

# NORTHSIDE-SOUTHSIDE STUDY

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**FINAL**

August 2018



**EAST-WEST GATEWAY**  
Council of Governments

**LOCALLY PREFERRED ALTERNATIVE REPORT**



**Document Revision Record**

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PM: Dan Meyers

Principal: Ken Kinney

**Originator: Nair**

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**Name, Firm:**

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Nair, AECOM

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## 1.0 Summary of the Locally Preferred Alternative

The East-West Gateway Council of Governments (EWGCOG) is leading the Northside-Southside MetroLink Conceptual Design Study (Northside-Southside Study) with support from the City of St. Louis. The Northside-Southside Study builds upon the 2008 Northside-Southside Study, including its adopted locally preferred alternative (LPA). That LPA was a light rail investment that stretched from Goodfellow/I-70 on the Northside, through downtown St. Louis, to Bayless/I-55 on the Southside, generally along Natural Bridge Avenue, 9<sup>th</sup>/10<sup>th</sup> Streets downtown, and Jefferson on the Southside.

Since the 2008 Northside-Southside Study, the City of St. Louis and its neighborhoods have changed considerably. New development has transformed much of the central corridor. South St. Louis, along Broadway Street and Jefferson Avenue, has enjoyed grassroots community revitalization with the addition of new residents and small businesses. North St. Louis became the future home of the multi-billion dollar next National Geospatial-Intelligence Agency (NGA) West campus. This current study seeks to understand these changes so that the proposed Northside-Southside line will have the potential to leverage and extend the economic growth and momentum happening in the City of St. Louis.

Following 18 months of technical analysis and community input, which is summarized in this report, the LPA for the current Study has been identified as center-running light rail transit (LRT) that primarily operates along Natural Bridge Avenue, 9th and 10th Streets, and Jefferson Avenue between Grand Boulevard and Chippewa Street (Figure 1-1).

There are two options through the neighborhood around the future site of the National Geospatial Intelligence Agency’s (NGA) new campus: via either Cass Avenue or Florissant Avenue. The preferred alternative through the NGA area, based on the results of this Study’s technical analysis and community input, is the Cass Avenue alignment. The final selection of the Cass or Florissant Avenue alignment will occur during the Preliminary Engineering and environmental clearance phase of the project, which could begin in 2019.

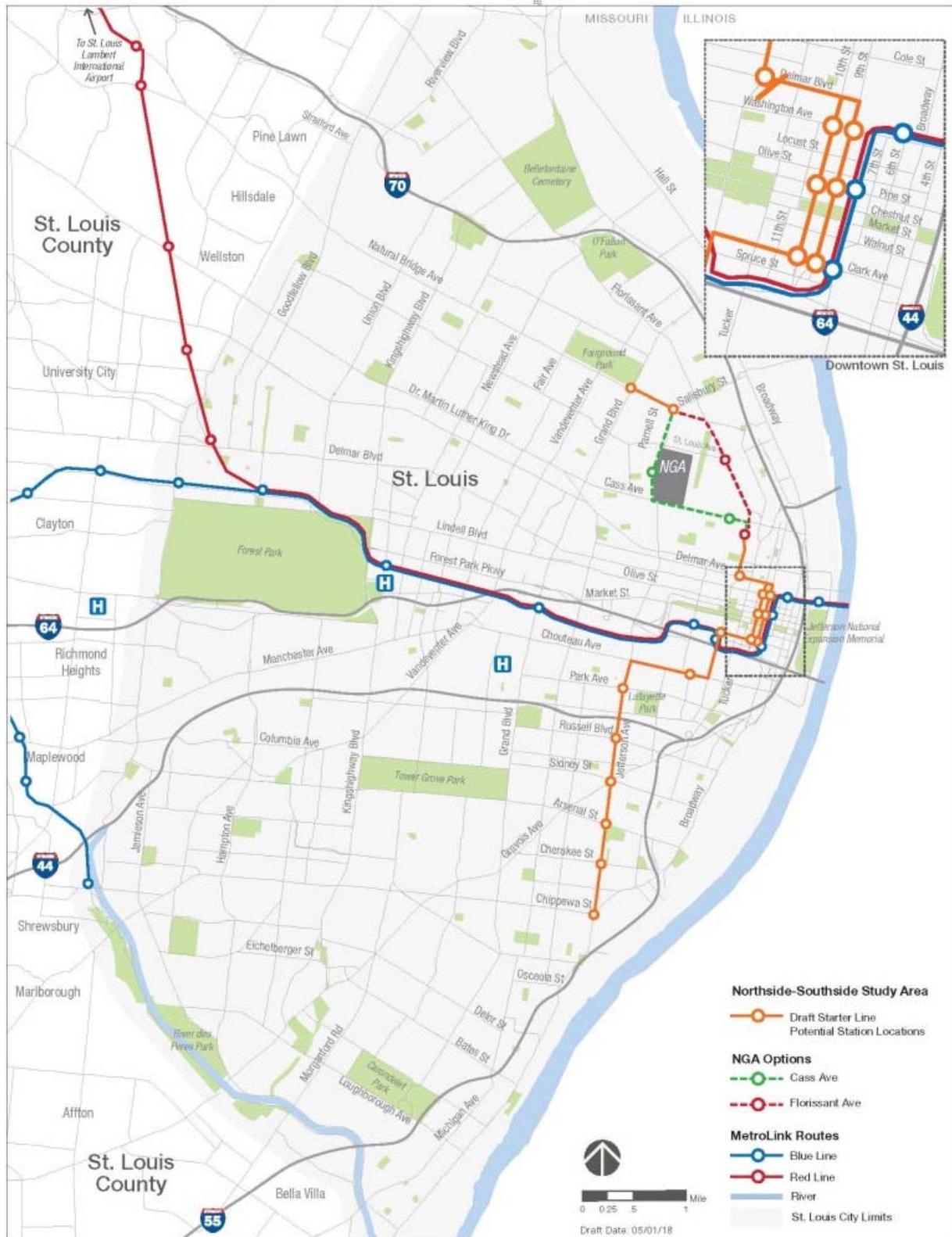
Future phases of this project could evaluate ways to expand the alignment north and south to complete the full 17-mile alignment that was identified as the 2008 LPA, including consideration of a southern alignment along Broadway. The decision to construct this alignment in phases is primarily due to financial constraints, allowing additional time to plan for and identify resources to complete the full 17-mile corridor.

### The Locally Preferred Alternative: Key Statistics

Length: 8.29 miles (Cass); 8.0 miles (Florissant)	Travel Time (one way): approximately 25 minutes
Number of Stations: 16	Average Daily Ridership (2025): 9,000 (Cass); 8,200 (Florissant)
Span of Service: 4 AM – 1 AM, 7 days a week	Number of Residents in Station Areas (2015): 47,100 (Cass); 47,000 (Florissant)
Frequency: 12 minutes (rush hour); 20 minutes (non-rush hour)	Number of Jobs in Station Areas (2015): 65,500 (Cass); 664,900 (Florissant)
Capital Costs (2017\$): \$667 M (Cass); \$660 M (Florissant)	
Annual Operating and Maintenance Costs (2017\$): \$17 M (Cass)*; \$14 M (Florissant)	<i>*Higher O&amp;M cost for the Cass alignment is due to having an additional train in operation (6 vs. 5), two more rail cars in operation (12 vs. 10), and four more rail cars required in the fleet (16 vs. 12).</i>



Figure 1-1: Locally Preferred Alternative





## **2.0 Introduction**

This report summarizes the Northside-Southside Study process and outcomes, and identifies the LPA that is recommended for further study. This report describes which alternatives were studied, the major steps in the decision-making process, who was involved, and next steps to move the LPA towards implementation.

### **Project Description**

As previously mentioned, this Study builds on the 2008 Northside-Southside Study, with the goal of selecting an LRT investment that meets the transportation and development needs of the community while maximizing competitiveness for federal capital funding through the Federal Transit Administration's (FTA) New Starts Capital Improvement Grant (CIG) Program.

### **Summary of the Process to Define and Select the LPA**

The LPA is a technical term that is used to describe the transit investment that Study stakeholders identified as best addressing the Study's identified purpose and need. The LPA is a general description of the transit vehicle, alignment, station locations, and service plan. LPA design specifics and the definition of additional elements of the project, including details related to station locations, will be refined during subsequent engineering and planning efforts.

Identification of an LPA is a critical step in pursuit of federal funding. It is anticipated that the region will pursue federal funding for up to 50 percent of the Northside-Southside LRT's total capital costs through the FTA New Starts program. The selection of an LPA tells the FTA which alternative EWGCOG and its partners expect to be the most competitive for funding through New Starts.

Phase 1 of this Study advanced the definition of the LPA that was recommended during the 2008 Northside-Southside Study, including the identification of potential alignment options in the area around the planned NGA campus. Phase 1 also included detailed evaluation of potential initial investments – or the portion of the full 2008 corridor that would meet local needs while maximizing competitiveness for federal funding. This detailed evaluation resulted in the identification of a preferred alternative.

Phase 2 refined the preferred alternative to become the LPA. The LPA is the project that, pending adoption into EWGCOG's long-range transportation plan and local consensus, will begin the process to apply for FTA New Starts capital funding by moving forward into Preliminary Engineering and environmental clearance work.

### **Project Decision-Making**

Two committees and, most importantly, extensive public engagement, informed the decisions for the Northside-Southside Study. The Technical Committee (TC) was comprised of technical representatives from partner agencies and stakeholder entities; the Policy Committee (PC) was comprised of the policymakers from those same agencies and entities. Members on the committees included representatives from EWGCOG, the City of St. Louis, St. Louis County, Bi-State Development, Metro Transit, and the Missouri Department of Transportation.



The recommendations and decisions of the committees were also informed by public input. Members of the public have been engaged throughout the Study process; a summary of public engagement activity can be found below.

### Public Engagement

A critical component of the Study is stakeholder and public participation. Effective stakeholder and public participation is essential for good decision making and to assist in making a lasting contribution to the quality of life of those who live in the corridor. Summaries and all materials related to public engagement activities over the course of the Northside-Southside Study are available on the project website at [www.northsidesouthsidedtl.com](http://www.northsidesouthsidedtl.com).

The goal of public involvement is to ensure that the concerns and issues of those with a stake in the corridor are identified and addressed. To achieve this goal, the Northside-Southside Study:

- Re-engaged 2008 Study participants in a way that honors their previous input and focused on identifying changing conditions and priorities
- Conducted substantial outreach to potentially affected communities and stakeholders along new or revised alternatives
- Informed stakeholders about the FTA funding process and the steps necessary to move from an LPA to an operational project
- Fostered opportunities for communications between regional stakeholders with the understanding that federal funding requires development of a project that has achieved broad community support

The goals were accomplished through several community engagement techniques, including:

- Project branding
- Stakeholder outreach and interviews
- Public meetings
- Communications materials
- Targeted outreach to underrepresented populations
- Media relations
- Online, mobile, and social media outreach

In total more than 3,000 people participated in the Northside-Southside Study through more than 80 community events, workshops, business outreach, presentations, pop-up events, social media, and online engagement forums.



### Public Involvement Summary

- More than 3,000 people participated
- 80 community events

### Common feedback heard by the project team:

- Provide all-day transit service
- Connect people to businesses, services, jobs, and education
- Concern about property and business impacts
- Pursue highest transit investment possible to make areas more desirable
- Transit options should also be cost-effective
- Safety is important

## 3.0 Project Purpose and Need

One of the first reports completed for the Northside-Southside Study was the *Purpose and Need Statement* (May 2017). This document identified the transportation needs of the corridor, which in turn led to the development and evaluation of the alternatives that could meet the project needs.

The stated purpose of the Northside-Southside Study is to identify the light rail investment that encourages sustainable development patterns that expand access to opportunity for study area residents, matches demographic trends and preferences within the study area, and leverages the existing transportation infrastructure to improve connectivity within and beyond the study area.

The development of the project purpose also identified the following two project needs:

### Stabilization, Revitalization, and Redevelopment of Key Areas

- Study area neighborhoods need stabilization, revitalization, and redevelopment.
- Areas of decreased commercial and residential development require increases in community safety.
- The positive momentum of recent or planned investments can be leveraged by light rail investment.
- The character of existing stable residential areas needs to be preserved.

### Expanded Access to Jobs and Activity Centers

- Study area residents – especially transportation-disadvantaged residents – need improved access to jobs.
- Light rail is an attractive alternative that is competitive with cars.

## Goals

As part of the development of the project's purpose and needs, three project goals were developed to describe the desired outcomes of investment in Northside-Southside LRT:

- Foster sustainable development and redevelopment



- Improved access to opportunity
- Develop and select an implementable and community-supported project

The goals guided the development of the evaluation criteria that were used to define and evaluate the alternatives.

**Evaluation Criteria**

Evaluation criteria were developed to assist in understanding the degree to which each alternative would meet the project goals. The TC and PC provided input into what information would be useful in determining an alternative’s ability to meet the project goals, and which evaluation criteria would help identify the key differentiators between the alternatives. Table 3-1 presents the evaluation criteria (linked to project goals) that were used during the alternative evaluation phases. Note that the criteria for Phase 2 build upon the criteria that were used during Phase 1, ensuring a consistent methodology throughout.

**Table 3-1: Project Evaluation Criteria**

<b>Project Goals</b>	<b>Phase 1: Detailed Evaluation</b>	<b>Phase 2: Refinement of the LPA</b>
Foster Sustainable Development and Redevelopment	<ul style="list-style-type: none"> <li>• Station area population and employment densities</li> <li>• Station area equity characteristics</li> <li>• Station area land use and economic development opportunities</li> <li>• Environmental impacts/benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Economic development*</li> <li>• Land use*</li> <li>• Environmental benefits*</li> </ul>
Improve Access to Opportunity	<ul style="list-style-type: none"> <li>• Ridership</li> <li>• Transit travel times</li> <li>• Traffic impacts</li> <li>• Parking impacts</li> <li>• Potential right-of-way impacts</li> <li>• Bicycle and pedestrian impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Mobility improvements*</li> <li>• Congestion relief*</li> </ul>
Develop and Select an Implementable and Community-Supported Project	<ul style="list-style-type: none"> <li>• Capital and operating and maintenance costs</li> <li>• Cost effectiveness</li> <li>• Community support</li> </ul>	<ul style="list-style-type: none"> <li>• Financial capacity analysis*</li> <li>• Cost effectiveness*</li> </ul>

*\*consistent with FTA New Starts criteria*



## 4.0 The Process of Define the LPA

### Phase 1: Defining and Evaluating the Alternatives

#### Defining the Northside-Southside LRT Alternatives

The *Detailed Definition of Alternatives Report* (October 2017) defined the key physical and service elements of the transit alternatives that were evaluated during Phase 1.

For purposes of estimating cost and ridership, as well as assessing impacts and benefits, the Northside-Southside Study defined the detailed alternatives based on the following categories:

- Service plan
- Station locations/spacing
- Station facilities
- Runningway
- Transit vehicles
- Fare collection
- Technology/customer information
- Identity/branding
- Maintenance facility

**Figure 4-1: Proposed Northside-Southside LRT Vehicle: Siemens S70 Vehicle used in Charlotte, NC**



The detailed alternatives were all street-running LRT with the primary differences being runningway configuration (comparing the 2008 LPA recommendations to updates/modifications based on additional analysis) and route alternatives/station locations in the area around the planned NGA facility. Figures 4-1 and 4-2 show examples of what some of the Northside-Southside LRT vehicles and stations/infrastructure could look like.



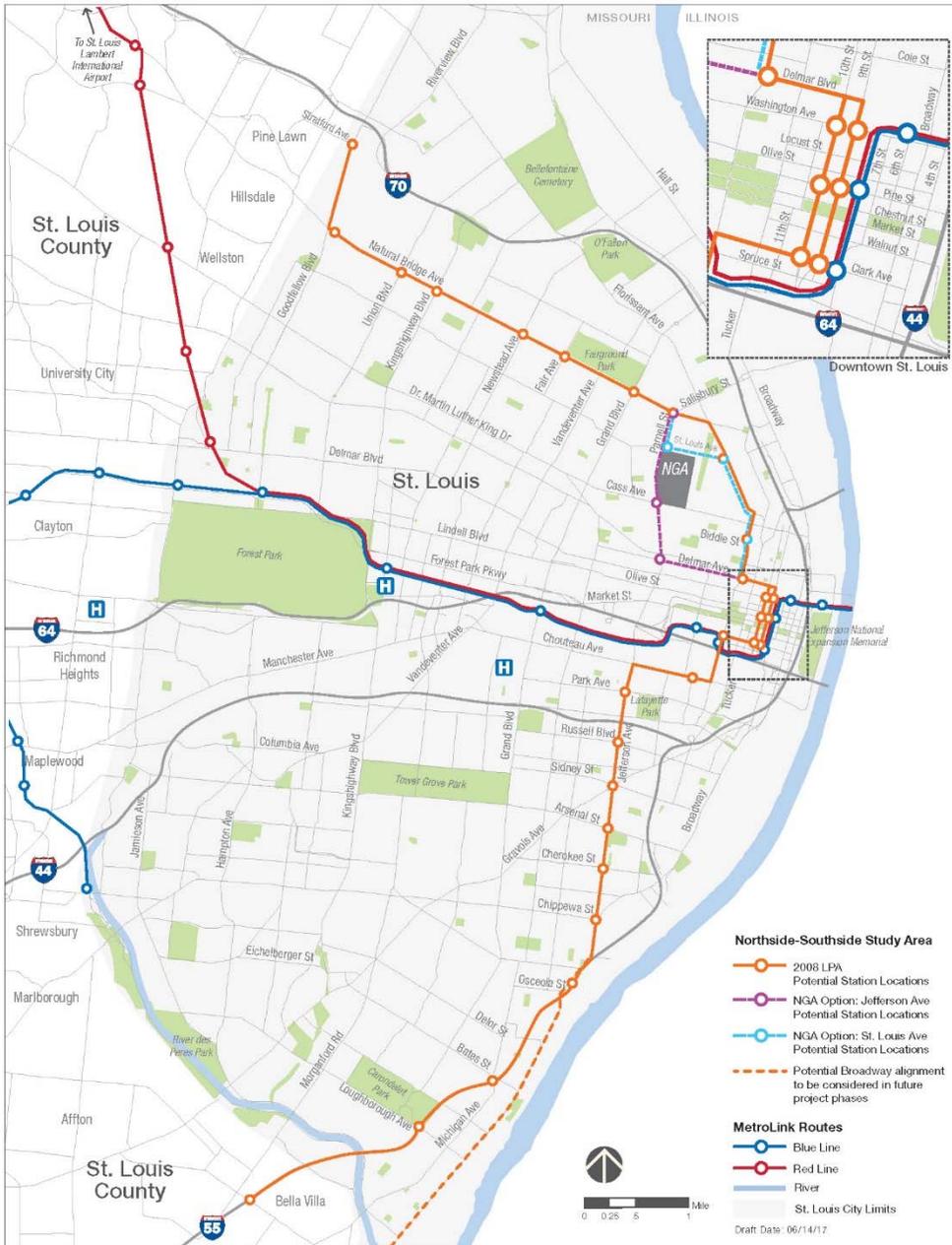
Figure 4-2: MAX Orange Line LRT Center Station, Portland, OR



The routes that were considered as part of the Study were designed to confirm and advance the LPA recommendation of the 2008 Study. The alignment was slightly modified to respond to development in the area around the Goodfellow/I-70 area, and two additional alignment options were added in the area around the NGA to respond to the planned redevelopment of that site. The modified 2008 LPA is shown by the orange line in Figure 4-3; the two additional alignment options through the NGA area are shown by the purple (via Delmar Boulevard) and blue (St. Louis Avenue) lines. As noted in the map, a Southside alignment along Broadway may be considered in future project phase, but was not included in this phase of analysis.



Figure 4-3: The Full Corridor Alternatives for Evaluation



### Station Area Market Analysis

As part of the detailed definition of alternatives, the current land use and future development opportunities for eight of the proposed station areas were analyzed and documented in the *Station Area Market Analysis Technical Memorandum* (March 2018). One of the primary goals of the Study is to foster sustainable development and redevelopment, so this analysis was designed to support and guide future station development and redevelopment. The analysis documented the existing land uses and



neighborhood character and created a plan for transit-oriented development that would be appropriate in terms of scale and uses in the selected station areas.

The analysis consisted of:

- Documenting the existing land use and character
- Understanding the LRT station area connectivity at the half-mile scale and the area immediately adjacent to the station
- Creating development programming (uses and densities) and a suggested timeline and phasing to construct the new development
- Creating a rendering of what potential development at the LRT stations could look like

Renderings of “before” and “after” LRT begins operating were generated for four of the proposed station locations (Grand, Cass, Gravois, and Osceola), and are shown at the end of this section on Figures 4-4 through 4-11.

### Evaluating the Northside-Southside LRT Alternatives

The second part of Phase 1 was the detailed evaluation of alternatives. A combination of quantitative and qualitative evaluation criteria was used to assess the degree to which each of the detailed alternatives meets project goals, as stated in the project *Purpose and Need Statement*.

The corridor was divided into segments to simplify the alternative definition and evaluation process (Figure 4-12). Consistent data collection and analyses were applied along the full length of the corridor, but the results were reported in segments. This enabled a quick comparison of different combinations of segments as potential initial investments were developed and considered, and facilitated internal and external decision making. The segments represent natural breakpoints in either corridor development character or right-of-way geometry.

The *Detailed Evaluation of Alternatives Report* (June 2018) and its supporting technical memoranda present details of each alternative’s performance against the evaluation criteria; detail of the evaluation methodology and outcomes is included in the tech memo appendices to that report. Major topic areas that were addressed include ridership forecasts, capital and operating and maintenance costs, potential environmental impacts, potential transportation network impacts, and station area analyses.



**Figure 4-4: Existing Conditions: Proposed Grand Station Area**



**Figure 4-5: Potential Future Conditions: Proposed Grand Station Area**





Figure 4-6: Existing Conditions: Proposed Cass Station Area (NGA Option 2 Delmar Alignment)



Figure 4-7: Potential Future Conditions: Proposed Cass Station Area (NGA Option 2 Delmar Alignment)





Figure 4-8: Existing Conditions: Proposed Gravois Station Area



Figure 4-9: Potential Future Conditions: Proposed Gravois Station Area





**Figure 4-10: Existing Conditions: Proposed Osceola Station Area**

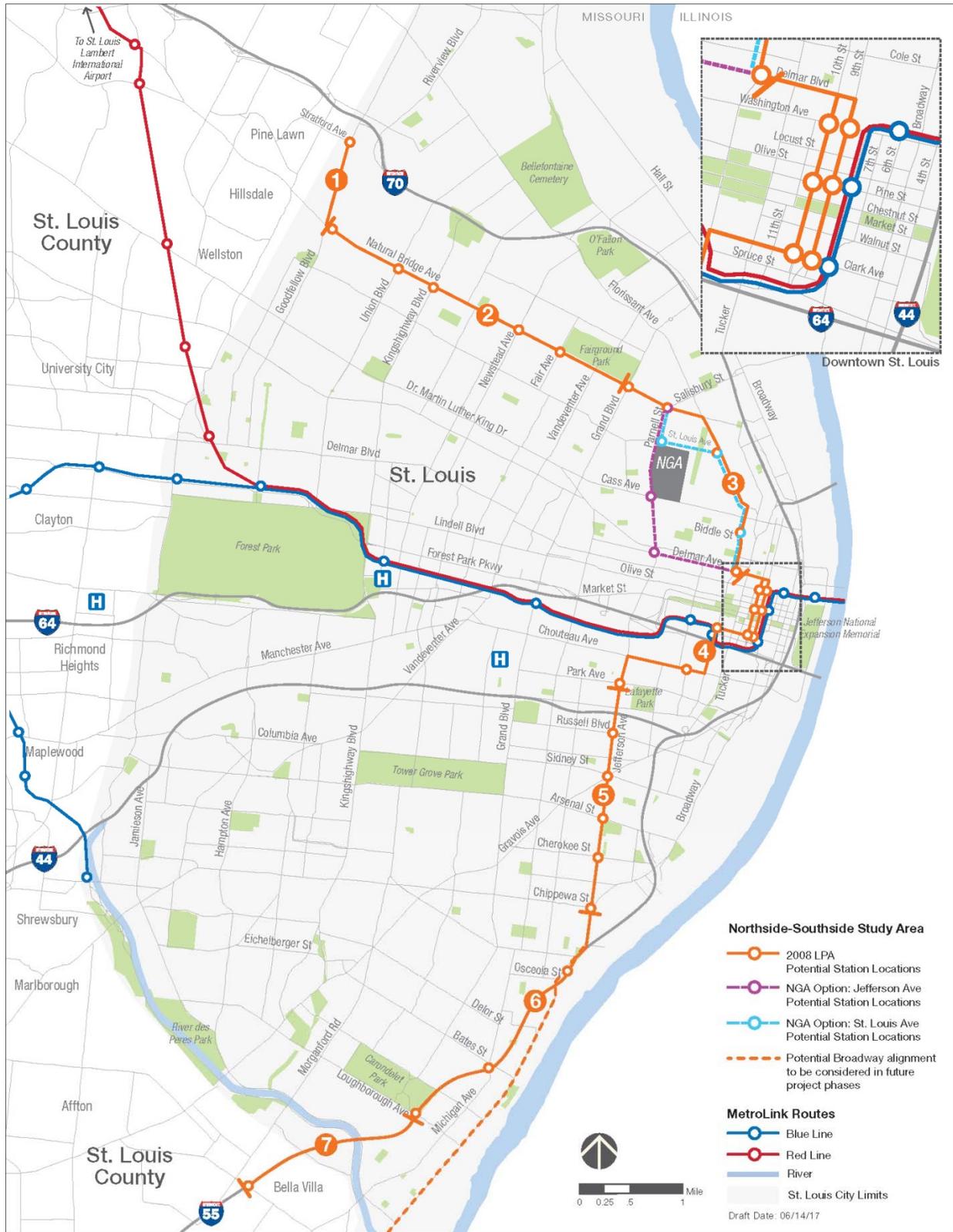


**Figure 4-11: Potential Future Conditions: Proposed Osceola Station Area**





Figure 4-12: Segmenting the Corridor for Evaluation





## Selected Evaluation Results

The data generated during the detailed evaluation show that there are no major data differentiators among the three full corridor alternatives due to the similarities of their alignments. The variations in results were generated by the different alignment options through the area around the NGA site. Table 4-1 summarizes the key evaluation metrics from the detailed evaluation of alternatives.

**Table 4-1: Summary of Key Evaluation Metrics for the Full Corridor Alternatives**

	2017 Design	Via St. Louis Avenue	Via Delmar Boulevard
Number of daily riders (2025)	16,500	17,200	17,000
Number of transit-dependent riders (2025)	7,800	8,100	8,000
Capital cost (2017\$ M)	\$1,372	\$1,373	\$1,376
Rail O&M cost (2017\$ M)	\$28	\$28	\$28
Change in traffic travel time (at AM peak / PM peak hours)	3 minutes / 8 minutes	0 minutes / 1 minute	1 minute / 2 minutes
Number of parking spaces impacted	2,600	2,200	2,200
Number of jobs (2015)	81,800	82,200	89,600
Number of residents (2015)	82,200	82,200	81,600

## Phase 2: Refining and Selecting the Locally Preferred Alternative

### Adding the Cass Alignment Option through the NGA Area

After the detailed evaluation of alternatives was completed, the Study team received additional community feedback and learned new details regarding the pedestrian and vehicle entrances to the planned NGA facility.

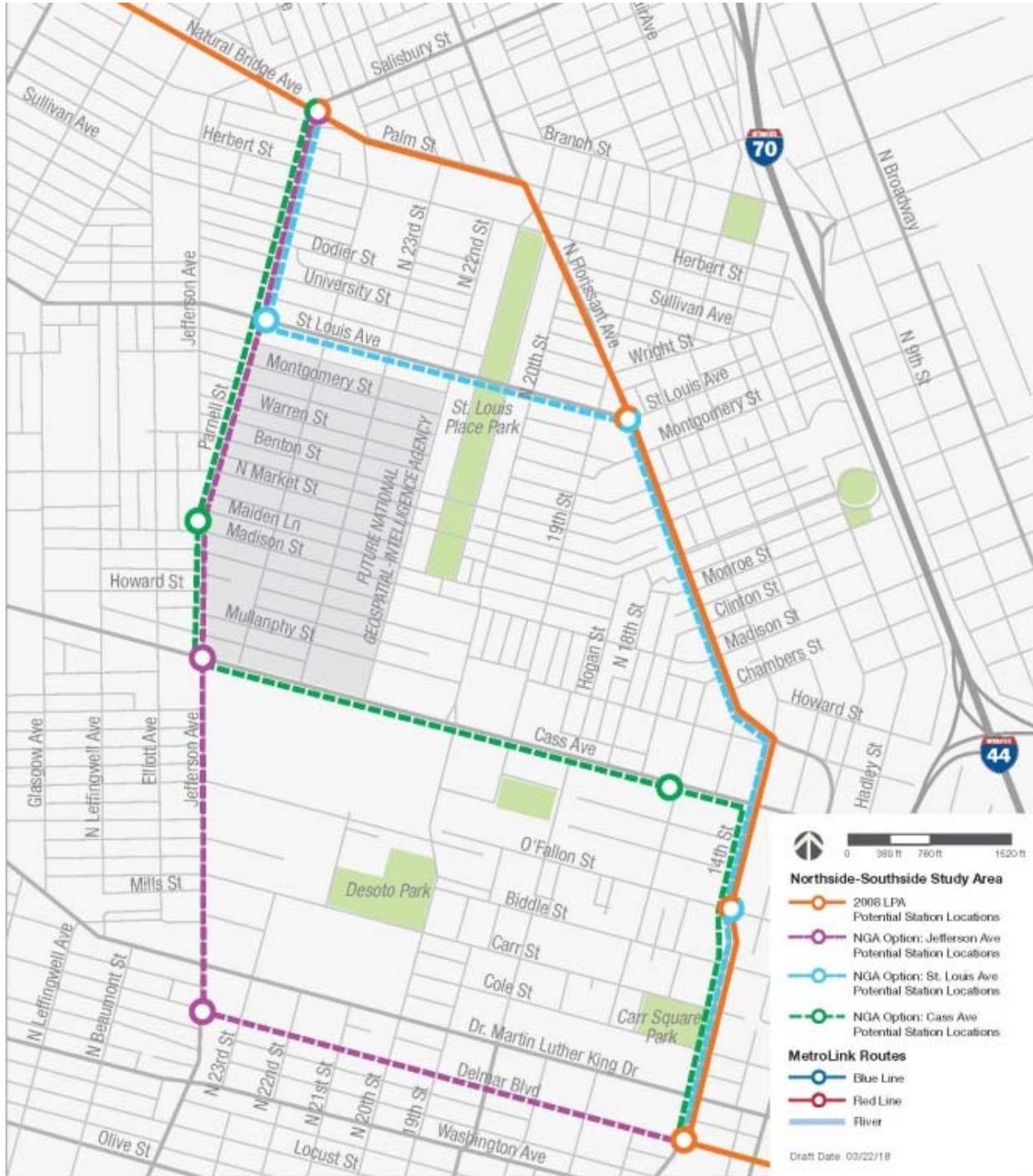
This input resulted in the addition of a new alignment option primarily along Cass Avenue through the NGA / Old North St. Louis / Carr Square neighborhood. This new alignment option is shown on Figure 4-13 (green line).

The Cass Avenue alternative would travel along Natural Bridge Avenue before turning south on Parnell Street to Jefferson Street, turning east on Cass Avenue, and then turning south on 14th Street. Station locations include:

- Natural Bridge & Parnell
- Madison & Jefferson
- Cass & 16th
- Delmar & 14th



Figure 4-13: New Alignment Option through the NGA / Old North St. Louis / Carr Square Neighborhood





### Evaluating the Cass Avenue Alignment Option

The Cass Avenue alternative was evaluated to generate the same metrics that were applied to the original three full corridor alternatives (see Table 4-1). The results of the Cass Avenue evaluation are summarized in Table 4-2. There are small differences in the metrics between the four alternatives, however, these differences are not significant enough to clearly prioritize one alternative over another.

**Table 4-2: Summary of Key Evaluation Metrics for the Cass Avenue Alignment Option**

	2017 Design	Via St. Louis Avenue	Via Delmar Boulevard	Via Cass Avenue
Number of daily riders (2025)	16,500	17,200	17,000	16,600
Number of transit-dependent riders (2025)	7,800	8,100	8,000	7,600
Capital cost (2017\$ M)	\$1,372	\$1,373	\$1,376	\$1,379
Rail O&M cost (2017\$ M)	\$28	\$28	\$28	\$28
Change in traffic travel time (at AM peak / PM peak hours)	3 minutes / 8 minutes	0 minutes / 1 minute	1 minute / 2 minutes	2 minutes / 3 minutes
Number of parking spaces impacted	2,600	2,200	2,200	2,300
Number of jobs (2015)	81,800	82,200	89,600	82,400
Number of residents (2015)	82,200	82,200	81,600	82,400

Based on the results of the segment-based detailed evaluation and the input received from the public, refinements to the full corridor alternatives were made. Because the cost of constructing the full corridor is not financially feasible, an initial starter investment that better reflects the region’s funding capabilities and best balances costs, ridership, and impacts (the LPA) was identified. The two refinements that led to the identification of the LPA are described below.



### Refinement #1: Selecting the Cass and Florissant Avenue Alignment Options for Additional Study

As previously noted, there were no significant differentiators between the full corridor alignments in the metrics outlined in Table 4-2. The quantitative metrics, however, do not capture key qualitative differences between the NGA alignment options that should factor into the decision making process. As shown below, both the Cass Avenue and Florissant Avenue alignments (Figure 4-14) should be carried forward for additional study in subsequent project phases because they best meet the project purpose and needs. Details of this decision making process can be found in the *Summary Definition and Evaluation of the Cass Avenue Alternative Report* (May 2018).

#### **Need #1: Stabilization, Revitalization, and Redevelopment of Key Areas**



Cass and Florissant aligns with Choice Neighborhoods designation and other redevelopment activity



Cass and Florissant serve existing neighborhoods

#### **Need #2: Expanded Access to Jobs and Activity Centers**



Cass best serves the NGA pedestrian entrances



Community preference to serve both residents and the NGA campus; too many parking impacts on St. Louis Avenue



Figure 4-14: Cass Avenue and Florissant Avenue Alignments Recommended for Further Study





## Refinement #2: Selecting an Initial Investment between Grand Boulevard and Chippewa Street

The LPA that is recommended by this Study affirms and advances the recommended LPA from the 2008 Study, which stretched from Goodfellow on the Northside to Bayless on the Southside. Based on the results of the technical analysis and input from the public, an initial investment that best balances benefits, costs, and ridership was identified as the LPA for this Study. This investment, stretching between Grand Boulevard and Chippewa Street stations (Figure 4-15) was chosen for a number of reasons, including:



**Best bus connections:** Grand Boulevard and Chippewa Street provide connection to two of the system's most heavily used bus routes (70 on Grand and 11 on Chippewa)



**Best balance of cost and ridership:** Fewer riders and increasing capital costs north of Grand Boulevard and south of Chippewa Street



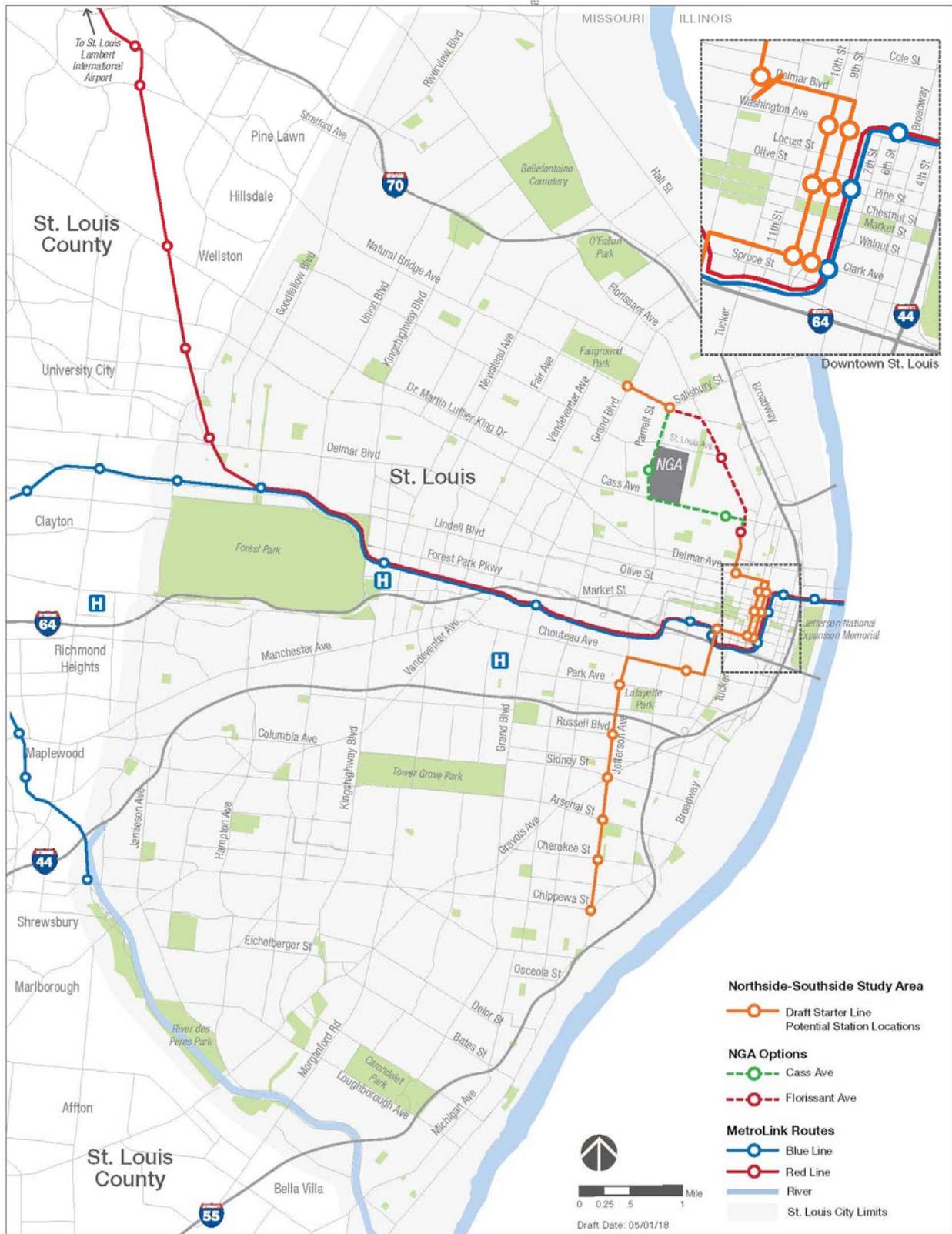
**Best meets project goal #1:** Stabilization, revitalization and redevelopment of key areas



**Best meets project goal #2:** Expanded access to jobs and activity centers



Figure 4-15: Northside-Southside LPA





## Future Design Decisions

As this LPA is carried forward for further study, a series of design decisions will need to be addressed, including:

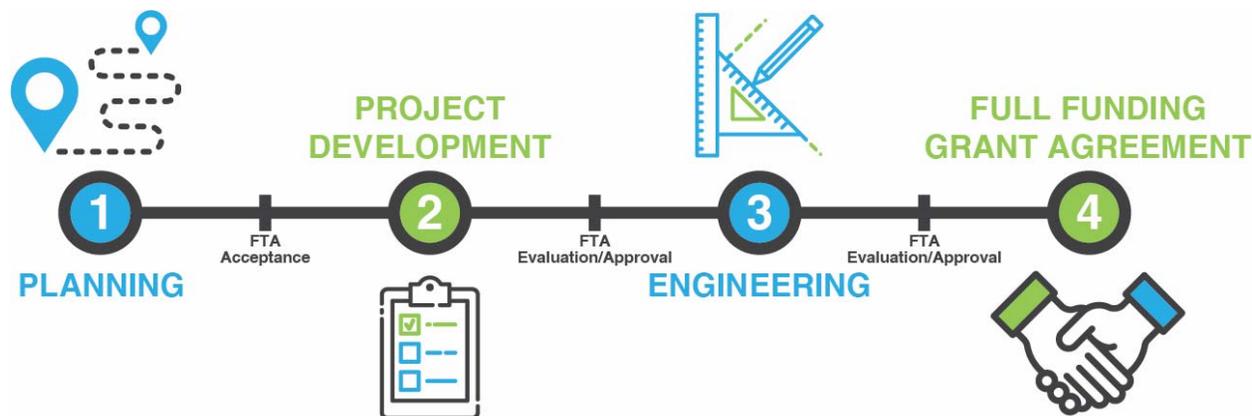
- Which is the preferred alignment through the NGA / Old North St. Louis / Carr Square neighborhood – Cass Avenue or Florissant Avenue?
- How will the alignment interact with potential Convention Center expansion plans in downtown St. Louis?
- How can Northside-Southside LRT be designed to complement City Garden?
- Are the station locations correctly placed to maximize transit connectivity, complement the surrounding neighborhood, and support transportation network functionality?

These questions – and others – will be addressed during the Preliminary Engineering and environmental clearance process that will happen in the next project phase.

## 5.0 Next Steps

EWGCOG and its partners are at the beginning of a long journey to develop a high capacity transit solution in the Northside-Southside corridor. Because the end of that journey – full implementation and operation of the Northside-Southside LRT - depends on discretionary federal transit funding, it has a very specific path, as shown on Figure 5-1.

**Figure 5-1: Future Project Phases**



The project is currently in the first phase – Planning. It is within the planning phase that project sponsors identify transportation problems within priority corridors, develop alternatives that address problems, and evaluate the alternatives in order to determine which potential investment best meets local goals and objectives for the corridor, while at the same time demonstrating a strong likelihood of meeting the New Starts criteria. With EWGCOG’s selection of the LPA in the Northside-Southside corridor, the project is ready to advance into the federal environmental review stage consistent with the National Environmental Policy Act (NEPA) of 1969. Once NEPA is initiated, the next step in the CIG process is to request entry into New Starts Project Development.



## Project Development

The first phase of the New Starts process where FTA takes any formal action is called Project Development. Project Development approval is important, as it not only places candidate projects in the pipeline for CIG funding, but provides pre-award authority for all subsequent project development costs.

FTA's requirements for acceptance into Project Development focus on the readiness of the project to advance in the process, as measured by two milestones:

- Development of a project schedule that lays out all the requirements for entering New Starts Engineering – as described below - within two years
- Demonstration that the project sponsor has committed sufficient funding to complete Project Development

Essentially, completion of Project Development includes completion of NEPA requirements, plus the preparation of information and achievement of certain financial and design thresholds, necessary to enter Engineering. These include:

- Preparation of specific project management documents prescribed by FTA. The documents are intended to reflect the project sponsor's technical capacity to efficiently and effectively execute the Engineering phase of development.
- Preparation of cost estimate, project delivery schedule, and 20-year system-wide capital and operating financial plan that demonstrates that Metro has the financial capacity to build and operate the Northside-Southside initial investment while still being able to operate and maintain its system at current levels.
- Refined and detailed development of the New Starts project justification criteria.
- Commitment of at least 30 percent of the non-New Starts share of project capital funding (that is, 15 percent of the project cost, assuming a 50 percent New Starts match).
- Completion of approximately 30 percent design. Since approval into Engineering locks in the amount of CIG funding required to construct the project - meaning that any subsequent cost increases, for whatever reason, are completely borne by the project sponsor. Many project sponsors consider completion of an even higher level of design before requesting entry into Engineering.

As noted, all of these activities must be met within two years. This can be challenging, particularly for candidate projects that may have significant environmental impacts, complicated financial arrangements, or complex engineering and design elements. FTA therefore encourages project sponsors to perform whatever work they feel is necessary prior to requesting entry into Project Development to facilitate their ability to complete Project Development within the two-year timeframe. Most New Starts project sponsors wait until after the initiation of NEPA – and many until near the completion of the NEPA analysis – prior to requesting entry into Project Development. The Northside-Southside *Financial Analysis Report* (July 2018) assumes that Project Development would commence one year after the start of the NEPA process.

It can be expected that FTA will assign a Project Management Oversight Contractor (PMOC) approximately six months prior to an anticipated request to enter Engineering to provide guidance and assistance to a New Starts project sponsor on the preparation of the project analyses and reports.



### Engineering

Projects that have satisfied all the requirements above – as well as achieve a rating of at least Medium against both the New Starts project justification and local financial commitment criteria – may be approved by FTA to enter the Engineering phase of the New Starts process.

During Engineering, the project and the cost estimate are further refined, final design is performed, and contract documents are prepared. FTA and its PMOC will monitor Engineering activities to ensure that the project is progressing towards readiness for a CIG grant. FTA will further re-evaluate the technical capacity of the project sponsor to construct the project on time and within budget.

To complete the Engineering phase, project sponsors must complete sufficient engineering and design to develop a firm and reliable cost, scope, and schedule for the project; obtain all non-CIG funding commitments; complete all critical third party agreements; and meet other FTA readiness requirements related to technical capacity, staffing, and oversight to be eligible for a Full Funding Grant Agreement (FFGA).

### Full Funding Grant Agreement

Engineering concludes when the sponsor and FTA negotiate a multi-year FFGA. The FFGA specifies the sponsor's obligation to fully implement the project scope and operating plan, and the annual amount and timing of CIG funding, subject to future appropriations by Congress. Failure to execute the project in accordance with the terms of the FFGA puts the project sponsor at risk of having to refund to the government any appropriated funding.

### Project Funding

The funding for Northside-Southside LRT will likely require a combination of federal and non-federal funding. Funding sources will likely include FTA New Starts funds and matching funds from the City of St. Louis' Economic Development Sales Tax. However, throughout the NEPA and Project Development phases, EWGCOG and its partners will continue to explore additional funding sources.

### Future Full Corridor Build-Out

As previously discussed, the LPA that is recommended by this Study affirms and advances the recommended LPA from the 2008 Study, which stretched from Goodfellow on the Northside to Bayless on the Southside. Future phases of this project could evaluate ways to expand this alignment north and south to complete the full 17-mile alignment that was identified as the 2008 LPA, including consideration of a southern alignment along Broadway.