

TRANSIT-ORIENTED DEVELOPMENT (TOD) PRECEDENT BOOK

CITY OF RALEIGH

DECEMBER 2020



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ACKNOWLEDGMENTS

The Transit-Oriented Development Precedent Book was prepared by WSP USA, on behalf of the City Planning Department and through a collaborative process.



1 INTRODUCTION

Raleigh is the fastest-growing city in North Carolina and one of the fastest-growing regions in America. With a population of more than 470,000 in 2018, Raleigh (the City) is expected to reach 600,000 by 2030. As Raleigh and Wake County continues to grow, traffic congestion will also increase. Recognizing the role of transit in serving the needs of a growing population, Wake County voters approved a plan in November 2016 for focused investment in public transit, which includes building approximately 20 miles of Bus Rapid Transit (BRT) lines. Increasingly, Wake County's BRT corridors will be conduits of economic and community activity – as BRT and transit-oriented development connect a complementary mix of homes, jobs, and other destinations with fast reliable affordable transportation.

The City published the Equitable Transit-oriented development (ETOD) Guidebook in 2020, which outlines a path for planning future growth around transit with an emphasis on equity and affordability. Once implemented, BRT will connect Raleigh residents to jobs, housing options, education, health care, and other needs, with reliable speed and without a car. The ETOD Guidebook recognizes the significant economic, social and environmental benefits of building near BRT, provides a vision for sustainable growth and is accompanied by a “Policy Toolkit” to encourage ETOD. The Guidebook recommends public policies and investments to attract private investment with zoning incentives, financing tools, and housing affordability programs to advance equitable development. By focusing on considerations associated with private investment, this book complements the public actions described in the Policy Toolkit with lessons learned to assist developers who may not be familiar with TOD.

The TOD Precedent Book (the book) builds on the ETOD Guidebook and provides guidance to developers who want to participate in the dynamic evolution of Raleigh’s BRT corridors. Transit-oriented development (TOD) offers unique advantages to developers but is not without challenges. For this reason, this book focuses on lessons learned. This book explains why TOD locations enjoy more market demand than auto-dependent locations, and describes critical factors for market-based success and opportunities to apply Equitable TOD principles. Lessons learned have been derived from TOD case studies and literature. Case studies selected capture places where original conditions are similar in context to the BRT Corridors of Wake County. The lessons learned consider how TOD development came to be, and describe important features for economic feasibility and community benefits.

BRT and TOD

While TOD has been traditionally associated with rail transit, Bus Rapid Transit (BRT) is in a position to lead the next frontier of transportation systems, primarily due to its relatively low cost-to-benefit ratio and ability to provide service at levels comparable to other fixed guideway systems.

The Cleveland Health Line has often been credited as one of the most successful BRT systems in the country, having spun off approximately \$9.5B in private and institutional development within walking distance of the corridor. When planning for TOD around BRT stations, there are additional considerations that should be taken into account - mostly due to the zone of influence and perceptions of bus-based systems on market demand. A BRT Station with a similar context and market demand will generally support a similar amount of development as a rail station.

HOW TO USE THIS BOOK

This book includes lessons learned from successfully built TODs to assist those who are interested in development along Wake County BRT Corridors. Key components of this Precedent Book are organized into five sections:

- 1. Introduction
- 2. Why Invest in TOD?
- 3. What are the Types of TOD?
- 4. How to Successfully Build TOD
- 5. Case Studies

TOD Precedent Book

The Precedent Book was prepared to support the development community interested in pursuing opportunities for TOD around the Wake County BRT Corridors.

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2 WHY INVEST IN TOD?

TOD real estate investments offer advantages when compared with auto-reliant locations.

STRONG MARKET DEMAND

Differences in real estate value are often explained with a simple adage: “location, location, location.” This is especially true in the case of TODs, where location demand can be thought of in three different ways:

EASY REGIONAL ACCESS

When choosing where to locate, residents and business people want to get what they need with relative ease. The market places greater value on locations with greater travel options and reduced travel costs – as measured in time and money – especially for trips to central business districts and employment-focused activity centers. Reduced travel costs also enhance affordability in TODs.

As the nation’s metropolitan areas continue to grow, real estate demand will continue to rise for locations that offer convenience, save money, and enhance quality of life. For Raleigh, Wake County’s Transit Investment Strategy Report (2016) found that congestion along major corridors can be expected to worsen significantly and will lead to growing demand for fast reliable alternatives to car travel.

As transit service increases travel options for residents and employees, it reduces travel costs for trips to the central business district and regional destinations – and market demand increases.

A WALKABLE NEIGHBORHOOD

TODs offer convenient local access to daily activities, such as getting groceries, walking to school, and enjoying parks. Local destinations bring “location-efficient” value to the homes and jobs that are within walking distance. In Raleigh and throughout the country, real estate markets show higher demand for residential and employment districts that offer shops, services and amenities. Walk-to conveniences add value and reduce use of private cars and average driving distance when they are used, in addition to providing health and environmental benefits from reduced vehicle emissions and miles traveled.

COMMUNITY-CENTERED LIFESTYLE

TOD’s value-add is more than better regional and local access. TODs mix residential uses and employment with commercial conveniences, recreational open space, and other community amenities. TOD planning and design creates a whole community where many if not most activities take place close to home or work.

TODs stress pedestrian-friendly routes to encourage car-free transit and local trips, and the quality of walking environments adds value in and of itself. The “2013 Community Performance Survey” from the National Association of REALTORS® showed 60 percent of respondents favored diverse, walkable communities that are closer to employment. Through urban design and land use mix, TODs are more attractive to home-buyers, renters, and employers, than developments that segregate land uses and rely on private cars for most trips.

HIGHER DEVELOPMENT YIELDS

TODs are generally more compact than auto-reliant developments, and with a greater intensity and diversity of use within a walkable district, that can result in higher returns on investment and a wider range of real estate products.

COMPACT DEVELOPMENT

High market demand for and limited supply of TODs justify investments of higher residential density and higher commercial intensity than auto-reliant locations. In Raleigh, zoning recommendations allow for and encourage more residential density and commercial intensity in exchange for housing affordability and/or transit-accessible jobs. Specifically, the TOD Overlay includes an “affordability bonus,” which would allow additional building height in exchange for affordable housing units, and an “employment bonus” that allows more building height for job-generating uses.

REDUCED DRIVING AND PARKING

People who live or work in TODs drive less and require less parking than their auto-reliant counterparts, translating into reduced transportation-related expenses and more income being available to its residents. Some banks go so far as to offer TOD households more favorable “location-efficient mortgages.” Right-sizing parking ratios to actual performance increases the potential for higher densities. Developers who do so can serve more development with less parking. Because parking can comprise a large part of a development site, reductions in parking can significantly boost development yield and also reduce development costs. This is especially true for development projects that rely on structured parking.

FLEXIBILITY IN MEETING DEMANDS

TODs will have residential and commercial uses, which can also be thought of as real estate “products.” Residential products may include a mix of apartments, townhouses, and detached single-family home products, and of which each may appeal to different type of household in terms of tenure, size, and affordability. Commercial uses may include office buildings, research and development, lodging, entertainment, and retail.

Developers can use TOD’s mixed-use platform to their advantage. For example, day care and restaurants may be more successful near office buildings, and office buildings near day care and restaurants may have lower vacancy rates. Such synergies can translate into more market demand and investor interest.

In larger TOD projects where there is a greater mix of uses and independent development parcels, product diversity also helps manage risk, as different product types will follow different market cycles — the ups-and-downs of market demand. To illustrate, multifamily housing may be a more successful investments venture than a single-family investment, or vice versa. Furthermore, market shocks can come unexpectedly and product diversity reduces market risk.

POLICY INCENTIVES

The City of Raleigh is working to provide policy support for equitable TOD around transit. The ETOD Guidebook provides a “Policy Toolkit” with the following elements:

ZONING TOOLS

The Toolkit recommends zoning overlay zones to encourage compact, walkable mixed-use communities while expanding affordable housing options. It provides an “affordability bonus” and “employment bonus” that allows additional building height in exchange for affordable housing units or job-generating uses respectively. Because people in TODs drive less, the Toolkit also recommends that parking requirements be reduced.

EQUITY FUND

The recommended Equity Fund would capture a part of new tax revenue from TODs and reinvest the revenue within TODs. Equity Funds could be used for affordable housing, public art, and pedestrian & bicycle safety improvements.

LAND PARTNERSHIPS AND AFFORDABLE HOUSING FUND

The Toolkit recommends that the City play a proactive role in acquiring and preparing land for development and partnering with developers, non-profits, and land trusts, to achieve deeper levels of affordability. The City’s existing Housing Fund can be expanded to provide low-interest loans to develop affordable housing within TODs.

NEIGHBORHOOD STABILIZATION

The Toolkit recommendations seek to minimize displacement of residents and businesses as TOD development occurs, with building rehabilitation assistance, anti-predatory real estate education, tenant legal assistance, and small business assistance.

EQUITABLE PARTICIPATION

The Toolkit calls for local worker participation in BRT construction, equitable homeownership tax assistance, and giving priority to existing residents when creating new residential units.

3 WHAT ARE THE TYPES OF TOD?

STATION AREA TYPES

The ETOD guidebook presents 5 Station Area Types defined by different land uses and development scales.

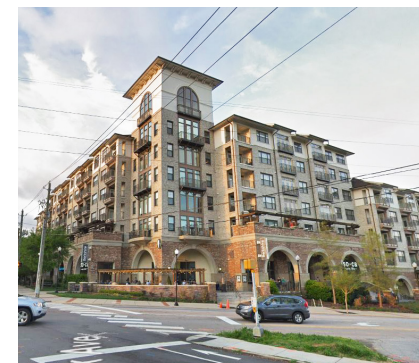
- **Downtown**
- **Emerging Urban Center**
- **Neighborhood Center**
- **Campus**
- **Park**

Given the unique context for downtown development and limited opportunities to grow in the Park station area type, case studies in this book focus on the following three Station Area Types that are common along the Western Boulevard corridor within the planned Wake County BRT system. These types of opportunities are based on existing conditions and an assessment of appropriate future scale.



Emerging Urban Centers

Emerging Urban Centers are TODs that are expected to become mixed-use activity centers with a concentration of commercial and community activities, such as retail, entertainment, office, cultural uses, and government services. Residential uses are also expected in Emerging Urban Centers. While the market will ultimately determine the height of new buildings, heights up to 12 stories – or 20 stories – are expected in the core area of Emerging Urban Centers with much lower heights at Station Area edges.



Neighborhood Centers

Neighborhood Centers are TODs that are expected to have a residential focus, along with local-serving commercial and community uses. Neighborhood Centers may be up to 7 stories in the core area of the Station Area, with careful transitions down to 3 or 4 stories at the edge where it meets existing residential areas.



Campus TODs

Campus TODs are near and expected to complement a medical or university campus. As such, they are expected to be regional employment centers comprised of some combination of office, research & development, medical, and institutional uses. Local-serving retail, restaurants, and services would serve these uses. Building heights among Campus TODs will dependent needs of each institution.

SITE SIZE

While the overall principles are consistent, there are specific approaches that are more relevant than others depending on parcel size. Larger development sites allow projects with more product mix, such as residential, commercial, and community uses. Larger sites allow different uses to be mixed horizontally. Smaller “infill” sites offer less opportunity for horizontal mix, although vertical mixing of housing or office over ground-floor shops is possible.

The ideal TOD site is part of a connected street grid comprised of walkable blocks. Larger parcels, typically associated with more suburban sites can be adopted to support TOD by breaking up larger parcels into a smaller development sites. This is a proven strategy for creating successful TOD on larger parcels and can be part of a strategy to create a unique sense of place where none existed before.

4 HOW TO SUCCESSFULLY BUILD TOD

DEVELOPMENT CHALLENGES TO TOD

There are many positives to developing TOD, but developers should also be aware of some of the challenges to building and developing TOD. While they are becoming more common, there are structural impediments to financing mixed-use development. Most banks and investors are risk-averse and are more familiar with more-common auto-centric patterns of development. Banks may not be familiar with TOD and may be able to finance a single structure with both residential and commercial uses. As a condition of financing, they may require developers to apply higher parking requirements than are necessary for TOD.

TOD is experienced differently than more common highway style development, because TOD is focused on the public realm and around a walkable environment design of buildings. Details such as an active streetscape and interesting corners are much more important in TOD than developers may be accustomed to.

Because TOD by definition must be walkable to transit, there may be more competition for desirable development parcels. In areas with more intense development requiring larger parcels, assembly of smaller parcels over time may be required. Assemblages will need to be accounted for in development schedules and will require a longer-term outlook than some developers may be accustomed to.

While TOD may require less parking per occupant, higher density TOD may require structured parking, which may increase the cost of development or create design challenges that require parking to be screened from view from the street.

Finally, TOD is associated with densities relatively higher than the surrounding non-TOD neighborhoods. These neighbors often oppose relatively higher density development as their first response to news of TOD. Getting these stakeholders to support development may require additional outreach and engagement than a more typical lower density development would.

TOD LESSONS LEARNED

What does it take to develop successful transit-oriented development? The following principles encapsulate basic market-based essentials for TOD, based on lessons learned. These lessons learned are meant to be a reference for property owners who may be considering TOD opportunities, or developers who have made a commitment to TOD and want to enjoy higher returns and minimize risks.

This section will discuss the following Lessons Learned for building TOD:

1. **Advance a Shared Vision**
2. **Form Partnerships**
3. **Leverage Incentives**
4. **Tailor TOD to Market Demands**
5. **Respect the Neighborhood Context**
6. **Create a Great Public Realm**
7. **Maximize Development**
8. **Program a Mix of Uses**
9. **Be Flexible in Identifying Sites for TOD**



The Market Common at Clarendon was completed after almost a decade of collective visioning between Arlington County and the local community.

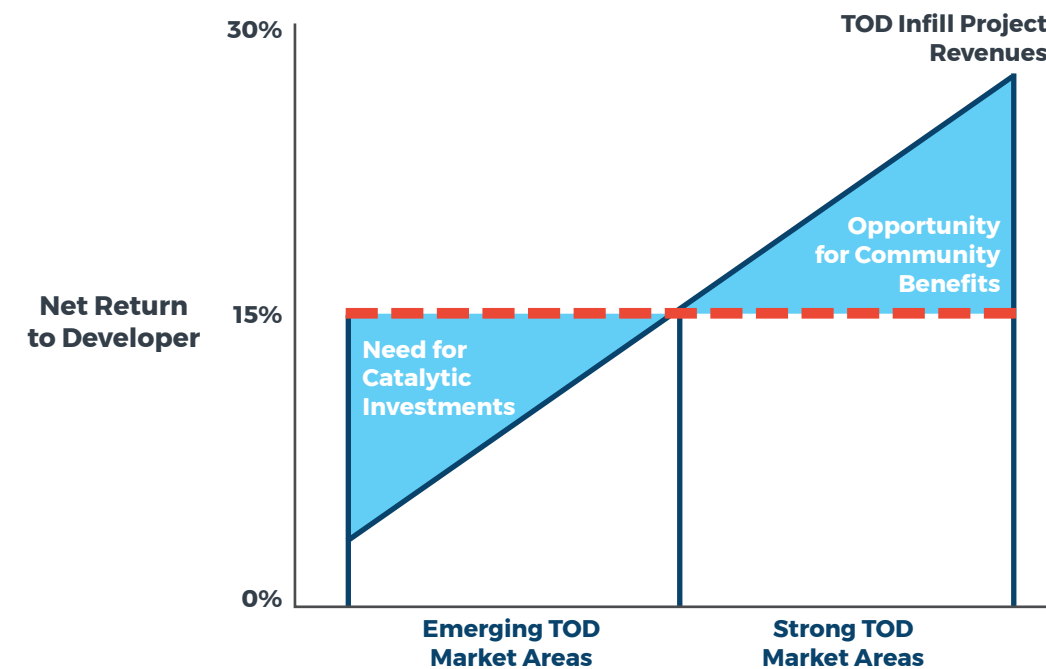
Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

ADVANCE A SHARED VISION

Experience has shown that plans for TOD can require persistence and perspective. Often, governments play a vital role in initiating a vision for TOD and its benefits, but developers serve as catalysts for advancing the shared vision to make it real. This is especially true when a developer controls a site large enough to serve as a catalyst by changing perceptions of what's possible is ambitious.

In suburban areas, transit-oriented development means the transformation of low density sites to more compact, integrated, and intentional patterns of development. In suburban Arlington County, Virginia, market success of transit-oriented development was preceded by long-range planning that set the stage for TOD followed by a developer's engagement of community and financial stakeholders.

Real Estate Market Needs and TOD Investment Needs¹



¹ <http://ctod.org/pdfs/2008MTCFinancingTOD.pdf>

Arlington's Clarendon Market Common redeveloped a vacant suburban shopping center that was flagged by the local government as an opportunity but required a developer to seize the opportunity and work through community concerns while simultaneously satisfying programmatic goals and design requirements of financial investors. After Market Common's success, the community's long-range vision embraced even higher density near transit, which paved the way for more infill projects.

In urban areas, transit-oriented development means shifting perspectives about areas that have been passed over after years of neglect. In East Austin Texas, where a changing economy led to a decline of industrial uses and general disinvestment, support for mixed-use redevelopment coalesced around a bold vision for the neighborhood.



Virginia Commonwealth University reoriented itself along the BRT corridor to make way for TOD to frame the corridor.

Source: Beyond DC (CC BY-NC 2.0), <https://www.flickr.com/photos/beyonddc/29494657217/in/album-72157624088413711/>

The City of Austin and Metro Austin came together to redevelop an abandoned railyard (East Austin's largest opportunity site) based on a long-range vision with community buy-in for the larger district. Developer commitment to the railyard site was accompanied by commitments by several other developers on nearby sites – and yielded the creation of a dynamic mixed-use urban district.

For institutions like universities and medical centers, transit-oriented development offers an opportunity to develop a more cohesive campus and more recognizable identity. As institutions grow, TODs can serve as gateways, both physical and symbolic, as transit stations are regional arrival points where development by institutions can announce their presence. This was done in Richmond Virginia, where Virginia Commonwealth University reoriented its campus away from the main road to frame the road with new BRT and create a new mixed-use boulevard.



Cleveland State University has a dedicated Healthline BRT stop, and encourages students to utilize its service to reach destinations throughout the corridor.

Source: Cleveland State University, <https://www.csuohio.edu/sustainability/transportation>

In Cleveland Ohio, the Cleveland Clinic medical center and Cleveland State University took advantage of a similar opportunity to orient their institution's growth toward BRT stations. Complementary growth followed, as research & development companies, residential developers, retailers, and hoteliers recognized synergies with these institutions and located to form more complete urban districts.

FORM PARTNERSHIPS

Public-private partnerships can be used to enhance project feasibility and attain higher levels of community benefits. As a vision is developed, it can be used as a vehicle for aligning necessary actions among agencies and other partners. A successful partnership plays to the strengths and abilities of each member. Private developers bring investment capital and know-how, attend to consumer demographics and preferences, and call out market-based "bottom lines." Public partners oversee regulatory decisions and organize infrastructure investments.

Where the effects from community requirements on development feasibility are unclear, the community can retain a trusted real estate market expert to guide decisions, and a developer can offer to reimburse the community for such work. For example, Berkeley California adopted affordable housing requirements but community members were reluctant to allow buildings over 10-stories in height. An economic analysis by an independent consultant explained the effects of building height on development feasibility, such that community decision makers decided to allow taller buildings so that development with affordable housing would be feasible.

Non-profit organizations also play a role to develop affordable projects within TOD, as well as promote job training and small business development. In Minneapolis-Saint Paul, Minnesota, a partnership of philanthropic organizations was formed to promote affordable housing and equitable economic development along the region's principal transit corridors. With funding from the regional government, the partnership facilitated land acquisition to develop low-income housing, support job training, and assist local entrepreneurs.

LEVERAGE INCENTIVES

Public agencies can agree to fund public improvements and other public benefits, and pay for them using taxes or fees on development after it occurs, using "value capture financing" to reduce developers' upfront cost burden. In Atlanta, Georgia, value-capture financing was employed for environmental remediation of TOD opportunity sites and to fund TOD infrastructure improvements. In Denver, Colorado, value capture financing was used for the historic restoration of Union Station and for redevelopment of surrounding land by assembling parcels and constructing infrastructure.

TAILOR TOD TO MARKET DEMAND

Because return on investment is essential for developer participation, TOD needs to be adapted to reflect market demand, parcel control, and construction cost realities. In this respect, TOD opportunities are not all equal. In some locations, market demand is high enough for a project to accommodate every aspiration a developer and community may have as far as densities, open space, development impact fees, and other community contributions.

Charlotte, North Carolina, has experienced considerable market driven investment along its LYNX light rail transit network. A case in point is Charlotte's South End district, where incremental infill development has transformed an underutilized commercial area into an urban center. Initially, residential development followed a low-rise garden- apartment format with surface parking. More recent development includes a mid-rise mixed-use development complete with on-site amenities, structured parking, and 120-foot-tall residential towers. Project densities have risen as developer confidence in the area has grown, demonstrating the importance of understanding and building to meet market demand.

In Kansas City Missouri, the market for TOD has followed the region's investments in rapid bus and light rail transit. In the historic River Market district, high density infill projects are evidence of the investment value that can be achieved by respecting the local context and market. Marketing materials for 531 Grand and boast of views of Kansas City's downtown skyline, and close proximity to the City Market's restaurants, bars and stores - seemingly marketed to attract young professionals and empty-nester tenants who are increasingly increasing their transit use.

While market demand is high enough to drive development in many areas, other areas may have insufficient market demand to make development feasible unless project costs are contained.

RESPECT THE NEIGHBORHOOD CONTEXT

One size does not fit all. While there are common design principles for TOD, successful TOD design is project specific - responding to market demands but also considering the physical context for the development. In many places, TOD will be constructed in a station area that is undergoing change with the arrival of transit, meaning current and future conditions may not be the same. The mix of uses, building scale and detailing, pedestrian routes to and from the project, and the location and character of open space and parks near the proposed TOD should be considered and influence the design of the TOD project. Since TOD is typically denser than areas further from the station, transitioning from a higher to lower density context can be an especially important strategy to maintain the character of existing neighborhoods and reassure current residents that their concerns are heard.



To better integrate the development into the surrounding low-density neighborhood, Townhomes at the edge of the development were designed to face the street similar to the existing single family homes across the street to maintain the neighborhood fabric.

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

An example of this is the Clarendon Market Common. The project faces a busy retail street, but its adjacent neighbors on the side and rear of the project are residential neighborhoods of single-family detached homes. Retail uses are oriented to the commercial street with mid-rise residential towers above. A zone of townhouse scaled heights and densities transition from the mid-rise towers to the single-family homes. The townhouses face landscaped mews that connect the mixed-use core of the development to the adjacent neighborhood. These rows of townhouses are capped with an end unit that faces the single-family homes across the street, mimicking the scale and density of the homes.



Arlington County and the community believed it was critical to have a great public realm at the center of the Market Commons that anchors the development and provides a quality open space.

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

CREATE A GREAT PUBLIC REALM

Transit-oriented development works – and sells best when it makes a great place. Most TODs feature residential products with less private open space than single-family homes or even garden apartments. Meaningful and usable open space such as parks and even sidewalks, and the design of them, take on greater importance than in traditional suburban development. With TOD development, street activation is crucial. Transit-oriented development relies on the quality of the pedestrian experience for success, and it is not enough to bring together a mix of uses together near transit, if people don't want to walk.

Street connections and infrastructure conditions to and from the transit station are also critical for TOD success. Recognizing this, Florida's Department of Transportation (FDOT) developed a handbook of "Transit and Complete Streets Practices." A context classification system provides a framework for arriving at complete streets solutions that are appropriate to local context and linking the reader to best practices for street design.

The better the pedestrian experience along streets and paths, the more successful the TOD in meeting buyer expectation for walkable communities. Paths next to walls or parking lots can feel alienating, so parking can be placed behind or under buildings instead. Paths lined by storefronts or other active uses attract more activity and have windows that put "eyes on the street."

In Clarendon Market Commons, retail storefronts and residential mid-rise buildings are focused around a central, publicly accessible open space. This "green" is programmed with passive and active spaces; hard and soft surfaces to allow for varied programming and uses. A children's playground attracts both residents and visitors to create a true gathering place for the community at the heart of this TOD.^{1 2}

MAXIMIZE DEVELOPMENT

Meeting targets for financial returns means optimizing development yield within the physical and financial limits imposed by zoning regulations and building codes. Many TOD apartment buildings are the maximum height allowable when using less expensive wood frame construction: four stories of wood frame construction, and five stories with fire-resistive wood or steel studs. Often this less expensive form of residential construction is placed above a first floor with concrete construction (sometimes called a "concrete podium"). A concrete podium in buildings with vertical mixed-use are often accompanied by ground-floor shops that face the street and a parking garage or parking structure midblock.

¹ <https://grandboulevard.net/projects/multi-modal-corridor-plan>

² https://www.fdot.gov/docs/default-source/transit/documents/FDOTCO_ANationalSynthesisofTransit-inCompleteStreets_FinalReport_20180508.pdf



Block A of Plaza Saltillo includes a concrete podium that integrates a grocery store and parking under the residential portion of the building.

Source: <https://jhparch.com/projects/plaza-salttillo>

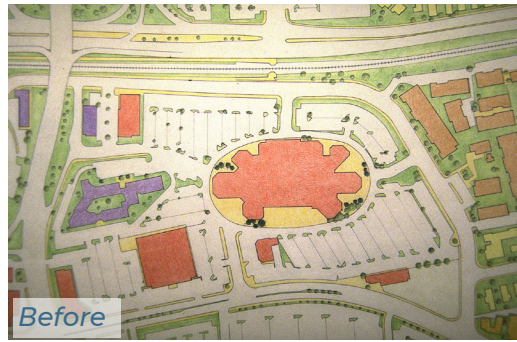
The case studies featured illustrate this point. In East Austin Texas, residential apartments are built above a concrete podium used to line the principal street with storefronts while placing access to parking garages and service/loading areas on side streets; similar construction is used at the Clarendon Market Common. Costs associated with vertical mixed-use can be reduced if the parking structure stands separate from the residential building, such as wrapping residential wood-frame construction around a midblock parking structure. Residential projects may exceed heights permitted than if less expensive residential construction is used, but taller buildings must then rely on more expensive concrete and steel-frame construction – and are generally reserved for project locations where higher rates of return can justify higher construction costs.

Development intensities can also be increased by right-sizing on-site parking to reflect TOD parking demand. People who want to drive less are especially interested in TOD, and TODs are associated with lower parking rates and fewer vehicle miles driven. Less parking means lower construction costs (especially when parking is below grade or in a parking structure), or more development for the same amount of parking, which can be pivotal for development feasibility. Right-sized parking can provide more physical space and financial capacity, which can make a marginal project feasible or deliver more community benefits.

Because TODs offer convenient alternatives to the car, developers and municipalities can work to make parking more efficient with implications for developer costs and yields. Urban Land Institute’s “Shared Parking” was first published in the 1990s and explains how to accurately estimate the parking demand for projects with a mix of land uses. Since parking demand for particular uses vary by time-of-day, some parking spaces can be shared and a project’s overall amount of parking can be less.

PROGRAM A MIX OF USES

A successful TOD district will contain a mix of uses. For the developer, portfolio diversification makes for good investments, and land use diversification makes for more vibrant TODs. People from every part of the economic spectrum like to live near transit and local destinations, and employers recognize that business locations with urban amenities can attract more qualified employees. Different housing types will appeal to people at different stages of their life and different incomes. By diversifying real estate products, developers can appeal to multiple market segments simultaneously, which allows for faster market absorption and greater resilience if a specific market softens.



"The Crossing" replaced the aging Old Mill Shopping Center, bringing a diverse range of housing options next to a commuter rail station, including single-family units built for Phase 1.

Source: Calthorpe Associates

In Mountain View California, an aging shopping center with commuter rail access, was redeveloped as a high-density residential neighborhood with diverse product types called "the Crossing." Because of an economic downturn, the first residential product built and sold were detached single-family homes on small lots. Attached single-family townhouses were next in line. By the time single-family products had sold, the real estate market for multi-family apartments had returned, and this product type was built in the project's final phase.

Market success also depends on the right mix of uses. TOD offers flexibility for projects that are more-or-less residential, office, retail, or other use. Within each TOD, the proportion of each use will vary depending on local market and demographic factors. Also recognize that it's often important to mix uses horizontally. Even if they are mixed, different land uses and different real estate products may need to be designed, financed, and constructed separately.



BE FLEXIBLE IN IDENTIFYING SITES FOR TOD

Sites that are appropriate for TOD may be limited. To support TOD, a parcel must be within walking distance to transit. Greenfield sites unencumbered by existing development will be limited. Many parcels within the station areas will already be developed but with access to transit and may now be primed to be redeveloped to higher densities and better uses.

Another strategy is to redevelop surface parking lots with TOD. Auto-centric development comes with large parking requirements, almost always provided in surface parking lots. The reduced parking requirements for TOD may allow for surface lots to be redeveloped, or the higher values associated with TOD may justify replacing surface parking with structured parking, freeing up land for TOD. It may be possible to keep existing uses and still develop a portion of a parcel for TOD.

In Tysons, VA, many of the parcels being developed for TOD contain existing uses that will remain, and it is the surface parking lots that are being redeveloped as TOD. As part of the entitlement and approvals process, developers are allowed to reduce parking requirements over time. This recognizes that it may take time to shift the preferred travel mode from single occupant vehicles to transit; that in the short term, lease agreements often require property owners to provide minimum parking ratios that exceed the lower levels associated with TOD and that lenders may have their own parking requirements that developers must meet as a condition of getting financing.

While smaller sites can support TOD, larger sites may offer the potential for an anchor development with a greater mix of uses. In many of the station areas, large parcels under single ownership may not be available meaning development parcels will need to be assembled from smaller parcels. This may be challenging, as it will extend development schedules, making it more difficult to time development to meet market demands and adding another level of uncertainty to the project.

There may be opportunities for the City of Raleigh, the public, and land owners to assess areas along the corridors where the assemblage of smaller parcels into a larger site could facilitate and achieve TOD visions. Transit agencies and municipalities can acquire land, assemble small parcels, and make those sites available for development through public-private joint development activities. Development projects may depend on infrastructure, parks, or other public investments for which a developer can't afford up front. In places where return-on-investment makes projects too risky, municipalities can increase development activity by working with land owners and developers to reduce upfront costs or defer development fees.

5 CASE STUDIES

This chapter will dive into a few examples of built TODs across the country that were successfully implemented for a variety of reasons. As the previous chapter discussed the principles necessary for how to successfully build TOD, this chapter provides real-world examples of these principles being applied in relatively similar markets to that of Raleigh, and in particular the Western Corridor. The case studies presented in this chapter provide some lessons learned for how those interested in developing TOD:

- Incorporating Affordable Housing, Public Space, and Retail Critical to neighborhoods such as grocery stores.
- Unique ways of consolidating parking and screening it from the public right of ways.
- The Importance of a Collective Vision and Working with communities to ensure the retail options reflect local needs, such as incorporating a grocery store
- Leveraging Design Guidelines to manage the potential conflict between higher density TODs and surrounding lower-density neighborhoods by diversifying the real estate product and tapering building heights
- Collaboration with local institutions for more integrated TODs.

SALTILLO RAILYARD REDEVELOPMENT - AUSTIN, TX



Source: <https://www.endeavor-re.com/properties/salttillo-retail/>

Project data

- Site area: 10 acres
- Residential Units: 800
- Affordable Units (%): 15%
- Retail Gross Leasable Area (SF): 110,000
- Office Gross Leasable Area (SF): 150,000
- Landscaped or Open Spaces: 1 acre

GENERAL STUDY

Saltillo is a 6-block 10-acre project that has contributed to the urban renaissance of the East Austin district, where vacant and underutilized land is being transformed into a vibrant urban district. Principally through redevelopment and adaptive re-use of industrial properties, East Austin now features a vibrant mix of residences, businesses, restaurants, and retail, connected by streets lined by building fronts.

The Saltillo site has served as a catalyst for public and private interest in making East Austin more urban and transit-oriented. Named after Austin's sister city, Saltillo, Mexico, the site's potential as a larger opportunity in an Emerging Urban Center was recognized by decision-makers early on. Austin's transit agency, Capital Metro, acquired the abandoned railyard in 1995 as it acquired rights-of-way for a regional Light Rail Transit (LRT) system. Since then, the Saltillo railyard site has been remade and has served as a catalyst for remarkable transformation and intensification of East Austin.



Looking west to Downtown Austin, the former railyard lays underutilized years before development was set to begin

Source: Andrea Calo, <https://austin.curbed.com/2018/9/19/17861438/plaza-salttillo-neighborhood-development>

PUBLIC-PRIVATE PARTNERSHIP

Public decision-makers used the site acquisition to promote a transit-oriented vision for the Saltillo site and surrounding area. In 2006, shortly after voters authorized funding for MetroRail construction, Capital Metro and the City of Austin hired a consultant team to develop a master plan for the former railyard site. As the master plan of the former railyard site progressed, the City of Austin worked with community members and stakeholders to develop the Saltillo Station Area Plan for an area about four times as large as the Saltillo redevelopment area.

In 2010, the MetroRail Red Line began operations with a station at Plaza Saltillo on the northeast corner of the redevelopment site. The station's opening was accompanied by the creation of a community activity center comprised of a renovated historic depot and new public plaza.

In the decade after the Red Line opened and with the adoption of the Saltillo Station Area Plan, private investment flowed into the area. In 2013, a request for proposals for developers was issued with four principal goals:

1. Increase transit ridership,
2. Generate long-term revenue and optimize value of assets,
3. Create and promote equitable mixed-use and mixed-income communities around transit, and
4. Respond to the community's vision and values.

PLANNING AND DESIGN

The Station Area Plan was adopted in 2008 and accompanied by a "Regulating Plan," a zoning overlay district with development parameters, which included an inclusionary requirement for affordable housing.

The Endeavor Real Estate Group was selected by Capital Metro and, in 2016, they entered into a master development agreement with a 101-year land lease. The agreement was soon revisited, however, as Endeavor sought a height exception for a seven-story office tower to be leased by Google, which Austin's City Council conditioned upon Endeavor's payment of \$600,000 into the City's affordable housing fund.



The Saltillo site plan highlights the connection to transit and the core anchor tenants that serve the neighborhood.

Source: <http://www.plazasalttillo.com/construction-updates/>

The 6-block 10-acre Saltillo project is remarkable for its mix of land uses within an urban format. The project contains:

- 800 apartments (15% affordable to households with the area's Family Median Income),
- A 7-story office tower (totaling 150,000 square feet),
- A Whole Foods grocery store (35,000 square feet),
- A Target department store with CVS Pharmacy,
- A health club,
- Small shops and restaurants, and
- A small park and pedestrian paseos.

East 5th Street connects the north edge of all blocks in the project and extends to the Plaza Saltillo MetroRail station. East 5th Street is the main address for the project's retail and restaurants, except that Whole Foods also faces the Interstate 35 frontage road along the project's west edge for access and visibility. On the ground-floor, parking garages are located behind shops, except where the Whole Foods and Target require more floor area. Parking garage entrances and service zones are situated on cross streets that extend into the site.



An 8-story office tower sits above an urban-Target, providing a strong tenant & ridership base

Source: <https://www.endeavor-re.com/properties/salttillo-retail/>

Residential uses extend four stories above ground-floor shops. This vertical arrangement maximizes Type V wood-frame residential under most building codes and avoids higher constructions per-square-foot costs associated with more than four floors of residential use.

The Saltillo project also features mobility infrastructure and programs. The project features walkable access to the Plaza Saltillo MetroRail station, placing it within minutes of downtown Austin, its convention center, and other regional destinations. The project features reserved car-sharing spaces, bike sharing, secure bicycle parking, electric vehicle charging stations, as well as on-site parking.

FINANCIAL FEASIBILITY

The 10-acre Saltillo project could only be attained after careful proforma financial analysis by Endeavor Real Estate Group of potential project income and costs, and negotiation of terms with Capital Metro based on such analysis. While this type of financial analysis would be proprietary, it probably covered a similar methodology as the financial report contained within the Saltillo Station Area Plan.

The Saltillo Station Area Plan was accompanied by a financial analysis by real estate economists that examined proposed land uses from a product market feasibility standpoint. The Station Area's ability to attract Austin's "creative class" was viewed as critical for demand for urban-style housing and employment space, within a walkable diverse neighborhood with cultural, commercial, and recreational destinations.

The analysis examined market demand for potential TOD uses, as reflected in comparable sale prices and lease rates. The analysis also considered if the cost of new transit-oriented development, including land, construction, parking, and financing would allow developers to make a profit based on market sales prices and level of demand. Finally, the analysis considered the capacity of development to support investments in new public infrastructure, streetscape, open space improvements, and affordable housing, while maintaining market feasibility.

The financial analysis determined that TOD projects would have higher construction costs than less dense projects, and that higher yields and public actions might be needed to enhance the feasibility of TOD projects. Specifically, the Station Area Plan recommended:

- Allowing denser TODs to stimulate developer interest,
- Parking districts or other solutions to reduce or share the high-cost of structured parking, and
- Assembling small parcels into larger development sites such as through direct public action.



The Plaza Saltillo Station Plan, drafted in 2008, was implemented in 2013.

Source: Larry D. Moore, CC BY-SA 3.0. https://commons.wikimedia.org/wiki/File:Plaza_saltillo_station_2012.jpg

A principal challenge cited by the financial analysis is that, where market support for development is less strong, TODs may require high density for financial feasibility. Consequently, conditioning high-density development on the provision of affordable housing may be a disincentive for private developer participation, in the absence of financial incentives. The capacity of TOD to support affordable housing or other costs – while remaining feasible – may merit consideration as it depends on a variety of factors.

PUBLIC IMPROVEMENTS

For the Saltillo Station Area Plan, the financial feasibility analysis determined that most promising potential source of funding for public improvements was Tax Increment Finance (TIF). TIF uses the additional increase in property taxes resulting from new development, which does not increase taxes for existing property owners. Other potential public finance sources included developer impact fees, a public improvements funding district, and Federal and State grants.

CLARENDON MARKET COMMON - ARLINGTON, VA



Source: <https://www.mccafferyinc.com/portfolio/market-common%C2%AE-clarendon>

Project data

- Site area: 9.4 acres
- Townhome Units: 87
- Multi-Family Units: 300
- Retail Gross Leasable Area (SF): 240,000
- Office Gross Leasable Area (SF): 100,000
- Parking Spaces: 1200
- Open Space: .5 acres

GENERAL STUDY

Clarendon Market Common is located on 10 acres in the Clarendon neighborhood of Arlington, Virginia, on a major bus corridor and just one block away from a Washington Area Metro Station. Clarendon Market Common illustrates how to transform an aging suburban retail center – with big box and surface parking – into a new neighborhood with welcoming walking environments framed by multi-story mixed-use buildings.

In 1994, site conditions were described as “amorphous,” as 60% of the site was asphalt. Today, the centerpiece of the project is a linear park surrounded by 240,000 square feet of prime retail, including prominent national retailers such as Pottery Barn, Williams-Sonoma, Barnes & Noble, and Apple Computer. Market Common also includes 300 apartments, 87 townhomes, and 100,000 square feet of office space.



To better integrate the development into the surrounding neighborhood, townhomes were used to taper the density down into the existing residential area

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

PUBLIC RECOGNITION OF OPPORTUNITY

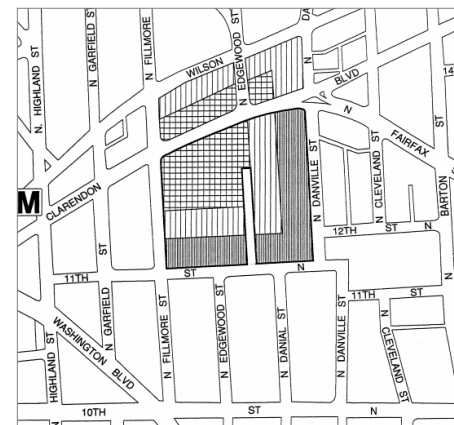
Clarendon Market Common opened in 2001 and was developed by McCaffery Interests. The project came about through a decision-making process that involved Arlington County officials, Clarendon community members, and the developer. In 1994, Arlington County adopted the East Clarendon Special Coordinated Mixed Use District Plan for the project site, which had been vacated in 1993 by Sears Roebuck.

This Plan described the desired future character as an urban village and contained urban design options, one of which suggested retail along Clarendon Boulevard and extending into the site. The 1994 Plan also indicated building heights up to 80 feet in the northwest corner of the site – closest to the Metro station – stepping to only 35 feet along the eastern and southern edges near single-family homes.



An aerial view of the Market Commons and surrounding context (2020)

Source: google maps (2020)



One of the key successes from the development was the developer leaning into the planning work and incorporating urban design recommendations from the Clarendon Mixed Use District Plan. The map above demonstrated the transition from the more dense mixed-use core of the site down into a more traditional, lower density residential area.

Source: East Clarendon Special Coordinated Mixed Use District Plan (1994)

INNOVATION WITHIN A SHARED VISION

In acquiring the Sear Roebuck site, McCaffery Interests recognized the market support for retail and residential based on the area's demographics, and the advantage that placemaking can bring to retail destinations. A narrow linear park was introduced to provide urban amenities and allow views to penetrate from Clarendon Boulevard. The master plan emphasizes pedestrians' experience with intimate public gathering spaces.

The site's dominant building steps back from the area's main intersection to frame a crescent-shaped plaza with an outdoor restaurant and public art, which is clearly visible from the public streets converging on the site. At the same time, McCaffery worked within the community-driven vision in the 1994 Plan, such as to use low-rise townhomes as a transition between the project's mid-rise core and single-family areas.

PARTICIPATING IN A VISION

Regional transit and the Market Commons project have served as a catalyst for further change within the larger Clarendon Metro Station Area, which covers about 212 acres. In 2006, the City of Arlington Virginia adopted the Clarendon Sector Plan, which extended the “urban village concept” for Market Common throughout the station area. The center of the urban village concept is to promote high-quality public environments with connected spaces and a rich mix of uses and a sense of place. The policies and strategies in the Sector Plan build on concepts presented in previous County plans to concentrate a mix of uses around each Metro station with active ground-floor uses, upper-story uses, and lower heights closer to surrounding residential neighborhoods.

Even when Arlington Virginia was characterized by auto-oriented suburban development, it was an early adopter of transit-oriented principles as Washington Area’s Metro transit system was being planned in the 1970s. Arlington would eventually explore alternatives to create more dynamic Metro station areas by guiding land use and density patterns toward mixed-use development to avoid creating places with solely office uses and little evening and weekend, and take advantage of market demand for high-density residential formats. The first Clarendon Sector Plan was adopted in 1984, which mediated between a desire for higher density near transit and protecting the character of residential neighborhoods and historic resources.

CAMPUS TOD, VIRGINIA COMMONWEALTH UNIVERSITY (VCU) AND MEDICAL CENTER

BRT BOULEVARD AS CAMPUS ADDRESS

VCU and VCU Health System is a public education and research university, and a major health center dedicated to advancing knowledge and partnerships that support the community. VCU has an urban campus that is integrated with central Richmond’s gridiron street network. In the 20th century, the VCU campus grew around the main open space in the area, Monroe Park, and campus growth largely passed over the Broad Street, which experienced disinvestment. As planning of The Pulse BRT occurred, VCU reoriented its campus plan to build sizable institutional and mixed-use buildings along West Broad Street, thereby creating a recognizable walkable transit-oriented urban boulevard from a previously neglected underutilized auto-dominated corridor.

› Sports & Entertainment Node

VCU’s growth along West Broad Street has taken advantage of its visibility and transit access, with uses that serve the community. VCU chose West Broad Street as the location of Siegel Center, an indoor arena with 7,500 seats that hosts VCU sport events, along with concerts and other performances. VCU’s sports medicine clinic is located adjacent to Siegel Center. Across Broad Street from the Siegel Center and adjacent to the VCU BRT station, VCU constructed a mobility hub that includes a visitor center, parking garage, and retail space.

› Infill Housing

VCU has also built several blocks of housing that frames West Broad Street. Most, but not all, VCU development has lined streets with active ground-floor space, including retail shops and building lobbies. Exceptions to more active space include blank walls and ground floor residential units, which are unfortunate interruptions in otherwise continuous pedestrian-oriented routes, and might have been mitigated with landscaped setbacks or architectural solutions.



VCU and surrounding institutions are leveraging the BRT to activate the corridor with mixed-use and institutional developments framing the streets.

Source: <https://ggwash.org/view/69056/xx-photos-of-richmonds-new-brt>

› Creative Arts and Community Focus

VCU is also refocusing its creative arts programs to be part of Richmond's emerging Arts District, east of VCU's historic campus with development of the Institute for Contemporary Arts Center and a planned new Arts and Innovation Building that supports academic programs and community engagement. VCU's master plan proposes continued development of programmatic synergies to connect with The Pulse and serve as a new "front door" to the east edge of its campus.

› Medical Center and Biotechnology

The Pulse plays a vital role in connecting VCU's main campus with its Medical Center campus in downtown Richmond, as well as the Virginia Biotechnology Research Park with which VCU is affiliated. With over a half million outpatient visits each year, VCU Medical Center includes an adult and children's hospital comprised of research, clinical, administrative, and support services. The Virginia Biotechnology Research Park houses nearly 70 public and private life sciences companies, research institutes affiliated with VCU, and prominent medical laboratories.

› Transit Pass Program

In 2019, VCU and GRTC entered into an agreement to provide unlimited transit pass access for VCU students and employees. The transit pass program was first tested as a pilot program, during which it was determined to be highly effective at shifting students and employees out of private vehicles in onto The Pulse and other GRTC service. The program has effectively "closed the distance" between VCU's main campus, its Medical Center, a variety of destinations, and housing options. By shifting demand from private vehicles to transit, the transit pass program has also reduced pressures to build expensive new parking garages.



Developments like The Summit are filling in neighborhoods, bringing housing units and redefining the neighborhood grid.

Source: <https://thesummitrva.com/>

RICHMOND INFILL

› Incremental Infill

Development along The Pulse includes construction on West Broad Street in Richmond's Scott's Addition neighborhood, and adjacent to BRT station. Scott's Addition is among Richmond's fastest growing neighborhoods, with high walk scores and mix of housing, shops, and restaurants. "The Summit at Scott's Addition," a 6-story 166-unit apartment building, includes 8,500 square feet of ground-floor retail with parking behind the retail space and below the project. The developer describes Scott's Addition as ideal given the area's walkability, and opportunities to live, work and play in the area.^{1 2}

¹ <https://richmondbizsense.com/2018/06/07/6-story-mixed-use-building-eyed-scotts-addition/#djPop>

² <https://thesummitrva.com/>

CONCLUSION

As the 20-mile BRT system connects Wake County communities, it is critical for both public and private investments to consider principles outlined in the ETOD Guidebook to promote more sustainable and equitable growth. This TOD Precedent book serves as a companion to the ETOD Guidebook, providing additional context and lessons learned for those interested in pursuing development opportunities along the planned BRT Corridors.

In addition, case studies in this book also help land owners and developers to better understand how TOD can be successfully built by illustrating what types of TOD are appropriate in which contexts, the ways in which the City and interested parties can collaborate, and how to integrate new development into and reflect the needs of the communities near the corridor. As the BRT corridors realize their potential to be conduits of economic and community activity, it is important that public and private parties work together to build successful and equitable TODs that connect communities to economic, social, and recreational opportunities, health services, and to each other.