

EXHIBIT 1A. PROJECT DESCRIPTION

Requirement: Provide a clear, concise and focused description of the proposed transportation improvements

RESPONSE:

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge is a proposed public transportation improvement project that will provide a parallel bypass roadway to Penn Avenue, reducing traffic volumes in the congested Penn Avenue corridor at the intersections with Fifth Avenue, Bakery Square Boulevard and East Liberty Boulevard/Reizenstein Way. Bicycling and pedestrian circulation conditions will also be enhanced with the construction of a pedestrian/bicycle bridge, which will extend over the MLK East Busway. The pedestrian bridge will link the Larimer neighborhood to Bakery Square and other economic anchors in the area.

The project includes the following features:

- Provide a new two-way connection from Bakery Square Boulevard to Rainbow Street, parallel to Penn Avenue;
- Provide one shared vehicle/bicycle lane between Bakery Square Boulevard and Rainbow Street in each direction;
- Provide a six-foot-wide sidewalk on the south side of the Larimer-Homewood Multimodal Greenway Extension along its length;
- Provide a Rectangular Rapid Flashing Beacon (RRFB) with in-pavement lighting at the Larimer-Homewood Multimodal Greenway Extension/Port Authority of Allegheny County Driveway/Bakery Square Boulevard intersection to provide enhanced pedestrian crossing safety;
- Provide a new traffic signal with full pedestrian amenities (pedestrian pushbuttons, countdown equipment, audible equipment, and thermoplastic piano key pavement markings) at the Larimer-Homewood Multimodal Greenway Extension/Rainbow Street intersection;
- Provide improvements to the existing Rainbow Street pavement; and
- Provide a secure public outdoor bicycle barn at the Larimer-Homewood Multimodal Greenway Extension /Port Authority of Allegheny County/Bakery Square Boulevard intersection.

REFERENCE:

- Larimer-Homewood Multimodal Greenway Extension Rendering
- Pedestrian Bridge Rendering



2020 | LA RIMER-HOMEWOOD MULTIMODAL GREENWAY EXTENSION

BAKERY OFFICE THREE: 350,000 SF
OPENING FALL OF 2020

COURTYARD REFRESH
F&B BUILDING
UNDER CONSTRUCTION
OPENING FALL OF 2020

1000 CAR GARAGE
OPENING FALL OF 2020

PENN AVENUE
MID BLOCK CROSSING

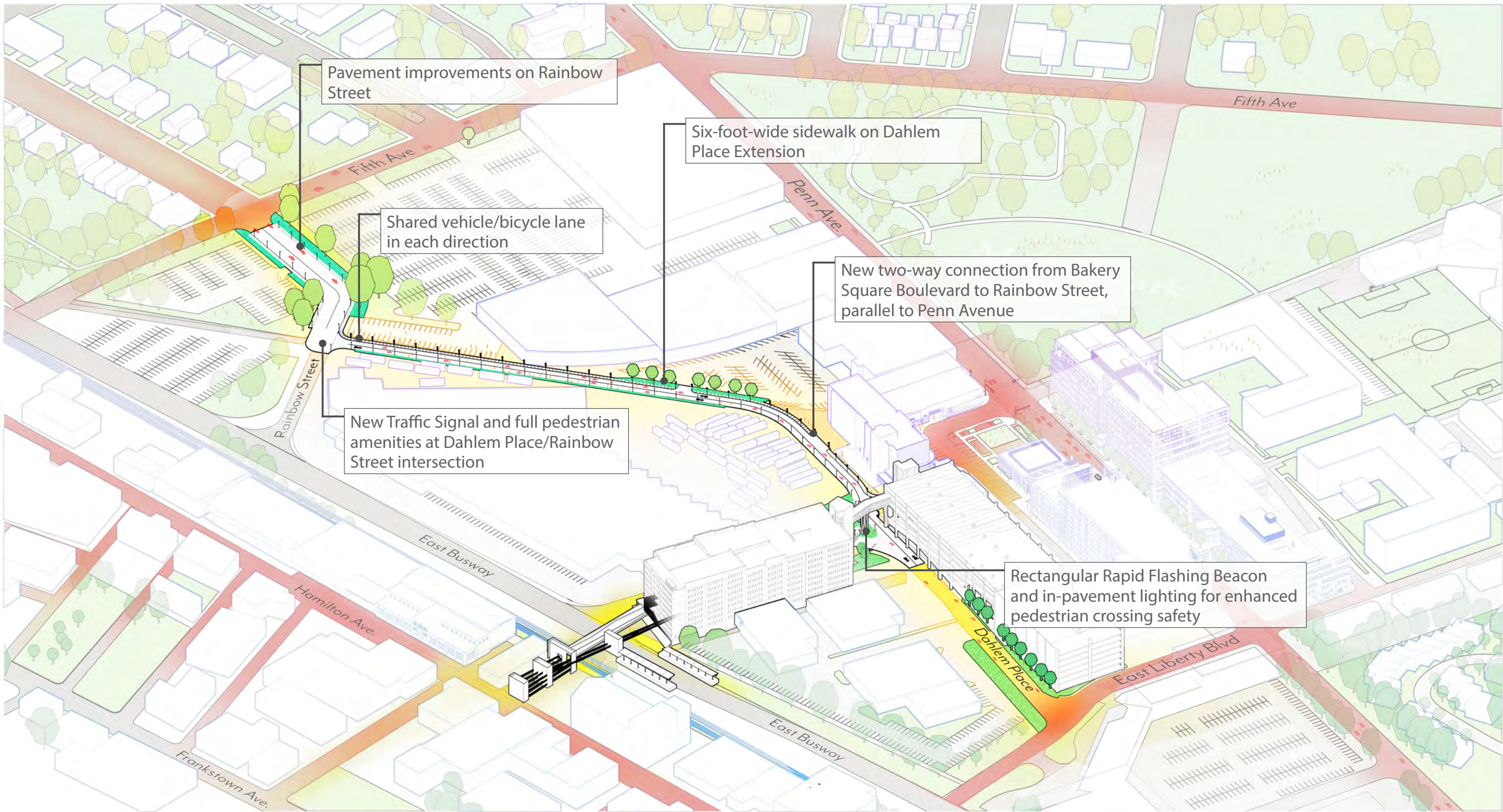
**FUTURE LARIMER
TRANSIT CENTER
& PEDESTRIAN
OVERPASS**

**PROPOSED LARIMER-
HOMWOOD MULTIMODAL
GREENWAY EXTENSION**

**BKSQ BUS STOP
IMPROVEMENTS**

BAKERY OFFICE FOUR: 61,000 SF
MOVE IN READY

BAKERY SQUARE 2020 PROGRESS PLAN



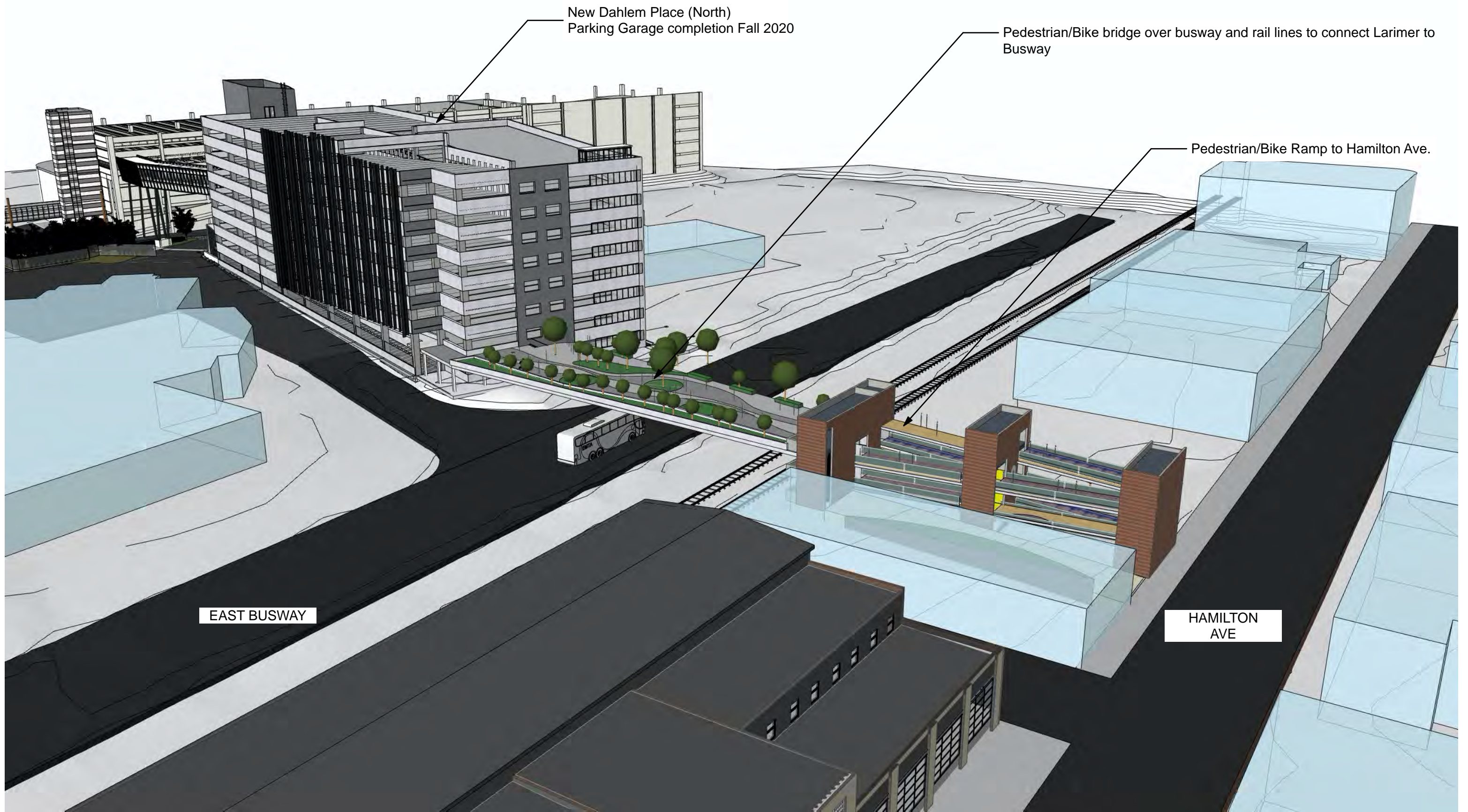
PROJECT RESULTS

The construction of the Larimer-Homewood Multimodal Greenway Extension provides a “relief valve” for the congested conditions on Penn Avenue, with projected reductions of 410 vehicles on Penn Avenue between Fifth Avenue and Bakery Square Boulevard during the AM peak hour and 320 vehicles in the same area during the PM peak hour.



VIEW OF DAHLEM PLACE TOWARD RAINBOW STREET

Street improvements include designated Bicycle sharrows to expand and offer improved Pittsburgh cycling connections, wide sidewalks, planting beds, and new LED street lights for improved pedestrian and vehicle safety.



HAMILTON AVENUE/LARIMER PEDESTRIAN/BIKE BRIDGE
Overall Bridge View



EXHIBIT 1B. LOCATION

Requirement: Provide the specific location of the project site, including the municipality, street names and transportation project boundaries

RESPONSE:

Addresses of Project Site:

Bakery Square Boulevard to Rainbow Street, Pittsburgh, PA 15206

6487 Dahlem Place, Pittsburgh, PA 15206

6526 Hamilton Avenue, Pittsburgh, PA, 15206

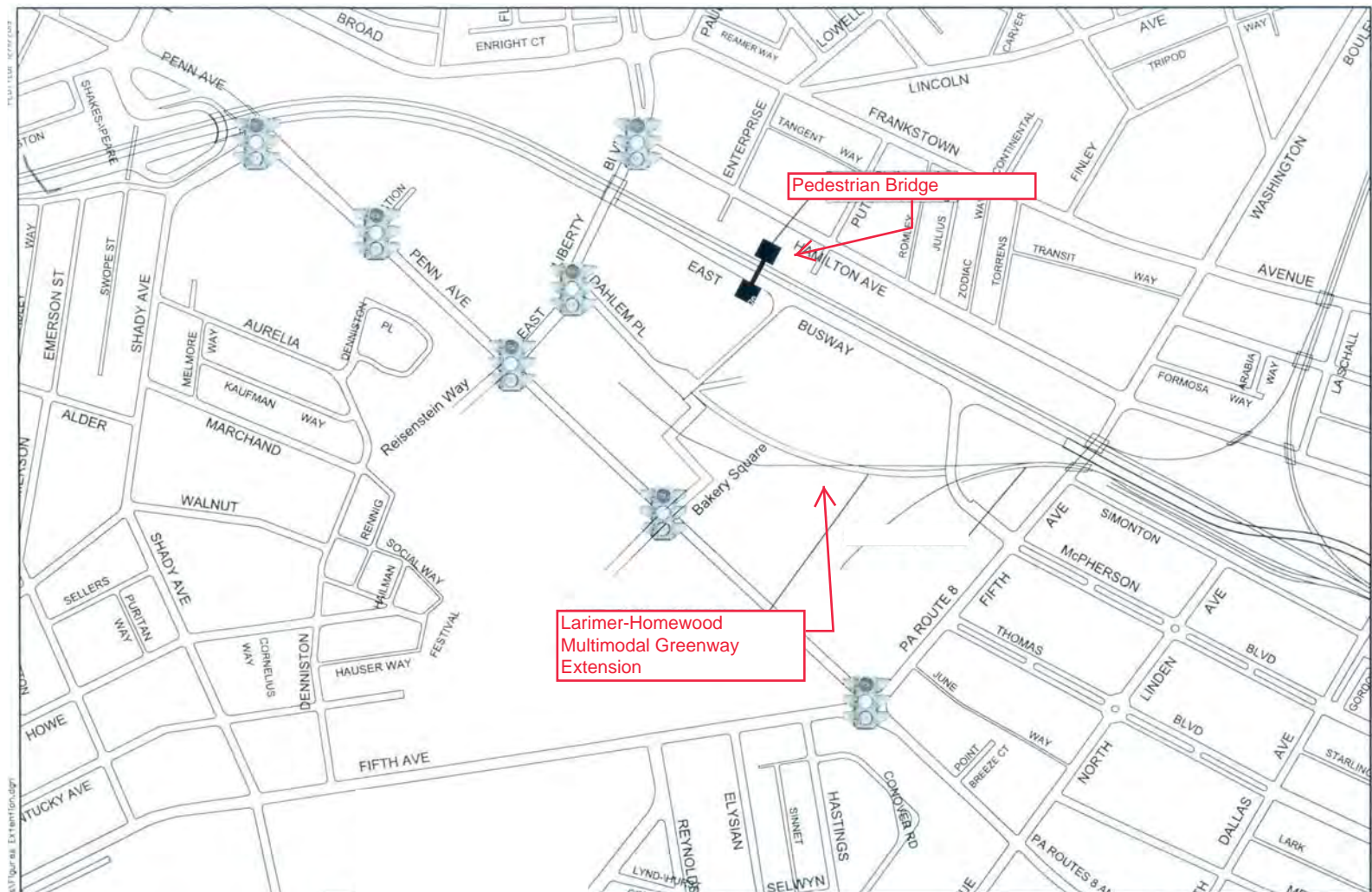
Municipality of Project Site: City of Pittsburgh

County of Project: Allegheny County



The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge project is proposed to be built in the Larimer neighborhood of the City of Pittsburgh.

REFERENCE:

- Street Map



Legend

 - Optimize Signal Timings


SCALE: N.T.S.

Trans
ASSOCIATES

Small Firm Client Experience. Big Firm Capabilities
4955 Steubenville Pike, Twin Towers Suite 400
Pittsburgh, Pennsylvania 15205, 412-490-0630

LOREP00 - 17276

PROJECT:
Larimer-Homewood Multimodal Greenway Extension & Pedestrian Bridge
City of Pittsburgh, Allegheny County, Pennsylvania

TITLE:
Proposed Improvements

FIGURE
2

D.B. AMK
C.B. CAJ
REV. _____

FILE NAME: P:\Urban\2017\TREC\TREC\Map\Figures_Extension.dwg

EXHIBIT 1C. NEED FOR PROJECT

Requirement: Provide the need for the proposed transportation improvements

RESPONSE:

The Larimer-Homewood Multimodal Greenway Extension Transportation Impact Study (TIS) was performed to assess the impacts of the Larimer-Homewood Multimodal Greenway Extension upon conditions in the area including improvements in traffic congestion, queuing, traffic delay, associated air pollution related to vehicle emissions, bicycling conditions, and pedestrian conditions. In this area, congestion is currently most acute along Penn Avenue at its intersections with Fifth Avenue, Bakery Square Boulevard and East Liberty Boulevard/Reizenstein Way. The results of the TIS for the Larimer-Homewood Multimodal Greenway Extension indicate that congestion, delay and queuing, and related air pollution impacts, will be reduced for the Penn Avenue corridor with the proposed Larimer-Homewood Multimodal Greenway Extension in place. The project will also provide enhanced pedestrian and bicycling conditions and connections for the study area. The TIS is referenced in Exhibit 1D of this application.

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge will also provide greater connections through major economic anchors and commercial corridors into and out of the Larimer neighborhood. Currently, the Larimer neighborhood lacks efficient transportation options, specifically for those who do not own a vehicle. According to the American Community Survey, the Larimer neighborhood, which consists of Census Tracts 1204 and 1208, estimates that nearly half the population, 48 percent, do not have any access to a vehicle. For those who reside in the Larimer neighborhood, it is important for residents to be able to access services, job opportunities, and other amenities without the use of a vehicle. The proposed pedestrian bridge will provide easier access to the Bakery Square development, where Larimer residents may find jobs or shop at the retail stores, and will also connect the Larimer neighborhood more easily to the East Liberty Busway Station for the East Busway Route. The increased accessibility to the East Busway Station will allow residents to access more transportation options, as the East Busway provides direct access to Downtown Pittsburgh with alternate connecting busway routes.

To assist in the evaluation of the proposed project Walnut Capital commissioned Econsult Solutions, Inc. (ESI) to complete a community benefits impact analysis for the proposed Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge. The attached memorandum highlights those anticipated benefits on the surrounding neighborhoods in the following categories:

- Increased Commercial value and development;
- Improved quality of life for nearby workers and residents;
- Enhanced accessibility to job opportunities
- Broad health and environmental implications

While preparing the memorandum, ESI conducted interviews with various community groups and stakeholders. The interviewees were:

- Donna Jackson, Larimer Consensus Group

- DeAnna Davis, Larimer Consensus Group
- Skip Schwab, East Liberty Development, Inc.
- City of Pittsburgh Councilman Reverend Ricky Burgess, District 9

REFERENCE:

- Community Benefits Analysis

Memorandum

To: Walnut Capital Management

From: Econsult Solutions, Inc.

Date: September 14, 2020

RE: Community Benefits Analysis for the Larimer-Homewood Multimodal Greenway Extension

1 Introduction and About the Project

Walnut Capital has proposed to build the Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge, a transportation improvement project that aims to build a parallel bypass roadway to Penn Avenue, which would better connect the Bakery Square development to the Larimer and Homewood neighborhoods in Pittsburgh. Walnut Capital commissioned Econsult Solutions, Inc. (ESI) to complete a community benefits impact analysis for the proposed Greenway Extension and Pedestrian/Bike Bridge. This memo highlights those anticipated benefits on the surrounding neighborhoods in the following categories:

- Increased Commercial value and development;
- Improved quality of life for nearby workers and residents;
- Enhanced accessibility to job opportunities
- Broad health and environmental implications

To assist in our evaluation of the proposed project, ESI conducted interviews with various community groups and stakeholders, in order to better understand the impact of the Greenway Extension and Pedestrian/Bike Bridge will have on the surrounding community. The interviewees were:

- 1) Donna Jackson, Larimer Consensus Group
- 2) DeAnna Davis, Larimer Consensus Group
- 3) Skip Schwab, East Liberty Development, Inc.
- 4) City of Pittsburgh Councilman Reverend Ricky Burgess, District 9

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge is a proposed public transportation improvement project that will provide a parallel bypass roadway to Penn Avenue, reducing traffic volumes in the congested Penn Avenue corridor at the intersections with Fifth Avenue, Bakery Square Boulevard and East Liberty Boulevard/Reizenstein Way. Bicycling and pedestrian circulation conditions will also be enhanced with the construction of a pedestrian/bicycle bridge, which will extend over the MLK East Busway. The pedestrian bridge will link the Larimer neighborhood to Bakery Square and other economic anchors in the area.

RE: Walnut Capital: District Vision Plan Housing Study
Date: September 14, 2020

2 Neighborhood Context

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge proposed project is situated in the Larimer neighborhood, and will be a connection point at Bakery Square. Overall, Pittsburgh is illustrative of the economic trajectory of many cities in the US. With the automation, suburbanization, and globalization of manufacturing, Pittsburgh saw its employment base decrease and therefore its population plummet in the second half of the 20th century. The city's population declined from 677,000 in 1950 to 300,000 in 2019. **The neighborhoods surrounding Bakery Square were once densely populated and had vibrant commercial corridors followed by a downward trajectory of disinvestment and stagnation, are currently undergoing a planning process to revitalize and make improvements for existing and future residents.**

The Larimer Vision Plan, which was recently completed in August 2020, sets a specific land-use vision plan for the Larimer neighborhood over the next decade. The Larimer Vision Plan has three overarching themes for the neighborhood, which include

- 1) building a sustainable community, which is to establish a new identity for the neighborhood as a state-of-the-art green community,
- 2) consolidating assets, which is to increase opportunities for connection as the neighborhood has become isolated from other parts of the city, and
- 3) turning challenges into opportunities, which is to turn existing assets of the neighborhood such as Larimer Avenue, Hamilton, and Frankstown Avenue into new uses that would increase recreation and provide further job opportunities for existing residents.

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge project will be a significant investment that complements the Larimer Vision Plan and helps the neighborhood achieve its goals.

3 Increased Commercial Value and Development

Transportation improvements that are attractive to residents also increase the attractiveness of the area as a business location. By reducing the financial and time cost of commuting, these improvements reduce the effective cost of doing business. A body of economic literature has established positive effects from agglomeration on productivity, which ultimately leads to greater earnings.¹ Research has also explored the direct relationship between transit and high growth business clusters across the United States.²

¹ For summaries of literature on agglomeration effects and their relationship with transit service, see: National Bureau of Economic Research (NBER) (2010). Glaeser, Edward (Editor). "Agglomeration Economics." London School of Economics (2018). Graham, Daniel J. Quantifying Wider Economic Impacts of Agglomeration for Transport Appraisal: Existing Evidence and Future Directions.

² Economic Development Research Group, Inc. for the American Public Transportation Association (APTA) (2013). The Role of Transit in Support of High Growth Business Clusters in the U.S.

RE: Walnut Capital: District Vision Plan Housing Study
Date: September 14, 2020

3.1 Project will improve Hamilton Avenue commercial district and will allow businesses to restart Larimer corridor with bars, restaurants, coffee shops, and other opportunities.

The Greenway Extension aims to provide greater connectivity for Larimer, and supports the Larimer Vision Plan to create visual and physical connections to increase more development opportunities. Larimer Pedestrian/Bike Bridge will create a new visual and physical connection that will not only link Larimer to major economic anchors such as Bakery Square and other commercial retails, but create an opportunity for existing and new residents to access Larimer without the use of a private vehicle. **The new pathway into Larimer will help to further unlock the value of the community by attracting more commercial activities and businesses that will view the corridor as a viable location. In other words, the proposed pedestrian/bike bridge will allow for greater density for commercial development, which will help to increase commercial value due to new multimodal transportation connections within the neighborhood.**

Interviews conducted with Donna Jackson and DeAnna Davis, from the Larimer Consensus Group, and Councilman Reverend Ricky Burgess, emphasized the need to create and sustain businesses that will serve existing residents of the neighborhood. Ms. Jackson and Councilman Burgess noted the importance of Hamilton Avenue serving as an important commercial corridor for the neighborhood, and views the proposed Greenway Extension and Pedestrian/Bike Bridge as one way to begin increasing greater connections into Larimer. Councilman Reverend Burgess noted that Hamilton Avenue has begun to revitalize, including the future opening of the Environmental Charter High School along Hamilton Avenue.

It would not only connect them to Bakery Square but connect them to the busway to greater transportation opportunities. You're going to see the rebirth of Hamilton Avenue corridor which is close to Larimer. You're going to see over time greater connectivity and overflow of Bakery Square into the Larimer community."
—Councilman Reverend Burgess, District 9

3.2 Larimer/East Liberty Choice Neighborhoods Initiative

The Larimer/East Liberty Choice Neighborhoods Initiative (CNI) is a \$30 million award from the US Department of Housing and Urban Development (HUD) to revitalize the Larimer/East Liberty Neighborhood. The plan includes 334 new housing units and a new neighborhood park. In tandem with the Larimer Vision Plan, the CNI plan involves a comprehensive effort for Larimer to be a "21st Century Green Neighborhood that Works."³

³ Urban Redevelopment Authority of Pittsburgh, "Larimer/East Liberty Choice Neighborhoods Initiative," <https://www.ura.org/pages/larimer-east-liberty-choice-neighborhood-initiative>.

RE: Walnut Capital: District Vision Plan Housing Study
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Walnut Capital's investment into Bakery Square over the past decade is setting the momentum for additional investment in the surrounding neighborhoods. Councilman Reverend Burgess noted that without Walnut Capital's investment into Bakery Square, the Larimer/East Liberty Choice Neighborhoods Initiative award "would not have happened." **Further investment into the neighborhood with infrastructure such as the Greenway Extension will signal to the private and public sector that the Larimer and Homewood neighborhoods are a prime location for community redevelopment.**

4 Improved Quality of Life for Nearby Workers and Residents

Access to transportation is a major component that impacts a resident or worker's quality of life. As noted previously, by reducing the financial and time cost of commuting, residents and workers are able to access their destinations more efficiently and safely. Transit oriented development provides more freedom and mobility for individuals and groups who are unable or choose not to own a private vehicle.

4.1 Larimer community will have access to amenities (retail and restaurants) through the Bakery Refresh program underway.

The Greenway Extension and Pedestrian/Bike Bridge project provides connections into and out of the Larimer neighborhood, specifically providing direct access to other major commercial areas such as Bakery Square. Residents of Larimer will have easier and increased access to retail amenities, which includes eating establishments, retail stores, and other services at Bakery Square. Directly adjacent to Bakery Square is a shopping plaza which includes major grocery retailers, which helps to increase access to fresh food retailers for Larimer residents.

"The opportunity in Larimer is tremendous. It's walkable. It's bike-able. A lot of underutilized land and landmarks."

—Skip Schwab, Deputy Director, East Liberty Development, Inc.

RE: Walnut Capital: District Vision Plan Housing Study

Date: September 14, 2020

5 Enhanced Accessibility to Job Opportunities

Transit service is fundamental to connecting residents and communities to employment and to key services such as education, health care and recreation. Reliable and affordable public transportation provides disadvantaged residents the means to access economic and educational opportunities. This service creates a more inclusive economy in the short-term, and over the long-term helps to promote social mobility and reduce entrenched poverty.⁴

Affordable transportation service also provides direct budget savings and asset-building capacity for households. While the amenity value represented by transit access may increase housing costs, “location efficiency” yielded by proximity to transit can reduce car ownership and operating costs by offsetting amounts, resulting in a net savings to households. This trade-off is also wealth-generating over time for homeowners, since housing values tend to appreciate, while cars represent a depreciating asset, and car operating expenditures are lost a household.

5.1 Bridge will provide easy access to transportation along Penn Avenue (i.e. bus and other public transportation).

The proposed pedestrian/bicycle bridge will provide increased access to the Martin Luther King East busway. In community interviews with Ms. Jackson and Councilman Reverend Burgess, both stated connections for pedestrians are very important for the neighborhood to access the busway and the Bakery Square commercial corridor. In an interview with Skip Schwab, he noted that projects that improve the access and flow of pedestrians are important for not only residents to access services outside the neighborhood, but to increase visitors and future residents for the area.

5.2 Access to biking network that connects East Liberty, Larimer, and Homewood.

The Greenway Extension aims to address the congestion occurring along Penn Avenue, which is one of the few routes into and out of the Larimer neighborhood. The Greenway Extension will not only provide a new and safe option for pedestrians, but is also creating access for other users such as cyclists. The Pedestrian/Bike Bridge will include a cycling path and direct access to Pittsburgh’s bicycle network. This will provide more commuting options for existing residents and workers, which helps to reduce the number of cars on the road.

6 Broad Health and Environmental Implications

Investments in transportation also have significant implications for the environment and for public health. By reducing reliance on vehicles, transit service is crucial to reducing emissions, a trend

⁴The Equality of Opportunity Project, a large scale longitudinal study of upward mobility by geography led by Raj Chetty, has identified transportation and commute time as a crucial factor in escaping poverty. See: New York Times (May 7, 2015). Bouchard, Mikayla. Transportation Emerges as Crucial to Escaping Poverty.

RE: Walnut Capital: District Vision Plan Housing Study
Date: September 14, 2020

accelerated by the deployment of new technologies. These effects and the land use and lifestyle patterns encouraged by transit have significant implications for the environment and for the health of the population.

Transportation investments promote public health both by limiting exposure to harmful substances and stressors (like emissions) and through enabling health promoting behaviors such as active transportation. Research has identified positive relationships between transit access, physical activity and reduced chronic disease, demonstrating the importance of behavior changes associated with land use patterns encouraged by bicycling and walking. Health benefits are also derived from the increased access to employment, health care services, social services and food enabled by transit service.⁵ Given the prominence of public health as a matter of policy, fiscal impact and quality of life, the population health benefits of transportation investments represent a major component of the social and economic return on investment case. Of course, in the post-COVID-19 world, the dynamics of land use, transit usage, and public health will be altered at least temporarily; however, as the recovery process anticipates these challenges, the overarching health benefits of a strong transit network should remain.

6.1 Supports Larimer's 21st Century Green Neighborhood Efforts

As referenced earlier, the Larimer/East Liberty Choice Neighborhood Plan aims to have Larimer as a 21st Century Green Neighborhood. This is also in line with the Larimer Vision Plan, which aims to establish the neighborhood as a state-of-the-art green community. In addition, in an interview with Councilman Reverend Burgess, he confirmed the neighborhood's efforts to be the first Eco-district in the city of Pittsburgh, and noted that projects such as the Greenway Extension is one of the many projects that will help continue the process as Larimer seeks more sustainable development, green space, and improved multimodal access.

6.2 Providing access/easy way for children to get to Mellon Park.

Parks are an important component to quality of life for a neighborhood, providing a free public gathering space for communities. In addition, parks provide free and/or low cost recreational activities for residents, improving the overall health and well-being of a community. As discussed throughout this memo, the use of a private vehicle is the primary mode of transportation for the surrounding neighborhoods. Pedestrians, such as children, are unable to access Mellon Park safely as the only way to currently access the park is by walking through an underpass. The Greenway Extension will allow children to safely access Mellon Park, which includes a multitude of recreational activities. Studies have increasingly shown the link between children's well-being and access to open green space. The National

⁵ For a summary of evidence on the public health benefits of fixed use transit, see: University of British Columbia Health & Community Design Lab (2018). The Health Effects of Fixed-Guideway Transit Investment: A Review of Methods and Best Practices.

RE: Walnut Capital: District Vision Plan Housing Study
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Institute of Health has cited a myriad health benefits, including better test scores, improved self-discipline and cognition, and increased emotional well-being.⁶

“Bridging two communities into one. [...] We worked so hard for us to get to the point we are now. And I’m excited.”

–DeAnna Davis, Larimer Consensus Group

7 Conclusion

The Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge will provide a multitude of benefits to the surrounding communities. Interviews with community groups and stakeholders have demonstrated the importance of the Greenway Extension restoring physical connections into and out of Larimer. In sum, the Greenway Extension will provide the following benefits:

- Supports and complements Larimer’s Vision Plan, which aims to turn the neighborhood into a state-of-the-art green community;
- Increase and attract further commercial activity to the Larimer neighborhood due to increased connections;
- Provide a new safe and efficient transportation option for existing residents and commuters, allowing them to access amenities adjacent to the neighborhood, including retail, grocery stores, and parks;
- Increase access to open green space and provides new recreational benefits, which further supports the health and well-being of the community.

⁶ Seltenrich, Nate, “Just What the Doctor Order: Using Parks to Improve Children’s Health,” Volume 123, Number 10, *Environmental Health Perspectives* – National Institute of Health, <https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.123-A254>.

EXHIBIT 1D. TRANSPORTATION IMPROVEMENTS

Requirement: Provide if applicable, whether the transportation improvements will result in positive economic development impact and/or job creation

RESPONSE:

As mentioned in Exhibit 1C, the Larimer-Homewood Multimodal Greenway Extension Transportation Impact Study (TIS) was performed to assess the impacts of the Larimer-Homewood Multimodal Greenway Extension upon conditions in the area including improvements in traffic congestion, queuing, traffic delay, associated air pollution related to vehicle emissions, bicycling conditions and pedestrian conditions.

The TIS concluded that the Greenway Extension is projected to result in 410 less cars on Penn Avenue between Fifth Avenue and Bakery Square Boulevard during morning peak traffic hours and 320 less cars during the evening peak traffic hours. 47% of traffic related to Bakery Square moves through Penn Avenue intersections, and this would be reduced by around 50% in response to the addition of the Larimer-Homewood Multimodal Greenway Extension. The bicycle lanes should reduce traffic by 2-5%. Reductions in traffic congestion, queuing, and air pollution are expected. Furthermore, there will be greater accessibility and safety features for pedestrians and cyclists. Currently, safe and accessible pedestrian walkways are limited for residents of the Larimer neighborhood to access major economic anchors, commercial corridors, and major public transportation hubs. One of these economic anchors, Bakery Square is a mixed-use development which directly supports about 4,000 jobs and \$340 million in employee compensation. The Bakery Square Campus currently includes a retail plaza, a hotel, two residential complexes, two office buildings. Major companies and institutions that operate at Bakery Square are Google, Philips Sleep and Respiratory Care, University of Pittsburgh Medical Center (UPMC) Enterprises, the Department of Veterans Affairs Human Engineering Research Labs, Carnegie Mellon University (CMU) Software Engineering Institute, and several research labs for the University of Pittsburgh School of Rehabilitation Sciences. As these companies and institutions continue to grow and create more jobs, transportation accessibility is critical for local residents to access jobs at these companies and institutions.

The construction of the Larimer-Homewood Multimodal Greenway Extension and Hamilton Avenue/Larimer Pedestrian/Bike Bridge is also a part of the strategy to enhance Pittsburgh's and the Commonwealth's overall regional competitiveness. Investment in transportation infrastructure is paramount to enhancing the concentration of human capital, innovation assets, and commercial investment. Concentrations are only possible with investments in transportation infrastructure to safely and efficiently accommodate increasing numbers of people and activity. By increasing and adding to the area's multi-modal transportation network, this allows the continuation of densely co-locating commercial activities and human capital.

REFERENCE:

- Larimer-Homewood Multimodal Greenway Extension Transportation Impact Study (TIS)



LARIMER-HOMEWOOD MULTIMODAL
GREENWAY EXTENSION
City of Pittsburgh, Allegheny County, Pennsylvania

Prepared for:
WALNUT CAPITAL MANAGEMENT, INC.
Pittsburgh, Pennsylvania

Prepared by:
TRANS ASSOCIATES ENGINEERING CONSULTANTS, INC.
Pittsburgh, Pennsylvania

April 15, 2020



LARIMER-HOMEWOOD MULTIMODAL
GREENWAY EXTENSION

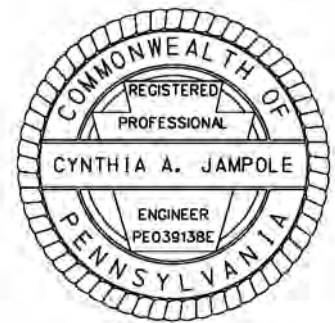
City of Pittsburgh, Allegheny County, Pennsylvania

Prepared for:
WALNUT CAPITAL MANAGEMENT, INC.
Pittsburgh, Pennsylvania

Prepared by:
TRANS ASSOCIATES ENGINEERING CONSULTANTS, INC.
Pittsburgh, Pennsylvania

Cynthia A. Jampole, P.E.


Principal



Ann M. Kline, E.I.T.


Associate Analyst

April 15, 2020

Purpose of Report

This report provides the results of the transportation impact study (TIS) performed for the proposed Larimer-Homewood Multimodal Greenway Extension to be developed by Walnut Capital. The TIS was performed to assess the impacts of construction of the Larimer-Homewood Multimodal Greenway Extension upon conditions in the area including improvements in traffic congestion, queuing, traffic delay, bicycling conditions and pedestrian conditions. In this area, congestion is currently most acute along Penn Avenue at its intersections with Fifth Avenue, Bakery Square Boulevard and East Liberty Boulevard/Reizenstein Way.

Site Location and Study Area

The proposed Larimer-Homewood Multimodal Greenway Extension will be in the Larimer and Shadyside neighborhoods of the City of Pittsburgh. The study area and study intersections are shown in Figure 1, and include:

- Broad Street/Frankstown Avenue and East Liberty Boulevard;
- Hamilton Avenue/Post Office Driveway and East Liberty Boulevard;
- Dahlem Place and East Liberty Boulevard;
- Dahlem Place and Parking Garage Driveway/Verizon Driveway;
- Dahlem Place and Dahlem Garage Driveway;
- Dahlem Place and Port Authority Driveway;
- Dahlem Place/Bakery Garage Driveway/Hotel Driveway/Larimer-Homewood Multimodal Greenway Extension/Bakery Square Boulevard;
- Rainbow Street and Larimer-Homewood Multimodal Greenway Extension (Matthews Driveway under 2020 conditions);
- Rainbow Street/McPherson Boulevard and Fifth Avenue;
- McPherson Boulevard and North Dallas Avenue;
- Penn Avenue and Shady Avenue;
- Penn Avenue and the Village at Eastside Driveway;
- Penn Avenue and Reizenstein Way/East Liberty Boulevard;
- Penn Avenue and Bakery Square Boulevard;
- Penn Avenue and Fifth Avenue;
- Larimer Avenue and East Liberty Boulevard (no data has been collected at this time due to atypical traffic conditions related to the COVID-19 pandemic);
- Penn Avenue and North Highland Avenue (no data has been collected at this time due to atypical traffic conditions related to the COVID-19 pandemic); and
- Penn Avenue and Centre Avenue (no data has been collected at this time due to atypical traffic conditions related to the COVID-19 pandemic).

Project Description

The location of the project, which is the proposed Larimer-Homewood Multimodal Greenway Extension, is shown in Figure 1. Details of the project are shown in Figure 2. The Larimer-Homewood Multimodal Greenway Extension will function as a parallel bypass route to Penn Avenue, reducing traffic volumes in the congested Penn Avenue corridor at the intersections with Fifth Avenue, Bakery Square Boulevard and East Liberty Boulevard/Reizenstein Way.

The Larimer-Homewood Multimodal Greenway Extension includes the following features:

- Two-way connection from Bakery Square Boulevard to Rainbow Street;
- Provide one shared vehicle/bicycle lane between Bakery Square Boulevard and Rainbow Street in each direction;
- Provide a six-foot-wide sidewalk on the south side of the Larimer-Homewood Multimodal Greenway Extension along its length;
- Provide a Rectangular Rapid Flashing Beacon (RRFB) with in-pavement lighting at the Larimer-Homewood Multimodal Greenway Extension/Port Authority of Allegheny County Driveway/Bakery Square Boulevard intersection to provide enhanced pedestrian crossing safety;
- Provide a new traffic signal with full pedestrian amenities (pedestrian pushbuttons, countdown equipment, audible equipment, and thermoplastic piano key pavement markings) at the Larimer-Homewood Multimodal Greenway Extension/Rainbow Street intersection;
- Provide improvements to the existing Rainbow Street pavement; and
- Provide a secure public outdoor bicycle barn at the Larimer-Homewood Multimodal Greenway Extension /Port Authority of Allegheny County/Bakery Square Boulevard intersection.

Additional Multimodal Initiatives Being Implemented by Walnut Capital

In addition to the Larimer-Homewood Multimodal Greenway Extension, Walnut Capital is also advancing the following multi-modal initiatives:

- Construction of the Dahlem Place (North) Garage as a multi-modal center. This garage, currently under construction, will provide:
 - Secure indoor bicycle room with work bench, repair tools and air pump;
 - Planned potential connection to Hamilton Avenue, including a pedestrian/bicycle bridge extending over the East Busway and Norfolk Southern railway tracks;
 - Adequate lighting for pedestrians and vehicles in the garage and the potential pedestrian/bicycle bridge location.

2020 Traffic Volumes

Using data presented in the study “Dahlem Place Garage and Bakery Office 3 Development TIS” prepared by Trans Associates (TA) and dated April 5, 2018 (the previous report), TA determined AM and PM peak hour traffic volumes in the area. The traffic volumes in the previous report, which were collected in December 2017, were increased to 2020 levels using a traffic growth factor obtained from the Southwestern Pennsylvania Commission (SPC), and a few additional intersections were added with new 2020 traffic counts. However, three of the new intersection counts could not be completed prior to restrictions in travel related to the COVID-19 pandemic and those counts have been deferred until a later date.

Performance of vehicle turning movement counts and pedestrian, bicycle and heavy vehicle (truck) counts for the study intersections was conducted during the following peak periods:

- Weekday AM peak period – 7:00 AM to 9:00 AM
- Weekday PM peak period – 4:00 PM to 6:00 PM

The overall peak hours determined from these counts are as follows:

- AM Peak Hour – 8:00 AM to 9:00 AM
- PM Peak Hour – 4:45 PM to 5:45 PM

Summaries of the data collected during the turning movement counts at each of the study intersections have been included in the Technical Appendix.

The results of the manual turning movement counts performed were plotted on schematic diagrams of the study intersections and adjusted to 2020 levels. The 2020 existing peak hour traffic volumes are presented in Figure 3.

2020 Intersection Levels of Service

Levels of service at each of the study intersections have been determined for the peak hours. These levels of service (LOS) were determined through implementation of signalized intersection capacity analysis methodologies presented in the 2010 Highway Capacity Manual, published by the Transportation Research Board. This methodology determines how well an intersection, approach to an intersection, or movement at an intersection operates, and assigns to it a Level of Service (LOS) A through F, with LOS A representing the best operating conditions and LOS F, the worst. Detailed definitions of LOS have been included in the Appendix.

Existing signal timings and operations were obtained from the City of Pittsburgh Department of Public Works (DPW) and were utilized in the 2020 existing conditions capacity analysis. The traffic signals on Penn Avenue in the study area are part of an interconnected signal system using Surtrac equipment, which was included in the analysis. The results of the capacity calculations performed using existing 2020 traffic volumes and existing signal timings are presented in Figure 4 and Table 1 for the AM and PM peak hours.

As shown in Table 1, under existing conditions, all levels of service were determined to be acceptable levels of service (LOS) D or better, the acceptable functioning for urban areas, except at the following locations:

- Penn Avenue and Fifth Avenue intersection
 - Northbound Fifth Avenue left turns – LOS E during the AM peak hour and LOS F during the PM peak hour
 - Southbound Fifth Avenue through and right turns – LOS E during the AM peak hour

Detailed capacity and level of service printouts are provided in the Technical Appendix.

Background Traffic Growth to 2025 Levels (Future Year with the Larimer-Homewood Multimodal Greenway Extension Constructed)

The impact of the project was determined by developing future year 2025 traffic volumes without, and then with, the project.

In order to project year 2025 background traffic volumes, an annual traffic growth factor was determined and applied to all the existing 2020 traffic volume data, except traffic entering and exiting the Bakery Square development, which would not experience regional background traffic growth.

To do this, first the traffic entering and exiting Bakery Square was determined, as shown in Figures 5A and 5B for entering and exiting AM and PM peak hour traffic volumes, respectively. These volumes were combined as shown in Figure 6. These volumes were then subtracted from the 2020 existing traffic volumes shown in Figure 3 to determine the 2020 background traffic volumes shown in Figure 7.

According to The Southwestern Pennsylvania Commission (SPC) Cycle 10 projections, traffic in the Larimer section of the City of Pittsburgh has a linear growth rate of 0.50 percent annually, which was applied to the 2020 background traffic volumes shown in Figure 7, resulting in the 2025 background volumes shown in Figure 8.

2025 No Build Traffic Volumes

The 2025 no build traffic volumes, that is, without the proposed Larimer-Homewood Multimodal Greenway Extension, were determined by adding the traffic volumes projected to be generated by the Dahlem (North) Garage in the previous report for the Dahlem Garage, shown in Figure 9, to the 2025 background volumes shown in Figure 8, resulting in the 2025 no build AM and PM peak hour traffic volumes shown in Figure 10.

2025 No Build Levels of Service

Using the analysis methodologies described previously, intersection levels of service were determined at all the study intersections under 2025 no build conditions. It should be noted that the 2025 no build conditions utilized optimized traffic signal timings and existing roadway and traffic signal interconnect conditions for this analysis. The result of the 2025 no build conditions analysis is presented in Table 1 and presented graphically in Figure 11 for the AM and PM peak hours.

As shown in Table 1, under 2025 no build conditions, all levels of service were determined to be acceptable levels of service (LOS) D or better, the acceptable functioning for urban areas, except at the following locations:

- Penn Avenue and Fifth Avenue intersection
 - Northbound Fifth Avenue left turns – LOS F during the AM and PM peak hours
 - Northbound Fifth Avenue approach – LOS E during the AM peak hour
 - Southbound Fifth Avenue through and right turns, and approach – LOS E during the AM peak hour
 - Westbound Penn Avenue left turns – LOS E during the AM and PM peak hours
 - Westbound Penn Avenue approach – LOS E during the AM peak hour

Detailed capacity and levels of service printouts are provided in the Technical Appendix.

2025 Build Traffic Volumes with the Larimer-Homewood Multimodal Greenway Extension Constructed

The 2025 build traffic volumes were determined through rerouting of traffic volumes to account for the addition of the Larimer-Homewood Multimodal Greenway Extension, including:

- Rerouted existing traffic volumes entering and exiting Bakery Square, shown in Figures 12A and 12B, respectively, shown combined in Figure 13
- Rerouted 2025 background traffic volumes, shown in Figure 14
- Rerouted Dahlem Garage traffic volumes, shown in Figure 15

These volumes were totaled to result in the Total Rerouted Traffic Volumes shown in Figure 16.

The total rerouted traffic volumes were then added to the 2025 no build traffic volumes, to result in the 2025 build traffic volumes shown in Figure 17.

It should be noted that the construction of the Larimer-Homewood Multimodal Greenway Extension provides a “relief valve” for the congested conditions on Penn Avenue, with projected reductions of 410 vehicles on Penn Avenue between Fifth Avenue and Bakery Square Boulevard during the AM peak hour and 320 vehicles during the PM peak hour.

2025 Build Levels of Service

Traffic analyses were performed using methodologies published in the *Highway Capacity Manual 2010*, by the Transportation Research Board using Synchro, Version 10 traffic analysis and simulation software. The traffic analysis of the study intersections under 2025 build conditions utilized optimized traffic signal timings and existing roadway configurations on existing roadways, with the addition of the Larimer-Homewood Multimodal Greenway Extension. The capacity analyses performed resulted in determination of overall intersection levels of service D or above for all study intersections, as shown in Table 1 and Figure 18.

It should be noted that all deficient levels of service identified during the 2025 no build conditions were improved and brought up to acceptable levels of service D or better during both peak hours through the implementation of the Larimer-Homewood Multimodal Greenway Extension. This will result in reduced delays and queueing, with associated improvements in air quality, particularly in the Penn Avenue corridor.

Detailed capacity and levels of service printouts are provided in the Technical Appendix.

Queuing Analysis

For dense urban conditions, queuing analyses provide a far more accurate representation of traffic flow than level of service designations. The 95th percentile queue lengths for the study intersections under existing, 2025 no build, and 2025 build conditions were evaluated. Analyses were performed using methodologies published in the *Highway Capacity Manual 2010*, by the Transportation Research Board using Synchro, Version 10 traffic analysis and simulation software.

Under 2025 build conditions, peak hour 95th percentile queue lengths were calculated, resulting in reductions of queue lengths as compared to those projected for 2025 no build conditions, as shown in Table 2 and Figures 19 and 20 for the 2025 AM and PM peak hours, respectively.

Conclusion

The results of this TIS performed for the Larimer-Homewood Multimodal Greenway Extension indicate that congestion, delay and queuing, and related air pollution impacts, will be reduced for the Penn Avenue corridor with the proposed Larimer-Homewood Multimodal Greenway Extension in place. The project will also provide enhanced pedestrian and bicycling conditions and connections within the study area.