

OKLAHOMA CITY



Northwest Multimodal Transportation Corridor Concept Plan



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Executive Summary

The Northwest Multimodal Transportation Corridor Concept Plan is a nationally recognized plan that examines an automobile-dominated, transportation corridor that is currently anchored at the Downtown Transit Center; with a goal to utilize the Santa Fe Station for this role in the future.

The Corridor includes Classen Boulevard to the Northwest Expressway and along the Expressway to an initial extension at Meridian Avenue. Subsequent discussions and planning projects have evolved to contemplate reaching, and possibly surpassing, Council Road. The concept plan is a small stretch of the imagination for how this arterial street and highway could be transformed for continued support of motorists while complementing high frequency transit, enhancing pedestrian and cyclist connections and improving access to destinations that contribute to public health.

While the Concept Plan is about many things, it primarily builds on EMBARK's 2030 System Plan as outlined in The Central Oklahoma Transportation and Parking Authority's (COTPA) regional 2005 Fixed Guideway Plan (FGP). This Northwest plan includes goals and objectives, data, maps and more and serves as a roadmap to the future of public transportation in the region.

The development of this concept plan was achieved, in large part, through the efforts of a quartet of agencies that were aided by a citizen's advisory group, University student concepts as well as public input meetings. The agencies included EMBARK, the Oklahoma City Planning Department, Oklahoma City County Health Department and the Association of Central Oklahoma Governments.

Since EMBARK was awarded a national award for the health-in-planning beta test in 2015 by the United States Department of Transportation (USDOT), which sparked the need for a broader plan, many more concepts have emerged. Some have become sharpened and more defined while new concepts continue emerged as EMBARK received feedback from the community. Interestingly, in 2017 the Concept Plan was a nationwide Transportation Planning Excellence Award (TPEA) winner; one of about ten determined by the USDOT.

During the main push of the concept plan planning process, the team sought to examine three overarching questions. First, could the corridor support various means of transportation including Bus Rapid Transit? Second, if so, what would the corridor look like with high frequency public transportation and the required pedestrian connections? Third, could improvements to the corridor support community public health? These three questions parallel the plan's formal problem statement.

Northwest Multimodal Transportation Corridor Concept Plan

This concept plan is not alone. It compliments and integrates with **planokc**, Oklahoma City's guide for policy, infrastructure and planning decisions for years to come, providing the path to a better quality of life and sustainable, efficient and successful development. (<https://okc.gov/departments/planning/comprehensive-plan>)

The concept plan expounds on some of the major ideas of **planokc** such as:

- Developing a transportation system that works for everyone
- Building an urban environment which facilitates health and wellness, and
- Developing great places that attract people and catalyze development, livability and housing choice such as through transit oriented development (TOD)

Regardless of improvements needed in the corridor such as pedestrian and cyclist mobility and safety, motorists' needs or the support of public health, high frequency transit emerged as the highest priority for the corridor concept plan. The BRT option recommended in the 2030 System Plan proved to still be the most viable rapid transit technology.

A Bus Rapid Transit (BRT) system employs futuristically-designed buses and station platforms that look and feel closer to light rail than a bus system. BRT appears to be the most prudent first step in high capacity transit for the corridor; as with so many larger U.S. cities. Adding BRT on this main arterial street and highway paves the way to adding BRT into other corridors and quadrants of the region as identified in the FGP. BRT and its upscale vehicles, aesthetically pleasing stops and pedestrian crossings, smart technologies, park-and-ride lots, and the ability to traverse Oklahoma City more efficiently by route of business access and transit (BAT) lanes or bus-only lanes are the features that make it nationally popular. BRT is unlike anything ever seen before in the region. It can be integrated into corridors by scaling it up or down to fit the local economy and need that depends on affordability, convenience and stimulation.

As mentioned, motorists need better roadway design, safer facilities and merge lanes, better traffic signal technology in certain locations and Select Park-and-Ride lots. Motorists will also be able to travel more efficiently as they realize pedestrians will have a legible, safe space to travel as well.

The prospect of local funding for multimodal improvements has yet to be detailed, but realistic and good options are suggested in the concept plan.

The following pages include many concepts. Some have progressed, but all need differentiating degrees of effort by various parties for completion. Transit, for example, will need far more platform stops than the seven illustrative locations described in the maps and in the various sketches, and could possibly require 15 station crossings in each direction.

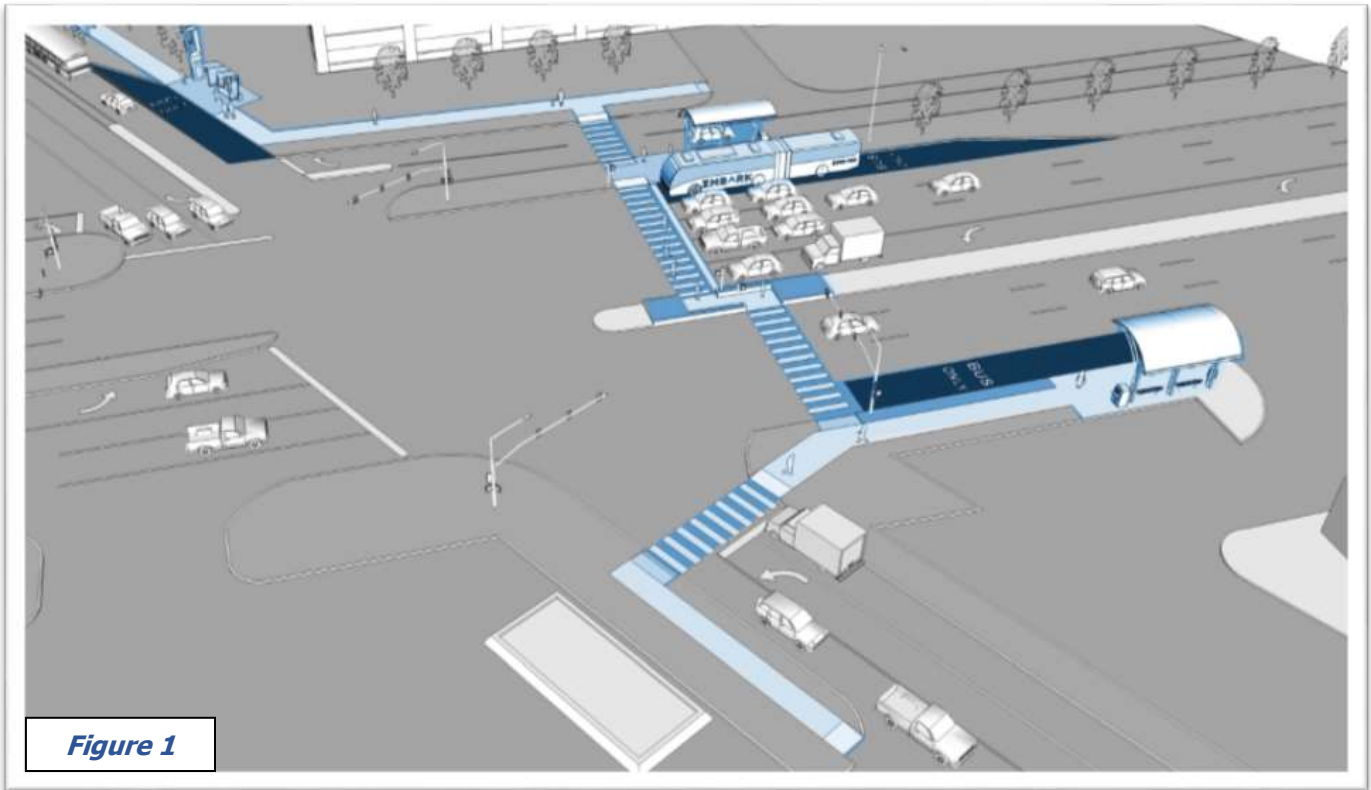
The ideas for transit oriented development (TOD), which are livability, placemaking, and private real estate investment, will require more attention as the Plan barely broaches the importance of those concepts. An upcoming important planning step is a close-up look at these ideas to satisfy National Environmental Policy Act (NEPA) requirements.

Oklahoma City and the surrounding area's needs are evolving along with a diversifying and growing population and economy. It is readily accepted that this six-lane corridor will essentially become Main Street in the City outside of Downtown Oklahoma City. This regionally important corridor is used often by many people whether they reside in the corridor or not. A successful project that is used by a wide range of people would be evidence that the multimodal approach along a transit trunk-line is a good city-shaping and livability strategy to use in other City quadrants. The Northwest Multimodal Transportation Corridor Concept Plan and its BRT backbone are transformational and are about more than choice, equity, mobility, health, safety, and urban sustainability. The Plan concludes with next steps including additional community input, additional technical planning and funding strategies. A list of major steps and more information on each of those next steps can be found starting on page 18.

Concept Background

EMBARC succeeded in having the corridor selected as one of the five in the U.S. for a health-in-planning beta test by the United States Department of Transportation (USDOT) in late 2014. Oklahoma City was one of only two cities where the beta tests were primarily about transit. Unfortunately, health characteristics and outcomes place Oklahoma among the nation's worst seven states. The poor public health outcomes of the residents in central Oklahoma City are well documented for each zip code. While this is a transportation plan, there is also a special emphasis on how the planning can benefit community health, livability, and the health of households living within blocks of the corridor's centerline. The corridor is nine miles long from the Santa Fe Station out to Meridian Avenue.

Since the end of the 2015 concept planning, a Smart Growth America Transit Oriented Development (TOD) workshop grant was awarded in April 2016 to only nine cities in the U.S, and Oklahoma City was one of the cities chosen. COTPA's grant proposal was about the NW Multimodal Corridor which is planned to be anchored at one end by the Santa Fe Station and includes nodes on Classen and the Northwest Expressway. The total corridor includes parts of four wards. The Oklahoma City Planning Department found that it has about 120,000 jobs and around 75,000 residents. Of the approximate jobs about 39,000 are away from Downtown, but within a quarter of a mile from the corridor centerline. About 45,000 residents are away from Downtown, and of them approximately 29,000 are within a quarter of a mile from the corridor centerline.



The concept planning has been a partnership among the Central Oklahoma Transportation and Parking Authority (dba EMBARK), Oklahoma City-County Health Dept. (OCCHD), City of Oklahoma City Planning Dept., and the Association of Central Oklahoma Governments (ACOG). A focus group of about 15 business and community representatives including the Oklahoma Health Equity Campaign (OHEC) also served as a sounding board. In addition to one major hospital (INTEGRIS) on the focus group, two more hospitals have a strong connection to health and the corridor. Students and some staff at The University of Oklahoma's (OU) Institute for Quality Communities (IQC) were an important resource to the four planning partners and created digital illustrative concept renderings (Figure 1), prepared meeting summaries, and performed research (See Appendix Two).

Oklahoma Department of Transportation (ODOT) was part of the focus group and the City's Public Works Department has been consulted as were the local Urban Land Institute (ULI) Council, Oklahoma Alliance for Public Transportation (APT), the City of Warr Acres, the disabled community, and other entities. Two well-attended community meetings were held in August and September 2015 to present information and conceptual ideas and to gain community input.

On October 2, 2015 The Concept Plan was presented to the COTPA Board of Trustees during their televised monthly meeting.

Northwest Multimodal Transportation Corridor Concept Plan

During 2016 there were two Smart Growth America community workshops featuring TOD and the corridor in late August. More than 100 people participated in the technical assistance and learned about the concept plan, BRT and more.

Several next steps have been identified as part of the Northwest Multimodal Transportation Corridor Concept Plan effort. The following list includes the next steps identified. More information on each of the recommended next steps can be found starting on page 18:

- Additional Outreach with Stakeholders - In order to advance the topic and engage the community, additional information and meetings have been conducted. As the effort moves forward, there will need to be significant discussion with the public and property owners within the corridor.
- Prepare Final Report - Reporting and communicating the efforts of the NWMTC is an important step of the planning effort.
- Review Beta Test Results - Understanding the results of the USDOT of the Healthy Planning Framework Beta Test is an important step in knowing how to improve the corridor from a health perspective.
- Identify Interim Implementation Projects - In order to have a successful BRT corridor, initial improvements will need to be made to the pedestrian and bicycle network, traffic signals and existing bus stops. These types of projects could help prime the corridor for additional transportation investment.
- NEPA Work and other Planning & Design - Significant planning has taken place; however, there is still much planning and design to be conducted.
- Funding Options/Sources - Identifying available and appropriate local, state, and federal funding sources is key to the successful implementation of multimodal transportation improvements.

Several focused steps emerged during 2016 as the way to plan and design the multimodal project. Each is a deeper look that often requires a community engagement specific to the step. Some will require a small budget; while others may involve a greater expenditure for a consultant team. These steps are all part of the NEPA and Additional Planning and Design step above. Of those, one key step underway in 2017 is the Benefit Cost Analysis (BCA). Another, which will be needed soon, will be a federally defined process, such as an environmental assessment.

The corridor needs Transit Oriented Development (TOD) framework and planning that goes well beyond the summer 2016 workshops that attracted so many participants. Concept design work for grade-separated crossings for cyclists will be needed, as will the planning for smart infrastructure that aids in the efficiency and safety for motorists. A short segment of the corridor near Penn Square Mall has the basic requirements needed to accommodate a new, transit-only lane for BRT while providing efficient and safe travel interaction for motorists, but

the associated landscaping requires design. Neighborhood planning is needed for better ways to get to and from the corridor, such as along the old interurban right of way between Classen and Pennsylvania Avenue.

Finally, local funding and local funds that could be matched toward potential federal infrastructure funding will warrant a much closer look. BRT, for example, was not specifically mentioned as a 2017 G.O. Bond voter project, but might still fit the bond issue's subcategories and other local funding options are on the horizon. The ways a major transit project can bolster bikewalkokc, Oklahoma City's first bicycle-pedestrian master plan, is by initiating a salvo degree of support.

This short explanation of the concept plan will provide a much deeper understanding behind the reasons for the plan, what BRT is and the benefits it can provide and how and when the corridor will be implemented. The hope is to foster already present excitement and encourage new support for the concept plan as well as a better understanding of the possibilities and opportunities it will offer the region and its residents. The plan includes goals and objectives, data, maps and more that should be viewed as a roadmap for what is required to obtain the many benefits of a BRT. It also includes a brief set of short-term steps as well as a series of focused steps.

Figure 2 - Map 1 on the next page shows the corridor out to Meridian and the seven illustrative intersections explored in the 2015 health beta test planning. It was understood from the onset that other locations warrant some planning and that the corridor should extend to and through the City of Warr Acres and out to Council Road or possibly past the Kirkpatrick Turnpike. Similarly, the plan should reflect the transit and transit oriented development (TOD) policies adopted in Plan OKC. Contact planokc.org for further explanation.

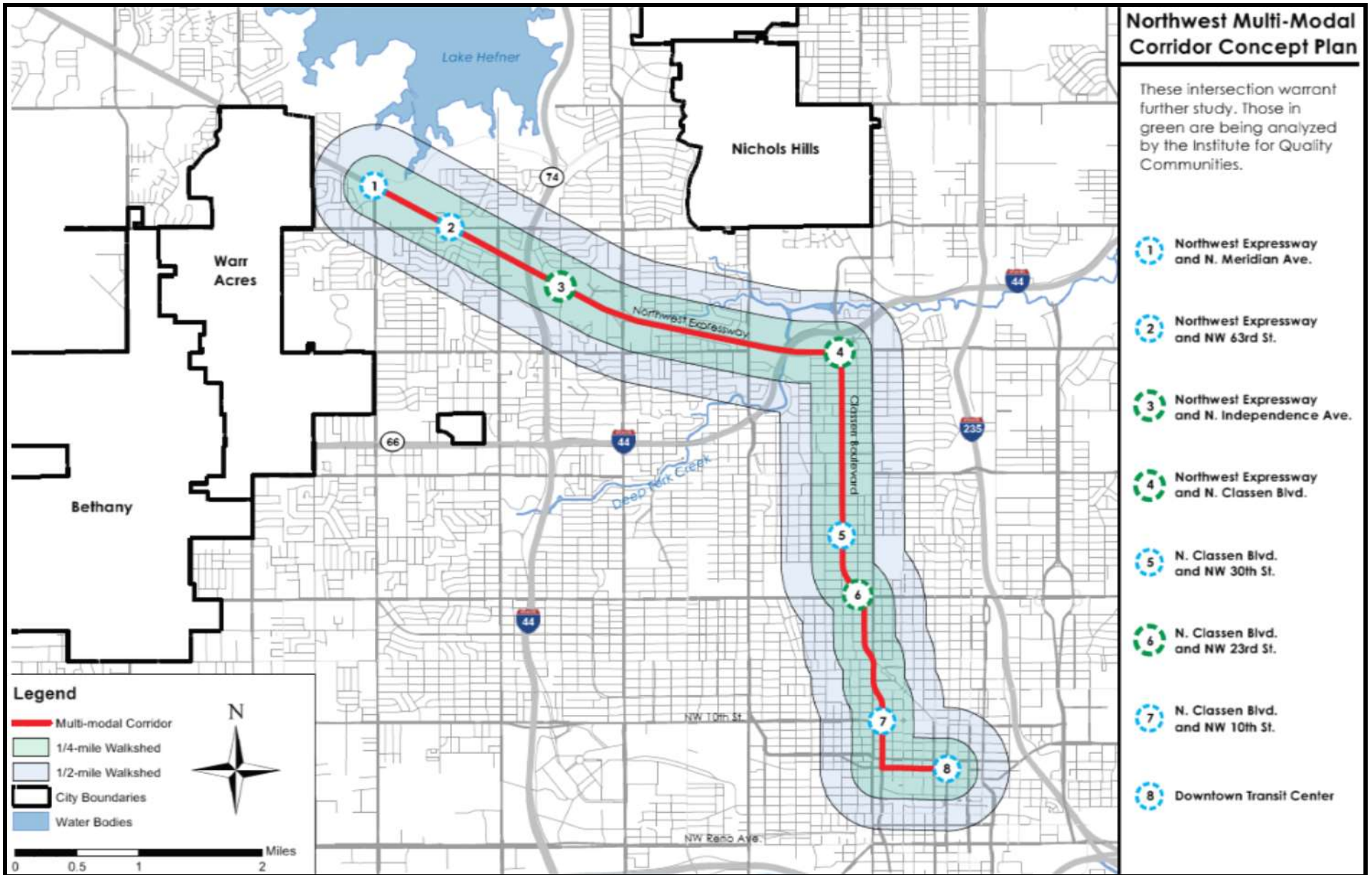


Figure 2 – Map 1

OKC and USDOT Beta Test

In terms of background, EMBARK learned in December 2014 that EMBARK Planning had succeeded in getting Oklahoma City's Northwest BRT corridor selected by the USDOT as one of only five American cities. The beta test was for a six-step pilot planning approach wherein healthy community factors are made part of a corridor planning project. Only two of the five cities' projects were transit corridors. The USDOT and the firm of ICFI worked with COTPA in 2015 as EMBARK guided the beta use of the USDOT Public Health and Transportation Corridor Planning (PHATCP) Framework in the Northwest Multimodal Transportation Corridor (NWMTC) concept planning. The effort of the four planning partners led by EMBARK resulted in going beyond public health considerations and served as a large part of the initial NWMTC concept planning, while sparking other related planning activities such as the TOD workshops and the BCA.

In spring 2016 the USDOT published the case study report detailing how EMBARK and Oklahoma City used the framework. The Oklahoma City case study (FHWA-HEP-16-031) can be found at https://www.fhwa.dot.gov/planning/health_in_transportation/planning_framework/framework_test_cases/oklahoma_city/case_study/index.cfm.

COTPA drafted an outline of a Plan Report for the NWMTC concept planning in early winter 2016. COTPA (EMBARK) and its three planning partners integrated some of the IQC work, the PHATCP framework, the USDOT Case Study and other information into the initial Northwest Multimodal Corridor Concept Plan's Report. COTPA has continued to utilize the USDOT's framework in the NWMTC planning. The Health in Transportation Corridor Planning Framework can be found at https://www.fhwa.dot.gov/planning/health_in_transportation/planning_framework/the_framework/fhwahep16014.pdf.

While there are six steps, the health-in-planning part of the NWMTC effort for OKC focused on steps 1-4. The steps are defined as follows:



Step 1: Define Transportation Problems and Public Health Issues

During this step, transportation practitioners consider the problems and needs to be addressed in the corridor planning study and determine if an opportunity to address public health exists. Consideration should be given to extent to which transportation decisions have the potential to positively influence public health outcomes. To identify relevant health issues, practitioners will need to reach out to agencies, groups, and individuals that might have information to share.

Step 2: Identify Needs, Resources, and Public Health Priorities

This step begins the development of a baseline understanding for the corridor study by collecting data and information about the needs, issues, and specific public health priorities. Health partners will assist in looking at the problems and issues identified in Step 1 to help focus on what can/should be addressed in the planning. Other activities at this step are to identify gaps in information and decide how to communicate effectively with stakeholders.

Step 3: Develop Goals and Objectives that Protect and Promote Public Health

Although the corridor study will have goals that are not related to health, the potential public health impacts of transportation strategies will be considered at this step. Goals and objectives related to public health provide a benchmark for establishing evaluation criteria and analyzing solutions.

Step 4: Establish Evaluation Criteria and Public Health Impacts

Strategies proposed to meet the corridor study goals and objectives are identified at this step. Strategies may be one of two types: capital, physical items (sidewalks, transit vehicles, signal lights, for example) or they may be policy strategies such as detailed planning, awareness campaigns, needed partnerships, new ordinances and so forth. To consider public health impacts within each strategy, evaluation criteria are developed (see Appendix One). The criteria will be used in the next step to measure the effectiveness of alternative solutions from both a transportation and public health perspective.

Online Tour of Health in the Corridor

One product developed during the planning process was "A Self-Guided On-Line Tour of Health and More in the Corridor." It and some other health documentation may be found online by scrolling down the webpage at <http://embarkok.com/about/planning>.

We all know a place experientially through our five senses and yet there is also value in taking a more clinical look. Quantitative and qualitative data also helped add to stakeholders' anecdotal data as they worked on the concept planning for the overarching corridor; especially as they worked on the first four steps of the framework of using public health principles in the transportation corridor's planning.

It is a long corridor out to Meridian or beyond, and health, livability, and transportation conditions vary. The online guided tour included many internet links that may help highlight health related factors. Some of the links are from ICFI consultant materials, some are from local research and others are from City-County Health and ACOG. A few are described below.

An address and city are typed in and the website will find data as data layers are selected either on or off. One can plug in their home address to get a sense of its data power. According to the Walkscore website, many of the NWMTC corridor neighborhoods are high on walking and walkability. In fact, in 2015 it was discovered that the three most walkable Oklahoma City neighborhoods are in the corridor: Roberts-Crest, Paseo and Mesta Park. Roberts-Crest is adjacent to the northwest from INTEGRIS Hospital at Northwest Expressway and Independence and scores highest. Try Walkscore at: <http://www.Walkscore.com/>

In terms of livability, the AARP Livability website was also useful. Its link is <https://livabilityindex.aarp.org/>. Like the other indexes, type in an address and city and it will find data as data layers are selected either on or off.

Oklahoma County Health Scorecard

One of the best data sources was excellent zip code level data from the NWMTC planning partner City-County Health. To view the booklet with maps please see https://www.occhd.org/download_file/view_inline/701.

In it one will find that page 125 has the overall score map, and the NWMTC corridor is inside of (but generally smaller than) 73102, 73103, 73106, 73112, 73116, 73118, and 73132. The east boundary of 73106 is Shartel, which are just a few blocks east of Classen. The north boundary of 73112, where Roberts-Crest is located, is NW 63rd Street. Below are just a few mapped facts from the City-County Health Department website about the corridor based on zip codes:

- Low amount of prenatal care, pg. 29
- Infectious disease, pg. 47 (somewhat high)
- Hepatitis B and C pg. 51 and 53, respectively
- Substance abuse visits to the emergency room (ER), pg. 93
- Aggravated assaults, pg. 111
- Gun related mortality, pg. 113

Other Background Information and Maps

The Oklahoma City Planning Department, and to some extent COTPA, prepared maps highly specific to the corridor. The maps prepared by the Oklahoma City Planning Department provide the best summary of the corridor conditions as to the sidewalk network, availability of grocers and health care as detailed in Maps 2-5. In addition, the COTPA Fixed Guideway Plan and its 2030 Systems Plan map were useful resources. The EMBARK website has some of the NW Concept Plan information at <http://embarkok.com/about/planning>.

Information about the ACOG Commuter Corridors Plan (Central OK Go) may be found at the link below. This 2013 plan suggested streetcar route placement along Classen running parallel to a north-south commuter rail line east of Classen, but in no specified timeframe. In the meantime, BRT as recommended in the COTPA Fixed Guideway Plan's and 2030 Systems Plan, is considered a more realistic, scalable and cost-effective concept. To learn more about the Commuter Corridor study visit http://www.acogok.org/wp-content/uploads/2015/09/Central-OK-GO_Executive-Summary_FINAL-for-PRINT.pdf.

Transit Treatments/Technologies (BRT & Streetcar)

Bus Rapid Transit (BRT) is a form of bus service that uses enhanced elements to improve the speed, convenience, and overall experience of transit service. The elements are mainly the style and length of the vehicle, the amply equipped platform stations, fewer stops, high service frequency, safe street crossings and technology. Many of these enhanced elements can make BRT more like rail-based transit than local bus service, and this is especially true for longer routes of 7 or more miles radiating from Downtown. Two technologies are of high importance: traffic signal priority (TSP) and off-bus fare payment.

Streetcar vehicles run on rails, are powered by electricity, share the lane with buses and other traffic and are different than light rail. A short streetcar system will begin operating downtown as an intra-downtown circulator in 2018. The Northwest Multimodal Transportation Corridor Concept Plan, which is similar to the 2030 Fixed Guideway Plan, finds BRT to be the favorable and appropriate initial transit technology for a single route using both Classen and the Northwest Expressway; based on consideration and evaluation of alternatives. The Oklahoma City Streetcar capital costs will be just over \$130,000,000 for the first five track (running) miles, which also includes vehicles.

BRT is implemented across the U.S. and the world at a variety of quality levels, but all are usually more frequent than buses and light rail. The scalability (variety of levels), compared to the all-or-nothing scale of streetcar, is noteworthy. Bus and BRT set the stage for eventual rail, like streetcar. Few BRT routes offer the greatest level of enhancement possible, and many BRT routes make only a few key improvements over local bus service. The USDOT funding programs recognizes two broad types of BRT; Fixed Guideway BRT and the less expensive Corridor Based

BRT. The style modeled for Oklahoma City in the 2017 Benefit Cost Analysis (BCA) was a blend of these, but would be categorized as the latter.

The Institute for Transportation and Development Policy (ITDP) offers an excellent scoring system, The BRT Standard, to compare and contrast the extent to which BRT systems implement features associated with maximum performance. In late 2015, the firm of Nelson Nygaard released a report on the various U.S. BRT systems that were operating as of about 2008 or 2010 and notes that many would not meet the international ITDP standard, but are valid BRT nonetheless.

It was estimated by consultants in the 2017 BCA that BRT can be built for about \$2,000,000 per mile in a 9-10-mile system out to Meridian and the Northwest Expressway. This includes the cost of buses based on a local engineering firms' estimate, which this is consistent with the costs of many U.S. BRT systems established since 2007. For Oklahoma City, this includes the streetcar-style platform stations, traffic signals, upgraded pedestrian/cyclist crossings, bus pullout lanes at a handful of stations and more. The cost also includes building about a half-mile segment of new two-lane BRT-only guideway and two bike-pedestrian bridges over the Northwest Expressway.

Another example, the Seattle Rapid, cost \$3,000,000 per mile, and half of that was for buses. That put the cost of the road, stop platform, lighting, and pedestrian/bike crossing-related infrastructure at \$1,500,000 per mile. Construction costs in Seattle are higher than in Oklahoma City. The Seattle BRT system also has many routes. More information can be found at <http://www.seattle.gov/transportation/transitmasterplan.htm>.

The article below references King County Metro Transit in Seattle in comparison to the Fort Worth Transportation Authority's project at a breakout of about \$1,150,000 per mile for the seven-mile project. The 8,000,000-project total included eight 60' articulated buses when it opened in 2011. <http://www.metro-magazine.com/resources/images/brt.pdf>.

Among the related technologies, for example, COTPA finished a draft report in 2015 for City Council about the context and use of traffic signal priority (TSP) as tool for both streetcar and rapid bus systems. COTPA coordinated later with OKC Public Works and MAPS staff for the TSP report. COTPA's 2017 fare study is exploring technology options to improve payment experiences.

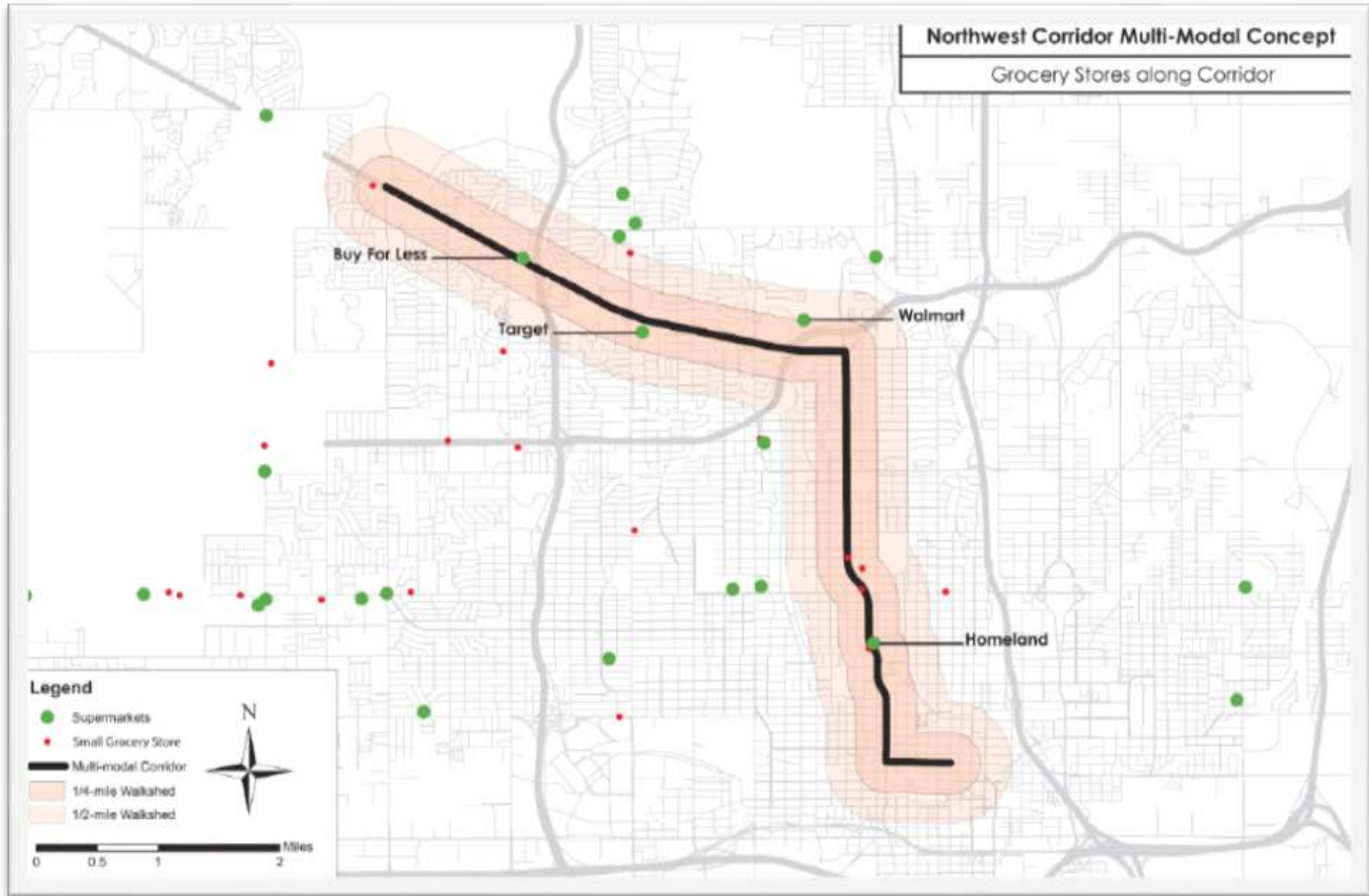


Figure 3 – Map 2

Northwest Multimodal Transportation Corridor Concept Plan

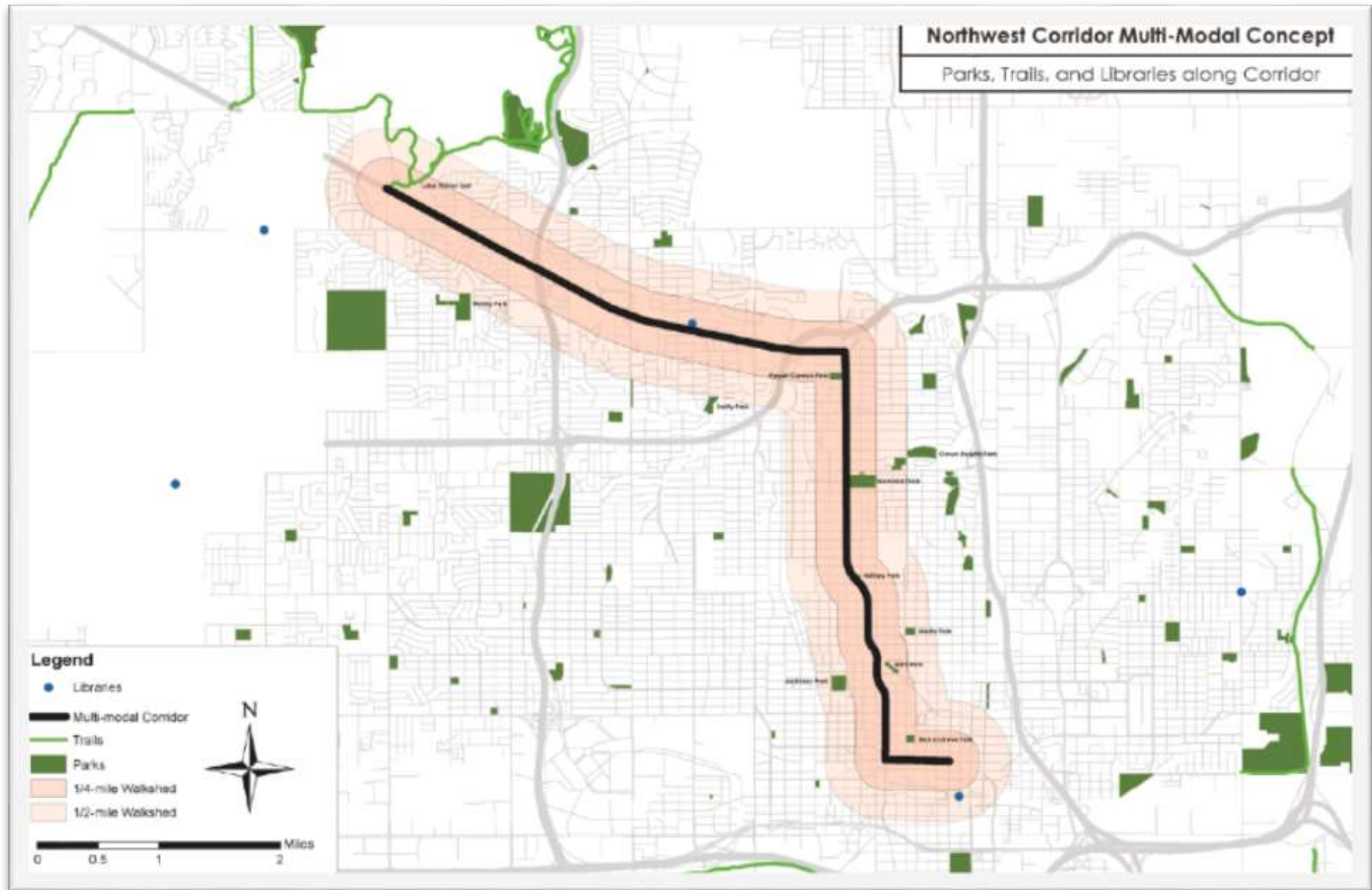


Figure 4 – Map 3

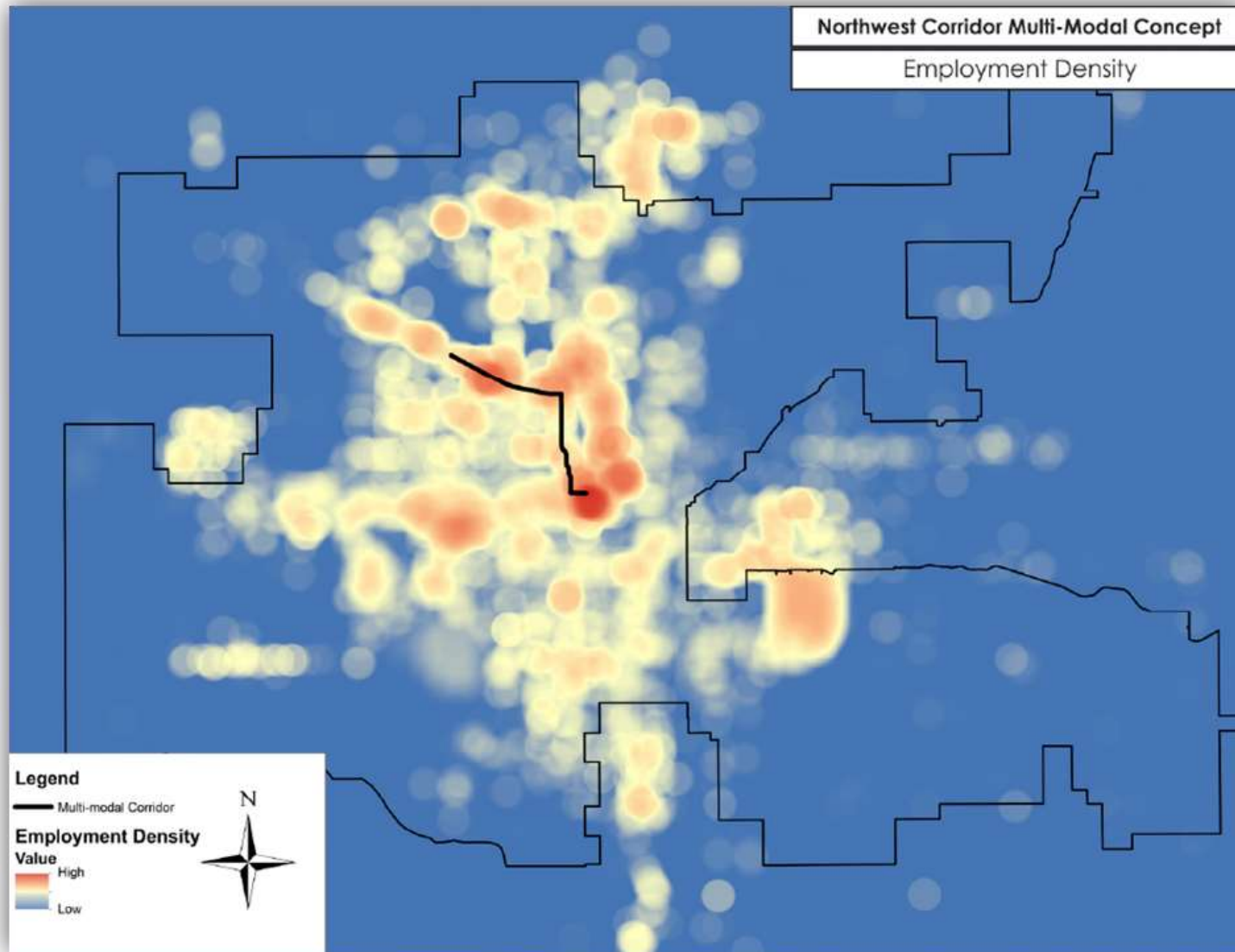


Figure 5 – Map 4

Pedestrian / Bicycle Treatments

When Oklahoma City was first settled in 1889 the primary modes of transportation did not include the automobile. Streets were dedicated to pedestrians, bicyclists, horses, and trolleys. Correspondingly, the urban form of the city that came into being during the early years of Oklahoma City was designed to accommodate people on foot. With the proliferation of the automobile in the first half of the 20th century, development began to focus on pedestrian needs less and less. This trend continued for decades; developments were not required to install sidewalks, and the pedestrian network is less and less extensive as one goes outward from the inner city. By the turn of the 21st century, city leaders, planners, and residents all recognized the negative impact of this pedestrian infrastructure absence, and began to take steps to address this problem.

New subdivisions are now required to address walkability, so many of the developments in the suburban areas of the city are equipped with sidewalks. Programs have been created to improve walkability, including the MAPS 3 sidewalk program, which has added an additional 60 miles of much needed sidewalk. The City has begun a cost-sharing program with property owners, the Sidewalk Repair and Replacement Program, a program to split the cost of repairing or replacing dilapidated sidewalks in front of personal property. Perhaps most importantly, **planokc**, the new comprehensive plan, focuses intensely on creating a transportation system that works for everyone, of which the pedestrian network is of very high importance. There are many opportunities to make connections within the sidewalk network.

The City of Oklahoma City is currently working on a bicycle and pedestrian master plan **bikewalkokc**. This is a long-range plan aimed at identifying needed active transportation infrastructure. The plan includes projects centered on the NW Corridor. The next page contains Maps 6 and 7 of a **bikewalkokc** pedestrian planning node centered at the heart of the NW Corridor at NW 23rd Street and N Classen Blvd. The maps show the planning area boundary and the planned pedestrian infrastructure of this example node.

The sorts of street crossings and signals required for transit passengers will also benefit pedestrians and cyclists, even if they are not using transit as part of their trip. The relative absence of pedestrian signals and safe crossings of the six-lane roadways will need to be further addressed. The concept of two-stage crossings may be a good way to achieve safer crossings without overly delaying motorists.

Bikewalkokc is Oklahoma City's first bicycle-pedestrian master plan. It has involved a wide range of stakeholders since early 2015. The plan shows how to plan and build a complete bicycle and pedestrian network throughout Oklahoma City to promote safer, healthier and more enjoyable active transportation choices. One can find out more at: www.bikewalkokc.com

Another form of outreach which is important to the Northwest Multimodal Corridor is Watch for Me OKC, an out-reach effort to everyone who uses Oklahoma City's roadways. Classes for

bicycle and pedestrian safety have complemented handouts, marketing, signs, events and more about the best ways for cyclists, pedestrians and drivers to navigate Oklahoma City's streets. Watch for Me OKC will also build protected bicycle lanes demonstrating the latest innovations in safe street construction. It has a web page at: www.watchformeokc.com. See Figure 5 for details.

Northwest Multimodal Transportation Corridor Concept Plan

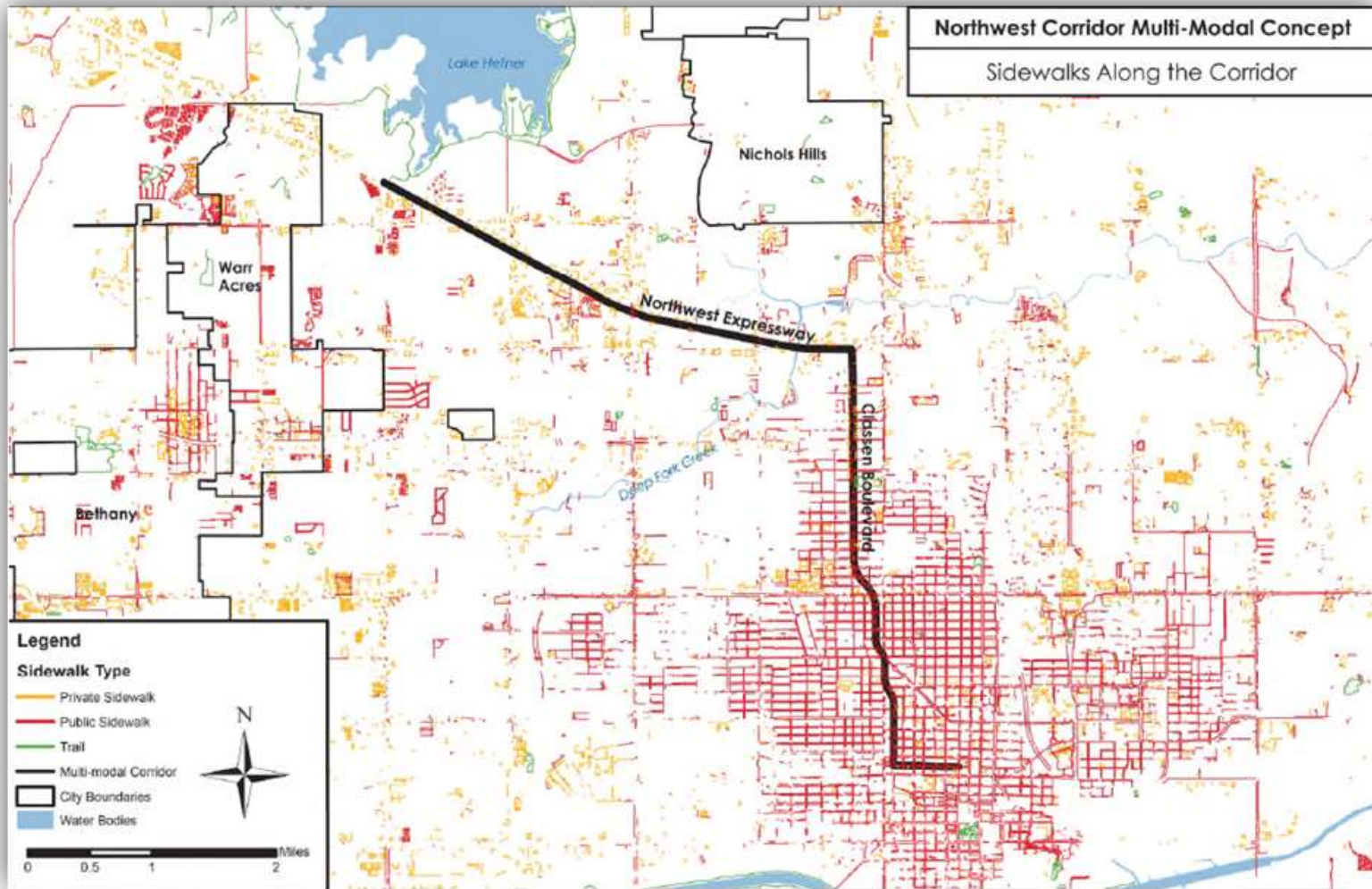


Figure 6 – Map 5

Automobile Treatments

Improvements for pedestrians also pose as improvement opportunities for motorists. Newer traffic signal technologies, improved roadway geometry, and even safer left turn movements may be part of an eventual corridor package. The cloverleaf interchange at May Avenue and the Northwest Expressway can be made more functional and safe. At a minimum, the motorist can have more predictable interactions with cyclists and pedestrians by using the crossings and lanes to separate the modes at key intersections.

The 2016 Smart City Challenge grant application stated the need for the addition of Vehicle to Infrastructure (V2I) and Vehicle to Vehicle (V2V) technology; either of which could be added along the Northwest Expressway to facilitate both traffic flow and motorist and pedestrian safety. Short loops of self-driving cars were also suggested to link BRT stops to high-use destinations that are at a greater distance from the Northwest Expressway. While self-driving cars require substantial investment the goal of obtaining and implementing V2V technology may be reached by gathering metrics and providing the information to drivers through use of an application that is accessed via smart devices such as phones or tablets. See Figure 6 and 7 on the following page.



LEGEND	
Phase 1	
Phase 2	
Full Build	
Existing	

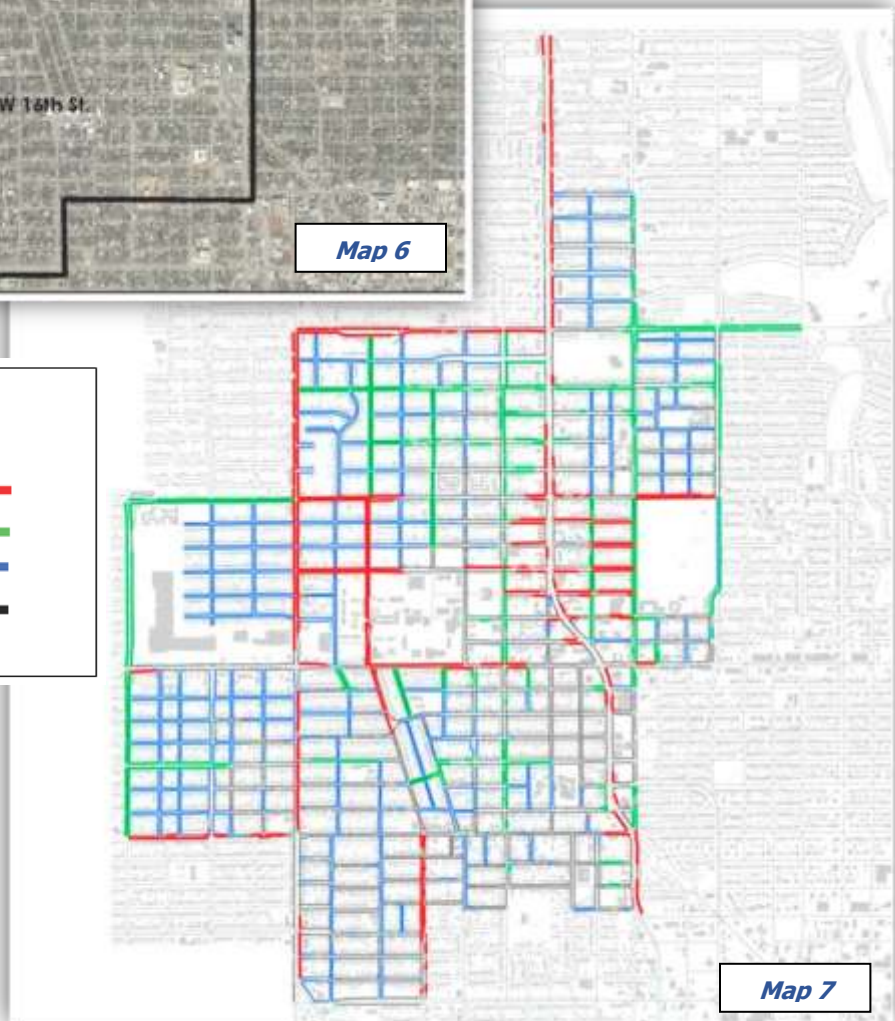


Figure 7 – Maps 6 & 7

Concept Recommendations

The late 2015 Concept Plan draft featured detailed recommendations to be pursued over the next two years. Those steps are as follows:

- One: Additional Outreach with Stakeholders
- Two: Prepare Final Report
- Three: Review Beta Test Results
- Four: Identify Interim Implementation Projects
- Five: NEPA; Planning and Design Steps
- Six: Funding Options and Sources

Now, as of mid-2017, there have been several developments around those steps. Planning processes do not usually end with static plan documents or inflexible recommendations. So, the next few pages maybe informative as an update to what planning progress has already happened regarding the 2015-2016 recommendations.

One: Additional Outreach with Stakeholders

The Concept Plan's ideas have been presented and discussed in many forums, with various departments, and entities. The opportunities for input have been more than the series of 2015 meetings conducted in relation to the health-in-planning beta test. Many new stakeholders were engaged during the successful grant in 2016 for a series of TOD workshops provided by Smart Growth America in August 2016. More than 100 people participated in the 2016 technical assistance and learned about TOD, the Corridor Concept Plan, BRT and more. One of the workshops was held at 50 Penn Place. The TOD workshops helped clarify that the new intermodal hub to be at the Santa Fe Station should be the eastern anchor of the corridor unless new factors prove otherwise. BRT has been presented at the televised COTPA Board of Trustees meeting during winter 2017.

Other stakeholders were engaged in January and February 2016 during the City's application for the USDOT Smart City Challenge grant. In both grant applications, the corridor and the idea of bus rapid transit (BRT) and even electric BRT buses and self-driving car loops to BRT stops were key features. Since the start of 2016, the City of Oklahoma City has been having discussions about what project should be include in the next G.O. Bond and the next MAPS capital project package. BRT, bicycle, and pedestrian improvements have discussed in relation to both. EMBARK staff has also met with ODOT and ACOG too. In conclusion, while additional outreach to stakeholders occurred by having two well-attended community meetings in fall 2015, there have been other meetings with other entities since then. COTPA coordinated with OKC Public Works and MAPS staff regarding the traffic signal priority (TSP) as originated in the corridor concept planning. TSP could be a useful tool for both streetcar and rapid bus systems. TSP should get underway later in 2017 on a couple of bus routes.

Two: Prepare Final Report

This document you are now reading has been in development for some time, but June 2016 was when the first complete draft was ready. An excerpt of that is what caused the Northwest Multimodal Corridor Concept Plan to be awarded that national 2017 TPEA award, an honor only announced every two years and usually for under a dozen plans. It is worth noting and is unusual that that completion of this Final Plan has been postponed a few times pending the completion or release of some companion planning efforts. For example, this Concept Plan Report was awaiting the late 2016 completion of a 'Findings and Recommendations' report by Smart Growth America for the TOD workshop technical assistance grant which was awarded to EMBARK by Smart Growth America in 2016. By the time that SGA Report was available, EMBARK had awarded the contract for the Northwest BRT Benefit Cost Analysis (BCA) which was to be finished in 2017. Also, the June 2016 Draft Report had awaited the review and public release by the USDOT of the Oklahoma City Case Study of use of the Healthy Planning Framework, and that release happened in March 2016. In addition, in late spring 2016 the IQC posted the formal 40-page Memorandum which presented the graduate students' concept graphics which they prepared as a resource to the Concept Plan's partners. That Memorandum is listed in this report as Appendix Two, but will be available under a separate cover and online. The mid 2017 version you read today is the first widely-circulated first version, but a Version Two may well be released by early 2019 due to stakeholder input, planning and design yet to emerge.

Three: Review Beta Test Results

The review of the Healthy Planning results was acceptable to EMBARK. The March 2016 public release of this by the USDOT of the Healthy Planning Framework on the USDOT website does reference EMBARK's and Oklahoma City's use of Framework Steps 1, 2, 3 and 4. Step 4 was about establishing criteria to use to determine health impacts of various strategies. The Oklahoma City case study (FHWA-HEP-16-031) can be viewed at https://www.fhwa.dot.gov/planning/health_in_transportation/planning_framework/framework_test_cases/oklahoma_city/case_study/index.cfm#Toc444765442.

Four: Identify Interim Implementation Projects

While a wide range of projects could help implement the plan, there are some lower-cost, yet high-impact capital improvements and capital planning steps which could be started and completed if the opportunity arises. Some projects of this sort are:

- Preparing capital cost estimates for the buses, passenger waiting platforms, traffic signals and more as part of a Benefit Costs Analysis (BCA) for a northwest BRT project.
- Initiating a pilot project for traffic signal priority (TSP) as tool for both streetcar and rapid bus systems and a pilot project should get underway soon.
- The City's new Bicycle-Pedestrian Master Plan calls for many improvements.
- COTPA has had the bus shelter access improved for northbound buses along Classen at NW 12th.

- COTPA has improved the transit transfer point at NW 23rd and Classen by adding new shelters, such as at the pharmacy for southbound buses and on NW 23rd in front of the Gold Dome.
- Pedestrian/bicyclist crossings near NW 42nd and Classen Boulevard. Such a traffic signal improvement would add safety for blind transit customers accessing NewView and might also benefit elementary school students needing to cross Classen to access Horace Mann School to the east. As such, the crossing may qualify as a Safe Routes to School (SRTS) crossing and be part of a City grant application in 2017.
- Pedestrian crossing improvements at NW 16th and Classen. This project is gaining traction in part due to the ULI “A Better Classen” (ABC) project. COTPA has funded plans to improve the bus stop for northbound buses along Classen between NW 16th and NW 17th and installed new shelters at NW 30th Street and near NW 23rd Street.
- COTPA has received an inquiry about the need for a pedestrian crossing at Blackwelder across the NW Expressway for Myanmar refugees and other residents of the neighborhood to the south. They desire a safer way to access shopping at the Belle Isle Station shopping center (Wal-Mart and other stores).

The above eight activities are just a few examples of interim projects.

Five: NEPA: Planning and Design Steps

This section is a longer one, as it has become clear that this Multimodal Concept Plan needs to be followed by some even more specific planning, much of which will involve engaging the public. Most important is the NEPA environmental planning described below. In addition, community change continues even as the Concept Plan has been drafted.

Already, TOD workshops provided by Smart Growth America (SGA) in August 2016 added depth to the 2015 Northwest Multimodal Planning efforts. The 2017 Benefit Costs Analysis (BCA) work has generated many details about costs, design, and schedules. Among other findings and recommendations in their Fall 2016 TOD Technical Assistance Report to EMBARK, SGA stated that the City needs to plan for creating and funding safer pedestrian spaces along both Classen and along the Northwest Expressway, undertake a corridor market assessment, and include social equity considerations in future environmental and other assessments in the multimodal corridor while prioritizing pedestrian and other healthful improvements in capital budgets. The corridor needs a Transit Oriented Development (TOD) framework and TOD planning with community partners which goes well beyond the summer 2016 workshops that attracted so any participants.

Several focused steps emerged during 2016 and 2017 as ways to plan and design the multimodal project. Each is a deeper look that often requires a community engagement specific to that step; some will require a small budget, while others may involve a greater expenditure for a consultant team.

EMBARK staff had conferred with the Federal Transit Administration (FTA) staff and online resources in 2016 about next planning steps. The completion of a Benefit Cost Analysis (BCA) and a NEPA environmental process are key next steps. Each can also be quite useful even if federal capital funds are not pursued or received. A Benefit Cost Analysis (BCA) helps determine feasibility and is a requirement in TIGER Grant applications.

Because the BRT project is wholly within a “built urban environment,” a NEPA Environmental Impact Statement (EIS) is not needed, and perhaps only scoping and a Documented Categorical Exclusion (DCE) are needed. However, an Environmental Assessment may be the NEPA step which could be essential to an application for FTA Small Starts funding. A DCE is a less complicated NEPA step. Satisfaction of NEPA must be achieved soon after any TIGER grants are approved.

The nonprofit community seems to be locating some key service providers along the lower Classen area around NW 16th Street, so now many call it the ‘Corridor of Hope.’ This is due in part to the large new Catholic Charities headquarters, Sunbeam Family Services building, the new location of TEEM (The Education Employment Ministry), the public housing authority complex a half-block east of Classen on 13th, and the new Commons affordable housing. Further north are the Boys and Girls Club near Northwest 36th Street. Also, NewView Oklahoma has purchased a large building at 4301 N. Classen Boulevard. It will feature a clinic, a community room and more. NewView primarily serves and employs the blind and people with low-vision.

The planning for motorists was affected by the collision of a truck with the May Avenue Bridge over the Northwest Expressway in the month of May 2016 and the City overcame the challenge of maintaining traffic flow. The bridge was repaired over the summer but also helped remind all that the cloverleaf could be improved with longer merge lanes. This bridge also poses a longer-term obstacle to having a dedicated lane for transit in that vicinity. The safety closure of the westbound I-44 exit near Blackwelder for many months of 2016 caused some to see that traffic still moved well despite the closure.

The next couple of pages further describe the tasks included in this NEPA, Planning and Design section:

- Benefit Cost Analysis
- Environmental Review
- TOD Planning
- Grade Separated Crossings
- Transit-Only Lane Concept
- Neighborhood Improvements

Benefit Cost Analysis (BCA)

EMBARK staff had been advised about next planning steps by the FTA and national consultants. The Benefit Cost Analysis (BCA) for Bus Rapid Transit and the associated bike/pedestrian and park and ride improvements was the most urgent next step and helps local decision makers gain essential information. Without a BCA, the concept of BRT or other transit along Classen or along the Northwest Expressway would remain a vague, easily misunderstood idea.

In the first half of 2017 a BCA was completed by three consulting firms and through considerable EMBARK staff effort. The BCA is available separate from this multimodal plan, but it has been a success and shows cost effectiveness. For the BRT Scenario One corridor that went from Downtown out Classen to the Northwest Expressway and then on to Meridian and is presented in Map 8 below.

The BCA ratio exceeded 1.0. The ratio in the BCA was based on the BCA's bus ridership projections; capital costs estimates, environmental and travel time benefits, operating cost estimates, park-and-ride usage and more. The ridership for the BRT was projected to be twice that of any existing route and was based on a schedule and a frequency (12-14 minutes) between transit vehicles, a schedule very comparable to what is in store for the new downtown streetcar circulator beginning operation in 2018.

BCA Scenario One

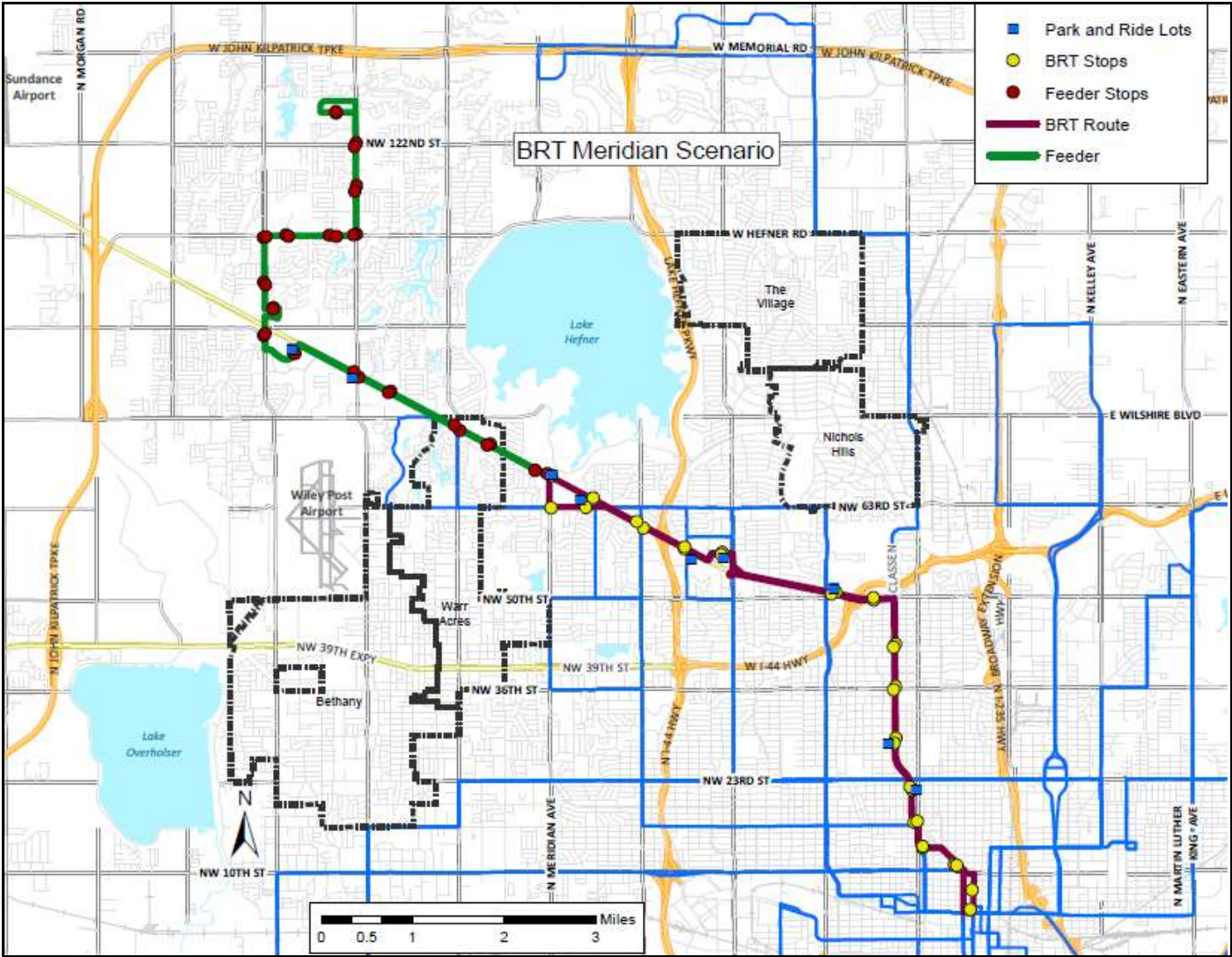


Figure 8 – Map 8

Regarding physical appearance, the buses would be the longer accordion-style futuristic buses and the route-side platforms would be like the OKC streetcar platforms. The modeled plan also included two new bike-pedestrian bridges (one near Independence) in addition to a third one already funded as of spring 2017 and about 30 BRT station platforms. Scenario One BCA modeled a BRT route with termini at Meridian and at the NW 5th and Hudson Downtown Transit Center. A Scenario Two BCA was for the longer corridor ending nearly at Council Road. The Scenario One BCA was accompanied by a 2017 consultant cost estimate for the BRT, associated bike/pedestrian, and motorist improvements of under \$23,000,000 for a Corridor-Based BRT route.

A BCA is a very specific sort of planning and modeling study. There are useful, specific federal guidelines as to how one is conducted, and it requires a proper projection of ridership and development of other data inputs. Simply put, a BCA identifies, quantifies and compares expected benefits and costs. To apply for a TIGER grant, for example, each applicant is to submit a BCA to provide evidence that the expected benefits of the project justify the costs. This link helps explain the steps and complexity of a BCA: https://www.transportation.gov/sites/dot.gov/files/docs/TIGER_BCA_Guidance.pdf.

It was recognized that some costs and benefits are difficult to quantify or monetize and that a good BCA for a BRT project in Oklahoma City including the attendant ridership projections would require national consultant expertise. The cost of a BCA was anticipated to be \$40,000. EMBARK achieved the completion of both BCA's under the anticipated cost for just a single BCA; one that went from Downtown out Classen to Meridian and the second went to Council Road. In each case, in addition to the BRT route a new local feeder route to suburban northwest OKC was also modeled. The feeder route for Scenario One extended from Meridian out to Council Road and then over to a turnaround at the Francis Tuttle Career Tech Rockwell Campus.

Being admitted into the Project Development phase by the FTA is required to become eligible for federal funding amounts larger than what is common under a TIGER grant, such as through FTA Small Starts funding. Before admission to Project Development, a BRT project (or any other fixed guideway transit capital project) needs to have passed through various steps. Those are basic technical feasibility, financial feasibility (cost estimates vs. benefits), a letter/study to the FTA, an overall project timeline, future ridership estimates, and a timeline for completing NEPA and other tasks needed to obtain a federal project rating. FTA advises project sponsors to do "up front" work in advance of seeking entry into Project Development to ensure they can complete the Project Development activities within two years. A BCA is one useful, early "up-front" step before seeking entry to Project Development.

Environmental Review

EMBARK has conferred with other transit agencies and the Federal Transit Administration (FTA) about the level of environmental work needed for a transit project in a built urban environmental setting like this. The BRT envisioned does not cross rivers, wetlands or so many other forms of sensitive lands and neighborhoods. Following or alongside the BCA previously described, the FTA requires completion of a NEPA process. The extent of the NEPA work needs to span from the Downtown Santa Fe Station to Council Road/NW Expressway and perhaps beyond. While an Environmental Assessment (EA) may be needed, the NEPA process would at least need to be a Documented Categorical Exclusion (DCE), such as that finished in Kansas City and in Albuquerque for recent BRT projects. NEPA is a required step if a transit project is to be eligible for federal Capital Investment Grant (CIG) funds. COTPA understands that a DCE and environmental scoping could cost exceed \$150,000 to prepare, while an EA could cost considerably more and even two or three times what a DCE would cost.

The DCE or EA would re-evaluate some route alignment alternatives and the relative value of the BRT and Streetcar vehicle technology options. While most of the alignment would be assumed to operate in mixed traffic, some short segments such as near Penn Square Mall and elsewhere could conceptually be evaluated via some engineering for transit-only fixed guideway lanes. While a NEPA process is very helpful for getting better organized and ready to build a locally funded process, it is required for federally funded projects. Projects should have completed the National Environmental Policy Act ("NEPA") process by the time any TIGER Grant application is submitted. However, if any part of the environmental review or permitting process is incomplete at the time of application for a TIGER grant, then the applicant (City or EMBARK) should demonstrate, through the project schedule, narrative and supporting documents that by about a year after grant award that they will have reasonably completed NEPA and obtained any other necessary permits and approvals.

As an alternative to NEPA, a feasibility plan could be prepared for the corridor between the Downtown Santa Fe Station to Council Road/NW Expressway. However, such a study will not help a project become eligible for federal construction capital funds or to help gain federal funds for vehicle purchases. Unlike a BCA or a NEPA process, a feasibility study would not add much to the progress already achieved by the Northwest Corridor Concept planning. A feasibility study of any sort is unlikely to go into the depth needed to create good data for City leaders as to capital cost estimates, route schedules, credible ridership projections, a fatal flaw analysis, or other needed analysis.

Transit Oriented Development (TOD) Planning

The Smart Growth America (SGA) Transit Oriented Development (TOD) workshop grant was awarded in April 2016 to only nine cities in the U.S, and so OKC was one of the nine. TOD and a healthier community are closely related. The workshops engaged more than 100 people in August and Smart Growth America sent its report in October, and it contained eight recommended actions, three of which were suggested for implementation by sometime in 2017:

1. Revisit prior TOD efforts to leverage best practices and coordinate local and regional agency efforts.
2. Create safe pedestrian spaces, particularly along both Classen Boulevard and the Northwest Expressway and along the connecting streets to both.
3. Foster cross-sector collaboration between public and private sector stakeholders, including the many active social service agencies and the interested developers and investors.

The three illustrative locations addressed in the TOD workshops and TOD awareness was:

- Near the Downtown Santa Fe Station
- At Classen Boulevard at NW 23rd ("Urban" intersection of high intensity uses, and COTPA's two busiest routes). TOD could be part of a suggested charrette for the Gold Dome/Classen Tower/Western/NW 20th area
- Northwest Expressway at Penn Square Mall (City's largest Simon Property, and located adjacent to high-rise offices, and dense residential)

Grade Separated Crossings

Additional planning and design efforts are needed to explore the concept of having a few grade-separated cyclist and/ or pedestrian crossings. While there are pros and cons aside from just cost and safety, in 2015 the four planning partners heard considerable support for grade separation from pedestrians, transit customers, and from people with disabilities. As a result, the four planning partners asked the University of Oklahoma IQC for conceptual renderings, and ones like the bridge below were received. The rendering below provides a general sense as to what such a facility might be like north of Baptist INTEGRIS Hospital near the hillcrest. One can imagine the grand vista of the city toward the southeast afforded from atop the bridge structure.

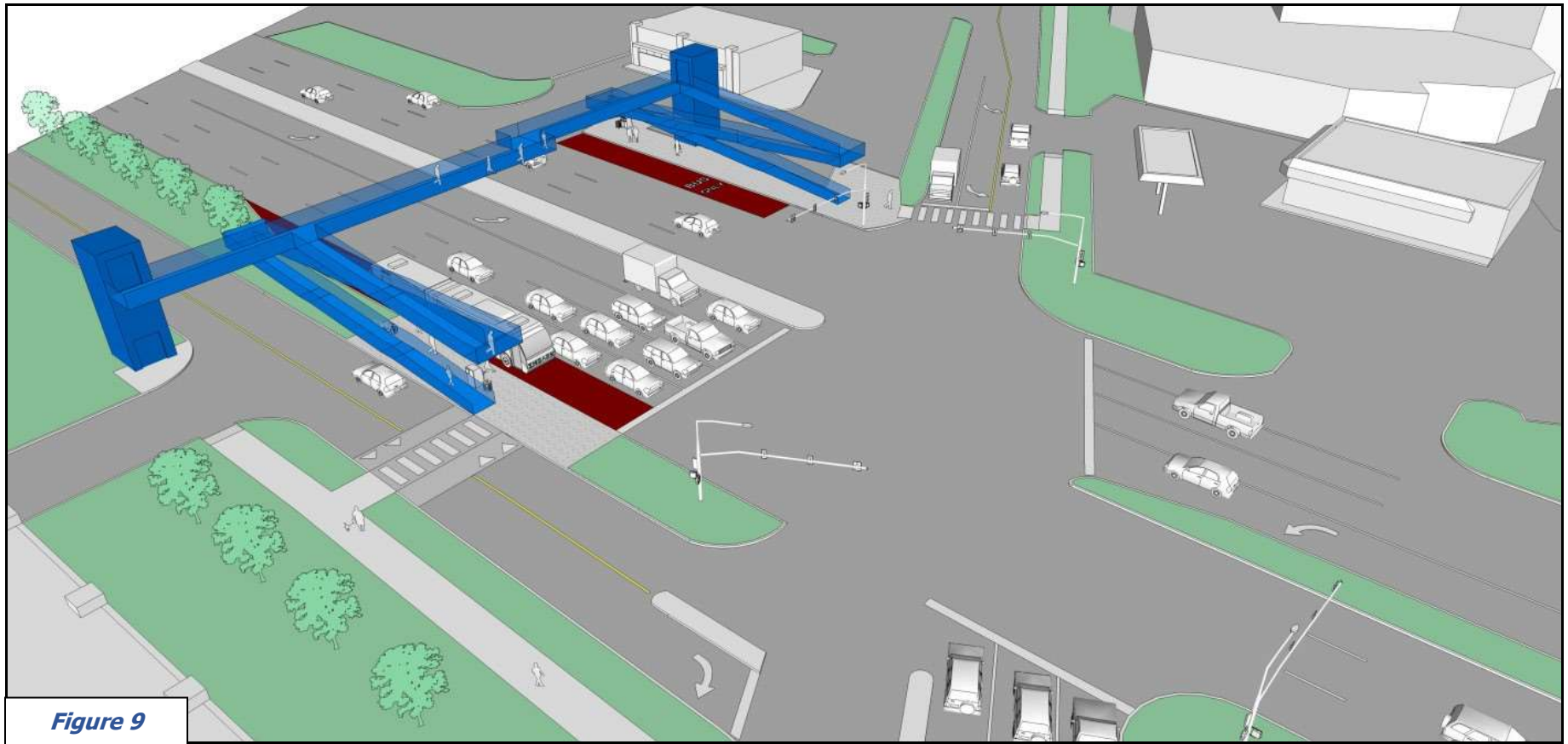


Figure 9

The sketch above is at NW Expressway and Independence next to INTEGRIS Hospital. The concept shows stairwells and elevators on the north and south sides for those who do not want to traverse the long ADA-compliant ramps' serpentine path. In addition, arrangements might conceivably be made to have it extend to the edge of the INTEGRIS parking garage and make access across the highway even more convenient.

A second example of a crossing was discussed to connect the Penn Square Mall side to the Fifty Penn Place side. Due to the unique topography of each site, an underpass could be conceivably be achieved with a relatively level gradient and allow easy, inviting access in contrast to some isolated or poorly designed underpasses around the country.

While Penn Square and other grade-separated safe cyclist and pedestrian crossings are worth consideration, those also go far beyond the scope of the initial 2015 NW Multimodal Concept planning. For the above and other locations, a NEPA Process could be the proper evaluation tool. The City, as of mid-2017, is finishing the design and funding of a bike/pedestrian bridge over the Northwest Expressway west of MacArthur near where Wilshire intersects the Expressway. This process will yield new insights and the actual project can help improve a prospective feeder route bus stop on the Expressway.

Transit-Only Lane Concept

As part of the NEPA environmental process, the evaluation of a dedicated transit-only lane should be explored. One example is a dedicated curbside lane for business access and transit (BAT) and for right-turns only. Another is a somewhat virtual lane that is in effect in the curbside lane and is transit-only when needed thanks to a “lane-clearing” overhead Smart City



signal technology. This may be especially valuable along Classen Boulevard. A third example is the more traditional transit only lane, described below.

Along the Northwest Expressway, transit-only lanes were considered in the 2017 Benefit Costs Analysis for at least a short segment, and the congestion at and near the Penn Square Mall make this a segment well worth conceptual consideration. Such lane might be north of the Expressway and would not likely extend west of Pennsylvania. Past Villa Avenue it would be difficult to be cost effective due to the May Avenue cloverleaf and the narrow underpass at May. During 2015, the westbound exit from the Northwest Expressway near Blackwelder Avenue had to be closed while the long I-44 Belle Isle Bridge was repaired. Motorists found alternative ways to exit for nearly ten months during 2015. This experience made it seem plausible to re-purpose the westbound NW Expressway Bridge over the Deep Fork Creek as a transit-only bridge, and perhaps even close that exit which is well-known for its sharp left turn. If not closed, the traffic exiting westbound I-44 could be directed via the existing paving to the existing signal at the Blackwelder/ Northwest Expressway intersection. If so then the former exit lane that continued west parallel to the NW Expressway lanes over the westbound bridge could be reserved only for two-way transit travel.

Elsewhere between Classen and Pennsylvania, the wide grassy right-of way parallel to the highway could be improved with one or two new paved lanes perhaps north of the existing westbound lane. Proper signalization for Bus Rapid Transit (BRT) and pedestrians, dedicated bus lanes, and new landscaping can add an attractive sense of place.

While a more in-depth planning and engineering study is needed, this could potentially be done as part of the NEPA work.

Neighborhood Improvements

Some planning is needed in support of strategic investments on private and nonprofit sites. Below are three examples:

For example, one concept emerged as part of creating a healthier neighborhood and allowing safe access between Classen and Pennsylvania. The neighborhood and associated land owners would be invited to participate in some design workshops to consider how the old, wide El Reno Interurban rail right-of-way greenspace could be repurposed west of Classen. In addition to new private development, the narrow parcels might accommodate a driveway and/or a new cycling and walking trail. The right-of-way is located between NW 40th and NW 41st and is open for many blocks. Such a project could help further unify the neighborhood, allow a scenic walking trail, spark infill reinvestment by exploring a means of allowing special re-zoning, support transit access, and more. For example, new zoning might allow for new small lot homes, a driveway that doubles as fire-lane access, and new rear-yard accessory dwellings abutting the old right-of-way.

It could lead to a beneficial reuse of the passed-over, underused privately-owned linear tracts and also support transit by creating a spine of very convenient access to both a Classen Boulevard BRT transit stop and a Pennsylvania bus stop. In the area near Georgia Avenue where it has been closed, there might be some way to make a connection. The block between McKinley and Classen is essentially open as of 2017. This healthy neighborhood planning would require intensive collaboration with property owners and require high neighborhood involvement; which will open placemaking opportunities.

About a block north of the east end, a new pedestrian signal for people crossing Classen near NewView and for access to Horace Mann school could be added to strengthen two adjacent neighborhoods. NewView is at the northwest corner of Classen and NW 42nd.

Also, just over a mile to the south, the iconic Gold Dome Bank building has been previously mentioned as a grocery store or other healthful use; including retrofitting the existing building for such a health-related purpose that fits the aims of healthy corridor planning. More than just a TOD strategy, a design charrette that also includes policy and partnership exploration with the owners of the large, underused adjacent parking garage south of the Gold Dome would be a valuable planning and design step. As of Spring 2016, Natural Grocers, based in Colorado, had planned to open a store there, and that was an ideal way to meet healthy planning criteria as Natural Grocers specializes in organic foods and had opened a couple of other locations in the metro over the past two years. By early 2017 this business plan was no longer the case and so a charrette has re-emerged as a key planning step.

Six: Funding Options and Sources

There are local, State, Federal and private funding options for improvements. These will come into better focus once more stakeholders are engaged by the City or EMBARK. Private funds are usually spent on private land but may also be used to build, for example, sidewalks in the public right-of-way next to a business or housing.

Above all, the importance of local municipal funding must be emphasized for a better, healthier corridor. Millions of dollars in local funding will be needed even if just for the match toward potential federal infrastructure funding. Federal funding is also being sought by strong competitors in other states. So, the Northwest Multimodal Concept Plan may largely have to be locally funded, but even the situation around local funding is not simple.

For example, the Northwest BRT is not specifically listed in the municipal General Obligation (G.O.) Bond issue and the next MAPS initiative, both of which will be voted on by Oklahoma City citizens on September 12, 2017. However, the elements needed (buses, pedestrian improvements, trails, traffic signals, and so forth) are all components in these initiatives.

ODOT controls part of the Northwest Expressway, and so some State funds might be available for some ODOT improvements that double as meeting some of the concepts in this plan.

Another example is how ODOT will be planning how the 40+ year old I-44 crossing over the Northwest Expressway will be replaced. Sometimes, the State DOT needs to make traffic signal or other improvements at intersections along the Northwest Expressway, dispose of surplus right-of-way, or take other actions: these are all opportunities when a small implementation step might potentially occur.

In fall 2017, it appears there will be an opportunity, for example, to seek federal Safe Routes to School (SRTS) funds from ODOT, the State DOT. These might help with adding some Classen Boulevard crossings.

Application for Federal Grants

Pursuit of federal funds is challenging but deserves exploration in this Concept Plan. The steps to federal funds are useful even if only to help plan for local funding of a NW BRT line and the related improvements for pedestrians and cyclists. The Fixing America's Surface Transportation (FAST) Act was signed into law on December 4, 2015. It allows for FTA funding for various programs including New Starts (NS) as well as the Small Starts (SS) program. Federal Law requires that projects seeking the federal Capital Investment Grant (C.I.G.) funding "complete a series of steps over several years to be eligible for funding" under New Starts and Small Starts. Federal TIGER funding is not part of the C.I.G. program and is usually is distributed as a much smaller award than New Starts and Small Starts and has fewer required steps, but TIGER is still very hard to win. In the case of the OKC BRT project, the total project cost is small enough that TIGER appears to be a good fit as a federal funding source, and SS is the second best fit.

After some of those C.I.G. steps and evidence of the local funds to do the Project Development studies, a project can enter Project Development (PD) by the FTA. Those steps include, for example, NEPA, LPA selection, adoption into the fiscally-constrained regional plan of ACOG, and sufficient engineering), According to the FTA, entering PD "should not be construed as a major milestone... it merely indicates the project has been allowed to enter the initial stage of the process" of pursuing C.I.G. funding.

The BCA study and NEPA process mentioned earlier in this Concept Plan are simpler, more affordable steps to complete before asking the FTA for entry to PD. Upon successful completion of the NEPA process during Project Development the strength of the Project will then be eligible for rating to be compared to other US projects under consideration. After NEPA is complete the project may also be eligible for admission into the Engineering Phase. If the project can advance past these and other hurdles, then Small Starts may later be approved to help pay for new fixed guideway systems (BRT in a dedicated lane, commuter rail, streetcar, etc.) or the less complicated form of BRT the FTA calls Corridor-Based BRT. The local match is typically around 40%, although less (20%) is the by-law minimum required.

Northwest Multimodal Transportation Corridor Concept Plan

New Starts funding is known to pay for more costly projects than does Small Starts, but SS funding is more realistic due to the levels of anticipated ridership and “cost effectiveness” per passenger trip. SS can be for up to \$100 m in federal funds on project with a total cost under \$300m. New Starts is for larger projects.

However, without an assured source of local match in-hand, it is less realistic for Oklahoma City to gain federal C.I.G. Small Starts funds.

TIGER grants and other federal grants through HUD and the EPA are other avenues with simpler requirements. TIGER is not part of the FTA Small Starts program and may be a more likely federal funding source for a smaller NW BRT grant than Small Starts but, again, the competition by strong projects across the U.S. is still very high and it is unclear how the 2016 national election outcome will impact this infrastructure program. TIGER funds become available when the USDOT decides to open a round for applicants, and there has been a grant round about annually for many consecutive years.

When a TIGER grant round has been announced in the past, it has been possible to compete for smaller amounts of funds, such as \$12,000,000; \$15,000,000; or even \$25,000,000 in federal funds. In fact, the latest TIGER grant awards announced in July 2016 were for 40 communities and the average award was \$12,100,000 although ten were granted \$15,000,000 or more. Regardless, the local match must be properly assured, the benefit cost analysis (BCA) submitted in the TIGER grant application must be strong, and the project must be able to complete a NEPA process within a year or so of grant approval. A significant part of the BCA and hence the requested federal approval hinges on transit ridership projections, and especially on the current transit ridership in and near the corridor.

The Oklahoma City BCA for Northwest BRT and bike/pedestrian improvements included a 2017 project cost estimate of under \$23m for a Corridor-Based BRT route. At that cost level, a TIGER grant is compatible as a federal funding source. Below are some characteristics of the federally-defined Corridor-Based BRT; one of the two main forms of BRT recognized by federal grant programs.

- Separated Right-of-Way: not required for entirety of corridor
- Substantial Investment in a specific corridor; including defined stations
- Traffic Signal Priority (TSP) for buses
- Short headway times
- Bi-directional services for a substantial part of weekdays, not required on weekends

Stakeholders, Community Input and Resources

The Northwest Multimodal Transportation Corridor (NWMCT) Concept Plan had four partners. The planners from the four co-partner planning agencies are with the Oklahoma City Planning Department, by ACOG, COTPA (dba EMBARK) and the City County Health Department (OCCHD). EMBARK and the three other partners were co-leading the process.

A project of this sort requires ideas and input from a broader cross section of the community, and so there was also an Advisory Focus Group (AFG) for the healthy planning beta test and hence the NWMCT Concept Plan. The AFG met about a half dozen times and summaries of all these meetings and the community meetings are available through EMBARK. The organizations their representatives that comprised The AFG can be found on the following page.

Advisory Focus Group

ACOG

Holly Massie
Danny O'Connor

Neighborhood Alliance

Georgie Rasco
Ryan Baker

American Fidelity

Melody Wortmann
Lisa Burchfield

Oklahoma City-County Health

Shannon Welch
Dave Cox

EMBARK

Jason Ferbrache
Kevin Mulcahy
Larry Hopper

Oklahoma City University

Cary Pirrong

Greater OKC Chamber

Derek Sparks

ODOT

Ernestine Embroh
Joshua Jones
Randall Lee
Laura Chaney

Health Equity Campaign

Marisa New

OKC Planning

Ian Colgan
Dennis Blind
Matt Sandidge
John Tankard

ICFI

Beverly Bowen

INTEGRIS Health

James DeHaven
Jim Porterfield
Brian Roberts

Penn Square Mall/Simon Properties

Ann Christensen
Jeffery Runnels

University of Oklahoma IQC

Shane Hampton
Bryce Lowery

The University of Oklahoma Institute for Quality Communities

There were seven higher priority study locations addressed by the University of Oklahoma (OU) Institute for Quality Communities (IQC) under a 2015 planning grant awarded by COTPA (EMBARK). The IQC had been a resource for the healthy planning beta test and the NWMTC planning by creating renderings, focusing on those key locations, researching BRT and streetcar technologies, documenting the process with summaries of the group meetings, conducting fieldwork, and preparing a narrative memorandum. In addition, the OU IQC had also been working on a project called the "A Better Classen" (ABC) project for the local Council of the Urban Land Institute (ULI). "A Better Classen" was focused on "Lower Classen" which is the area south of 23rd.

In May 2016 the IQC posted a synopsis of the great work on the concept renderings it did for EMBARK. A link to that is <http://iqc.ou.edu/project/embark/>.

Overview of the Seven Illustrative Locations

The University of Oklahoma (OU) Institute for Quality Communities (IQC) used the grant from EMBARK to study seven higher priority study locations as part of the work EMBARK wanted for the 2015 healthy planning beta test. While many more locations will need to be evaluated as part of an engineering or NEPA process, the seven locations were selected by the four planning agency partners based an evaluation and consensus process that led to the seven in early June 2015. These seven helped the IQC proceed with specificity and the IQC work was reviewed by the four partners for needed revisions. In addition to these seven locations the 2017 BCA included around ten other locations as well. See *Figure 10* to view all mapped locations.

Three High-Priority Multimodal Nodes include:

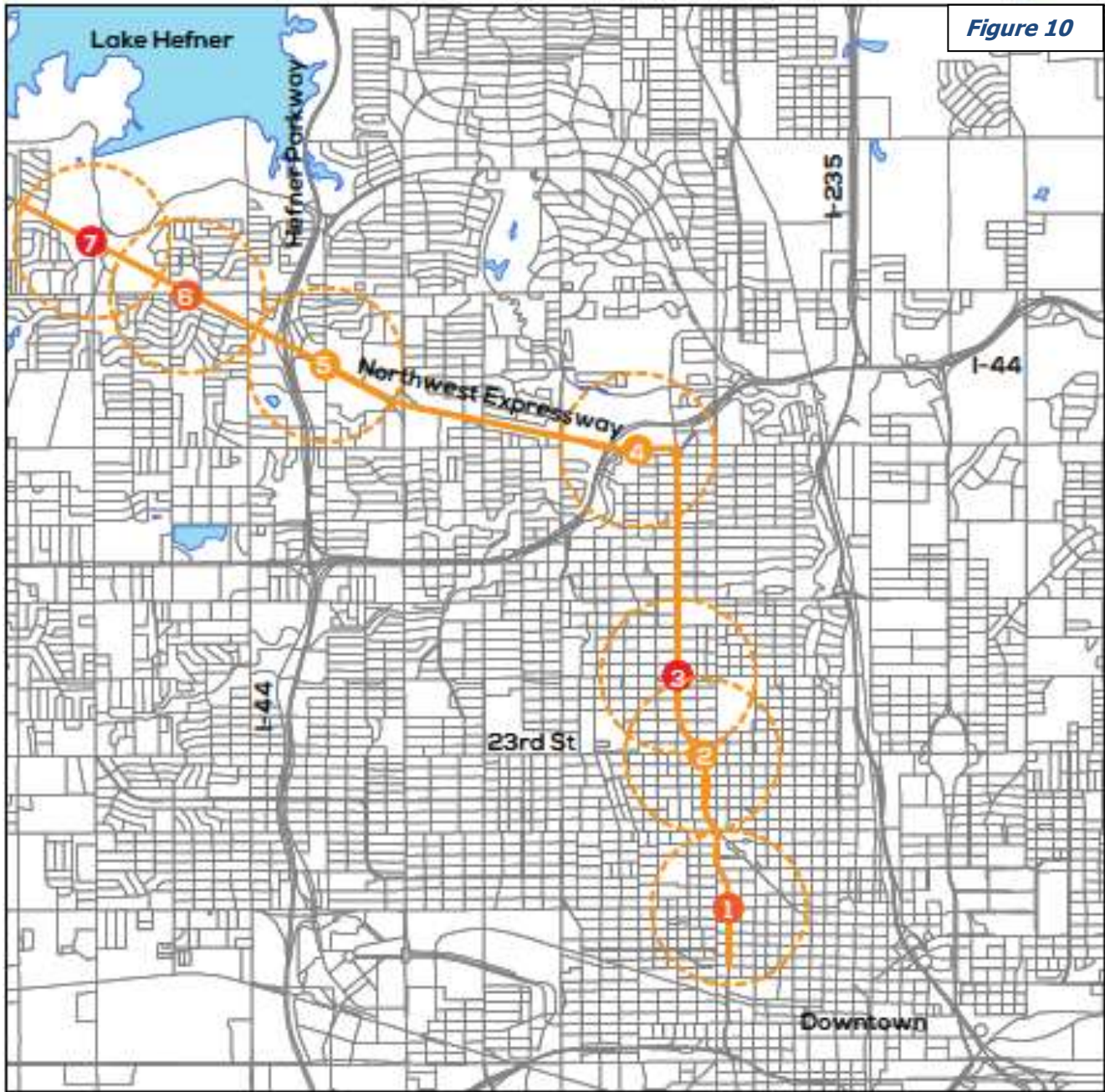
- NW 23rd & Classen
- NW Expressway & Blackwelder
- NW Expressway & Independence
-

Additional Multimodal Nodes:

- NW 10th & Classen
- NW Expressway & 63rd

Additional Corridor Locations:

- NW 30th & Classen
- NW Expressway & Meridian



Northwest Corridor Locations

High-Priority Multimodal Nodes

- 2 NW 23rd & Classen
- 4 NW Expressway & Blackwelder
- 5 NW Expressway & Independence

Additional Multimodal Nodes

- 1 NW 10th & Classen
- 6 NW Expressway & 63rd

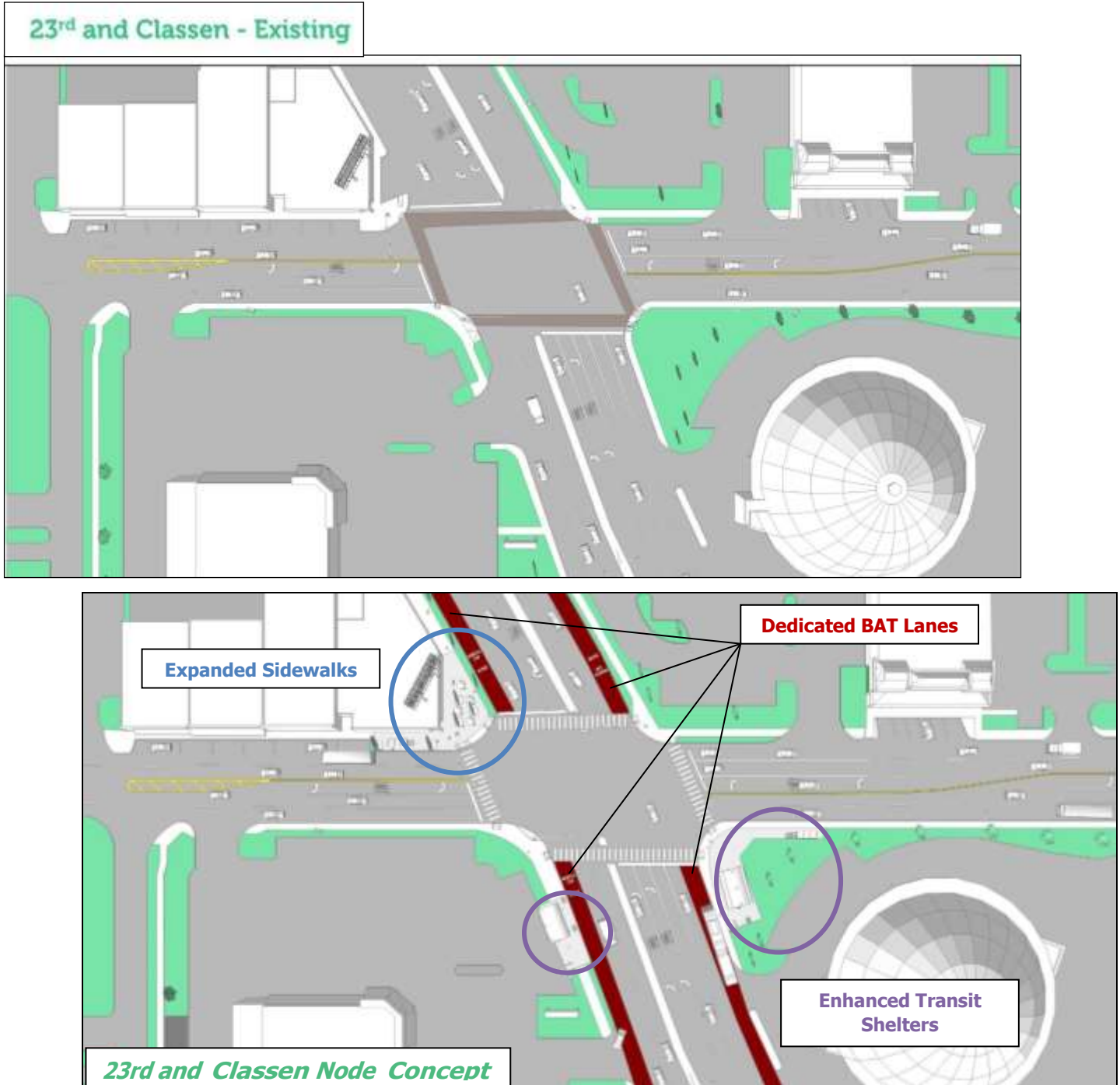
Additional Corridor Locations

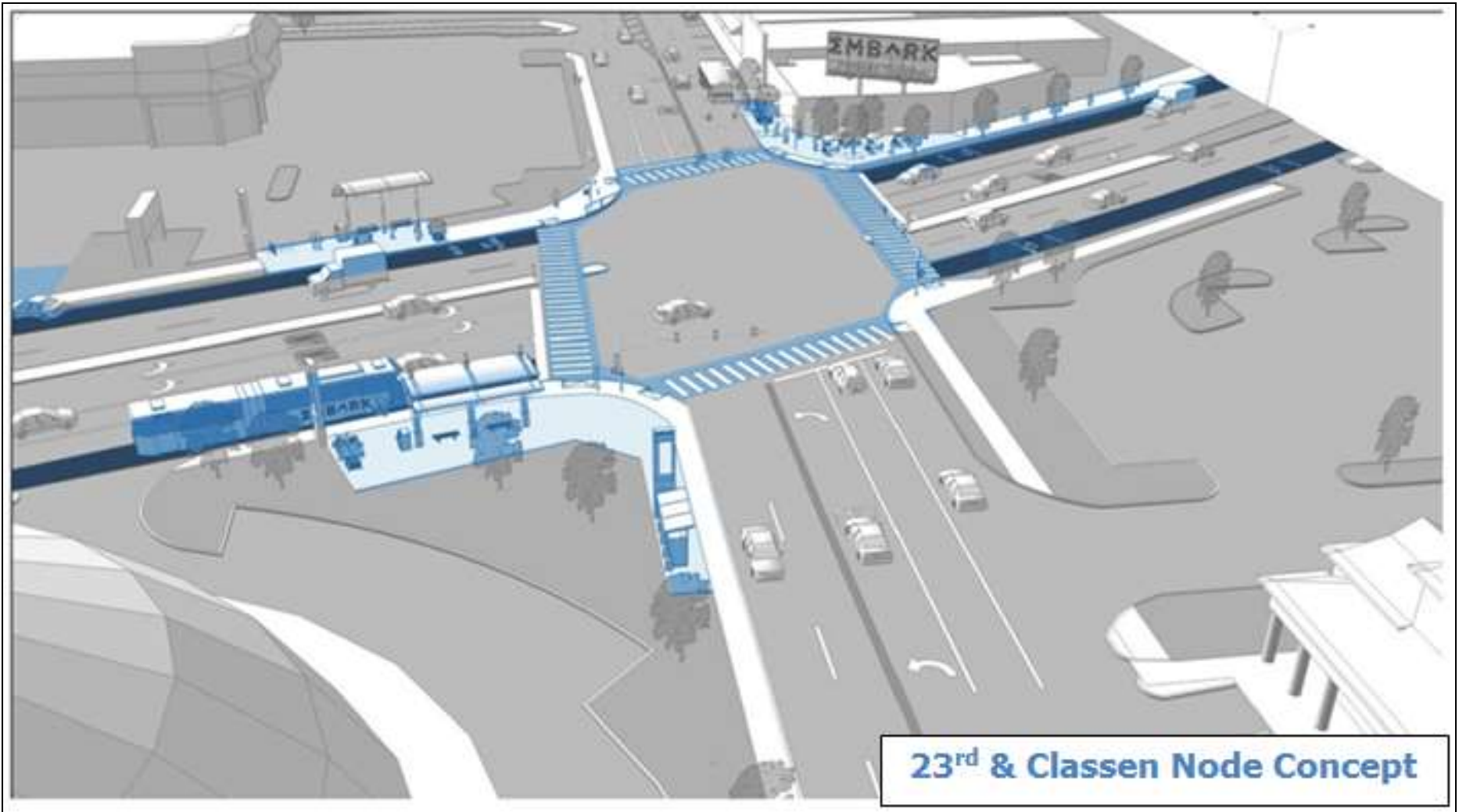
- 3 NW 30th & Classen
- 7 NW Expressway & Meridian

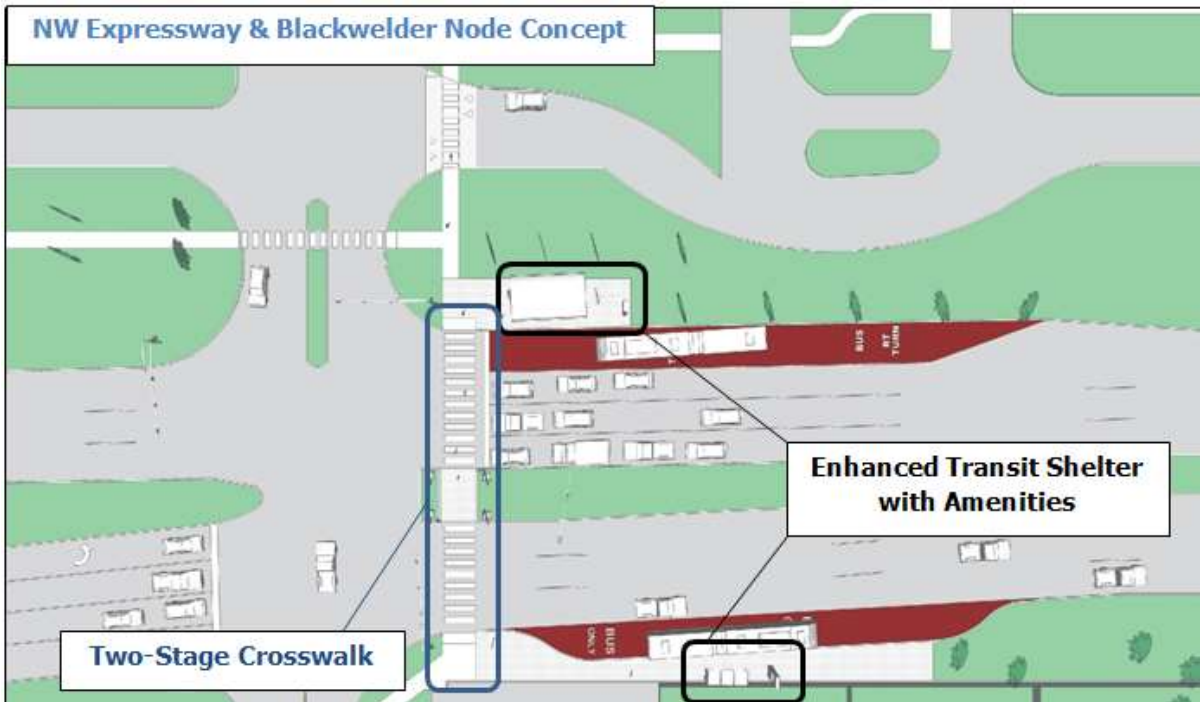
1/2 Mile or 10-Minute Walk

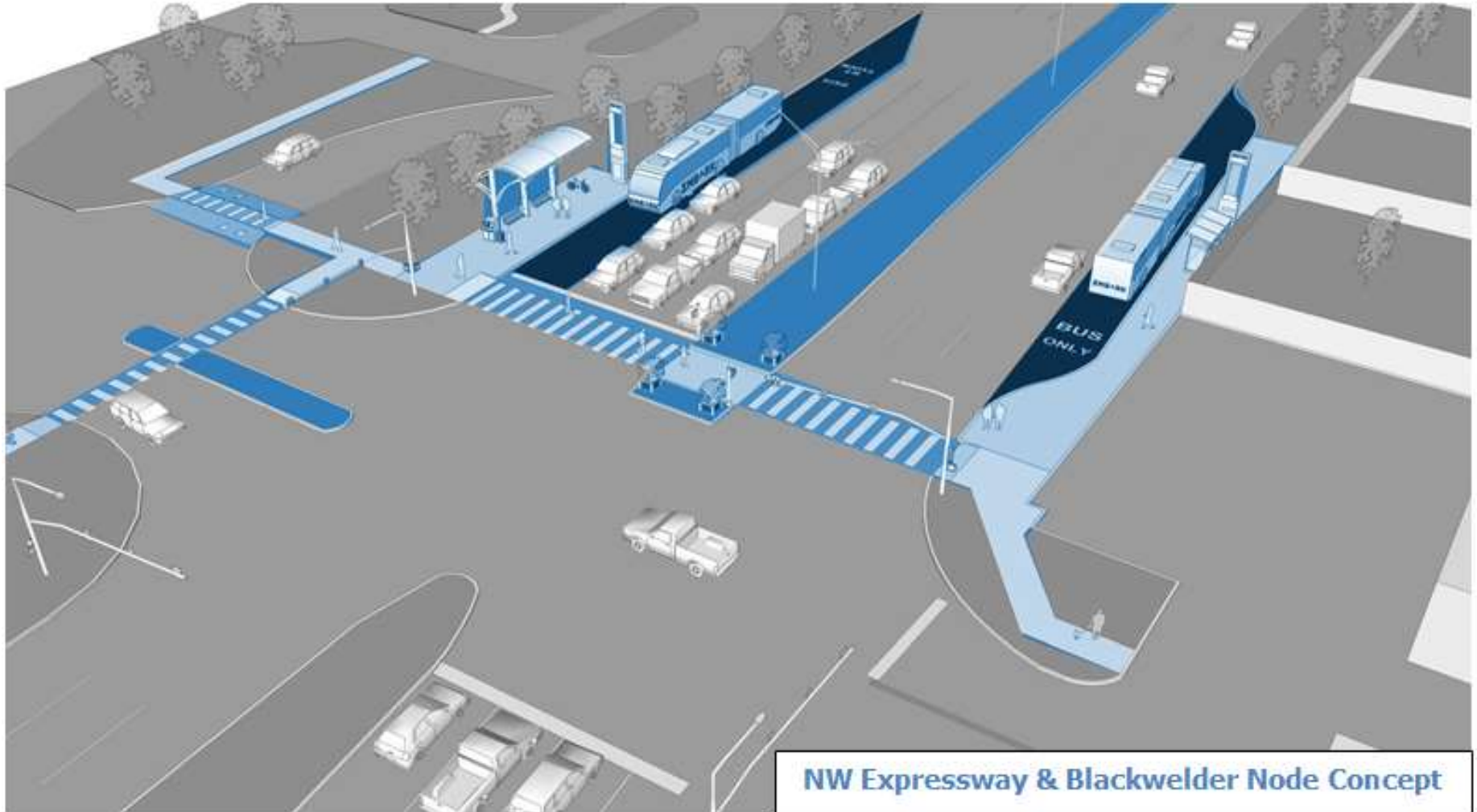
Northwest Multimodal Transportation Corridor Concept Plan

Below are a few concepts developed by IQC for retrofitting Northwest 23rd Street at North Classen Boulevard, as well as Blackwelder at Northwest 23rd. The remainder can be located online via Appendix Two.









Definition of the Corridor's Transportation Problem

The purpose and the overall problem to be addressed and solved for the Northwest Multimodal Transportation Corridor was defined in 2015 as the need to provide increased mobility in a manner that also integrates with the promotion of public health within and through the Classen Boulevard and Northwest Expressway corridor; between downtown Oklahoma City and Northwest Oklahoma City. Improved mobility will serve workforce commutes, improve social equity, and better connect existing neighborhoods, healthcare facilities, parks, and retail uses that are located along the corridor with adjacent land uses as well as provide active transportation options to increase connectivity within and adjacent to the corridor.

The need for improved multimodal access in the Classen/Northwest Expressway corridor is reinforced by the following problems:

- Vehicle congestion during a.m. and p.m. peaks;
- Minimal frequency of public transit and relative lack of multimodal options;
- Poor and absent pedestrian and bicycle corridor crossings;
- width of street – crossing distance
- long distances between signals / crossings;
- Lack of transit stops on the Northwest Expressway and lack of frequent transit service along the existing Classen and Northwest Expressway roadways
- Absence of a safe way to add transit stops and service along today's NW Expressway
- Lack of relatively safe pedestrian and bicycle access to health facilities, grocery stores, parks, etc.
- Sidewalk connectivity along the corridor, as well as from the corridor into adjacent neighborhoods
- Lack of transit oriented development (TOD) within and adjacent to the corridor
- Community's desire for increase healthy lifestyle options

Transportation Goals and Objectives

For the Northwest Multimodal Transportation Corridor Concept Plan, Goals and Objectives were formed and were adjusted as they gained consensus of stakeholders. One set was for transportation and another set was five goals for a healthier community in the corridor. Both sets directly support three of the City Council's six priorities. The City Council website states that those priorities "are grounded in the lessons of the City's history and the values of inclusiveness, mutual respect and self-reliance that are the hallmarks of our future." One City Council priority is 'Develop a Transportation System That Works for All Citizens' and another is 'Promote Thriving Neighborhoods' and a third is 'Enhance Recreation Opportunities and Community Wellness.'

The transportation goals and objectives of the Corridor Concept Plan fit the Priorities and are:

- Improve multi-modal transit options including:
- Improve transit frequency
- Improve timespan of offered service
- Improve travel time and reliability
- Provide convenient transit connections that minimize the need to transfer
- Increase transit ridership and mode share in the corridor via service that is comfortable, pleasant and easy to use
- Improve access for people walking and bicycling to transit
- Improve the safety of pedestrians and bicyclists accessing transit, traveling in and along and traversing the corridor
- Utilize a desirable, fiscally responsible transit vehicle technology
- Reduce or at most maintain traffic congestion levels faced by motorists
- Support private investment as well as economic development, revitalization and land use redevelopment opportunities for the corridor
- Support development and redevelopment as planned in other adopted planning and transit plans
- Coordinate transit stops and other improvements with other planned and programmed pedestrian
- and bicycle projects
- Support commerce's worker productivity and its business aims
- Coordinate transit capital improvements with other planned and programmed roadway projects in a way that allows buses to safely re-join traffic
- Minimize adverse impacts to existing businesses and industry
- Support community vision for high capacity transit that includes feeder bus services that connect the corridor's stops to districts and key developments
- Enhance quality of life and livability
- Improve the safety of all users of the system for all modes of travel
- Connect travel options to healthy community improvement
- Maintain the cleanliness and good repair of transportation infrastructure
- Prioritize transportation projects that enable active, livable, healthy communities
- Use transportation infrastructure to help create attractive communities
- New projects should respect the character of the corridor, neighborhoods and adjacent land uses
- Educate leaders and the business community about benefits of improved multimodal options
- Increase awareness of the economic, health, safety and other opportunities
- Connect multimodal understanding to the next steps toward its achievement
- Foster better awareness of bus rapid transit (BRT) and its use in the U.S.
- Cultivate an understanding of intermodalism
- Increase awareness of various types of barriers

Health-Related Corridor Goals

The health-related goals defined in 2015 for the Corridor Concept Plan are:

Goal 1: Increase people's physical activity achieved during everyday trips.

Goal 2: Improve access to "healthful" (health-related) resources along the corridor.

Goal 3: Improve air quality and other health-related natural environmental conditions.

Goal 4: Expand the equitable benefits of healthy, safe access to transit for transportation-disadvantaged populations in a way that also supports having healthy, affordable housing and helps build personal wealth and security.

Goal 5: Increase the safety of pedestrians and cyclists along and crossing the corridor and/or accessing transit there.

Below is an introduction to criteria. Criteria are the measures or tests that refine a strategy before it is implemented to affect a goal. The criteria related to both sets of goals may be found in the Appendix One. In order to fulfill goals, strategies are key ways or actions to carry objectives out. Strategies will evolve and can be strengthened through further planning and engineering. Ideas evolve into priorities and goals, and both need sub goals called objectives.

Strategies are concrete ways to affect an objective, and may be physical means (capital improvements like sidewalks, a new transit vehicle, etc.) or policy-related ways such as needed partnerships, awareness campaigns, new codes, schedules/timelines and so forth.

Transportation strategies are often connected to community benefits such as access to jobs, economic development goals, and social equity/opportunity: all three are also related to public health. Criteria help improve strategies.

Health Problems to Overcome in the Corridor

Incorporating public health into transportation decision-making requires some degree of discovery and re-education on the part of all sides (citizens, leaders, planners, and public health officials). This is needed to overcome barriers related to process, terminology, and other unfamiliar considerations. Health partners and stakeholders play an essential role in identifying the relationships between transportation strategies and public health outcomes. Transportation strategies are better achieved via collaboration between health and transportation professionals which leads to a strong understanding of how transportation improvements could benefit the community.

Some key health items:

- The “Self-Guided Online Tour of Health and More in the Corridor”
- The two meetings of the Ad Hoc Health Subcommittee
- Health goals, objectives, and criteria
- Various maps of diseases, healthcare sources, sidewalk networks and grocers
- EMBARK has been mindful of health ever since adding bike racks to its buses back in about 2006-2007; for years has organized annual health fairs for EMBARK customers; and conducted Oklahoma’s first HIA (2012) as part of the TIGER II planning for the MAPS streetcar project.
- Many health issues surfaced through the planning. For example:
 1. The high number pedestrian and bicycle crashes
 2. The very high percentage of mother’s there with less than a high school education: has a great health impact
 3. The absence of signalized pedestrian crossings along the Northwest Expressway
 4. High rate of persons living there with substance abuse problems and needing substance abuse visits
 5. Highest zip code incidence of hepatitis B and C found in the county; low usage rate of prenatal care
 6. Relatively small number amount of full-line grocery stores on/abutting Classen or the NW Expressway

Land Use Change Consideration

TOD is an essential future strategy to use in NW Multimodal Corridor and was identified as such in 2015. EMBARK has a strong stake in working with investors on TOD because the type and intensity of development will have a direct and dramatic impact on transit ridership. TOD is synonymous with both a more livable, healthier community and a higher quality of life. PlanOKC urges TOD, and the 2016 Smart Growth America TOD Workshops helped community leaders and developers recognize the value in emphasizing TOD in future public and private investments in the corridor.

The Central Oklahoma Transportation and Parking Authority (COTPA) and the Planning Department proposed TOD during the 2015 concept planning and EMBARK applied in early 2016 for some targeted TOD assistance from Smart Growth America. This was to help accelerate the discussion around private economic development, mixed use development, affordable housing, and to add to the corridors vitality and livability. The Smart Growth America Transit Oriented Development (TOD) workshop grant was awarded in April 2016 to only nine cities in the U.S, and OKC was one of them.

There was to be no single issue addressed in follow-up after the summer 2016 workshops; but there remain three closely interrelated challenges in addition to SGA's recommendations:

- Attract the right mix of TOD businesses, housing and other land uses in the heart of Downtown within a few blocks of the Santa Fe Station 'Hub', and near some of the corridor's sites
- Continue to spread awareness and support for TOD and BRT among the public
- Incentivize legally-binding, affordable restricted (LBAR) housing near the Hub and along the corridor

The five illustrative locations addressed in TOD workshops and TOD awareness are:

- Near the Downtown Santa Fe Station
- At Classen Boulevard at NW 23rd ("Urban" intersection of high intensity uses, and COTPA's two busiest routes)
- Northwest Expressway at Penn Square Mall (City's largest Simon Property, and located adjacent to high-rise offices, and dense residential)
- Northwest Expressway at Independence (Very large campus of hospital towers, office and hotel towers, and OKC's most walkable neighborhood (per the Walkscore website)
- Northwest Expressway at NW 63rd/Tulsa (Cluster of low/mid-rise suburban towers with very large underused nearby parcel (shopping center, empty car dealership, and so forth)

Also, the City's February 2016 Smart City Challenge grant application envisioned a Smart Zone in Oklahoma City which would include Classen and part of the Northwest Expressway. The Smart Zone envisioned the use of technology, better transit, smart land use, self-driving car routes, a "connected citizenry, and more to create model area within the City. Smart land use includes TOD.

Conclusion

The initial progress on the six basic Concept Plan Recommendations (Page 18) suggested in late 2015 has been promising. The pursuit of some of the Additional Planning and Design steps is underway and a key step like the NEPA work will need to be paid for as soon as it is practical. The Benefit Cost Analysis (BCA) was completed by mid-2017. The potential is high to create a more livable corridor with a high quality of life served by transit, great bike/pedestrian crossings, and nodes of mixed-use transit oriented development. The Northwest Multimodal Corridor has the capacity to further add to the health and wealth of the City, and to be an example to replicate elsewhere in the region. The Concept Plan shows the future looks bright if the community turns on the light!

APPENDICES

Appendix One: Health Criteria for Concept Plan's Goals and Objectives

Appendix Two: IQC Project Memorandum

Appendix One: Health Criteria for Concept Plan Goals and Objectives

As an introduction to criteria, one needs to understand how they grow out of ideas and goals. The Corridor's criteria related to both sets of goals are found in this Appendix One. Strategies will evolve and can be strengthened through further planning and engineering. Ideas evolve into priorities and goals, and both need sub goals called objectives. Strategies are concrete ways to effect an objective of a goal, and may be physical (capital improvements like sidewalks, a new transit vehicle, etc.) or policy-related such as needed partnerships, awareness campaigns, new regulatory codes, schedules/timelines and so forth.

Criteria sharpen strategies by being the measures that test and refine a strategy before a strategy goes too far into action. Health partners and stakeholders play an essential role in identifying the relationships between transportation strategies and public health outcomes. Transportation strategies are often connected to community benefits such as access to jobs, economic development goals, and social equity/opportunity: all three are also related to public health.

NOTE: these criteria are verbatim from the outcome of the summer 2015 planning with stakeholders.

Goal 1: Increase people's physical activity achieved during everyday trips.

Criteria:

- Does the strategy add bicycle racks, a bike repair station, or bike share station? Does the strategy support a safe-routes-to-school pathway?
- Is the strategy some other short-term capital step (preferred), as opposed to a longer-term one requiring more than \$1,000,000 to achieve?
- Does the step require high ongoing annual expense (less preferred)?
- Will the strategy seemingly improve livability and pedestrian and bicycle (pedestrian/bike) activity; better yet, will it likely increase by 20% (at least by 20) per day the amount of pedestrian/bike trips as measured by mode share crossing the corridor near that location?
- Will the strategy or new land use likely increase the number of transit boardings and alightings by 20% (or by 20) per day at a particular stop?

- If involving new or rehabilitated dwelling units, does it add at least ten within two blocks of the corridor crossing or transit stop?
- Will the strategy potentially increase the number of total intermodal transfers by 15% (or by 15) per day; such as via a park-and-ride lot, bike-on-bus, or transfers between bus routes at a stop?

Goal 2: Improve access to "healthful" (health-related) resources along the corridor.

Criteria:

- Does the new strategy, such as a stop location, place a higher priority on locations allowing access to health-related resources and jobs; or instead is the strategy placing more priority on recreational travel (less preferred)?
- Will the strategy likely increase the number by 20% (or by 20) per day of transit customers, cyclists, and other non-motorists accessing particular pharmacies, full-line grocery stores, clinics, hospitals, parks, educational training, proven venues of alternative wellness/medicine, and other health resources in the corridor?
- Does the strategy or proposed land use include or support a full line grocery store or pharmacy?
- Do the new sidewalk, signal or and trail improvements in the corridor likely boost non-recreational use and livability; such as access to health-supportive land uses, moderate density housing, and transit-oriented development?

Goal 3: Improve air quality and other health-related natural environmental conditions.

Criteria:

- Does the strategy have the capacity to substantially reduce the emission of harmful air pollutants within 600 feet of the corridor's centerline?
- Is the strategy a NEPA step, such as the preparation of a Categorical Exclusion (CE), BCA, or an Environmental Assessment study; or is it at least a form of a transportation alternatives analysis?
- Has the strategy included the planting and maintenance of trees and greenery, or and the proper management of water courses and other natural features along the corridor?

Goal 4: Expand the equitable benefits of healthy, safe access to transit for transportation-disadvantaged populations in a way that supports healthy, affordable housing that will help build personal wealth and security.

Criteria:

- Does the strategy include social marketing or other steps that can help community health and wealth?

Some examples: Urge decreased tobacco use, educate on ways to reduce hepatitis, and urge graduation from high school

- Will the strategy attract and benefit non-drivers such as people with physical disabilities, newly arrived refugees, and other transportation-disadvantaged populations at least as much as the rest of the population, in terms of safety and access to healthful resources?
- If involving new or rehabilitated dwelling units, does it add legally binding, affordably restricted (LBAR) dwelling units? If so, does it add at least five units within two blocks of the corridor crossing or transit stop? Will any units be designed for livability for people relying on wheelchairs?
- Can the strategy be achieved that it avoids even a temporary discontinuation of transit service along the corridor during construction of transportation improvements?
- Will the project qualitatively help improve at least two City-County zip code scorecard social determinants of health (SDOH) measures?
- Does the strategy help people be more aware of the benefits of a healthier lifestyle and promote a “culture of health” along the corridor?
- Will the project add a low-cost or free health clinic?
- Will the project add a facility for an entity providing direct services or employment to people with disabilities?
- Does the strategy add lighting, improved defensible space or other elements which benefit personal security?
- Will the proposed transportation investments be unlikely to displace or disproportionately harm transportation-disadvantaged populations in the corridor?

Goal 5: Increase the safety of pedestrians and cyclists along and crossing the corridor and/or accessing transit there.

Criteria:

- Does the strategy increase safety via the number of signalized crossings for pedestrians and cyclists?
- Will the strategy likely supports a safe-routes-to-school pathway?
- Does the strategy increase the number of pedestrian refuges at medians, or grade-separated pedestrian crossings (via an overpass/underpass) and other treatments?
- Is the strategy likely to spur reductions in the absolute numbers of annual injury and fatality crashes despite added access, and reduce crossing fatalities to zero at heavy use crossings during most years?
- Will the strategy improve the conditions for safety and stable-footing at transit stops?
- Does the strategy add or lengthen any sidewalks, ADA curb cuts, bus shelters, or add any pedestrian bridges or crossing signals within a half mile of a corridor crossing or corridor stop?
- Will the strategy add or lengthen any bicycle lanes or cycle tracks at a crossing or within a half mile?
- Does the strategy add any bicycle-only signals or 'bike-box' pavement color coatings in the street at crossings or nearby intersections?

Appendix Two: IQC Project Memorandum

Disclaimer: the IQC Project Memorandum contains conceptual illustrations and while attractive and well done, their actual feasibility will require a large amount of additional planning, design and engineering.

The 40-page Memorandum which is this Appendix Two is available under a separate cover and reflects a great sample of the work done by the University Of Oklahoma (OU) Institute for Quality Communities (IQC). The IQC created many graphics, maps, and other materials for EMBARK that are being used by the City and EMBARK.

In May 2016 the IQC posted Appendix Two as a synopsis of the work the IQC did for EMBARK. A link to that synopsis (Appendix Two) is below: <http://iqc.ou.edu/project/embark/>
The IQC focused on the seven higher priority study locations addressed under a planning grant awarded by COTPA/ (EMBARK). The seven locations were selected by the four planning agency partners based an evaluation and consensus process that led to these in early June 2015. The four partners were:

Central Oklahoma Transportation and Parking Authority (dba EMBARK)
Oklahoma City-County Health Dept. (OCCHD)
City of Oklahoma City Planning Department
The Association of Central Oklahoma Governments (ACOG)

The IQC had been a resource for the NWMTC planning by focusing on those key locations, researching BRT and streetcar technologies, documenting the process with summaries of the group meetings, conducting fieldwork, and preparing a narrative memorandum.

In addition, the OU IQC had also been working in 2015 on a project called the "A Better Classen" (ABC) Project for the local Council of the Urban Land Institute (ULI). "A Better Classen" is focused on "Lower Classen" which is the area south of 23rd Street, yet some of the citizen comments about the ABC study are about areas farther north. The ABC Project was a great resource for the Northwest Multimodal Corridor Concept Plan.