

NEXT GEN

IT'S YOUR MOVE



High Capacity
Transit



Smart Mobility
Options



Enhanced
Bus Service



EXECUTIVE SUMMARY

July 2017

The Community's Vision

NextGen is the community's vision for the future of transit and a transformative effort to keep central Ohioans on the move for decades to come.

Shaped by technical analysis and conversations with community and business leaders, stakeholders and residents, NextGen is designed to get people to their destinations more quickly and conveniently, connect residents with jobs, and support efforts to create communities where young and old alike want to live, work and raise a family – during a time of unprecedented growth.

NEXTGEN GOALS

Lead the community in a visioning exercise

to determine what central Ohio's public transportation system needs to accomplish in the coming decades to ensure current and future residents have access to jobs, housing, education and services.

Prepare central Ohio for future growth

by identifying transit investments that integrate with regional plans and goals. Critical regional goals include maintaining regional competitiveness, minimizing sprawl, and responding to demographic preferences.

Support local and regional plans

with transit investment options.

Identify conventional and creative revenue options

that offer potential to support the recommended vision and ensure the concepts can be implemented.

NextGen has Three Components



HIGH CAPACITY TRANSIT

... which moves more people, faster, in less physical space, attracts new development and focuses growth.



SMART MOBILITY OPTIONS

... such as self-driving vehicles, first/last mile services, and smart apps, which makes planning and paying for transportation services and job access easier than ever.



ENHANCED BUS SERVICE

... that runs more frequently, to more places—ensures residents can access jobs and employers can attract employees because transportation is accessible 24-hours a day.

WHY NEXTGEN IS NEEDED

Enhances regional competitiveness by attracting and retaining a 21st century workforce and the companies that need them

Improves job access for residents who don't live near where jobs are located

Addresses congestion associated with future growth

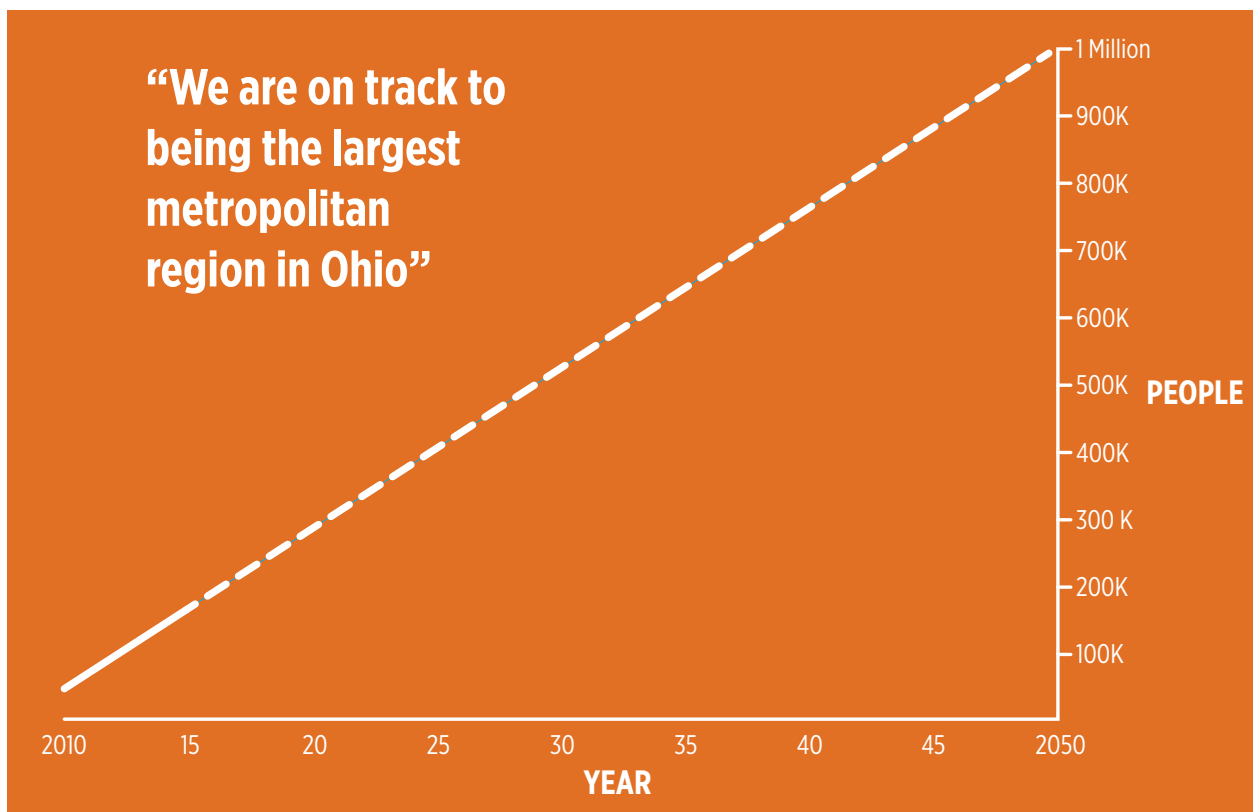
No action now means significantly higher costs and traffic congestion later

Capitalizes on a unique moment in time when central Ohio public and executive leadership are united in transforming mobility

COTA kicked off the NextGen long-range visioning effort in 2015 by asking the community to envision public transit needs and opportunities over the next 35 years. Collaborating closely with the Mid-Ohio Regional Planning Commission (MORPC), the City of Columbus and COTA's many member communities, COTA looked at where population and jobs are expected to grow, where road congestion might increase, and how transit might best support the mobility needs of the region.

NextGen aligns with MORPC's insight2050 findings, which note that population growth occurring today and over the next 30+ years is projected to be dramatically different than in the past. Businesses are now locating where the skilled workforce wants to live and work. Local communities understand that the most desirable places to live are walkable, have a vibrant array of restaurants, shopping and services, and provide transportation choices for people of all ages. NextGen responds to these new trends and the additional desire to focus growth where it can be served most cost-efficiently.

Figure E-1 Projected Central Ohio Population Growth (7-County insight2050 Region)



Source: insight2050

Components

NETWORK OF HIGH CAPACITY TRANSIT CORRIDORS

1 DEVELOP HIGH CAPACITY TRANSIT SERVICES



... such as bus rapid transit (BRT), light rail, streetcar, and/or commuter rail (see Figure E-2).

BY 2025

Implement one high capacity transit line

BY 2040

Implement three additional high capacity transit lines

BY 2050 AND BEYOND

Implement seven additional high capacity transit lines

SMART MOBILITY OPTIONS

2 LEVERAGE SMART TECHNOLOGY



... such as autonomous vehicles and app-based ride sharing to make it easier to connect between home, high capacity transit and that last mile to work.

BY 2025

Implement emerging smart mobility pilot programs in one zone to provide first/last mile connections or late-night service

BY 2040

Expand smart mobility programs to two additional zones, providing first/last mile connections to job centers and neighborhoods not served by fixed-route transit

BY 2050 AND BEYOND

Further expand smart mobility programs to include three additional zones

3 MAKE TRANSIT EASIER TO UNDERSTAND AND USE



... by making fare payment and real-time arrival information available electronically and accessible from smart phones, and by providing wifi on-board buses.

BY 2025

Upgrade technology with mobile fare payment, real-time arrival information, and on-board wifi

BY 2040

Continue to incorporate technology innovations into the transit user experience

BY 2050 AND BEYOND

Continue to incorporate technology innovations into the transit user experience

Components (continued)

IMPROVEMENTS TO THE BUS NETWORK

4 IMPROVE EXISTING SERVICES



... by increasing frequency and extending span of service.

BY 2025

Operate all high frequency routes until 9:00 p.m.
Upgrade three existing routes to 15-minute all day service

BY 2040

Operate all standard service at least every 30 minutes
Upgrade four existing routes to run every 15 minutes

BY 2050 AND BEYOND

Upgrade three existing routes to 15-minute service

5 EXPAND SERVICE TO NEW AREAS



... by extending existing routes or creating new connections (see Figure E-3).

BY 2025

Add crosstown service between Dublin, Grove City, Westerville, and Reynoldsburg

BY 2040

Add crosstown service between New Albany, Westerville, and Dublin

BY 2050 AND BEYOND

Add crosstown service between Easton, New Albany, Canal Winchester, Groveport, West Columbus, Hilliard, and Dublin

6 EXPAND FREEWAY BASED EXPRESS SERVICES



... to include connections to, from, and between suburban communities and job centers at all times of day (see Figure E-4).

BY 2025

Implement one all-day and one new, peak-only commuter express route

BY 2040

Implement two all-day and one peak-only commuter express routes to regional job centers

BY 2050 AND BEYOND

Implement two all-day and five commuter express routes to regional job centers

What is High Capacity Transit?



HealthLine BRT, Cleveland, OH
Credit: John Greenfield

BUS RAPID TRANSIT (BRT)

Bus rapid transit (BRT) operates in a combination of exclusive rights of way and mixed traffic. Like rail service, BRT service offers riders increased frequency plus other enhancements such as increased speed, reliability, and comfort through distinctive vehicles, off-board fare payment, traffic signal priority, and station amenities. Cleveland's HealthLine has attracted more than \$4 billion in development since opening in 2008.



Lynx Blue Line Light Rail, Charlotte, NC
Credit: James Willamor

LIGHT RAIL TRANSIT (LRT)

Light rail provides urban rail service that operates in a combination of exclusive rights-of-way and mixed traffic. Stops are usually every 1 to 2 miles. It is designed to serve high volume corridors over longer distances at moderate speeds. The Minneapolis Green Line attracted \$5 billion in development in the corridor since opening in 2014.



KC Streetcar, Kansas City, MO
Credit: Jason Doss

STREETCAR

Streetcar service is a high capacity rail mode that operates in a combination of mixed traffic and exclusive rights-of-way in urban areas. Streetcars typically stop more frequently than light rail, resulting in a lower operating speed. Streetcars tend to have shorter alignments, with lines less than 3 miles being common. Kansas City's streetcar attracted \$381 million in development in the first year since opening.



Northstar Commuter Rail, Minneapolis, MN
Credit: Michael Hicks

COMMUTER RAIL

Commuter rail service provides fast rail service in longer, high-volume corridors, and typically has stations every five to 10 miles. Service operates on exclusive rights-of-way, often on rail lines that are owned by freight railroads. Whereas BRT, light rail, and streetcar operate throughout the day, commuter rail usually operates at peak times only. New development typically occurs around rail stations.

Why Invest in High Capacity Transit?

With central Ohio predicted to grow by up to 1 million people by 2050, the region will need to support a significantly increased level of travel demand. A natural outcome of increased demand will be increased congestion, which has been predicted by MORPC's regional model. insight2050 examined four different growth scenarios, all of which assumed the same amount of growth in the region, but different levels of density. Compared to past growth trends, scenarios with increased density are predicted to result in reduced costs at the government and household level, and reduced impact on natural resources. In essence, increasing density is the most cost effective and sustainable way to accommodate growth. High capacity transit plays a key role in attracting and moving people who live in densely developed areas.

While improvements to a local bus network can increase ridership, local bus service does not lead to transformative land use and economic development changes. Buses will also continue to get slower and less competitive as traffic congestion increases.

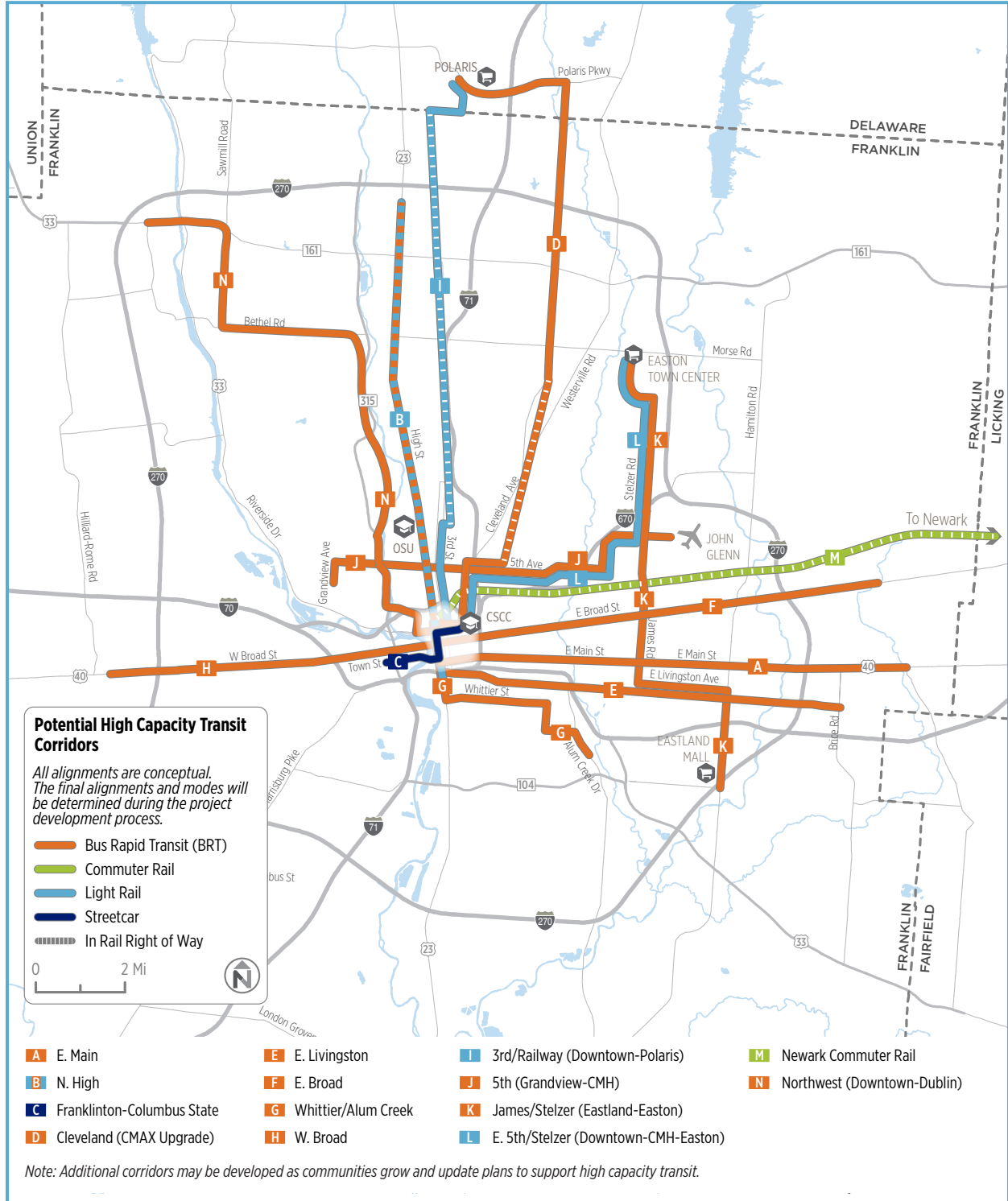
In contrast, high capacity transit has spurred development in concentrated corridors across the U.S. This makes the economic benefits for outweigh the investment costs. NextGen has taken the first steps to identify corridors in which the community envisions high capacity transit, which will facilitate denser development as the region grows.



Credit: Nelson\Nygaard

Proposed High Capacity Transit Network

Figure E-2 Conceptual NextGen High Capacity Transit Corridors



Where do the Potential High Capacity Transit Corridors Go?



**COLUMBUS STATE TO
FRANKLINTON**



**DOWNTOWN TO WORTHINGTON
VIA NORTH HIGH STREET**



**DOWNTOWN TO REYNOLDSBURG
VIA MAIN STREET**



**CLEVELAND AVENUE CMAX
UPGRADE**



**DOWNTOWN TO REYNOLDSBURG
VIA EAST LIVINGSTON AVENUE**



**DOWNTOWN TO REYNOLDSBURG
VIA EAST BROAD STREET**



**DOWNTOWN TO POLARIS VIA 3RD
STREET AND COMMERCIAL RAILWAY**



**LINCOLN VILLAGE TO DOWNTOWN
VIA WEST BROAD STREET**



**DOWNTOWN TO ALUM CREEK
DRIVE VIA EAST WHITTIER STREET**



**GRANDVIEW AREA TO THE
AIRPORT VIA 5TH AVENUE**



**EASTLAND MALL TO EASTON VIA
JAMES ROAD AND STELZER ROAD**



**DOWNTOWN-AIRPORT-EASTON VIA
5TH AVENUE AND STELZER ROAD**



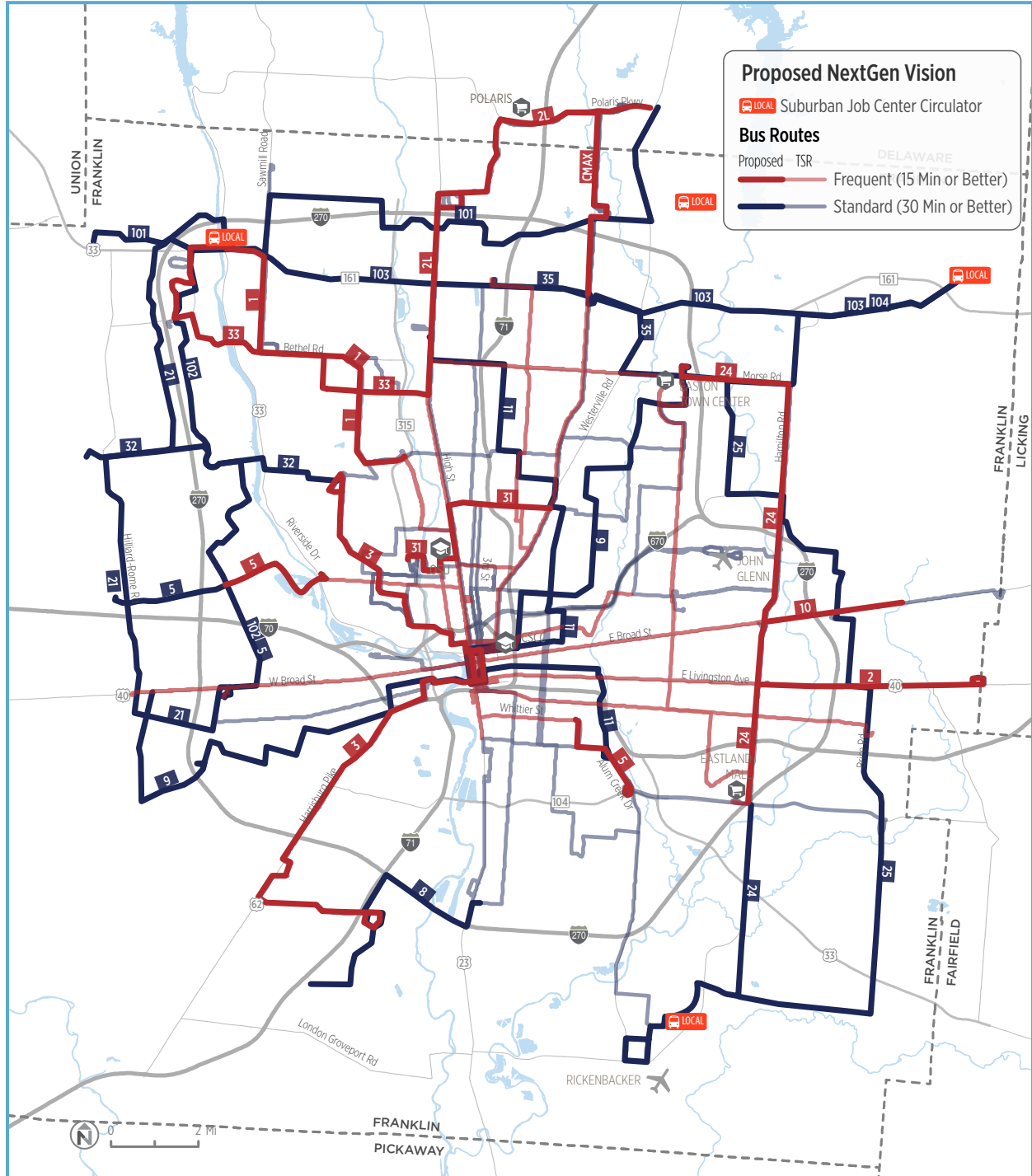
**DOWNTOWN TO DUBLIN
BRIDGE STREET DISTRICT VIA
OLENTANGY RIVER ROAD**



**NEWARK TO DOWNTOWN
COMMUTER RAIL**

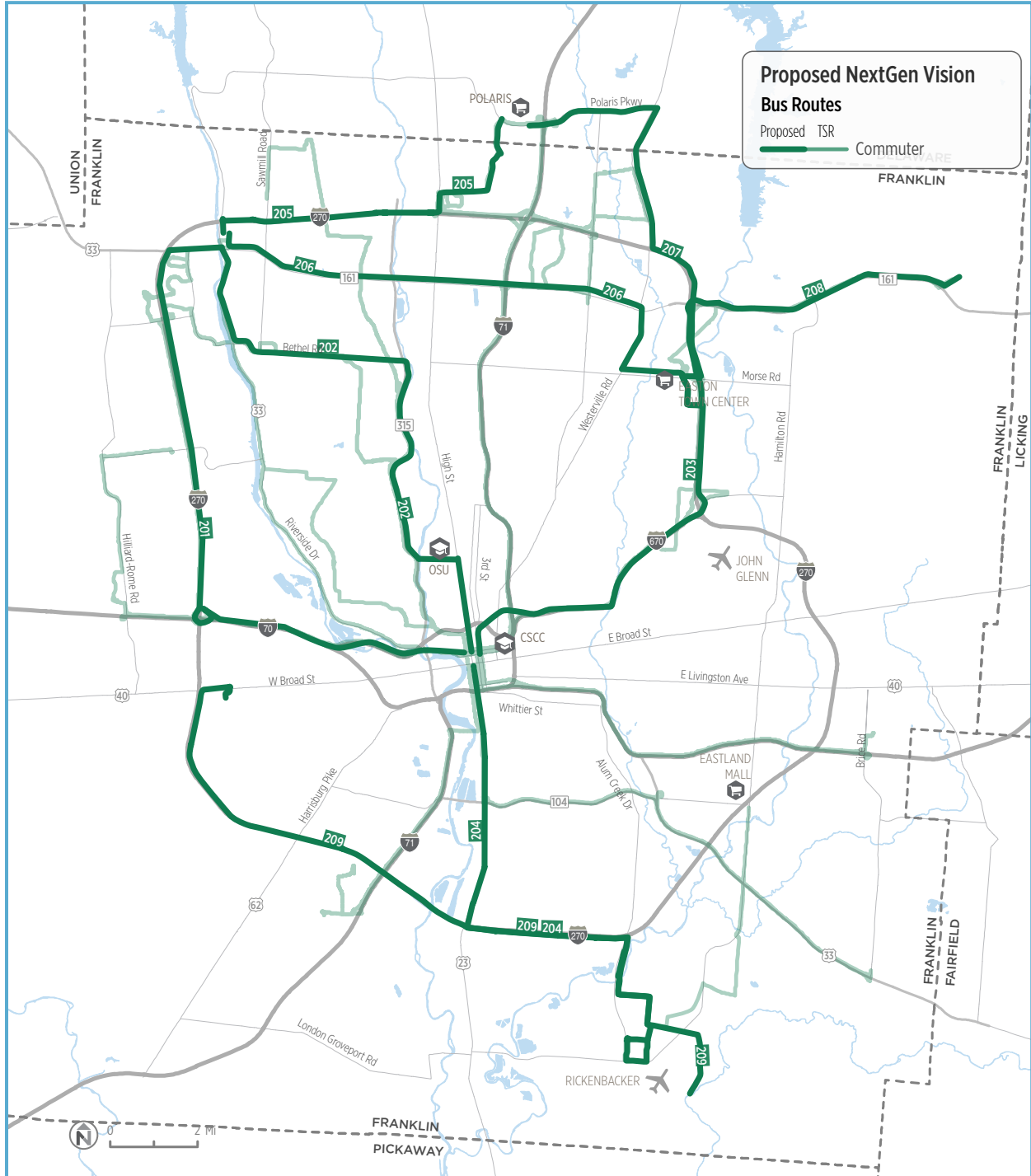
Proposed Local Bus Network

Figure E-3 Proposed Local Bus Expansion



Proposed Commuter Bus Network

Figure E-4 Proposed New Commuter Service



NextGen is Smart

Smart mobility options are cost effective, innovative new services to provide first and last mile connections to home and jobs with autonomous vehicles and app-based ride sharing. The City of Columbus, winner of the United States Department of Transportation (USDOT) Smart City Challenge, is partnering with COTA to test self-driving transit shuttles in the Easton area as part of the Smart Columbus effort. COTA has partnerships with SMART Ride in New Albany and GREAT in Groveport/Rickenbacker, which are existing scheduled shuttle services that provide first/last mile services in each respective business park. Other examples of these smart mobility options include partnerships with Transportation Network Companies (TNCs) such as Lyft, Uber or taxis, and flexible, on-demand fixed-route shuttles.

Smart mobility options can attract more discretionary riders and provide a cost-effective, convenient option for areas and times of day or night with lower transit demand.



Credit: Aric Crab, Bay Area News Group

APPLICATIONS FOR SMART MOBILITY OPTIONS INCLUDE:

Provide service between 1 a.m. to 5 a.m.

Suburban smart mobility partnerships

Shared-ride access to hard-to reach job sites

First/last mile access to home and work



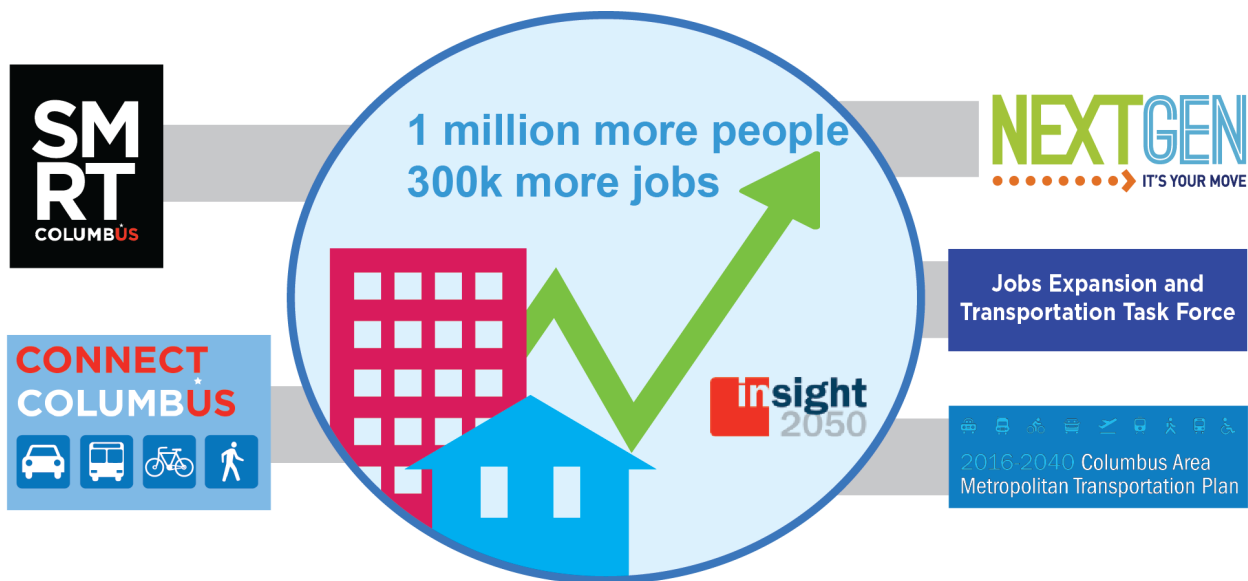
Credit: Navya

Collaborative Efforts

NextGen has coordinated public involvement, technical analysis and information sharing with concurrent planning efforts, including:

- The City of Columbus's **Connect Columbus** Multimodal Thoroughfare Plan and **Smart Columbus** initiative;
- MORPC's **Metropolitan Transportation Plan** and **insight2050** findings; AND
- Transportation and land use planning efforts in Westerville and Dublin, among others.

As a result, NextGen recommendations reflect and build upon transit improvements desired by local communities. Likewise, partner agencies and communities are encouraged to use NextGen to inform ongoing and future discussions relating to transportation in the region. We look forward to this continued collaboration with our partners to transform mobility in central Ohio.



The Community's Voice Was Heard

The NextGen Vision was shaped by extensive public and stakeholder engagement. Public input helped define community values and identified needs and opportunities. It also shaped in initial improvement options and the subsequent alternative refinement process. These five community values emerged from public input and served as the guiding principles in the development of the NextGen Vision.



MAKE BETTER CONNECTIONS

Extend transit's reach further.



INVEST IN UNDERSERVED COMMUNITIES

Direct transit investment to specific corridors and neighborhoods.



COORDINATE WITH GROWTH

Encourage focused growth in existing neighborhoods and fast-growing areas.



BUILD ON SUCCESS

Improve existing service.



SUSTAINABILITY

Protect the environment and reduce greenhouse gas emissions.

Funding the Vision

NextGen was developed without defined funding sources or budget constraints in order to create a vision that is tailored to the aspirations and needs of the region. It will, however, require building new infrastructure, acquiring more vehicles and expanding budgets to operate and maintain new and enhanced transit services.

It is estimated that between \$4.9- and \$5.4-billion in capital funds will be necessary to build out NextGen over the next 35 years.¹ In addition, transit operating budgets will need to increase by \$113- and \$127-million annually between now and 2050. Though central Ohioans contribute to transit service today through a 0.5 percent local sales tax, additional sources of local, state and/or federal funding will be needed to make the vision outlined in NextGen a reality.

NextGen is one piece of a broader investment in the robust transportation network needed to accommodate regional growth in the coming years. Other examples include the Columbus Crossroads interstate 70/71 reconstruction through downtown Columbus (\$1.1 billion), and the widening of I-270 in North Columbus (\$390 million).

Benefits of Transit Investment

- 87% of public transit trips impact the economy.
- Every \$1 invested in public transportation generates approximately \$4 in economic returns.
- Every \$1 billion invested in public transportation supports and creates more than 50,000 jobs.
- Every \$10 million in capital investment in public transportation yields \$32 million in increased business sales.
- Residential property values performed 42% better on average if they were located near public transportation with high-frequency service.

Source: American Public Transportation Association 2016 Public Transportation Fact Book – www.apta.com

¹ All capital and operating costs are in 2016 dollars.

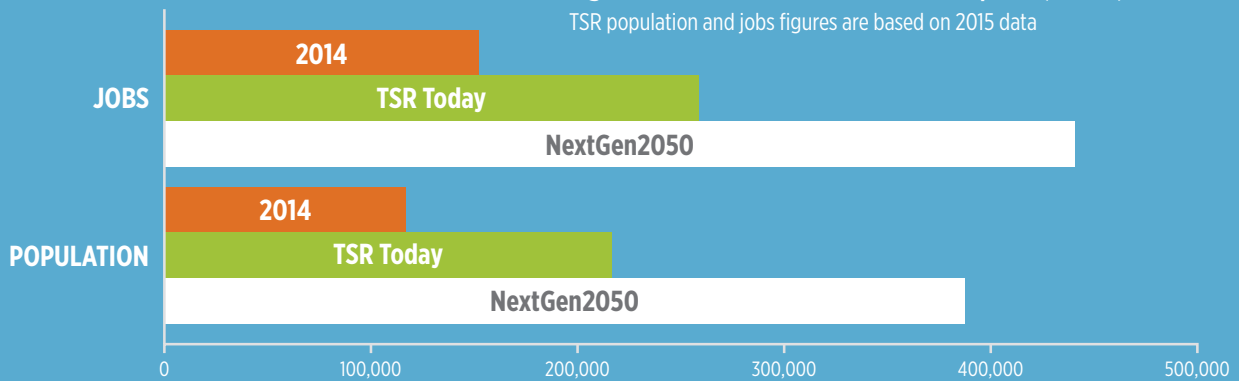
How NextGen Could Change Transportation in Central Ohio

NextGen calls for improving and expanding existing transit service, implementing new types of mobility services, and developing high capacity transit such as bus rapid transit (BRT), light rail, streetcar and/or commuter rail. COTA's new network, implemented by COTA in May 2017 took crucial first steps in transforming the bus network into a more effective system with resources that exist today.

If NextGen were implemented by 2050, more than 250,000 more people and jobs would be within a quarter mile (five minute walk) from transit service. Over 75% more people and jobs would be within a short walk from high frequency transit service (operating every 15 minutes or better). With central Ohio predicted to grow significantly, it is more important than ever that residents are able to access jobs in the safest, most convenient and efficient way as possible. While self-driving vehicles are expected to become a major component of our transportation system, it will be as important as ever to move more people efficiently. NextGen's combination of technology innovations, high capacity transit and on demand services will facilitate this movement so central Ohio can continue to thrive.

Figure E-5 Access within ¼ Mile of Frequent (15 min) Network

TSR population and jobs figures are based on 2015 data



Credit: Wikimedia Commons

What is Included in this Vision?

In undertaking this process, COTA set out to guide the community through development of a long-term vision for our regional transit system. We did so with the understanding that this vision would need to provide flexibility for emerging technology and opportunities for each community to define their goals and level of investment within the larger system. As a result, the NextGen Vision does not provide detailed solutions to all the transit questions that must be answered in the years to come. Here's what this vision brings to the conversation:



VISION FOR INVESTMENT

A vision of the types of transit investments that can be implemented



INTEGRATION

A concept of how individual projects/services can be integrated into a comprehensive system



MECHANISM FOR DISCUSSION

A mechanism for promoting more in-depth conversations about the future of mobility in central Ohio



INITIAL IMPLEMENTATION

First steps toward short-term implementation and visioning for long-term improvement



COSTING

Estimates of potential project construction costs based on recent experience with other cities



COMMUNITY RESOURCE

A resource for communities within the region to use as they undertake their own transportation planning efforts

In order to advance the NextGen vision, additional detail will need to be developed through future planning processes at the municipal, county and regional levels. The preferred mode for each high capacity transit corridor will need to be selected by community stakeholders. Detailed cost projections and phasing options will need to be refined from the high-level recommendations presented by NextGen.

Next Steps

NextGen reflects the desires of the very broad base of stakeholders and public who were consulted as part of this effort, but it will require substantial investment to implement and be challenging to fund. The community must now begin working together to develop new funding options.

In the near term, COTA, its partner agencies and local municipalities can move forward with components of NextGen that have a direct path to implementation. This includes leveraging Smart Columbus to integrate more technology into transit, building on the recently implemented bus network with further frequency enhancements, and expanding the reach of the bus network to job sites through partnerships with municipalities and freeway-based commuter services.

Developing a network of high capacity transit service will require additional planning and consensus building to determine the order in which to implement corridors and how they will be funded. Corridors selected for implementation in the next ten years must move beyond conceptual visioning into project development. COTA will create a community-based steering committee to prioritize components of the NextGen Vision. The steering committee will consist of COTA Board of Trustee members, the business community, public officials, major stakeholders, and the general public to set the direction for prioritizing NextGen projects and develop funding alternatives.



Credit: Nelson Nygaard

