- **Chapter 2 – Document Review** considers a variety of local planning efforts in the City of Norman, Cleveland County, and the larger Central Oklahoma Region.
- **Chapter 3 – Land Use and Infrastructure** continues to establish the context in which transit operates in the City of Norman by identifying the surrounding land uses, multimodal transportation infrastructure, and future developments in the service area.
- **Chapter 4 – Transit Inventory** Provides an overview of trends and characteristics for the City of Norman transit service and a detailed assessment of the operating challenges and opportunities for each route in the existing system.
- **Chapter 5 – Market Analysis** evaluates socioeconomic and demographic conditions within the City of Norman to better understand transit demand and service gaps.
- **Appendix A – Public Outreach Summary** summarizes the results and key findings from public outreach conducted in conjunction with this Existing Conditions Report.

KEY FINDINGS

- **EMBARK Norman provides extensive coverage.** EMBARK Norman currently serves most high-density residential areas, as well as most major employment, education, shopping, and medical destinations.
- **There are many important community destinations not currently served by transit.** While many areas of the city are served by transit, there are several unserved destinations that may be able to support transit, including Moore Norman Tech, Walmart stores, Norman Public Library East, and residential areas in northeast and southeast Norman.
- **Southeast Norman warrants a higher level of transit service.** Southeast Norman exhibits the highest transit demand outside of student housing adjacent to the University of Oklahoma campus. Southeast Norman residents have lower vehicle ownership rates and incomes than residents in other areas of the city.
- **Transit service in Northwest Norman is not convenient.** The existing EMBARK Norman route network requires two transfers for most riders starting or ending a trip along 36th Ave NW. Providing more direct service would reduce rider travel times.
- **Service levels are inadequate for some routes.** Frequency for several routes in the EMBARK Norman system do not match ridership and transit demand.
- **Paratransit ridership patterns are relatively dispersed** throughout the city with a few major destinations including the Community Services Building, the Cleveland County Family YMCA, the Norman Housing Authority, and the Full Circle Adult Day Center.
- **Operating cost per passenger** for fixed-route service and paratransit service have generally been **increasing** since 2013.
- **Sidewalk infrastructure is lacking** in many older neighborhoods of the city.
- **The highest priority transit service improvements for the City of Norman identified in existing planning documents include:**
  - Improving service frequency
  - Providing later service
  - Providing Sunday service
  - Extending service to Moore Norman Technology Center and Classen Blvd

2 DOCUMENT REVIEW

This chapter summarizes content from existing plans that discuss transit service improvements and policies affecting transit in the City of Norman. This review includes a diverse cross-section of plans and studies conducted by the City of Norman and the Association of Central Oklahoma Governments (ACOG). Documents reviewed in this chapter include:

- City of Norman NORMAN 2025 Land Use and Transportation Plan (2004)
- City of Norman Moving Forward Comprehensive Transportation Plan (2014)
- City of Norman Parking Strategic Plan (2018)
- City of Norman DRAFT PlanNorman Comprehensive Plan (2018)
- ACOG Central Oklahoma Commuter Corridors Study (2015)
- ACOG Encompass 2040 (2016)

CITY OF NORMAN DOCUMENTS

NORMAN 2025 Land Use and Transportation Plan (2004)

The NORMAN 2025 Land Use and Transportation Plan is the long-range plan for the future physical development of the City of Norman. It represents a desired land use pattern in response to anticipated growth rates, public utility constraints, and environmental conditions and provides a vision for the future and a foundation for managing the city's growth.

Goals

The NORMAN 2025 Land Use and Transportation Plan identifies seven unique goals to guide development decision making in the community, including:

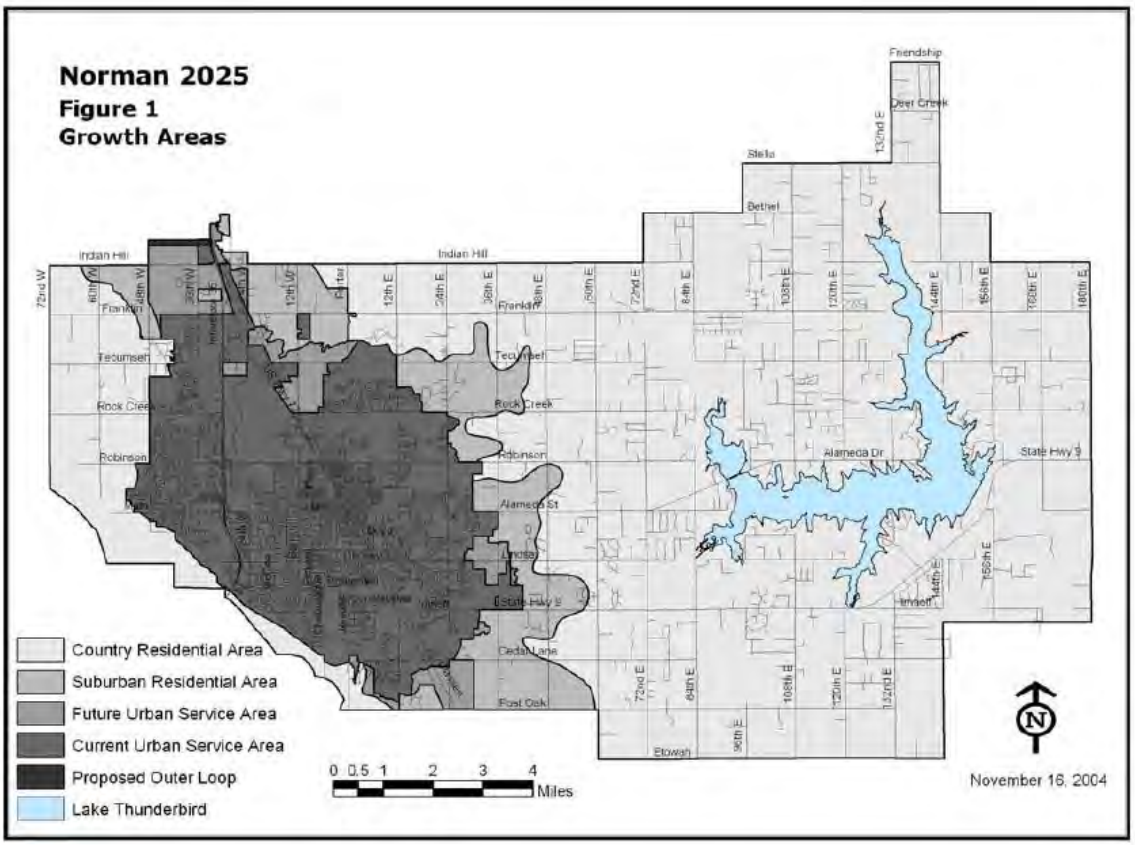
1. **Managed Growth** – Affirmatively and responsibly manage the location of growth in Norman based on available public services and the environmental suitability of the land for development.
2. **Infrastructure-Supported Growth** – Utilize the provision of infrastructure in supporting and influencing growth into areas most suitable for development.
3. **Housing and Neighborhoods** – Encourage and support diversified housing types and densities in order to serve different income levels, family structures, and ownership.
4. **Economic Stability and Enhancement** – Enhance the quality of economic growth in the City by attracting high technology-related industries that have low environmental impacts.
5. **Rural Character and Development** – Retain the distinct character of rural Norman and protect the environmentally sensitive Little River Drainage Basin.
6. **Greenbelt Development** – Develop and maintain a greenbelt system for Norman.
7. **Core Area Stability and Enhancement** – Continue efforts to promote the enhancement and stability of the core area.

Growth Areas

NORMAN 2025 also identifies four distinct growth areas related to character, density, and level of appropriate public services. These growth areas (Figure 2-1) have unique recommended development intensities and include:

- **Current Urban Service Area** – Greater than 3.5 units per acre
- **Future Urban Service Area** – Greater than 3.5 units per acre
- **Suburban Residential Area** – Less than 0.5 units per acre
- **Country Residential Area** – Less than 1 unit per 10 acres, or 0.5 units per acre through the Planned Unit Development process

Figure 2-1 NORMAN 2025 Growth Areas



Source: NORMAN 2025 Land Use and Transportation Plan, 2004

Land Use

The Land Use section of the NORMAN 2025 Plan calls for 31,000 additional dwelling units, 650 acres for new commercial land, 150 acres for office land uses, 1,200 acres for industrial land uses, and 800 acres for mixed-use development. The plan incorporates mixed-use development to provide a more flexible approach to development in specific targeted areas, with an emphasis on pedestrian accessibility, office-based employment, retail activities, and a mixture of residential densities.

Transportation

The Transportation section of the NORMAN 2025 Plan focuses on classifying roadways, supports enhanced opportunities for local and regional public transportation service, and calls for a comprehensive pedestrian and bikeway system in conjunction with the other elements of the City's transportation system.

At the time of this plan, transit service was provided by Cleveland Area Rapid Transit (CART), as a department of the University of Oklahoma. Transit service has since moved to the City of Norman Public Works Department.

Moving Forward Comprehensive Transportation Plan (2014)

The City of Norman's Moving Forward Comprehensive Transportation Plan identifies future transportation needs for the area, goals and policies, and short-term and long-term capital investments for improvements to existing roads, construction of new roads, bicycle, pedestrian, and transit facilities. The plan includes five guiding principles:

1. **A Special Place to Live** – A vibrant Norman community in 2035 will be achieved by ensuring transportation and infrastructure investments that focus on both people and places.
2. **Mobility** – The provision of transportation options and solutions within Norman will create a seamless system through efficient system management and operations, context sensitive complete street designs, and with a range of accessible and convenient transportation choices.
3. **Maintain and Improve Existing Infrastructure** – Prioritize maintenance, rehabilitation, safety, and reconstruction of basic infrastructure systems through efficient system management.
4. **Fiscal Stewardship** – Provide a detailed roadmap of actions for transportation and infrastructure investments based on an approach that maximizes the benefits for multiple user groups in a way that is both fiscally and environmentally responsible.
5. **Enhance Economic Vitality** – Promote economic growth while using resources in an efficient and effective manner.

Public Transportation Needs

The plan identifies three major deficiencies in the existing public transit system:

- Limited Saturday and evening bus service
- Absence of night-time and Sunday service
- Need for an overall increase in bus frequencies

Norman Moving Forward also recognizes six short range transit needs, including:

- Expanded service hours
- Increased service frequency on key routes
- Realigned routes to create a grid-like system with more efficient transfers
- Dedicated local funding source
- Enhanced bus stop amenities
- Improved pedestrian access and safety near bus stops

The plan recognizes the funding constraints limiting service expansion and suggests potential new funding strategies, including:

- Time-limited sales tax
- Property tax
- Development fees

- Increased student fees
- A possible fare increase
- Value capture-based financing

In addition to these funding strategies, the plan also suggests that a fare-free transit system be considered for the City of Norman to attract additional ridership. Since the publication of this plan, voters have approved a one-eighth percent sales tax to fund transit service in the City of Norman and service has been made fare free.

Public Transportation Recommendations

Norman Moving Forward also discusses the planned improvements to CART service. The previous CART long-range plan completed in 2008 calls for transit improvements in three phases:

Phase I – Longer service hours

- Extended service hours on high-ridership core routes
- Initiation of Sunday service
- Downtown/Campus Corner Circulator operating at 20-minute headways

Phase II – Higher frequency, more effective and understandable routes

- Creation of a grid of corridor routes
- Operate the key grid routes at 30-minute headways

Phase III – Add routes on new corridors

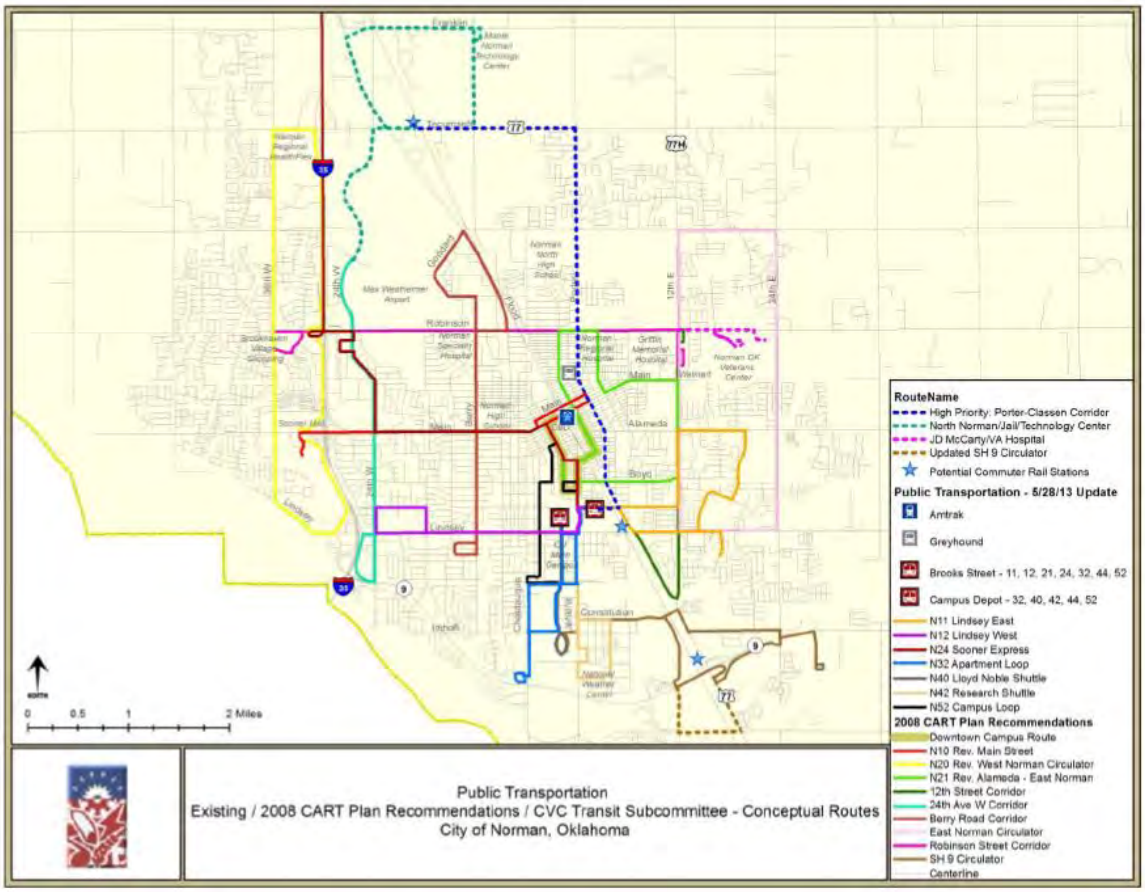
- State Highway 9 Circulator
- West Norman Circulator
- East Norman Circulator
- Berry Road Corridor Extension
- Main Street Corridor extension west to Sooner Mall

While the improvements identified in CART's long-range plan would provide significant enhancements to service hours, frequency, and geographic coverage, many have not yet been implemented. In addition to these recommended improvements from the CART long-range plan, Norman Moving Forward synthesized a series of recommended improvements and conceptual routes (Figure 2-2), including:

- Increasing frequency of service, expanding hours of operations, and adding Sunday service are the highest priority improvements.
- Improved on-bus accommodations for transit patrons with wheelchairs and an improved on-bus circulation pattern.
- Make all bus stops accessible according to the Americans with Disabilities Act (ADA)and provide overall enhanced pedestrian access.
- Enhance safety for transit riders crossing major roadways to reach bus stops, re-positioning bus stops as needed.
- Provide a corridor-based, grid network of transit routes to serve Norman and migrate from the University-centric route structure to better serve the needs of all of Norman.

- Provide transit service to areas not considered in the 2008 CART Plan, including the Porter Ave/Classen Blvd corridor, Cleveland County Jail, Moore Norman Technology Center – Franklin Road Campus, and the University North Park development.
- Support regional public transit connectivity through a high-capacity transit connection between the City of Norman and downtown Oklahoma City and beyond.

Figure 2-2 Norman Moving Forward Conceptual Route Network



Source: Norman Moving Forward Comprehensive Transportation Plan, 2014

City of Norman Parking Strategic Plan (2018)

The 2018 Parking Strategic Plan is intended to serve as a guide for decision makers on topics including governance, technology, enforcement, planning, and parking asset development and management for the downtown Norman area. The plan included an update to the parking inventory and occupancy in downtown Norman and found that there are approximately 8,300 parking spots with 16% located on-street and 84% located in parking lots or parking garages. The occupancy evaluation determined that during peak parking demand, 46% of on-street spots were occupied and 55% of off-street spots were occupied.

Beyond updating the parking inventory and occupancy for downtown Norman, the Parking Strategic Plan recommends nine key elements for the City to consider while developing an emerging parking program:

- A sense of purpose and direction relative to parking and transportation policy
- A strong and capable program leader
- Establish parking as a separate "enterprise fund"
- A strong customer service orientation
- A focus on "mastering the fundamentals" of parking management
- Investment in new technology
- Development of a strong parking maintenance program
- Development of an on-going and collaborative relationship with the University of Oklahoma (OU)
- Over time, expand the parking program's mission to adopt a broader more "mobility management" oriented perspective

DRAFT PlanNorman Comprehensive Plan (2018)

By 2040, ACOG projects that the City of Norman will grow by 52,444 people and add 21,445 jobs, requiring 23,333 additional housing units. This anticipated growth will create increased challenges related to land use, infrastructure, and housing and employment equity. The PlanNorman Comprehensive Plan seeks to address these potential challenges and provide guidance to the City, residents, developers, and business on how to manage and leverage future growth and development.

PlanNorman is divided into three primary themes: Places, People, and Systems. The Transportation and Mobility element of the plan is contained within the Places theme, including the goal to create an integrated multimodal transportation network that offers a wide range of mobility choices and a high level of connectivity with the community and region. The policies and actions identified for this goal align with the 2014 Comprehensive Transportation Plan and call for a complete streets strategy that accommodates pedestrians, bicycles, automobiles, and public transportation facilities. Additional policies include coordination with ACOG and neighboring municipalities to promote regional connectivity and effectively coordinating land use policy with transportation and land use decisions.

PlanNorman identifies three specific growth management focus areas as candidates for redevelopment from auto-oriented corridors and centers to pedestrian friendly, transit accessible spaces (Figure 2-3), including:

- Focus Area #1 – 12th Ave NE between E Main St and Alameda St
- Focus Area #2 – N Flood Ave between W Robinson St and Acres St
- Focus Area #3 – E Lindsey St near 12th Ave SE

These focus areas are slated for pedestrian improvements and mixed-use developments which may be supportive of transit service.

Figure 2-3 PlanNorman Growth Management Focus Areas

Source: PlanNorman Comprehensive Plan, 2018

REGIONAL DOCUMENTS

Central Oklahoma Commuter Corridors Study (2015)

The Central Oklahoma Commuter Corridors Study, led by the Association of Central Oklahoma Governments and branded as CentralOK!go, is an analysis of transit options for three major commuter corridors in the central Oklahoma region converging at the Santa Fe Station Intermodal Hub in downtown Oklahoma City. CentralOK!go builds upon the findings of the 2005 Regional Fixed Guideway Study, which recommended further investigation for the implementation of passenger rail, bus rapid transit (BRT), a downtown Oklahoma City streetcar system, and an improved bus system to enhance connectivity between public transit services.

Each of the three corridor evaluations included multiple potential alignments and high-capacity transit modes, including commuter rail, BRT, streetcar, light rail, and conventional and express bus service. A detailed evaluation including evaluation criteria based on identified goals and objectives, ridership estimates, technical feasibility, environmental and social impacts, capital costs, and operating and maintenance costs was used to identify and select a locally preferred alternative (LPA) for each of the three corridors.

The South Corridor LPA (Figure 2-4) would connect the downtown Oklahoma City Santa Fe Intermodal Hub and the City of Norman, extending to State Highway 9 via commuter rail. Existing BNSF rail right-of-way would be used as available along the 17-mile route. Capital costs for commuter rail between Norman and Oklahoma City are estimated between $310 million and $410 million, with an estimated operating and maintenance cost of $5.5 million per year. The South Corridor LPA would combine with the North Corridor LPA to provide a one seat commuter rail connection between Edmond, Oklahoma City, and Norman and is projected to attract approximately 5,700 daily riders.

Following this study, the Regional Transportation Authority (RTA) board of directors has transitioned from working with ACOG to working with EMBARK as the administrative arm of the RTA. The RTA is currently conducting an updated commuter rail line study. However, a draft of this plan is not yet available.

Figure 2-4 CentralOK!go South Corridor LPA

Source: Central Oklahoma Commuter Corridors Study, 2015

Encompass 2040 (2016)

The Association of Central Oklahoma Governments' Encompass 2040 is the comprehensive, long-range transportation plan for the Central Oklahoma region. The plan forecasts land use, population, employment, and other socioeconomic factors through 2040 to assess the region's future development and transportation needs. The plan analyzes two development scenarios:

- **Scenario 1 – Historical Trend**
  - Continues the region's historical trend of outward growth based on the assumption that no new zoning initiatives will be adopted.
- **Scenario 2 – Nodal Growth**
  - Assumes a change in regional land use policy which focuses on growth that would encourage infill, nodal, and downtown development within communities, which would be more supportive of future regional transit.

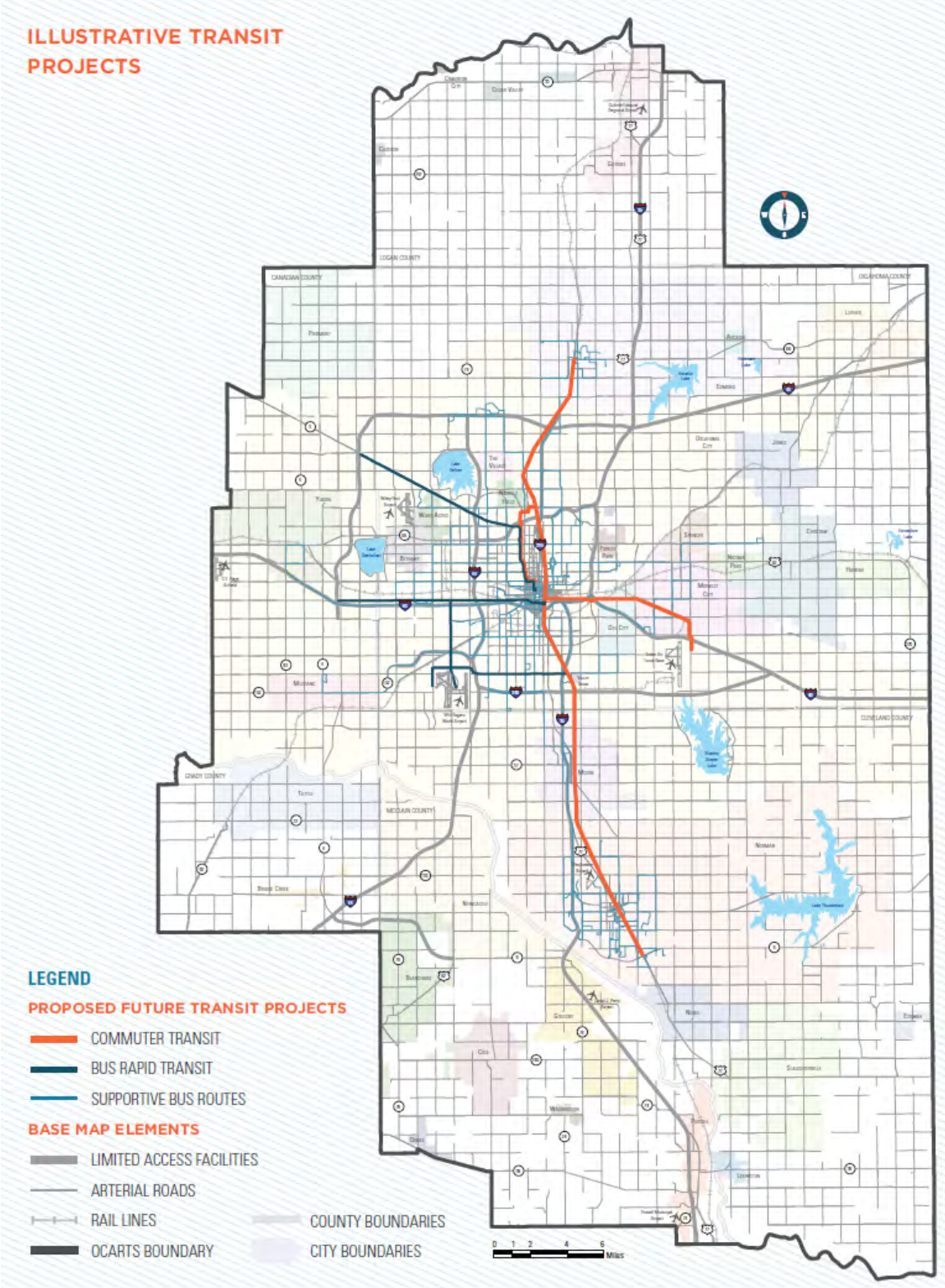
Based on existing conditions data from 2010, the plan found that transit ridership accounted for less than half of one percent of total daily trips made throughout the region and that transit funding per capita is significantly lower than for other similarly sized metropolitan areas. Identified transit needs for the region include a desire for walkable urban neighborhoods, expanded bus service, more multi-modal options, and a greater mix of commercial and residential areas. A lack of continuous sidewalks, an absence of bicycle trails, and a scarcity of bus shelters have also been identified as a key challenge for regional transit connectivity.

Encompass 2040 includes numerous transit recommendations, some of which are shown in Figure 2-5. The detailed recommendations include:

- Establish a regional transit authority and dedicated local funding sources to expand public transportation
- Continue implementing the recommendations of the 2005 Fixed Guideway Study
- Promote the further development of the Regional Intermodal Transportation Hub
- Encourage improved coordination between land use and transit planning, including pedestrian and bicycle connections to transit routes
- Explore transit access to Will Rogers World Airport
- Promote regional clean air goals by providing alternatives to the single occupant motor vehicle, including more express bus routes, park-and-ride opportunities, reduced or fare free bus service, and assist with funding to purchase alternative-fueled buses
- Enhance marketing of new and existing transit services to expand ridership
- Pursue efforts to fund and expand passenger rail service linking Oklahoma City with other cities and states
- Advocate transit as an alternative mode of transportation to alleviate regional congestion
- Incorporate Oklahoma City Streetcar into regional transit plans

Several of these recommendations have since been completed, including moving forward with the 2005 Fixed Guideway Study recommendations and further developing the Regional Intermodal Transportation Hub in downtown Oklahoma City.

Figure 2-5 Encompass 2040 Illustrative Transit Projects



Source: Encompass 2040, 2016

3 LAND USE AND INFRASTRUCTURE

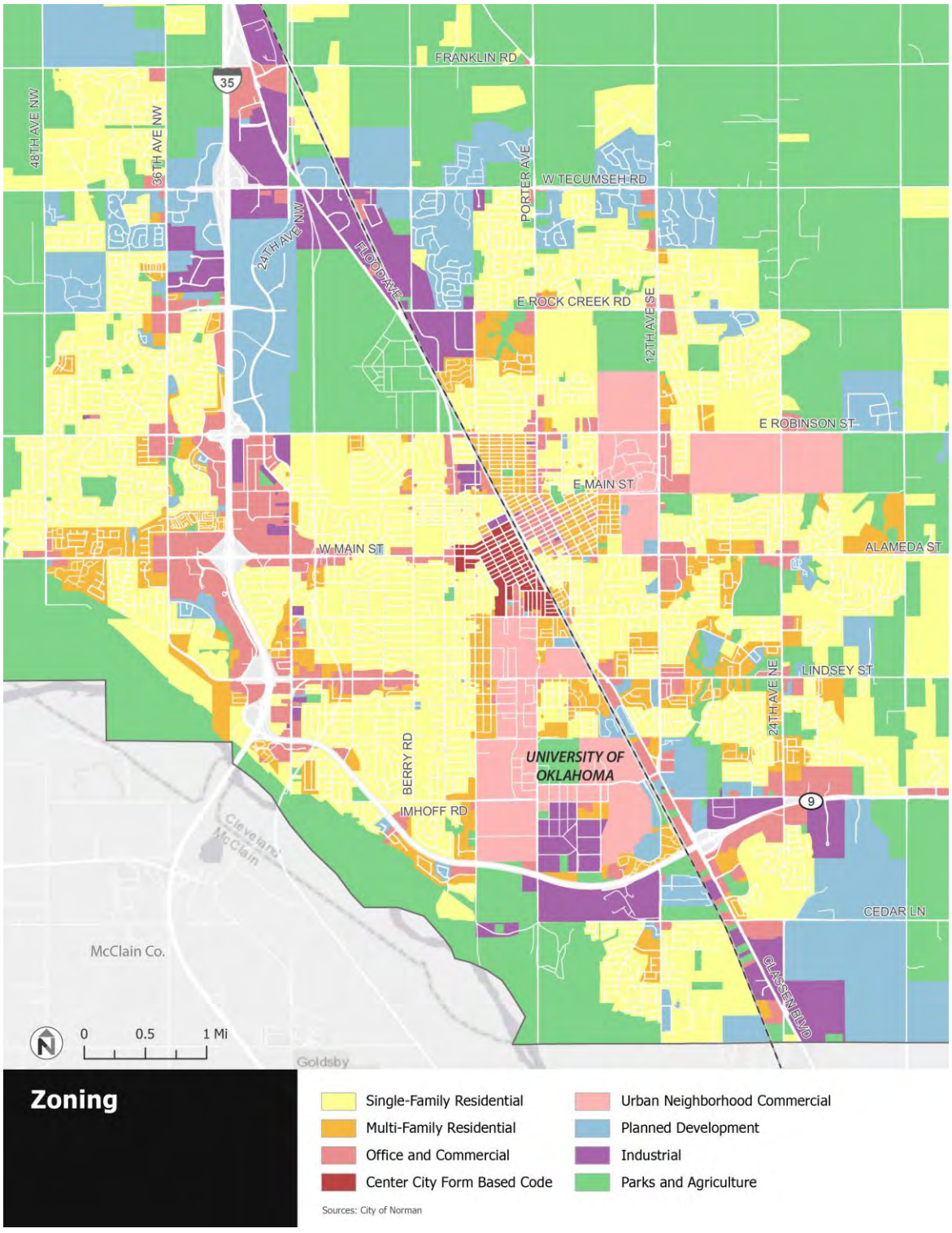
This chapter describes the zoning typologies across the city, existing multimodal infrastructure, ongoing development, and future growth areas. Understanding existing and anticipated land use and infrastructure is important in determining where transit should operate and what service levels should be provided.

ZONING

The City of Norman contains nearly 190 square miles of land. Slightly more than 50% of this land is developed or unavailable for development due to being classified as open space, lakes, right-of-way, and institutional land. Approximately 75% of total land is zoned for parks and agriculture and 14% of total land is zoned for single-family residential (Figure 3-1). Planned development (4%) is scattered along Tecumseh Road and southeast of the OU campus near Cedar Lane. Downtown Norman follows a form-based code west of the railroad tracks and is zoned as commercial east of the railroad tracks. Areas zoned as office, commercial, and multi-family tend to support public transit and account for approximately 5% of total land. These areas mostly exist near the OU campus and along West and East Main streets.

The form-based code in Downtown Norman aims to increase mixed-use density in designated areas, improve walkability, and preserve historic structures. It provides specific requirements regarding building height, layout, parking, green spaces, and building form standards, and it dictates new standards for street and sidewalk widths. These characteristics enhance the transit user experience by promoting compact and walkable development.

Figure 3-1 Zoning



MULTIMODAL INFRASTRUCTURE

Sidewalk and Bike Networks

The City of Norman lacks a complete sidewalk network. While the main commercial area of Downtown Norman typically has sidewalks on both sides of the street, coverage varies within neighborhoods across the city. Sidewalks are not present in many of the older neighborhoods in the city, such as the University neighborhood south of Main Street and the residential areas west of Chautauqua Avenue and south of Lindsey Street, near the OU campus.

Bike infrastructure exists in various forms throughout the city (Figure 3-2). Most of the routes are "shared-road" routes, which provide the least amount of protection between the rider and vehicle traffic. Separated bike paths exist along Rock Creek Road, 24th Avenue NW, the railroad right-of-way through Downtown Norman, and within the OU campus.

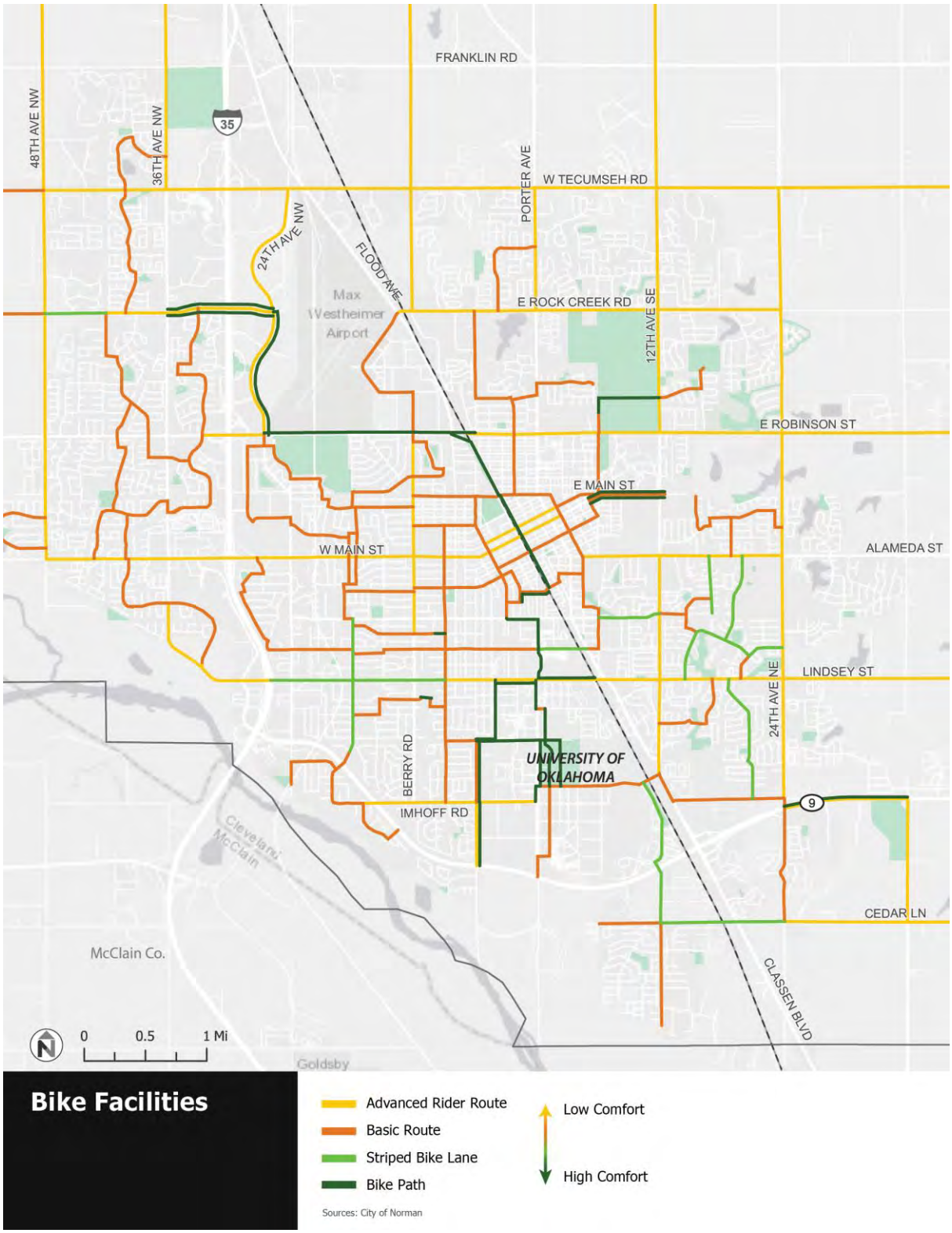
A safe and comfortable walking and biking environment is important for everyone, but particularly for transit riders. High quality sidewalk and bike infrastructure near transit stops reduces barriers to transit access. Providing safe options for riders as they travel to and from transit stops enhances the overall user experience, which can lead to increases in ridership.

Street Network

The street network of Norman varies significantly due to development patterns. Streets in Downtown Norman follow a grid pattern. The OU campus has a rectangular grid pattern with longer block lengths. Outside of these areas, street networks are curvilinear and fragmented due to large-scale commercial and multi-family development.

The BNSF railroad and I-35 are significant pedestrian barriers that span the entire length of the city. At-grade rail crossings impact transit schedule reliability. On- and off-ramps for the I-35 and State Route 9 are hostile environments for pedestrians due to their high vehicular speeds and lack of nearby sidewalks.

Figure 3-2 Bike Facilities



MAJOR DESTINATIONS

The University of Oklahoma is a major activity generator in Norman with more than 28,000 students and nearly 7,500 full-time employees. Other major employment locations include Norman Regional Hospital, Norman Public Schools, Johnson Controls, and Walmart (Figure 3-3 and Figure 3-4). Shopping destinations are mostly located west along the I-35 corridor and include University Town Center, Robinson Crossing, and Sooner Mall. Social services and recreation centers are scattered across the city.

Figure 3-3 Activity Generators

Figure 3-4 Top Ten Employers in the City of Norman

Major Employer	Employees
The University of Oklahoma	7,500
Norman Regional Hospital	3,000
Norman Public Schools	1,800
Johnson Controls	1,000
Walmart Supercenters	950
City of Norman	850
Riverwind Casinos	800
Hitachi	400
National Oceanic & Atmospheric Administration (NOAA)	400
Cleveland County	400

Source: Norman Economic Development Coalition, 2020

FUTURE DEVELOPMENT

Ongoing Projects

Numerous residential, commercial, and municipal facilities are currently planned or under construction in the City of Norman (Figure 3-5). Construction began in November 2020 for an Operations and Maintenance Facility south of the intersection of Rock Creek Road and Flood Avenue, just east of the Max Westheimer Airport. The Operations and Maintenance Facility will be an 18,635 square-foot building used to maintain the transit fleet and public safety vehicles. All transit operations, including bus drivers, dispatchers, schedulers, and customer service representatives will work out of this facility. Construction is scheduled to be completed in July 2021. Other planned developments such as the mixed-use planned community on Tecumseh Road, Norman Regional Health System Southeast Campus, the Cleveland County Wellness Center, and the new senior living facility on 24th Avenue NW will affect the population and employment densities in Norman and should be considered when planning or expanding transit services.

Future Growth Areas

As discussed in the Norman 2025 Land Use and Transportation Plan, growth areas are part of an ongoing effort to manage growth in the city in relation to the character, infrastructure, and suitability of developable land. The plan establishes priorities to maintain a healthy balance of development in the eastern and western areas of the City, areas for future urban densities, areas suitable for industrial development, and very low density areas particularly for environmentally sensitive land such as the Garber-Wellington aquifer recharge area and the Ten-Mile Flats floodplain.

As shown in Figure 3-6, areas identified for potential future urban growth are outlined in light gray and exist slightly outside the current urban service area. The City will continue to revitalize the central business district and Campus Corner area (as outlined in the Downtown Norman Revitalization Plan) and efforts will be made to continue strengthening existing neighborhoods. Future urban service areas comprise of areas outside existing water and/or sewer service areas but are recommended for urban land uses.

Figure 3-5 Future Projects

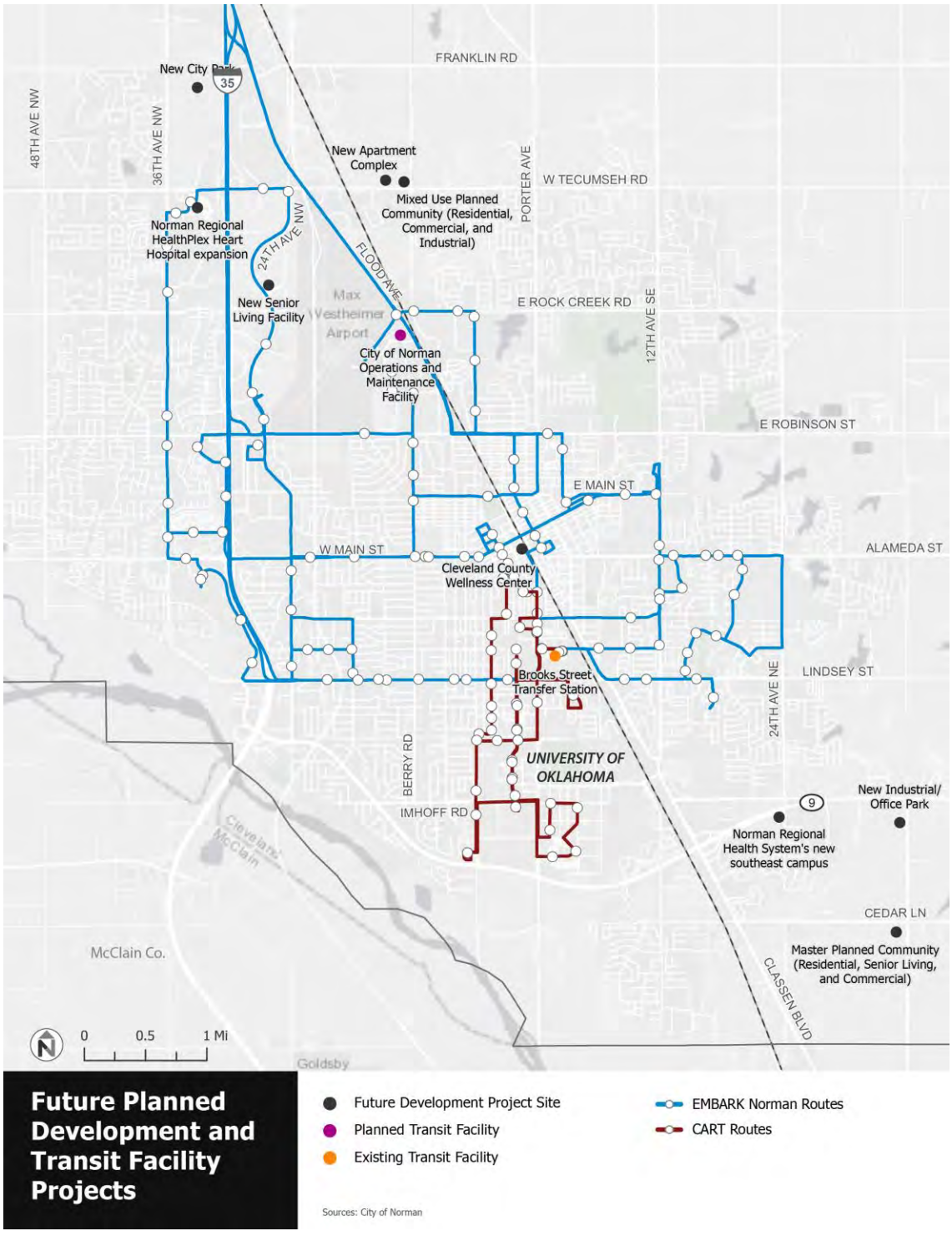
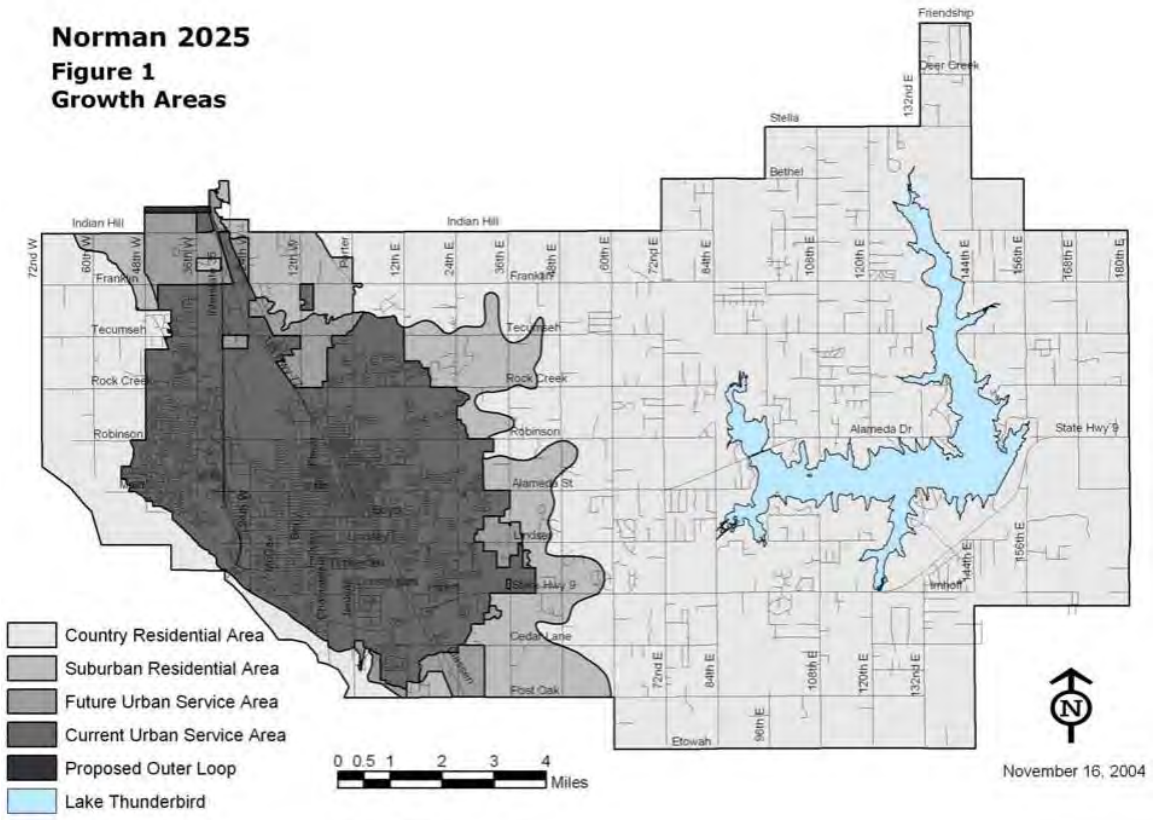


Figure 3-6 2025 Growth Areas



4 TRANSIT INVENTORY

The City of Norman operates fare free fixed-route and paratransit service Monday through Saturday. This chapter provides an overview of fixed-route and paratransit policies, services, and performance. This chapter also includes a trend analysis comparing current and past performance of CART service and service provided by the City of Norman between 2013 and 2019.

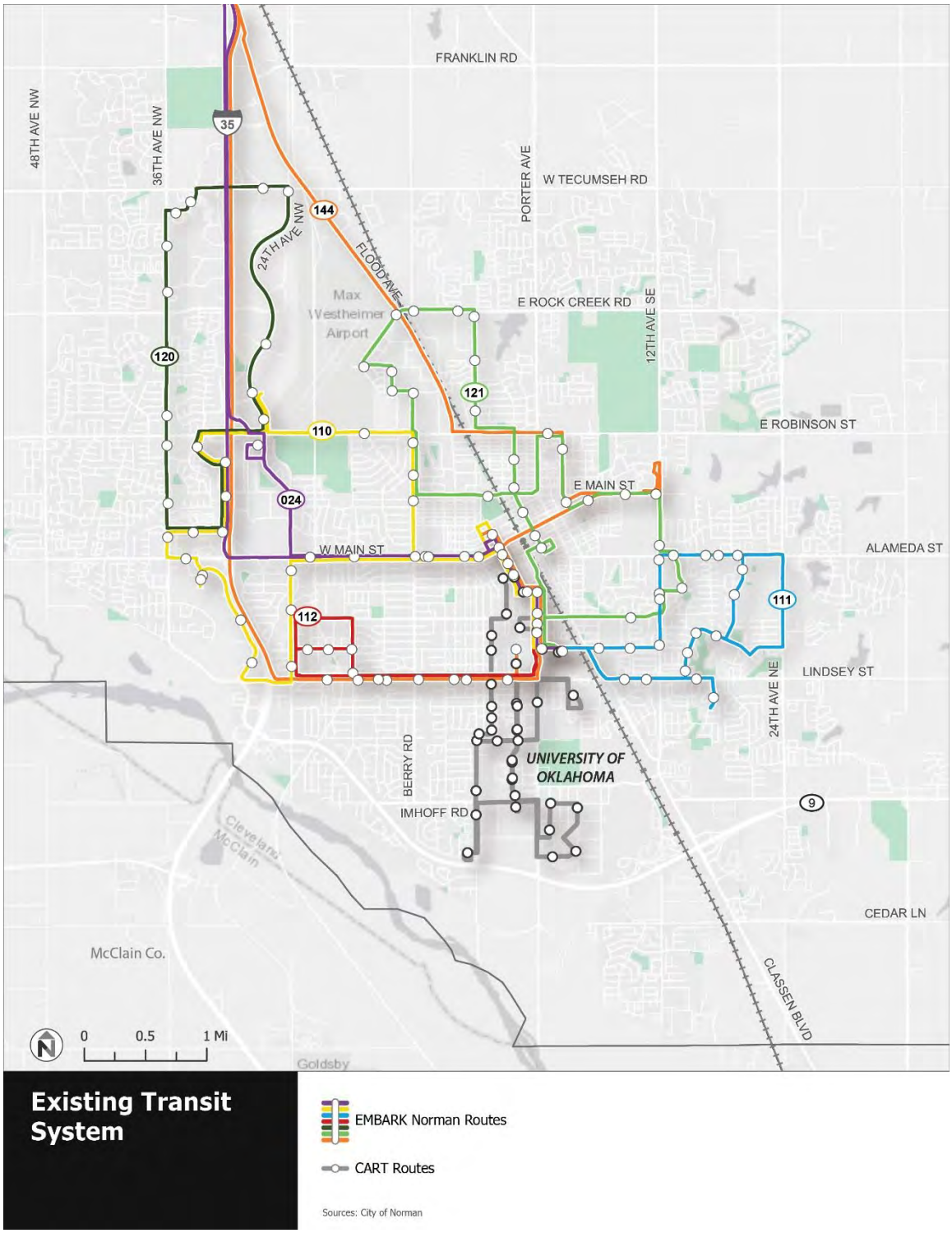
FIXED-ROUTE SERVICE

Route Network

The existing EMBARK Norman transit network is comprised of five local fixed-routes providing service throughout the City of Norman. Four of these five routes terminate at the Brooks Street Transfer Station (Figure 4-1), providing connections to CART Routes 32 and 52 operated by the University of Oklahoma. EMBARK Norman also operates an express route to the social security administration office located in the City of Moore and previously operated an express route to Oklahoma City, the operations of which have recently been transferred to EMBARK Oklahoma City. The EMBARK Norman system map is shown in Figure 4-2.

Figure 4-1 Brooks Street Transfer Station

Figure 4-2 EMBARK Norman Existing Transit Network

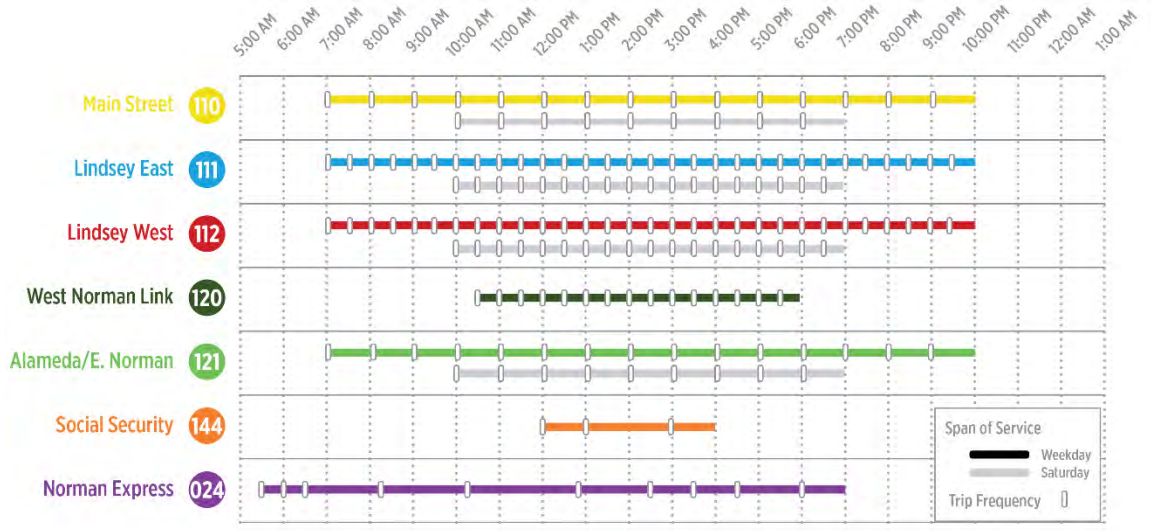


Service Span and Headways

The four primary EMBARK Norman local routes (110, 111, 112, and 121) begin at 7:00 a.m. and end at 10:00 p.m. on weekdays and begin at 10:00 a.m. and end at 7:00 p.m. on Saturdays. Route 120 operates between 10:15 a.m. and 5:28 p.m. on weekdays only. Route 144 Social Security operates during weekday midday hours only. Route 024 Norman Express operates during weekday morning, midday, and afternoon hours. Figure 4-3 shows the frequency and span for each fixed-route in the system.

EMBARK Norman routes operate a range of headways (the time difference between two vehicles passing a specific point). Routes 111, 112, and 120 provide 30-minute service while Routes 110 and 121 operate hourly service. The two express routes, the 144 – Social Security and 024 – Norman Express operate irregular headways throughout the day. Route 024 is no longer operated by the City of Norman, instead, operations have transitioned to Oklahoma City.

Figure 4-3 Existing Route Service Spans and Headways

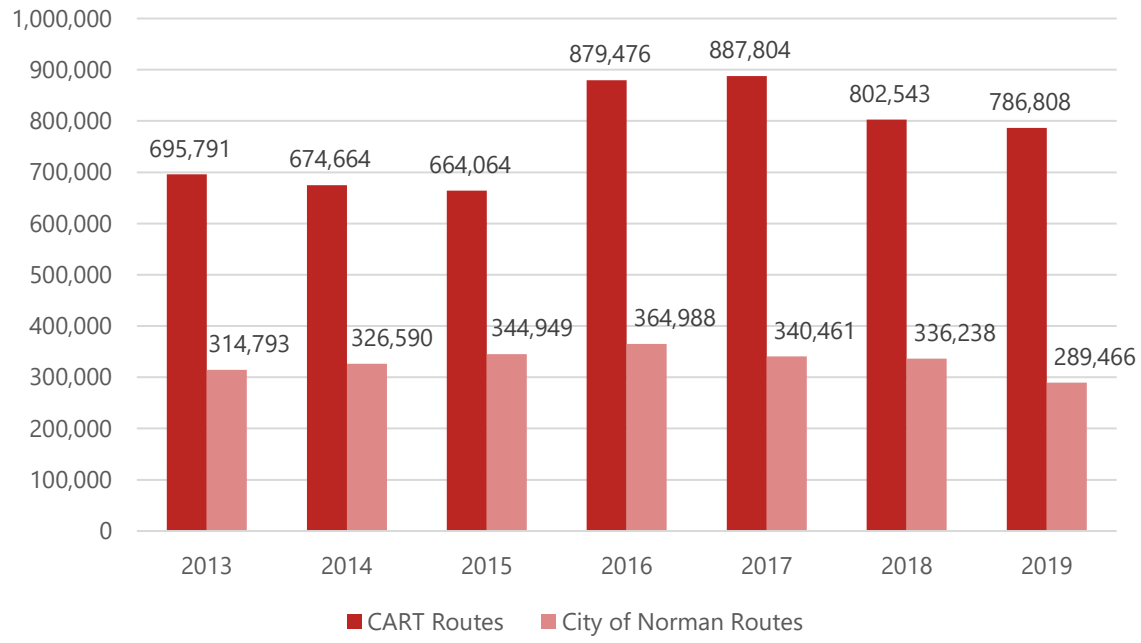


Historical Ridership

Ridership data for City of Norman routes was made available by the City of Norman and was used to extrapolate ridership between CART and the City of Norman over the seven-year year period from 2013 – 2019 (Figure 4-4). While the combined ridership on CART and City of Norman fixed-route service has increased by 7% over this seven-year period, ridership on the two services varies considerably.

Ridership on City of Norman routes is lower than on CART routes. Additionally, CART ridership increased by 13% over this four-year period, while City of Norman ridership decreased by 8% over the same timeframe.

Figure 4-4 CART and City of Norman Fixed-Route Ridership (2013 – 2019)



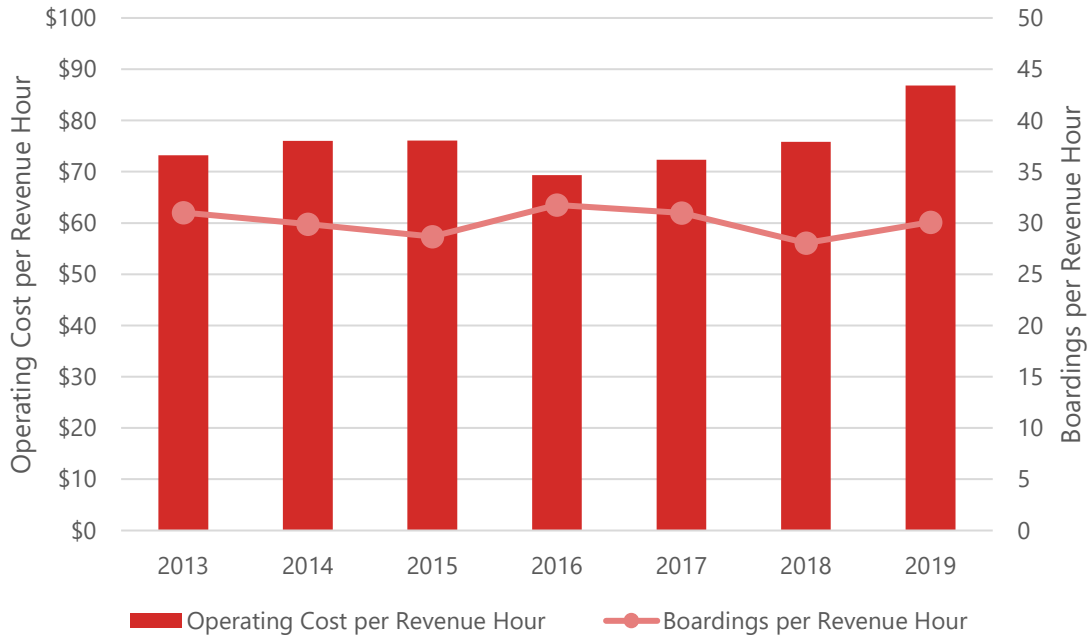
Source: iNTD CART, 2013 – 2019; City of Norman, 2013 – 2019

Historical Performance

Historical performance relies on data from the National Transit Database (NTD) and represents service currently operated by both CART and the City of Norman prior to service oversight transitioning to the City. Rather than showing the trend for City of Norman transit specifically, this analysis represents a holistic picture for all transit service in the City.

Figure 4-5 presents two key performance indicators for fixed-route service over the seven-year period from 2013 through 2019, the most recent year for which NTD data is available. Operating cost per revenue hour has increased by 19%, which is in line with an annual inflation rate of 3%. However, boardings per revenue hour, which represent the efficiency of fixed-route service, has decreased by 3% during the same timeframe.

Figure 4-5 CART and City of Norman Fixed-Route Performance Metrics (2013 – 2019)



Source: iNTD CART, 2013 – 2019; City of Norman, 2013 – 2019

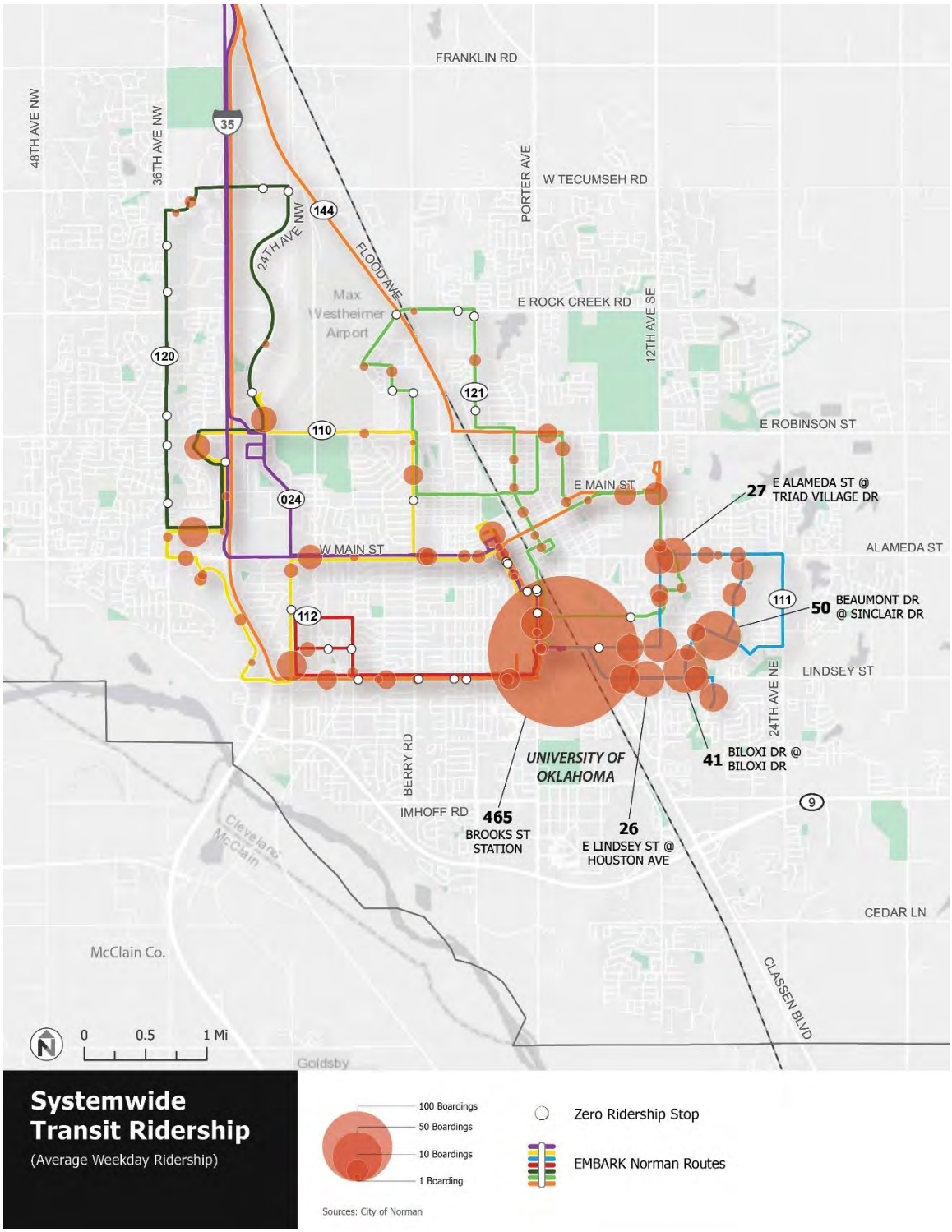
System Ridership

The average daily ridership for every stop in the EMBARK Norman system is shown in Figure 4-6. Ridership is concentrated near multifamily housing developments east of the OU campus, with the highest ridership stops including:

- Brooks Street Transfer Station
- Beaumont Drive & Sinclair Drive
- Biloxi Drive & Biloxi Drive
- E Alameda Street & Triad Village Drive
- E Lindsey Street & Houston Drive

Ridership is also high at retail destinations along Lindsey Street, Main Street, University Town Center, and Sooner Mall.

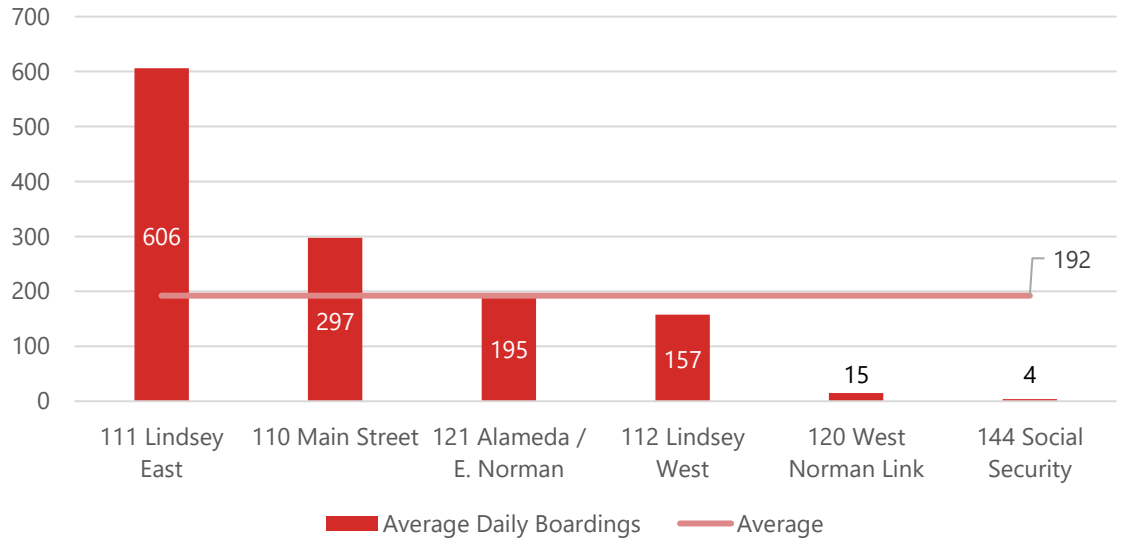
Figure 4-6 EMBARK Norman Systemwide Ridership Map



Route Ridership

Ridership performance for all City of Norman routes is shown in Figure 4-7. The system averages 1,343 daily riders on weekdays, based on October 2019 data. Route 111 and Route 110 are the highest ridership routes in the system, averaging 606 and 297 boardings per weekday. Routes 120 and 144 are the lowest ridership routes, averaging 15 and 4 boardings per weekday.

Figure 4-7 Average Weekday Ridership (October 2019)



Source: City of Norman, 2019

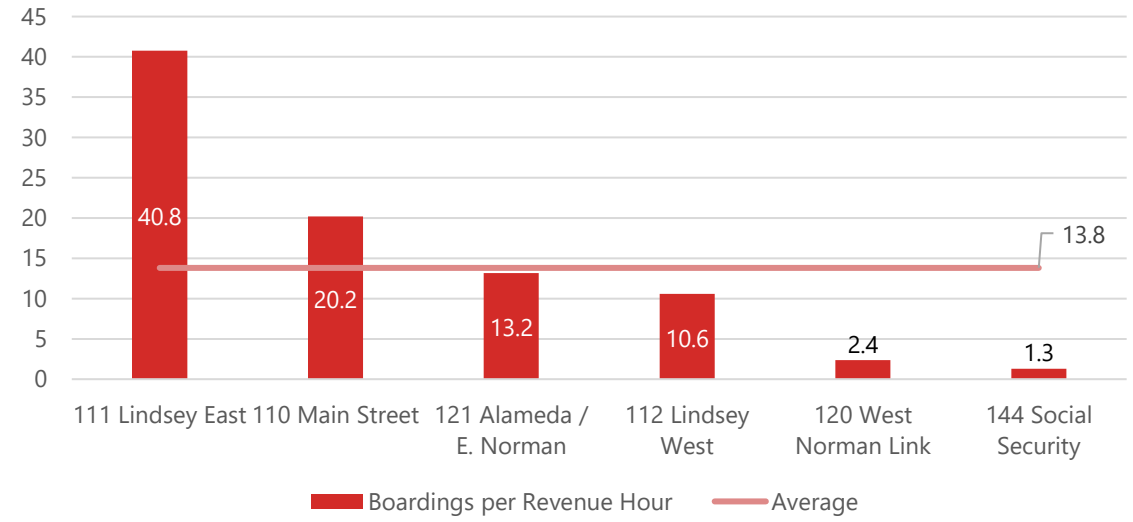
Route Productivity

Weekday route productivity, measured by boardings per revenue hour, varies significantly as shown in Figure 4-8. Route 111 averages three to four times as many boardings per revenue hour than other primary local routes (110, 121, and 112).

Route 120 averages far fewer boardings per revenue hour due to its shorter service span, low-density operating environment, and lack of connectivity with the Brooks Street Transfer Station.

Route 144 also averages low productivity due to its shorter service span and express service type.

Figure 4-8 Average Weekday Productivity (October 2019)

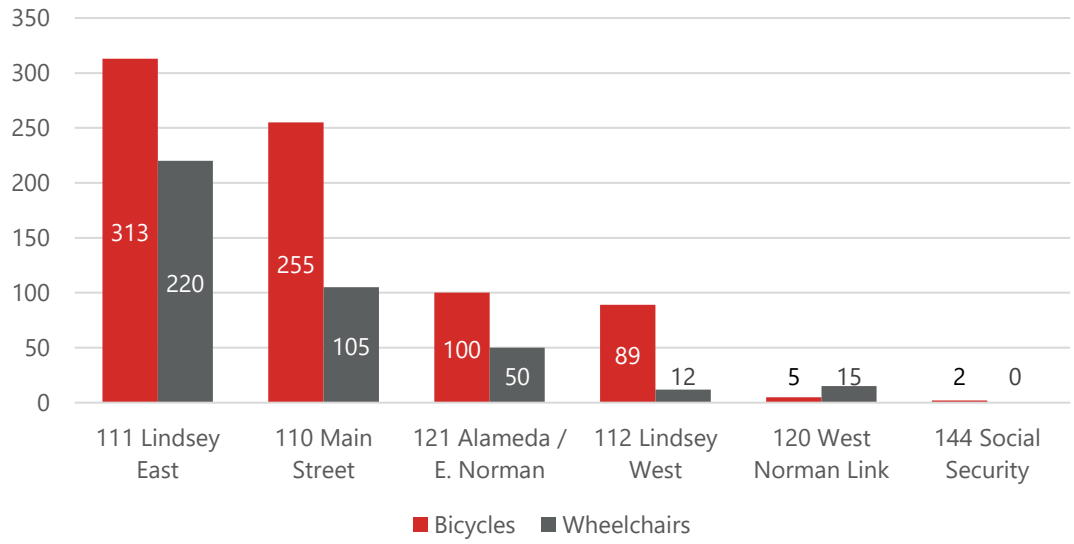


Source: City of Norman, 2019

Bicycle and Wheelchair Use

The number of passengers boarding with bicycles or wheelchairs during the month of October 2019 is shown below in Figure 4-9. These boardings largely correspond to overall ridership for each route. However, the process of loading and securing bicycles and wheelchairs during the boarding process increases dwell time at stops and may contribute to on-time performance issues for routes. High bicycle and wheelchair use for specific routes may also indicate that the route serves higher need communities with higher proportions of people with disabilities or who need to travel further distances to access transit.

Figure 4-9 Monthly Boardings with Bicycles and Wheelchairs (October 2019)



Source: City of Norman, 2019

ROUTE PROFILES

This section discusses the specific service parameters and performance metrics for each route in the EMBARK Norman system, including ridership by time of day, ridership by stop, and on-time performance. This analysis is based on automated passenger counter (APC) data collected in October 2019. On-time performance is calculated by comparing the average departure time at each timepoint of each trip to the scheduled departure time. Trips that depart a timepoint five or more minutes after scheduled are considered late and trips that depart a timepoint before the scheduled departure are considered early. All other trips departing within five minutes of the time scheduled are considered on-time. These early, late, and on-time designations are then combined to show the percent of departures from timepoints that fall into each designation.

Route 110 Main Street

Route 110 Main Street is a clockwise loop route providing 60-minute service beginning and ending at the Brooks Street Transfer Station and operating along Main Street, Berry Road, Robinson Street, Interstate Drive, 24th Avenue, Webster Avenue, and Jenkins Avenue. Major destinations served by the route include:

- Brooks Street Transfer Station
- Norman City Hall
- Norman High School
- University Town Shopping Center
- Robinson Crossing Shopping Center
- Normandy Creek Shopping Center
- Sooner Mall
- Norman Public Library West
- Parkway Plaza Shopping Center
- Savannah House Senior Housing

Aside from the Brooks Street Transfer Station, the route provides transfer opportunities with Route 112 Lindsey West, Route 120 West Norman Link, and Route 121 Alameda/E. Norman. Service parameters for Route 110 Main Street are shown in Figure 4-10. Saturday service began operating in August 2020, thus there is no Saturday ridership data included in this analysis.

Figure 4-10 Route 110 Main Street Service Parameters

	Weekday	Saturday
Headway	60	60
Service Span	7:00 AM – 9:00 PM	10:00 AM – 6:00 PM
Daily Revenue Hours	14	8
Daily Trips	14	8

Ridership

Route 110 Main Street is the second highest ridership and second highest productivity route in the Embark Norman system, averaging 261 boardings per weekday and 18.6 boardings per revenue hour.

Ridership on Route 110 Main Street is highest in the midday and afternoon peak period, with all trips between 12:00 p.m. and 5:00 p.m. averaging over 20 boardings, while morning and evening trips average between 10 and 15 boardings (Figure 4-11). Ridership activity is concentrated around several shopping centers in the city (Figure 4-12), with the highest ridership stops including:

- Brooks Street Transfer Station
- University Town Center
- Norman City Hall
- Sooner Mall
- Normandy Creek Shopping Center

The relatively high midday ridership and activity concentrated around shopping centers indicate that this route may be heavily used by retail employees. Additionally, the high ridership activity at the Brooks Street Transfer Station also suggests that a large number of passengers on this route may require a transfer to complete their trip.

Figure 4-11 Route 110 Main Street Ridership by Time of Day

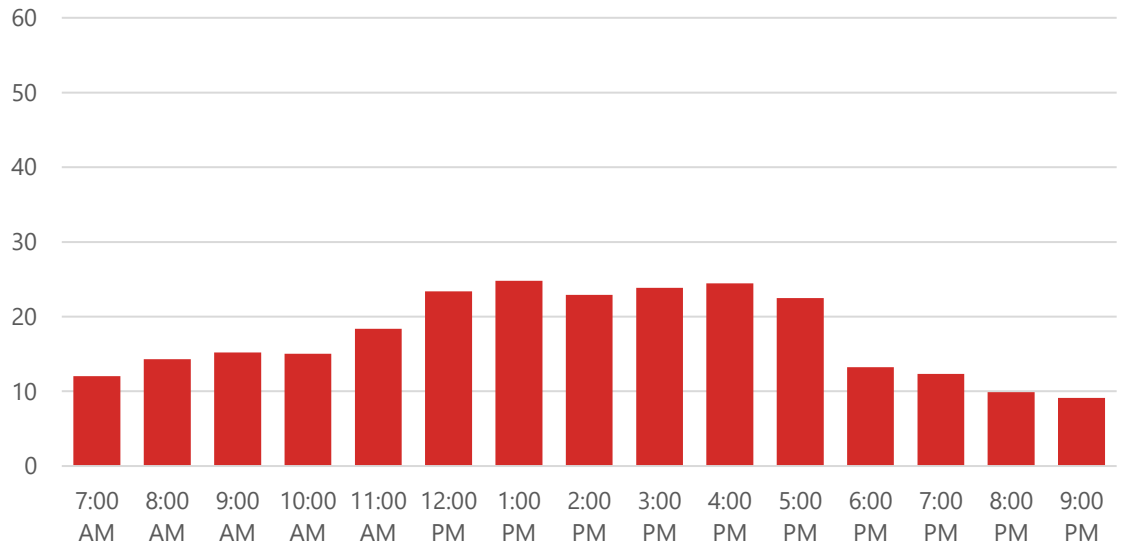
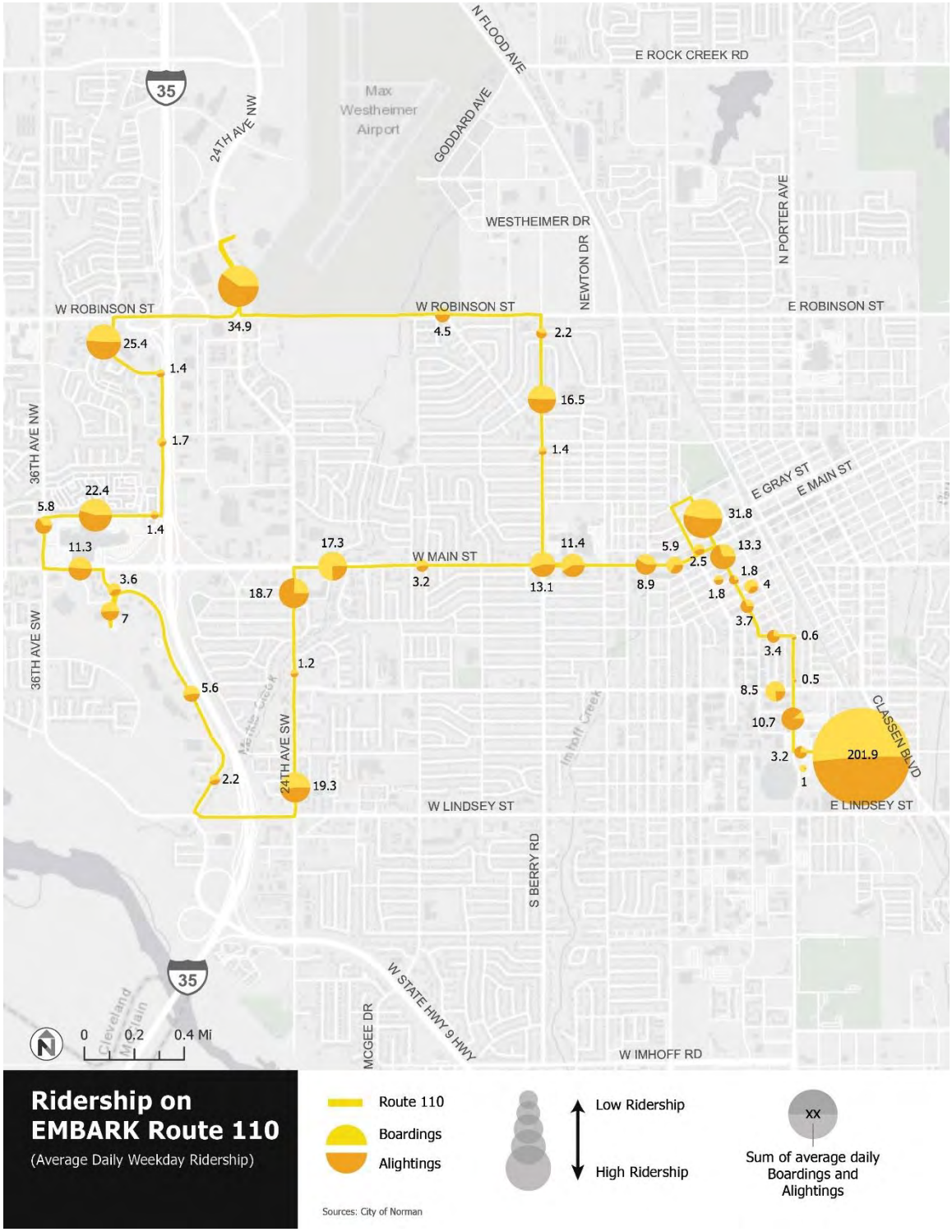


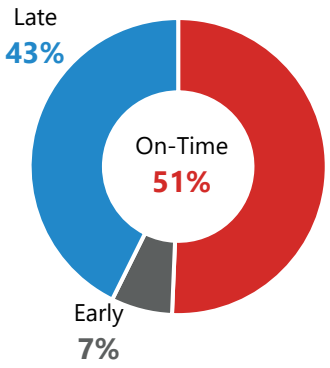
Figure 4-12 Route 110 Main Street Ridership Map



On-Time Performance

Route 110 Main Street has the worst on-time performance in the EMBARK Norman system, departing from stops on-time 51% of the time, late 43% of the time, and early 7% of the time (Figure 4-13). Delays on the route may be related to traffic congestion in downtown Norman, along Main Street, or near I-35 on-ramps. Delays may also be related to difficult turning movements such as the turnaround within University Town Center. Reducing unnecessary turning movements along the route's alignment may improve on-time performance.

Figure 4-13 Route 110 Main Street On-Time Performance



Summary

Route 110 Main Street is a relatively high ridership route, predominately serving retail destinations on the west side of the City of Norman. Despite being the second highest ridership route in the system, Route 110 Main Street operates on hourly headways and may be a strong candidate for improved service frequency. Improving to 30-minute headways, particularly in the midday period, would make the route more convenient for passengers and better facilitate transfers between other routes in the system. This route also has the lowest on-time performance in the system, which may be due to traffic congestion in downtown Norman or unnecessary and difficult turning movements. Reducing the circuitous alignment of the route would simplify the service, make it easier to understand for passengers, and likely improve on-time performance.

Roue 111 Lindsey East

Route 111 Lindsey East is a counterclockwise loop route providing 30-minute service beginning and ending at the Brooks Street Transfer Station and operating a long Lindsey Street, Creekside Drive, Biloxi Drive, Beaumont Drive, Vicksburg Avenue, Alameda Street, 12th Avenue, and Brooks Street. During the 3:30 PM trip only, the route serves 24th Avenue instead of Vicksburg Avenue. Major destinations served by the route include:

- Brooks Street Transfer Station
- Numerous multifamily housing developments along Lindsey Street, Creekside Drive, Biloxi Drive
- Irving Middle School
- Retail destinations near 12th Avenue & Alameda Street

Aside from the Brooks Street Transfer Station, the route provides transfer opportunities with Route 121 Alameda/E. Norman. Service parameters for Route 111 Lindsey East are shown in Figure 4-14. Saturday service began operating in August 2020, thus there is no Saturday ridership data included in this analysis.

Figure 4-14 Route 111 Lindsey East Service Parameters

	Weekday	Saturday
Headway	30	30
Service Span	7:00 AM – 9:50 PM	10:00 AM – 6:50 PM
Daily Revenue Hours	14.8	8.8
Daily Trips	30	18

Ridership

Route 111 Lindsey East is the highest ridership and highest productivity route in the Embark Norman system, averaging 517 boardings per weekday and 34.9 boardings per revenue hour. This route has nearly double the ridership of the second highest ridership route, Route 110 Main Street. Ridership is high throughout the day but is highest in the morning between 8:00 AM and 10:00 AM, averaging nearly 50 boardings per hour (Figure 4-15). Ridership is slightly lower in the mornings and evenings but is still relatively high, between 20 and 30 boardings per hour. During the 3:30 PM trip, the route operates on 24th Avenue instead of Vicksburg Avenue.

Ridership activity is highly concentrated at large apartment complexes and multifamily housing developments, with the highest ridership stops including:

- Brooks Street Transfer Station
- Beaumont Drive & Sinclair Drive (Campus Lodge)
- Biloxi Drive at Radius Apartments
- Lindsey Street & Houston Avenue (Springfield Apartments)
- Lindsey Street & Delaware Lane (Millennium Apartments)
- Creekside Drive & Houston Ave (Twin Creek Village Apartments)
- Alameda Street & 12th Avenue (Homeland grocery store and transfer opportunity with Route 121 Alameda/E. Norman)

The ridership patterns on Route 111 Lindsey East suggest that the route is heavily utilized by OU students traveling to and from campus. Ridership is also sufficiently high that the route may be able to support 15-minute frequency, particularly during peak periods between 8:00 AM – 10:00 AM and 3:00 PM – 6:00 PM.

Figure 4-15 Route 111 Lindsey East Ridership by Time of Day

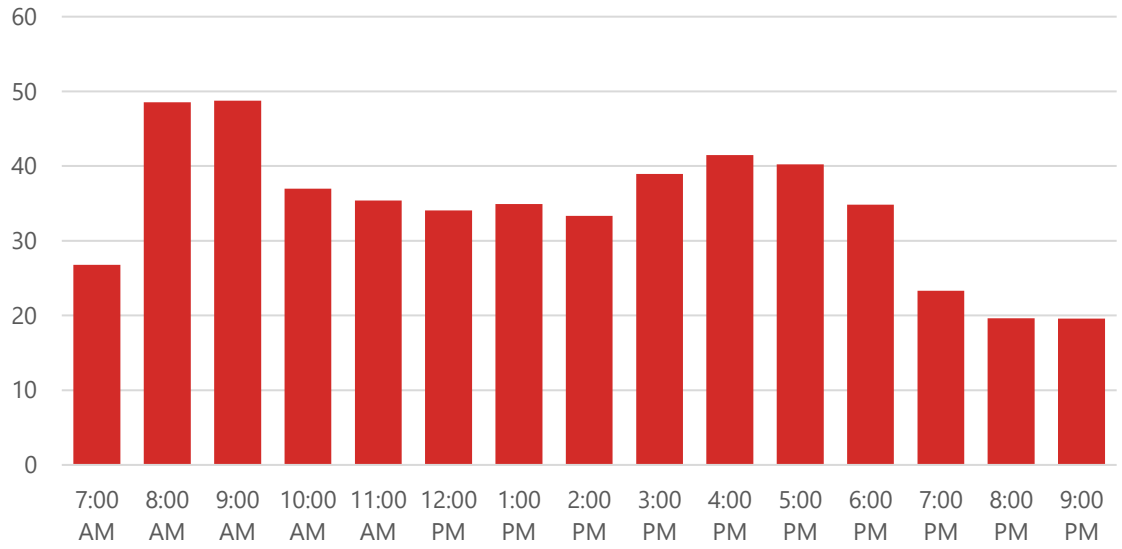
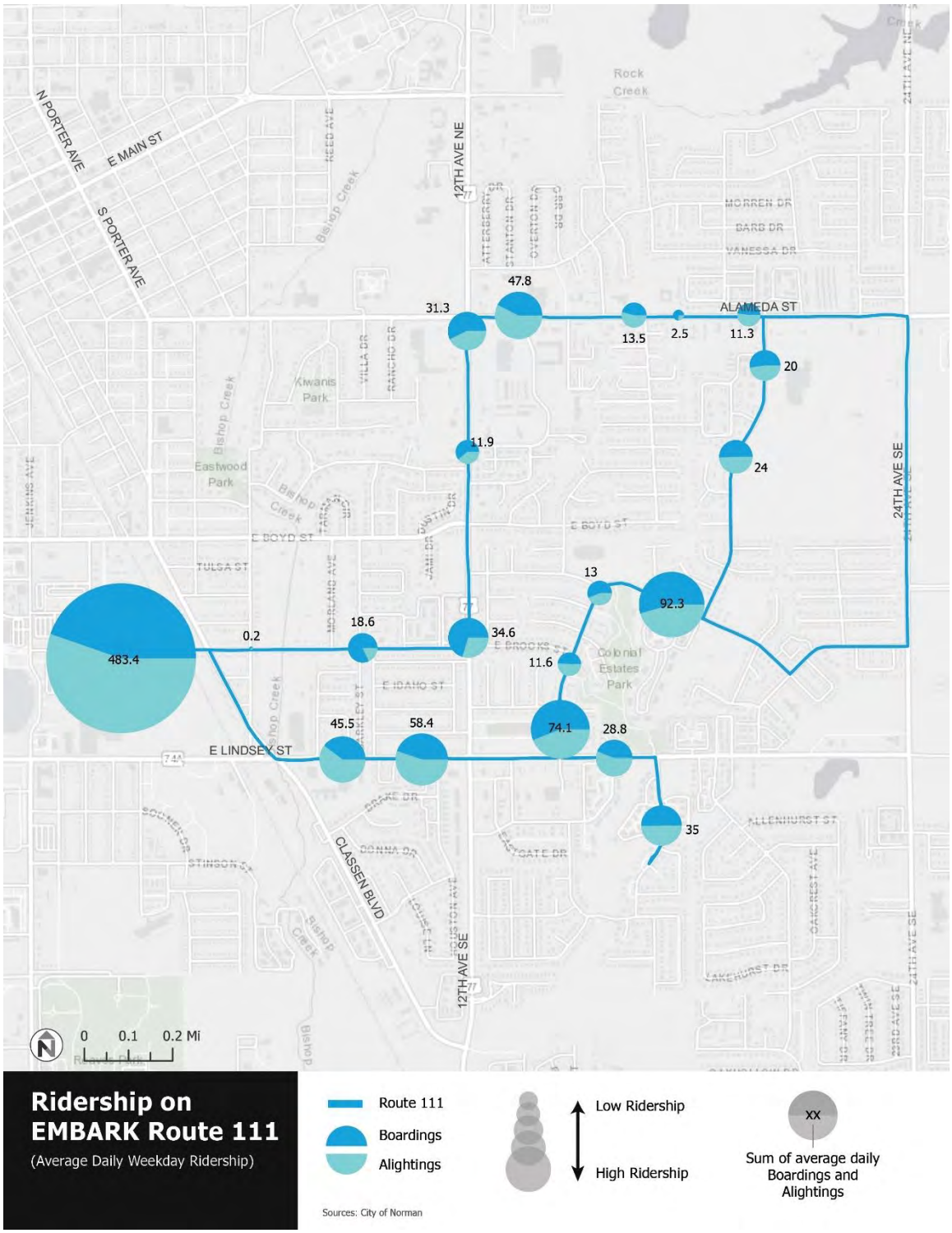


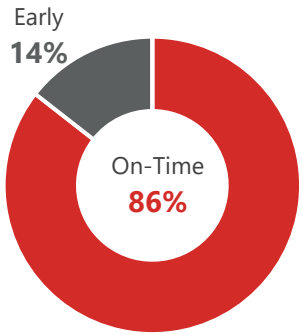
Figure 4-16 Route 111 Lindsey East Ridership Map



On-Time Performance

Route 111 Lindsey East has the second highest on-time performance in the EMBARK Norman system, behind only Route 112 Lindsey West. No trips arrive late on the route, while 14% arrive early and 86% arrive on time.

Figure 4-17 Route 111 Lindsey East On-Time Performance



Summary

Route 111 Lindsey East is the highest ridership and productivity route in the EMBARK Norman system. The primary market for the route is to provide a connection between the OU campus and several large apartment complexes on the east side of the City of Norman. The route currently operates with 30-minute headways and may be a candidate for 15-minute service, particularly in the peak period, due to high ridership on the route. This route would also be improved by providing bi-directional travel, rather than a one-way loop. In the current alignment, passengers boarding along Lindsey Street are required to travel out of direction for a significant portion of the alignment before reaching the Brooks Street Transfer Station. Realigning service into a linear, bi-directional route would make it a more convenient option for passengers.

Route 112 Lindsey West

Route 112 Lindsey West is a bi-directional route providing east-west service every 30 minutes between the Brooks Street Transfer Station and 24th Avenue NW along W Lindsey Street. The western terminus of the route is a loop between Lindsey Street, 24th Avenue NW, Brooks Street, and McGee Drive. During the 3:30 PM trip, the route operates on Boyd Street instead of Brooks Street. Route 112 Lindsey West provides service to numerous destinations on Lindsey Street, including:

- The OU campus
- The Salvation Army
- Savannah House Senior Housing
- Numerous housing developments along 24th Avenue
- Whitter Middle School

Aside from the Brooks Street Transfer Station, the route provides transfer opportunities with Route 110 Main Street. Service parameters for Route 112 Lindsey West are shown in Figure 4-18. Saturday service began operating in August 2020, thus there is no Saturday ridership data included in this analysis.

Figure 4-18 Route 112 Lindsey West Service Parameters

	Weekday	Saturday
Headway	30	30
Service Span	7:00 AM – 9:46 PM	10:00 AM – 6:46 PM
Daily Revenue Hours	14.8	8.8
Daily Trips	30	18

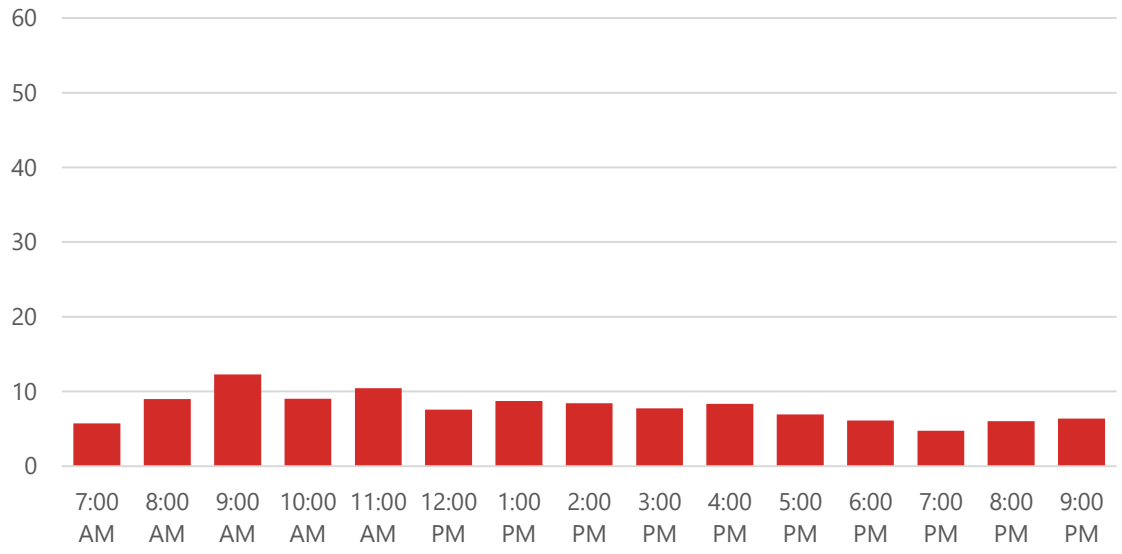
Ridership

Route 112 Lindsey West has below average ridership and productivity, averaging 117 boardings per weekday and 7.9 boardings per revenue hour. Ridership on the route is highest in the morning, averaging between 9 and 12 passengers per hour, and is relatively consistent throughout the day (Figure 4-19). The highest ridership stops on Route 112 Lindsey West are generally at residential developments and the OU campus, including:

- Lindsey Street & Van Vleet Oval
- Wilcox Drive & 24th Avenue
- Lindsey St & Crown Point Avenue

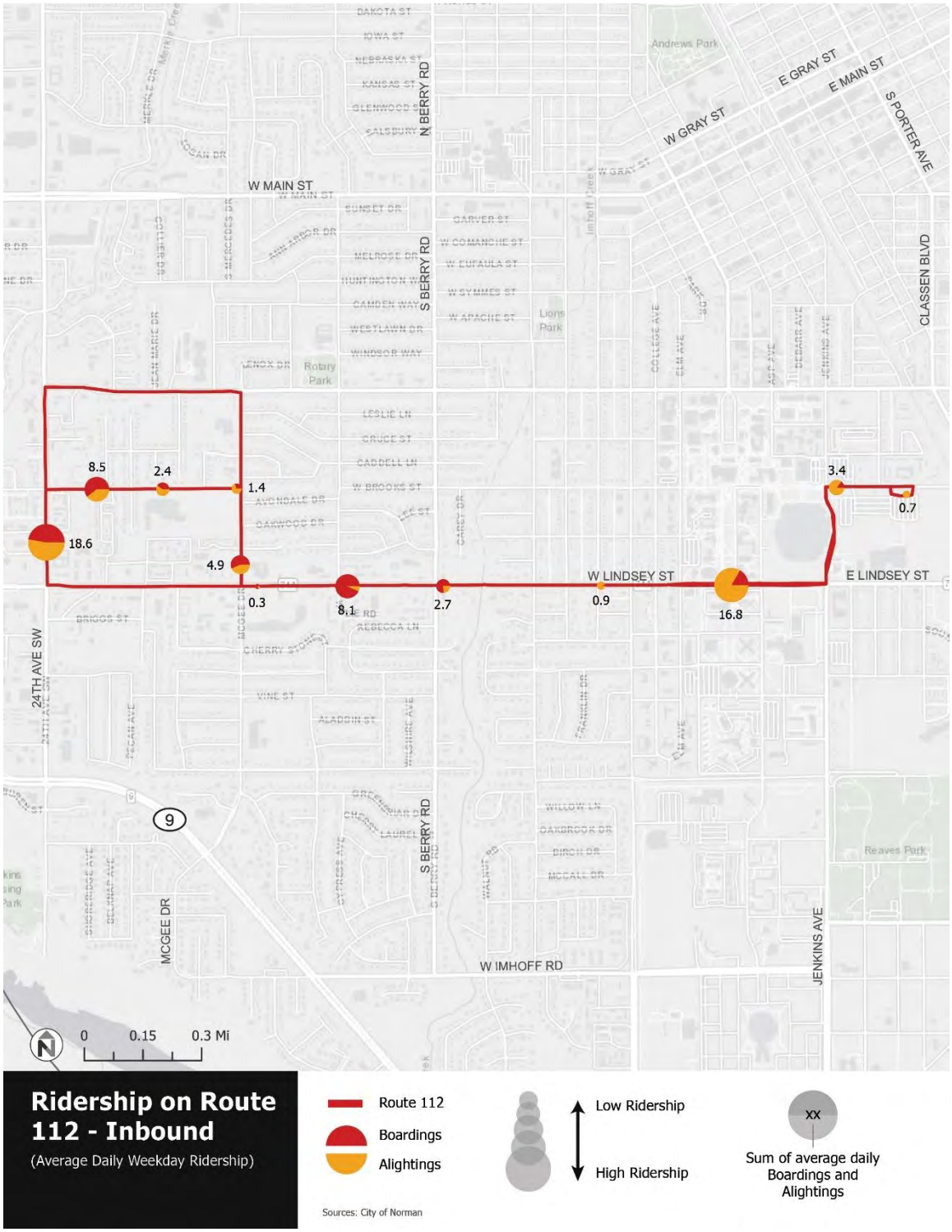
The ridership patterns on Route 112 Lindsey West suggest that the route is generally utilized by OU students traveling to and from campus. However, the demand for service is significantly lower than that for Route 111 Lindsey East.

Figure 4-19 Route 112 Lindsey West Ridership by Time of Day



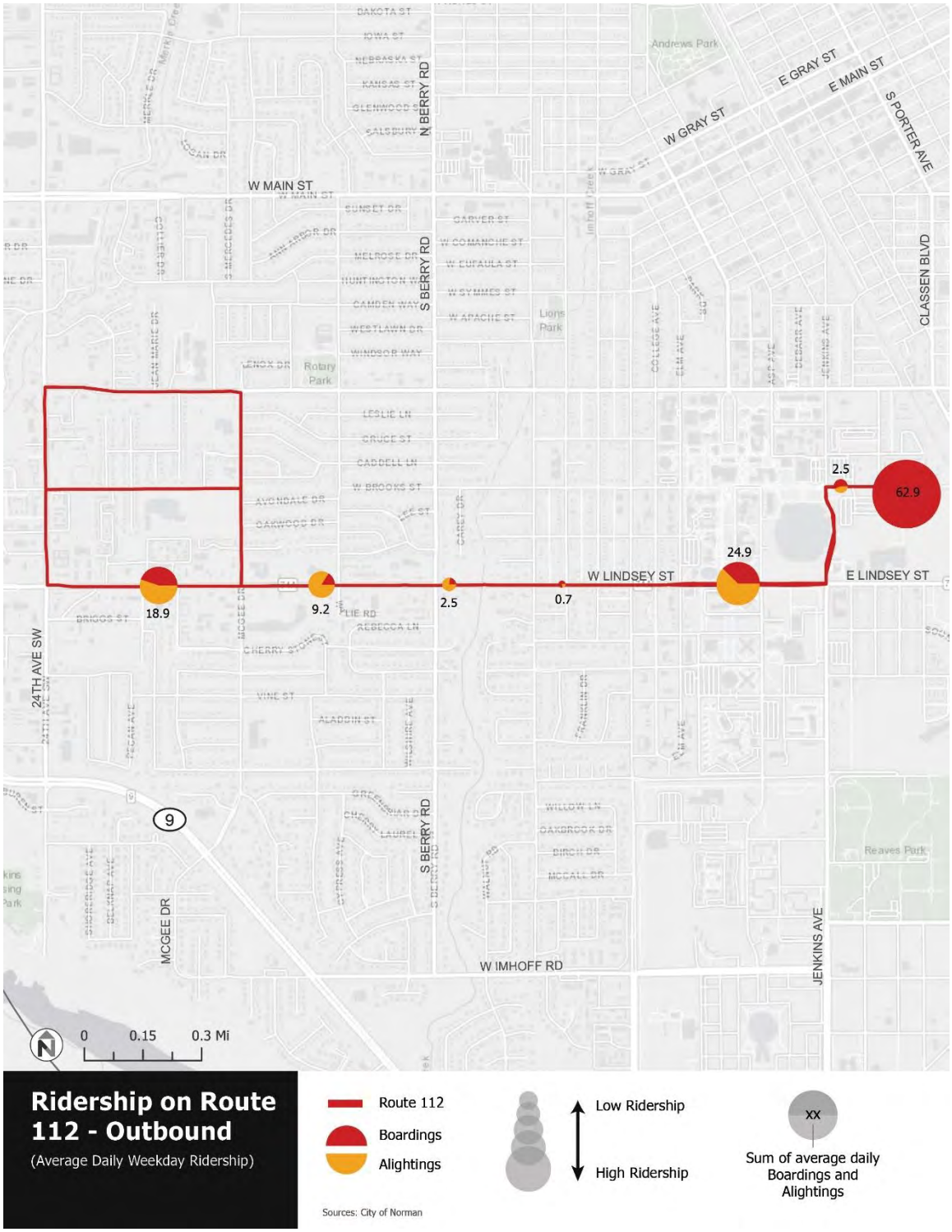
Inbound

Figure 4-20 Route 112 Lindsey West Ridership Map – Inbound



Outbound

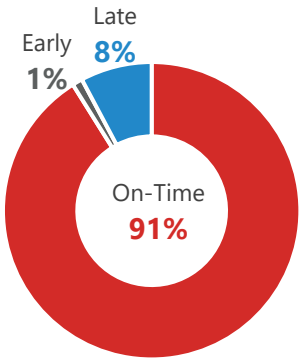
Figure 4-21 Route 112 Lindsey West Ridership Map – Outbound



On-Time Performance

Route 112 Lindsey West has the highest on-time performance in the system, arriving on-time for 91% of trips, early for 1% of trips, and late for 8% of trips. The route is relatively short and generally avoids heavily congested areas of Norman.

Figure 4-22 Route 112 Lindsey West On-Time Performance



Summary

Route 112 Lindsey West is a relatively low ridership, low productivity route that has high on-time performance. The route primarily connects the OU campus to residential developments along Lindsey Street in the western area of the City of Norman. The low ridership and productivity indicate that the route, as currently designed, may not warrant 30-minute service. Reducing frequency or realigning the route to serve additional high ridership destinations may be a more effective use of agency resources.

Route 120 West Norman Link

Route 120 West Norman Link is a clockwise loop route operating every 30 minutes along River Oaks Drive, 36th Avenue NW, W Tecumseh Road, 24th Avenue NW, W Robinson Street, and N Interstate Drive. This is the only route in the system that does not serve the Brooks Street Transfer Station. However, there are transfer opportunities between Route 120 West Norman Link and Route 110 Main Street. The route provides connections between several major destinations, including:

- Sooner Mall
- Brookhaven Village Shopping Center
- Walmart Neighborhood Market
- Norman Regional HealthPlex Heart Hospital
- University Town Shopping Center

The ridership parameters for the route are shown in Figure 4-23. Route 120 West Norman Link only operates on weekdays.

Figure 4-23 Route 120 West Norman Link Service Parameters

	Weekday	Saturday
Headway	30	N/A
Service Span	10:15 AM – 5:28 PM	N/A
Daily Revenue Hours	7.3	N/A
Daily Trips	15	N/A

Ridership

Route 120 West Norman Link is the lowest ridership route in the EMBARK Norman system, averaging 21 boardings per weekday and 3 boardings per revenue hour. Ridership on the route is generally low on all trips. The highest ridership stops are located at Sooner Mall, which provides a transfer opportunity with Route 110 Main Street, and Norman Regional Healthplex, as shown in Figure 4-25.

Figure 4-24 Route 120 West Norman Link Ridership by Time of Day

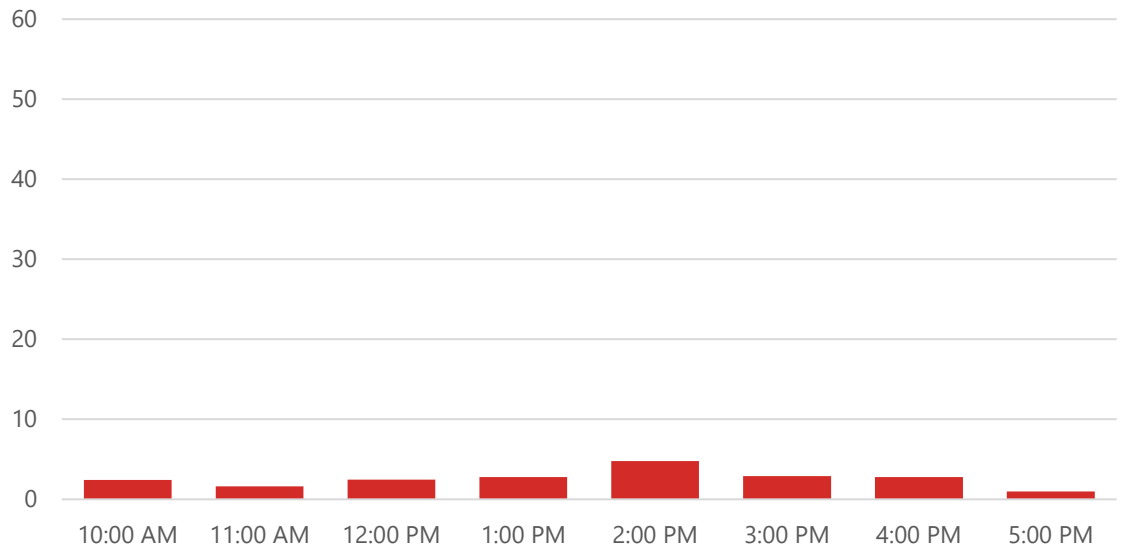
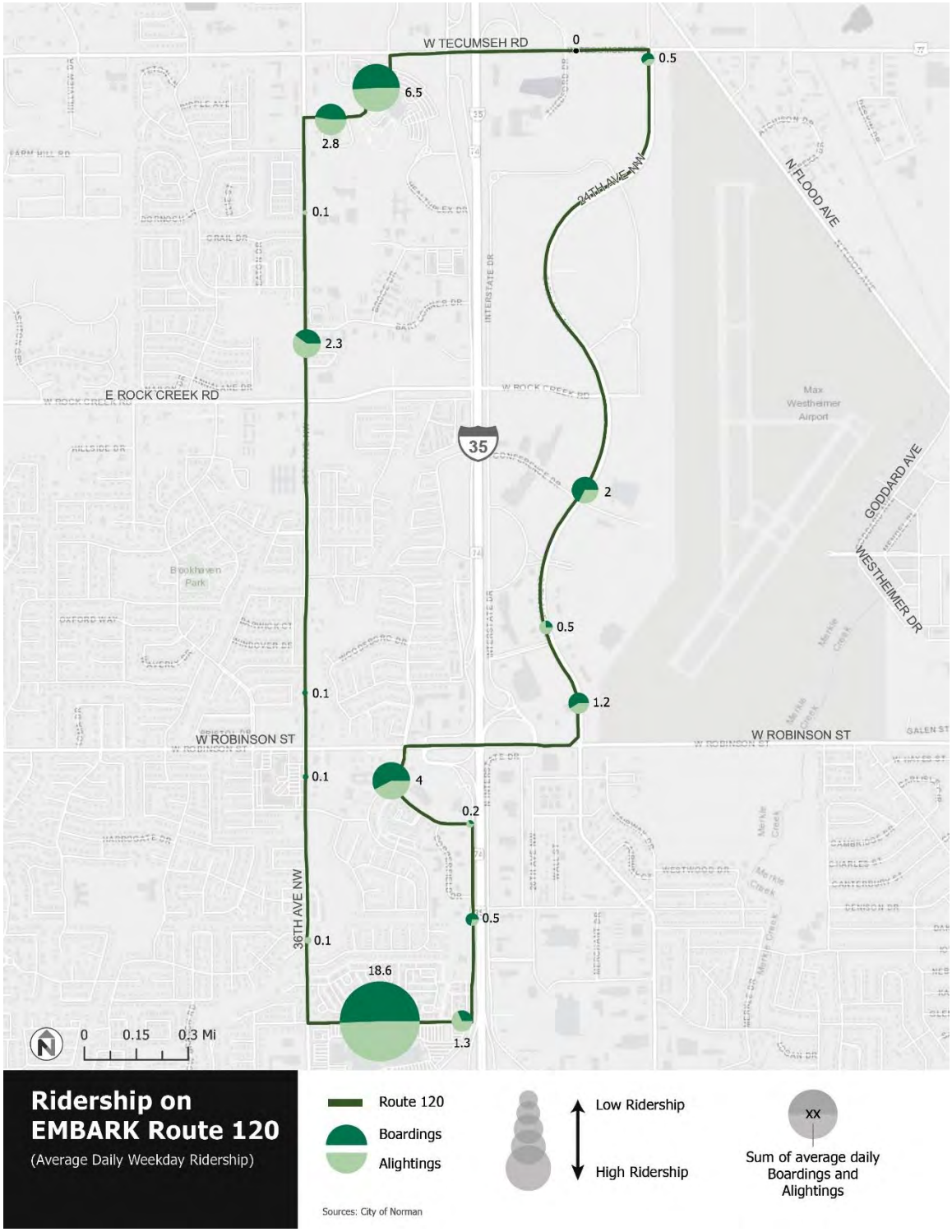


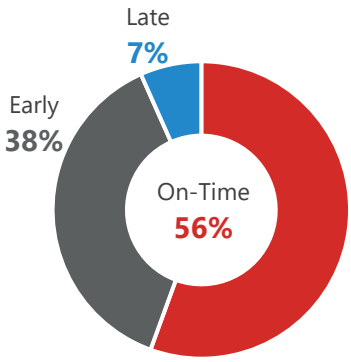
Figure 4-25 Route 120 West Norman Link Ridership Map



On-Time Performance

Route 120 West Norman Link has the second lowest on-time performance with 56% of trips departing on-time, 7% of trips departing late, and 38% of trips departing early (Figure 4-26). The relatively high proportion of trips departing early may be due to the relatively small length of the route and low ridership. Fewer stops and delays related to boarding and alighting activity may allow the route to operate faster than the scheduled times, resulting in more early departures.

Figure 4-26 Route 120 West Norman Link On-Time Performance



Summary

Route 120 West Norman Link is a low ridership, low productivity route serving the northwest area of the City of Norman. This is the only route in the system that does not serve the Brooks Street Transfer Station, limiting the number of people who can reach the service without making multiple transfers. Despite being the lowest ridership route in the system, Route 120 West Norman Link operates with 30-minute headways. The route, as currently designed, does not have sufficiently high ridership to warrant this level of service. Reducing frequency or combining with another route may be a more efficient allocation of resources for the city.

Route 121 Alameda/E. Norman

Route 121 Alameda/E. Norman operates hourly service on a figure-eight pattern comprised of a southern counterclockwise loop and a northern clockwise loop. The alignment of the route has been adjusted since the data for this analysis was collected to provide east-west service on Acres Street instead of Robinson Street.

The route currently provides service beginning and ending at the Brooks Street Transfer Station and operates along Boyd Street, Triad Village Drive, 12th Avenue, Main Street, Findley Avenue, Robinson Street, Porter Avenue, Berry Road, Goddard Avenue, Rock Creek Road, Stubbeman Avenue, Peters Avenue, and Jenkins Avenue. The route includes a deviation to serve the Cottonwood Ridge Condos along 12th Avenue SE and Triad Village Drive.

Major destinations served by the route include:

- Cottonwood Ridge Condos
- Walmart
- Community Service Building
- Longfellow Middle School
- Norman Regional Hospital
- Norman Library Central
- Norman Housing Authority
- Cleveland County Family YMCA
- USPS Maintenance Technical Support Center
- Norman North High School
- Cleveland County Court Clerk
- Norman Senior Citizens Center

The service parameters for Route 121 Alameda/E. Norman are shown in Figure 4-27. Saturday service began operating in August 2020, thus there is no Saturday ridership data included in this analysis.

Figure 4-27 Route 121 Alameda/E. Norman Service Parameters Summary

	Weekday	Saturday
Headway	60	60
Service Span	7:00 AM – 9:40 PM	10:00 AM – 6:40 PM
Daily Revenue Hours	14.8	8.8
Daily Trips	15	8

Ridership

Route 121 Alameda/E. Norman is a below average ridership route in the EMBARK Norman system, averaging 181 daily boardings and 12.3 boardings per revenue hour. Ridership fluctuates throughout the day but is relatively consistent, between 12 and 18 boardings per hour. Ridership in the morning and evening is notably lower, with fewer than 8 boardings per hour. Ridership is also higher on southern counterclockwise loop than on the northern clockwise loop. The highest ridership stops for the route include:

- Brooks Street Transfer Station
- Boyd Street & Jenkins Avenue (OU Campus)
- 12th Avenue & Mockingbird Lane (Cottonwood Ridge Condos)
- Alameda Street & Triad Village Drive (Homeland grocery store)
- 12th Avenue & Main Street (Walmart)
- Main Street & State Drive (Central OK Community Health)
- Norman Regional Hospital

Figure 4-28 Route 121 Alameda/E. Norman Ridership by Time of Day

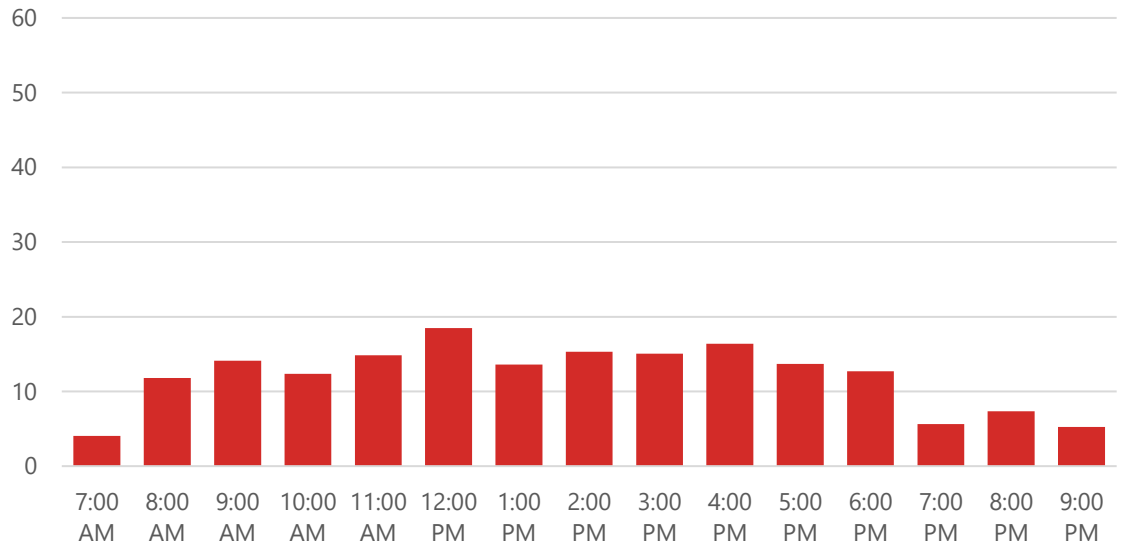
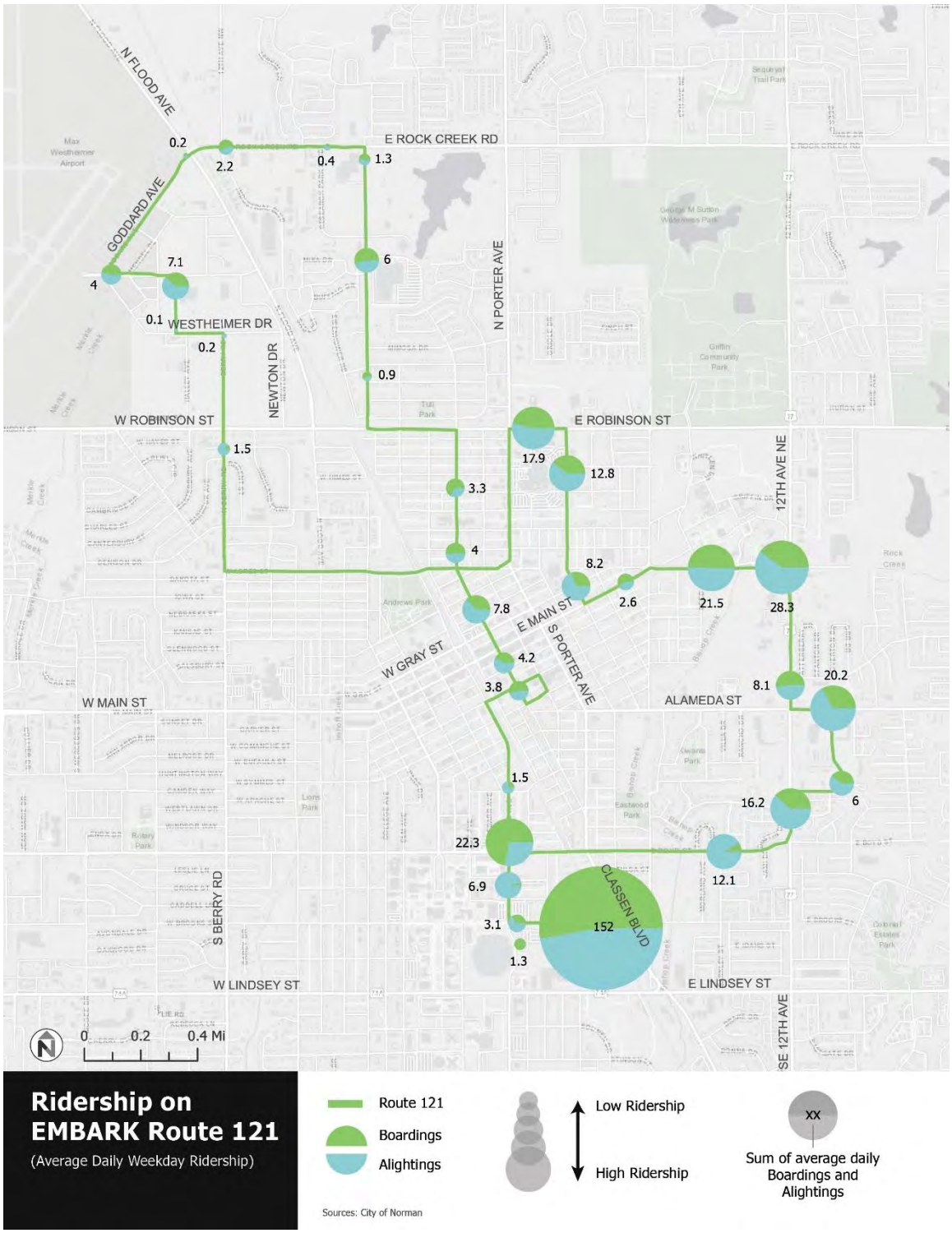


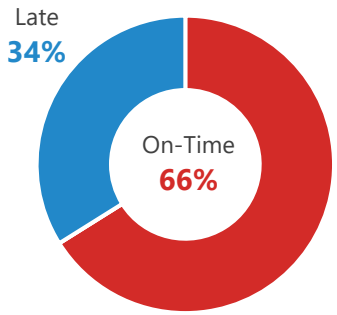
Figure 4-29 Route 121 Alameda/E. Norman Ridership Map



On-Time Performance

Route 121 is a below average route in terms of on-time performance, departing on-time for 66% of trips and departing early for 34% of trips. This high proportion of early departing trips indicates that the route may be under scheduled.

Figure 4-30 Route 121 Alameda/E. Norman On-Time Performance



Summary

Route 121 Alameda/E. Norman is a below average ridership and productivity route that operates on a circuitous figure-eight alignment. The majority of ridership activity occurs early in the route, between the Brooks Street Transfer Station and Norman Regional Hospital. This route would be made considerably more convenient and easier to understand for passengers by realigning service to provide bi-directional service, rather than large loops that require passengers to travel out of direction to reach their destination.

Route 144 Social Security

Route 144 Social Security is a specialized fixed-route service which provides two round trips per day on Tuesdays and Fridays only. The route operates limited stop, express-like service between the Brooks Street Transfer Station in the City of Norman and the Social Security Administration office located in the City of Moore. Route 144 departs Norman to the Social Security office at 12:05 PM and 2:20 PM and departs the Social Security office to Norman at 1:00 PM and 2:00 PM.

Due to the limited nature of this service, detailed ridership and on-time performance data was not assessed during this analysis.

PARATRANSIT

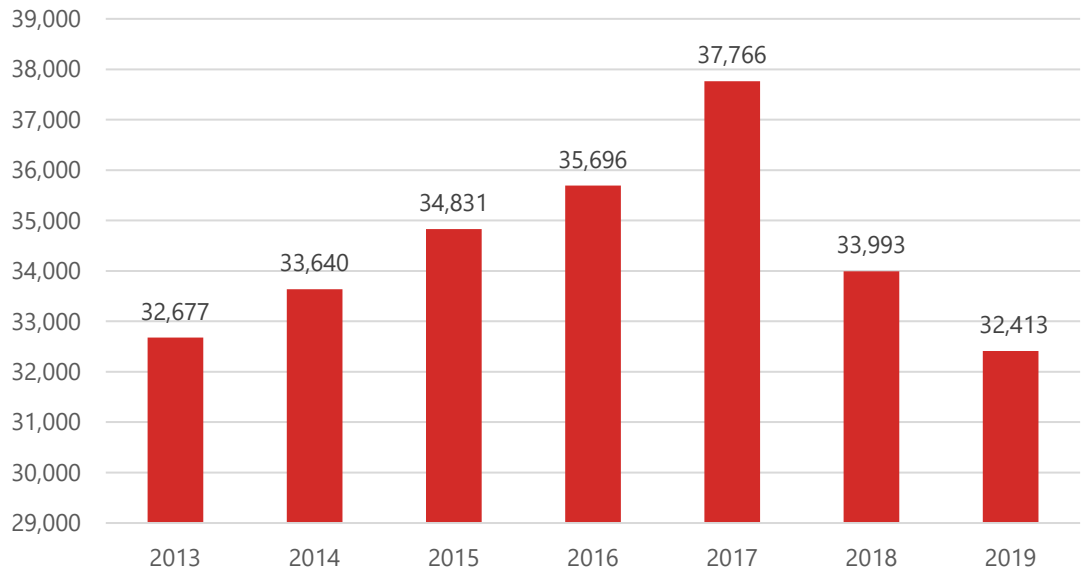
Service Summary

The City of Norman provides fare free, curb-to-curb complementary paratransit service, branded as EMBARK Plus, for qualifying individuals with disabilities who are unable to independently ride the fixed-route system. Prior to the City of Norman taking over transit operations on July 1, 2019, paratransit service was provided by CART. Passengers are required to submit an application and relevant documentation to determine eligibility for EMBARK Plus service and must recertify eligibility every three years. EMBARK Plus mirrors fixed-route bus service hours through two distinct service zones, with Zone 1 operating from 7:00 a.m. to 10:00 p.m. Monday to Friday and 10:00 a.m. to 7:00 p.m. on Saturdays and with Zone 2 operating from 7:00 a.m. to 7:00 p.m. Monday to Friday only.

Historical Ridership

Paratransit ridership steadily increased by approximately 16% between 2013 and 2017 before decreasing by approximately 14% between 2017 and 2019, as shown in Figure 4-31. Paratransit ridership reached a seven-year low of 32,413 boardings in 2019.

Figure 4-31 Annual Paratransit Ridership (2013 – 2019)

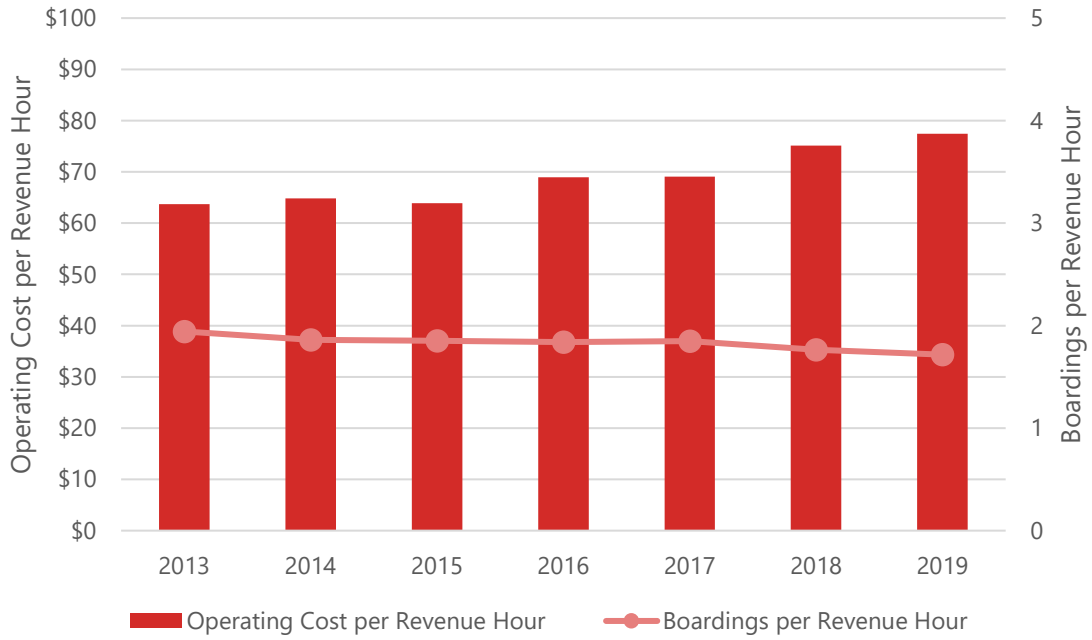


Source: iNTD CART, 2013 – 2019

Historical Performance

Figure 4-32 presents two key performance indicators for paratransit service over the seven-year period from 2013 through 2019, the most recent year for which NTD data is available. Operating cost per revenue hour has increased by 22%, which is in line with an annual inflation rate of 3%. However, boardings per revenue hour, which represent the efficiency of service, has decreased by 3% during the same timeframe.

Figure 4-32 Paratransit Historical Performance Metrics (2013 – 2019)



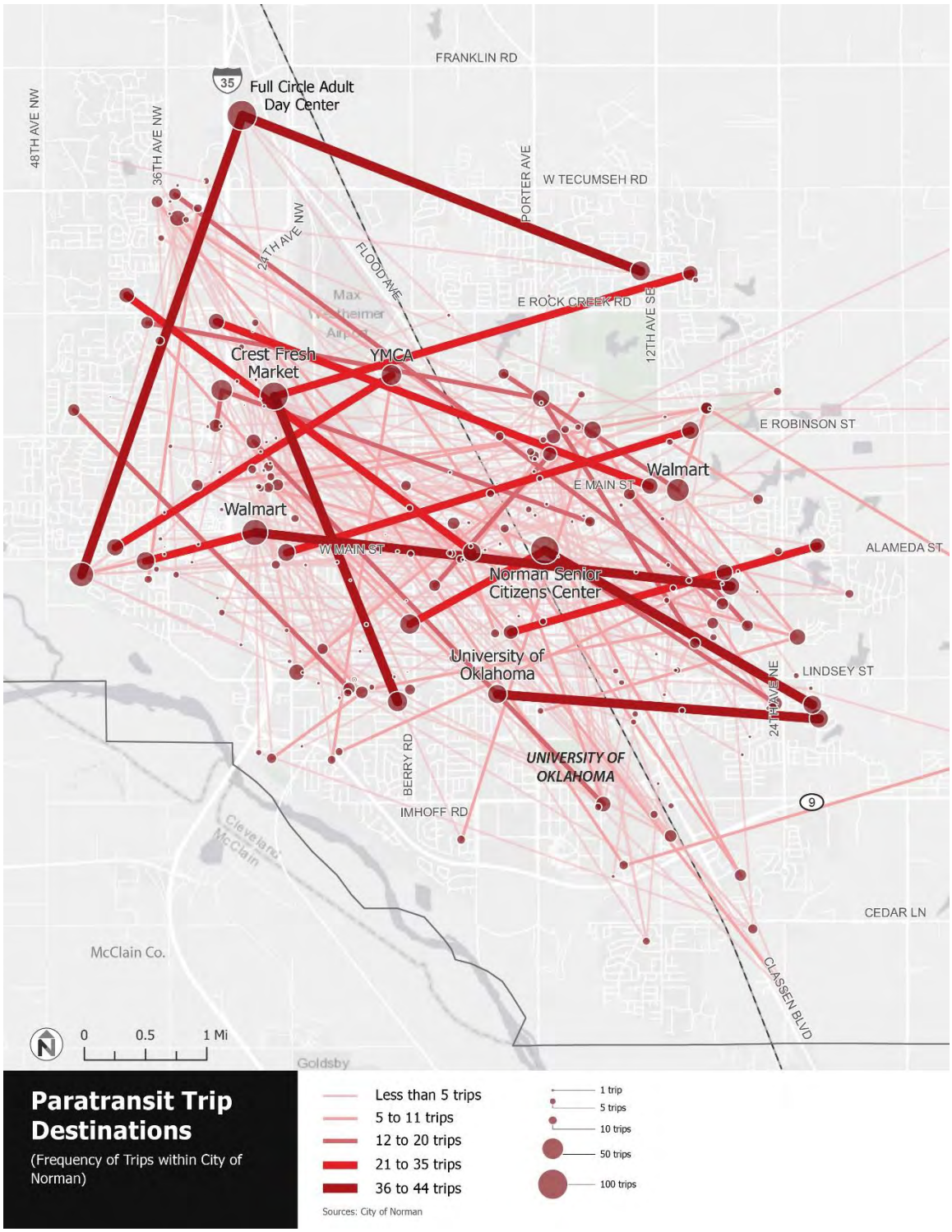
Source: iNTD CART, 2013 – 2019; City of Norman, 2013 – 2019

Ridership Patterns

A map showing paratransit origins, destinations, and trip patterns during January 2020 is shown in Figure 4-33. There were over 2,300 unique paratransit trips during this period. The most common origins and destinations include:

- Norman Senior Citizens Center
- The Cleveland County Family YMCA on Halley Avenue
- The Norman Housing Authority on North Berry Road
- The Full Circle Adult Day Center on 28th Avenue NW
- Retail destinations including Crest Fresh Market and Walmart

Figure 4-33 Paratransit Origins and Destinations (January 2020)



5 MARKET ANALYSIS

This market analysis presents demographic characteristics associated with the market for transit ridership in the City of Norman. The purpose of this analysis is twofold: (1) to identify gaps in transit service in areas with high demand and (2) to identify overserved areas where transit demand is weak.

DEMOGRAPHIC CHARACTERISTICS

The demographic characteristics of the City of Norman are used to identify specific population groups that are likely to use public transportation, where these groups are concentrated within the city, and how well they are currently served by transit.

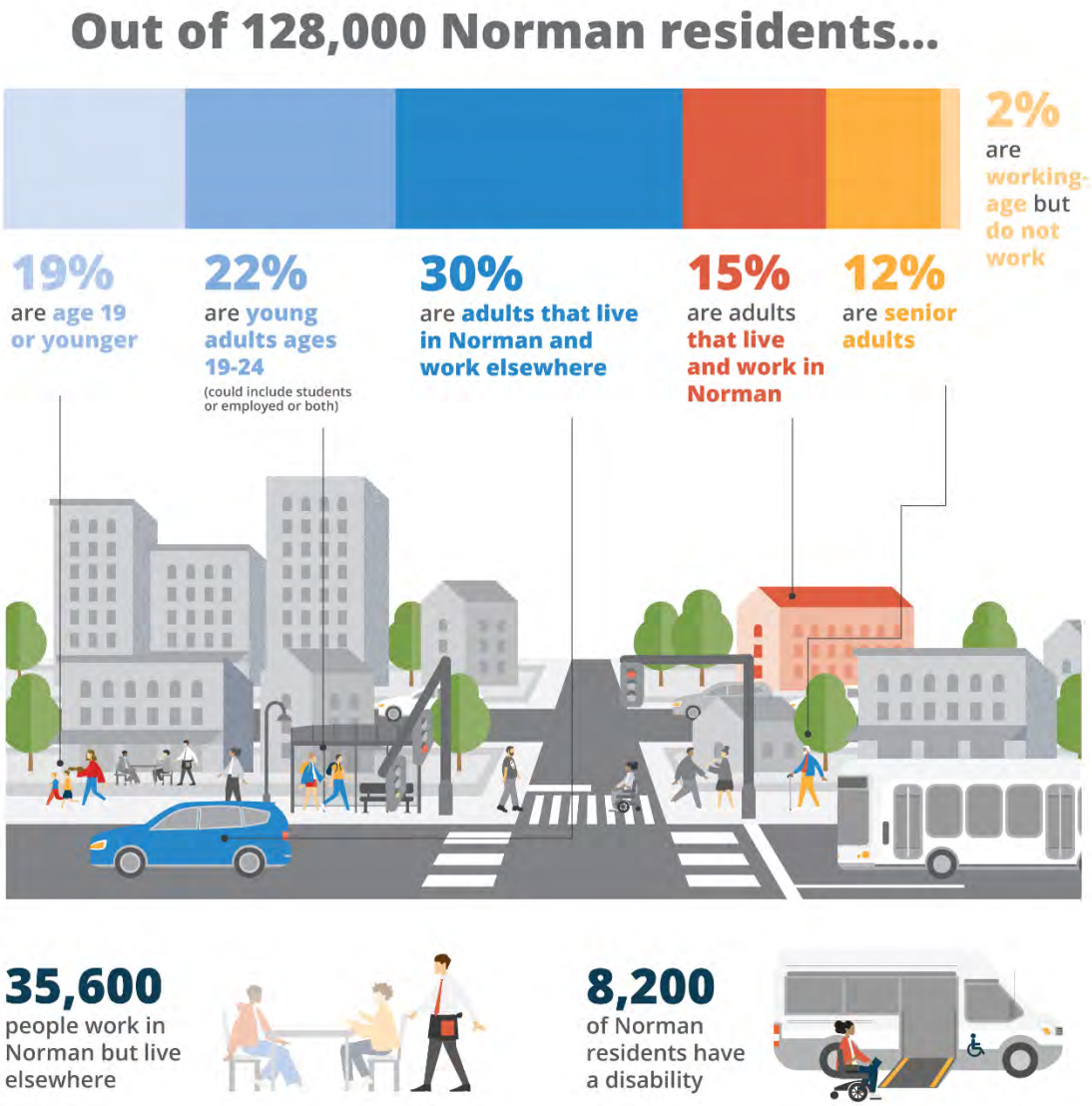
Community Breakdown

Population groups in the City of Norman can be broken down in several way, including by age and employment status. Figure 5-1 below shows such a community breakdown for the City of Norman, which includes:

- 19% of residents are age 19 or younger
- 22% of residents are young adults age 20-24
- 30% of residents are age 25-64, live in Norman and work elsewhere
- 15% of residents are age 25-64 and both live and work in Norman
- 12% of residents are senior citizens age 65 or older
- 2% of working-age residents do not work

Additionally, approximately 6% of the population in the City of Norman has a disability and approximately 35,600 people work in the City of Norman but do not live there. The City of Norman is relatively young, due in part to the large population of young adults associated with the University of Oklahoma. The young adult population includes students, employees, and both.

Figure 5-1 City of Norman Demographic Breakdown



Population Density

Population density is a key determinant of transit demand. Higher density residential areas have more people within walking distance of potential bus routes, making these areas more likely to support frequent transit service than lower density areas. Studies have also shown that a doubling of population density is correlated with as much as a 30% decrease in driving. [1] Many of these driving trips are replaced with transit trips.

In the City of Norman, the highest population densities, 15 or more people per acre, are located near the OU campus and in neighborhoods with significant multi-family housing developments, including:

- The OU campus area.
- The neighborhood located south of E Lindsey St between Classen Blvd and 12th Ave SE.
- The neighborhood located north of E Lindsey St between Biloxi Dr and Brandywine Ln.

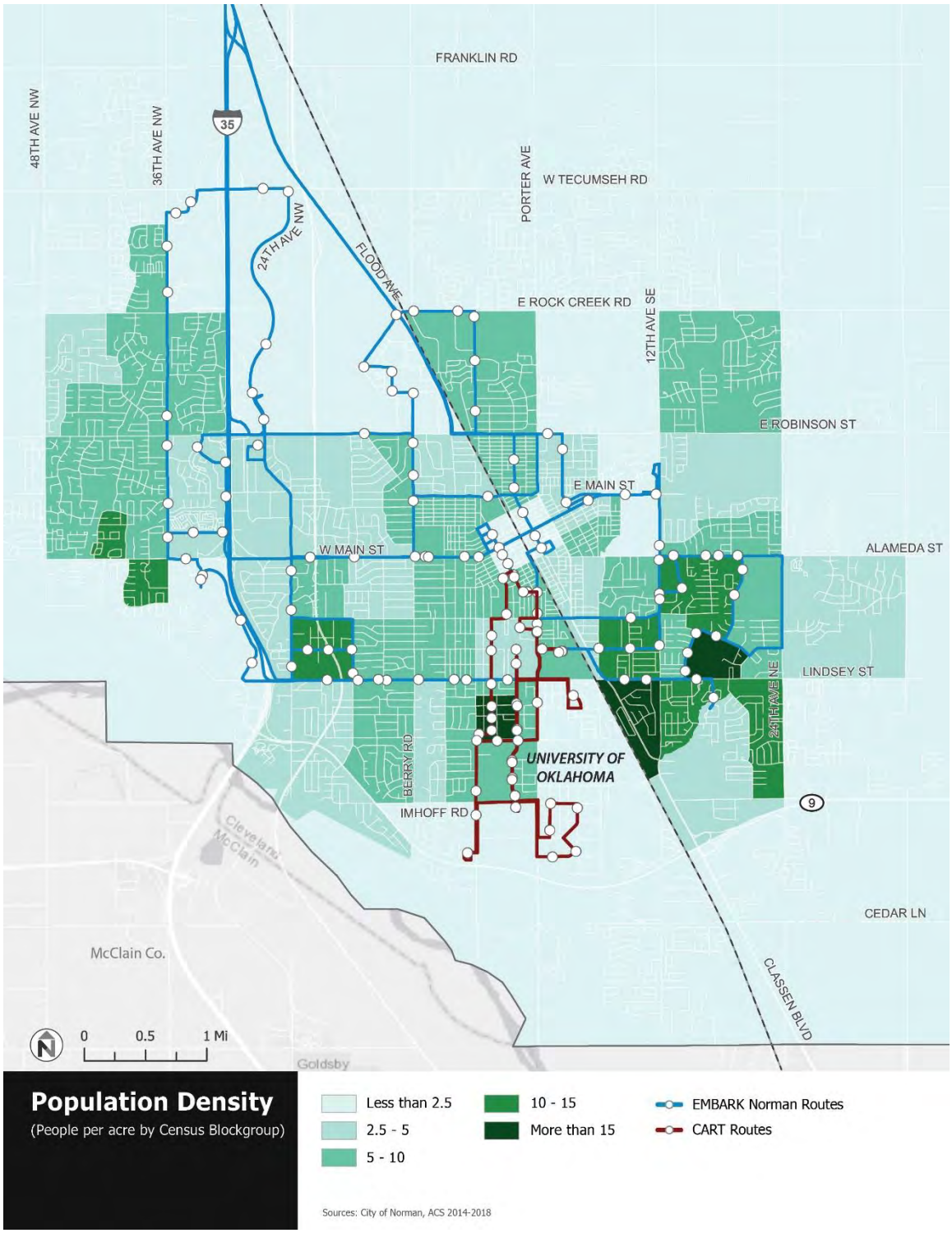
Additionally, the following areas have moderately high population density:

- The neighborhood north of W Lindsey Street between 24th Avenue SW and McGee Dr.
- The neighborhoods adjacent to W Main St between Lamp Post Rd and 36th Ave SW.
- The neighborhood south of Alameda St between 12th Ave SE and Vicksburg Ave.
- Additional neighborhoods in southeast Norman adjacent to E Lindsey St between Classen Blvd and 24th Ave SE.

Figure 5-2 presents the population density for block groups in the City of Norman.

[1] *Patterns of Automobile Dependence in Cities.* Newman and Kenworthy, 1989

Figure 5-2 City of Norman Population Density

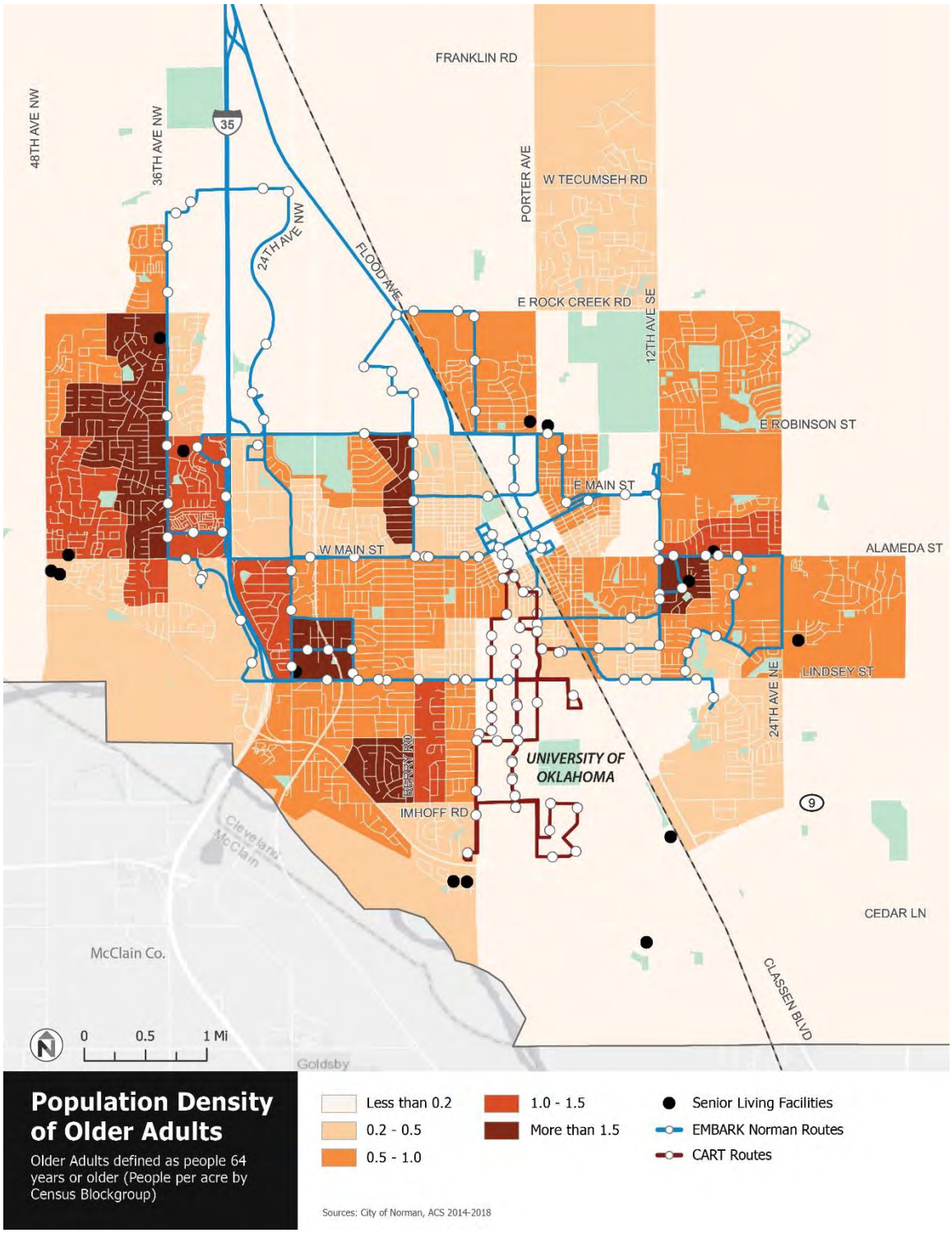


Seniors

Seniors, ages 65 and older, are more likely to take transit than those age 64 and younger. This population may be unable or unwilling to drive a car and instead rely on public transportation to access goods and services in the community. The highest concentrations of senior populations in the City of Norman, shown in Figure 5-3, are generally scattered throughout the city with a high concentration in the western area of the city. High concentrations of seniors are located in:

- The neighborhoods located west of 36th Ave NW between W Main St and W Rock Creek Rd.
- The neighborhood north of W Lindsey Street between 24th Avenue SW and McGee Dr.
- The neighborhood west of S Berry Rd between Westbrooke Terrace and Imhoff Rd.
- The neighborhood south of Alameda St between 12th Ave SE and Shiloh Dr.
- The neighborhood west of N Berry Rd between W Robinson St and W Main St.

Figure 5-3 City of Norman Density of Seniors Age 65 and Older

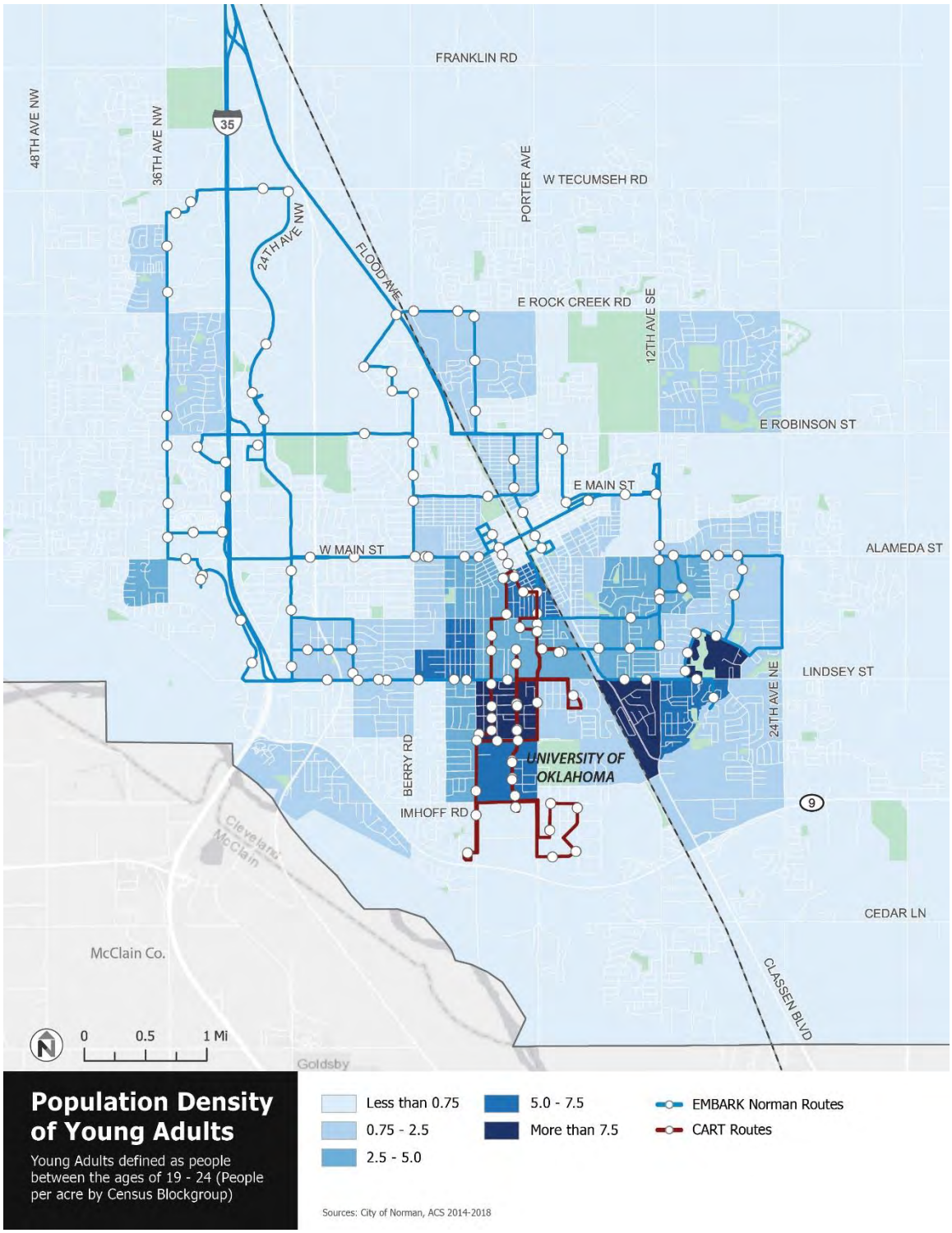


Young Adults

Adults between the ages of 19 and 24 are more likely to take transit than adults over the age of 24. This age group is more likely to be a college student or have limited access to a vehicle and be more reliant on public transportation for their mobility needs. Young adults, as shown in Figure 5-4, are concentrated in:

- The OU campus area.
- Multi-family housing developments in the neighborhoods adjacent to E Lindsey St between Classen Blvd and Brandywine Ln.

Figure 5-4 City of Norman Density of Young Adults Age 19 to 24

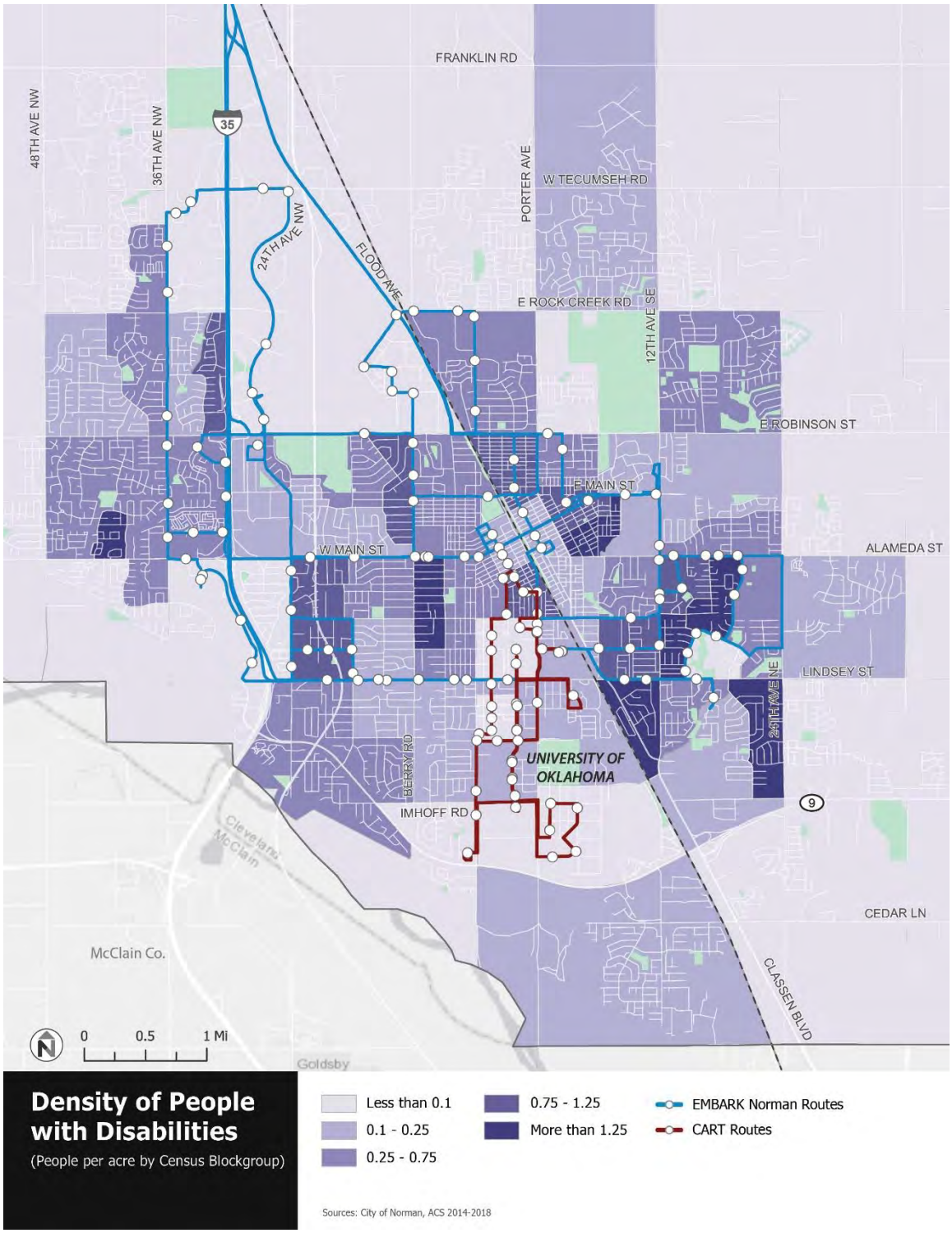


People with Disabilities

People with disabilities, shown in Figure 5-5, are generally clustered in a few neighborhoods in downtown Norman, west Norman, and southeast Norman. These neighborhoods and communities include:

- The neighborhoods in southeast Norman adjacent to E Lindsey St between Classen Blvd and 24th Ave SE.
- Downtown Norman, between E Main St, Reed Ave, and Alameda St
- The neighborhood between S Berry Rd, W Lindsey St, S Flood Ave, and W Main St
- The neighborhood in west Norman north of W Main St between Lamp Post Rd and Willow Branch Rd

Figure 5-5 City of Norman Density of People with Disabilities



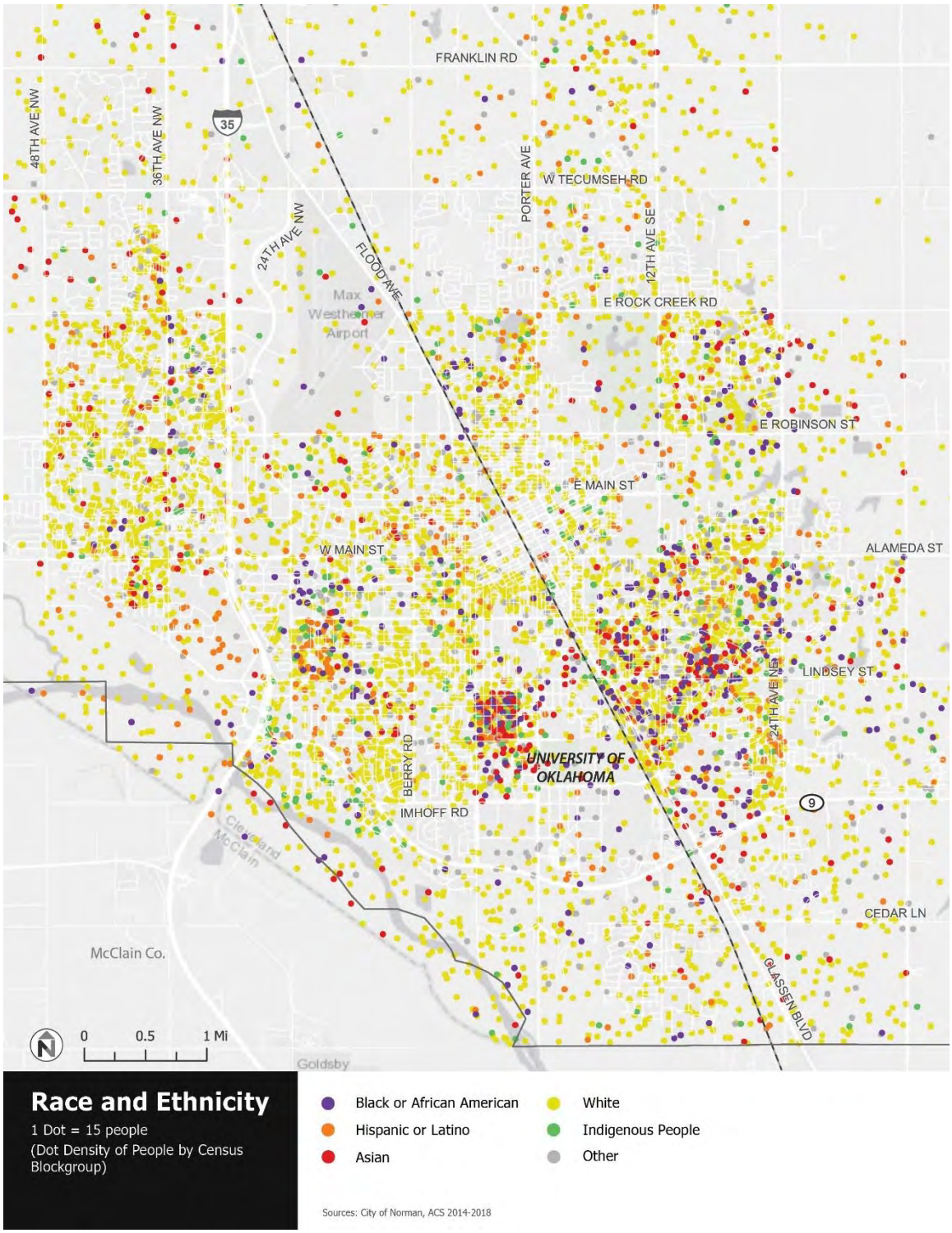
Race and Ethnicity

The racial makeup of the City of Norman is predominantly white, as shown in Figure 5-6. Racial and ethnic minorities are concentrated near:

- The OU campus area.
- The multi-family housing developments in southeast Norman.
- The neighborhood located east of 24th Ave SW between W Main St and W Lindsey St.

To a lesser degree, there are also concentrations of non-white populations scattered around the periphery of the city, including west of 36th Ave NW and northeast of the intersection of 12th Ave NE & E Robinson St.

Figure 5-6 City of Norman Race and Ethnicity



SOCIOECONOMIC CHARACTERISTICS

Limited Access to a Vehicle

Many households in the City of Norman have access to a vehicle. However, some areas, particularly in the university-oriented neighborhoods in southeast Norman, have at least three households per acre with limited or no access to a vehicle, as shown in Figure 5-7. The areas with the highest density of limited vehicle access include:

- The neighborhoods adjacent to E Lindsey St between Classen Blvd and Vicksburg Ave.
- The neighborhood south of W Main St between Cherry Creek Dr and 36th Ave SW

Figure 5-8 shows a matrix of households with limited access to a vehicle by household size.

Figure 5-7 City of Norman Density of One and Zero Vehicle Households

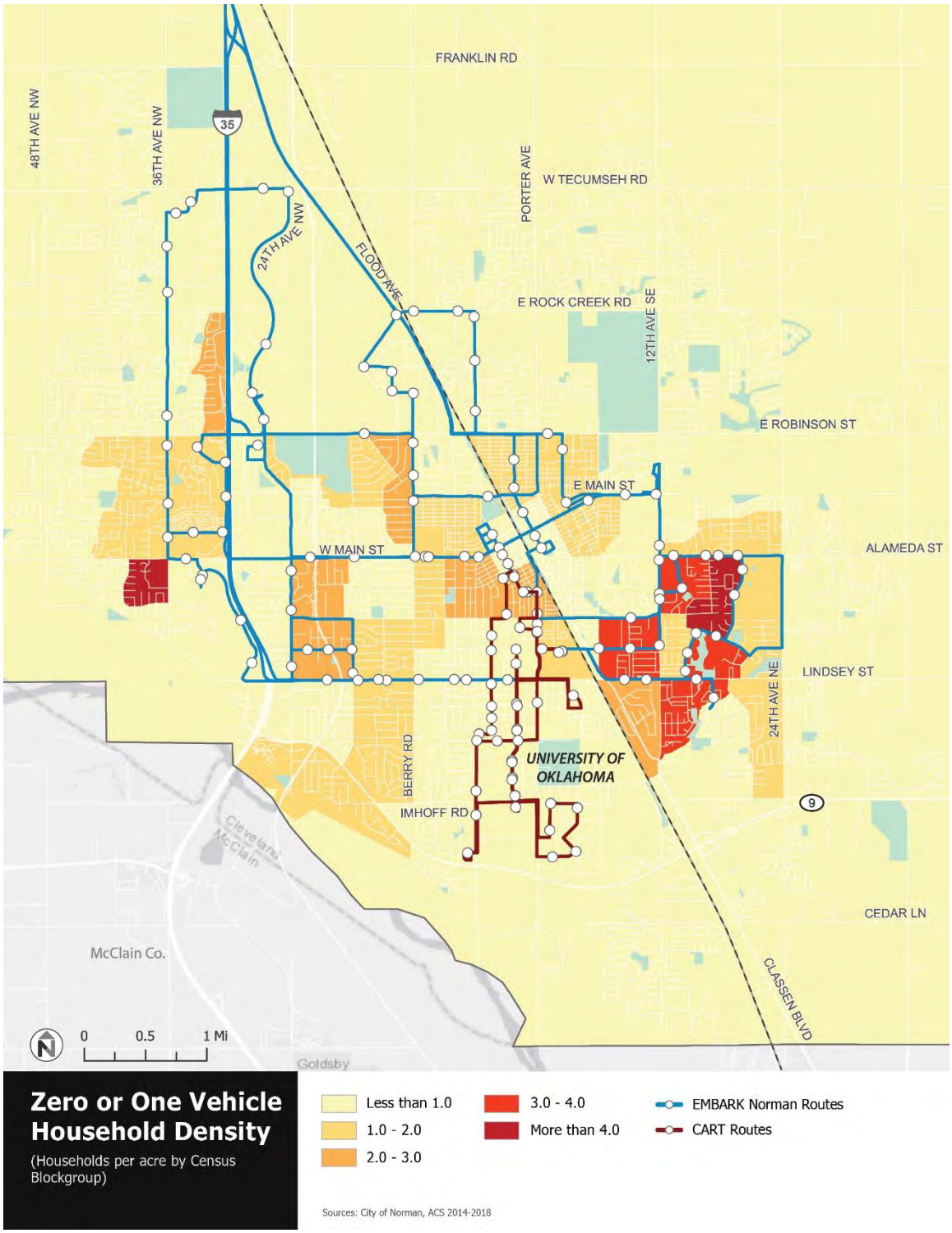
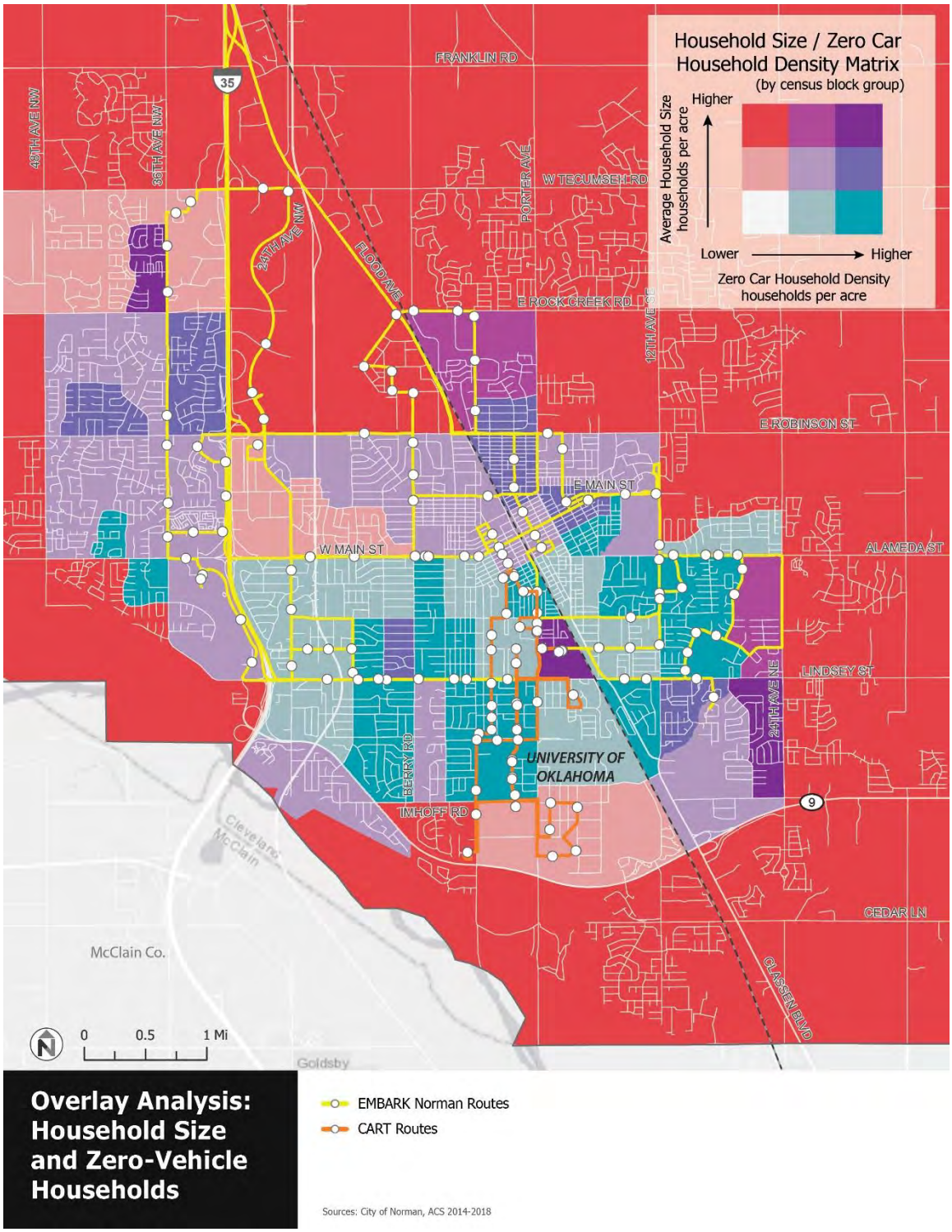


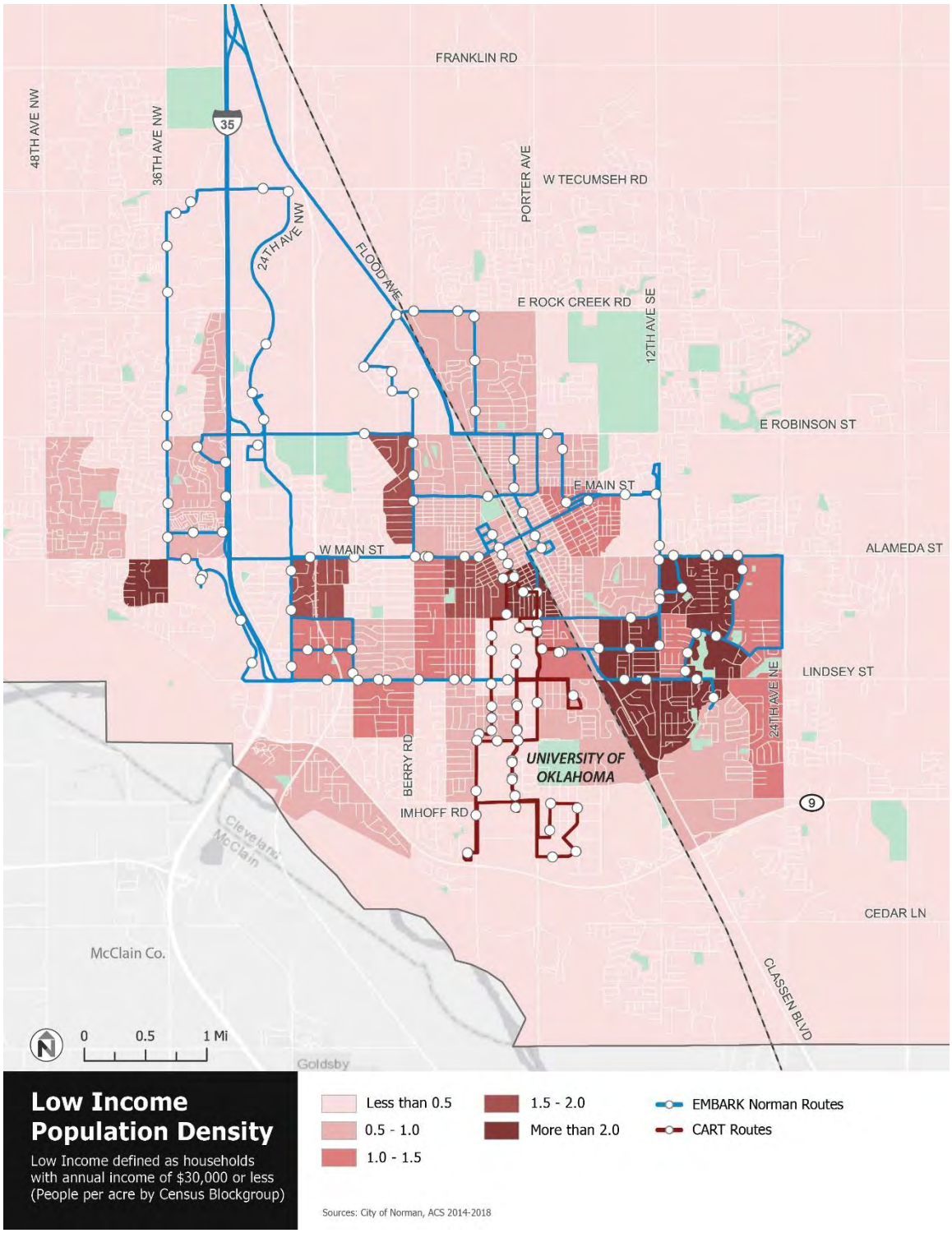
Figure 5-8 City of Norman Density of Zero Vehicle Households by Household Size



Low-Income Population

Low-income populations, shown in Figure 5-9, are generally concentrated around the multi-family housing developments in the southeast area of the city. There are a few additional areas with high concentrations of low-income population, including the northern area of the OU campus, and the neighborhood south of W Main St between Cherry Creek Rd and 36th Ave NW.

Figure 5-9 City of Norman Low-Income Population Density



EMPLOYMENT

Employment density shares a similar nexus with transit demand as population density. Areas with a higher density of jobs are more popular destinations and have a higher demand for transit trips, particularly during the morning and afternoon peak periods. Employment density, shown in Figure 5-13, is primarily clustered in downtown Norman and near OU.[2] Other notable employment clusters include Moore Norman Tech and key retail destinations like University Town Center, Robinson Shopping Center, and Sooner Mall.

Low-wage employment, shown in Figure 5-11, follows a similar pattern as total employment. However, the retail locations in the western area of the city include stronger concentrations of low-wage employment than downtown Norman.

An analysis of the employment locations of Norman residents (Figure 5-12) shows that employment is concentrated in the City of Norman. There are a significant number of Norman residents who work north of the Norman in Moore and Oklahoma City. This employment distribution suggests that there is higher demand for commute trips within the city, but that there continues be a market for intercity service between Norman and Oklahoma City.

[2] Due to census reporting processes, employment associated with the University of Oklahoma may be reported at a single administrative location, rather than at the actual employment location

Figure 5-10 City of Norman Employment Density

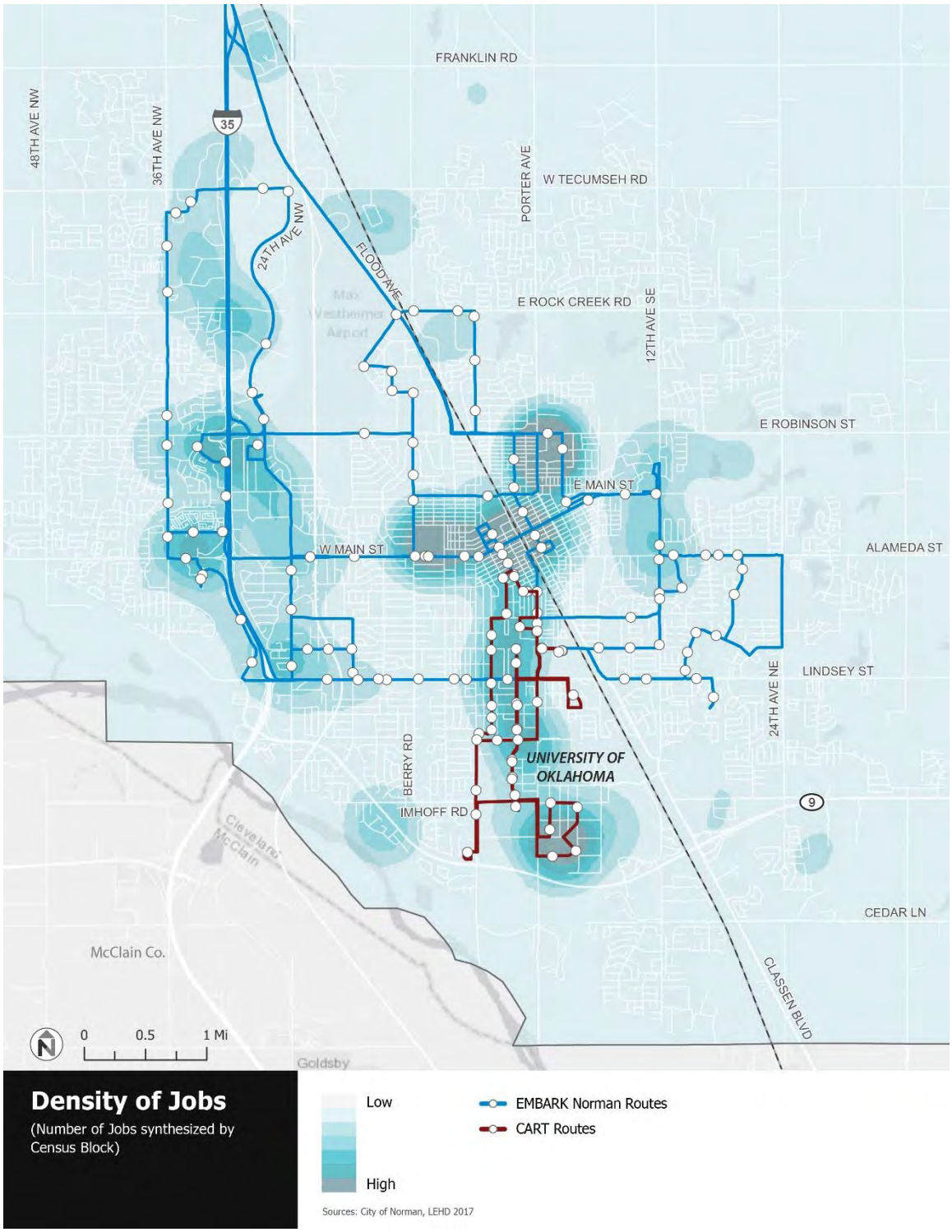


Figure 5-11 City of Norman Low-Wage Employment Density

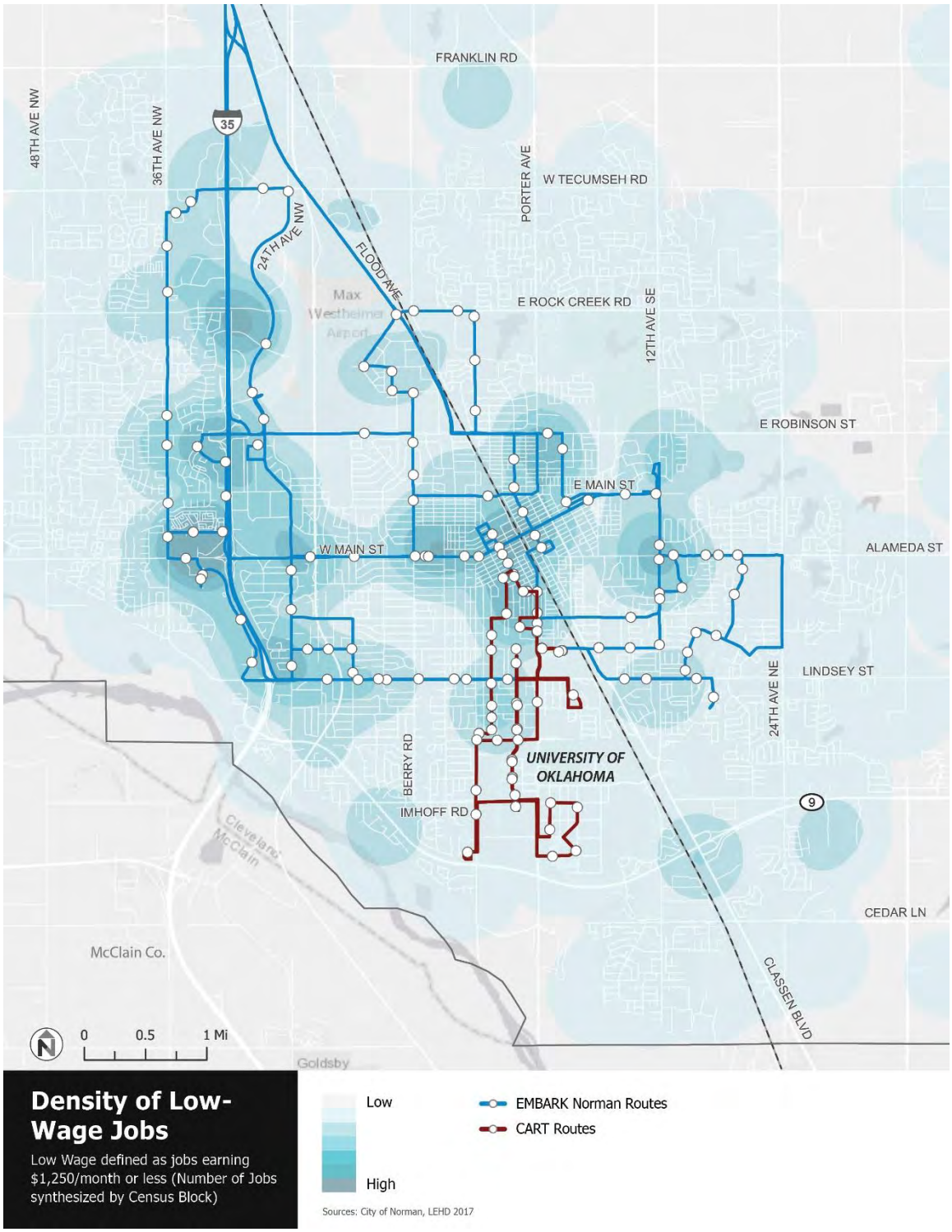
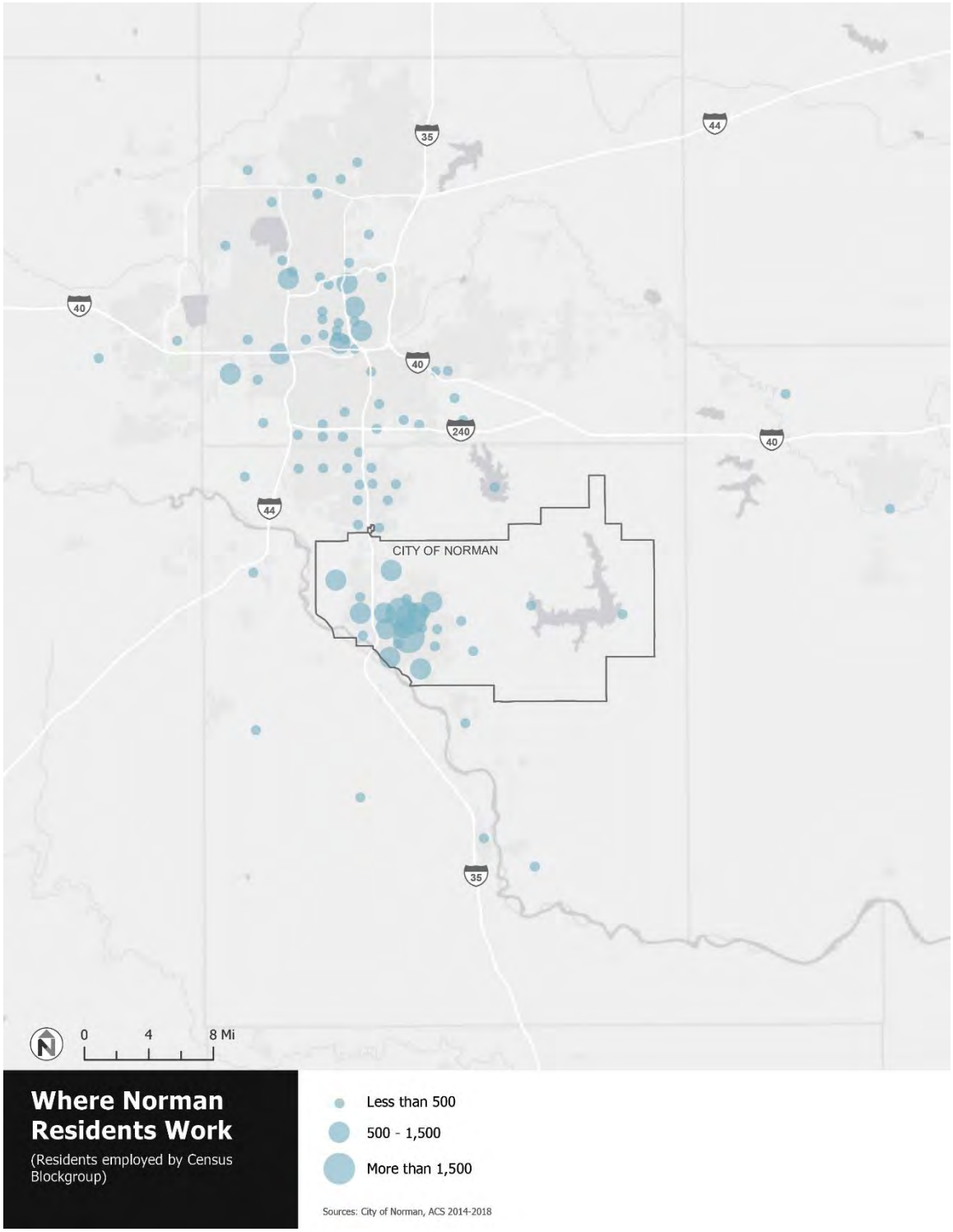


Figure 5-12 Employment Locations of City of Norman Residents



OVERLAY ANALYSIS

For the purposes of this analysis, overlay analyses are used to combine two demographics or variables that represent a higher demand for transit or propensity to use transit. These needs assessments include:

- Population Density & Employment Density (Figure 5-13)
- Density of Young Adults & Low-Income Population Density (Figure 5-14)
- Density of Seniors & Density of People with Disabilities (Figure 5-15)

Based on this analysis, the largest demand for transit is clustered into three general areas:

- **Southeast Norman.** There is high transit demand throughout the southeast area of Norman, generally bounded by Alameda St, 24th Ave SE, E Imhoff Rd, and Classen Blvd. This area contains numerous large multi-family housing developments and high concentrations of young adults, low-income population, seniors, and people with disabilities. This neighborhood represents the highest density area of the city and high concentrations of likely transit users.
- **Downtown Norman and Campus Area.** This area within the City of Norman's core is generally bound by Lindsey St, Classen Blvd/Porter Ave, Acres St, and Berry Rd. This area contains a high concentration of population, employment, low-income population, young adults, seniors, and people with disabilities. This area has a similar demographic composition as southeast Norman but is smaller geographically and has a higher concentration of employment.
- **West Norman.** The West Norman area is generally located west of I-35 and includes several residential neighborhoods and shopping centers. This area contains a high concentration of employment in the University Town Center, Robinson Crossing, and Sooner Mall shopping centers and high concentrations of low-income population, young adults, seniors, and people with disabilities, particularly at the Savannah Harbor Apartments and Savannah Square Apartments southwest of W Main St. and 36th Ave SW.

Figure 5-13 City of Norman Population and Employment Density

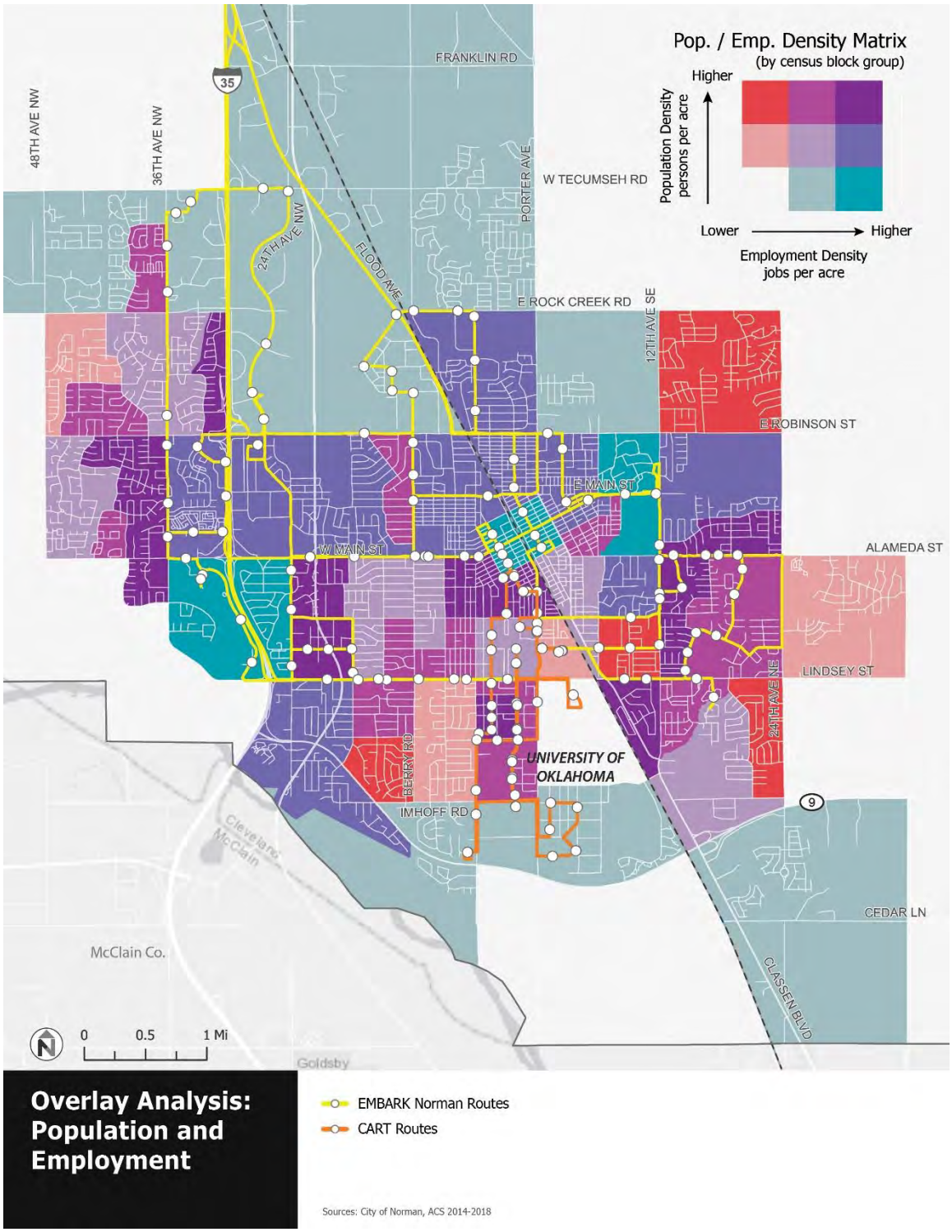


Figure 5-14 City of Norman Young Adults and Low-Income Population Density

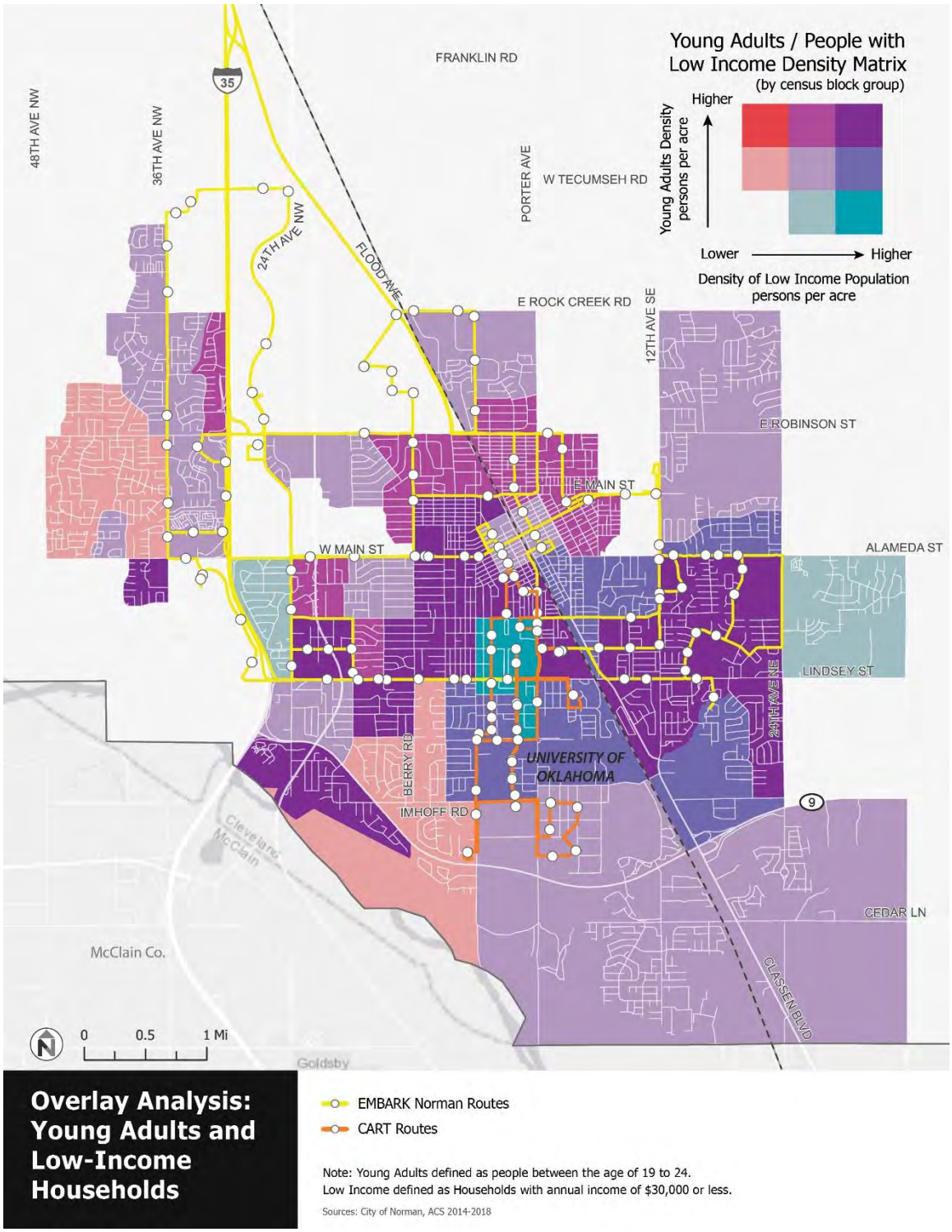
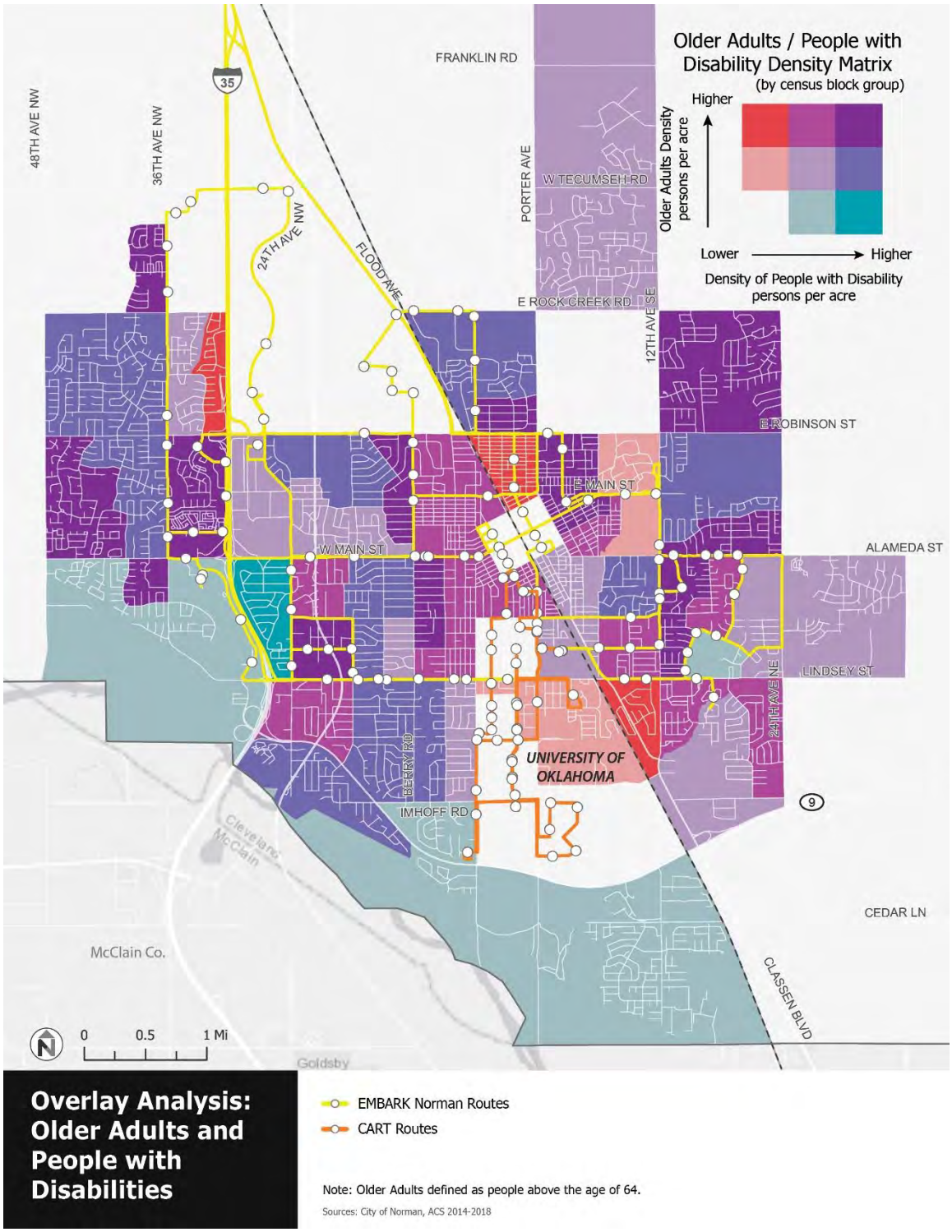


Figure 5-15 City of Norman Seniors and People with Disabilities Density



Appendix B – Fare Analysis

FARE ANALYSIS OVERVIEW

The City of Norman began operations of the City transit system in July 2019, following a transition of the City transit services from the University of Oklahoma (OU). The City transit system, now branded as EMBARK Norman, currently operates as a fare free service. The transfer of operations to the City of Norman, declining ridership, increasing operating costs, and financial constraints associated with the ongoing COVID-19 Pandemic have led the City of Norman to evaluate the potential benefits and costs associated with instituting fares. This report explores the benefits and costs associated with instituting fares as one potential method for raising revenues. The analysis includes:

- Policy implications associated with charging a fare.
- Tradeoffs associated with various fare media and technology.
- A peer review of similar agencies, fare structures, policies, and performance.
- Expected ridership and revenue impacts raised by different fare scenarios
- Estimated capital and operating costs and benefits.
- Estimated return on investment associated with charging a fare.

Benefits of Implementing a Fare

In the current fiscally-constrained environment, transit agencies around the country are looking for any and all opportunities to increase their operating revenue by securing new funding sources and increasing or introducing transit fares. The need for additional revenue is a key factor behind the City of Norman's decision to reevaluate its policy of providing fare free service. Some of the key benefits of introducing a fare include:

- Increasing revenue to help offset operating expenses.
- Reducing reliance on federal and state funding.
- Supporting the perception that the public helps pay for public services (addressing the question: why should transit riders get a "free ride?").
- Addressing potential problems with individuals who may ride the bus seeking shelter or for other non-transportation reasons, particularly when COVID-19 related onboard capacity constraints are limiting service reliability.

Costs of Implementing a Fare

While offering potential for increased revenue, instituting a fare would require capital investments, create new or expanded responsibilities for staff, and increase operating costs for the City of Norman. Some of the significant challenges the City of Norman would face if a fare were introduced include:

- **Investment in fare collection hardware and office/accounting infrastructure.**
  - Installing fareboxes on every vehicle in the fleet
  - Developing secure space for accounting, auditing, and fare reconciliation.
  - Installing a vault for secure money storage.
- **Increase in staff responsibilities.**
  - Accounting, auditing, and fare reconciliation.
  - Additional marketing and customer service responsibilities to convey and educate passengers and drivers about the fare structure and policies.
  - Point of sale administration and staffing for selling passes at City of Norman offices and distributing passes to retail locations and ticket vending machines (TVMs).
  - New and increased responsibilities for drivers in operating the farebox and conducting fare enforcement.
  - Resources needed to conduct public outreach around introduction of fares and future increases in fares.
  - Additional responsibility for maintenance/administrative staff to "empty" fareboxes and count fares.
- **Increased dwell times** (additional boarding time at bus stops) and operational delays associated with collecting a fare.
- **Development of fare validation and enforcement policies.** The collection of fares requires operators to oversee fare validation and enforce policies and can result in altercations with passengers and inconsistent execution of agency policies.
- **Consideration of Title VI impacts.** The City of Norman must ensure that fare implementation would not disproportionately affect low-income and minority passengers.
- **Training operators and supervisors.** The City of Norman must train drivers, supervisors, and dispatchers about fare collection policies, procedures, and passenger interactions.
- **Potential conflicts between operators and passengers.** Although some assaults occur without reason, many assaults do have one or more contributing factors. According to a study by the Transit Cooperative Research Program (TCRP), fare enforcement was reported by 67% of respondents as the most common contributing factor in driving assaults.[1]
- **Customer complaints** would likely increase as a result of fare policy implementation

Each of these issues is explored in this report.

[1] TCRP Synthesis 93: Practices to Protect Bus Operators from Passenger Assault

Key Findings

- Funding agreements with universities and other local partners is a key source of revenue for peer agencies. Direct contributions from local businesses, contract revenue for university student passes, and direct payments through student fees are all examples of funding strategies used by peer agencies.
- Increased dwell time associated with fare implementation is anticipated to be minimal and would not require additional service investments to accommodate longer travel times.
- Implementation costs related to collecting a fare are estimated between $515,000 and $860,000 with ongoing annual costs estimated between $237,700 and $239,900 per year. Annual farebox revenue is estimated between $146,000 to $281,000 per year. Only implementing a fare aligned with the EMBARK Oklahoma City fare structure in conjunction with an OU funding partnership providing free trips for students is expected to provide higher annual revenue than annual costs.
- The return on investment associated with implementing a fare is expected to be negative over a ten-year implementation period, between -32% and -38%.

Recommendations

- Continue operating fare free for at least two years
  - Allow riders to adjust to recommended Fall 2022 route changes
  - Allow ridership to recover from the COVID-19 pandemic
  - Begin discussions with OU regarding funding partnership and student pass
- Re-evaluate the potential for fare implementation in two years
  - Continue operating fare free, or
  - Implement a new fare policy
    - Establish a fare structure with low base fares to mitigate potential ridership loss
    - Partner with the University of Oklahoma on student pass program
    - Adopt fare technology that includes magnetic swipe cards, RFID smart cards, and mobile ticketing
    - Explore alignment with EMBARK Oklahoma City

IMPLEMENTING A FARE: POLICY AND STRATEGY

There are a series of fundamental and interrelated considerations associated with implementing a fare:

1. Fare Policy
2. Fare Strategy and Structure
3. Payment Type and Technology
4. Fare Validation/Collection

Each of these four elements is discussed in greater detail in this section.

Fare Policy

As part of implementing fares, The City of Norman would need to implement a fare policy to address financial matters (revenue), equity, customer relations, simplicity, and cost control (administrative/management issues). Additional fare policy issues for the City of Norman includes statewide policies and developing a fare system that is consistent with existing regional practices and policies. Developing and prioritizing fare policy goals are important first steps in establishing a fare structure.

Revenue Objectives and Measurements

One of the main reasons for charging a fare is to generate a revenue stream that will help fund operations and investments. As part of instituting a fare, the City of Norman may want to set policies or expectations for fare revenues. Goals for fare revenue are typically identified in terms of a farebox recovery target[2] or level of subsidy such as (for example):

- Achieve a fixed-route farebox recovery ratio of at least 20%
- Subsidy per fixed-route passenger should not exceed $3.00[3]

Most – although certainly not all – transit systems have established a target for achieving the percentage of costs to be recovered by passenger fares. Standard transit industry practice is for farebox recovery ratio targets for fixed-route local bus service to range between 15% and 30%. For paratransit and Americans with Disabilities Act (ADA) services, it is generally more expensive to produce a trip, and the number of passengers carried per hour is significantly lower compared to fixed-route service. As a result, a lower farebox recovery is expected, typically in the range of 5% to 10%.

The City of Norman may choose to set a farebox recovery target as part of a larger effort to help set fares and balance affordability for passengers versus maximizing revenues. Another valuable measurement is subsidy per passenger, which is calculated by subtracting passenger fares from operating costs and dividing this number by ridership. In addition to these quantitative

[2] Farebox Recovery Ratio is calculated by dividing all passenger (farebox) revenue by total operating costs. Farebox recovery evaluates both system efficiency (through operating costs) and productivity (through boardings).

[3] EMBARK Norman's cost per passenger was $2.88 in 2019.

measurements, the City of Norman may want to consider some basic qualitative measures such as maximizing revenue while minimizing ridership loss.

EMBARK PLUS

One area where equity will be important for Norman is EMBARK Norman's paratransit service, EMBARK PLUS. In the City of Norman, EMBARK Plus operates over two zones:

- Zone 1 – ¾ mile area surrounding the fixed route system
- Zone 2 – all other areas within the Norman City Limits

Federal rules limit the amount a fare can be charged to riders on ADA-mandated complementary paratransit service, like the service provided in Zone 1, to twice the cash fare that is charged for a comparable fixed-route trip (i.e., if a local adult cash fare is $1.00, the maximum ADA fare is $2.00). Zone 2 paratransit service is considered a premium service and is not subject to these fare maximums.

EMBARK PLUS service is expensive to provide but highly valued by the older adults and people with disabilities living in the City of Norman. Charging a fare after many years of offering the service fare free may be a difficult transition for many. For the purposes of this analysis, it is assumed that fares would be implemented on EMBARK PLUS in conjunction with fixed-route services.

Public Involvement

As a sub-recipient of FTA funds for transit service, EMBARK Norman must comply with Title VI including evaluating any and all fare changes to determine whether those changes will have a discriminatory impact based on race, color, or national origin of the transit riders. Specifically, the transit provider shall engage the public in a decision-making process to develop a major service change policy and fare change policy. FTA guidance requires public engagement when developing service change and disparate impact policies.

Transfer Policies and Regional Considerations

Other key fare strategy considerations are transfers and transfer policy. Many systems are designed so that many riders must transfer between bus routes, which require agencies to address transfers. Transfers are issued at the time of boarding and are intended for passengers who need to change buses to get where they're going without paying a fare every time they board.

Agencies that offer transfers—either free of charge or at a discounted rate—typically allow a set time for their use, often a two-hour period, and allow them to be used in one direction only. In this case, a driver issues the rider a transfer with the time stamped on it, and the rider can get on and off as many buses as necessary within the allotted time period as long as travel is generally in one direction. Other agencies allow transfers to function as a two-hour pass, allowing passengers unlimited travel in any direction. Typically, the rider displays the valid transfer as proof of payment.

Transfers have become an increasingly sensitive and controversial issue at many transit agencies because of problems associated with their use. For example, a common complaint is that passengers use transfers improperly, such as with an expired time stamp or on a return trip when

that is not allowed. Such improper use causes conflicts between operators and passengers and boarding delays when operators take time to validate transfers. Agencies lament that improper use of transfers contributes to fare evasion and creates on-time performance problems. An increasing trend in the transit industry is to eliminate transfers and offer day passes, which allow passengers unlimited ride privileges in a 24-hour period. Day passes and other types of pre-paid fare instruments are discussed in the following section.

Regional Considerations and Inter-Agency Transfers

EMBARK Norman is one of four transit operators in the region, including University of Oklahoma's Campus Area Rapid Transit, Citylink Edmond, and EMBARK Oklahoma City (EMBARK OKC). Of these three agencies, EMBARK OKC is the only agency that currently charges a fare. While not required, it is likely that if EMBARK Norman charged a fare, the fare may be roughly consistent with EMBARK OKC. EMBARK OKC's fare structure and policies are explored in more detail in Chapter 4.

In the case of EMBARK Norman, transfer policies are further complicated by the fact that EMBARK OKC operates a route between Norman and Oklahoma City. As part of developing a transfer policy, the City of Norman would need to negotiate transfers between systems. The negotiation includes Norman's willingness to accept transfer riders from EMBARK OKC as well as EMBARK OKC's willingness to accept EMBARK Norman riders transferring to their services. As the only regional transit agency that currently charges a fare, EMBARK OKC does not provide free transfers.

Fare Strategy and Structure

Fare strategy refers to the general type of fare collection and payment structure. Possible approaches include flat fares, differential pricing (by distance traveled, time of day, or type of service), market-based or discounted payment options, and transfer pricing. Other options are fares based on a zonal system, peak/off-peak differentials, and express or other special surcharges. Fare structure represents the combination of one or more fare strategies with specific fare levels. EMBARK Norman generally only operates short distance local trips. Therefore, a fare structure will likely not be as complex as other transit agencies.

The process of establishing pricing levels is influenced by political and social equity concerns and closely tied to revenue objectives. A common practice for transit agencies is to monitor farebox recovery ratio as an indicator of when and how much to raise fares. For example, if a transit agency has a farebox recovery target of 20% for its fixed-route service and this ratio is declining as costs increase, then it will consider increasing fares. However, such decisions need to be carefully considered because ridership typically drops after a fare increase.

When establishing a fare structure, it is important to consider the types of passengers carried and the types of services offered. Typically, transit agencies have four to five categories:

- Adult (full or base fare)
- Seniors and people with disabilities (federally-mandated discounted fare)
- Students (discounted fare or free fare)
- Children (under five years old ride free with paying adult)
- Premium fares (express or limited-stop service)

Reduced Fares and Title VI Considerations

Social equity and environmental justice are important considerations in establishing and setting transit fares. Transit agencies try to offer equitable fares because they recognize that some passengers who depend on the service for their mobility needs may have a harder time paying for it. Environmental justice considerations also address equitable and fair treatment for all segments of the population.

The FTA requires that fixed-route services that receive FTA operating assistance offer older adults and persons with disabilities a 50% discount from the full fare during off-peak hours. Many transit agencies go beyond the legal requirements and offer a 50% discount throughout the day for cash fares as well as discounted monthly pass or tickets.

Many transit agencies also have a variety of fare instruments and discounted fares to address these social equity/justice concerns. Reduced and discounted fares for young children and students (elementary and high school), for example, are frequently available, as are discounted monthly passes or ticket books. Many transit agencies also offer free fares for children less than five years of age, provided they are traveling with a fare-paying adult.

Secure Cash Fare Handling

All cash farebox revenue must be securely counted and reconciled. Revenue controls, processing, and handling can be particularly difficult for small to mid-sized agencies because they often do not have large administrative staff to manage these systems. Reconciling fare collections serves as

both a preventive and detective control and can deter and identify a potential misappropriation of farebox receipts. The City of Norman would need to ensure the proper administrative and handling controls to securely convey any cash collected for deposit.

Customer Relations Objectives and Measurements

The structure and policy of passenger fares at many transit agencies has evolved over several years, sometimes resulting in a complex fare structure with a myriad of fare instruments that are confusing to both riders and operators alike. An important consideration when establishing a fare structure is to create a system that is relatively simple, easy to understand, and easy to use for both riders and operators alike. This means that if transfers (paper slips issued upon boarding that allow passengers to change from one bus to another without paying additional fare) are offered, the rules governing them should be straightforward.

Similarly, how tickets and passes work should be simple to understand, and it should be easy to pay fares. For many agencies, the challenge arises when they balance the goal of simplicity against other goals addressing customers' ability to pay. A common outcome is various multiple-ride passes with discounts and/or convenience for those who can't afford a full monthly pass.

Payment Type and Technology

Payment type refers to the type of fare payment media (i.e., cash, token, paper ticket, or advanced payment media) and equipment used to collect fares. Agencies are increasingly offering a broad range of payment options that segment the market based on frequency of use and willingness to prepay. Most agencies offer one or more types of multi-ride pass as well as some form of discounted multi-ride options; the most common types are described below. They include monthly, weekly, and daily passes as well as special or innovative pass types through partnerships with universities, employers, and other institutions.[4] The passes sold below can be sold as "rolling" or calendar date passes. A rolling pass will become valid upon first use for the specific duration on that pass (e.g., 31 days, seven days, one day). A calendar pass will be valid on a specific date or date range. Pass prices are based on the cash fare and a multiplier[5].

Fare Collection Technology

Generally speaking, there are two primary types of fare collection technology: smart cards and magnetic strip cards. There are also different types of smart card systems – open and closed systems. An "open" system is a smart card system that is reliant on existing "third party" cards with built-in RFID (proximity card) capabilities. As an example, if one already has a proximity-enabled debit or credit card or employer ID, these can be used as a "smart" card on transit vehicles. A "closed" system is a more traditional smart card where a transit agency is in control of the fare media, including sales, distribution, reconciliation, and support.

In addition to smart cards and magnetic strip cards, mobile ticketing has become more common in the transit industry as technological advancement has made these options more readily available. A more robust discussion of the available fare media and collection technology options available for EMBARK Norman, as well as the general costs and benefits associated with each, is included in Chapter 3 of this report.

[4] The multiple-ride instruments in this section are usually sold at several points of sale including retail outlets, agency administrative offices, schools, employers, and through TVMs. Day passes are often sold on board buses as is the case at GET (Bakersfield), C-Tran (Vancouver, WA) and Capital Metro Transit (Austin). Passengers deposit cash directly in the farebox, and a pass is produced. Drivers are not required to handle cash when passengers purchase day passes on board vehicles.

[5] The term "multiplier" refers to the number that is multiplied by the cash fare to determine the price of a daily, weekly, or monthly pass. This can also be considered the "break even" point for a customer purchasing the pass. For example, a multiplier of 30 would mean a monthly pass price of $30.00 with a base cash fare of $1.00. A customer would need to ride a system using their monthly pass 30 times within a month before breaking even on their purchase.

Fare Validation/Collection

The type of fare validation refers to the manner in which fares are enforced or inspected. The basic fare validation options are:

- Pay fare upon boarding – passengers pay, purchase fare media, or validate fare media when getting on the bus.
- Pay fare at barriers – passengers pay or validate fare at barriers, such as turnstiles, to control access to the transit vehicle.
- Proof of Payment (POP) – passengers purchase fare before they get on the vehicle. Enforcement of fare payment is done by random inspection or 100% conductor validated.

Of these options, only fare purchase or fare instrument validation upon boarding is currently the most relevant for a bus operator like EMBARK Norman. The other three options are generally appropriate for rail or bus rapid transit system. Additionally, the latest generation fareboxes are "validating" fareboxes, such as GFI's "Odyssey."[6] They can verify that magnetic stripe or smart card passes and/or transfers are valid. In addition, they can validate cash payments, verifying the amount and authenticity of bills and coins.

[6] GFI is a farebox manufacturer.

FARE MEDIA AND TECHNOLOGY

Fare media refers to the type of fare payment accepted (i.e., cash, token, paper ticket, or advanced payment media) and equipment used to collect fares. In the U.S., there are eight commonly used options for fare payment—token, cash or coins, swipe card, contactless cards, ID-as-pass, mobile flashpass, mobile validation, and mobile contactless.

Cash

Cash is still the dominant method of payment nationwide, whether at a physical location, at a kiosk, or onboard. Despite its popularity, cash fare payments have several drawbacks for transit agencies and passengers.

On average, boarding a bus accounts for one-half to one-third of vehicle (revenue) run time. National research shows that passenger boarding takes 4.5 seconds for cash payments, 3 seconds for token payments, and 2.75 seconds for smart card. For a single stop, these small delays may seem insignificant. However, over the course of a full route, they can aggregate and create noticeable issues with on-time performance and schedule adherence. Faster fare payment methods can reduce dwell times, leading to improved bus speed and reliability. As a rule of thumb, the ongoing costs of cash fare collection and revenue handling are 5 to 10 percent of cash revenues, regardless of agency size.[7]

[7] TCRP Report 94 Fare Policies, Structures and Technologies: Update (2003)

Swipe Cards

Magnetic stripe media in fare collection is common around the transit industry and is known to be reliable but does have some deficiencies. Magnetic stripe fare products can include unlimited (time-period) passes, multi-ride products, transfers, and change cards. Some of these products require the farebox only to read the media, while others require the farebox to both read and encode media. A prominent feature is their ease of manufacture since they are printed on paper, and can be pre-printed and distributed to vendors or partner agencies without requiring special card-encoding equipment at the vendor sites. Magnetic stripe media also can be dispensed easily at the farebox.

Figure 1 provides a summary of some benefits and drawbacks of magnetic stripe technology.

Figure 1 Benefits and Drawbacks of Magnetic Stripe Technology

Benefits	Drawbacks
▪ Collection of basic fare data ▪ Reduces operator interactions/fare enforcement ▪ Reduces cash in system ▪ Accommodates cash (stored value), passes, and transfers (cannot necessarily do all at once on the same card) ▪ Can be purchased pre-loaded (encoded)	▪ Fare media can be damaged/deactivated ▪ Limited uses of fare media (cannot combine passes and stored value on same card) ▪ Reloading can only occur at designated locations (cannot be done automatically)

Contactless/RFID Smart Cards

Electronic contactless smartcards have become common at many transit agencies which use a more durable "hard plastic" card. For customers, smartcards carry advantages over magnetic swipe cards, but also require numerous prerequisites to be implemented successfully. The most significant customer advantage of smartcards compared to magnetic cards is their durability. This attribute allows smartcards to be reloaded on numerous occasions and last for several years without replacement.

Smartcards can be reloaded with stored cash value or passes, and provide the opportunity to provide balance protection[8], increasing security. In addition, the use of smartcards allows more flexible pricing options since transfer costs can be automatically calculated. From an operational perspective, payment with smartcards is faster than both magnetic stripe payment and cash payment. In addition, since the validation and/or encoding of a smart card do not require any mechanical action at the farebox, smart card systems are frequently more reliable (fewer breakdowns) compared with magnetic stripe fare collection systems.

Despite these benefits, smartcards also present numerous challenges. One significant challenge is the need for elaborate back-end systems to manage accounts and balances associated with

[8] Balance protection refers to a feature that ensures if a smartcard is lost, a customer's cash balance or pass is not lost. That value or pass can be migrated to a new replacement smartcard. Many agencies also describe card management as account management.

smartcards to ensure a distribution network for loading/reloading. For example, smartcards typically do not come "pre-loaded" and must have value added to them. As a result, a network of methods to load smartcards should include a combination of in-person, online, and telephone reload options. In-person reloading could occur at a fixed-location (such as a transit center), an automatic fare reloading station (ticket vending machine[9]), or even at the farebox. Each location requires special hardware to read the smart card and real-time communications to ensure that the customer's account can be updated with new balance information. The use of smartcards also necessitates on-site encoding capabilities for potential retail vendors to be able to add value or new fare products to customer cards.

Although there are challenges, there may be opportunities for limited rollout of smartcards for specific markets such as universities or major employers. In these scenarios, university students, staff, or faculty may be able to use their existing university identification cards as a fare payment device. Similarly, if an employer pass program is initiated, special cards could be developed that can be administered (adding value) through on-site employer staff.

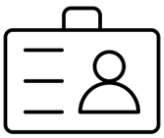
No peer agencies currently accept smartcards.

Figure 2 Benefits and Drawbacks of Smartcards

Benefits	Drawbacks
▪ Enhanced data collection capabilities ▪ User features like "autoload" and "balance protection" ▪ Loading value online or over the telephone ▪ Lower on-board transaction times (reduced dwell times) ▪ Permanence of cards (single card can be used for months)	▪ Higher cost of implementation (back-end systems, value-loading terminals, new equipment, need for on-board vehicle communications equipment) ▪ Greater range of fare options may lead to greater levels of confusion for customers and complexity for agency staff

ID-as-Pass and Flashpass

ID-as-Pass is common in systems with specific markets such as universities or major employers. In these systems, student ID or employer ID is used as fare media, either as a smart card or as a magnetic swipe card.



[9] Ticket Vending Machines (TVMs) are a general term for self-service distribution devices that sell fare media and reload fare value. TVMs can be procured that issue both plastic extended use card media (passes) as well as smartcards and magnetic tickets. TVMs can be placed at transit centers and transit stops. TVMs can also be used to add value to existing smartcards through a credit card or cash payment, although many have a minimum value per transaction and not all are equipped to accept cash.

Mobile Ticketing

Mobile ticketing (payment using a smart phone) offers an increase in customer convenience over paper or smart card payment as well as potential operational savings. Smartphone payments eliminate the need for customers to procure and carry a physical fare payment media, may reduce delay in fare payment (by reducing cash in the system), and reduce the volume of passes that must be processed by the farebox (potentially lowering maintenance costs). Unlike other fare technology options, smartphone payments typically require users to have a linked credit card or banking account.

Mobile ticketing has many benefits, including system efficiency, passenger convenience and long term cost savings. While payment via smartphone offers several advantages, mobile ticketing is not a viable option for all riders. The use of a mobile fare payment option relies on customers to enter their bank account information, credit card, or debit card information, which is not an option for customers who rely on cash or are unbanked. While this market share is growing, smartphone payment options only can serve as a supplement to an existing fare collection system.

Barriers to widespread adoption of mobile ticketing include:

- **Complexity:** Custom white label software with custom tie-in to back-end systems.
- **Cost:** Software development is never cheap.
- **Equity:** Many people are still cash dependent, lack smartphones or bank cards.
- **Politics:** Widespread adoption requires cooperation and leadership across various agencies and levels of government, including negotiating with labor unions.
- **Technology Failures:** New innovations may be prone to repeated maintenance.

Currently, several vendors exist that provide mobile ticketing technology including Token Transit, EZ Fare, Masabi, Moovel (formerly GlobeSherpa), and Unwire. The following table summarizes the pros and cons of smartphone fare payment.

Figure 3 Benefits and Drawbacks of Smartphone Enabled Fare Payment

Benefits	Drawbacks
▪ Fare products can be accessed through one's smartphone – no need for separate fare distribution outlets ▪ Various means to validate media (visual, scan, proximity) ▪ Customers can purchase fare products at any time, and any location ▪ Operational savings ▪ Reloadable ▪ Faster boarding ▪ Retains bus tickets if phone is lost or stolen ▪ Lower upfront cost for agency and users	▪ Visual validation of fare products could add dwell time. However, some studies suggest that flash passes may in fact be faster than processing individual magnetic cards or smartcards. ▪ Access issue for those who do not have a smartphone with data plan or a linked credit card/bank account ▪ Need to supplement existing fare payment options (smart card or magnetic stripe) ▪ Requires smartphone ▪ Cannot make purchase with cash ▪ Requires WiFi or internet to activate ticket

There are three methods for validating mobile tickets onboard buses—mobile flashpass, mobile validation, and mobile contactless.

Costs

Fare collection results in ongoing operating costs associated with administering the fare system. These costs include developing and distributing fare media (tickets and passes), managing reduced fare programs, and customer service. Any type of fare payment, whether it is cash, magnetic swipe card, smart card, or app based, has an associated cost.

For example, all cash farebox revenue must be securely counted and reconciled. Reconciling fare collections serves as both a preventive and detective control and can deter and identify a potential misappropriation of farebox receipts. Revenue controls, processing, and handling can be particularly difficult for small to mid-sized agencies because they often do not have large administrative staff to manage these systems.

Any decision to add fares to EMBARK Norman would require purchasing and installing fare technology and must balance the cost of getting it up and running with ongoing maintenance costs. On top of the actual cost to purchase and maintain new equipment, there may be other tradeoffs associated with investing in farebox technology. General capital, operating, and maintenance costs for fare technologies are shown below in Figure 4. These costs are also explored in greater detail in Chapter 7 of this report.

Figure 4 Capital, Operating, and Maintenance Costs

Recommendations

There are numerous benefits and drawbacks associated with different fare technologies, including implementation and maintenance costs, ease and accessibility of use, and operational impacts to service speed and dwell times. Based on the current rate of technological advancement, the size of the EMBARK Norman system, and fare technology accepted by peer agencies evaluated in Chapter 4 of this report, a hybrid swipe card/RFID smart card fare system is the most applicable for EMBARK Norman. This system would provide an appropriate foundation for fare payments and allows the system to grow and advance without requiring additional capital costs to upgrade fare equipment prematurely. Mobile ticketing can also be accepted as a mobile flashpass without requiring more advanced farebox technology.

PEER REVIEW

No two transit agencies operate identically; however, most agencies share some characteristics with others, and those common characteristics can form a basis for comparison. Comparing fare structures, policies, and system performance among a group of peer agencies helps identify strengths and opportunities and facilitates best practices amongst the groups of peers.

This peer review compares EMBARK Norman with six other transit systems throughout the county. The purpose of this peer review is to identify best practices among similar transit systems, determine the benefits and drawback of alternate fare media, and establish common fare policies and structures, including:

- Fare pricing
- Reduced fare eligibility
- Transfer policies
- Pass products and multipliers
- Fare collection practices
- Average fare per passenger
- Farebox recovery ratio

This review uses data from agency websites and from the National Transit Database (NTD) for 2019.

Peer Agencies

Peer agencies were identified based on several operating characteristics, including location, size, population, and other characteristics, like the presence of a college or university. This list was shared with City of Norman staff and adjusted based on their knowledge and experience. The resulting peer agency characteristics are shown below in Figure 5 and include:

- EMBARK; Oklahoma City, OK
- Huntsville Transit; Huntsville, AL
- Ann Arbor Area Transportation Authority (The Ride); Ann Arbor, MI
- Ames Transit Agency (CyRide); Ames, IA
- Lawrence Transit System; Lawrence, KS
- Missoula Urban Transportation District (Mountain Line); Missoula, MT

Figure 5 Peer Review Agencies

System Name	City	Service Area Population	Service Area Square Miles	Population Density Persons per Square Mile
EMBARK Norman	Norman, OK	96,782	178	544
EMBARK OKC	Oklahoma City, OK	650,221	244	2,665
Huntsville Transit	Huntsville, AL	97,224	66	1,473
The Ride	Ann Arbor, MI	258,829	130	1,991
CyRide	Ames, IA	54,445	15	3,630
Lawrence Transit	Lawrence, KS	96,948	29	3,343
Mountain Line	Missoula, MT	73,340	70	1,048

Source: NTD 2019

Fare Structure and policies

Each peer agency operates with a unique fare structure, including base fares, pass products, and pass product multipliers. A pass product multiplier shows how many times a passenger would need to use transit to "break even" on the cost of purchasing the pass product. In addition to fare structures, peer agencies also have specific policies related to reduced fares, reduced fare eligibility, and transfers. These fare structures and policies are explored in detail for each peer agency and are summarized in Figure 6 and Figure 7.

Figure 6 Peer Agency Fare Structure Summary

Fare Type	EMBARK Norman	EMBARK Oklahoma City*	Huntsville Transit	The Ride*	CyRide	Lawrence Transit	Mountain Line
Single Ride	*Free*	$1.75	$1.00	$1.50	$1.00	$1.00	*Free*
Reduced	*Free*	$0.75	$0.50	$0.75	$0.50	$0.50	*Free*
Day Pass	*Free*	$4.00	*N/A*	$4.50	*N/A*	$2.75	*Free*
Multiplier	*N/A*	*2.3x*	*N/A*	*3x*	*N/A*	*2.8x*	*N/A*
Weekly Pass	*Free*	$14.00	*N/A*	*N/A*	*N/A*	*N/A*	*Free*
Multiplier	*N/A*	*8x*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Monthly Pass	*Free*	$50.00	$30.00	$58.00	$35.00	$34.00	*Free*
Multiplier	*N/A*	*28.5x*	*30x*	*38.6x*	*35x*	*34x*	*N/A*

*EMBARK Oklahoma City and The Ride operate numerous service types. These fares, passes, and multipliers represent local bus service.

Figure 7 Peer Agency Discount Policy Summary

Fare Type	EMBARK Norman	EMBARK Oklahoma City	Huntsville Transit	The Ride*	CyRide*	Lawrence Transit*	Mountain Line
Children	*Free*	*Free*	50%	*Free*	*Free*	*Free*	*Free*
Eligibility	*N/A*	Ages 6 and under	Ages 6 and under	Ages 5 and Under	Ages 5 and Under	Ages 5 and Under	*N/A*
Youth	*Free*	50%	50%	50%	50%	50%	*Free*
Eligibility	*N/A*	Ages 7-17	With Student ID	Students K-12	Students K-12	Students K-12	*N/A*
Seniors	*Free*	50%	50%	*Free* (50%)	50%	50%	*Free*
Eligibility	*N/A*	Ages 65+	Ages 65+	Ages 65+ (60-64)	Ages 65+	Ages 60+	*N/A*
Disabilities	*Free*	50%	50%	*Free*	50%	50%	*Free*
Transfers	*Free*	No Transfers	*Free*	*Free*	*Free*	*Free*	*Free*

*Free or discounted service is offered for university students and/or staff and faculty with valid ID

EMBARK Norman

EMBARK Norman provides fare free transit service and does not collect fares.

EMBARK Oklahoma City

Oklahoma City is notably larger than Norman and located about 20 miles to the north along I-35. Despite the differences in size between EMBARK Oklahoma City and EMBARK Norman, the close proximity of the cities and transfer opportunities via Route 024 make the fare structure for EMBARK Oklahoma City relevant as a peer agency.

Fare Policies

EMBARK's discount policies apply to several age groups and people with disabilities, including:

- Free service for children ages 6 and under
- 50% discounts for seniors ages 65 and older
- 50% discounts for children, ages 7-11
- 50% discounts for youth ages 12-17
- 50% discounts for people with disabilities

Additionally, EMBARK does not allow free transfers. All passengers must pay a single trip fare or use a pass product each time they board a vehicle.

Fare Structure

EMBARK Oklahoma City operates multiple service types: Streetcar, Local Bus, and Express Bus.

Figure 8 EMBARK Oklahoma City Base and Reduced Fares

Service Type	Base Fare	Reduced Fare
Streetcar	$1.00	$0.50
Local Bus	$1.75	$0.75
Express Bus	$3.00	$1.50

In addition to these base fares for single trips, EMBARK also provides 1 Day, 7 Day, and 30 Day unlimited passes which are accepted at the same price for all three service types. Because passengers can use EMBARK pass products on Streetcar, Local Bus, and Express Bus services, the pass multipliers vary by service type.

Figure 9 EMBARK Oklahoma City Pass Products and Multipliers

Pass Product	Regular Cost	Regular Multiplier	Reduced Cost	Reduced Multiplier
1 Day Unlimited Pass	$4.00	4x – 1.3x	$2.00	4x – 1.3x
7 Day Unlimited Pass	$14.00	14x – 4.6x	$7.00	14x – 4.6x
30 Day Unlimited Pass	$50.00	50x – 16.6x	$25.00	50x – 16.6x

Huntsville Transit

Huntsville Transit, similar to EMBARK Norman, is a transit service provided through a city department, rather than an independent transit agency. The cities of Norman and Huntsville are also similar in population and are both home to large universities. These factors make Huntsville Transit a strong candidate for a peer agency.

Fare Policies

Huntsville Transit provides a 50% discount to:

- Seniors ages 65 and older
- Children ages 6 and under
- Disabled citizens
- Medicare and Medicaid card holders
- Students with a valid student ID

The agency also provides free trips for Children under 32 inches tall and allows free transfers using transfer slips that are valid for 90 minutes. Transfers may not be used for a return trip on the same route.

Fare Structure

Huntsville Transit has a relatively simple and straightforward fare structure that includes regular and reduced fares for single trips, a 20-ride pass book at a slight discount, and a monthly pass option. Reduced fares are only available for single trips, not for the 20-ride book or monthly pass.

Figure 10 Huntsville Transit Fare Structure

Fare Type	Regular Fare	Reduced Fare	Pass Multiplier
Single Trip	$1.00	$0.50	--
20-Ride Book	$18.00	--	--
Monthly Pass	$30.00	--	30x

The Ride

The Ride serves a notably higher population than EMBARK Norman with service in the cities of Ann Arbor and Ypsilanti, MI as well as in four townships adjacent to the cities. Despite serving a larger population, the service area size is similar between the two systems. Additionally, the presence of the University of Michigan in Ann Arbor and Eastern Michigan University in Ypsilanti make The Ride an applicable peer agency.

Fare Policies

The Ride offers a reduced fare option, branded as Fare Deal, which allows cardholders to receive a 50% discount on single trips and 30-day passes. Fare Deal is available to any of the following population groups:

- Seniors ages 60-64
- Medicare and Medicaid card holders
- People with disabilities

In addition to the Fare Deal program, the following discount programs are also available:

- Seniors ages 65 and older are eligible for free service
- Children ages 5 and under are eligible for free service
- Youth in grades K-12 receive a 50% discount on single rides and 30-day passes

The Ride also offers free transfers using transfer slips. Local bus trips are also free with a University of Michigan ID card.

Fare Structure

The standard fixed-route fare structure for The Ride includes single rides, day passes, and 30 day passes. Single rides and 30 day passes are available at reduced rates for eligible passengers. However, there is no reduced rate for day passes. In addition to the standard fixed-route fare structure, The Ride also operates express service and flex service with different base fares and pass products available.

FlexRide service is available for $1.00 per trip and $0.50 for reduced fare service. 30 day passholders may ride FlexRide for free. ExpressRide service is $6.25 per trip or $125.00 for a 30 day commuter pass. A 50% discount is available for 30 day commuter passes and 10-ride tickets for employer Go!Pass card holders and University of Michigan students, staff, and faculty.

Figure 11 The Ride Fixed-Route Fare Structure

Fare Type	Regular Fare	Regular Multiplier	Reduced Fare	Reduced Multiplier
Single Ride	$1.50	--	$0.75	--
Day Pass	$4.50	3x	$4.50	6x
30 Day Pass	$58.00	38.6x	$29.00	38.6x

CyRide

Ames, IA is a smaller city than Norman, OK but the two college towns have a number of similarities. Both transit systems have a strong focus on serving their respective universities. While EMBARK Norman was previously embedded within the University of Oklahoma before transferring to the City of Norman, CyRide is currently operated as a partnership between Iowa State University (ISU) and the City of Ames.

Fare Policies

CyRide offers free and reduced fares to a number of eligible population groups, including:

- Free service for ISU students
- Free service for Children ages 5 and under
- 50% discount for seniors ages 65 and older
- 50% discount for K-12 students
- 50% discount for Medicare cardholders
- 50% discount for people with disabilities

CyRide also allows free transfers.

Fare Structure

The CyRide fare structure includes single rides, monthly passes, ISU semester passes, and ISU school year passes. There are no day or week passes offered on the CyRide system.

Figure 12 CyRide Fixed-Route Fare Structure

Fare Type	Regular Fare	Regular Multiplier	Reduced Fare	Reduced Multiplier
Single Ride	$1.00	--	$0.50	--
Monthly Pass	$35.00	35x	$17.00	34x
Semester Pass*	$130.00	130x	$65.00	130x
School Year Pass*	$260.00	260x	$130.00	260x

*Semester and School Year Passes are available for prorated rates based on date of purchase

Lawrence Transit

Similar to CyRide, Lawrence Transit is also a partnership between the City of Lawrence and the University of Kansas. Lawrence Transit also serves a similar population size as EMBARK Norman, making it a strong peer agency candidate.

Fare Policies

Lawrence Transit offers a 50% discount for the following population groups:

- Students in grades K-12
- Haskell Indian Nations University students
- Seniors ages 60 and over
- People with disabilities, including Medicare and Paratransit card holders

University of Kansas students and children ages 5 and under may ride Lawrence Transit for free. Lawrence Transit also allows free transfers valid for up to one hour on any bus except the route on which it was issues. Transfers cannot be used for a round trip.

Fare Structure

Lawrence Transit's fare structure includes regular and discount fares for one-way trips, day passes, and monthly passes. Late night shared vehicle service, branded as Night Line, is available between 8:00 pm and 6:00 am for $2.00 but does not accept reduced fares. Additionally, 10-ride punch cards are available for regular and reduced fares but does not come with any cost savings over single rides. A student semester bus pass is also available to K-12 students for $10.00 and are offered for Spring (Jan-Apr), Summer (May-Aug), and Fall (Sep-Dec).

Figure 13 Lawrence Transit Fare Structure

Fare Type	Regular Fare	Regular Multiplier	Reduced Fare	Reduced Multiplier
One-Way	$1.00	--	$0.50	--
Night Line Fare	$2.00	--	--	--
Day Pass	$2.75	2.8x	$1.35	2.7x
Monthly Pass	$34.00	34x	$17.00	34x

Mountain Line

Mountain Line provides fare free transit service and does not collect fares.

Fare Technology

Peer agencies are using a range of fare technologies (discussed in Chapter 3), including cash, swipe cards, flashpasses, and mobile ticketing. Besides cash, swipe cards are the most commonly accepted fare media amongst the peer agencies. Some peer agencies also accept flashpasses and mobile ticketing but none accept smart cards.

- All peer agencies (excluding EMBARK Norman and Mountain Line, which are fare free) accept cash payments.
- Swipe cards are accepted by EMBARK OKC, Huntsville Transit, The Ride, and CyRide.
- Lawrence Transit currently uses flashpasses for both student IDs and monthly passes.
- EMBARK OKC and The Ride both accept mobile flashpasses through Token Transit and EZ Fare, Respectively.

Figure 14 Accepted Fare Media by Peer Agency

Agency	Cash	Swipe Card	Smart Card	Flashpass	Mobile Ticketing
EMBARK Norman					
EMBARK OKC	X	X			X
Huntsville Transit	X	X			
The Ride	X	X			X
CyRide	X	X			
Lawrence Transit	X			X	
Mountain Line					

Fare Performance

In addition to comparing the fare structure and policies for each of the peer agencies, an assessment of annual fare revenue, average fare paid per passenger, and farebox recovery can be indicative of how well these policies are performing for each agency.

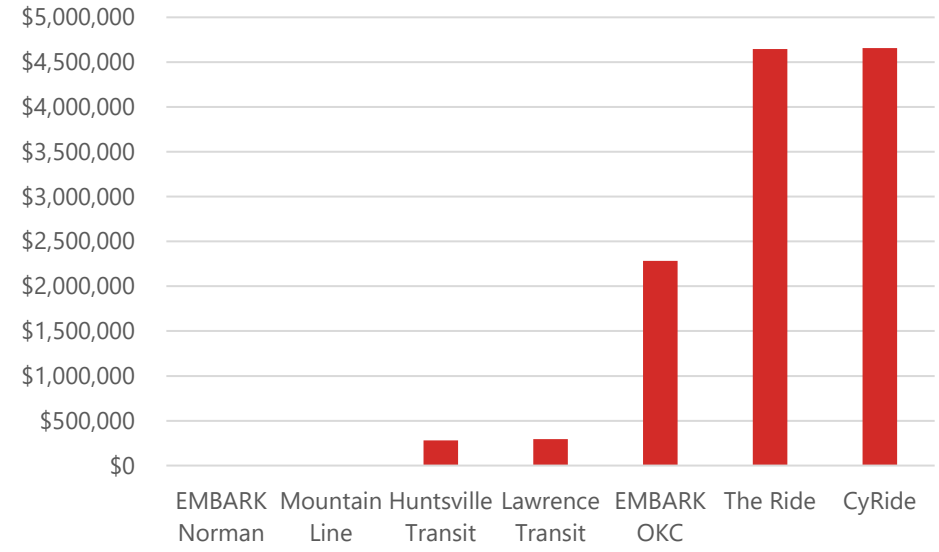
Fare Revenue

Annual fare revenue is a measure of how much total revenue is directly generated by fares. EMBARK Norman and Mountain Line both operate fare free and do not report any annual fare revenue. Huntsville Transit and Lawrence Transit both generate around $275,000 - $300,000 in fare revenue per year, while the other three peers generate significantly higher fare revenues. EMBARK OKC generates over $2 million in fare revenue annually while The Ride and Cy Ride generate over $4.5 million annually.

As reported by NTD, fare revenue can also include contract revenue related to fare programs. For instance, CyRide directly generates revenue through Iowa State University student fees and The Ride generates revenue through a contract with the University of Michigan that provides students with free transit passes. This appears to inflate the fare revenue for these agencies.

Additionally, when Mountain Line transitioned to providing fare free service in 2015, the agency initiated a partnership with a number of local businesses, organizations, and government bodies to replace potential lost fare revenue. This partnership funding is not reported as directly generated fare revenue in NTD. EMBARK Norman does receive some funding from the Norman Regional Health System to assist with paratransit operation costs. However, EMBARK Norman appears to be mostly unique in both operating fare free without a contract or partnership funding agreement with more local partners and the local university. Exploring the possibility of more of these agreements would better position EMBARK Norman with other peer agencies.

Figure 15 Peer Agency Annual Fare Revenue (2019)



Source: NTD 2019

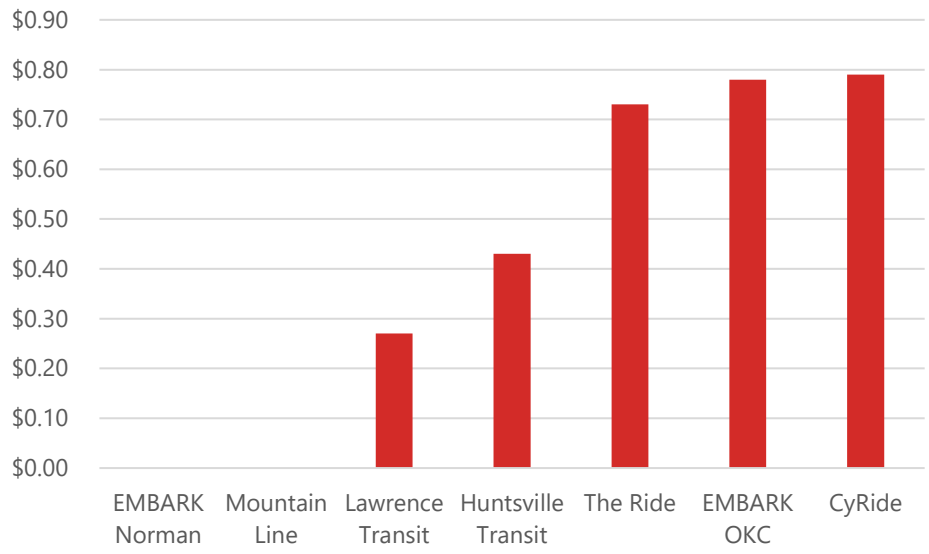
Average Fare per Passenger

While some passengers pay the full base fare for a single ride, the availability of multi-ride pass products, discount policies, and contracts with local universities allow some passengers to ride for less than the base fare. The average fare paid per passenger trip provides insight into how much fare revenue is actually collected per passenger trip.

Lawrence Transit, Huntsville Transit, and CyRide all charge a $1.00 base fare, but collect $0.27 and $0.43, and $0.79 per trip on average, respectively. The higher average fare paid associated with CyRide is likely related to the funding agreement with Iowa State University, which collects student fees regardless of transit usage. Lawrence Transit is also operated as a partnership between the City of Lawrence and the University of Kansas, but university related funding is not reported as fare revenue by NTD.

EMBARK OKC and The Ride charge base fares of $1.75 and $1.50 and collect $0.78 and $0.73 per trip, respectively. EMBARK Norman and Mountain Line provide fare free service and collect no fares per passenger.

Figure 16 Peer Agency Average Fare Paid per Passenger (2019)

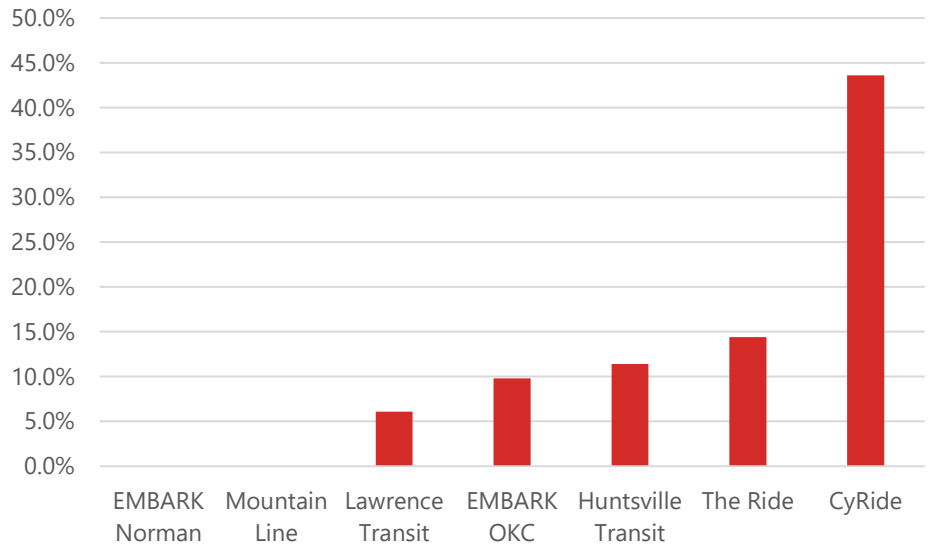


Source: NTD 2019

Farebox Recovery

Farebox recovery is a measure of the percentage of operating costs that are paid for with fare revenues. Farebox recovery is a commonly used performance metric for many transit agencies. While performance standards vary from agency to agency, typical farebox recoveries are generally in the range of 10% to 20%. Most peer agencies have a farebox recovery between 5% and 15% with the exception of CyRide, which has a significantly higher reported farebox recovery (43.6%). This high farebox recovery for CyRide is also likely related to the Iowa State University student fees funding being reported as fare revenue.

Figure 17 Peer Agency Farebox Recovery (2019)



Source: NTD 2019

Fare Free Best Practices

In 2015, Mountain Line in Missoula, MT made the decision to implement a zero-fare demonstration project in which the agency stopped charging fares and explored potential funding partnerships with local businesses, schools, government agencies, and non-profit organizations. The program began with 11 partners and has since grown to 24 with some of the major partners including the University of Montana, City of Missoula, and local area hospitals. Mountain Line initiated the process with the goal of increasing ridership by 40% within the first three years of the demonstration project and nearly hit their goal within the first year and has increased by 70% since implementation.

From a revenue perspective, Mountain Line has been able to generate more revenue from their funding partnership (approximately $500,000 per year) than they had previously generated through farebox revenue, while reducing administrative costs associated with fare collection. Additionally, the increased ridership on the system qualified the agency for additional grant funding, including approximately $3 million in federal 5339c Low or No Emissions and 5339 Bus and Bus Facilities grants.

Mountain Line has been successful in marketing the zero-fare service as a benefit for everyone in the community, whether they ride transit or not. This emphasis on community benefits and the value proposition for partner organizations to provide funding has helped sustain the program since its implementation. This type of funding partnership may be relevant for EMBARK Norman to identify additional revenue sources while continuing to provide fare free service as ridership continues to recover from the COVID-19 Pandemic.

FARE MODEL SCENARIOS

Implementing a fare for EMBARK Norman service would result in changes to ridership and revenue. To better understand these impacts, a fare model was developed based on existing ridership and revenue data from FY 2020. This information was then used as a baseline to understand order of magnitude changes to fare revenues and ridership as a result of specific pricing or structural changes.

Significant research over time has examined the sensitivity of transit ridership to fare increases. As such, elasticity factors are common in fare modeling, as they define the price sensitivity of riders to fare changes. An elastic factor suggests a larger change in ridership relative to a fare change. An inelastic factor suggests a relatively small change in ridership relative to a fare change. Informed by industry research,[10] the model accounts for an elasticity factor (-0.33), which is consistent with industry standards for regular fares and instituting new fares to a system.

Using this elasticity factor, ridership changes (on a fare product basis) are determined from the proposed fare structure implementation. A new average fare for each fare product is also calculated from the percentage change in the fare product price. Finally, multiplying the new ridership estimate by the new average fare produces a revenue estimate for that fare product.

It should be cautioned that any estimation model is an approximation based on a set of assumptions and is dependent on accurate data inputs to ensure quality outputs. The fare model bases ridership and revenue changes strictly on price variation. Qualitative factors such as customer simplicity or other factors are not considered here but are certainly factors that influence ridership and revenue levels.

Preliminary Fare Scenarios

Six scenarios for fare structures and pricing changes were developed to evaluate potential impacts to EMBARK Norman ridership and revenue. These fare scenarios are described below:

- Scenario 1: EMBARK Norman Status Quo
- Scenario 2: Optimize Fares to Maximize Revenue
- Scenario 3: Align Fare Structure with EMBARK Oklahoma City
- Scenario 4: Align Fare Structure with Peer Agency Best Practices
- Scenario 5: University Student Pass with EMBARK Oklahoma City Fare Structure
- Scenario 6: University Student Pass with Peer Agency Best Practices Fare Structure

Scenario 1: EMBARK Norman Status Quo

This scenario represents the baseline ridership and farebox revenue for EMBARK Norman service that all other fare scenarios should be evaluated against. In this scenario, EMBARK Norman would continue operating fare free transit service. Thus, there would continue to be no farebox revenue

[10] Source: TCRP Report 95, Chapter 12, *Transit Pricing and Fares*.

and ridership would remain consistent at FY 2020 levels of approximately 263,000 annual boardings. Based on elasticity factors, Scenario 1 represents the maximum ridership potential based solely on changes to fare structures.

Scenario 2: Optimize Fares to Maximize Revenue

This scenario takes an iterative approach to adjusting fares and pass multipliers until prices are such that revenue is maximized and no longer increases with subsequent increases in fare price. Scenario 2 represents the maximum potential for farebox revenue based solely on changes to the fare structure. The fare structure developed to maximize revenue is shown in Figure 18 and includes a base fare of $1.60, reduced fare of $0.80, a 2x multiplier for day passes, a 32x multiplier for monthly passes, and would charge full fares for transfers.

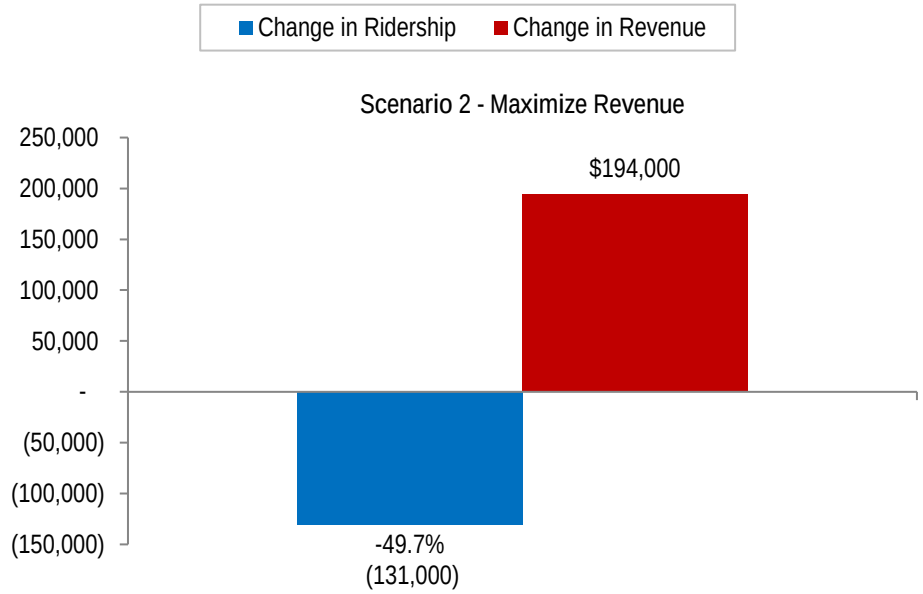
The ridership and revenue impacts of Scenario 2, would result in an additional $194,000 in farebox revenue with about a 50% reduction in ridership (131,000 passengers). This increase in farebox revenue is equal to about 5.3% of FY 2020 operating expenses.

Transitioning from fare free service to a relatively high base fare of $1.60 represents a significant increase for passengers and, as such, is expected to have substantial impacts on ridership. While this fare structure would maximize farebox revenue, the immediate impacts on ridership are notable. This fare structure and level of base fare may be better suited for a longer term implementation following a transition period at a lower fare level, allowing passengers to adjust to the fare payment process.

Figure 18 Scenario 2 Fare Structure

Fare Type	Regular	Reduced
Single Ride	$1.60	$0.80
Day Pass	$3.20 (2x)	--
Monthly Pass	$51.20 (32x)	--
Transfers	$1.60	$0.80

Figure 19 Scenario 2 Ridership and Revenue Impacts



Scenario 3: Align Fare Structure with EMBARK Oklahoma City

This scenario evaluates the ridership and revenue impacts of adjusting the fare structure to match what is currently offered by EMBARK Oklahoma City. As a neighboring agency with similar operations and a transfer opportunity provided by Route 024, aligning fares regionally may improve coordination between agencies and better facilitate interagency transfers between the two systems. The fare structure for Scenario 3 is shown in Figure 20.

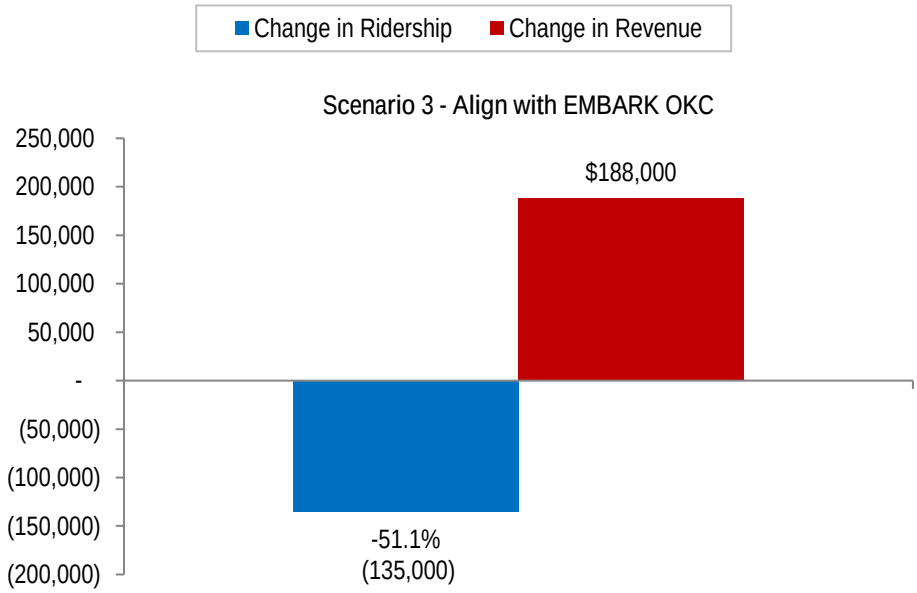
In this scenario, the base fare would be $1.75 with a reduced fare of $0.75. Day Passes, weekly passes, and monthly passes would be available for $4.00, $14.00, and $50.00 respectively with 50% discounts available for qualifying passengers. The ridership and revenue impacts of this scenario are shown below in Figure 21. This scenario is expected to generate approximately $188,000 in annual farebox revenue with about a 51% decrease in ridership (135,000 annual boardings). This increase in farebox revenue would account for approximately 5.3% of FY 2020 operating costs.

Similar to Scenario 2, the $1.75 base fare in this scenario represents a notable increase over the fare free service currently provided by EMBARK Norman and is expected to have a notable impact on ridership. Despite the inherent benefits of a coordinated regional fare, the immediate impacts on ridership make the immediate implementation of this scenario a challenge. This fare structure and level of base fare may be better suited for a longer term implementation following a transition period at a lower fare level, allowing passengers to adjust to the fare payment process.

Figure 20 Scenario 3 Fare Structure

Fare Type	Regular	Reduced
Single Ride	$1.75	$0.75
Day Pass	$4.00 (2.3x)	$2.00 (2.7x)
Weekly Pass	$14.00 (8x)	$7.00 (4x)
Monthly Pass	$50.00 (28.5x)	$25.00 (33.3x)
Transfers	$1.75	$0.75

Figure 21 Scenario 3 Ridership and Revenue Impacts



Scenario 4: Align Fare Structure with Peer Agency Best Practices

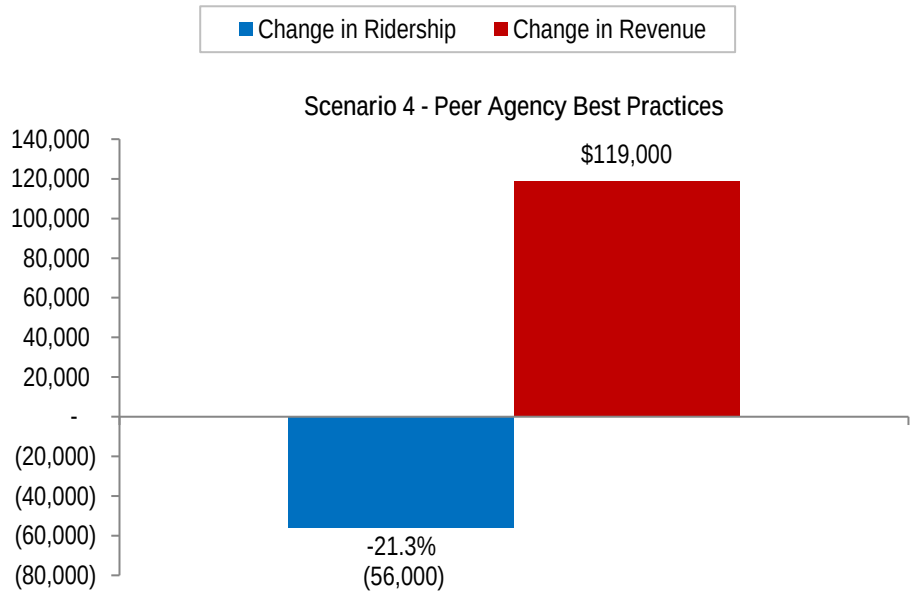
Building upon the peer agency review performed in Chapter 4, this scenario uses the identified best practices in fare structure for similarly sized agencies to establish a potential fare structure for EMBARK Norman. This fare structure is shown in Figure 22 and includes a $1.00 base fare, $0.50 reduced fare, day passes and monthly passes with 2x and 28x multipliers respectively and allows for free transfers.

The impacts to ridership and revenue for Scenario 4 are shown below in Figure 23**Error! Reference source not found.**. This scenario would result in farebox revenues of about $119,000 per year (3.2% of FY 2020 operating costs) and result in a 21% decrease in ridership (56,000 annual boardings). Aligning with peer agency best practices appears to be more appropriate for an initial fare implementation, particularly compared with Scenarios 2 and 3. While Scenario 4 represents a more realistic initial fare structure for EMBARK Norman, the impacts to ridership are still substantial and may represent a challenge for implementation in the near or mid-term.

Figure 22 Scenario 4 Fare Structure

Fare Type	Regular	Reduced
Single Ride	$1.00	$0.50
Day Pass	$2.00 (2x)	$1.00 (2x)
Monthly Pass	$28.00 (28x)	$14.00 (28x)
Transfers	Free	Free

Figure 23 Scenario 4 Ridership and Revenue Impacts



Scenario 5: University Student Pass with EMBARK Oklahoma City Fare Structure

Recognizing that university pass programs were identified as a best practice for peer agencies, Scenario 5 incorporates this approach into the fare structure previously identified in Scenario 3 (aligning with EMBARK Oklahoma City), as shown in Figure 24. Scenario 5 is dependent on long-term, ongoing discussions with the University of Oklahoma (OU) regarding student fares and payment options.

While this scenario is contingent about these discussions and a potential partnership agreement, a common approach in the industry is to allow OU students to continue riding fare free upon boarding the vehicle by using a valid student ID as a flash pass. Operators would track student ridership using a unique key code at the farebox and bill OU for the cost of providing those trips.

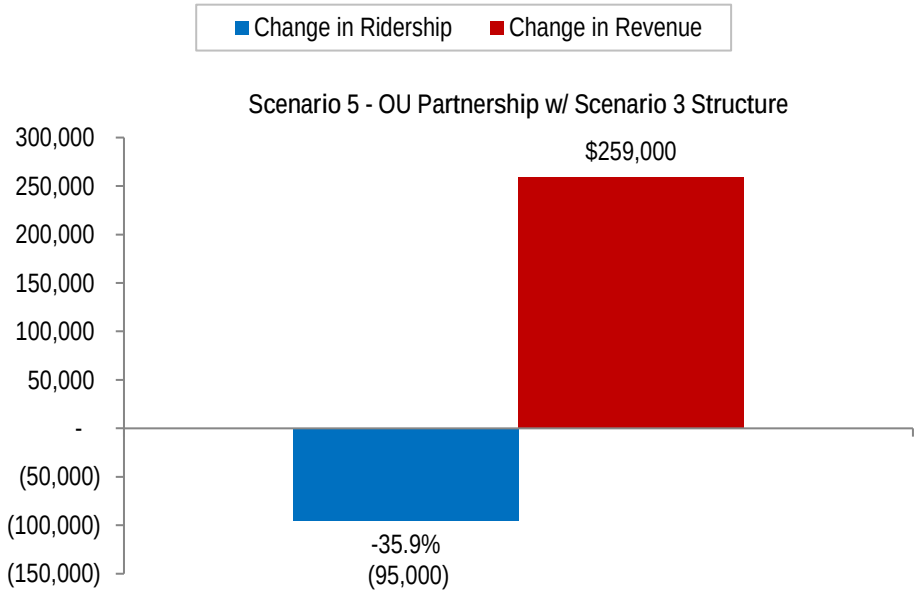
This scenario would impose the same fare structure as Scenario 3 but would allow OU students to continue riding fare free and assumes that OU would pay for the cost of all student trips ($1.75 per ride). The ridership and revenue impacts related to Scenario 5 are shown below in Figure 25 and are expected to result in $259,000 in farebox revenue (including payments from OU) and about a 36% decrease in ridership (95,000 annual boardings). This level of farebox revenue represents 7% of EMBARK Norman's FY 2020 operating costs.

This approach provides a valuable service for OU students by allowing them to continue riding fare free, reduces the ridership loss associated with implementing a fare, and provides increased farebox revenue for EMBARK Norman. Despite these benefits, the need for ongoing discussions regarding funding partnership with OU make Scenario 5 more complicated to implement and would only be considered a viable option in the long-term.

Figure 24 Scenario 5 Fare Structure

Fare Type	Regular	Reduced
Single Ride	$1.75	$0.75
Day Pass	$4.00 (2.3x)	$2.00 (2.7x)
Monthly Pass	$50.00 (28.5x)	$25.00 (33.3x)
OU Students	Free	Free
Transfers	$1.75	$0.75

Figure 25 Scenario 5 Ridership and Revenue Impacts



Scenario 6: University Student Pass with Peer Agency Best Practices Fare Structure

Scenario 6 takes a similar approach as Scenario 5, using the same assumptions to provide fare free service for OU students while the university pays for the cost of those rides on the backend. However, the fare structure in Scenario 6 is the same used in Scenario 4, aligning with the identified peer agency best practices (Figure 26).

This approach provides a valuable service for OU students by allowing them to continue riding fare free, reduces the ridership loss associated with implementing a fare, and provides increased farebox revenue for EMBARK Norman. Despite these benefits, the need for ongoing discussions regarding funding partnership with OU make Scenario 5 more complicated to implement and would only be considered a viable option in the long-term.

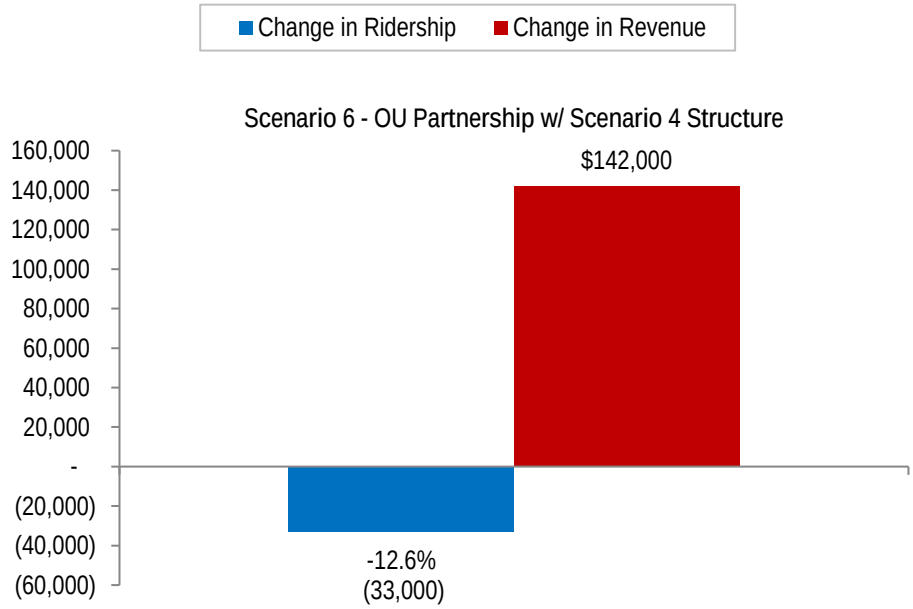
The impacts to ridership and revenue (Figure 27) include a 12.6% reduction in ridership (33,000 annual boardings) and $142,000 in farebox revenue, about 4% of FY 2020 operating costs. This approach best aligns with peer agency best practices, provides an increase in farebox revenue, and mitigates potential ridership loss associated with implementing a fare.

This approach provides a valuable service for OU students by allowing them to continue riding fare free, reduces the ridership loss associated with implementing a fare, and provides increased farebox revenue for EMBARK Norman. Despite these benefits, the need for ongoing discussions regarding funding partnership with OU make Scenario 5 more complicated to implement and would only be considered a viable option in the long-term.

Figure 26 Scenario 6 Fare Structure

Fare Type	Regular	Reduced
Single Ride	$1.00	$0.50
Day Pass	$2.00 (2x)	$1.00 (2x)
Monthly Pass	$28.00 (28x)	$14.00 (28x)
OU Students	Free	Free
Transfers	Free	Free

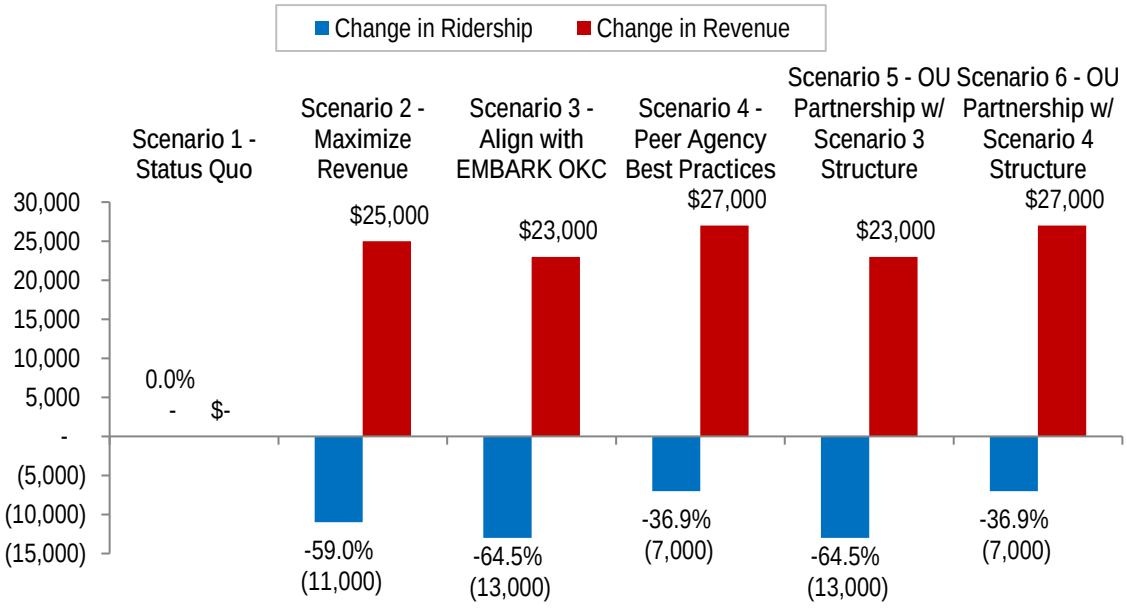
Figure 27 Scenario 6 Ridership and Revenue Impacts



Paratransit

As a public transportation system receiving federal funding, EMBARK Norman is subject to FTA requirements regarding the provision of complementary paratransit service, branded as EMBARK Plus. FTA requirements state that paratransit fares may not be more than twice the fare for a comparable trip on fixed-route service. As such, it is a common practice in the transit industry to set paratransit fares at twice the level of base fares for fixed-route service. This approach to setting paratransit fares was used for all peer agencies evaluated in Chapter 4 of this report. This analysis assumes that any fare structure implemented for fixed-route services would include a paratransit fare set at twice the fixed-route base fare for Zone 1 service and set as four times the fixed-route base fare for Zone 2 service. The ridership and revenue implications for paratransit associated with these fare structures is shown in Figure 28.

Figure 28 Paratransit Fare Scenario Ridership and Revenue Impacts

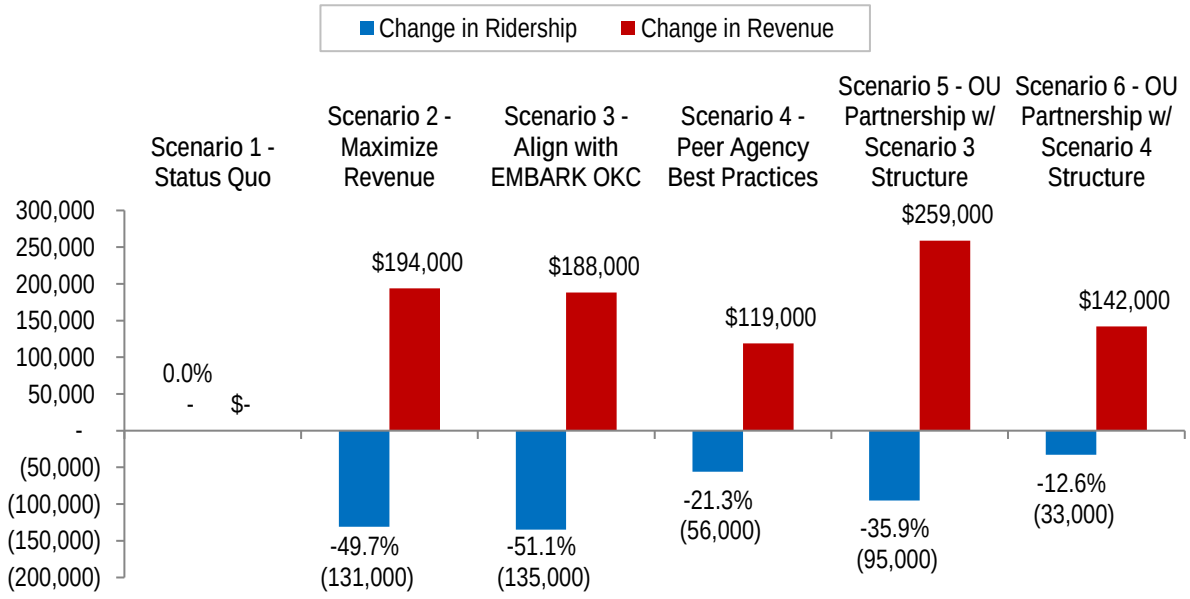


Fare Scenario Summary and Recommendations

The relative ridership and revenue changes for fixed-route service each fare scenario are shown in Figure 29. The fare scenarios include a range of impacts with fixed-route ridership loss ranging between a 12.6% decrease and a 51.5% decrease and total farebox revenue ranging from $146,000 to $281,000 (4.0% - 7.6% of FY 2020 operating costs) combined for fixed-route and paratransit service.

- The high ridership loss associated with Scenario 2 and Scenario 3 are due to the relatively high base fares assume for each scenario. This impact may make these scenarios unlikely for near-term implementation and makes them more suitable for further study in the long-term following potential implementation of an initial lower base fare.
- Scenario 5 and Scenario 6 mitigate potential ridership loss and increase farebox revenue through potential funding partnerships with OU. However, implementing these scenarios would require long-term, ongoing negotiations with the university. The complicated nature of any potential partnership would make these scenarios viable options in the long-term only.
- Scenario 4 – Align with Peer Agency Best Practices is the most viable option for near-term or mid-term implementation. However, ridership loss associated with this scenario remains significant at over a 20% decrease in ridership and may present challenges during implementation.
- Ridership and revenue impacts for paratransit service follow similar patterns as for fixed-route service. However, revenue generation is much more limited, ranging between $23,000 and $27,000 per year.

Figure 29 Fixed-Route Fare Scenario Ridership and Revenue Impacts Summary



Recommendations

Based on the results of the initial fare scenario analysis, recommendations were developed to focus on the near-term, mid-term, and long-term options and considerations.

Immediate Term

It is recommended that the City of Norman continue providing fare free service in the near term to encourage ridership growth as the community recovers from COVID-19 and recommended service changes are implemented.

The significant ridership loss associated with implementing a fare on EMBARK Norman service would create implementation challenges. Additionally, introducing a fare in combination with route alignment and service changes associated with other elements of the *Go Norman Transit Plan* may stifle potential ridership growth associated with the service change.

Mid-Term

Following implementation of near-term service changes recommended through the *Go Norman Transit Plan,* there is an opportunity to reevaluate the potential for fare implementation. This process should include ongoing monitoring of pandemic related ridership recovery and providing sufficient time for the route alignments and service changes to "mature," allowing passengers to adjust to the service changes before introducing additional changes to the fare structure. Initial fare implementation should align with peer agency best practices with generally low base fares to minimize impacts to ridership as fares are introduced. As a part of this process, EMBARK Norman should continue exploring the potential for funding partnerships with OU to mitigate ridership loss and increase potential farebox revenue. Additionally, long-term fare structures may begin to align with regional fare structures currently used by EMBARK Oklahoma City to foster regional coordination between the two transit systems.

OPERATIONAL IMPACTS

Introducing fare payments to a transit system inevitably will create boarding delays. These delays are related to passengers paying their fares as well as asking questions and talking to the operator. For a single stop, these small delays may seem insignificant. However, over the course of a full route, they can aggregate and create noticeable issues with on-time performance and schedule adherence. This chapter will briefly outline the potential operations impacts that can be caused by the introduction of fare payment and how it specifically may impact EMBARK Norman.

Boarding delay caused by fare payment is quantifiable and is often measured on a per-boarding basis. However, the magnitude of the delay can vary depending on the fare payment type. Fare media that require visual inspection only (such as flash passes) are likely to cause the least delay per boarding, whereas an individual paying cash fare (and requiring exact change) may take significantly longer. Other fare media such as magnetic swipe cards or RFID smart cards fall between the above two examples in terms of delay.

National research has considered the delay caused by passengers paying a fare (Figure 30). Based on EMBARK Norman's existing fare free service model and this research, it is assumed that current EMBARK Norman boardings take approximately 2.5 seconds per passenger. If EMBARK Norman were to introduce fare payment on its services, it would likely add boarding delay on top of the existing 2.5 seconds.

Figure 30 Boarding Delay by Fare Payment

Fare Media	Passenger Service Time (Seconds per Passenger
Pre-Payment (including no fare)	2.5
Cash (exact change)	4.0
Swipe Card	4.2
Smart Card	3.5

Source: Transit Cooperative Research Program (TCRP 100- Transit Capacity and Quality of Service Manual

Based on TCRP research, this analysis assumes that requiring a fare payment on EMBARK Norman routes would add approximately 1.5 seconds to each boarding (the difference in time between free fares and delay from requiring exact change). It is understood that not all future passengers will have exact change (4.0 total seconds per boarding is a middle ground between those using smart cards, change, and swipe cards).

Impacts on EMBARK Norman Routes

The projected ridership for each local route in the EMBARK Norman system is based on the low estimate for ridership associated with Fare Scenario 3 and the high estimate for ridership associated with Fare Scenario 4. The expected average additional dwell time for each route is determined based on the difference between the assumed boarding time per passenger of current ridership and the projected boarding time per passenger at each adjusted ridership level.

For the low ridership estimate associated with Scenario 3, the expected decrease in ridership is sufficient to counteract the additional boarding time per passenger and results in time savings of 1-12 seconds per trip. For the high ridership estimate associated with Scenario 4, dwell times are expected to increase between 1-14 seconds per trip, with the largest increases occurring on Routes 110 and 111. These dwell time increases are sufficiently small and operational impacts to routes are not anticipated as a result of implementing a fare.

Figure 31 Estimated Dwell Time Analysis

Route	Daily Trips	Current Ridership	Adjusted Ridership – Low	Adjusted Ridership – High	Average Additional Dwell Time per Trip (Seconds) – Low	Average Additional Dwell Time per Trip (Seconds) – High
110	14	297	145	234	-12	14
111	30	606	296	477	-11	13
112	30	157	77	124	-3	3
120	15	15	7	12	-1	1
121	15	195	95	153	-7	8

COSTS ASSOCIATED WITH IMPLEMENTING A FARE

Introduction of a fare structure and fare collection system involves numerous up-front and ongoing costs to establish and maintain fare collection equipment, as well as internal and external processes to print and distribute tickets and passes, collect and reconcile fares, and conduct other customer relations and financial transactions.

This section presents a detailed review of equipment that would be necessary to begin fare collection at EMBARK Norman and a range of corresponding costs. It also estimates ongoing operating costs that reflect new administrative responsibilities for EMBARK Norman. These cost estimates are used in tandem with ridership and fare revenue projections to determine the "bottom line," i.e., whether a net income gain or loss would result if EMBARK Norman were to introduce a fare (see Chapter 8).

Initial Capital Investments

Implementing a fare requires several capital investments. None of EMBARK Norman's vehicles are currently equipped with fareboxes. For the purposes of this analysis, it is assumed that fareboxes would need to be purchased for all EMBARK Norman vehicles. All capital costs are listed separately, including initial marketing and education costs plus a 10% contingency for all capital costs. On the low end, the required capital costs are estimated at approximately $515,000 and the high-end costs are estimated at approximately $860,000, as shown in Figure 32

Figure 32 Fare Implementation One-Time Capital Investments

Fare Collection Implementation Costs					
One-Time Capital Investments	Qty	Unit Cost Low	Unit Cost High	Total Cost Low	Total Cost High
Fixed Route Fareboxes[1]	13	$12,000	$15,000	$156,000	$195,000
EMBARK Plus (Demand-Response) Fareboxes[1]	13	$2,500	$9,000	$32,500	$117,000
Farebox Installation Costs[1]		3%	10%	$5,655	$31,200
Ticket Vending Machines (TVMs)[1]	2	$30,000	$55,000	$60,000	$110,000
Attended Card Encoders[1]	2	$13,000	$19,000	$26,000	$38,000
Data Processing Software and Hardware[1]	1	$35,000	$55,000	$35,000	$55,000
Vault (on wheels)[1]	1	$30,000	$40,000	$30,000	$40,000
Spares Parts (10% of fareboxes and TVMs)[2]		10%	10%	$24,850	$42,200
Money Room and Clean Room Build Out[3]	1	$160	$220	$57,600	$99,000
Contingency Budget (10% of all Capital Costs)[4]				$42,761	$72,740
One-Time Capital Costs [5]				$470,366	$800,140
Initial Marketing and Education[6]				$45,000	$60,000
Total Capital Costs				$515,366	$860,140

Notes:

Bus probes and garage probes will be needed for data collection from vehicles (these will likely be provided by hardware vendor at no cost as noted from GFI). These are needed for downloading data from fareboxes into data processing computers, typically via infrared emitters/sensors. Attended Card Encoders are devices to program (encode) blank fare media (magnetic stripe or smart cards). They can be used to generate multi-ride passes and/or smart cards.

1. Farebox, TVM, other hardware and installation costs are based on figures from TCRP Report 94.

2. Cost for spares (additional spare parts and pieces) is factored only for high-use equipment such as fareboxes and TVMs. Ongoing spare parts costs is determined by taking 10% of the initial capital cost of spare parts.

3. Room Build Out costs assumes 360 Sq Ft (small) and 450 Sq Ft (large). Per unit costs reflect per-square-foot costs.

4. Contingency budget has been developed to cover 10% of all above capital costs.

5. Capital costs are FTA eligible; however, this analysis assumes capital costs would be funded by EMBARK Norman. If federal funds are secured, then it would cover 80% of the cost, reducing EMBARK Norman's contribution to 20%.

6. Initial marketing and education includes $15,000 - $20,000 per year over a three year period before and during implementation to educate the public on fare implementation and continued assistance for navigating fare media purchase and payment.

Ongoing Operating Costs

In addition to capital investments, implementing a fare would also have ongoing operating costs associated with administering the fare system (Figure 33). Implementing fares also includes recurring direct costs such as purchasing fare media (passes, tickets, etc.), plus ongoing marketing activities and administrative tasks. There is some variation in the ongoing operating costs that reflect the ridership impacts associated with the potential fare structures identified in Chapter 5 and the required quantity of fare media. To provide a range of potential ridership levels, the following fare scenario outputs were used:

- Scenario 4 – Align with Peer Agency Best Practices. This represents the fare structure with the lowest base fare and thus, the highest ridership.
- Scenario 3 – Align with EMBARK OKC Fare Structure. This represents the fare structure with the highest base fare, and thus the lowest ridership.

These ongoing costs associated with a fare assume that transfers are made available through magnetic swipe cards and all other pass products are available as smart cards. The fare structure included in Scenario 3 would require full fares for transfers, thus no annual transfer media is assumed in this scenario. Ongoing operating costs associated with fare implementation are similar between the two fare structures, ranging between $237,700 and $239,900.

Figure 33 Ongoing Costs Associated with Fare Collection

Annual Costs for Fare Media and Personnel Functions	Unit Cost	Scenario 4 – Align with Peer Agencies	Scenario 3 – Align with EMBARK OKC
Procure annual transfer media (paper stock, mag stripe)[1,2]	$0.02	$2,000	--
Procure annual smartcard media[1,2]	$1.45	$400	$200
Ongoing purchase of farebox and TVM spare parts[4]	$982	$25,500	$25,500
Equipment Maintenance Costs[6]	6%	$20,000	$20,000
Additional Ongoing Marketing Costs		$5,000	$5,000
Annual FTE Employee Costs: includes media distribution and reconciliation, maintenance, revenue handling, and software maintenance[5]	2 FTEs	$105,000	$105,000
Capital Reserve Replenishment[7]		$82,000	$82,000
Annual Ongoing Operating Costs		$239,900	$237,700

Notes:
1. Assumes hybrid smart card/mag stripe system.
2. Assumes that pass media is purchased at 50% over required demand for that fare class, based on ridership projections from model outputs in Chapter 5. Costs for media are higher at lower fare levels because ridership is projected to be higher and thus a higher quantity of fare media is necessary.
3. Based on TCRP Report 94, staff costs for various aspects of fare collection is taken as a percentage of overall revenue. The suggested FTE cost of $50,000 is roughly at the midpoint of TCRP's range from that report.
4. Farebox and TVM spare parts costs are based on EMBARK Oklahoma City annual farebox maintenance costs per vehicle for FY2019.
5. Assumes one new full-time administrative employee ($50,000) and one new full-time mechanic ($55,000).
6. Annual equipment maintenance costs range between 5-7% of total equipment costs, an average of 6% was used for farebox and TVM maintenance.
7. Capital Reserve Replenishment takes the average between low and high FTA-eligible capital costs and annualizes it over the intended lifespan (10 years for farebox related equipment and 30 years for structures).

FARE IMPLEMENTATION COST AND REVENUE SUMMARY

This fare analysis report identifies the costs and benefits associated with implementing a fare for the EMBARK Norman transit system. A key goal of the analysis is the determine if the benefits (revenues) associated with implementing a fare outstrip the costs associated with implementing a fare, and if so, by how much and under what circumstances.

The analysis identifies the following costs:

- One-time capital investment of between approximately $515,000 and $816,000 to purchase and install fareboxes and other equipment necessary to implement a fare.
- Ongoing operational costs of roughly $240,000 annually. Over half of these costs are associated with increased staffing requirements related to fare implementation and replenishing capital reserves in preparation for future farebox replacement costs.

Charging a fare, on the other hand, would generate revenue. Based on the anticipated revenue associated with fare model scenarios 2, 4, and 5, EMBARK Norman could raise between $146,000 and $281,000 annually for both fixed-route and paratransit service. On an annual basis, including only operating cost, fare revenue aligned with the EMBARK OKC fare structure and an OU funding partnership to provide free trips for students would generate a net positive return of $43,300 annually.

Figure 34 Net Annual Revenue to EMBARK Norman by Fare Scenario

Fare Model Scenario	Operating Costs	Operating Revenues	Net Gain
Scenario 3 – Align with EMBARK OKC	$237,700	$211,000	($26,700)
Scenario 4 – Align with Peer Agency Best Practices	$239,900	$146,000	($93,900)
Scenario 5 – OU Partnership w/ Scenario 3 Fare Structure	$237,700	$281,000	$43,300

Return on Investment

The impacts of the investment in implementing a fare structure in terms of benefits produced were evaluated through a return on investment analysis, which compares the capital and operating costs (investment) against the total benefits. For the purposes of this analysis, it was assumed that EMBARK Norman would be able to pay for all capital investments associated with the fare collection equipment. It was also assumed that operating costs would increase at a rate of 2% per year, while revenues would remain flat for the first five years; in year five, fare revenue would increase from $146,000 to $281,000 with the implementation of Scenario 5 and then remain constant until the end of the ten-year period.[11]

The analysis suggests that implementing fares will not generate positive benefits for EMBARK Norman following a ten-year implementation period including a five-year period of low-base fares followed by a five-year period of fares aligned with EMBARK OKC and an OU funding partnership with a free student pass program (Figure 35).

Figure 35 Return on Investment for a Ten-Year Period

	Low Capital Investment	High Capital Investment
Recommended Fare Structure Implementation	(32%)	(38%)

[11] Transit industry experience nationally suggests it is difficult for transit agencies to raise fares on an annual basis. Instead fares are raised periodically, roughly every 5 years. This assumes the recommended implementation beginning with the fare structure associated with Scenario 4 and ending with the fare structure associated with Scenario 5.

Appendix C – Transit-Support Design Toolkit

Strategies to support transit in Norman, Oklahoma

TABLE OF CONTENTS

1

INTRODUCTION

INTRODUCTION

Goal of Transit-Supportive Design

The goal of transit-supportive design is to encourage more sustainable development, improve access to useful public transportation options, and increase transit ridership on EMBARK Norman services. To achieve this, transit-supportive design can:

Make transit more accessible to all types of riders.

Connect more people with jobs, services, and other important destinations.

Maximize rider safety, comfort, and convenience.

Improve operational efficiency and schedule reliability.

Improve the community's perception and show the value of transit.

Purpose of Transit-Supportive Design

Access to useful public transit requires the surrounding built environment to be designed to intentionally support all modes of movement, including buses, walking, rolling, and biking. Transit-supportive design allows for the integration between development design and transportation planning. It makes riding transit more convenient and reduces dependency on driving. Increased transit ridership may help alleviate traffic congestion and improve air quality in the city.

This Transit Supportive Design Toolkit will introduce a range of strategies divided into two parts: design interventions and program & policy improvements.

2

STRATEGY TOOLKIT

PART 1:
ACCESS TO AND FROM TRANSIT

Transit riders begin their journey the moment they step out of their homes. Riding on the bus is only one part of the trip that almost always requires walking or biking to reach the destination. The experience of a transit rider is not confined to the interior space of the bus vehicle or the bus stop. Ensuring safe and easy navigation to and from transit stops is essential for a successful transit service. Access routes to and from transit service should be designed with an understanding that all travelers become pedestrians on their way to transit. Part 1 of this toolkit will illustrate four urban design interventions that can elevate the experience of getting to and from a transit stop.

A.1 Provide lighting, shelter, and shade along access routes to transit

A.2 Create complete bike and pedestrian networks

A.3 Provide wayfinding and information

A.4 Manage the curb to support transit operations and access

A.1 PROVIDE LIGHTING, SHELTER, AND SHADE NEAR TRANSIT STOPS

Strategy description

Within ¼ mile of transit stops, public streets should have clearly demarcated safe street crossings for people walking and biking, pedestrian scale lighting, and shade by infrastructure or urban canopy.

Sidewalks, bike lanes or shared-use side paths should be delineated clearly and separated from vehicle paths. Different colors of paint, flex posts, planters, raised curbs, and other forms of demarcation can provide a sense of security for people walking and biking.

Lighting's primary purpose is to amplify visibility for security and safety at night. Intentional lighting can also aid in geographic orientation for finding the transit stop. Especially in more remote locations, lighting should be installed for both safety and landmark purposes.

Though the City of Norman has a temperate climate, heat, rain, and snow can turn people away from walking and biking on the street. A consistent shade provided by planters or trees can ease discomfort on the street and increase the overall aesthetic of the public space as well. Placement of trees should be consulted with the city to avoid any right-of-way and structural conflict.

How does this strategy support transit?

Makes transit more accessible to all types of riders, including people who use wheelchairs or other mobility devices, and people who are visually impaired.

Extends the reach of transit service by strengthening connections with more nearby activity centers.

Increases safety, comfort, and convenience to ride EMBARK Norman service.

Denver, CO

A.2 CREATE COMPLETE BIKE AND PEDESTRIAN NETWORKS

Strategy description

A fully connected bike and pedestrian network can tie the surrounding neighborhood to a transit station. A well-planned bike and pedestrian network should prioritize infrastructure improvements within ¼ mile walking radius and ½ mile biking radius around a transit station or bus stop and fill in identified gaps in existing sidewalks and bike lanes. It should also be accommodating of all-ages and abilities, emphasizing improvements that can support both an eight-year-old and an eighty-year-old's ability to use the infrastructure.

A successful network should minimize the walking distance from a transit stop to a destination. Often, unopened right-of-way, cul-de-sacs, surface parking lots, and the absence of mid-block crossing increases walking distances. A well-designed non-automobile network should allow cut-throughs and walkways that often deviate from vehicle circulation.

Both existing and new developments should be encouraged to grant easements for pathways and be cognizant of how a rider may travel through the developments to access a bus stop.

How does this strategy support transit?

A complete pedestrian and bike network supports transit access and use by all ages and abilities.

Paths and crossings provide a safer and more comfortable environment for pedestrians and cyclists.

Supports first- and last-mile connections to rider origins and destinations.

Orlando, FL

A.3 PROVIDE WAYFINDING AND INFORMATION

Strategy description

A wayfinding and traveler information strategy should provide highly-visible and intuitive tools for navigating around bus stops and transit centers as well as the overall transportation network. Wayfinding resources should include both analog and digital tools and should consider both vertical and horizontal surfaces for information display. Strategies should also address the needs of those with visual impairments or limited English proficiency. Ideally, a wayfinding strategy should be regionally coordinated to ensure that travelers arriving from throughout the transportation network immediately know where to find information they need and how to interpret it.

Wayfinding strategies should avoid excessive signage which can produce visual clutter that makes navigating the space more confusing. A clear hierarchy of information in the wayfinding scheme is crucial.

How does this strategy support transit?

Makes transit more accessible to new riders by helping them navigate to and from bus stops.

Supports the transit brand and boosts public awareness and recognition of the service.

Helps riders connect with other services and nearby destinations.

Can be integrated with digital wayfinding tools or fare payment systems to support trip planning.

Porterville, CA

A.4 MANAGE THE CURBSIDE TO SUPPORT TRANSIT

Strategy description

Curbside space is limited and most often used for people looking for on-street parking. A transit supportive curbside should recognize that curbside space is also used for people waiting for their bus, parking a car, hailing a cab, picking up or dropping off a passenger, or making a delivery. With restaurant owners increasingly adding outdoor dining areas according to the National Restaurant Association, curbside space is also used as a recreational space.

These competing uses for curb space often pose operational conflict. Curbside space should establish a clear management system that takes into account the peak demand hours for each use. Certain uses should also be prioritized for different land uses. Reliable transit and safe bicycling infrastructure are prioritized first in many leading cities according to the National Association of City Transportation Officials (NACTO).

How does this strategy support transit?

Increases people's mobility options and allow for multimodal connections to transit.

Reduces transit stop delays and conflicts with incoming traffic or other curbside uses like delivery trucks, taxicabs, and cyclists.

Allows curbside space for more competitive uses than on-street parking, such as parklets, bikeshare stations, food trucks, or carshare parking.

Seattle, WA

PART 2:
BUS STOP AMENITIES

A bus stop is more than just a location to load and unload passengers. Bus stop design must consider rider's safety, comfort, and accessibility. They should also consider the surrounding built and natural environment and adapt to context-sensitive design. Bus stop amenities can be installed individually, according to existing and future forecasted transit demand. A bus stop that is safe, comfortable, and accessible can increase transit ridership by fostering trust with riders and creating a low-stress environment.

S.1 Provide lighting, shelter, and other amenities at stops

S.2 Provide secure bicycle parking

S.3 Provide pedestrian-friendly street frontage in new developments

S.4 Include art, landscaping, and other placemaking elements

S.5 Provide seamless connections with other mobility options

S.1 PROVIDE LIGHTING, SHELTER, AND OTHER AMENITIES AT STOPS

Strategy description

Each bus stop should have basic amenities and high frequency bus stops should have enhanced stop amenities to accommodate more people waiting. Basic amenities like unobstructed level waiting areas, route and schedule information, lighting, shelter, seating, and trash cans should be included. In addition to a shelter that shields and creates an intentional waiting space for riders, a stop should also consider shelter footings, landing pads, concrete bus pads, and other ADA accessible infrastructure improvements to ensure transit stops can accommodate both fixed-route and paratransit services.

How does this strategy support transit?

Makes transit more accessible to all types of riders, including people who use wheelchairs or other mobility devices, and people who are visually impaired.

Increases safety, comfort, and convenience for riding EMBARK Norman services.

Philadelphia, PA

S.2 PROVIDE SECURE BICYCLE PARKING

Strategy description

To increase connectivity between biking and transit, a secure place to park bikes can help support multimodal transportation. Secure bike parking is possible at all scales. Long-term bike parking is best suited for a transit center. This is the most secure form of parking that allows riders to store their bikes for more than a few hours or overnight. Long-term bike parking includes bike lockers, enclosed bike cages, bike rooms, or a bike station. Short-term bike parking is best situated near a bus stop. They are mainly used by employees, shoppers, and other visitors.

How does this strategy support transit?

Attracts more types or riders beyond pedestrian riders and long-distance riders.

Bicycle parking at transit stops and stations allows people to connect easily to transit by providing a safe and convenient place to park their bike. Bicycle parking can also alleviate the demand for storage space on buses.

Grand Rapids, MI

Seattle, WA

S.3 INCLUDE ART, LANDSCAPING, AND OTHER PLACEMAKING ELEMENTS

Strategy description

Landscaping, green infrastructure, and art can be used to enhance the function, safety, and aesthetic of transit stops and stations and integrate the transit area into the surrounding community. Utilizing sustainable design and materials, including those that are recycled, durable, or produced locally can help ensure stops and stations contribute to multiple environmental, economic, and social benefits.

Multifunctional landscaping like stormwater planters with ground cover, shrubs, and trees can treat stormwater and provide riders with a sense of comfort. Landscaping and green infrastructure can also be integrated into transit capital improvements.

How does this strategy support transit?

Art and aesthetic treatments at stops and stations foster a sense of community by celebrating the unique characteristics of neighborhoods and create an identity for individual transit stops. These features can also provide traffic calming.

Plantings can improve the micro-climate around a transit station by lowering the urban heat island effect and improving air quality. Trees provide scale, shade, and some protection from adverse weather.

Seattle, WA

Boston, MA

S.4 PROVIDE SEAMLESS CONNECTIONS WITH OTHER MOBILITY OPTIONS

Strategy description

Transit is one of many transportation mode choices a person can use to travel. A well-designed transit service recognizes the variability in a rider's need and should integrate on-demand mobility devices like bikeshare services and ride-shares to operate in compliment with each other.

In addition to bus stop amenities including bike share parking space and dedicating curbside spaces for ride-share passenger pick-up and drop-off near a bus stop, programmatic integration between transit and other mobility options should also be initiated by the city.

A clear guideline and threshold for when and how to install and reserve space for complementary mobility options will help incentivize but also increase accountability when mobility operators enter the City of Norman's transportation space.

How does this strategy support transit?

Make transit more appealing choice as it accommodates different riders' mobility preference.

Supports first- and last-mile connections to rider origins and destinations.

Decreases conflict between bus operation and services with emerging mobility options.

Paris

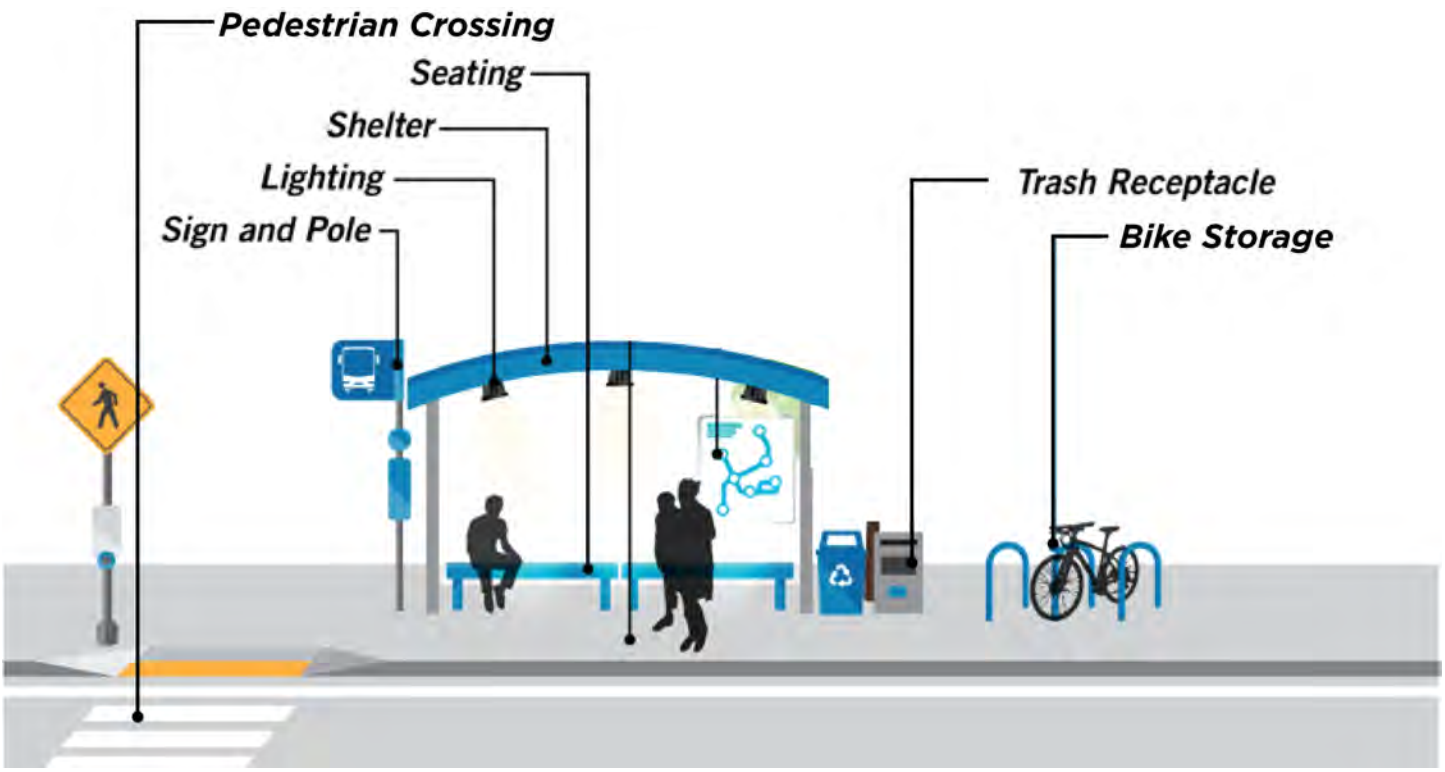
Cleveland, OH

3

AMENITIES GUIDELINES

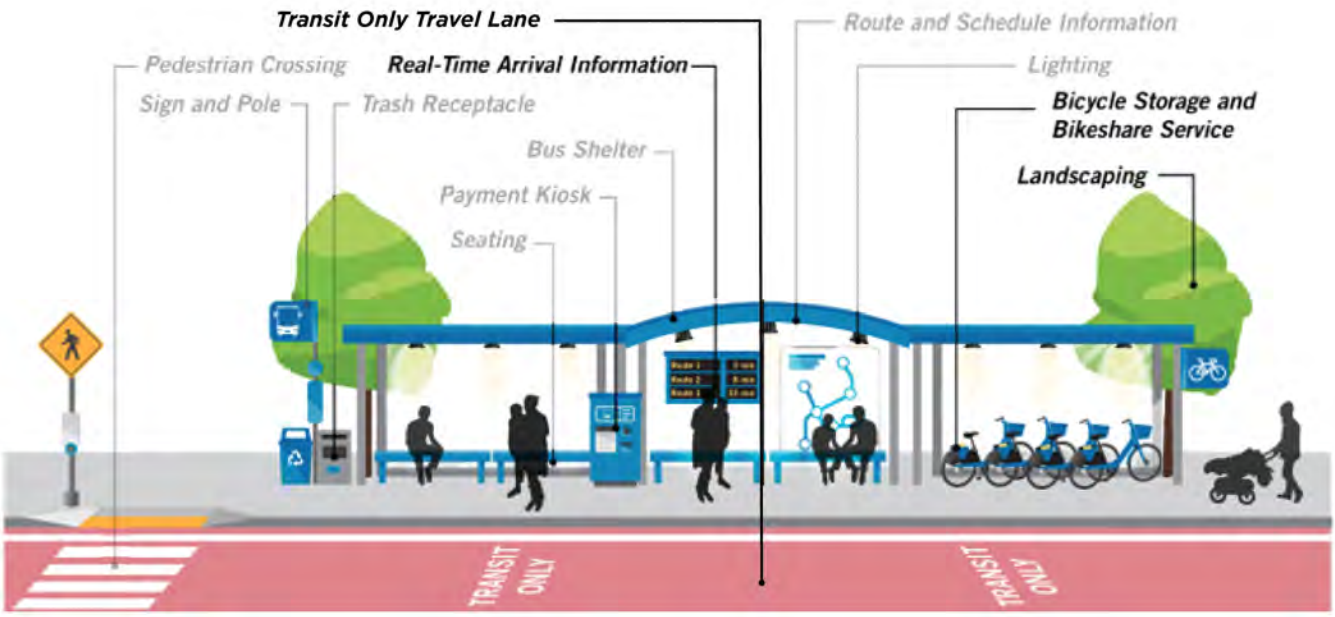
Sheltered Bus Stops

Amenities	Guidelines
Sign and Pole	All bus stops should have a bus stop sign. The type of sign installed depends on the number of routes serving the stop.
Pedestrian Crossing	Bus stops that serve major public, civil, and retail amenities.
Lighting	All bus stops should have external lighting; All shelters should have internal lighting. Lighting can be provided by solar power or hard wired.
Shelter	Bus stops with 20 or more average daily boardings.
Seating	Bus stops with 10 or more average daily boardings.
Route and Schedule Information	All bus stops with a shelter should display the route and schedule information.
Bicycle Storage	Bus stops that serve major public, civil, and retail destinations.
Trash Receptacle	All stops with a shelter should have a trash receptable installed.



Downtown Transit Center Additional Amenities

Amenities	Guidelines
Landscaping	Preserve existing natural shade to the extent possible and install low-maintenance plants to beautify the facility.
Bikeshare/Bike Rentals	Partner with mobility operators to identify key locations like transit stops for bikeshare parking.
Real-time Arrival Information	Provide real-time arrival information displays to improve the transit experience and reduce perceived wait times.
Transit Only Travel Lane	Repurpose general traffic lanes or parking lanes on street segments with high bus activity to maximize schedule reliability.



Appendix D – Outreach Summary

The following outreach efforts served to inform the public about the Go Norman Transit Plan, solicit public input regarding potential transit improvements, and report to the public on input received - all with the goal to maintain a high level of public awareness. Working closely with the City of Norman communications office, the consulting team leveraged existing communications channels to broaden the level of public outreach and engage target audiences and stakeholders.

PROJECT INFORMATION SHEETS

Project information sheets included details on upcoming outreach events and the project website address. Project information sheets were disseminated online, with utility bills, on-board transit vehicles, and at public facilities such as libraries and recreation centers. Project information sheets were updated at each phase of the study.

Figure 1 Project Information Sheets

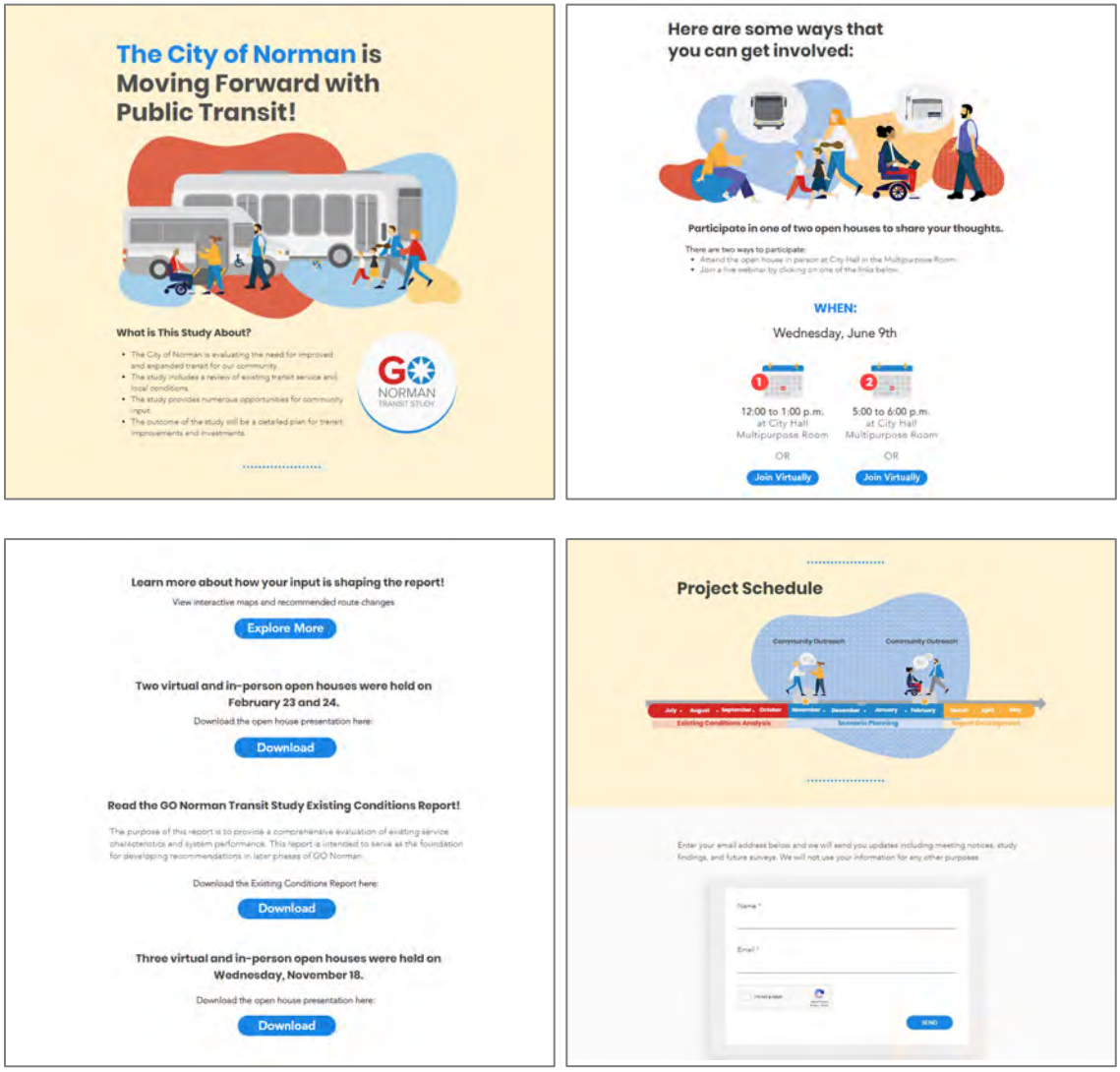
PROJECT WEBSITE

A project website <GoNormanTransit.com> was developed to provide community members with the following:

- An overview of the project
- A project schedule
- Information about upcoming virtual and in-person meetings
- Links to online surveys
- A story map summarizing existing conditions, services scenarios, and recommendations
- Links to download presentations and the Existing Conditions Report
- Mailing list signup

The City of Norman communications office shared links to the project website on the city's social media pages on Facebook and Twitter.

Figure 2 Project Website Pages



NEWS RELEASES

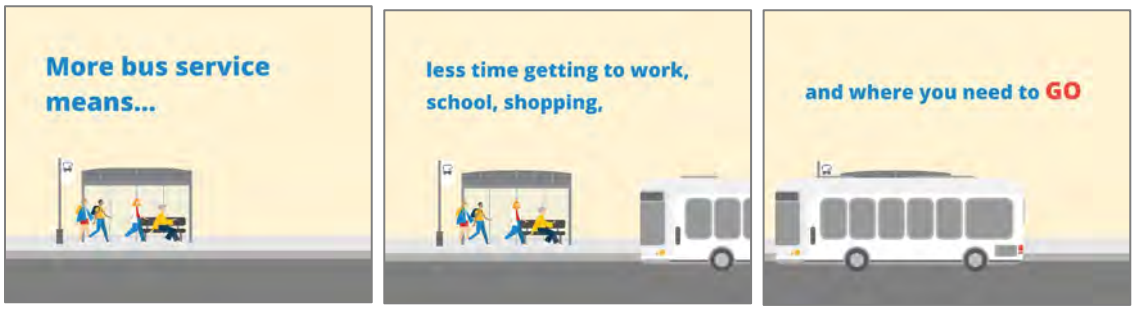
To promote the initial public meetings, the City of Norman issued a news release in November 2020 announcing the study and inviting participation in the public events. The City of Norman pitched the release to KWTV, KOCO, KFOR, KAUT, KOKH, The Norman Transcript and The Oklahoman. City of Norman staff were interviewed on KWTV and KOCO. The story also was shared on the KOKH website and published in both newspapers.

A second new release was issued in February 2021 to solicit participation in final virtual meetings and survey. The City of Norman pitched the story to The Norman Transcript and a story ran February 19, 2021.

SOCIAL MEDIA

In November 2020, social media messages and animated graphics were posted on the City of Norman's Facebook and Twitter accounts to announce the initial public meetings and encourage people to take the online survey. In February 2021, five social media messages were posted on the City of Norman's Facebook account.

Figure 3 Animated Graphic



COMMUNITY MEETINGS

November 2020

The goal of the first phase of outreach was intended to introduce the public to the project and identify aspects of the EMBARK Norman transit system that are working well, that are not working well, and priorities for service improvements.

Three public open houses were held, including an online and in-person option for all three events, on November 18, 2020. A total of three people attended online and three people attended in-person. The open houses included a presentation from the City of Norman and the consultant team, interactive polling activity, and provided an opportunity for a question-and-answer session.

Common questions and discussions involved:

- Requests for more frequent service
- Requests for improvements to bus stop accessibility and ADA compliance across the system
- Extending service to the Norman East Branch Library and Moore Norman Tech
- Creating grid-based transit system
- Incorporating microtransit service into the planning process

February 2021

Two public open houses were held online and in-person on February 23 and 24, 2021. A total of thirteen people attended online. The open houses included a presentation from the City of Norman and the consultant team, interactive polling activity, and a question-and-answer session. Most questions and comments focused on the service alternatives shared during the presentation. Meeting attendees were interested in elements of both route network scenarios.

June 2021

Two public open houses were held online and in-person on June 9, 2021. A total of ten people attended online and five people attended in-person. The open houses included a presentation from the City of Norman and the consultant team and a question-and-answer session.

Questions and comments included:

- The need for later service on Route 024 Norman Express
- Tradeoffs between large and small buses
- Rider requests for later service
- Data sources for the market analysis
- Support for the recommended route network
- Geographical representative of online survey responses
- Transit demand in southeast Norman

STAKEHOLDER DISCUSSIONS

November 2020

The City of Norman and consultant team hosted two stakeholder meetings on November 19, 2020. The two stakeholder meetings were attended by 18 stakeholders representing 14 different organizations, including:

- ABLE Council for Developmental Disabilities
- Association of Central Oklahoma Governments
- City of Norman Citizen's ADA Advisory Committee
- EMBARK
- First Baptist Church of Norman
- Greystar Apartments
- Oklahoma Department of Transportation
- Oklahoma Department of Veterans Affairs
- Oklahoma Transit Association
- Pioneer Library System
- The University of Oklahoma
- Thunderbird Clubhouse
- YMCA

Each stakeholder meeting included a presentation from the City of Norman and the consultant team, interactive polling activity, and group discussion.

Unserved Destinations

During the stakeholder discussions, the groups were asked to identify any areas that are not currently served by transit that may have a need for service. Stakeholder identified the following:

- Norman East Branch Library
- Moore Norman Tech
- Garland Square Apartments
- Walmart on Classen Boulevard
- Oklahoma Department of Veterans Affairs facility

Service Improvements

Stakeholders were asked to identify potential service improvements and suggested the following:

- Adding Sunday service
- Operating service later in the evenings
- Improving service frequency
- Making service more direct
- Adding a shelter to the Norman Central Branch Library stop

February 2021

The City of Norman and consultant team hosted two stakeholder meetings on February 25, 2021. The two stakeholder meetings were attended by 16 stakeholders, representing 13 different organizations, including:

- Association of Central Oklahoma Governments
- Moore Norman Technology Center
- Norman Chamber of Commerce
- Norman Economic Development Coalition
- Norman Next
- Norman Regional Health System
- Oklahoma Civil Air Patrol
- Oklahoma Department of Veterans Affairs
- Pioneer Library System
- Regional Transportation Authority of Central Oklahoma
- Tyler Outdoor
- University of Oklahoma Campus Area Rapid Transit

Each stakeholder meeting included a presentation from the City of Norman and the consultant team, interactive polling activity, and group discussion.

Route Network Scenarios

Similar to other community members, stakeholders were interested in elements of both route network scenarios.

Future Expansion

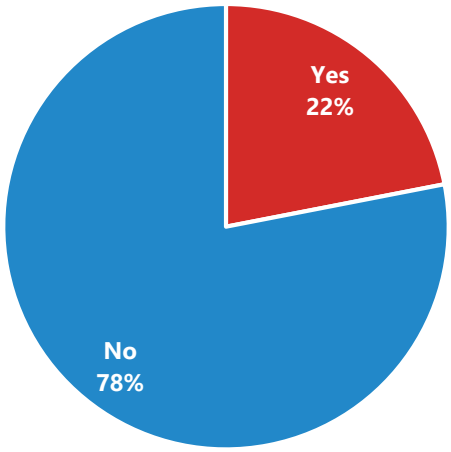
Stakeholders were most interested in expanding transit coverage to new areas and improving route frequencies. Unserved destinations and areas mentioned included: East Branch Library, Moore Norman Tech, and Ruby Grant Park.

COMMUNITY SURVEY #1

The first online survey was open for public comment from November 5, 2020 until December 1, 2020 and received 638 unique responses. This survey was not designed to collect a statistically valid representation of EMBARK Norman transit riders or the Norman community, however the feedback provides insights into the public perceptions of the transit system, priorities for transit improvements, and key unserved destinations.

Of the 638 respondents who participated in the survey, 22% have ridden EMBARK Norman transit service in within the past year, compared to 78% who have not.

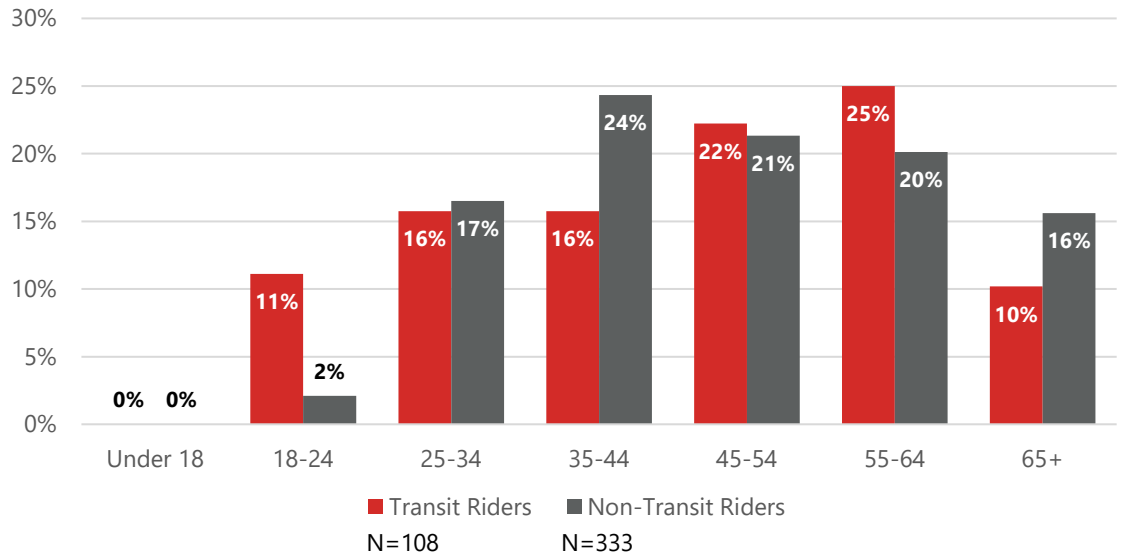
Figure 4 Have you taken EMBARK Norman within the past 12 months?



N=638

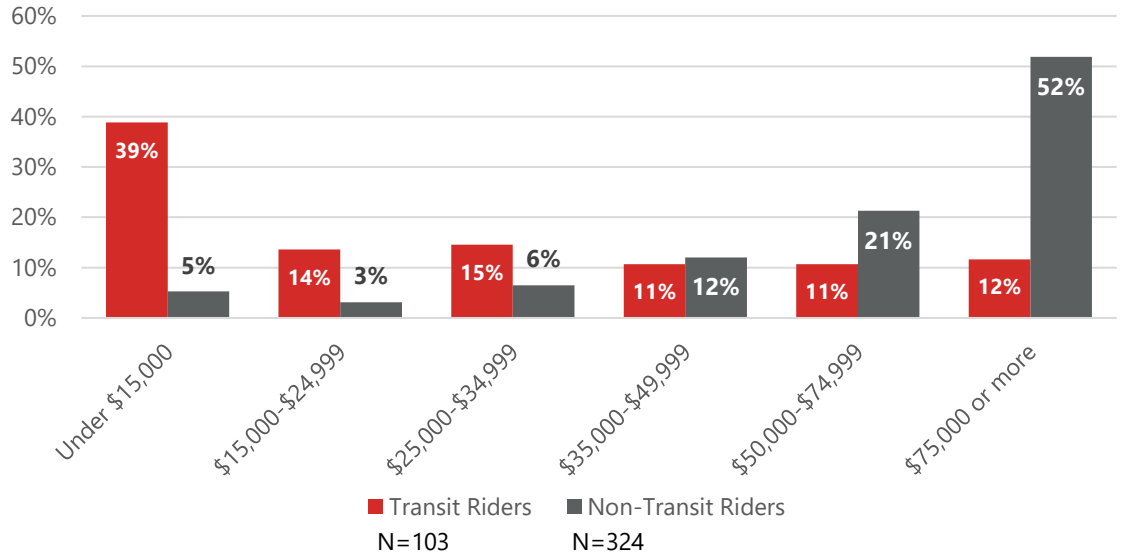
The online survey reached a wide range of ages within the community. Most respondents between the ages of 18 and 24 are transit riders. This age group includes college students and low-wage employees that are more likely to ride transit than other groups.

Figure 5 What is your age?



Transit riders are also more likely to be lower income than non-transit riders. Thirty-nine percent of transit riders reported a household income of under $15,000 compared to 5% of non-transit riders. Alternatively, 52% of non-transit riders reported a household income of $75,000 or higher compared to 12% of transit riders.

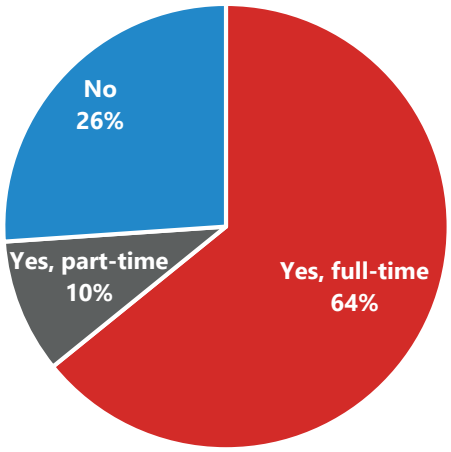
Figure 6 What is your total household income?



Nearly three-quarters of survey respondents reported being employed, either full time (64%) or part-time (10%). Additionally, relatively few survey respondents reported being a student.

Figure 7 Are you employed?

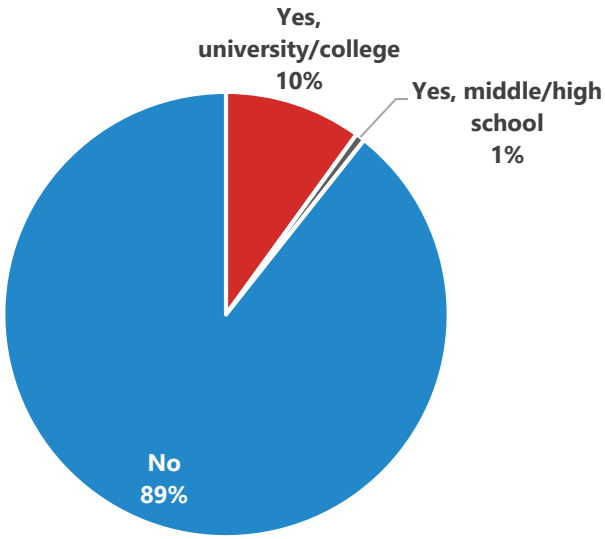
N=441



Ten percent of survey respondents reported being a college or university student and 1% reported being a high school or middle school student.

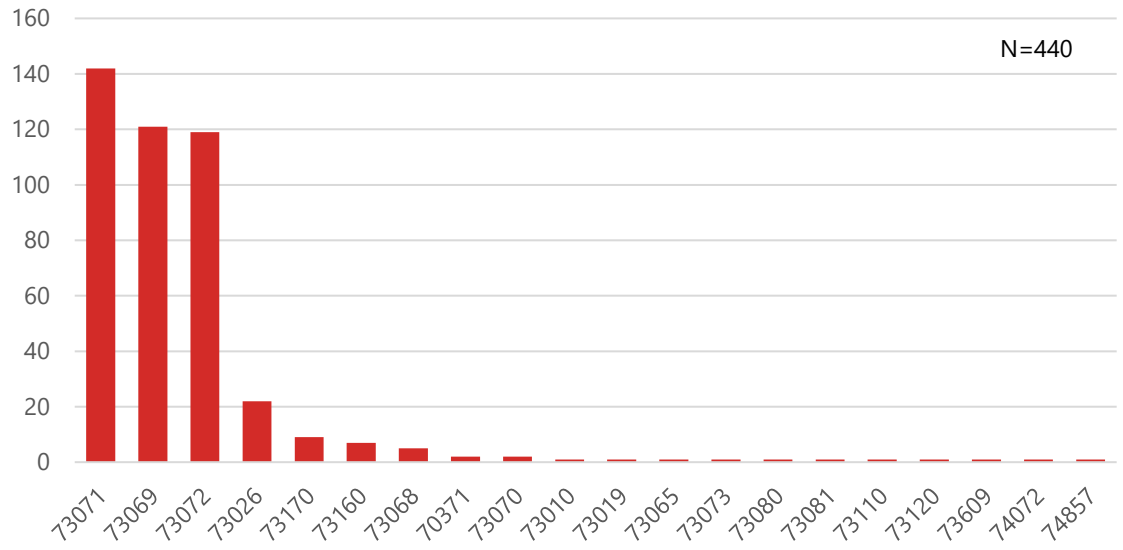
Figure 8 Are you a student?

N=441



When asked for their home zip code, 87% of respondents reported one of three zip codes: 73071, 73069, and 73072. These zip codes roughly correlate with east Norman, downtown Norman and north Norman, and West Norma, respectively.

Figure 9 What is your home zip code?

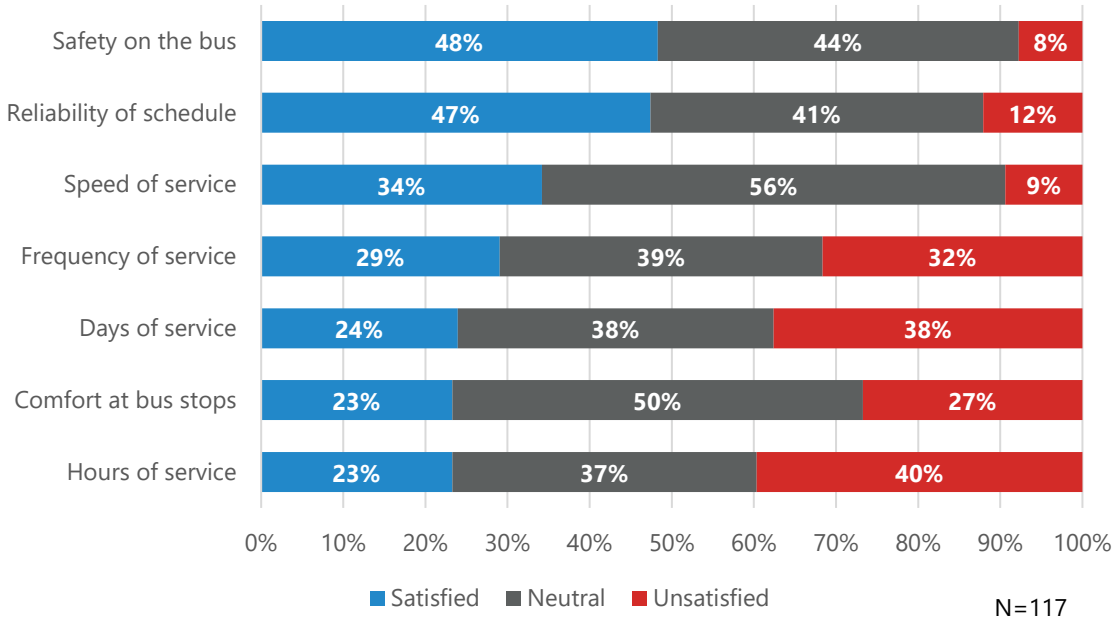


Transit Rider Characteristics

Survey respondents that have taken EMBARK Norman within the past 12 months were asked several questions about their riding characteristics and service satisfaction. While these characteristics are representative of current behaviors, the travel characteristics reported in this survey have occurred in tandem with the ongoing COVID-19 pandemic and may be reflective of distancing recommendations, remote learning, and working from home.

Survey respondents were asked several questions regarding their satisfaction with various aspects of existing EMBARK Norman service. Survey respondents were most satisfied with safety (48%), schedule reliability (47%), and speed of service (34%) and were least satisfied with hours of service (40%), days of service (38%), and frequency of service (32%).

Figure 10 Please rate your satisfaction with the following aspects of EMBARK Norman service

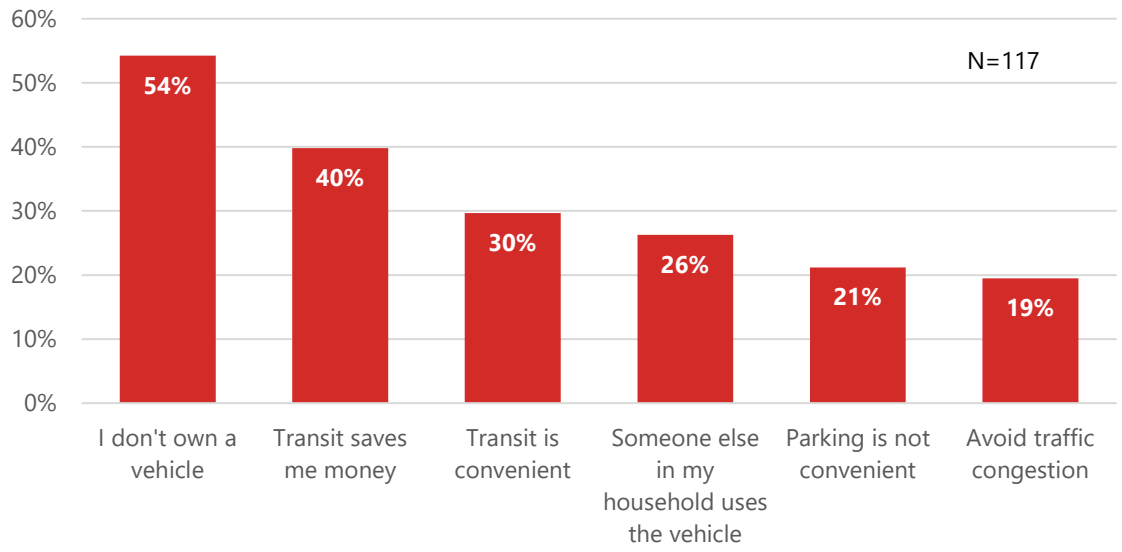


This feedback suggests that the highest priority service improvements for EMBARK Norman riders include:

- Adding earlier morning or later evening service
- Improving bus stops
- Adding Sunday service
- Improving service frequency

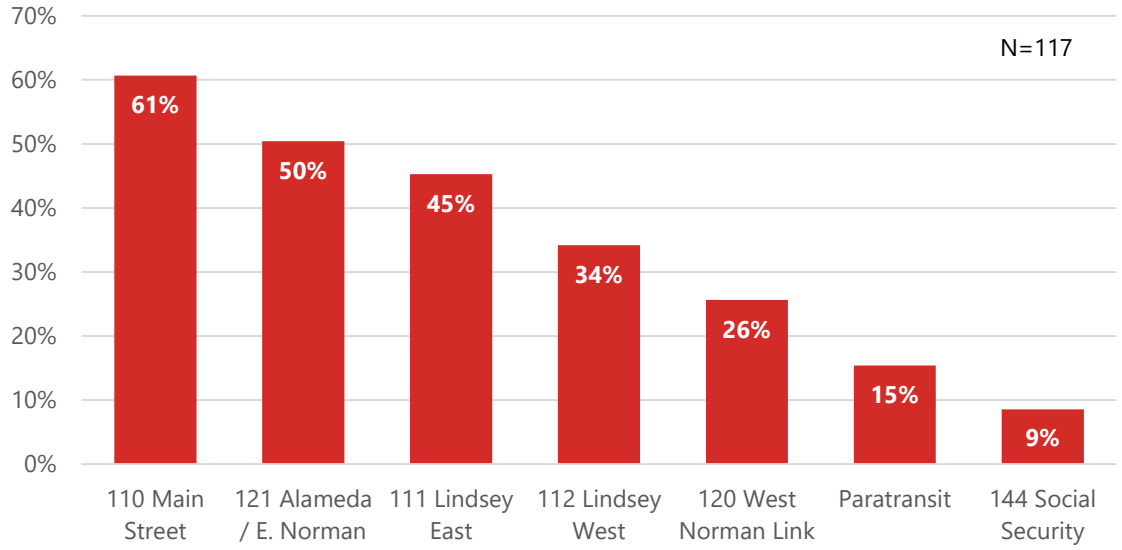
When asked why they ride transit, most survey respondents identified cost related reasons, including not owning a vehicle (54%) and that transit saves them money (40%). Only 21% of respondents ride transit because parking is not convenient and 19% to avoid traffic congestion. This is reflective of the built environment in the City of Norman, traffic congestion is relatively low, and parking is readily available, making public transportation a less competitive alternative to driving. Focusing on improvements that improve competitiveness with driving, including frequency, speed, service span, and weekend service appear to be the highest priority improvements for survey respondents.

Figure 11 Why do you ride transit?



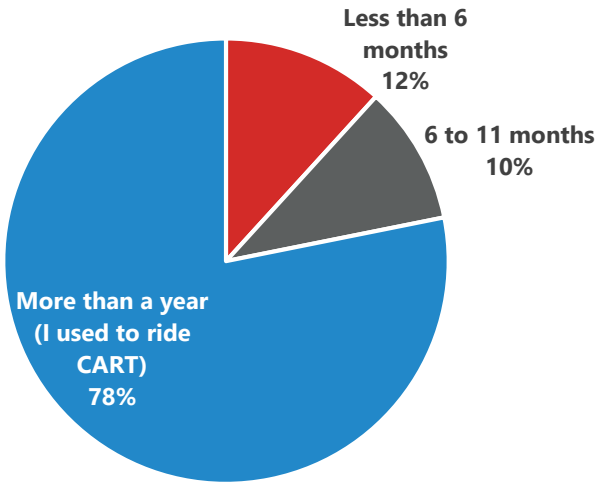
Survey respondents most commonly ride Route 110 Main Street (61%) and Route 121 Alameda / E. Norman (50%). Despite having the highest recorded ridership, Route 111 Lindsey East was only used by 45% of survey respondents. This may be reflective of changes in travel behaviors associated with the COVID-19 Pandemic and remote learning at OU.

Figure 12 Which EMBARK Norman routes do you ride?



Of the respondents who use EMBARK Norman service, 78% are long-time riders having used the transit system for over a year.

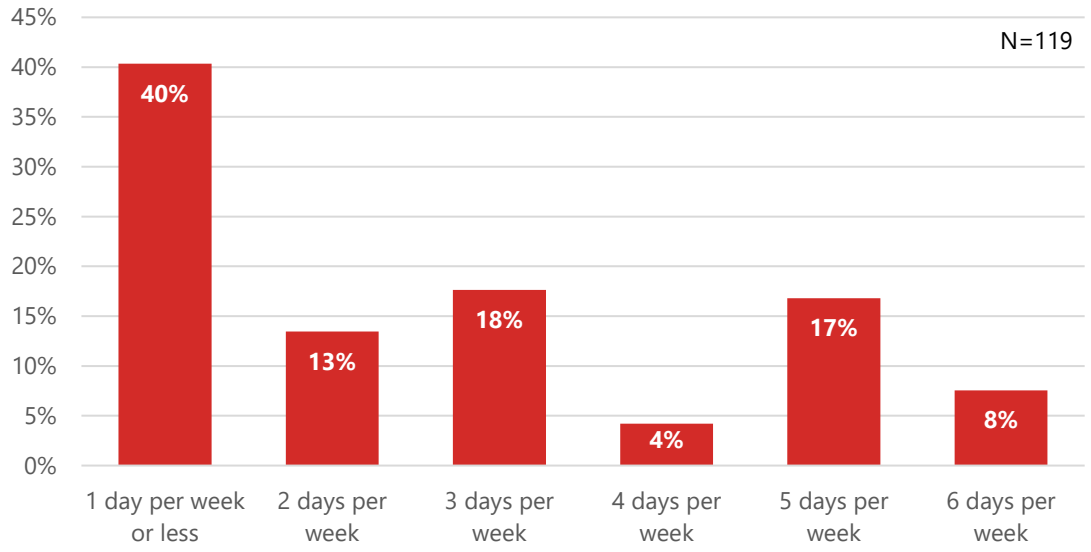
Figure 13 How long have you been riding EMBARK Norman?



N=119

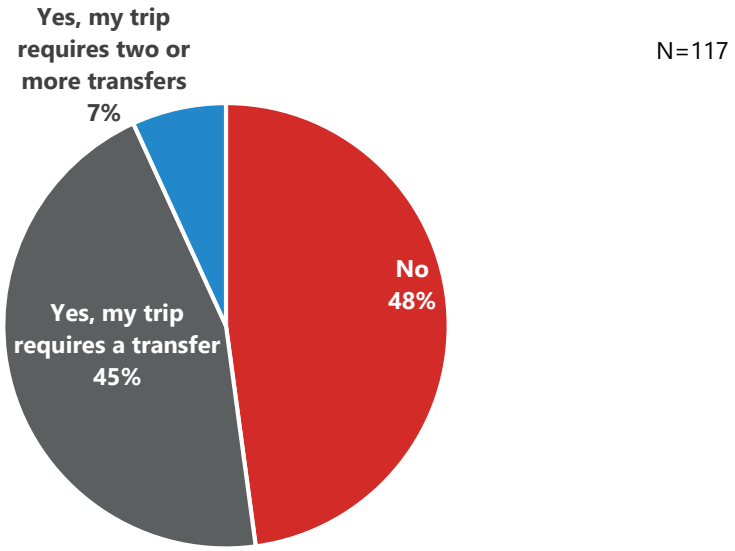
An additional 10% of respondents have ridden between six and eleven months and 12% have been riding for less than six months. Most riders appear to use EMBARK Norman service occasionally, with 40% of respondents riding once per week and an additional 13% of respondents riding twice per week. About a quarter of respondents were frequent riders, with 17% riding transit five days per week and 8% riding six days per week.

Figure 14 How often do you typically ride EMBARK Norman?



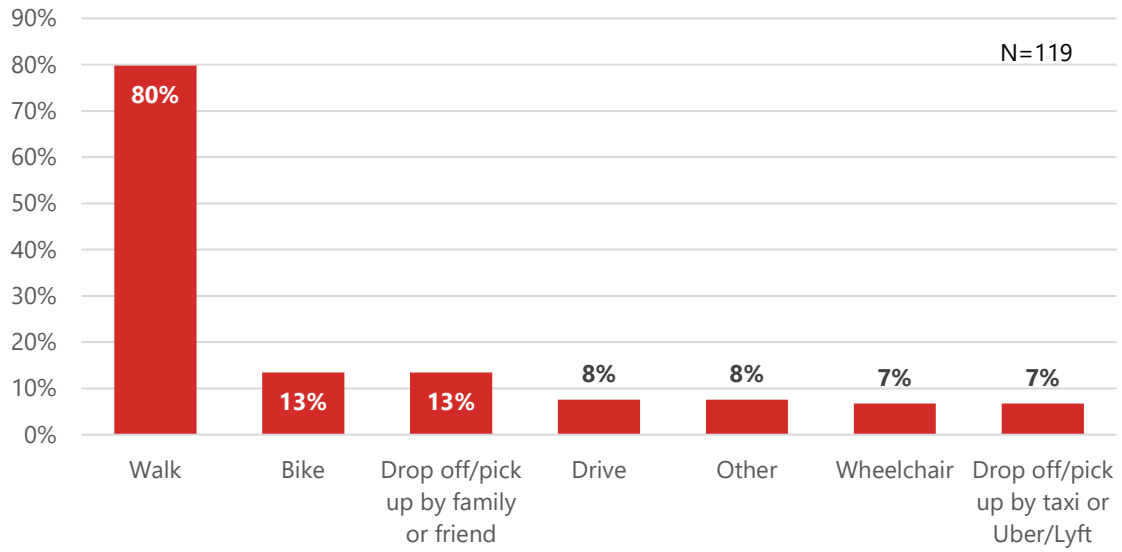
Fifty-two percent of survey respondents indicated that they need to make at least one transfer to complete their trip on EMBARK Norman service, with 7% requiring two transfers. This high transfer rate is due to the hub-and-spoke service model operated by EMBARK Norman.

Figure 15 When riding EMBARK Norman, do you typically transfer between buses?



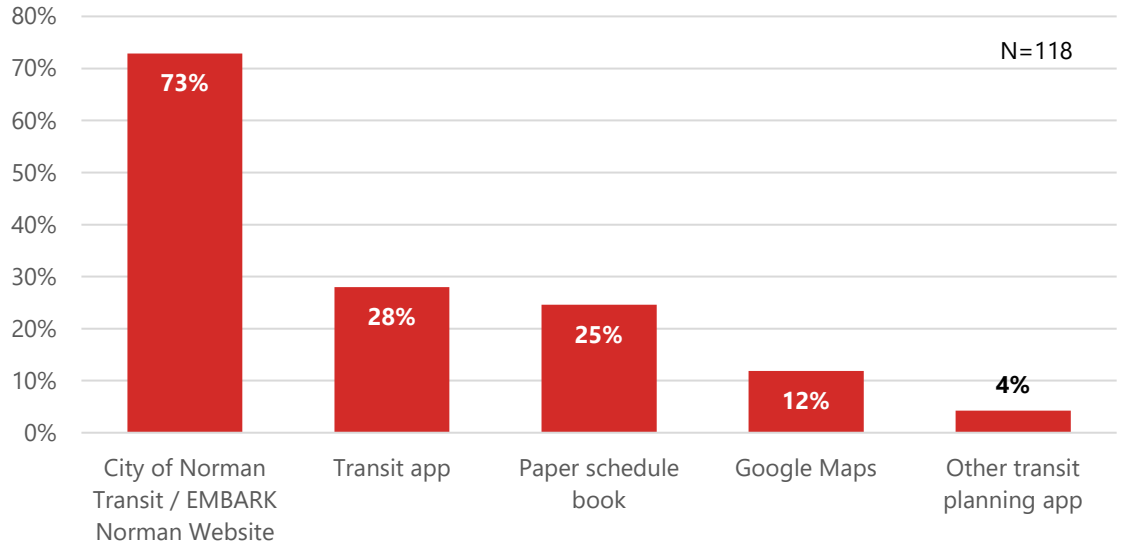
When asked how they typically travel to and from bus stops, 80% of survey respondents reported walking with the next highest modes (bicycling and drop off/pick up by a family friend) reported by only 13% of respondents.

Figure 16 How do you typically get to or from bus stops?



Nearly three-quarters of respondents (73%) reported obtaining their route/schedule information from the City of Norman or EMBARK Norman websites. However, numerous open-ended comments identified communication and marketing as key improvements for EMBARK Norman to make. This may be a key area of improvement for the agency to communicate with the public about the service and any potential changes in coordination with the *Go Norman Transit Plan*.

Figure 17 How do you obtain route and schedule information?



Open-Ended Comments

Survey respondents provided more than 1,000 unique open-ended comments on the survey in response to three distinct questions:

- Are there any places that EMBARK Norman should go that it does not go to today?
- Are there any specific EMBARK Norman bus stops that need to be improved?
- Do you have other comments or suggestions for improving EMBARK Norman service?

Unserved Destinations

Survey respondents provided 379 unique responses when asked if there were any places that EMBARK Norman should go that it does not go to today. Some responses included specific destinations while others included multiple destinations within a specific area of Norman.

Specific unserved destinations identified included:

- Moore Norman Tech
- Norman Public Library East
- Walmart Supercenter at Classen Blvd. and Cedar Ln.
- Walmart Neighborhood Market at Classen Blvd. and Constitution St.
- East Robinson Street & 12th Ave NE

Bus Stop Improvements

Survey respondents provided 310 unique comments regarding specific locations for bus stop improvements. The most mentioned locations include:

- Norman Public Library Central
- Norman High School
- Crest Fresh Market
- Irving Middle School
- Sooner Mall
- Berry & Denison (across from Dollar General)

Other Comments and Suggestions

When asked for additional comments or suggestions, survey respondents provided 324 unique comments. The most common comments and suggestions included:

- Requests for service to more areas of the city
- Requests for more frequent service
- Requests for Sunday service
- Requests for service later at night
- Requests for improved communication from the City and EMBARK Norman

Open-Ended Comments

The following open-ended comments have been edited for clarity and grammar.

Question: Are there any places that EMBARK Norman should go that it does not go today?
yes
On the west side more and south of the university more and expanded a bit for those that live at the edge of the town
I'm okay with the routes that I need to ride.
OKC
Libraries
South of Highway 9 like Eagle Cliff
South Norman by Noble
During the outbound trips for rt 21 & 10, it would be nice if they had a few more stops closer to the center of Downtown. On the inbound stops for rt 21, it goes right by the courthouse and senior citizen center (which is GREAT) however, it would be nice if they were to incorporate that into the OUTBOUND rt as well.
N/A
Need to add Norman to Moore to OKC to etc....
Lake Thunderbird
The apartment and Walmart near highway 9. They have a lot of apartments, businesses but some people cannot reach them.
24th street S.E needs a bus stop some of us who can take that walk do but there are so many who can't. We need to be able to get to the stores and shop without spending money on uber or the city cab. Most of us are on fixed income So yes, we need a bus to get us around
All cities
A little farther north from the Healthplex.
I'm not sure of the places it goes now but the corner of Robinson and NE 12th would be a good stop.
I would love it if EMBARK could add a stop in Hall Park
Norman Veterans Center
many more neighborhoods
Moore
Didn't know Norman had a mass transit system. Moved back to my hometown, 1975 NHS grad, 3 years ago and this the 1st time I heard there was a mass transit for citizens of this community. It was always "students only" before...
Outlying areas such as east Norman and the south Walmart area!
The Ave at Norman and Varsity House. Lots of residents that would utilize public transportation that are unable to
Do not know
No
Brick town more often and at night of thunder games

Question: Are there any places that EMBARK Norman should go that it does not go today?
Norman Veterans Center 1776 E. Robinson
no
Can't think of one.
Get rid of the buses and have more vans to take folks to the doctor or hospital.
South of Hwy9, no service to a large residential area with large apartment complexes, etc. near 12th Ave SE and Cedar Lane Rd.... and south to Eagle Cliff.
Mission Norman if it doesn't already travel that far out.
Absolutely...needs to go to all grocery stores, doctors' offices & both hospital locations for everyone not just those with mobility issues
OU Research Campus
I think it is fair.
The buses originally ran every 30 minutes on almost every daily route. We would all like for all buses to run every 30 minutes and Sunday service as well.
Just places of businesses so that people who need to work can work.
Walmart on Classen and Oak Tree Ave.
May be east to 36th Ave. or at least to the east side library.
Not sure
AWAY! GIANT WASTE OF CITY DOLLARS!! YOU COULD GIVE OUT FREE CAR RIDES CHEAPER AND MORE CONVENIENTLY. LOWER CARBON EMISSIONS THAN RUNNING EMPTY BUSSES!!! ****STICK TO WHAT CUITY GOVERNMENT SHOULD BE DOING!!!**** ******FIX THE STREETS AND FUND THE POLICE!!!!!!******
Another bus eastbound on Robinson. Any kind rail line.
Not sure
Go direct to Noble, OKC, Pursell from Norman
VA center, east side library, and Riverwind casino
NO
N/A
I cannot think of any place right off!
Eagle Cliff edition would be great! I just moved there.
I would be nice if it went to more grocery stores.
Walmart
Not sure
I don't know where it goes.
Unknown
None
there are no buses in the SE area of Norman

Question: Are there any places that EMBARK Norman should go that it does not go today?
No
West Walmart, south Walmart,
Does it go to the jail? What about the hospital? Porter and Tecumseh.
South Oakhurst, Alameda and Porter, Beaumont and Vicksburg, Boyd east of 12th
I don't know the routes
No
Really don't know where it does go - not educated on the Embark other than the campus loop
We live east of 60th NE. Where is our bus stop?
not sure
Access to all public places in the city.
No
Never ridden so would no know
More stops on the E side.
No
It needs to encompass all areas of our city even those toward the East. To be effective it must provide an opportunity for all citizens in the non-rural areas to ride.
Nowhere
If EMBARK can't, I-Drive can.
All routes should include the Santa Fe depot.
Not sure
We should remove EMBARK and go to a better financial responsible transportation system rather than large buses driving around all day with few people using it.
Unk
No
You should get a bus to go to the Riverwind Casino
I am unaware of where it goes today, which I view as part of the problem.
EMBARK should transport HS students from the two high schools to Moore Norman Technology Center and back to the high schools twice a day.
I don't know where EMBARK goes
there are no bus stops close to my house that would make it possible for me to use the EMBARK transit system
Crosstown
Victory family church
Robinson crossing and locations north - apt complexes at Rock Creek and NW 36th
to all public services
Oklahoma City, Moore, Neighborhood/ businesses near highway 9

Question: Are there any places that EMBARK Norman should go that it does not go today?
Yes - further South on 77, Moore
Moore Norman Technology Center
Norman Public Library East
Moore Norman Technology Center
not sure
Moore Norman Technology Center
more shopping areas
No
No
No
More coverage into 24th Ave NW from Boyd to Rock Creek.
Yes, It should have a pick up and drop off location at Moore Norman Technology Center. I would also recommend setting up a bench/booth (bus stop cube) where riders can wait for the next bus out of the weather elements.
Moore Norman Technology Center on Franklin Road
Moore Norman Technology Center, Cleveland County Detention Center,
Moore Norman Technology Center Franklin and 12th NW
Moore Norman Technology Center
East Norman
Closer to Walmart
Ward 6
Moore Norman Technology Center
MNTC
Moore Norman Technology Center
Moore Norman Technology Center
Not that I know of.
Moore Norman Technology Center City of Moore
Moore Norman Technology Center - Franklin Road Campus
need stops at or near Moore Norman Tech Center, Both hospitals, more stops at OU campus
Yes, Moore Norman Technology Center
Robinson and Rock Creek around Porter, 12th Ave NE and 24th Ave NE. Highway 9
It would be nice if it was closer to the Walmart. I have tried to see if there is a bus but there isn't
I don’t know
Moore Norman Technology Center
MNTC/OU/Apartments

Question: Are there any places that EMBARK Norman should go that it does not go today?
Moore Norman Technology Center and an OKC bus transfer stop
Moore Norman Technology Center
Moore Norman technology center
MNTC Franklin Road Campus
Moore Norman Technology Center (Franklin Campus)
Moore Norman Technology Center - The closest bus location is close to 3 miles away.
Yes. Moore Norman Technology Center
Yes, it should go to Moore Norman Technology Center.
Make Moore Norman Technology Center a stop on your routes
Moore Norman Technology Center
Moore Norman Technology Center
Moore Norman Technology
Moore Norman Technology Center
Highway 9
Moore Norman Technology Center, 12th Ave NW & Franklin Road
Moore Norman Technology Center
Moore Norman Technical Center
Moore Norman Technology Center
There should be stops at Moore Norman Technology Center Franklin Road Campus
Moore Norman Technology Center
MNTC Franklin Road Campus
Moore Norman Technology Center
Moore Norman Technology Center
Moore Norman Technology Center East Side Library
Yes, the Moore Norman Technology Campus desperately needs a stop for students.
Moore Norman Technology Center
Moore Norman Technology Center
near west side residential areas
Hard to say. I'm increasingly concerned about elderly residents and their ability to get to the store and such, but they're so dispersed across the city.
Moore Norman technology center
Moore Norman Technology Center, Max Westheimer Airport
Not sure
Franklin Road

Question: Are there any places that EMBARK Norman should go that it does not go today?
No
Moore Norman technology
Moore Norman Technology Center
n/a
MNTC Franklin Road Campus
I work with Moore Norman Technology Center and there is no bus stop anywhere near their campus in Norman
Yes, Moore Norman Technology Center
From areas around 24th NW to the High schools and Technology center and to the Mall, Sam's club and Walmart
Crest from rock creek and Stubbeman
There needs to be more stops. North to places like the Jail would be nice. If you get arrested you have to walk from the jail to Norman north high school to catch the bus. That's a long walk.
Moore Norman Technology Center
Yes
MNTC
Moore Norman Tech
They need to go to Moore Norman Technology Center off Franklin Rd and 24th
Moore Norman Technology Center -Franklin road
N/a
Stubbeman
Porter Ave, Flood, Classen Walmart, NCED, Moore, Sooner Mall
No
Hall park area
possibly to the south Moore area
not sure
No sure
Unfortunately, I do not ride the bus system so am unaware of the routes and locations.
No
No
Both hospitals, university town center, embassy suites conference center, sooner fashion mall, casino, Moore Norman tech, Norman north HS
Multiple morning and evening schedules to OKC Transit Center, OUHSC and Will Rogers Airport not just once to and once from a day
health department
No
No

Question: Are there any places that EMBARK Norman should go that it does not go today?
California
It is a boondoggle and waste of money.
Westside Walmart and going out on Robinson and 12th St.
South of highway 9 and Classen
It's a waste of money.
YES! South of Hwy 9, into Eagle Cliff apartment areas
It should go to places like Sitel and other farther out places where there's businesses and homes but no bus routes. More parts of Norman please.
Garland Square, Chapel Ridge, and Emerald Green apartment complexes. These areas have many low-income people living there where they would need public transportation.
to Woodcrest drive right off rock creek and porter. Or stop by the 7/11 on the corner. Would use very frequently if stop is added.
It should go anywhere it's needed.
It would very helpful if there stop near more physicians' offices and clinics. Many people don't go to or miss their appointments due to lack of transportation.
I don't know where it does/doesn't go.
24th sw. south of Robinson to main
Close to hwy9. East Norman Library.
I would love to see a comprehensive, full town, full day, schedule.
No
Moore, South OKC, Lake Thunderbird and other points along SH-9, possibly more dense service for points downtown.
Most importantly the handicap accessible buses are important with personalized service for seniors and handicapped in Norman. Get tips from Kiwanis Kruiser that's been operating since 1970's, I think. Most the other buses have few to no persons on that I've seen so perhaps smaller vehicle like handicap van bus and more pickup times. OU should chip in if going to use game. The OU trolleys are cute and perhaps something like that could run on Main St. and Boyd for historic area. However, if Norman cannot afford more than transportation for handicap and elderly smaller vehicle please don't over extend Norman financially because OU was losing money on. Encourage persons who can walk and bike to work.
Yes
None that I can think of.
A lot of communities north of Robinson are not served by current routes. As the city grows outward, the bus routes need to as well.
I don't know, where is the map?
It would be convenient if there was service between Main and Robinson on 24th Ave NW.
Duhhhh
no
no

Question: Are there any places that EMBARK Norman should go that it does not go today?
Link the areas where OU employees live and OU! If you could get 25% of OU employees out of their cars and onto the bus, it would be a major improvement!
East Norman on 24th by Reagan!
North Norman
I'm not sure.
Clear connection to rail and OKC
don't know
Don't know where they go now. That is one reason not to ride. We have way finding for cars. Need something to show routes and times available at bus stops and elsewhere.
I feel public transit should be available within a mile of every major shopping area and housing center
All previous stop locations that were in place prior to the service changes OU forced on Norman. People used those locations for many reasons
Although the buses go most places that I frequent, the circular routes make it difficult to travel to destinations and return home in a short time. Looking forward to more grid service and more frequent service as the budget allows. More service is needed for the southeast part of Norman. Once the Norman Regional ER and clinic opens at 24th SE and Hwy 9, service will be needed for employees and residents seeking medical care.
Noble
Make more frequent stops along 24th NW
I don't know where it goes
Porter and Rock Creek. Haven't looked at a map of routes lately, but many routes should go near or by downtown and the main Library, and Eastern/Western routes should go by the Eastern/Western Libraries.
East Library; Walmart Neighborhood Market on South Classen; 24th and East Lindsey;
Dodson's
We live east of 60th NE. EMBARK does not go anywhere near here.
Less places probably.
All of Norman should be served by bus service. Not, necessarily by EMBARK however. I think that the city should have it's own buses and that bus service should be a city function.
No
It is a waste of money. It would probably be cheaper to uber the passengers around town.
No. It isn't needed at all and not worth our tax dollars
Moore Norman technology center
not familiar
East library
East 24th street to Hwy 9 and Robinson St
Don't know where it goes
The transit buses do not service East Norman. The furthest east is Porter Avenue. This leaves a lot of residents unable to use the service.

Question: Are there any places that EMBARK Norman should go that it does not go today?
The central transit hub needs to be moved and there needs to be direct service east and west on Main Street (no big loops).
Oklahoma History Center
Walmart at Classen & Hwy 9 would be nice.
Do not use
Operate on Sundays for folks who go to Church and/or work
More east side access, slightly beyond 24th Ave E
Yes 24 and E Linsey
Yes, paratransit is limited.
yes - We have a need for Embark on the east side of Norman for easier access for elderly and low-income persons
The Cleveland County complex, the future site of The Well
NA
Not a user...unfamiliar
I cannot answer that because I have not reviewed where it goes.
Many more stops. Perhaps having more stops further west. I would use public transportation except the trip from home to work would take over an hour. By car it's 12 mins.
Can't think of any
East Library
I'm not super educated on where the bus stops.
I don't think so but I only use it from West Lindsey to campus as needed.
No
I don't know.
It would be great if Embark would expand the Norman East/Alameda route to go to Norman East Library.
To the far eastern boundary of Norman Late evening films & events
No
I don't know
1) Cleveland County YMCA (Not sure if it goes here already) 2) Moore Norman Technology Center, Norman campus (12th Ave NW & Franklin Road)
Don't know
It should take homeless people on one-way trips from Norman to places like Austin, Denver and Portland.
Unsure
Garland Square Apartments, 201 Woodcrest Dr. Norman, OK 73071, (Rock Creek and Porter Ave)
South of Hwy9 in the Trails
The routes need to be more direct. The giant super loops make trips too long and too inconvenient.

Question: Are there any places that EMBARK Norman should go that it does not go today?
Norman Library East
It should stop at all major intersections and government agencies/buildings.
Unsure all the places it goes now
Anywhere those who rely on the services need it to go to perform necessary business
Uncertain
There needs to be a stop closer to COCMHC; the walk from the stop next to McDonald's is too much for a lot of patients.
Don't know
I don't know where it goes and I never use it.
More stops more frequently on west side.
NW Norman to OKC
The new South East Walmart. Farther East on Robinson. East in Rock Creek to Porter.
I do not know of any.
I have no idea. Public transportation in central Oklahoma is so weak I never think of it as a reasonable option.
n/a
Not sure. But a route to and from NWC and Max Westheimer Airport by way of Imhoff and Berry Rd would be useful.
Not aware of any.
UNP. And more routes from South and East to North and West - without taking multiple buses
Wildwood Church, OKC, Chickasha Lights, Lake Thunderbird Nature Center, & Moore Warren Theater.
Past Oakhurst going East and further down Main Street past Sooner Mall.
EMBARK needs a Center City or Core loop that provide 20-minute to half hour pickups within central Norman.
no opinion
should make stops in the university area
Connectivity to OCCC or Rose State for concurrent enrolled high school students and adults gaining a higher-ed degree would help. Currently, transfers are required, and the trip takes ~3hrs. However, this may be outside of the scope of EMBARK Norman.
Close to schools. Eisenhower Elementary
Not sure
No
Ward 5
Close to Moore Norman Technology Center.
Have no idea
east highway 9 hwy 77
Everywhere

Question: Are there any places that EMBARK Norman should go that it does not go today?
None that I am aware of
The route currently serves most my needs as far as location is concerned. Weekends for restaurant workers and days CART isn't running is a long walk.
Yes
further north and east
Noble
I have not used EMBARK
No. The system is currently too difficult and slow to use to consider it an alternative to driving.
I don't know, I've never used it.
Sutton Wilderness/griffin park area
Not for me
I don’t know
No
No
Garland Square Apartments
Takes too long when the car only takes 15 minutes to go anywhere in town.
I never knew that Norman had a transit service.
There needs to be a campus to downtown route.
Oklahoma City
I don’t think I ever realized Norman had public transportation. So everywhere?
I don’t know.
Needs to go further up into University North Park. Also needs more service in East Norman.
To my knowledge, Embark does not go to University North Park. I think it should be easy to travel from any of the major residential areas to the city's most popular shopping center.
No
Closer to Porter and Tecumseh
Robinson towards the VA center
East side library.
South to the Cedar lane Walmart.
I think it should go less places
The East Norman Library needs to be added on to a route so that residents on the east side of town can use the library.
No idea
The se part of Norman out towards the new Walmart on cedar lane
Not sure

Question: Are there any places that EMBARK Norman should go that it does not go today?
To hell
36 street stop near hidden hill
Riverwind Casino
all of Cleveland County
Don't know. Haven't ever used it.
Who knows. Need a map to evaluate this question
Yes, pass E 24th avenue, and maybe have small routes around the neighborhoods that are in high need of public transportation
No Opinion
I don't know where it goes currently.
He entire east side of Norman.
Public schools
Better networking with OKC, Edmond, OUHSC, and options for connections to Tulsa.
Much more comprehensive routes and more frequent service throughout Norman.
Somewhere between Flood and the new Transit station off of Tecumseh.
OKC
Cleveland County Detention Center
I don't know where it goes now.
The newer businesses on Constitution and those near Highway 9 and Jenkins
Can't think of any
I don't know.
12th and Robinson. IDK if it's changed, but it used to be impossible for my kids to get from south east Norman (12th n Lindsey) to Westwood Pool. I encourage you to make sure ALL kids in town have access to the pool, library, rec centers, etc.
Reagan elementary
new Norman regional hospital location off Hwy 9
I'm not sure.
Norman Public Library East. This would increase access to those who desperately need service to vital resources such as internet access, educational resources, and more. This would also help with the limited parking available, allowing the option to take public transit to/from the library. It would be amazing to have all three libraries served by the public transit system. Either extending the line by adding a new stop or spacing out the many stops along Alameda. The bus could easily turn around in the parking loop. Moore Norman Technology Center would also be a useful stop if it's not already.
East Norman!
No
I live in NE Norman. North of Rock Creek and East of NE12th. I think the closest bus stop is about 2 miles from my house, so I don't use it.

Question: Are there any places that EMBARK Norman should go that it does not go today?
Cedar Lane Subdivision
No
Sutton Wilderness/far NE Norman, far S/SE Norman (i.e., Hwy 9/Classen Area)
Yes. Walmart at Cedar Lane and Classen. East side library.
No. It covers everywhere
Idk
To all libraries. To all doctors' offices. Extend to 48th in both directions and south of hwy9
Don't use it
We need more stops in general, but it's been a while since I used it. So I couldn't say specifically right now.
Ward 5
More places, the better.
All Norman Forward projects! Healthplex, Westwood pool
no
Regular trips to OKC Routes that pass all public schools
No
I cannot take the bus as it is too far from my house.
Jail, vo-tech, Eastside library, York, & veterans center

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
yes
Just wish they all had protection from rain or too much sun so shade as well.
The mall bus stop needs a shelter, I think.
All
no
N/A
All of them places that have shelters so if it's raining, we can places to stand under
It would be nice to have more actual covered stops. The ones in front of the apartments along Biloxi Dr. are only benches or signage. There are quite a few riders in this area. Can covered stops be added??
Better shelter
need add shelters everywhere times and routes and etc...
More shelters
No but we need one on 24th S. E to be able to get around.
Routes availability
An actual stop at the Central library.
unsure
yes, all the bus stops that don't have shelters
On 12th street
NA
unknown
No
Unknown
no
Can't think of one.
All of them
nil
No
Yes all should have areas to protect from weather
Sooner Mall
I think they are fair.
None of the EMBARK bus numbers for 41411 are correct on several stops.
Unknown
Not sure
Yes!! Make them ALL go away!!!

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
ones without any shelter.
Not sure
Alameda and 12th street, both sides of Irving middle school,
No
N/A
Nope!
East side
I don’t know
More clearly marked
Webster
No
No
Website needs updated with all stops. Don't know which are in service because website list three per route.
NA
No
We never use EMBARK bus stops, so no comment.
Don’t know where they are
Not that I am currently aware of
No
Unsure never notice the stops
All need covered shelter and seating. All need a route map.
No
Not specifically
Nope
No
None of which I am aware but basic standards should be adopted for all stops with weather protected shelters.
Not sure
We should remove EMBARK and go to a better financial responsible transportation system rather than large buses driving around all day with few people using it
Unk
NO
None that I can think of
Unsure
All

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
I live in Woodlake Estates and the closest stop is at Norman north. Need a stop at porter and rock creek.
No
Berry/Iowa for Main street. Inbound stop on Main/Berry. Webster/Main (inbound & outbound). Main/ Cockrel (center for children/ families) Berry/Westheimer & Halley/Westheimer. Westport/ 24th Ave NW (south of Homeland). Peters/Tonhawa & Peters/Comanche.
Yes, several needs shelters that only have benches. Particularly on East side near 12th & Alameda
Not that I know of.
covered waiting area at one of the bus stops on Webster near Main (stops are close enough to each other that could be used by people waiting at either stop)
No
Not with my tax money
No
No get rid of it. No one rides it. Waste of money.
Many do not have shade or protection from rain. Especially important for the elderly. I think the ones on Main street loop west of I-35 fall into this category.
None
All
Not that I frequent
Most of them
unknown
Can't think of any
unknown
I would like to see at least a bench at Brooks and Barkley.
None that I am aware of.
N/A
Not that I'm aware of.
Not that I have seen
I don’t know
I am not aware
Not enough info
A route to the Moore Norman Technology Center
Just need to add a stop
We need to provide a covered area at each stop
N/A
Not from experience.

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
I am not aware of any specifically.
Covers for inclement weather or shade from the heat.
Moore Norman Technology Center
unsure
N/a
Moore Norman Technology Center
No
Not aware of any, but do not actually pass by all stops to advise on the situations.
Unknown
n/a
Don't know
Not Sure
I do not know.
Any without "shelter"
Not sure
Not that I know of.
n/a
I don't know specifically but good shelter against storms is always a good thing
The stop on Berry Road across from Dollar General.
More pickup and drop off locations
No
Moore Norman Technology center would benefit from being on the route
Not sure
n/a
There aren't any by where I work or where I live so I haven't been able to use the system
N/a
They are not very easy to identify
Cover from the rain would be nice. Some of them don't have anything. The one in front of the courthouse for example is just a sidewalk. A bench would be at least something. Cover from the sun/rain would be good too.
None that I'm aware ok
Yes
Add stops
They should serve all educational facilities where adults of all circumstances attend.
Norman North High School location

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
N/a
Findley
No
Norman North High School needs a cover and larger area
No
no
Not sure
Unknown.
No
No
not that I am aware
Berry road and Robinson (by the Dollar General) needs a cover
All
No
Get rid of them all
County Jail
It is a boondoggle and waste of money.
There are mini bus stops is that do not have covers so if you will wheelchair you cannot stay there if it rains secondly the bus stop at the old library needs to be moved to the new library so you do not have to walk across the park two blocks to get to the other location there are many others but I cannot go through it all if you would like me to give you a detailed list you need to give me a lot more space and a lot more time the problem is the status of changing they say they're changing and you don't know where they're going or anything else because there's no Wi-Fi on the buses secondly they don't have a physical bus schedule on the buses so you don't know where that bus is going to get the buses have been changing their routes
More of them need to be added
It's a total waste of money.
Too many to name
The one by Walmart east Lindsey needs a glass window and a larger bench
I don't know
n/a
I don't know.
More near medical related services.
I'm not specifically familiar as I don't use, but generally would say what I drive by is not covered from the elements. If the stops protected me better, and the routes ran more frequently I might consider using from time to time but would still rely mostly on my own vehicle for transportation.
I am uncertain.

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
Ni
Mainly just need the smaller type vehicles for personalized service for senior citizens and handicap persons. These smaller type vehicles might work since few in Norman ride bus and be more cost effective since OU couldn't afford the large buses and, perhaps, neither can Norman.
None that I can think of.
The tree stump at Gray & Findley
All of them.
no
no
The current routes are not functional for a commuter who wants to go between home and OU.
None that I know of!
I don't know.
West side of Norman. Currently 20 min walk.
no
How about “led the way signs that point from major intersections toward nearby bus stops. For example, a led the way sign at NW 24th and Westwood Dr. pointing toward the bus stop at 26th and Westwood Dr.
I don't know enough to comment
All could use weather protections.
New bus stops at the Public Library on Acres and new stops serving Porter.
n/a
I don't know
Yes why can't it take from stop you get on at to east side it would make more sense lots of people agree
We have no idea. We can't use them.
NA
All of them should be covered and sheltered.
No
I don't know
Eliminate all.
No. Please don’t waste our money on this
Don’t know
not familiar
Two bus stops near Irving Middle School
No idea
I don't know - we need more access on the East side. Why can't kids be able to ride from 12th Avenue East to the mall or to the shopping district. There is no public transportation on the east side of the city.

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
Crest grocery stop on Main Street route could use a bench.
Do not use
Vicksburg, set up covered bus stop/bench
No
Yes
Not to my knowledge. However, you are Campus oriented and there are seniors in Norman that would be appreciative if they were included in the census on the East side of Norman.
NA
Not a user...unfamiliar
Possibly the stop on the north side of Main just west of 12th Ave SE.
No
Central Library
Berry and Robinson
Not to my knowledge
Route 10 high school eastbound (south side of Main) has a bench but the north side has a shelter/bench. When I would ride the bus in the winter before my office moved and before the pandemic I would sit on that bench staring at the shelter/bench across the street.
More stops on Lindsey close to middle of campus so we don't have to walk all the way from the depot off Brooks.
No
I don’t know.
The East side stops could use some improvement. I've noticed a larger amount of people waiting at those stops, so maybe making the shelters larger would be beneficial.
N/A
No
All
I don't know
N/A
Don't know
No, it’s all a waste of money.
All locations should have a covered and partially enclosed waiting spot.
New Senior Center Bus Stop
Na
More need to be protected from the weather. Including heaters in the winter.
Sure benches would assist if were placed in more stops
More sheltered stops

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
No clue.
Adding to West Main St to 48th
Shade at all bust stops is a necessity
the commuter stop at homeland off 24th
all stops should have covered areas for protection from heat, rain, and other extreme weather
Most of Main Streets stops basically after the Crest stop there are a few that are unsafe for passengers/drivers
I do not know of any.
Unknown
n/a
Not sure.
Not aware of any.
All bus stops should be covered and semi enclosed to protect people from the elements.
Less advertising or at least smaller...
Lindsey East - the stop in front of McDonalds; Lindsey East - stop by Irving Middle School; any Main St stop that is not covered (especially the stop behind Sooner Mall); the stop at Norman Regional Healthplex
All need shelters.
no opinion
all but the university
Need proper shelter from weather.
None that I can think of.
Need a bench or something to be able to sit at times. On Westport Southside of Homeland.
Not sure
No
Those around the soccer fields
N/a
They appear to protect riders/waiters from weather woes
Idk
Don't know
I find it adequate.
West Main street
unsure
Norman central library
NA
No.

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
N/a
Not to my knowledge
There are no stops near my neighborhood u have to take an Uber to the nearest bus stop which is pointless
No
No
No
Need shelters with schedule for switching buses
I have never seen any.
Peters and Tonhawa.
Some need coverings to protect people from the weather while they wait.
N/A
I don't know.
N/a
Not to my knowledge; I am not a regular rider.
No
No
The crest bus stop needs a shelter
No
The stop at East Lindsey and Biloxi Drive is not wheelchair accessible. It is also a heavily used stop that needs more seating and a shelter area.
Don't know
Not sure
In front of the mayor's house
No
I don't know
n/a
Never ride
N/A
Important to provide weather protection at stops wherever possible.
Unknown
Anything on the east side is damaged.
Idk.
No
Nearly all of them need shelters and benches.

Question: Are there any specific EMBARK Norman bus stops that need to be improved?
None specifically other than the need to be sheltered and tied into sidewalk infrastructure.
Coverings for bus stops in impoverished areas and near homeless shelters
I have no idea the conditions or even locations of any stops. Probably because I live on the East side. Never even seen a stop anywhere.
The ones along Lindsay St could use it.
I don't know
Any and all that don't have a seat and shelter.
None that I know of
not to my knowledge
It would be nice if bus stops had a sort of pass vending machine where you could quickly purchase a daily bus pass or something of that nature.
Not sure but probably all of them.
No
None that I know of
No
No
idk
Need more covered stops. Including the central library
Do t use it
I don't know.
There are no bus stops in ward 5
All need shelter from sun, and a bench
no
Don't know.... all need covered area with benches
Porter stops and new library
Shelters at all library stops!

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
yes
Mostly just to expand a bit and keep it as cheap as possible many are struggling more than anyone realizes barely surviving.
I can't think of anything else.
Should go back to OU
no
Just more stops and pickup locations
It would be nice and helpful to the community if MASK enforcement was a bigger priority. Many drivers and a very large number of riders don't wear a mask or wear it incorrectly. It would be interesting to see what the level of transmission/contact is while riding EMBARK. I wear 2 masks while riding (and might start 3 after the holiday). I still don't feel safe because so many are allowed to board and continue to ride even while not wearing the mask or wearing it wrong. For a city that actually "has" a mask mandate, they don't really seem to care if it's enforced on "city" run services.
Later service
need to add on Hub Amtrak station and greyhound bus and commuter rails and light rails and streetcar go to OU sports etc. and much more add on the future. Add for Stillwater for bedlam much more...
Service from the South lake thunderbird area to and from downtown, UTC, and Healthplex would be helpful.
Think about running 7 day a week. So everybody can get to work if needed.
No
expand Routes
I guess this is the new name for the bus system. When it changed over to Norman, instead of OU, the services for my mother were no longer useful. She used to could call and get a van ride to Dr offices, etc. After Norman took it over, they began to send Ubers, with drivers who smoked, had dirty cars, not polite, etc, which does not work for an elderly 88-year-old person with a walker and health issues. So, I as her daughter, now need to take off work any time she has to go to a doctor, rather than calling the bus system for people with disabilities/elderly. It was a horrible change to the system. It definitely needs improvement for the disabled/elderly population.
More!
I think EMBARK Norman Plus is a great service and hope it continues to be supported
service must be provided far more frequently to be useful
Do good
Add service for student living comps in the southeast of Norman. Density of student population is heavy in this area, and is currently not being served by EMBARK Norman
no
My son uses EMBARK to get back and forth to work. Great system for him, and those with disabilities. Thanks
Be more strict on the COVID precautions
More frequent lines to OKC brick town
Not enough buses. Have to schedule 3 days out sometimes, no last/current day schedule. No route comes out to this area.

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
No need to spend the money to increase/update service because ridership is very low. It will be a waste of taxpayer money to invest in additional service
Digital pay with debit card. If there isn't a card reader installed already.
I never see anyone riding the buses, however when they were run by OU the service they provided the elderly to the hospital or doctor's office was tremendous.
No
Service should be more frequent to encourage more usage
Establish a fare structure to charge people riding or using the bus system. The fare structure should be similar and comparable to the fares charged in Oklahoma City and Tulsa for their bus service.
More funding.
The bus services should be more frequent.
We would like to have Sunday service again. We would all like 30 minutes routes on every route again.
I know this is a tall order. But it would be helpful to match the ride times with Retail & Restaurant hours rather than 9-5 routine.
Less waiting at stops
The University knew it was a not needed item. City revived a dead dog of a service.
Can we work on making the transit system make a little more sense and maybe working on the sidewalk network?
Not sure
I think it's important to have more stops and more frequency for accessibility reasons. I am not a frequent user of public transportation because I use my bike but I fully support a robust public transportation system.
I just want bike paths throughout the city. The sidewalks don't work because their too small and falling apart, I already broke my arm riding on them. The roads are just really busy and not friendly to bikers. If we had paths running everywhere that would be nice. Like the one by the library/railroad.
Just more hours and extended weekends! And try to be as on time as possible!
I think it should be more frequent.
The frequency of the Alameda East route should be 30 mins instead of 1 hour
More bus stops near neighborhoods
No
Currently not well publicized
City of Norman should not own a Public Transit Service. It should be owned and run by private enterprise!
No
Improve website or give put schedule books. If stops aren't listed, how do you know if they are still stops?
Bike racks at bus stops would be nice.
No
No
Increase rider fees.

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
more maps showing the routes
Na
No
No
The Cart system needs to be expanded.
No
Shut it down
None
The present and lengthy circulator system does not work to meet the needs of Norman. Hub-and-spoke or a hybrid circulator/hub-and-spoke design would reduce the time required to travel round trip. The present map is outdated with the circulators too long in duration.
Sunday service
We should remove EMBARK and go to a better financial responsible transportation system rather than large buses driving around all day with few people using it. Maybe use lift abs uber credit program for people that need the bus or a van by appointment.
No
Get rid of it.
Try and go back to running half hour service on the Main St and Alameda
I have used public transportation my entire adult life (I am close to 60-years old) until I moved here. When I first investigated bus schedules, they didn't come frequently enough; there weren't enough routes to the right places; and the distance I would need to walk to catch a bus were all problematic. I am extremely concerned about the growing traffic issues and SPRAWL here though. I know from living in other cities that if we don't take bold action on public transportation now, we will not be able to recover for years, if ever. I've lived in cities where they tried to "catch up" to the traffic woes, and the ensuing traffic (and then construction) nightmares were a major reason I moved away. Please be mindful of Norman's sprawl, and please be visionary. Also, please invest in a major, ongoing communication plan. Taking public transportation needs to be easy for people – easier than driving their car.
Norman should investigate a Rideshare service like the one on Arlington, Texas
Again, more bus stops. Do they go to Walmart?
There should be a longer Route so transfers aren't necessary, services should run 24 hours and 7 days a week like in the city
The city seems well on its way to making it more convenient for me to bike where I want to go than to take a bus. It doesn't feel reliable to catch a connection to a bus that only runs once an hour and has no late-night service.
Need plenty of bus routes going to Moore-Norman VT
An app with on time updates
There are many Norman residents without transportation and willing to work. Norman needs more EMBARK routes. Thank you.
Sunday service
Get rid of it

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Scale it down
no
I really appreciate the bus allows you to connect with the community and different people.
None
make all routes every 30 min
Suggestion: Because so many buses run their routes even with many empty seats why not make available a smartphone-based demand service using smaller transport vehicles similar to how disabled people services work?
Put the proposed depot on West Side of Town
At least some weekend hours
No
no
This is a great service for our community and I hope it is expanded.
Provide more routes and locations for the community members that need the service.
Add in the City of Moore & Moore Norman Technology Center
Great service to the community and major schools in the area should be considered.
N/A
No
I think your buses should run up and down the same route versus taking a one way loop It just takes so much longer to get to one place than it does to get back
No
Do not use system
None until more info is given
Get the word out!
I am unaware of the most eastward bus stop, but I had a number of families that lived near the lake that struggled to have access to school resources, community resources, and health resources because of a lack of public transit.
None currently.
NA
Please continue service for those in need.
Providing transportation to and from Moore Norman Technology Center will help our students greatly. We have several students that their only means of transportation to class is to bike miles no matter the weather. This is unacceptable. Providing safe and reliable transportation would help in providing the education that these students are working so hard to achieve.
Provide a stop at Moore Norman Technology Center
More stops and more routes
Can we please have a bus stop by Moore Norman Technology Center?
No

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Make sure they are clean for visitors, I am aware some of our homeless ride the bus to stay out of weather conditions. Spray buses to ensure no scabies or other infectious diseases are transferred. Bike racks on front of buses. Handicap accessible (wheelchair, walkers or those who are blind).
None
If you want to expand the service, it needs to run consistently.
No
no
Having stops at MNTC Franklin Road campus would benefit the community. I have had students bike miles to get to school in terrible freezing weather.
Extended hours. Not all possible users work 9-5 with several 24-hour Walmart stores and markets, workers often work until 10 or 11 pm EVERY Day of the week, not just M-F. These extended routes/hours could be its own "route" that doesn't begin until say 6 pm and runs until 11:30pm?
Look at making sure that pathways to schools, hospitals, and grocery stores are accessible to more people.
More options with getting to OKC would be great.
Select a route that would move people to and from MNTC, allowing participants the transit option.
no
Not really. I don't have/take the opportunity to Use EMBARK, but it's important to me that we have a good public transportation system for those who need it and those who are able to use it.
No
Make sure bus stops are available at all higher educational facilities and training centers in Norman
No
More stops
n/a
More buses and more stops
Maybe more routes and stops for people
Need a map and timetable at all public places so that we know where the bus stops are located and the times they come
Improving bus stops and making a stop at the jail would be good.
Publicize this service a little more. I'm sure there are people who don't know about it.
Please expand locations.
Add stops
I would respectfully ask you all to please consider this additional stop I have mentioned to help our population that are trying to make a step up for their circumstances. Thank you
Is there an option for high school students to ride for free?
N/a
It would be highly beneficial to Norman if transit services were available on the weekends, ran more frequently, and were available later into the evening.

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Music on the bus, Handrails/straps, more flexibility to stop (people are being left out in the cold and dark, having to be stranded and walk). I pulled the cord twice and the driver didn't stop. Started walking after waiting 15 min. past stop time, thinking I missed the bus. Then it went by me and refused to stop when I tried waving at him. Had to walk an hour to get home.
i am concerned about how eco-friendly running continuous bus routes with low passenger count. Maybe an alternative such as smaller buses and fewer runs or Uber vouchers.
perhaps weekends
I am so thankful for public transportation, because not everyone can drive
EMBARK drivers are horrible. Speeding, taking up 2 lanes, reckless drivers on EMBARK.
no
No
Even though I don't use the service, I feel that it is very important to provide this service to the community. I hope that we are able to continue to provide and expand this service throughout the city.
Stop serving the university for free
No
Improved communication regarding routes and times
Is there even a phone app? I don't know how to use it. I just know the bus never was running when I needed it before, and I don't see it running when I need it now.
None
Make people pay to use it
I would be interested, but don't know routes or even what form of payment is accepted. I never see any basic information.
Charge more. And repeal the sales tax.
I have to go to work every day but there are so many people that just ride the bus up and down and take up the space. because of the virus I have been late to work a few times because I had to wait until they got off. No one should hog the bus, it is not a shelter, it is transportation for the community. Also, people should cover their noses and mouths, I do not want to get sick.
It is a complete boondoggle and a complete waste of money!
Right now, we have no flyers to give a hands-on route of all the routes that was guaranteed to me over a year ago there is no route posted on the bus is aware that bus is going in where it's letting you out at these unnecessary items yes you may be able to go to the website but if you don't have Wi-Fi on the buses how would they do that unless they have data than cells
Be on time and add more routes and stops. People should be able to use it to get to work and back. It needs to be dependable.
There are not enough residents that utilize the service to spend as much money as you are. It's so wasteful!
Please add Wi-Fi and music like Transit Buses had. I really miss the transit and all the original drivers!
You all are doing a great job spacing and cleaning during COVID. Thank you for all you do.
Keep it affordable and accessible.
I think Smaller buses with more frequent runs.

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Increase frequency of stops and expand routes.
Later service on West Norman Link
Not at this time.
I don't use it and think having very large buses for only a few riders seems like a waste of money. What if Norman just issued Lyft vouchers or something like that?
Norman might do best to just expand and help and seek advice from Kiwanis Kruiser on the best way to give seniors and handicap persons personalized service. Kiwanis Kruiser has LOTS of experience and has been helping seniors and disabled over 30 years with curbside, personalized transportation as far back as my grandmother. These same type smaller vehicles for others, too, since all the buses I see usually have less than five on bus. Smaller vehicles might allow for better availability and more pickup times.
More routes, more stops
It provides more than is needed for Norman.
As the city grows outward, the bus routes need to as well. I utilized bus services as an OU student and when I lived in Washington, DC, but cannot do so in Norman without a regularly scheduled route nearby. As it stands currently, I would have to walk 1.5 miles to get to the nearest bus stop from my home. Norman just doesn't have a good enough route system and service schedule for a lot of people to take advantage of public transport.
Use small busses on the shorter routes or the ones that don't get a lot of riders, the big ones are ever full
Before the pandemic, the Alameda bus was overcrowded. Numerous times my grandson and I had to stand while traveling from Longfellow MS and the YMCA. It might have been timing, but it was unsafe.
Get rid of that Socialist Mayor Clark would be a good start. Then work on removing the crooked city council and few very corrupt judges.
stop the service
no
Take a look at the bus system in State College PA, https://catabus.com/catabus/bus-schedules/. In the 7 years that I lived there, I rarely drove between my home and campus. I would love for that to be true here!
Great Job on the integration so far.
Every bus I see is empty...
Lol the app is trash. Needs update ASAP. Also, ability to pay on the app or use Apple Pay or something.
I wish we had actual data on usage; where people get on, get off, and times of travel
See above
I feel public transit is important even though I tend to bike ride where I need to go. I would like the bike lane situation to be improved! I do think any city should have public transit available for those that need it
Concentrate as well on tram and train service to OKC
I am retired and have been traveled very little during the pandemic. However, I look forward to riding the bus more next year.
I would be sure to ride more frequently if it went all the places I wanted to go easily. Primarily if it was accessible for me to get to work I would literally use it everyday. As it stands this is an impossibility
No
Put 2 buses on the East Lindsey route

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Bryan to slow down and get drivers like on Main Street or Alameda very nice and courteous
We hope urban Norman citizens appreciate rural east Norman subsidize their public transit system, which only they can enjoy.
Try to do something to about all the homeless people on the buses. They ride around and people with jobs are left at stops due to lack of space. Aldo ENFORCE masks.
NA
All buses should have mask dispensers and hand sanitizer at the doors and all passengers and drivers should wear masks at all times while on the bus.
Norman doesn't need any transit services
Eliminate service. This is not an effective use of tax-payer money.
Yes, eliminate the bus service that no one rides.
No
not at this time
It will be very helpful to add a stop outside of East library.
Lighted bus stop sheds would help
No
This is not an efficient way to gather important information from residents. Who knows about this survey? Did you put information about the survey in the water bills or other mail pieces?
Get rid of the meandering routes. They at the most are useful in one direction only and make a trip on the bus take too long.
Will know more when social distancing is over. At present, you cannot get on if bus is at capacity. You are left to wait for next bus. Not EMBARK's fault.
Do not use
When bus is full, 10 people, immediately send another bus, so folks won't be late for work, or their appointments.
No
There needs to be emergency medical transportation for those with disabilities that need accessible mobility vehicles to get from the hospital and other medical services especially in emergency situations!
You seem very geared toward college students for routes etc..., we have other people in the city that would utilize the bus if it were a little more stops on east and west sides.. Not just focused on center of Norman with one or two additional stops a little further away. There is no bus stops on SE 24thst and there is on NW 24th.
NA
Not a user...unfamiliar
Maybe a PR plan to let the public know more about routes, cost, and COVID plan.
I think all of the bus stops should be covered and have trashcans.
Want to keep the paratransit route
Get a shelter for the Central Library and extend service to a shelter at the East Library

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Yes. I suggest more routes and more frequent stops. The way to increase use of public transport is to make it more widely available. Find some way to enforce distancing and keep the buses clean, as COVID is not going anywhere. Hand sanitizer dispensers would be good.
The bus not being on time was a problem for me when I was a regular rider. I could walk where I needed to go in the same time as waiting for the bus. Most of the time I would just walk to get some exercise.
Smaller busses would be better.
No
Not at this time.
It would be wonderful if the service would extend into the weekends. I would love to take the bus to work, but I work on the weekends.
Pls provide an after-hours contact line for paratransit customers, for emergencies or location changes for EMBARK Plus rides, especially after-dark rides or inclement weather evenings
Why would the city not try to sell advertising on the busses? They are rolling billboards!
No
No
Sooner Express route to OKC -- after the pandemic is resolved I would take this more often if the ride were smooth. Vibration on the buses is very uncomfortable for a long trip.
There are more important things to spend money on.
Later times to and from OKC. Weekend service.
More publicity about the various stops would be helpful.
COORDINATE IN A TRANSPARENT MANNER WITH OU ONLINE AND WITHIN APPS, IN PERSON AND IN CITY MEETINGS, BE PROFESSIONAL!
No
Have most routes travel in both directions. Eliminate the noodling routes that go all over the place (but take too long to get to one's destination or back home.
Yes, all stops should run seven days a week, no more than 20 minutes between stops.
More bus stop covers to assist riders in bad weather. More frequent stops. Smaller vehicles as often see few riders on large buses. This would allow for more vehicles and more frequent routing
It would be nice if there was better information on bus schedules and routes, to make it more clear what routes are available without having to interpret five separate bus route maps. It should be possible to figure out how to take a bus from point A to point B at a certain time without having to interpret 4 schedules and 3 maps. Also, being able to pay using a phone/credit card on the bus or making it much simpler to get a bus pass would be nice, and I think make the buses much more accessible for occasional users rather than every day. If you can't figure out how to take the bus, or don't have change, you can't take the bus even if you wanted to.
More frequent service. Extend service hours for those who work late.
More information easily obtainable regarding routes, stops, fares, etc.
Is it actually used? Wouldn't it be just better to have shuttle service? You call it, tell it where you are, then tell it where you're going. It wouldn't have to rely on bus stops and might actually be useful.
Make commuting to OKC easier, later buses back from OKC specifically would be ideal

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
Need more frequency on Main and Alameda.
None
More buses, more routes, more effective communication of EMBARK as a true option for transportation.
As private vehicular traffic continues to outpace the efficiency of streets, roads and highways--this city, state and nation needs to move aggressively to public transit systems and expansions. I'm ready to pay higher taxes to fund prudent, vital and expanded services by EMBARK Norman.
Half hourly schedules during peak morning and evening commutes would be useful if not already provided. 20-minute cycle would be even better.
Not at this time.
more frequent runs
The newer buses look great! Keep it up. App driven options for seeing routes/paying for use. FREE rides at certain times to help introduce people to the service
Return half-hour service to Main Street (N10); return the GPS tracking for riders to access
Make it no charge, to encourage ridership.
a strong transit service is good for both the economy and the environment
Make the university pay out the a..
Affordable cost for seniors
None come to mind. Thanks for the great service!
The Brook Station porta potties needs to be cleaned more often. Also, with Corona virus, bus 10 is always full on W. Robinson an have to wait on another bus. This is inconvenient when you're trying to make it to your job.
I have not ridden a bus in Norman in years. However, I strongly support the availability of this service for those who need it. I have seen some smaller buses lately and if using those can increase service. I think that's a great idea.
No
There are a lot of elderly people in Norman, I would love a system that could be more focused on helping this population throughout Norman. Many can no longer drive.
N/a
Too costly to maintain. Should sell them & contract for individuals to provide this service. Too often see empty buses or only 1 or 2 riders with other seats empty
No
None
I have a specific complaint about a specific driver. I witnessed multiple occurrences by the same driver of an unacceptable attitude. I cannot board as fast as he likes and he's yelled at me to hurry, despite my being able bodied and rapidly boarding, and have witnessed him verbally abuse riders, and he road raged twice. One time after being picked up at the Charleston Apts, heading west on Lindsey before turning on W 24th. He changed lanes, sped up, and cut off a vehicle that turned in front of him, then stopped (before intersection) , in the middle of the road to block the aggressive driver, they then exchanged expletives. Driver was an African American male, (not Chris, that man is a pro and needs a raise lol) and I will not ride the bus when the driver is behind the wheel.
Need a Berry road route South of Main
expanding service and update routes

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
offer dedicated routes and yearly passes between OU and student rental areas
No
Norman is too small and too easy to get around with a car to simply add more bus stops. I would prefer our tax dollars be spent elsewhere.
More advertising, I don't know much another it, where the stops are or where it goes
Really need the buses that accommodate wheelchairs.
Advertise better and make it look less scary to ride
I never see anyone use it so optimize its efficiency by eliminating empty buses
No
No
Norman isn't big enough to need a major investment in mass transit. This is not New York City or Rome Italy and we have many places to park cars unlike some big cities
How about getting the word out a little better?
30-minute service or 10 minutes after the hour service. When you get off work at 5 you can't make the 5pm bus.
No
N/A
No.
Expand services
More stops. Regular, longer, service hours. Routes that can actually take you across the city without having to switch routes.
Don't add any more stops or buses
Would like the service on weekends, and on weekdays. Would like more runs.
Express lines from a few points on the edge of the service into the downtown and OU would be great.
Stop wasting tax dollars and maintain the budget that's available.
It seems silly to have these large buses that only one or two people use at a time. Have we considered smaller vehicles?
Please go back to 30-minute service on the Main Street and Alameda routes. Also we really need Sunday bus service for people who have to work or shop for groceries on weekends.
Yes, wouldn't it be more cost effective for a service such as Uber for those in need. The cost per ride has to be enormous. We need transit for people but it should be cost effective.
I would love to see the routes have 2 busses on them running in opposite directions on the same route that way if we want to go to someplace on the other side if town you do not need to sit on a bus for an hour
Have service on the weekends for those who work
Stop wasting our money on a half dozen riders a day.
Try to be as efficient as possible
Bus service just isn't convenient.

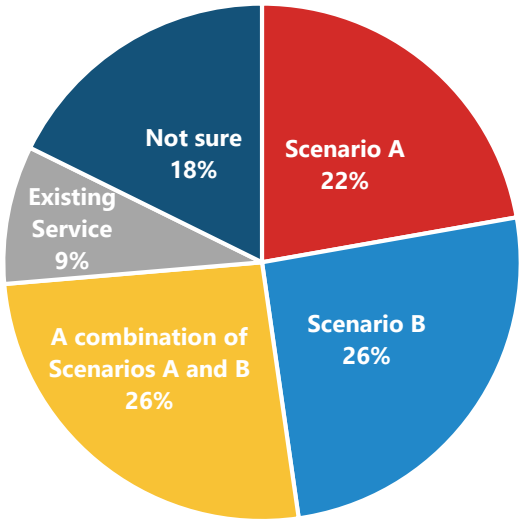
Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
cover all of Cleveland County
Explain how many are using it and the expense.
I believe it is critical for service to be provided on Sunday mornings to help residents get to church, work, stores, restaurants, etc.
Is this a bus service in Norman?
Lower the prices and add more stops so all people in Norman have access to transit not just people close to the university.
No.
No
As it functions now, EMBARK is far too limited to be useful to most Norman residents. Even if you are lucky enough to have a stop within two miles of your house, a few simple errands could take the better part of a day. Those with a car could complete the same errands in less than an hour. That disparity does not encourage use of mass transit for those with vehicles and is a burden for those without their own transportation.
Lines up with the regional transit plan for rail and trails/parks.
I suggest that the City do some cost accounting to determine the cost per rider mile. Based on what I have seen, it might be cheaper and more customer-friendly for the City to subsidize Uber/Lyft or to provide a City-owned ride share program. It would also reduce the risk of riders being exposed to fellow passengers who might be infected with COVID-19, influenza, colds, or other illness.
Looks like you could add stops to the east side.
Sunday service would be nice.
I really don't know much about EMBARK. I'm not opposed to taking public transportation. Maybe try to reach more people.
No
Sell it
Wi fi
I am not sure the bus routes are easily found online and again it would be nice if bus stops were equipped with some sort of vending machine where someone could purchase bus passes with a card, cash, or coins.
More/expanded routes
Better city and OU integration so that those who live and work in Norman are more likely to use public transit. I live 3.1 miles from my office and have to drive, if public transit were available I would use it.
Most of the buses seem to be empty or have little use
Return of twice-hourly service for Main St would be great, especially now given physical distancing requirements. I and others have repeatedly been turned away due to lack of capacity, and I have seen groups of 2-4 split apart for the same reason. These are often families who have to choose whether to split or stay, or people who have no other ready options for getting to work, appointments, or other essential destinations. They may be made to wait an entire hour for an opportunity to ride (often not knowing whether the bus will once again be full by the time it's made its way back around), and there seems to be little consistency as to whether special accommodations/calls can be made for a rider depending on which driver happens to be on shift.
make the routes follow the street grid, not circuits.
No

Question: Do you have any other comments or suggestions for improving EMBARK Norman service?
no
More frequent runs
No
Yes. Strollers and other equipment needed for transporting small children or equipment needed for disabilities should be utilized on the bus without folding them up and putting them away.
Decreasing time between stops
Need to add service to Ward 5.
I would like to see more buses on the routes and maybe more buses to OKC.
drop the loops which are very long. Transit stop downtown will be an improvement. Need water, restrooms at the transfer station.
no
Coverage for whole city
Doing great under adverse circumstances!

COMMUNITY SURVEY #2

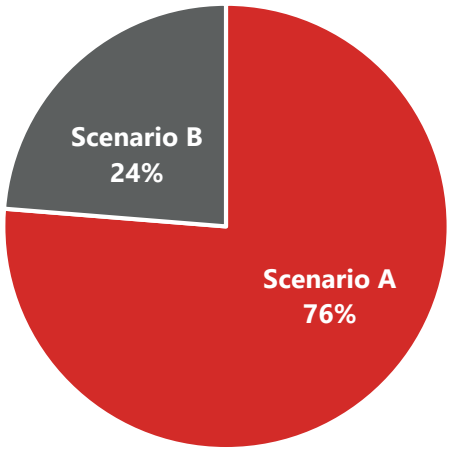
The second online survey was open for public comment from February 17 until March 30, 2021 and received 262 unique responses. This survey was not designed to collect a statistically valid representation of EMBARK Norman transit riders or the Norman community, however the responses provide feedback on route network alternatives and future expansion options.

Figure 18 Which route network do you prefer?



N=250

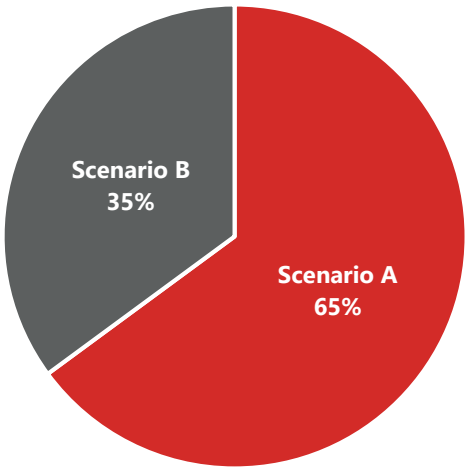
Figure 19 Which Route 110 option do you prefer?



N=59

Text

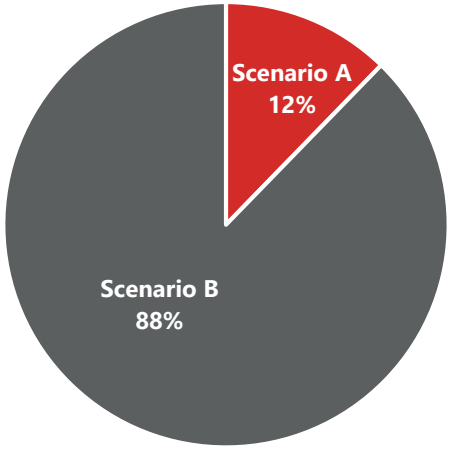
Figure 20 Which Route 112 option do you prefer?



N=57

Text

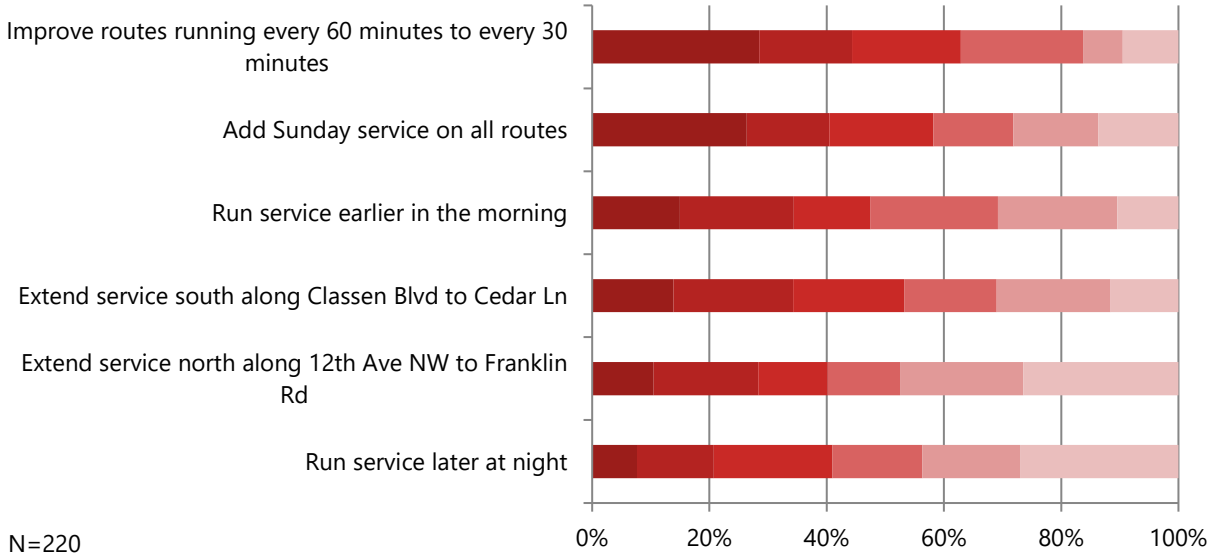
Figure 21 Which Route 121 and 122 option do you prefer?



N=57

Survey respondents were asked to rank future expansion options. The most popular option was improving routes running every 60 minutes to every 30 minutes. Adding Sunday service on all routes was also identified as an important future expansion option.

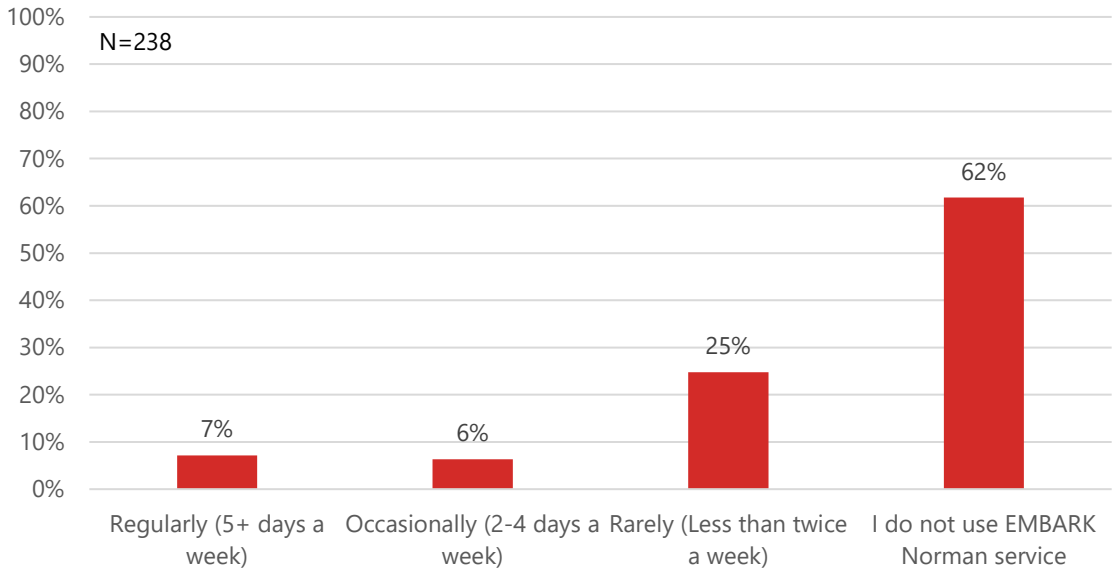
Figure 22 Please rank the following future expansion options:



N=220

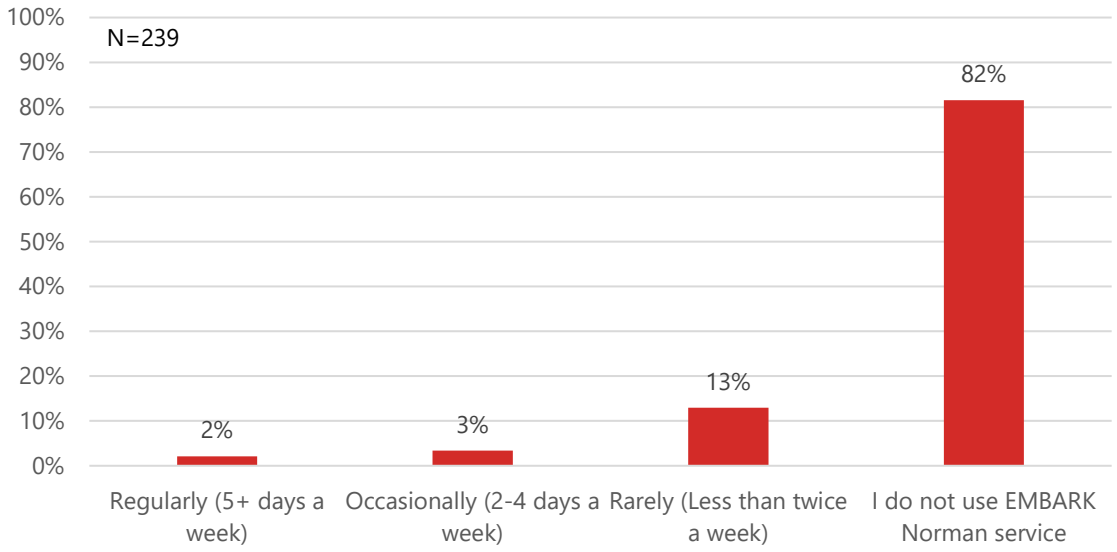
Approximately 38% of survey respondents have used EMBARK Norman transit service prior to the COVID-19 pandemic, while only 18% of respondents are still using EMBARK Norman service.

Figure 23 How often did you use EMBARK Norman service before the COVID-19 pandemic?



Text

Figure 24 How often do you use EMBARK Norman service now?



Open-Ended Comments

The following open-ended comments have been edited for clarity and grammar.

Question: Are there any places not served by EMBARK Norman that need service?
Areas south of highway 9.
Basically anyone west of I-35 who are almost completely unable to utilize our city's bus system. There is an idea that it's all wealthy subdivisions with cars, but there are many renters and multiple apartment complexes west of I-35 and it is currently required to have a car. There should be many, many more stops west of the interstate.
Better access for west Norman to downtown
Cedar Lane Road area for Eagle Cliff subdivision and new Sage Cobblestone senior living complex.
Could route 111 include a stop around Oakhurst Ave and E. Imhoff Road?
Do not know
East library
East library. From the high schools to the Vo-Tech, for high school students taking classes there.
East Norman Library
East Norman, near the new library branch
east of 24 and E Lindsey
East Side library
East side library
East side Library!
East side library!!!
East side Library, Thunderbird with bicycle carriers, and the detention center.
East side Norman Library
Eastside Library
Eastside library!
Extend some route to provide service to trailer park and apts on Main between 36th and 48th
Food and Shelter, salvation army, etc.

Question: Are there any places not served by EMBARK Norman that need service?
Food and Shelter. Why not?
For the love of god please move the regional transit forward and make a connection with OKC that could be a real alternative to driving in order to make a net difference for both communities.
Getting kids to zero hour at high schools would be ideal. Right now they have not options. for the routes that go by the HS. Vo tech connection is key for education/training opportunities.
Haven't found one yet
Hey 9 and 24th Ave SW
Highway 9 needs to be included, especially since the hospital on Porter is being relocated.
I am retired and still drive, but may need to rely on public transportation in the future. It would be great if there could be some service (pick up and drop off at residence and transport to destinations) for people who don't have access to personal transportation
I didn't really notice any big holes.
I do not know.
I have bee unable o ever use it, so I'm not sure.
i often ride the bus from panera to campus, the downtown hub will end that being more convenient than walking the almost 3 miles. a route from sooner mall to eastside walmart with connections would help flow tremendously!
I suggest service to our wonderful major community parks not just to grocery stores. We need to look into using the public transportation as a part of recreational purposes with kids to the parks. Riding buses without worried about being able to park the cars when you visit the parks. That hassle of finding parking spots is one of my worries not going to parks often. Also, I am for paying fare riding buses. I know it will require more spending to equip with such machines on buses, but we can make up some cost by sharing with riders. I am willing to pay to get to the destination. I mean, think about it. When we go to kids' basketball games and football games, we pay minimum $5.00 per person. If we are dealing with low-income or homeless population, they can apply for free pass at an agencies helping with their situations. We can get the electronic passes, so the drivers do not have to deal with cash on the vehicles. I don't know how realistic it would be or to cost, but if we do not have the citizens' participation, the public transit system can never develop the way we want. Ridership is the key, and the routes need to be serving a wider range of riders and have more frequency. I know it is harder in a pandemic, but it will not be here forever.
I would prefer you not waste tax payer money at all on a money losing system, there is no way mass transit can pay for itself and you will continue to ask for more money

Question: Are there any places not served by EMBARK Norman that need service?
I'm not sure. The closest route is so far from my home that I've never been able to use the bus but definitely wood if convenient to reach destinations and OU.
IDK
It would be great to have a bus stop added at Norman East library.
It would be great to have services to/from the farmers market off Porter and Robinson. Also, if dogs are allowed on the bus, to/from dog parks.
It would be nice if there was a bus stop at the Norman East Library location. It is the only library in Norman that does not have a bus stop, and it is an important addition to the city. It gives people access to internet and computers and even shelter during the day if they need it. The East library shouldn't only be accessible to people who have the means to get there, but for everyone.
Lindsey and oakhurst need a bus stop,
lloyd noble
MNTC. Postal Training Center.
More residential areas
New route from/to Little Axe. From Little Axe: Harp grocery store parking lot -> Dollar General/Car wash -> Thunder Bird Casino -> Shell gas station -> Clear Water Bay lake entrance parking lot -> CART connection -> Classen Blvd Walmart -> Connect 111 -> Connect 112 -> Connect 120 & 121 -> Connect 122 -> West Tecumseh -> Connect 36th -> Sams Club -> Hwy 9 -> repeat loop All buses with wheel chair, bicycle cage/carrier and service dog access. Route should include automated battery exchange stations en-route for uninterrupted electric bus service.
No
no
No
No
No, but if the routes aren't frequent and direct, they won't be very useful.
No, get rid of it stop adding taxes to hard working citizens. We want to keep the money we make.
NORMAN EAST LIBRARY
NORMAN EAST LIBRARY
Norman East Library

Question: Are there any places not served by EMBARK Norman that need service?
Norman East Library
Norman East Library
Norman East Library and just more east side
Norman East Public Library on east Alameda
Norman East Public Library
Norman Library East, areas off of 12th Ave, Sequoyah/Rock Creek/Porter.
Norman Pubic Library East!!!
Norman Public Library East
Norman Public Library East on Alameda
Norman Public Library East.
Norman Public Library East. Libraries provide essential technology and information access to all. The city voted for the library and it should be a stop on city transportation services.
Norman recreation center, 24th ave se
North from Rock Creek RD to Healthplex and University Town Center and Sooner Mall.
Not a destination, but a route along Main St. from westside to eastside could be very useful.
not sure
not sure
Oakcreek, Oakhurst, Turnberry apartments
Oakhurst addition South, specifically people at ot near Turnberry Apartments
Oakhurst area needs a stop
Oakhurst edition
Oakhurst has not stops. People who live in the area and don't drive have a very long walk to the east Lindsey shopping area.
Oakhurst!
Oakhurst, as well as the neighborhood West of Porter and North of Robinson
Oh, yeah! South of Hwy. 9 is covered above, but it's extremely important as expansion continues---and it'd be cost-effective for you to plan to serve the new NRH at 24th SE when you add the Classen Walmart Sup.! And the businesses on Classen like the Neigh. Walmart,

Question: Are there any places not served by EMBARK Norman that need service?
Slim Chickens, etc. need to be served. Plus, neighborhoods/residential areas! Disabled people live everywhere and can't always qualify for or rely on paratransit service. Plus, most neighborhoods have poor sidewalk coverage (hard to get to main roads). Also, schools are in a lot of those neighborhoods so kids could ride to get to after-school activities. Also, if you're changing the Sooner Express route, please don't. I use that to go to OU Medical Center for appts. I wouldn't ride public transit to the airport unless I was going on an easy overnight trip without luggage. Not essential, but a route to Riverwind might be helpful, at least on Fri. nights/weekends. Note: I'm disabled and rely on public transit but was not informed of this transit plan/comment period until I happened to be reading through Twitter during the winter storm. There NEEDS to be a registry that includes disabled people who aren't on Social Security for not only public transit needs but for needing assistance during emergency situations! Norman also needs a newsletter or something to get important information to the public. Norman Transcipt isn't enough!
One thought might be to bring 122 Rock Creek down Porter and 121 down straight down and over to Main Street. Also, you really need to consider getting down Tecumseh because houses and apartments are going up along that area very quickly. Maybe a route from NW 24th St. to Tecumseh and over to Porter and then down to Main St. Then you could leave 122 the way it is scheduled.
Postal Training Center/ Technology place
Probably.
Public Libraries and other social services
Public Library East
Question 4 is biased as it forces/leads the respondent to rank expansion options. It doesn't provide option to disagree with question and not select either. The current bus system utilization needs assessed. Most buses I see have no riders on it. The report does not address utilization in its study. Biased towards fixing a system that is not used. https://c7815b7b-ec0c-4bfc-848f-0eed083e3be5.filesusr.com/ugd/b59736_83063db4c7204e1d8e8493eedb73d98e.pdf
Residential areas: NW of Healthplex; NE of Rock Creek & 12th; E of 24th and S of Lindsey /Hwy 9; far east residents (E of 24th Ave N&S); Student apts S of Lindsey & E of OU campus
Robins Street (West) to 48th Street.
Route 111 on the existing plan could be extended roughly half a mile to stop at Norman Public Library East. This would give customers easy access to a place that is free, safe, and welcoming.
Ruby Grant Park!!!
Ruby Grant Park, especially on weekends, families with children. Connection with proposed Norman Senior Center.

Question: Are there any places not served by EMBARK Norman that need service?
Ruby Grant Park, Sutton Wilderness, Griffon Park, 12th Ave. NE Rec Center, East Branch Library, Saxon Park, Walmart/Apartments in SE Norman, Future Hospital site near HWY 9
Saving money should be our priority. No one uses this system.
Somewhere closer to campus corner/OU campus
SOUTH NORMAN! Why does it stop at Lindsey!?
south of highway 9, especially along 12th SE and Cedar Ln
Southeast Norman
Southeast Norman as mentioned above
Southeast Norman.
Stop expecting the property owners of Norman to fund a failed transit system. We are already the highest taxed property owners in the state of Oklahoma. OU dropped their transit system for a reason- the demand doesn't warrant it. In light of COVID, there is even less demand. Norman's Go Transit Project is another project which will impact the elderly and disabled property owners the most; the most vulnerable of Norman. It will also impact the most vulnerable of renters since landlords pass on tax increases to their tenants. Drop the expense of these studies- it's a waste of taxpayer money.
The Detention center
the east side library
The East Side Norman Library and several business at 24th NE and Alameda.
The Norman East Library on east Alameda St.
The Norman East library, and the east side in general could use more stops.
The postal training center.
The Walmart Neighborhood Market on Classen needs to be added.
There needs to be more service on the S E side of town. A lot more, at least out to 24th st. All the routes need to be extended out some. There will have to be a couple of satellite hubs on the corners of town. You completely excluded anything remotely close to Hwy 9 or the lake in the areas CART doesn't service. It looks like you intend to create a gaping hole in West Norman, while also not addressing existing issues like frequency of routes.
There should be a pick up location near Franklin Road for MNTC an/or Jail. There are a lot of doctor's offices near Washington Drive that people may need to have transportation to their doctor's office near Franklin Road.
This whole survey and project is a huge waste of money and time.

Question: Are there any places not served by EMBARK Norman that need service?
Unknown
Walmart south and the southern edge of Cart's coverage (highway 9 and Chautauqua
Where do i vote "No. End this waste of taxpayer money"? Best future expansion option is shut it down.
Yes definitely need the east side on Alameda /24 east by the east Library and the 7-Eleven-Also seniors in Royal oak addition need. Curb service- we pay taxes and are tired of being ignored!
Yes, for example, 100 square miles of Ward 5. You are currenly only serving a tiny slice of the City of Norman, and all the questions are geared toward continuing to serve only a tiny slice.
Yes, More on East side of Norman