

CONNECTING THE NORTHLAND

NORTH OAK CORRIDOR TRANSIT STUDY



Kansas City Area Transportation Authority
Kansas City, Missouri
North Kansas City, Missouri
Gladstone, Missouri



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EXECUTIVE SUMMARY

There has been a substantial amount of planning in recent years along the Burlington North Oak corridor. The North Oak Corridor Transit Improvement Study builds on past studies and evaluates transit concepts that integrate key recommendations while advancing the community's goals and objectives. This planning study evaluated ways to enhance transit service in the North Oak corridor and is implementation focused.

The Northland is a challenging transit market due to development patterns and relatively low residential densities. Commercial land uses are mostly segregated from residential areas and much of the Northland can be described as pedestrian unfriendly. Although most of the Northland is in Kansas City, North Kansas City and Gladstone are enclave communities along the Burlington/North Oak Corridor. In the absence of regional transit funding, transit service decisions are made by the individual local governments adding to the challenge of implementing transit service enhancements in the Northland.

Despite these challenges the KCATA and Northland local governments have invested in Northland transit in the last ten to fifteen years. This includes Route 201 North Oak which operates between the Boardwalk transit center near I-29 and Barry Road and Downtown Kansas City along Barry Road, North Oak and Burlington Street.

The North Oak Corridor is an important corridor not only in the Northland, but in the region. Smart Moves 3.0, the Region's transit plan, identifies North Oak in the fast and frequent network or routes, meaning the corridor is one of the primary transit corridors in the region. Fast and frequent transit service is a premium service designed to operate in primary transit corridors; KCATA's MAX routes currently operating on Main Street and Troost Avenue are examples of this service type. Elected and appointed officials in North Kansas City, Gladstone and Kansas City are interested in enhancing North Oak transit service and want to bring it to the level of a MAX service.

NORTHLAND SERVICE DESIGN OBJECTIVES AND ALTERNATIVE CONCEPTS

Early in the study, stakeholders developed the following objectives to guide the study.

- Deploy fast and frequent service in primary corridors (in keeping with Smart Moves 3.0)
- Match service levels to markets and transit potential
- Optimize operating funding investment and ridership
- Improve mobility in the Northland
- Support economic development (existing and future)

The project team developed various preliminary alternatives based on previous studies and stakeholder input. A two-level screening process was used to evaluate and compare the alternatives along the Burlington and North Oak corridor to each other. The evaluation criteria were both qualitative and quantitative including locally expressed preference and expectations, travel patterns, transit ridership, corridor demographics, employment and population, land use development, economic development potential, operating cost, and capital cost. Locally Expressed Preference and Expectations (qualitative). The alternatives all used Burlington and North Oak for the main portion of the new route. A variety of north and south termini were evaluated along with different service levels.

RECOMMENDED SERVICE PLAN & ALIGNMENT

The evaluation concluded that fast and frequent service to Barry Road (near Hwy 169) is the preferred alternative based on corridor needs, travel patterns, existing ridership, and locally expressed preference. An important conclusion was that a significant transit investment in the North Oak corridor is warranted.

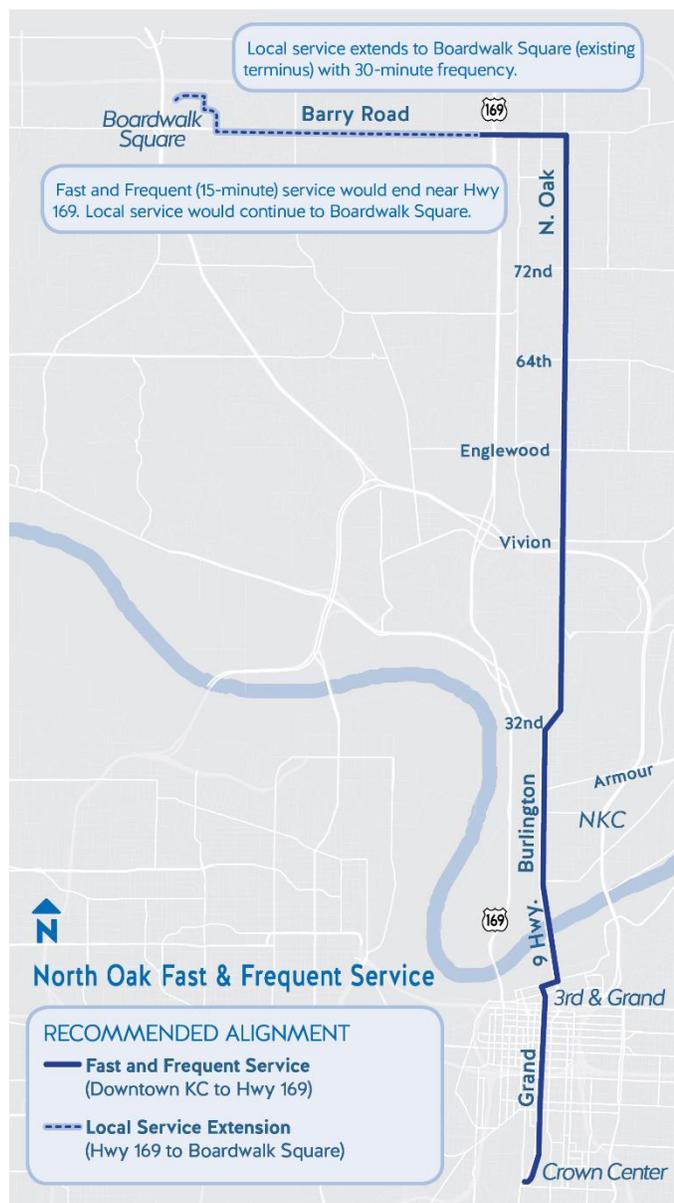
A local service extension to Boardwalk Square was also found to be warranted and the recommended service would operate similar to Main MAX and Troost MAX with select trips providing full service to Boardwalk Square. Other trips would terminate at a service break on Barry Road somewhere near Highway 169. The possibility of extending select trips north of Barry Road along North Oak to a park and ride lot near Route 152 should be evaluated in RideKC Next, KCATA's system redesign.

The service plan for the recommended enhanced North Oak service will align with KCATA's stated guidelines for fast and frequent service. The recommended service would operate from 4:45 a.m. – 12:00 a.m. Monday through Friday (weekdays), 6:15 a.m. – 11:45 p.m. on Saturdays, and 8:15 a.m. – 11:45 p.m. on Sundays. Service levels would be approximately twice the current service level on Route 201 with 15-minute frequency during the weekday and 30-minute service on evenings and weekends.

In addition to more frequent service and branded vehicles, RideKC MAX service includes highly visible stations. Two types of improvements are recommended for the corridor:

- Enhanced Stations – Full stations with a high level of passenger amenities; in-keeping with other MAX stations within the network.
- Improved Stops – Basic amenities with improved pedestrian access and waiting areas. This category of improvement would be for lower volume stops along the route.

Examples of MAX stations and an existing Gladstone stop are shown on the following page.





Park-and-ride lots are important in a service area such as the North Oak corridor to expand transit access to residents beyond a walkable distance from transit stops. Although the capital budget does not include new dedicated park-and-ride lots it is recommended that park-and-ride access be expanded through the establishment of shared use lots along the corridor utilizing existing parking lots through agreements with lot owners. Park-and-ride lots strategically located in the corridor can address the objective of enhancing mobility in the corridor and contribute additional transit passengers to make the new route more productive.

PROJECT COSTS

Total project cost is made up of both operating and capital costs. Capital costs are incurred at implementation of the project; operating costs are incurred annually and represent ongoing costs associated with providing the service.

The operating cost for the recommended service plan is estimated at \$3,478,000 on an annual basis. This represents a \$1,241,000 annual increase over the existing Route 201 North Oak's annual operating cost. These costs would be allocated among the three cities. It is assumed that the existing Route 201 would be discontinued.

Project capital costs include stations/stop amenities, roadway improvements, necessary transfer facilities and vehicle procurement. At present, no capital cost for fare collection or pedestrian and bicycle improvements were included. These are presumed to be included under separate projects in conjunction with the enhanced North Oak transit service implementation. The capital plan for the proposed service is scaled to the corridor. With a total estimated cost of \$26.3 million, about \$2 million per mile, the project is affordable, and will provide the amenities and visibility necessary to make the project attractive to existing and potential transit users in the Northland.

PROJECT JUSTIFICATION

A fundamental question addressed in the North Oak Transit Study is whether the recommended transit investment, or any transit investment at all, is justified by the benefits that are expected to accrue from the project. The question of project justification was addressed through several quantitative and qualitative points.

CORRIDOR RIDERSHIP

System ridership has declined 20 percent since 2011, but Northland ridership has increased five percent over the same time period. Ridership on Route 201 has increased 20 percent since 2011. Route 201 is the highest ridership route in the Northland with approximately 800 daily passenger trips. Ridership is a key consideration in assessing the value of a transit investment. The relatively high level of ridership (a projected 50 percent increase over current ridership) is partial justification for the investment. The projected increase in ridership is consistent with the 60 percent increase in ridership observed upon implementation of Main MAX.

ECONOMIC DEVELOPMENT

Support for development initiatives is a primary objective of communities in the Northland. The experience of Main MAX and Troost MAX is that this type of transit investment along with other targeted development initiatives does lend support for development and employment growth in the service area.

A 2017 study by MARC concluded that this type of investment is effective in supporting economic development and the Burlington/North Oak corridor and is one that can return these desired benefits. Although the exact impact of urban amenities is difficult to estimate, research suggests that such investments can stabilize real estate markets, incentivize private investment in real estate, and attract residents and jobs.

IMPROVED WORKFORCE ACCESS

Transit access to employment in the Northland is a major issue among stakeholders and employers as employment in the corridor grows. The enhanced service on North Oak will provide an important transit spine that, along with connecting transit services, will improve access to Northland jobs from other parts of the metropolitan area. North Oak improvements will help provide access to nearby Cerner, North Kansas City Hospital, and Metropolitan Community College to the east while connecting local jobs, businesses, and residents along the corridor.

STAKEHOLDER INPUT AND EXPECTATIONS

The North Oak Transit Study included a robust stakeholder engagement component, with dozens of stakeholders participating directly in the project through the Advisory Committee, interviews and presentations. Key stakeholders in the corridor support the investment and even expect an improvement in transit service in their communities.

PUBLIC INPUT AND EXPECTATIONS

The general public was engaged in the study through several public events and a survey that reached all parts of the corridor and received more than 275 responses. Public interest and support for the project was evident in all the public meetings. The survey found that the majority respondents agree that transit service is important to the community; 85 percent of respondents agree that transit service is extremely important or very important to their community. Only two percent of respondents that transit is not an important service. The enhanced service in the North Oak corridor will address many of the barriers to using transit cited by survey respondents.

IMPLEMENTATION PLAN AND FUNDING

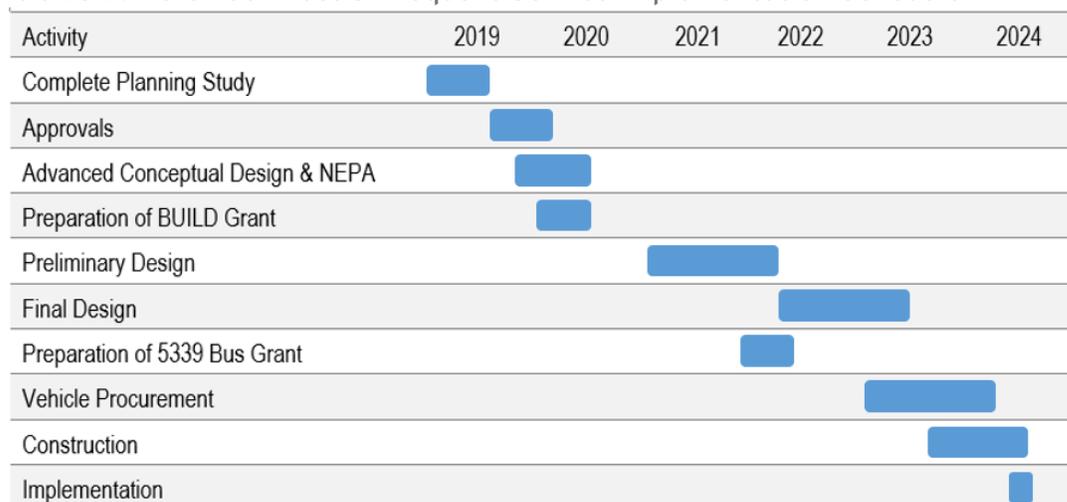
An implementation plan for the recommended North Oak transit plan was prepared to guide the project from the planning phase through implementation. It is not uncommon for the implementation plan to change as the project develops, thus the outlined approach should be considered an initial plan that will guide the project’s implementation over the next several years.

Most projects like this one are funded in part through federal grants administered by the Federal Transit Administration (FTA). The US Department of Transportation’s Better Utilizing Investments to Leverage Development, or BUILD Transportation Discretionary Grant program, provides an opportunity to invest in road, rail, transit and port projects that address national objectives. Several BRT projects like this one around the country have been successful recently in securing BUILD grants. These grants have been awarded for similar projects with grant awards between \$5 million and \$25 million. A reasonable budget expectation for the North Oak project is between \$10 to \$12 million BUILD grant, based on experience.

The preparation and award of the federal transportation grant is a major determinant of the North Oak corridor’s implementation schedule. The earliest application window for a BUILD grant is mid-2020 with award announcements expected by the end of 2020.

The schedule below shows how the project can move through the implementation steps, including application for the BUILD grant, to achieve implementation by the third quarter of 2024.

Exhibit ES 1. North Oak Fast & Frequent Service Implementation Schedule



Because the project is multijurisdictional, approvals will be required from the three cities and the KCATA Board. Approval, in the form of commitment of local share, will be required in the Spring of 2020 as part of the BUILD grant process. Approval, possibly in the form of a council resolution, would be required by the end of 2019 to allow the project to continue with the next steps towards implementation.

Also, in early 2020 additional study to refine and expand on the planning study recommendations is necessary for the BUILD grant application and to complete the environmental analysis. All projects that use federal transportation funding must be cleared through the National Environmental Protection Act (NEPA) process. More detailed information on station locations and other project elements is necessary to assess the project’s potential impacts.

EXISTING CONDITIONS

PREVIOUS PLANS

There has been a substantial amount of planning in recent years in the Northland and along the Burlington and North Oak corridors. The North Oak Transit Study builds on these efforts and identifies and evaluates transit concepts that integrate key recommendations while advancing the community's goals and objectives.

NORTH OAK CORRIDOR STUDY

The 2013 North Oak Corridor Study assessed North Oak Trafficway and Burlington Street for three transit options: base line (local service) with increased supply (frequency and span), mixed-traffic BRT, and streetcar. Key activity nodes identified include Armour Road, North Cherry Street, Vivion Road, Englewood Road, 70th Street, and Barry Road. The study concluded that enhanced bus service was warranted based on ridership and that there was a need for an updated Northland transit plan. This study picks up where the 2013 study left off.

KCATA COMPREHENSIVE SERVICE ANALYSIS

The KCATA Comprehensive Service Analysis (CSA) focuses on how KCATA can update services to accommodate the changing landscape of Kansas City. KCATA's most current CSA was completed in 2011. The CSA defines KCATA various service classifications (Key Corridor, Urban Local, Suburban Local, Commuter, and Lifeline) and includes service guidelines, minimum service levels, and productivity guidelines.

KCATA NORTH/SOUTH CORRIDOR ALTERNATIVES ANALYSIS

KCATA's 2019 North/South Corridor Alternatives Analysis outlined how KCATA could improve transit services in a primary north-south corridor from the Northland to the Plaza area. The plan identified the North Oak corridor as an opportunity corridor with high density land use potential. The plan also concluded that bicycle and pedestrian facilities in the corridor are key, in addition to further promoting economic development.

SMART MOVES 3.0 PLAN

Smart Moves 3.0 Plan outlined a system core of fast and frequent transit service. North Oak Trafficway is the only corridor identified for fast and frequent service north of the river. Investment strategies include frequent service on North Oak with a core built upon hubs at major modal connections and transfer points. The plan identified Armour Road, Vivion Road, Gladstone, Metro North, and Boardwalk square for mobility hubs along the existing North Oak transit route. Additional hubs north of the river were noted at the KCI Airport, in Excelsior Springs, and in Platte City. The plan targets development along key corridors and mobility hubs that vary in density based on the type of mobility hub (destination, junction, gateway, or local hubs).

TRANSPORTATION OUTLOOK 2040

MARC's Long-Range Transportation Plan (LRTP) included "North Oak BRT Improvements" (project ID 428) in the fiscally constrained project list for 2015 – 2020. The project is listed at a \$27,318,000 capital cost and includes design, construction and implementation a new bus rapid transit line in the North Oak corridor from Downtown Kansas City to Missouri 152 in the Northland. The project description also includes electric vehicles, enhanced stations, ITS improvements, passenger amenities, and transit centers. Other Northland projects include I-35 North Express Bus Enhancements (from CBD to Northern Clay/Platte County), I-29 Express Bus Enhancements (CBD to Airport and Platte County), St. Joseph Express Bus (between Kansas City and St. Joseph), and US 169 Express Bus (CBD to northern Clay County). The LRTP is currently being updated (RTP 2050) and North Oak Fast and Frequent improvements are anticipated to be included.

MARC COMPLETE STREETS HANDBOOK

The handbook's purpose is to aid communities moving forward to implement complete street policies and/or facilities. Complete Streets are streets, highways, and bridges that fit the needs of all travelers. The goal is to improve roadway efficiency and capacity by moving more people in the same amount of space. The handbook mentions the importance of improving and supporting the transit experience.

The current North Oak Complete Streets Planning Sustainable Places (PSP) project will assess the feasibility and implementation of a complete street on North Oak that includes bikeway facilities (such as protected bike lanes or a two-way protected cycle track), improved pedestrian connections, accommodations, and crossings, and integration of high capacity transit corridor accommodations. The project will also build upon previous streetscape planning efforts conducted along the corridor (North Oak Corridor Streetscape Master Plan, 2011 within Kansas City, Missouri) and will tie into capital improvements under construction south of NE Indianola Drive. The project location is on North Oak from Indianola Avenue to Barry Road.

TRAILS KC PLAN

This plan lays out a proposed system and hierarchy of trails and connectors for bicyclists, pedestrians, and equestrians. The plan does not include any recommended improvements along the existing North Oak route in the Northland. However, recommendations that would intersect with the route include the Toe Levee Trail (NE 32nd Street) and Vivion Road Trail (existing to the east and proposed to the west of North Oak Traffic way).

BIKE KC

This is the City's master bike plan. The plan is in the process of being updated in response to the 2016 Bike KC Performance Audit. The established vision for the bicycle master includes making Kansas City a "vibrant community where all modes of transportation, including the bicycle are valid, equalizing, and supported." The master plan has their process of implementation laid out over 2018 with planned adoption in late winter. Existing bike lanes are present in various portions along and across the corridor. The corridor is identified for "major separation" and is intersected by several "minor separation" and "shere street" corridors in the plan.

KANSAS CITY WALKABILITY PLAN

This plan provides tools to measure walkability and established city-wide walkability priorities. The plan emphasized the important connection between walkability and transit ridership. The plan identified four zones adjacent to North Oak Trafficway with poor walking “directness,” all north of Gladstone city limits.

BOULEVARD AND PARKWAY STANDARDS PLAN

This plan, published in 2010, provided standards and guidelines for the City’s many parkways and boulevards. The plan included a design approach for transit stops and stations located along parkways and boulevards. There are no boulevards listings in the study area, however, listings of parkways in study area include: Briarcliff Parkway, Line Creek Parkway, Maplewoods Parkway, and Searcy Creek Parkway.

KANSAS CITY METROPOLITAN GREENWAY SYSTEM (METROGREEN)

This plan promoted a comprehensive system of greenways, trails and open spaces and outlined a development strategy for preservation and restoration efforts. The vision involves the new and connecting trails, parks, city boulevards, and historic, recreational and cultural centers. One of their goals is to develop greenway for walking, biking, etc. as well as allow residents to experience nature’s beauty. The Mid-America Regional Council has taken the responsibility to help MetroGreen create and implement their vision.

BRIARCLIFF-WINNWOOD AREA PLAN

The plan includes transit and encourages plans for additional transit service that is safe and affordable. The area has a need for transportation options such as bus services, rapid transit, trails, and sidewalks. It notes the importance of connections to schools, accommodations for cyclists and pedestrians, and bicycle routes with access to transit services. Priority actions for the North Oak Corridor include: maintaining parks and fountains and permeant park and civic spaces, gateway features, intense streetscape standards, pedestrian and bicycle facilities, rapid transit hub, street improvement, connectivity to surrounding neighborhoods, and insure maintenance and upgrades are efficient and aesthetic. This plan aims to revitalize the area with a continued focus on redevelopment projects.

NORTH KANSAS CITY MASTER PLAN

The plan aims to be a voice for the community and guide for the future. The plan references prior studies including the North Rail Streetcar study and the North Oak/ Burlington Corridor Transit study as justification for enhanced transit service. Part of the development process includes creating a street network that accommodates bicycles, pedestrians, and transit riders. The plan is all about integrating and enhancing transit services, parks, bike lanes, and more to connect the area and provide access to their citizens.

BURLINGTON CORRIDOR COMPLETE STREET PLAN

The goal is to transform the existing Burlington Corridor in North Kansas City. The plan wants to integrate expanded transit and improvements for pedestrians and bicyclists. They plan to connect cyclists further north along North Oak Corridor by adding bike lanes and extending family-friendly bicycling facilities with multi use pathways. The plan also highlights the need of sidewalks and crossings at Burlington/North Oak intersections. It is believed that there will be a higher demand for transit services such as bus systems.

The design approach can eventually support systems like rapid transit services, streetcar, or light rail. The plan wants to provide and improve transit along the North Oak corridor to enhance accessibility to current and future residential and commercial development in the area.

FOCUS - KANSAS CITY'S COMPREHENSIVE PLAN

FOCUS has had 54 implementation achievements to date. They focus on creating a safe and well-maintained environment for Kansas City's residents. Several of these implementations have involved new transit centers (including in the Northland and Barry Road Corridor), plans for a light rail system connecting Kansas City's biggest job corridors, and creating plans to improve vehicular and transit circulation in the Northland. One of their plans is to connect Anita Gorman park (North Oak and Vivion) to Antioch shopping center.

GLADSTONE: SHAPING OUR FUTURE

This strategic plan was developed to transform Gladstone into a premier destination in the Kansas City area. One of the main goals is to enhance opportunities to bike and to businesses and city services, including along North Oak. Another goal is to enhance traffic flow and safety and pursue direct highway access. The plan also considers off-street bike paths along North Oak to connect businesses and citizens.

SMART CITY INITIATIVES

Kansas City, Missouri continues to focus on the use of technology and data to solve problems and improve safety, mobility, and ladders of opportunity. Technology solutions proposed for transit corridors included smart interactive kiosks, sensors to detect pedestrian and cyclists, environmental and air quality sensors, smart lighting, stationary and corridor Wi-Fi, gunshot detection software, enhanced Transit Signal Priority (TSP), mobility services located at mobility hubs, and others.

CONCURRENT PLANS

There are also several concurrent efforts taking place in the corridor or relative to this study. This planning effort is consistent with the "Complete Streets" effort in Gladstone and the Planning Sustainable Places effort on Burlington through North Kansas City. Concurrent with this study, KCATA is completing a system redesign. The conclusions of this study will feed that effort and the system redesign will look more broadly at all connecting routes and general route network in the Northland.

TRANSIT SERVICE PERFORMANCE SUMMARY

WEEKDAY ROUTE PERFORMANCE

KCATA has developed service guidelines to help design service, determine appropriate service levels, estimate minimum levels of service performance, and measure overall service performance. Different thresholds and ranges are set for various performance indicators based on KCATA's route classification system (Key Corridor, Urban Local, Suburban Local, Commuter or Lifeline service). Route 201 North Oak is identified as a Suburban Local route and is measured against the thresholds defined for Suburban Local routes. In evaluating whether service should be enhanced (more frequent service, expanded service span, etc.), it is helpful to compare existing service to similar "fast and frequent" corridors. The highest classification of route in KCATA's existing service guidelines are "Key Corridors."

Exhibit 1 shows how Route 201 North Oak's performance compares to Key Corridors in the fixed-route network. Route 201 North Oak's average daily ridership (ADR) is well below existing MAX routes and 71 Prospect and 24 Independence (the next routes identified for a MAX investment). However, ridership is almost that of other Key Corridor routes (12 12th Street, 25 Troost Local, and 101 Minnesota/State Avenue).

Exhibit 1: Route 201 North Oak and Key Corridors Performance Summary (2018)

Route	2018 Average Wkdy Daily Ridership	Daily Hours	Daily Miles	Px/Hour	Px/Mile	Direct Op. Cost/Px	Direct Op. Cost Recovery
1 Main MAX	3,336	166.9	1,542	19.99	2.16	\$2.61	34.8%
2 Troost MAX	3,785	190.9	2,148	19.83	1.76	\$2.67	30.2%
12 12 th Street	811	38.8	427	20.91	1.90	\$1.96	46.0%
24 Independence	2,354	106.6	946	22.73	2.49	\$2.30	37.7%
25 Troost Local	1,020	56.5	579	18.06	1.76	\$2.26	40.1%
31 31 st Street	2,493	113.9	1,373	21.88	1.82	\$2.43	31.1%
39 39 th Street	2,024	83.8	800	24.17	2.53	\$2.17	37.6%
71 Prospect Local	4,094	166.6	1,714	24.58	2.39	\$2.14	37.8%
101 Minnesota/State Ave	1,572	87.7	1,146	19.92	1.37	\$2.99	29.3%
201 North Oak	800	60.7	972	13.19	0.82	\$4.14	25.5%

Route meets standard with value between 75%-125% of the standard

Route exceeds the standard with a value 125% or greater of the standard

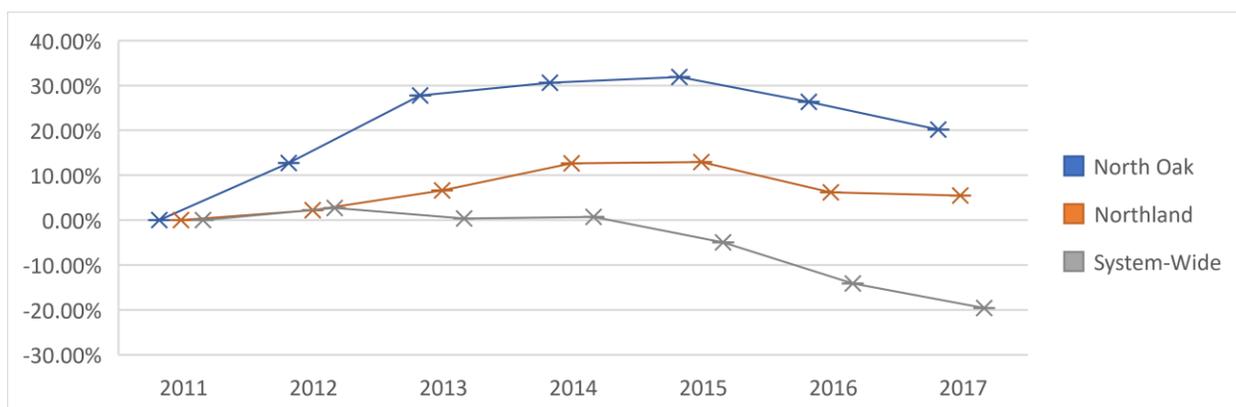
Route meets 50%-75% of the standard

Route meets 0%-50% of the categorical standard

Route does not operate

When evaluating service, it is also important to review trends over time. KCATA’s system ridership has continued to decline, as shown in **Exhibit 2**. However, Northland routes as a whole have better maintained ridership during the same period; Route 201 North Oak accounts for 25% of ridership in the Northland. The graph in **Exhibit 2** helps to show how average daily ridership (ADR) on Route 201 North Oak compares to changes in Northland ridership and KCATA system-wide ridership since 2010. System ridership has declined 20 percent since 2011, but Northland ridership has increased five percent over the same time period. Ridership on Route 201 has increased 20 percent since 2011. Annual percentage change could also be compared, but using a baseline of 2010 helps to visualize how total ADR compares to previous years.

Exhibit 2: Change in ADR (Compared to 2010)



ON-BOARD SURVEY RESULTS

An in-person survey on-board Route 201 North Oak, Route 233 Vivion-Antioch, and Route 238 Meadowbrook was completed in late October 2018. The primary purpose of the survey was to better understand travel patterns, trip purpose, access modes, and general demographics of transit passengers in the North Oak and connecting corridors. This section provides a brief summary of the survey results.

GENERAL RIDERSHIP PROFILE



As shown in the snapshot, all but one survey respondent are residents in the Kansas City area. The single visitor on Route 201 North Oak boarded in the River Market at 3rd and Grand and used the bus to access Boardwalk Square for shopping and dining amenities.

Transit often realizes a low percentage of choice ridership in the Kansas City Area, however, Route 201 North Oak has a higher than expected percentage of “choice riders.” The survey asked passengers if they had access to a vehicle they could have used to make their trip instead of taking transit. If the respondent

replied yes, they were considered to be a choice rider as they had another transportation option available and chose to instead ride transit. The survey found that about 25 percent are choice riders. Conversely, riders who do not have another transportation option and are reliant on transit are referred to as “transit dependent.” For comparison, in a similar survey Main Street MAX ridership was found to have 21 percent choice riders and the KC Streetcar was found to have 65 percent choice riders.

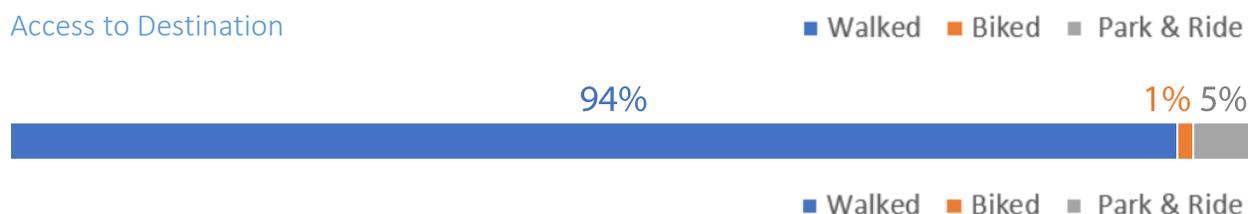
As anticipated, the majority of North Oak riders access the route via walking (see **Exhibit 3**). For those who access the route via walking, the average walk trip is two minutes. In addition to walking, there were several that used park-and-ride access, and a small number who used bicycle to access the route.

Exhibit 3: Access Type for 201 North Oak

Access from Origin



Access to Destination

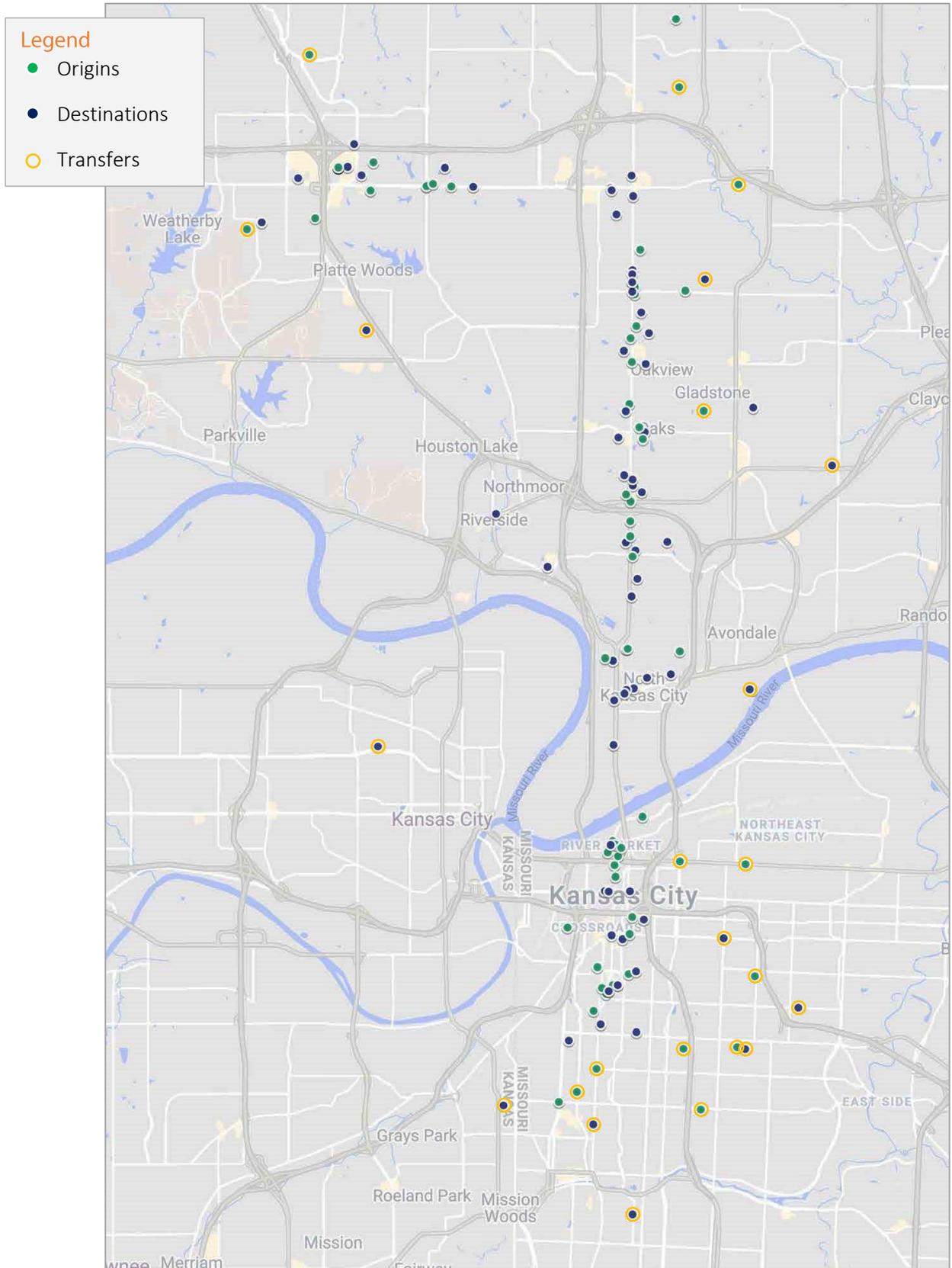


The majority of trips are home-based-work (HBW) trips. These standard commute trips account for 58 percent of total trips on Route 201 North Oak. The next largest category is home-based-other (HBO) trips, accounting for 31 percent. Non-home-based trips account for 11 percent. In addition to analyzing trip type, the survey asked more detailed information about the type of place riders came from and were traveling to. Trip destination is summarized as follows

- Home (40%)
- Personal Business (8%)
- Dining/Shopping/ Recreation (12%)
- Work (37%)
- Education (3%)

Exhibit 4 on the following page shows the origins and destinations of survey respondents. The majority of both origins are destinations are in close proximity to the route indicating that existing riders are not willing to walk further than a block or two.

Exhibit 4: Origins and Destinations



COMMUNITY ENGAGEMENT OVERVIEW

The objectives for community engagement for the North Oak Corridor Transit Study included:

- *Inform* the stakeholders by providing balanced and objective information to assist them in understanding the problems, alternatives, opportunities and solutions.
- *Consult* the stakeholders by obtaining feedback on analysis, alternatives and decisions.
- *Involve* the stakeholders by working directly with them throughout the process to ensure that concerns and expectations are consistently understood and considered, ensuring all stakeholder groups are included and consulted.
- *Demonstrate* that the feedback has influenced the decision-making and planning priorities.
- *Build* partnerships with other agencies and stakeholders, recognizing the effect this effort has on the community, and that it complements other community initiatives.

A variety of methods were used to communicate key messages with target audiences. Throughout the study the project team relied upon several levels of engagement including a project management team (PMT), Advisory Committee, stakeholder groups, community presentations, and public events.

PROJECT MANAGEMENT TEAM (PMT)

The Project Management Team (PMT) was responsible for leading the study and technical analysis. In addition to consultant staff, the PMT included technical staff and representatives from the cities of Gladstone, Kansas City, and North Kansas City, as well as the KCATA.

ADVISORY COMMITTEE

The Advisory Committee assisted the study team by providing structured input to the study and reviewing and reacting to conclusions and recommendations. Although the role of the committee was advisory, the committee was asked to review and accept major study conclusions and recommendations prior to sharing with the public and external stakeholders.

Advisory Committee members include:

- Zack Clevenger – North Kansas City Council/Mayor Pro Tem
- Laura Machala – North Kansas City Planning Commission
- Bob Martin – iWerx
- John Miller – Stor-Safe
- RD Mallams – Gladstone City Council
- Carolyn Meyer – Gladstone Neighborhood Commission Member
- Tim Johnston – Briarcliff Trails
- Patty Hilderbrand – KCMO Public Works
- Kevin O’Neill – Labor Beacon
- Eva Steinman – MoDOT
- Ed Linnebur – Northland Neighborhoods Inc.
- Shelia Tracy – Northland Regional Chamber of Commerce

The Advisory Committee met twice during the course of the study and group email was used to keep the Committee apprised of developments. Advisory Committee member feedback was sought during the first meeting in March on four main topics: visioning, needs and barriers to transit in the northland, fast and frequent characteristics, and alignment alternatives. The Advisory Committee identified common barriers to transit including the lack of a pedestrian environment and connections on (and off of) the corridor,

high traffic volumes and speeds, low amenities and unattractive stops, uncertainty in schedule or reliability, and the availability of free parking in downtown Kansas City. The group also provided input on service frequency, noting that 10 to 15-minute service is what they view as "frequent" service.

The purpose of the second Advisory Meeting in June was to present conclusions on the preferred service plan, as well as, provide an opportunity to ask questions or voice concerns. Members of the Advisory Committee discussed funding procedures for the project such as transit tax revenues from current taxes and a BUILD grant. Project justification was another main topic of the discussion and included qualitative and quantitative rationale for the Project. The Advisory Committee agreed with the progress and conclusions determined by the project team.

COMMUNITY PRESENTATIONS & DISCUSSION

Several community presentations were delivered throughout the project to key stakeholder and community groups including the following:

- NKC City Council (December 7, 2018)
- Gladstone City Council (December 10, 2018)
- Northland Regional Chamber of Commerce (NRCC) Planning Committee (January 24, 2019)
- RiverNorth (March 12, 2019)
- NKC City Council (June 18, 2019)
- Gladstone City Council (June 22, 2019)
- FOCUS North Oak (multiple meetings)
- FOCUS Vivion Road (multiple meetings)
- Kansas City, Missouri 1st District Problem Solving (September 3, 2019)

PUBLIC EVENTS

In lieu of traditional public meetings, the PMT aimed to reach Northland residents at community events and at locations where they already gather. To achieve a wider range of contact, the study group coordinated with community centers and relied upon presence at local grocery stores and existing transit centers to engage existing transit users, as well as, non-transit riders.

PUBLIC ENGAGEMENT: ROUND 1

PUBLIC EVENTS

In lieu of traditional public meetings, several public events were held to reach Northland residents at community events and at locations where they already gather.

NKC YMCA - MARCH 5TH

The North Kansas City YMCA is located one-half mile east of the corridor and serves as a community center for the City of North Kansas City. The public outreach took place from 4:30 p.m. to 6:30 p.m., a busy time for the YMCA. Heavy foot-traffic gave way to good visibility for engagement. In general, most people who stopped by were excited about potential transit improvements to the corridor. Several people commented on the need for park-and-ride locations along the corridor, particularly as parking restraints on the 3rd and Grand lot are tightened.

VIVION PRICE CHOPPER - MARCH 5TH

The team conducted public engagement from 1:30 p.m. to 3:30 p.m. at this location. Several residents and regular Route 201 riders came to this location to voice support for improvements. Regular passengers also commented on accessibility issues as well as route reliability.

GLADSTONE COMMUNITY CENTER - MARCH 8TH

The Gladstone Community Center is located just east of the North Oak corridor and contributes to the “downtown feel” that Gladstone is working to implement with Linden Square investments. Several events take place at the community center, including a Polynesian dance competition underway during the team’s outreach. Several Route 201 passengers came to this location in addition to many others who stopped by the booth who were more unfamiliar with transit in the Northland.

BARRY ROAD PRICE CHOPPER - MARCH 8TH

The Price Chopper on Barry Road provided an opportunity to engage residents and potential passengers on the northern most segment of the corridor. In turn this engagement event brought in several current riders and many residents that are not typical transit users. The team received several comments on station maintenance and again heard the request for potential park-and-ride locations.

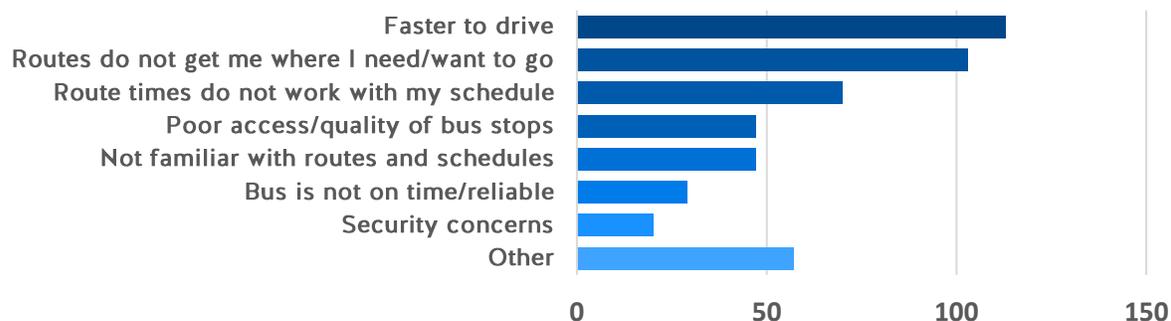


IN-PERSON AND ON-LINE SURVEY RESULTS

In tangent with first round of public engagement, a survey was published for 60 days to gather quantitative data. There was a total of 278 online and in-person survey responses from various locations in the Northland. The majority (44 percent) of the respondents reside in the 64155 (KCMO, North of Barry Rd and North Oak) and 64116 (primarily North Kansas City) zip codes. There are several key takeaways from the survey. Notable barriers identified by respondents are shown in **Exhibit 5**.

Exhibit 5: Survey Results, Barriers to Public Transportation Use

How important is a public transportation system to the



When asked about frequency, the highest percentage of respondents (30%) answered 15 minutes or less would make it more appealing to ride the bus. Another relevant discovery with the possible service break at Barry Road is whether or not riders would be willing to transfer. Close to half (44%) of those surveyed said they would be willing to transfer with twenty-seven (27%) hesitant about transferring depending on wait time etc. Other common comments from respondents include:

- More stops/access to institutions and apartments
- Need more park-and-ride locations/maintenance
- Increasing number of stops and access to stops
- Improve transit to the Airport, Downtown KCMO and farther north on North Oak Trafficway
- Need more East/West connections in the Northland

When cross-tabulating age and transit usage, respondents ages 55 - 64 and 25 - 34 years of age were the most likely to be everyday users (5+ times a day) of public transportation than those 65+ years of age. Additionally, those 65+ years of age had the least amount of public transit use with close to seventy-three percent (73%) never used or rarely use (less than once a month) public transportation.

Cross-tabulation of transit usage and importance of public transportation was also looked at. Respondents that never, or rarely use public transportation are more likely to rate the importance of public transportation lower than everyday users. Although, seventy-eight percent (78%) of all respondents stated that public transportation is either very important or extremely important to the community (see **Exhibit 6**).

Exhibit 6: Survey Results, Importance of Public Transportation

How important is a public transportation system to the community?

Almost 80% of respondents said that public transit is either very or extremely important.

FAST AND FREQUENT PRELIMINARY ALTERNATIVES

The North Oak corridor is a key north/south transit artery for the Northland, providing regional and local access between many activity centers and neighborhoods. Defining the fast and frequent network on the North Oak corridor and in the larger Northland area is a key outcome of the study. The following objectives were developed to guide the assessment of fast and frequent service design for the study.

NORTHLAND SERVICE DESIGN OBJECTIVES

- Deploy fast and frequent service in primary corridors (in keeping with Smart Moves 3.0)
- Match service levels to markets and transit potential
- Optimize operating funding investment and ridership
- Improve mobility in the Northland
- Support economic development (existing and future)

ALTERNATIVE CONCEPTS

Early in the study, the project team developed various preliminary alternatives based on previous studies and stakeholder feedback. All alternatives were initially defined by service's north terminus; however, southern terminus locations were evaluated as well. The following list includes the preliminary alternatives considered. The preliminary alternatives are shown on the following page in **Exhibit 7**.

- The alternatives are defined by the MAX service north terminus:
 - A. Full Route with terminus at Boardwalk Square.
 - B. Hwy 152 with a terminus north of Hwy 152 and North Oak.
 - C. Metro North with terminus at Barry and North Oak.
 - D. Metropolitan Community Center.
 - E. 72nd Street with a terminus at 72nd Street and North Oak (just north of Linden Square).
 - F. Englewood with a terminus at Englewood and North Oak.
 - G. Vivion Road with a terminus at Vivion and North Oak.

- Alternative south end termini could be paired with any of the north terminus alternatives.
 - a. Crown Center with a terminus at 27th & Main (current Route 201 terminus).
 - b. East Village Transit Center (EVTC) with a terminus at 12th and Charlotte.
 - c. 3rd & Grand with a terminus at 3rd and Grand (this provides a connection to the KC Streetcar).

Exhibit 7: Preliminary Fast and Frequent Alternatives



Prior to the initial screening, operating costs were developed for comparison between preliminary alternatives. An additional local service at current service levels was assumed for any alternative that does not serve Boardwalk Square with fast and frequent service. Annual operating costs for each preliminary alternative were developed in addition to assessing the cost difference between terminating the route at the EVTC or 3rd & Grand instead of Crown Center. Preliminary costs developed were refined throughout the planning study.

PRELIMINARY SCREENING

Each preliminary alternative was screened and qualitatively ranked in comparison to each other (rather than a pre-determined scale). The following list is the initial evaluation criteria used to evaluate preliminary alternatives. The rating of each alternative against the criteria is shown in **Exhibit 8**.

Evaluation Criteria:

- Locally Expressed Preference - Qualitative assessment of expressed community support for the alternative.
- Economic Development (Eco Devo) Potential - Qualitative assessment of transit supportive economic development and growth.
- Population Density - Does the alternative serve densely developed areas in the corridor.
- Serves Existing Ridership - Rating of how well the alternative would accommodate existing Route 201 North Oak ridership.
- Transit Potential - Qualitative assessment of the potential to maximize ridership in the corridor based on development patterns and destinations.
- Increase Operating Cost (\$) vs. Current Cost - Additional incremental cost compared to existing Route 201 North Oak annual operating cost.

Exhibit 8: Fast and Frequent Preliminary Alternatives Screening Matrix

Northern Terminus Options	Locally Expressed Preference	Eco Devo Potential	Population Density	Serves Existing Ridership	Transit Potential	Increase Cost vs. Current	Average Rating
A Boardwalk Square/Zona Rosa (Current Terminus)							2.5
B Hwy 152							1.7
C Metro North (North Oak Only)							2.3
D Maple Woods							1.7
E 72nd Street (North side of Gladstone)							2.7
F Englewood							1.0
G Vivion Road							1.7

The alternatives in **Exhibit 7** with a rating greater than 2.0 were selected to move forward into further evaluation. The three alignment alternatives moved forward (shown in **Exhibit 9**) include: A) Boardwalk Square/Zona Rosa (current terminus), B) Metro North (near Hwy 169 and Barry Road or the intersection of Barry Road and North Oak), and C) 72nd Street (north side of Gladstone).

Exhibit 9: North Oak Alignment Alternatives for Fast and Frequent Service



The preliminary alternative to continue fast and frequent service north of Barry Road was not advanced for more detailed evaluation for several reasons. The segment along Barry Road is an established market and the connection to the Boardwalk transit center was considered an important connection for access to employment sites in the airport corridor. North Oak north of Barry Road is currently served by Route 237. This segment currently generates limited ridership with the very limited service schedule but may have some potential as a park and ride market.

KCATA's system redesign should evaluate the possibility of additional service north of Barry Road along North Oak either by extending select trips of the North Oak fast and frequent service, or by providing a connector route with a transfer to fast and frequent service at Barry Road and North Oak.

SECONDARY SCREENING OF FAST AND FREQUENT ALIGNMENT ALTERNATIVES

The three alignment alternatives brought forward from the first screening were evaluated in further detail based on the secondary screening criteria listed below. Each criterion, data, and a more complete definition is included in this section.

- Locally Expressed Preference & Expectations (qualitative)
- Transit Patterns & Ridership
- Corridor Demographics & Existing Employment
- Land Use & Economic Development
- Cost

LOCALLY EXPRESSED PREFERENCE

The locally expressed preference criterion reflects the goals and preferences of local municipalities and stakeholders. Political support is necessary to move forward investment in the corridor and as such, a qualitative rating was assigned to each alternative based on input received from the Advisory Committee, project management team, stakeholder discussions, and current transit users.

Exhibit 10: Locally Expressed Preference Rating

Alignment Alternative	Rating	Notes
A Boardwalk Square (Current Terminus)		Service to Boardwalk Square will continue to be an important connection. Fast and frequent service to the existing terminus is expensive but select trips may be necessary.
B Barry Road (Near Hwy 169 or old Metro North)		Kansas City, Missouri feels strongly that fast and frequent service should go to Barry Road and potentially turn onto Barry to access commercial development, such as the new Twin Creeks Development on the west side of Hwy 169.
C 70th Street (Downtown Gladstone)		Kansas City, Missouri and Gladstone partners feel strongly that the route serve all of Gladstone. All options serve North Kansas City, Missouri.

TRANSIT PATTERNS & RIDERSHIP

The transit patterns and ridership criterion reflect the potential to maximize ridership (existing and future users) in the corridor based on development patterns and destinations. Notably, nearly half of riders (about 45 percent) make a “reverse commute” trip (traveling northbound in the morning peak and southbound in the evening peak). Generally, Route 201, including the Barry Road segment, has a relatively low peak to off peak passenger ratio, a characteristic more in line with an urban arterial route rather than a suburban commuter route. This indicates that peak only trips on Barry Road would likely not serve the majority of riders on Barry Road. Similarly, each segment has a similar number of boardings per route mile (with the Boardwalk segment with slightly more passengers per route mile). Again, this highlights that the Barry Road segment is integral to the service.

A qualitative rating was assigned to each alternative based on an evaluation of current service and potential transit markets. All options support a logical network, Option A best facilitates connections at Boardwalk Square, a prominent transfer facility in the Northland.

Exhibit 11: Transit Patterns & Ridership

Alignment Alternative	Rating	Notes
A Boardwalk Square (Current Terminus)		Serves the most existing and future riders with 180 additional boardings (daily average) more than Option B. This segment of the route has approximately 48 passengers per route mile.
B Barry Road (Near Hwy 169 or old Metro North)		Serves more existing and future riders than Option C and less riders than Option A. This segment serves an additional 95 boardings (daily average) than Option C. This segment of the route has approximately 39 passengers per route mile.
C 70th Street (Downtown Gladstone)		While this option serves a similar number of passengers per route mile (approximately 39), this option serves fewer total riders than Option A or Option B.

CORRIDOR DEMOGRAPHICS & EMPLOYMENT

The analysis of corridor demographics assessed demographics within one-half mile of either side of the North Oak corridor. The demographics analysis included population density and automobile ownership among others. Automobile ownership is often used as a proxy for transit dependent residents. Existing employment centers were also mapped to identify large clusters of employment along the North Oak corridor. There is not a significant difference among alternatives based on the demographics and employment criteria.

Exhibit 12: Corridor Demographics

Alignment Alternative	Rating	Notes
A Boardwalk Square (Current Terminus)		Population Density per Square Mile: 2,421 Automobile Ownership (Zero Car Households): 9% Employment Centers: 93,397
B Barry Road (Near Hwy 169 or old Metro North)		Population Density per Square Mile: 2,387 Automobile Ownership (Zero Car Households): 9% Employment Centers: 88,034
C 70th Street (Downtown Gladstone)		Population Density per Square Mile: 2,393 Automobile Ownership (Zero Car Households): 10% Employment Centers: 84,111

LAND USE & ECONOMIC DEVELOPMENT

The analysis of corridor land use and economic development potential assessed density, existing development character, and a qualitative assessment of existing transit supportive economic development and growth potential. Through discussions with the PMT and other community representatives, the team evaluated and inventoried existing and future investments in multi-modal connections, conducive land use patterns to transit ridership, and planned developments that would be transit-supportive.

Exhibit 13: Land Use and Economic Development

Alignment Alternative	Rating	Notes
A Boardwalk Square (Current Terminus)		The community has previously invested in the Boardwalk Square development and nearby Zona Rosa area. However, the growth potential along the segment is not likely as high.
B Barry Road (Near Hwy 169 or old Metro North)		The planned community and development at Twin Creeks along Barry Road includes significant community investment. This area is likely to experience extreme growth.
C 70th Street (Downtown Gladstone)		The City of Gladstone is working to redefine the land use pattern and encourage infill development in and around Downtown Gladstone. This transit-supportive land use pattern will benefit the fast and frequent network and has potential to be the most supportive segment among the three alternatives.

COST

Operating costs were developed for comparison between alternatives. All three alternatives costs assume the existing southern terminus, Crown Center. The annual operating cost for existing Route 201 North Oak is approximately \$2,237,000. Terminating the route at 3rd and Grand would reduce the operating cost by approximately \$800,000 and terminating the route at the EVTC would reduce costs by approximately \$400,000.

Exhibit 14: Preliminary Operating Costs (Increase Cost vs. Current)

Alignment Alternative	Rating	Notes
A Boardwalk Square (Current Terminus)		Approximate cost: \$5,063,000 Increased cost over current: \$2,826,000
B Barry Road (Near Hwy 169 or old Metro North)		Approximate cost: \$4,608,000 Increased cost over current: \$2,371,000
C 70th Street (Downtown Gladstone)		Approximate cost: \$4,324,000 Increased cost over current: \$2,087,000

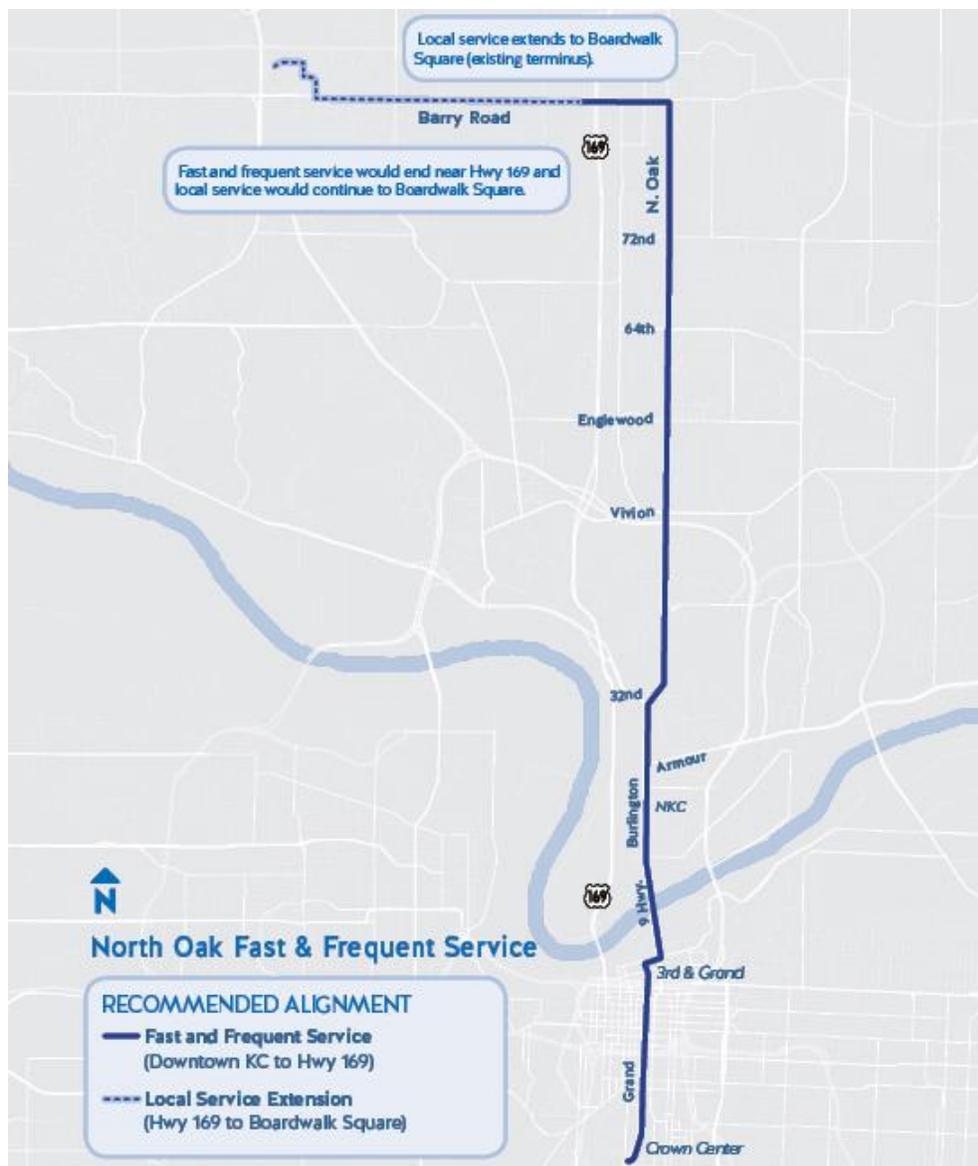
Note: All sub-categories add into the total overall evaluation score. As such, alternatives with a higher increased cost over existing Route 201 were given a lower rating.

RECOMMENDED SERVICE PLAN & ALIGNMENT

The secondary screening concluded that Option B: Fast and frequent service to Barry Road (near Hwy 169) is the preferred alternative based on corridor needs, travel patterns, existing ridership, and locally expressed preference. A local service extension to Boardwalk Square is warranted and the service would operate similar to Main MAX and Troost MAX with only select trips providing full service to Boardwalk Square. Other trips would terminate at a service break along the line, (somewhere between North Oak and the Twin Creeks Development just west of Highway 169). As noted previously, the possibility of extending select trips north of Barry Road along North Oak should be evaluated in KCATA’s system redesign.

The recommended alignment is shown in **Exhibit 15**.

Exhibit 15: Recommended Alignment



SERVICE PLAN

The service plan for the proposed North Oak corridor will be fast and frequent and align with KCATA’s stated guidelines for fast and frequent service. The proposed service plan is shown in **Exhibit 16**. The proposed service would operate from 4:45 a.m. – 12:00 a.m. Monday through Friday (weekdays), 6:15 a.m. – 11:45 p.m. on Saturdays, and 8:15 a.m. – 11:45 p.m. on Sundays.

Exhibit 16: Weekday Service Plan

	Early AM	AM Peak	Midday	PM Peak	Evening
Fast and Frequent (Between Crown Center and Hwy 169)	30	15	15	15	30
Local Extension (Between Hwy 169 and Boardwalk Square)	60	30	30	30	60

Note: Saturday and Sunday service would operate every 30 minutes to Hwy 169 and every 60 minutes to Boardwalk Square.

RECOMMENDED STATIONS & STOPS

In addition to more frequent service, guideway improvements, and branded vehicles, RideKC MAX service includes highly visible stations. Two types of improvements (shown in **Exhibit 17**) are recommended for the corridor:

- Enhanced Stations – Full stations with a high level of passenger amenities; in-keeping with other MAX stations in the network.
- Improved Stops – Basic amenities with improved pedestrian access and waiting areas.

Exhibit 18 on the following page shows recommended station and stop placement along the corridor.

Exhibit 17: Examples of Enhanced Station Improvements

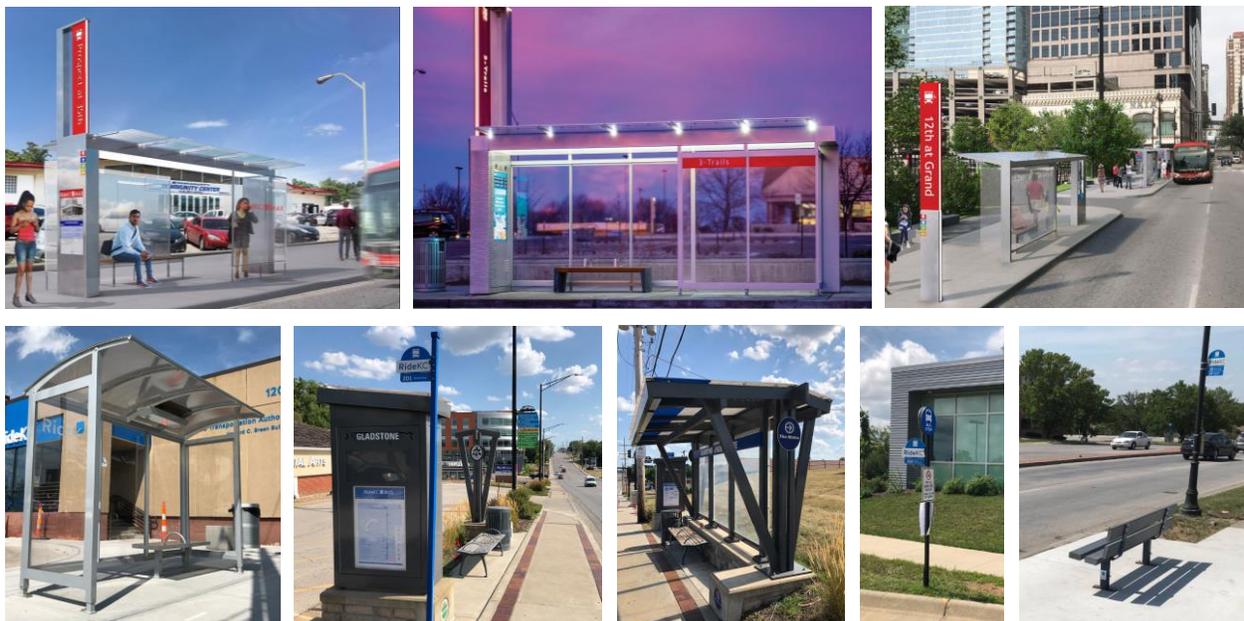


Exhibit 18: Recommended Stops and Stations



PARK-AND-RIDE FACILITIES

Park-and-ride lots are important in a service area such as the North Oak corridor to expand transit access to residents beyond a walkable distance from transit stops. Although the capital budget does not include new dedicated park-and-ride lots it is recommended that park-and-ride access be expanded through the establishment of shared use lots along the corridor.

Currently there are park-and-ride lots located at the Boardwalk transit center and the former Metro North site just west of North Oak on Barry Road. These existing lots can be improved and expanded. The Metro North site is being redeveloped. KCATA should work with the developers to identify a park-and-ride location that has convenient access to Barry Road and does not require buses to deviate significantly from the route.

Other potential park-and-ride sites include the following.

- Gladstone is in the center of the corridor and is a logical location for a park-and-ride lots. There are several commercial parking lots that are candidates for shared use.
- Vivion Road is one of the primary east west roadways in the Northland and is therefore a logical location for a park-and-ride lot. There are several commercial parking lots that are candidates for shared use.
- North Kansas City is a possible location for a park-and-ride lot for the convenience of residents of the community who choose to use transit to access jobs and activities in the Kansas City downtown area, or to access destinations north in the corridor. Although candidate commercial shared use lots in North Kansas City are more limited than in other parts of the corridor, even a relatively small lot can meet the market needs in the community.
- Surplus MoDOT ROW may be used for a park and ride lot near Route 152 and North Oak. This would require an extension of MAX service north along North Oak or a new express service.
- While the recommended alignment does not include North Oak north of Barry Rd to 152 Hwy, there may be potential for a Park & Ride opportunity near North Oak and Barry Road. Such a facility could be served by an additional variant of 201, or by the existing 237 or another express route to downtown.

Park-and-ride lots strategically located in the corridor can address the objective of enhancing mobility in the corridor and contribute additional transit passengers to make the new route more productive.

PUBLIC ENGAGEMENT: ROUND 2

A second round of public engagement was held to receive feedback on the proposed alignment and stop locations. In lieu of traditional public meetings, several public events were held to reach Northland residents at community events or at locations where they already gather. The second round of engagement focused on the proposed local service extension along Barry Road, stop locations, and recommended southern terminus. The team received positive feedback from passengers and residents at both the North Kansas City YMCA and Gladstone Community Center public events. Events took place at the North Kansas City YMCA on May 2nd and at the Gladstone Community Center on May 4th.

Several comment cards were collected from both locations. In summary, nearly 70 percent of respondents said they were likely to use the local extension and nearly 90 percent of respondent said that the proposed service break location (Hwy 169) was the right location. Feedback on the southern terminus was mixed and 50 percent of respondents said 3rd & Grand was sufficient, five percent preferred the EVTC, and 45 percent said that Crown Center was necessary. However, a terminus at Crown Center serves more users and destinations and is in-keeping with KCATA’s transit emphasis corridor (TEC) plan.

BOARDWALK SQUARE - MAY 13TH

The project team executed ad hoc public engagement at the northern terminus of current Route 201 North Oak, Boardwalk Square. Several passengers waiting for the next bus or recently alighting passengers were interviewed about their experience and familiarity with Route 201. Several said they used the route interchangeably with Route 229, choosing to ride whichever bus arrived first to Boardwalk Square. Most said they were headed to destinations along North Oak or to downtown Kansas City. Very few were going to a destination on Barry Road.

Exhibit 19: Materials from Round 2 of Public Engagement

North Oak Fast & Frequent Service

RECOMMENDED ALIGNMENT
 - Fast and Frequent Service (Downtown KC to Hwy 169)
 - Local Service Extension (Hwy 169 to Boardwalk Square)

SERVICE PLAN
 Weekly Service Plan (4:45 AM - 12:00 AM)
 Early AM Peak Day PM Peak Evening
 Fast & Frequent 30 15 15 15 30
 Local Extension 60 30 30 30 60
 Sunday & Sunday service will operate every 30 minutes to Hwy 169 and every 60 minutes to Boardwalk Square from 6:15 AM - 11:45 PM on Saturday and from 6:15 AM to 11:45 PM on Sunday.

DRAFT STATION ALTERNATIVES
 • Proposed Stations (enhanced stations with high passenger amenities)
 • Proposed Stops (basic amenities with improved pedestrian access and waiting area)
 Existing Route 201 North Oak has approximately 75 station pairs. The proposed route shows has approximately 45 station pairs.

SOUTHERN TERMINUS OPTIONS
 1 Crown Center (Current Terminus)
 2 EVTC (12th and Charlotte)
 3 3rd & Grand

STATION CONCEPT DESIGN

CURRENT MAX STATION DESIGN
 In addition to more frequent service, guideway improvements and boarded vehicles, RideKC MAX service includes light rail and boarded stations. This type of station improvement is one option for enhanced stations along the fast and frequent service on North Oak at major transit nodes in the Northland. MAX station amenities include real-time arrival information, and pedestrian access improvements.

INTEGRATING BICYCLE INFRASTRUCTURE
 Several bicycle facilities are planned or existing along the Route 201 North Oak corridor. This includes a two-way cycle track on Grand through Crown Center, existing bicycle lanes on Grand through downtown Kansas City, a planned two-way cycle track on Burlington through North Kansas City, and bicycle improvements on North Oak between Independence and Barry Road.

There are two general bicycle infrastructure concepts being considered for the Route 201 North Oak corridor: outside bicycle lanes in both directions and a two-way cycle track on one side of the corridor.

Bicycle Lanes **Two-Way Cycle Track**

Bicycle Lane and Transit Stations **Two-Way Cycle Track and Transit Stations**

Separated bike lanes and protected bicycle facilities can be integrated with a variety of bus station and stop designs. When feasible, separated bicycle lanes should be routed behind bus stops to minimize conflict between buses and bicycles. This can be seen in practice at the newly designed transit stop at 16th & Grand.

NORTH KANSAS CITY PLANNED CONCEPT DESIGN

As City is progressing with the "Street" design for the Corridor, the redesigned Corridor will include a cycle track on the east corridor with a protective secondary shared shoulder. Allways will be positioned cycle track in the west. Complete Street concept includes enhanced curb and to, medians, crosswalks, columns, site furniture and lighting, and landscaping.

EXISTING GLADSTONE STATION DESIGN

Connecting the Northland Communities
North Oak Transit Study
QUESTIONS

- Are you or someone you know likely to use the local extension?
 Yes No Maybe
- Is the frequency on the local extension to Boardwalk Square sufficient?
 Yes No Maybe
- Is just west of Hwy 169 the right service break location for fast and frequent service?
 Yes No
 If no, where would you suggest? _____
- What is your preferred southern terminus?
 3rd & Grand (River Market)
 East Village Transit Center (12th & Charlotte)
 Crown Center (current terminus)

Other comments: _____

RIDERSHIP

Ridership forecasts were developed using the Federal Transit Administration (FTA) Simplified Trips-on-Project (STOPS) model for an existing year (2017), opening year, 2027, and 2037. STOPS is a stand-alone ridership model specifically created by FTA for evaluating new transit networks and services. STOPS is calibrated and validated using actual ridership experience on fixed-guideway transit including bus rapid transit (BRT), light rail (LRT), commuter rail and streetcar systems across the country.

The preferred alternative for North Oak was modeled utilizing the STOPS model that was developed for the Kansas City Streetcar Main Street Extension project. This model was reviewed and approved by FTA as part of the Kansas City Streetcar Main Street Extension's New Starts Grant Application process.

The table below summarizes the ridership projections for the preferred alternative by community. The establishment of North Oak fast and frequent service is projected to result in an increase of 49% over the current Route 201. The projected increase is consistent with the experience on the previous MAX lines.

Exhibit 20: North Oak Fast and Frequent Ridership Projections

	Existing	2017	2023	2037
North Kansas City	94	120	130	170
Gladstone	113	210	240	280
Kansas City	593	1,190	1,300	1,550
Total	800	1,520	1,670	2,000

PROJECT COSTS

Total project cost is made up of both operating and capital costs. Capital costs are incurred at implementation of the project; operating costs are incurred annually and represent ongoing operations and maintenance costs associated with providing the service.

PROJECT OPERATING COST

The proposed service plan is estimated to cost \$3,478,000 on an annual basis. This represents a \$1,241,000 annual increase over the existing Route 201 North Oak's annual operating cost. The community allocation of operating cost is shown in **Exhibit 21**.

Exhibit 21: Community Annual Operating Cost Allocation

	Annual Cost
Kansas City	\$2,963,000
North Kansas City	\$254,000
Gladstone	\$261,000

PROJECT CAPITAL COST

Project capital costs include stations/stop amenities, roadway improvements, necessary transfer facilities and vehicle procurement. At present, no capital cost for fare collection or pedestrian and bicycle improvements are included. These are presumed to be included under separate projects in conjunction with a North Oak transit service implementation. **Exhibit 22** shows a summary of estimated capital costs.

Exhibit 22: Total Project Capital Cost

Project Capital Costs	High	Low
Enhanced Stations	\$9,015,300	\$7,415,300
Improved Stops	\$575,900	\$575,900
Real-Time Arrival Signs	\$840,000	\$840,000
Transit Signal Priority & Signals	\$100,000	\$100,000
Roadway Improvements	\$1,000,000	\$1,000,000
Transit Centers	\$2,000,000	\$2,000,000
Vehicles	\$4,950,000	\$4,950,000
Subtotal	\$18,481,200	\$16,881,200
Contingency	\$3,630,000	\$3,230,000
Subtotal	\$22,111,200	\$22,111,200
Professional Services	\$4,228,000	\$3,728,000
Total Cost	\$26,339,200	\$23,839,200

A more detailed breakdown of station and stop improvements and capital costs are shown in Exhibit 23.

Exhibit 23: Station and Stop Capital Cost Breakdown

Enhanced Station Capital Costs		Improved Stop Capital Costs	
MAX Shelter & Installation	\$128,000	RideKC Standard Shelter & Installation	\$14,500
MAX Marker & Installation	\$45,500	Concrete Pad	\$1,800
Station Platform (Level Boarding)	\$6,800	Demolition & Site Modifications	\$1,200
Bus Pad	\$9,000	Bicycle Rack	\$1,250
Demolition	\$5,700	Trash Receptacle	\$1,500
Electrical	\$15,000	Bench	\$1,900
Bicycle Rack	\$1,250		
Trash Receptacle	\$1,500		
Bench	\$1,900		
Total Enhanced Station Cost	\$214,650	Total Improved Stop Cost	\$22,150

The capital plan for the proposed service is scaled to the corridor. With a total estimated cost of \$26.3 million, about \$2 million per mile, the project is affordable, and will provide the amenities and visibility necessary to make the project attractive to existing and potential transit users in the Northland.

PROJECT JUSTIFICATION

A fundamental question addressed in the North Oak Transit Study is whether the recommended transit investment, or any transit investment at all, is justified by the benefits that are expected to accrue from the project. The question of project justification was addressed through several quantitative and qualitative points.

CORRIDOR RIDERSHIP

Route 201 is the highest ridership route in the Northland. Ridership is a key consideration in assessing the value of a transit investment. The relatively high level of ridership (a projected 49 percent increase over current ridership) is partial justification for the investment. The projected increase in ridership is consistent with the 60 percent increase observed upon implementation of Main MAX.

ROUTE PERFORMANCE MEASURES

Route 201 is the highest performing Northland route in the KCATA system in terms of the metrics KCATA uses to evaluate routes. It is anticipated that North Oak MAX will remain the Northland's most effective and efficient route and its metrics will approach the performance of Main MAX. Furthermore, as discussed in the Existing Conditions section, the Northland as a whole has better maintained ridership than the rest of the KCATA system since peaking in 2014-2015.

CAPITAL AND OPERATING PLAN

The capital plan is scaled to the corridor. With a total estimated cost of \$26.3 million, about \$2 million per mile, the project is affordable, and will provide the amenities and visibility necessary to make the project attractive to existing and potential transit users in the Northland.

The operating plan will provide 15-minute service during the daytime on weekdays and a full-service span that will meet the expectations of Northland residents and employees. Although the estimated operating cost of \$3.5 million is a significant increase over the cost of existing Route 201 service, the increment of \$2.2 million is modest, realizing the current investment in Route 201.

ECONOMIC DEVELOPMENT

Support for development initiatives is a primary objective of communities in the Northland. The experience of Main MAX and Troost MAX is that this type of transit investment along with other targeted development initiatives does lead to support for development and employment in the service area. A 2017 study by MARC concluded that this type of investment is effective in supporting economic development and the Burlington/North Oak corridor is one that can return these desired benefits. Although the exact impact of urban amenities is difficult to estimate, research suggests that such investments can stabilize real estate markets, incentivize private investment in real estate, and attract residents and jobs.¹

¹ Technical Memorandum, Potential Impacts/Maximum Potential Service, Fregonese Associates, October 17, 2018.

Locations along the route that may warrant focused attention on development are:

- North Kansas City – NKC is already a focus but the city has significant potential given its proximity to downtown Kansas City and its relatively dense and transit friendly development pattern.
- 42nd and North Oak – The intersection has good access to the east and west and has potential for development.
- Vivion Road and North Oak – Although development has occurred, the existing development could be augmented with transit related development, and current development could be made more accessible.
- Downtown Gladstone – Another focus area with significant potential.
- Barry Road and North Oak – Redevelopment of this prominent intersection could feature transit supportive development.
- 169 Highway and Barry Road – Adjacent to one of the largest Northland developments, transit supportive uses should be incorporated into the planned development.

IMPROVED WORKFORCE ACCESS

Transit access to employment in the Northland is a major issue among stakeholders and employers as employment in the corridor grows. The enhanced service on North Oak will provide an important transit spine that, along with connecting transit services, will improve access to Northland jobs from other parts of the metropolitan area.

CONSISTENCY WITH COMMUNITY PLANS AND INITIATIVES

The recommendations of the North Oak Transit Study are consistent with numerous plans for the transformation of the corridor. These include the North Kansas City Master Plan and Burlington Complete Streets Plan, the Gladstone Master Plan and the KCMO Briarcliff Winnwood Plan. The recommendations support previous, recent, and planned community investments in economic development and infrastructure. The project builds on the North Kansas City initiative for Burlington Street and incorporates these committed investments into the capital plan for North Oak MAX.

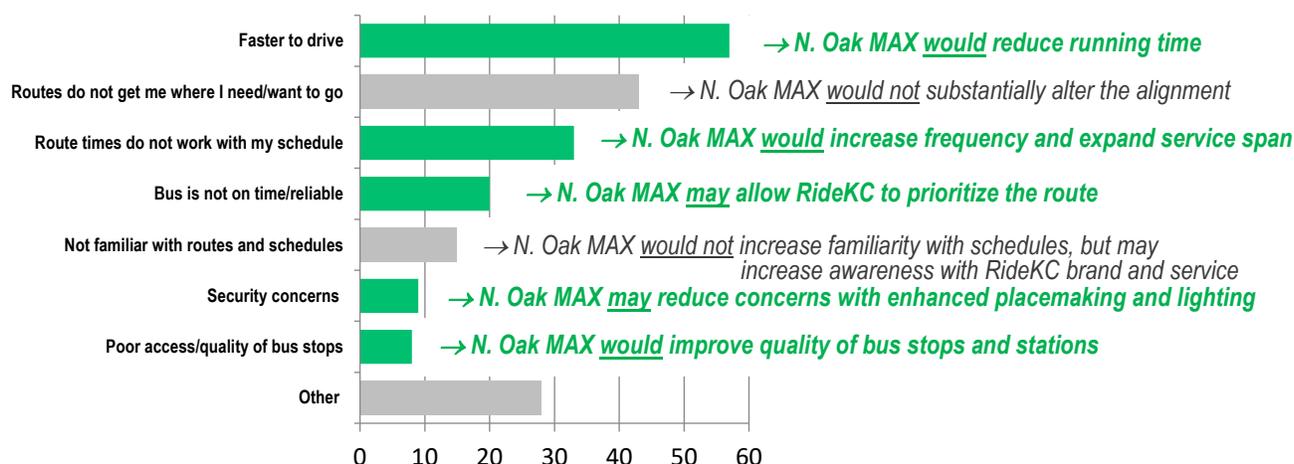
STAKEHOLDER INPUT AND EXPECTATIONS

The North Oak Transit Study included a robust stakeholder engagement component, with dozens of stakeholders participating directly in the project through the Advisory Committee, interviews and presentations. Key stakeholders in the corridor support the investment and even expect an improvement in transit service in their communities.

PUBLIC INPUT AND EXPECTATIONS

The general public was engaged in the study through multiple public events and a survey that reached all parts of the corridor and received more than 275 responses. Public interest and support for the project was evident in all the public meetings. The survey found that the vast majority of respondents agree that transit service is important to the community; 85 percent of respondents agree that transit service is extremely important or very important to their community. Only two percent of respondents that transit is not an important service. The enhanced service in the North Oak corridor will address many of the barriers to using transit cited by survey respondents (see **Exhibit 24**).

Exhibit 24: How North Oak MAX will Address Identified Barriers



OTHER PROJECT BENEFITS

Transit improvement projects are associated with several benefits that address community objectives.

- Help create more vibrant walkable communities. Highly visible well-lit transit stations with pedestrian accommodations contribute to a pedestrian friendly environment, and transit users are also pedestrians. Coordinated investments in urban amenities such as transit and pedestrian infrastructure are proven to shape land use patterns.
- Improve mobility, mode choice and connectivity. For example, the North Kansas City commercial area can be effectively connected to the downtown KCMO residential market with transit.
- Provide health benefits and increased physical activity. Transit users walk to stations, and enhanced transit services typically attract users from longer distances.
- Reduce air pollutants and improve air quality to the extent transit trips replace automobile trips. KCATA is committed to low emission vehicles; North Oak MAX vehicles will be CNG or electric.
- Build community, meet neighbors. Transit requires users to share rides, thus they meet others on the vehicle, at stations and walking to and from stations. This can make communities stronger.

FINAL OPEN HOUSE PUBLIC MEETING

An open house was held at the Gladstone Community Center on Tuesday, June 25, 2019 from 5:30 – 7:30 p.m. This final meeting gave the public an opportunity to learn about the project and the recommendations, ask questions and voice concerns. PMT members explained project elements, key findings, and next steps.

CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

Welcome!

June 25, 2019

CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

Kansas City Area Transportation Authority
Kansas City, Missouri
North Kansas City, Missouri
Gladstone, Missouri

RideKC NORTH KANSAS CITY

CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

STUDY PROCESS

1st Phase of Public Events 2nd Phase Open House

Evaluate Existing Transit Service → Identify Issues & Needs → Develop and Refine Alternatives → Select a Preferred Alternative → Develop Implementation & Funding Plan → Deliver Final Plan

RideKC NORTH KANSAS CITY

CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

WHO IS RIDING ROUTE 201 NORTH OAK?

- 800 Average Daily Riders
- 60% Home-Based Work Trips
- 35% Minority Riders
- 1 in 4 "Choice Riders"
- Common Transfer Routes: MMAX, 229 & 71

PROJECT FEEDBACK

What are barriers to public transportation?

How important is a public transportation system to the community?

83% said either EXTREMELY or VERY important. Only 2% said NOT IMPORTANT.

Importance of public transportation by frequency of use:

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STATION CONCEPT DESIGN

MAX STATION DESIGN

EXISTING GLADSTONE STATION DESIGN

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INTEGRATING BICYCLE INFRASTRUCTURE

Bicycle Lanes

Two-Way Cycle Track

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PROJECT BENEFITS

- RIDERSHIP INCREASE**: 50% increase in ridership. This is consistent with prior MAX lines (Main Street MAX saw an increase of 60% in the first year and an increase of 40% over 10 years).
- SCALED CAPITAL INVESTMENT**: Improvements total a \$2M per mile capital investment which matches projected ridership.
- SUPPORT ECONOMIC DEVELOPMENT**: Local and national experience shows BRT can be an economic generator and BRT on North Oak will leverage existing investment in the corridor.
- IMPROVE SAFETY**: Crime decreased significantly following the implementation of Troost MAX in 2011.
- ENHANCE QUALITY OF LIFE**: BRT on North Oak will improve mobility, mode choice options, and workforce access in the Northland. Transit is also better for air quality and promotes stronger communities.

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CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

ROUTE ALIGNMENT & STATION LOCATIONS

North Oak Fast & Frequent Service

RECOMMENDED ALIGNMENT

SERVICE PLAN

STATION IMPROVEMENTS

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CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

PRELIMINARY COST ESTIMATES

Capital costs include station and stop alignment, real time arrival signs, benches, bicycle amenities, and shelters, local bonding to select stations, roadway improvements and bus pads, transit center at Hwy 289 and Berry Road, new MMAX vehicles, contingency and professional services.

CAPITAL COST	
Enhanced Stations & Improved Stops	\$10,431,200
Roadway Improvements	\$1,000,000
Transit Center	\$2,000,000
Vehicles	\$4,950,000
Contingency	\$3,430,000
Professional Services	\$4,228,000
Total Cost	\$26,399,200

OPERATING COST

Annual Operating Cost Estimate = \$3.5 M
(Current Route 201 North Oak service costs \$2.2 M annually)

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CONNECTING THE NORTHLAND NORTH OAK CORRIDOR TRANSIT STUDY

NORTH OAK IMPLEMENTATION

July 2019 → Summer 2020 → 2021 → 2022 → 2023 → 2024

Complete Planning Study → NEPA and Federal Grant Application → Preliminary Design and Engineering → Final Design and Engineering → Procurement and Construction → North Oak Fast and Frequent Service

— We Are Here!

Thank you for coming!

RideKC NORTH KANSAS CITY

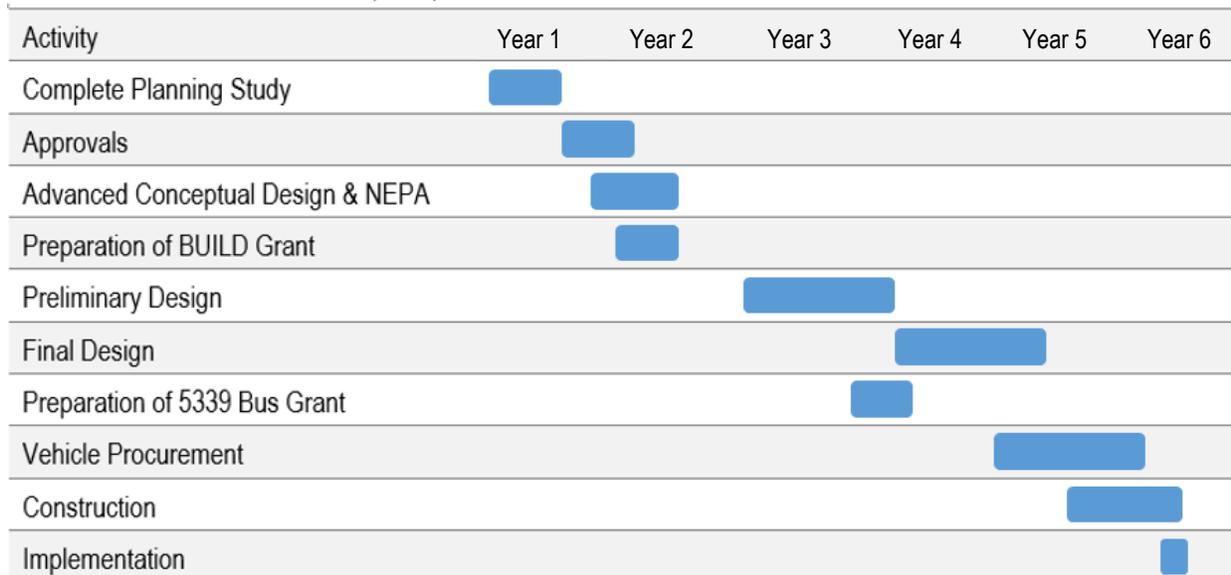
IMPLEMENTATION

The following is an outline of an implementation plan for the recommended North Oak Transit Plan. It is not uncommon for the implementation plan to change as the project develops, thus this approach should be considered an initial plan that will guide the project’s implementation over the next several years.

Most projects like this one are funded in part through a federal grant administered by the FTA. The project likely would not fare well under FTA’s Capital Investment Grant (CIG) program (Small Starts) because the projected ridership does not meet Small Starts criteria thresholds. The Better Utilizing Investments to Leverage Development, or BUILD Transportation Discretionary Grant program, provides an opportunity to invest in road, rail, transit and port projects that address national objectives. Several BRT projects like this one around the country have been successful recently in securing BUILD grants. These grants have been awarded for similar projects with awards between \$5 million and \$20 million. A reasonable budget expectation for the North Oak project is between \$10 to \$12 million, based on past experience.² Other funding sources may include the Surface Transportation Program (STP) funds sub allocated through MARC or a 5339 bus grant.

The schedule for the preparation and award of the federal transportation grant is a major determinant of the North Oak’s implementation schedule. The schedule below shows how the project can move through the implementation steps, including application for the BUILD grant.

Exhibit 24: Station and Stop Capital Cost Breakdown



The following narrative provides additional information on the steps necessary for implementation, along with the responsibility for completing the actions.

² Oklahoma City received a 2018 BUILD grant of \$14.38 million for the Northwest BRT. Tulsa received a 2018 BUILD grant of \$6.5 million for BRT. Atlanta received a 2017 TIGER grant of \$12.6 million for Summerhill BRT. Birmingham received a 2015 TIGER grant for BRT.

1. ACCEPT PLAN RECOMMENDATIONS AND APPROACH

With the completion of the study, staff from the three cities (Gladstone, Kansas City and North Kansas City) and KCATA Planning comprising the Project Management Team (PMT) have accepted the recommendations for the capital plan and service plan, schedule and the approach to funding. In addition, the Advisory Committee has endorsed the recommendations. However, KCATA senior staff has not accepted the study recommendations, a necessary initial step in the implementation process.

ACTION	Submit North Oak Transit Study recommendations to KCATA senior staff and secure approval to move forward
TIMING	July - August 2019
RESPONSIBILITY	KCATA Planning Staff

2. CONFIRM COST ALLOCATION APPROACH

The North Oak project is unique in that the MAX line would operate in three cities, requiring the allocation of both capital and operating costs among the cities. Assumptions were made during the study which must be confirmed by the KCATA and the three cities. It is important to have accurate capital and operating cost estimates for city officials to evaluate prior to their commitment to the project. Project costs will be incorporated into formal agreements between the cities and KCATA.

ACTION	Confirm capital and operating cost allocation approach and estimates
TIMING	August – September 2019
RESPONSIBILITY	KCATA Planning Staff and Financial Staff

3. APPROVALS

Because the project is multijurisdictional, approvals will be required from the three cities and the KCATA Board. Approval, in the form of commitment of local share, will be required in the Spring of 2020 as part of the BUILD grant process. Approval, possibly in the form of a council resolution, would be required by the end of 2019 to allow the project to continue with the next steps towards implementation. The approvals could follow the outline schedule below.

- Acceptance of plan recommendations, and approval to pursue project implementation and funding through a BUILD grant.
 - KCATA Senior Staff – September 2019
 - City approvals – October 2019
 - KCATA Board of Commissioners – December 2019
- After cost allocations have been revised and confirmed, commitment of local funding.
 - KCATA – April 2020
 - City – April 2020

ACTION	Secure approvals and commitments from the cities and KCATA
TIMING	September 2019 – May 2020
RESPONSIBILITY	KCATA and City Representatives

4. ADVANCED CONCEPTUAL DESIGN AND ENVIRONMENTAL CLEARANCE

This phase will refine and expand on the planning study recommendations as necessary for the BUILD grant application and to complete the environmental analysis. All projects that use federal transportation funding must be cleared through the National Environmental Protection Act (NEPA) process. More detailed information on station locations and other project elements is necessary to assess the project's potential impacts. The BUILD grant application must include a commitment of local funding.

ACTION	Conduct advanced conceptual design and NEPA evaluation
TIMING	January 2020 – July 2020
RESPONSIBILITY	KCATA and City Representatives

5. BUILD GRANT APPLICATION

KCATA would be the grantee for this grant application. Much of the information required for the BUILD grant application was developed during the planning study. Additional information will be developed during the advanced conceptual design phase, including a refinement of project costs and benefits. A benefit cost analysis (BCA) is an important quantified evaluation of the project and is part of the BUILD grant application.

Endorsement letters are an important part of a BUILD grant application. Letter should be obtained from the following entities.

- KCATA Board of Commissioners
- Kansas City, North Kansas City and Gladstone
- Regional Transit Coordinating Council
- MARC Total Transportation Policy Committee (TTPC)
- Northland Regional Chamber of Commerce

ACTION	Prepare and submit BUILD grant application
TIMING	May 2020 – July 2020
RESPONSIBILITY	KCATA and City Representatives

If a BUILD grant is not secured there are other options for federal funding. These include Congestion Mitigation Air Quality (CMAQ) and Surface Transportation Program (STP) funds. Both of these funding sources are included in MARC's sub-allocation funds which are awarded on a year by year basis.

6. Preliminary and Final design

This phase is to refine and finalize project design elements to prepare for construction of stations and other facilities. Refinement of the operating plan may also be included in this phase. Design work would likely not be started until there is certainty that the project will be funded.

ACTION	Conduct preliminary and final design
TIMING	May 2021 – July 2023
RESPONSIBILITY	KCATA and City Representatives

7. 5339 BUS AND BUS FACILITIES GRANT AND VEHICLE PROCUREMENT

The project assumes that a subfleet of nine new MAX-type vehicles will be used for the service. The recommendation from the planning study is to fund the buses through a 5339 FTA bus grant and KCATA's capital fund. The new buses would replace buses currently operating on Route 201. Vehicle procurement typically requires 18 months from the time an order is placed to the time of delivery.

ACTION	Prepare 5339 grant application and conduct bus procurement
TIMING	January 2022 – July 2024
RESPONSIBILITY	KCATA

8. CONSTRUCTION

Construction for a project such as this typically requires about one full construction season.

ACTION	Award contracts for construction and oversee construction activities
TIMING	January 2023 – September 2024
RESPONSIBILITY	KCATA

9. IMPLEMENTATION

As construction nears completion, activities necessary for the start of the new service can begin.

ACTION	Prepare schedules, conduct public information campaign and implement service
TIMING	January 2024 – October 2024
RESPONSIBILITY	KCATA

The North Oak transit plan requires coordination among three cities and several agencies over a period of five years. Projects like this benefit from a project champion who can lead the effort to secure approvals and address the need to coordinate among the three cities, the KCATA, MARC and stakeholder groups such as the Northland Regional Chamber of Commerce, Neighborhoods, Inc. and economic development organizations..