

TOD TOOLKIT

MARCH 2013 KNOXVILLE REGIONAL TRANSIT CORRIDOR STUDY

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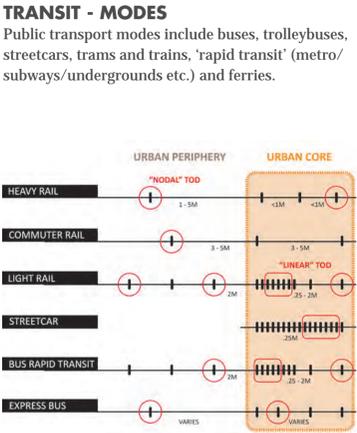
SASAKI Planning and Urban Design



Dallas Area Rapid Transit Mall (DART)

WHAT IS TRANSIT?

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Public transport (also public transportation or public transit) is a shared passenger transportation service which is available for use by the general public, as distinct from modes such as taxicab, car pooling, or hired buses, which are not shared by passengers without private arrangement.



MODES



John J. Duncan Jr. Knoxville Station Transit Center



Allegheny Riverfront Green Boulevard, Pittsburgh, Pennsylvania

Transit oriented development (TOD) is typically defined as more compact development within easy walking distance of transit stations (typically a half mile) that contains a mix of uses such as housing, jobs, shops, restaurants and entertainment.

WHAT IS TOD?



Charlotte CTC Arena T

TOD SHOULD...

- encourage people to walk, bike, AND take transit
- increase transit ridership
- provide a rich mix of land uses
- increase land values for public and private sectors
- create a sense of place and community



Cleveland Euclid Avenue Healthline BRT

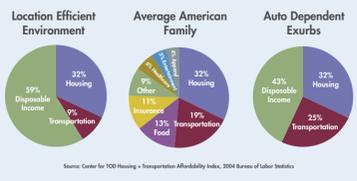
MOBILITY

INCREASED MOBILITY FOR ALL

- TRANSIT...**
- Provides greater access to jobs / housing and other services in greater metropolitan region
 - Reduces congestion city wide as it lowers need for cars
 - Provides access to multiple modes of mobility, encouraging transfer between modes (i.e. bus to rail), as well as pedestrian and bicycle access
 - Provides mobility for wide range of people without automobiles: seniors, teens, students
 - Encourages walking to and from stations, greatly promoting health benefits

- TOD IS MORE AFFORDABLE BECAUSE...**
- Percentage of household income spent on transportation is less in communities served by transit
 - Choice of jobs and housing types are greatly increased with access to transit
 - Higher densities in TOD locations increase potential to provide more affordable housing options
 - The demographic groups growing most quickly – older, non-family, non-white households – have historically used transit in higher numbers
 - Height and density can pay for community benefits and affordability

AFFORDABILITY



Dallas Area Rapid Transit Mall (DART)



Dallas Area Rapid Transit Mall (DART)

PLACEMAKING



- IT'S DEVELOPMENT THAT ALSO:**
- Increases "location efficiency" so people can bike, walk, and take transit
 - Boosts transit ridership and minimizes the impacts of traffic
 - Provides a rich mix of housing, jobs, shopping and recreational choices
 - Provides value for the public and private sectors, and for both new and existing residents



EUCLID AVENUE BUS RAPID TRANSIT

**CLEVELAND, OHIO
EUCLID CORRIDOR PROJECT
BRT TRANSIT SYSTEM, URBAN DESIGN
CITY POPULATION 480,000
MSA POPULATION 2,090,000**

Cleveland's Euclid Avenue is being transformed by a strategic \$200 million investment in a Bus Rapid Transit Corridor, which has catalyzed \$5.8 billion dollars in spin-off investments and over 13.5 million square feet of new development. Sasaki Associates redesigned the street to integrate a new bus rapid transit system into the Euclid Avenue corridor, which connects the central business district with University Circle. It has helped Cleveland regain its footing and changed the perception of the city as a place to work, live, and reinvest. The Corridor opened for service as the Euclid HealthLine in October 2008, and ridership has increased over 54%.

Cleveland Euclid Avenue Healthline BRT



The environmental benefits spurred by the Healthline have been numerous; the increase in transit ridership along the corridor alone has greatly reduced dependency on single occupancy vehicles resulting in a substantial reduction in carbon emissions in just the first two years of service. Creating an "Urban Forest" along Euclid Avenue, the 1,323 new street trees currently sequester approximately 51,032lbs of CO2 per year.

ENVIRONMENT

ENVIRONMENTAL BENEFITS

TRANSIT...

- Is more sustainable
- Provides more efficient use of land, energy, and resources
- Helps to conserve open space by concentrating development
- Reduces oil and gas consumption of single occupancy vehicles
- Results in cleaner air through reduced vehicle emissions
- Minimizes increase in vehicular traffic



Cleveland Waterfront Transit Line

LAND USE

OPTIMIZED LAND USE PATTERNS

TRANSIT ORIENTED DEVELOPMENT...

- Supports a rich mix of housing, jobs, shopping and recreational choices
- Accompanied by planning and rezoning can regularize outdated, incompatible land uses and lead to the redevelopment of abandoned buildings
- Promotes the robust use of both local and destination retail opportunities
- Promotes higher investment in areas around stations than elsewhere in the city
- Accommodates a broader mix and density of household types

VIBRANT NEW "COMPLETE STREETS" ENCOURAGE DEVELOPMENT

As an investment in the core infrastructure of this once great urban boulevard, the project scope included a building face to building face reconstruction. The strategy was to breathe new life into the public realm of Euclid and transform the street into a linear urban forest in a manner that the transit and infrastructure investments would encourage and spur private development. This meant transforming the street into a model "complete street" that is not just for automobiles, but for multiple modes of transit, exclusive bike lanes, and pedestrian friendly sidewalks and street crossings. This makes it one of the few BRT's with exclusive vehicle lanes in an urban corridor and the only one in the country that specifically supports all of these modes of transportation on the same street. As part of that goal parking was integrated back into the street to support developer efforts to revitalize vacant retail storefronts.



Cleveland Euclid Avenue Healthline BRT

GREATER VALUE AND ECONOMIC BENEFIT

The Cleveland Clinic and University Hospitals of Cleveland—the city's two biggest employers—purchased naming rights to the BRT line in a 25-year, \$6.25 million deal. Dubbing it the HealthLine ties the service to Cleveland's branding as a hub of medical care and research. By physically linking large hospitals, startups, convention space, and cultural amenities, the corridor is propelling Cleveland's evolution into a world-class destination for the health care and biotech industries.

The project has brought about the partnerships necessary for Cleveland to make a transition from an industrial economy to a knowledge-based economy, building off the strength of education, research, health care, and tourism. The corridor is vibrant with possibility as a place for people to live, work, and prosper, and serves as an example for similar cities in the United States and around the world.

TRANSIT ORIENTED DEVELOPMENT...

- A major economic generator that has helped catalyze approximately \$5.8 billion in investment
- The project represents a success story achieved through a complex public-private partnership of multiple stakeholders
- The transit system has demonstrated success with a 54% ridership increase utilizing clean, hybrid bus technology
- The project is a model complete street, with mobility improvements for transit, bicycles, auto drivers, and pedestrians
- The collective project offers a model that can be emulated by nearly any other city in the US

ECONOMIC BENEFIT



KNOXVILLE

MARCH 2013 REGIONAL TRANSIT CORRIDOR STUDY

The Knoxville Regional Transit Corridor Study assesses the need, and highlights a consensus for, capital investment in rapid transit service within a growing congested region between the City of Knoxville and Knox, Blount and Anderson Counties. The study also analyzes and ranks the general feasibility of several potential transit investments.

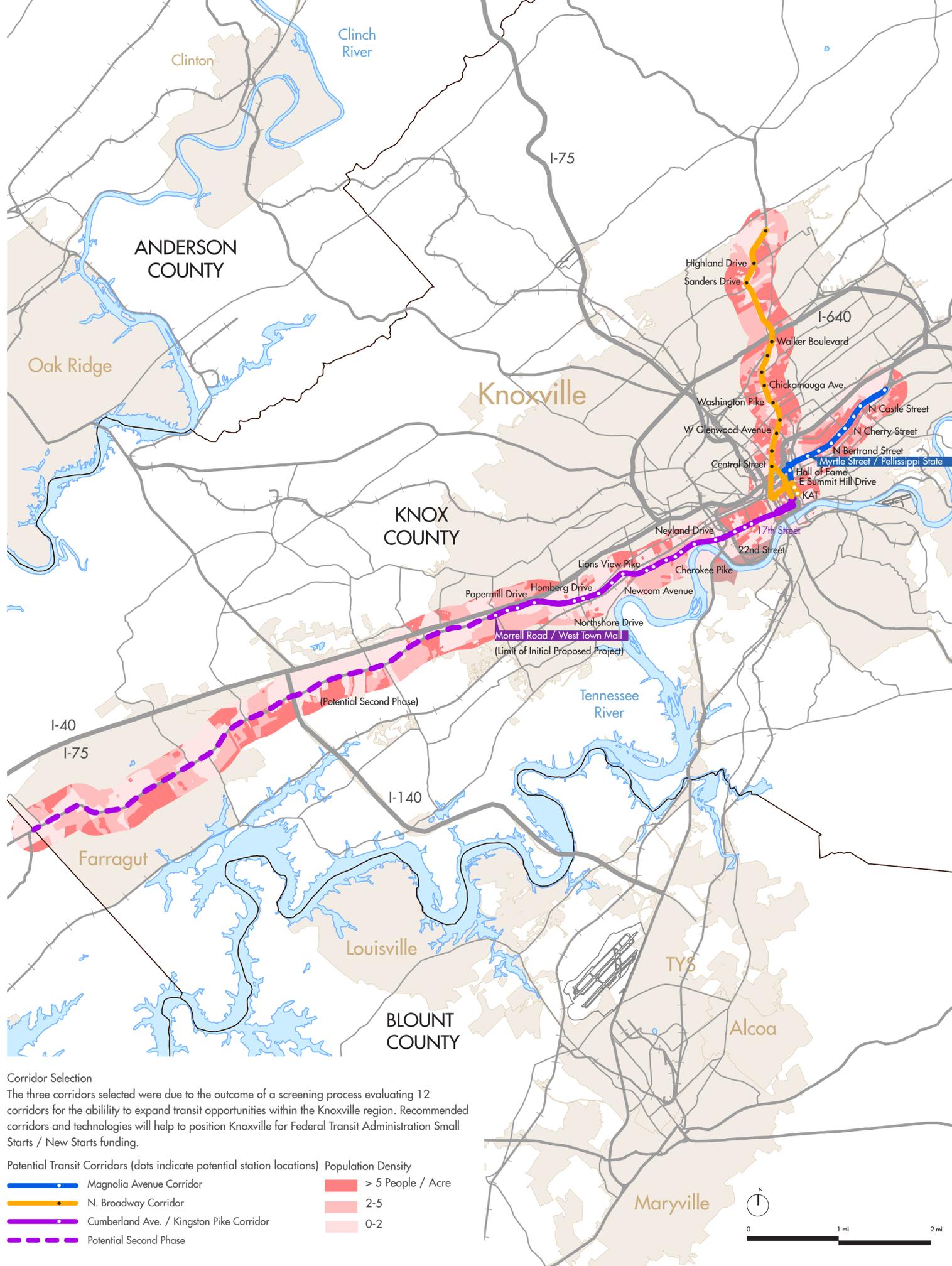
Potential transit opportunities were developed to meet the transportation needs of this diverse study area. The study team sought opinions of stakeholders and study area residents to help guide the development of alternatives and gauge the support for additional analysis and advancement to a more detailed level of study.



CUMBERLAND AVE. / KINGSTON PIKE CORRIDOR MORRELL ROAD / WEST TOWN MALL STATION

The Cumberland Ave. / Kingston Pike is lined with commercial and residential areas varying in scale from the active commercial areas surrounding the University of Tennessee Campus to the large format retail oriented areas such as the West Town Mall. This corridor could support a new transit investment with ridership during the peak hours, off-peak, and a reverse commute demand given the student population and major employment locations downtown. A Bus Rapid Transit system with a dedicated lane at station locations could greatly

enhance connectivity from areas well outside the city to the UT campus and Downtown Knoxville. Station locations, as that indicated for the West Town Mall area, could provide Transit Oriented Development infill opportunities including multi-family housing, office space, convenience retail, and community scaled open spaces. A multi-modal BRT station at the intersection of Morrell Road and Kingston Pike could provide park and ride opportunities adjacent to the West Town Mall and easily accessible from Interstate 40/75.



MAGNOLIA AVENUE MYRTLE STREET / PELLISSIPPI STATE COMMUNITY COLLEGE STATION

The Magnolia Avenue Corridor Plan incorporates a dedicated transit way for a new Bus Rapid Transit system to serve the mix of residential and commercial uses found along the corridor. The wide roadway cross section is ideal for implementing a BRT route that could provide access to transit dependent neighborhoods and major destinations such as Pellissippi State Community College, as well as potentially increasing land values at station locations. As indicated in the accompanying images, there are many opportunities for infill on the blocks surrounding Pellissippi State Community College—

and at the cross roads of Magnolia Avenue and Winona Street. A BRT station at this location would provide access to the College as well as Caswell Park, the Knoxville City Greenways, and the O'Connor Senior Citizen's center. Infill should include a robust mix or residential and ground floor commercial uses complementing the existing neighborhoods and useful to commuters going to and from the College. Improvements all along the corridor should enable safe access for all users, regardless of age, ability, or mode of transportation

