

Technical Report Documentation Page

| | | | | | |
|---|--|--|--|---|--|
| 1. Report No. SWUTC/14/600451-00047-1 | | 2. Government Accession No. | | 3. Recipient's Catalog No. | |
| 4. Title and Subtitle The Effect of the City of Houston Transit Corridor Ordinance on Development along METRO's Light Rail Corridors | | | | 5. Report Date October 2014 | |
| | | | | 6. Performing Organization Code | |
| 7. Author(s) Walter Hassell, Carol Abel Lewis, Ph.D. and Jennifer Auzenne | | | | 8. Performing Organization Report No. Report 600451-00047-1 | |
| 9. Performing Organization Name and Address Center for Transportation Training and Research Texas Southern University 3100 Cleburne Houston, Texas 77004 | | | | 10. Work Unit No. (TRAIS) | |
| | | | | 11. Contract or Grant No. DTRT12-G-UTC06 | |
| 12. Sponsoring Agency Name and Address Southwest Region University Transportation Center Texas A&M Transportation Institute Texas A&M University System College Station, Texas 77843-3135 | | | | 13. Type of Report and Period Covered | |
| | | | | 14. Sponsoring Agency Code | |
| 15. Supplementary Notes Supported by a grant from the U.S. Department of Transportation, University Transportation Centers Program. | | | | | |
| 16. Abstract <p>Many cities are moving toward more compact, transit friendly development. Specifically when the focus of the development is the transit, the concept is considered transit friendly and termed transit supportive or transit oriented development. Typically rail stations or transit centers spawn medium to high density mixed-use developments, designed to promote walking, transit and bicycling in those areas.. It is common for cities to revise codes and guidelines to encourage transit friendly development. The City of Houston's development, public infrastructure and built environment are guided by the Chapter 42 Subdivision, Developments, and Platting Ordinance.</p> <p>In 2009 the City of Houston added a Transit Corridor Ordinance, a code in Chapter 42 to encourage an urban environment that improves pedestrian mobility, supports METRO's light rail investment, and helps accommodate the City's anticipated growth. This research examines developer response to the Transit Corridor Ordinance and determines which parcels owners have chosen to undertake design of elements within this code. Other agency TOD efforts, various developer rail station projects and best practices of public and private joint developments are also explored.</p> | | | | | |
| 17. Key Words Transit Supportive Development, City Policy and Transit Oriented Development | | | 18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161 | | |
| 19. Security Classif.(of this report) Unclassified | | 20. Security Classif.(of this page) Unclassified | | 21. No. of Pages 33 | |
| | | | | 22. Price | |

**The Effect of the City of Houston Transit Corridor Ordinance on
Development along METRO's Light Rail Corridors**

By

Carol Abel Lewis, Ph.D.

Walter Council, M.S.

Jennifer Auzenne

SWUTC Project #600451-00047

Project Title: The Effect of the City of Houston Transit Corridor Ordinance
on Development along METRO's Light Rail Corridors

Texas Southern University
3100 Cleburne
Houston, Texas

October 2014

Abstract

Many cities are moving toward more compact, transit friendly development. Specifically when the focus of the development is the transit, the concept is considered transit friendly and termed transit supportive or transit oriented development. Typically rail stations or transit centers spawn medium to high density mixed-use developments, designed to promote walking, transit and bicycling in those areas.. It is common for cities to revise codes and guidelines to encourage transit friendly development. The City of Houston's development, public infrastructure and built environment are guided by the Chapter 42 Subdivision, Developments, and Platting Ordinance.

In 2009 the City of Houston added a Transit Corridor Ordinance, a code in Chapter 42 to encourage an urban environment that improves pedestrian mobility, supports METRO's light rail investment, and helps accommodate the City's anticipated growth. This research examines developer response to the Transit Corridor Ordinance and determines which parcels owners have chosen to undertake design of elements within this code. Other agency TOD efforts, various developer rail station projects and best practices of public and private joint developments are also explored.

Disclaimer

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This document is disseminated under the sponsorship of the Southwest University Transportation Center and the Texas Transportation Institute, in the interest of information exchange.

Acknowledgments

The authors recognize that support for this research was provided by a grant from the U.S. Department of Transportation, University Transportation Centers Program to the Southwest Region University Transportation Center. We also thank Jennifer Ostlind, City of Houston Planning and Development for providing access to data and for guidance during this research.

Executive Summary

Across the United States, transit agencies strive to maximize station development potential along their rail lines, through joint or transit oriented developments. A variety of strategies are employed by transit and other public agencies to encourage development around their stations that enhance potential for mixed use, pedestrian and bicycle friendly communities. The Metropolitan Transit Authority (METRO) in Houston Texas began light rail operation with a 7.5 mile line called the Red Line. An additional 15.2 miles of track scheduled to be added will provide ample opportunity to optimize development surrounding new and existing stations. Purple and Green Lines will yield a total of 39 stations to METRO's light rail system. Hindrances in the previous city codes discouraged transit supportive developments, so in 2009 the City of Houston's Transit Corridor Ordinance (TCO, Ordinance No. 2009-762, Chapter 42 Article IV) was passed (City of Houston, n.d.). This transit favorable ordinance encourages an improved pedestrian mobility, supports METRO's light rail investment, and is projected to help accommodate the City's anticipated growth. This research examines developer response to the Transit Corridor Ordinance and determines which parcels owners have chosen to undertake design of elements within this code.

Steps undertaken in the conduct of this research include a literature review on transit oriented and supportive developments with particular focus on other cities' experience. An in-depth understanding was gained about Houston's regulation regarding transit friendly designs near light rail stations. Next, the study team gathered a list of properties positioned inside the geographical boundaries covered by the ordinance that were eligible for opting-in to the ordinance.

The report reflects techniques and strategies cities and transit agencies are applying to facilitate transit compatible development. There are some unique methods, but also similar patterns show across entities. Best management practices of achieving TODs are explored, as well. Developers have a plethora of incentives they can analyze in different markets to reduce the cost of these projects. Also, some communities have the advantage of a TOD bank that will ease the borrowing pressure for some developers.

The City of Houston and its Transit Corridor Ordinance provides for more transit supportive development to occur along METRO's rail lines. The ordinance enables properties to be built closer to the street and encourages improved landscaping and street furniture; it also facilitates relocation of parking and driveways, reducing interference with pedestrian flow. The call for the transparent wall at street level increases the ability to observe street occurrences, thereby increasing the safety of users. This work is designed to increase knowledge of existing conditions and set the framework for a potential future based on collaboration between the City of Houston, Houston METRO and future developers.

Table of Contents

| | |
|--|-----|
| Abstract | v |
| Disclaimer | vi |
| Acknowledgments..... | vi |
| Executive Summary | vii |
| Chapter 1. Introduction | 1 |
| Chapter 2. Design of Study | 3 |
| Chapter 3. Background | 5 |
| Chapter 4. The City of Houston’s Transit Corridor Ordinance (TCO)..... | 11 |
| Chapter 5. Summary | 15 |
| Works Cited | 21 |

List of Tables

| | |
|--|----|
| Table 1: Summary of Street Element and Design Distinctions | 12 |
| Table 2 Land Area of Transit Corridor Ordinance Parcels | 13 |
| Table 3: Properties That Opted into the TCO | 14 |

List of Figures

| | |
|---|----|
| Figure 1: Transit Corridor Ordinance Parcels..... | 16 |
| Figure 2: Red Line/South..... | 17 |
| Figure 3: Red Line/North..... | 18 |
| Figure 4: Green Line/East and Purple Line/Southeast..... | 19 |
| Figure 5: Fulton Gardens Apartments..... | 19 |
| Figure 6: Broadstone 3800..... | 20 |
| Figure 7: Vacant Properties in the Transit Corridor | 20 |

Chapter 1. Introduction

Many cities are moving toward more compact, transit friendly development. Specifically when the focus of the development is transit, the concept is considered transit friendly and termed transit supportive or transit oriented development. Typically rail stations or transit centers spawn medium to high density mixed-use developments, designed to promote walking, transit and bicycling in those areas (Transit Cooperative Research Program, 2002). It is common for cities to revise codes and guidelines to encourage transit friendly development. The City of Houston's development, public infrastructure and built environment are guided by the Chapter 42 Subdivision, Developments, and Platting Ordinance. There are a number of guidelines in Chapter 42 that are contradictory to the implementation of Transit Oriented Development (TODs) concepts. For example, typically on major arterials development must be set back 25 feet, which is not optimal pedestrian mobility or succinct with best practices of TOD design (Municode, 42-150d).

Recognizing hindrances in the codes discouraged transit conducive developments, in 2009 the City of Houston's Transit Corridor Ordinance (TCO, Ordinance No. 2009-762, Chapter 42 Article IV) came to fruition (City of Houston, n.d.). This transit favorable ordinance "is to encourage an urban environment that improves pedestrian mobility, supports METRO's light rail investment, and helps accommodate the City's anticipated growth" (City of Houston, n.d., p. 1).

Purpose of Study

The onset of the City of Houston's TCO has pushed forward Transit Oriented Development principles into a concrete policy initiative. An additional 15.2 miles of track to the city's 7.5 mile light rail system provides ample opportunity to optimize development surrounding new and existing stations. An extended Red Line, along with soon to be completed Purple and Green Lines will yield a total of 39 stations to METRO's light rail system. The purpose of this research is to examine developer response to the Transit Corridor Ordinance and determine which parcels owners have chosen to undertake design of elements within this code. Early recommendations for the TCO declared that stimulating a variety of transportation modes would be best, avoiding formulaic rules for land use and density, and instead allowing the market to chaperone these elements of TODs (City of Houston, 2009A). Likewise, this project aspires to educate and appeal to developers' understanding, so they will voluntarily opt-in, generating attractive green spaces, street level glass facades on mixed-use buildings, and a pedestrian and bicycle friendly infrastructure around METRO stations. With METRO and the City of Houston in mind, this document will examine an array of transit agencies' TOD efforts, various developer rail station projects, best practices of public and private joint developments, and incentives to encourage TODs.

Chapter 2. Design of Study

This research showcases steps to educate the public, specifically property owners and developers about the potential to utilize the Transit Corridor Ordinance. The forthcoming completion of several new METRO rail lines and stations is an ideal situation to galvanize stakeholders to the potential of the rules in Chapter 42, Article IV. The methodology employed should provide valuable feedback on the present and future development proximate to Houston's Metrorail.

Several steps led to the conduct and findings of this research. First a literature review occurred on transit oriented and supportive developments with particular focus on other cities' experience. An in-depth understanding was gained about Houston's regulation to steer transit friendly designs near light rail stations. Next, from the City of Houston Planning and Development Department, the study team gathered a list of properties positioned inside the TCO geographical boundaries that were eligible for opting-in to the ordinance. These properties were taking steps toward producing new buildings in this zone. The goal was to examine this sample and determine how many had opted-in to adhere to the guidelines of the TCO. We contacted different city personnel, which helped to identify the appropriate parcels. Maps were created to show opportunities for new TCO development.

A final step is to work with COH staff and meet with pre-determined property owners to determine current level of awareness about the guidelines of the TCO. Furthermore, we will measure the amount of knowledge and viewpoints with regards to the ordinance. Next, the study team will describe findings, pinpointing divergence between knowledge and applications, and build suggestions to enhance feedback. The work will be available via internet resources for greater community understanding.

Chapter 3. Background

Transit agencies worldwide apply a cadre of strategies to encourage development around their stations that enhance potential for mixed use, pedestrian and bicycle friendly communities. Joint developments, land use changes and incentives are offered to facilitate desirable transit supportive adjacent uses.

Transit Agencies' Joint Development and TOD Strategies

Across the United States, transit agencies have launched various campaigns to maximize station development potential along their particular rail systems, through Joint Developments. Joint development is composed of public-private partnerships (PPP) that reduce the community's cost of administering or building transportation networks, stations, or enhancements (Lewis et al., 2012). Typically Joint Developments occur on transit agency owned land, which can allow revenue accumulation from multiple year ground leases or from future land transactions (Reconnecting America, 2006). The developer benefits because the accessibility advantages of being near a transit station are capitalized into higher rents or greater occupancy (Cervero, 1992). Several agencies, including Houston METRO, LACMTA, and Washington Metropolitan Area Transit Authority (WMATA) mention revenue generation through joint developments, such as multi-year leases on significant land holdings sold to companies (METRO Harris County, TX, n.d.; Epstein, 2013; WMATA, 2013). This stream of revenue gives the public a return on investment and in some cases may abate property taxes (WMATA, 2013). Enhancement of ridership is noted in Houston METRO and Los Angeles County Metropolitan Authority (LACMTA) documents (METRO Harris County, TX, nd.; LACMTA, 2000). This is crucial to successful ventures, as more commercial and residential square footage could produce increased ridership totals and larger revenues from rail ticket receipts (Zhao, Das, and Larson, 2012). Some agencies' Joint Development documents feature procedures for request for proposals (RFPs), while others touch on how to deal with voluntarily presented station proposals (METRO Harris County, TX, n.d.; LACMTA, 2000; LACMTA, 2009). Both Houston and L.A. transit agencies offer grants to bolster TODs, but the latter is much more comprehensive. LACMTA allows qualified community based organizations to receive grants, on a scoring system that includes the actual plan, the communities impacted, problems that the plan will resolve, and how the proposals will alleviate those issues (LACMTA, 2012).

Joint developments give transit agencies an opportunity to actualize land use patterns with elements that correspond best with TODs. Promotion of meticulous station design along the rail corridors, that include parcels with denser development, a diverse mix of housing variety, green space of trees and shrubs, and a transportation infrastructure that lessens auto dependency is a common theme. LACMTA distinguished stations' typology in accordance to their locations, such as major urban center, neighborhood center, or regional/suburban center, which allows unique development in accordance to the focal point of that area (LACMTA, 2000). Houston METRO station design solicited local artists to design elements of each station in keeping with the proximate neighborhood. Metropolitan Atlanta Rapid Transit Authority (MARTA) showcases potential opportunities available to developers, by aggregating information on all 37 stations (MARTA, 2013). Facts such as the total number of jobs, office square footage, retail space, number of households, and population within a ½ mile of all the stations are presented (MARTA, 2013).

Developers

Developers have led the charge in creating viable TODs across the country. In Portland, the siting of the Oregon College of Oriental Medicine at a light rail station was designed to facilitate hundreds of students, faculty and staff (Peggy, 2011). It would include a 980 bed dorm, with ground floor retail, plus 1,000 bicycle spaces (Peggy, 2011). A developer in Atlanta was given an opportunity to overhaul a 119 acre site destined to become a multimodal hub for the city, to eventually include bus and rail (commuter, light, streetcar and high speed regional) (CityBizList, 2011). In Washington, DC developers established a mix of national retail chains, adjacent to hundreds of units of diverse housing options at decades old subway stations (CityBizList, 2011). Los Angeles has witnessed new developments near stations, including a transit adjacent development in Chinatown with affordable housing composing 20% of units (Bachrach, 2013A). Near the Hollywood and Vine Station in the city, two 30+ story buildings will highlight a development that features an observation deck, skatepark, car sharing system, and \$5 million dedicated to affordable housing (Bachrach, 2013B).

Not all corridors can tout TOD success. Los Angeles' Blue Line travels through lower income neighborhoods and industrial sectors (Loukaitou-Sideris & Banerjee, n.d.). Some local Los Angeles academicians have suggested TODs have stalled along the Blue Line for a host of reasons: middle income people dissuaded by negative preconceived cultural notions near these areas, developers discouraged thinking it is too expensive to build exclusively less than market rate housing, and considerable lack of support from local and state authorities (Loukaitou-Sideris & Banerjee, n.d.).

Best Practices of TOD and Joint Development

A collage of best management practices have been instituted in various locations, with regards to TODs and Joint Developments. A Puget Sound Regional Council forum contained speakers from a combination of state and federal level transportation agencies to describe successes. For example, Portland's Trimet best practices include finding a site, acquiring it, defining the goals, reaching out for partners, arbitrating the contract, finding how revenue for trips could be anticipated, sending information to Federal Transit Administration, and examining the development process (PSRC, 2013). Some of the literature notes that an important practice for transit agencies is to recapture some of the infrastructure value for the public coffers from developers, through ground leases, air leases, station connection fees, and negotiated private contributions (PSRC, 2013; Belzer & Autler, 2002). Both ground and air rights leases obtain annual rent payments from the at-grade property purchased from the transit agency or above rail stations, respectively (Belzer & Autler, 2002). Station connection fees could be either a single time or yearly payment that gives the developer the right to undeviatingly connect to a rail station or negotiated private contributions may serve to enhance access to a transit station according to the level of perks the private entity perceives it has obtained (Belzer & Autler, 2002).

It was suggested at the forum that the terminology *Joint Development* was not substantive, because it forsakes the 3 "Ds" of density, diversity, and design for financial benefits (Belzer & Autler, 2002). The basic goals of TOD are generally agreed upon and focus on ridership and financial return. For transit agencies, goals are to capture monetary return and optimize ridership; provide riders convenient access to stations, mode options, and adjacent uses;

enhance neighborhood property values, decrease traffic, and create a more viable community. Developer goals are getting Return on their Investment, reducing risk, and perusing long term value (Belzer & Autler, 20002).

Innovative options are available to address some developer concerns. For example, a TOD bank can appeal to developers wary of investing in certain neighborhoods. Further, providing technical assistance is an option by offering station typologies that would be of interest to developers and their financiers. A study of successful TODs, such as near the much heralded Rosslyn – Ballston station in Arlington, VA, showcases 40 years of development before and after the subway connection, with its plan to create village like destinations ¼ from stations (Arlington, VA, 2012).

Incentives to Developers

A number of incentives have been shown to appeal and align with developers' goals and strategies. Expediting the proposal, review, and permitting process is one way some areas are enticing developers. Some cities offer reduced parking requirements (WMATA, n.d.; BBP&A, n.d). An additional incentive is collaborative marketing between cities, transit agencies and private firms to increase buyer enthusiasm for particular TOD projects, so housing and office units can be sold sooner, lowering costs through accelerated final payments to mortgage loan companies (WMATA, n.d.; Valley Metro, 2009; METRO Harris County, TX, n.d.). Houston METRO will form partnerships to advertise to particular projects on their websites or other medium, as well as exhibit advantages of being proximate to TODs (METRO Harris County, TX, n.d.). Several transit agencies attempt to attract developer interest with favorable changes in regulation such as zoning bonuses, decreased fees, increased Floor Area Ratio (F.A.R.), reduced taxes (WMATA, 2006; BBP&A, n.d.). Portland, OR's transit agency, Trimet, provides developers 10 year exceptions from taxation (Trimet, 2010). This incentive is advantageous to the financial viability of projects and lowers figures on property valuations via improvements; yet property title holders are still required to pay taxes (Trimet, 2010). Furthermore, this agency will actually purchase land for the purpose of selling it to developers at a discounted price (Trimet, 2010).

Case Studies

Today, many transit systems and communities across the country are participating in Transit Oriented Development (TOD) programs. TOD participants range from small local and intercity bus systems with community-related services to large local and intercity rail systems with numerous projects (TRB, 2004). Currently, transit agencies are looking at programs and analyzing real-estate competitiveness to solicit developer interest. Robert Cervero, of the Institute of Urban and Regional Development at the University of California at Berkeley, authored the TRB report with a research team that summarized the state of the practice of TOD (2004). The report was compiled from the results of the research team literature review, a comprehensive survey, interviews, and ten (10) case studies. The 10 case studies covered a collection of TOD designs and practices from Boston, New Jersey, the Washington D.C. Metropolitan Area, Miami, Chicago, Dallas, Colorado, Portland, the San Francisco Bay Area, and Southern California. The report focuses on TOD and joint development and practice; the level of collaboration between various partners in relation to development community, financial partners, planning and land-use agencies, and government entities. Also included are impacts of

TOD and Joint Development on land values; the potential benefits of TOD; and successful design principles and characteristics.

Case-study approaches will continue to be relied upon to advance our knowledge and understanding of TOD and TJD. TODs are picking up steam in most U.S. rail cities with the focus being on outputs in regards to what is being done to bring about compact, mixed-use development near rail stations as oppose to outcomes. Outcomes would represent the evidence of congestion relief, affordable housing production, or economic rejuvenation of inner-city neighborhoods. The report also notes the major knowledge gaps that exist about TOD. One of the items named is Public Benefits, specifically congestion relief and air quality benefits. Quality improvements accrue only to the degree that increased transit patronage is matched by reduced automobile usage. The goal is to encourage Americans to drive less and ride trains and buses more. If successful TODs will contribute to smoother traffic flows, cleaner air, and energy conservation, they should be pursued. While literature shows that those living and working in TODs ride transit more than others, there is scant evidence that these trips substitute for and reduce the level of private automobile travel. In the case of Private Benefits in relation to land values, the literature indicates that for every study that shows that being near transit raises property values, there is at least one study that shows it does not. In the area of Finance and Implementation the case experiences provide sources on how creative financing partnerships influence TOD implementation versus sites without the benefits of creative financing – this area is not well documented. Again, the Cervero report indicates the literature is equally silent on the degree to which TOD success stories might be transferable. The influences of external factors, like macroeconomic conditions and sub-regional real estate market conditions, on TOD implementation are considered not particularly well known. In reference to the organizational and institution factors the research found that there is little research on the success of partnerships in TOD.

The literature on Transit Joint Development (TJD) was somewhat better defined because it is more project-specific. Experience with TJD's has been largely successful and is pushing large transit agencies to become entrepreneurial. The growing demands for office space and apartments near rail stops show the benefits of living, working, and doing business in TODs. Although, good for communities, there are regulatory and political factors that can complicate the practice of transit supportive and joint development in the United States. In order to improve the practice of TOD and TJD, case experiences, directed research, and the dissemination of best practices are needed to shed light on the naysayers.

Additional Strategies

There are many additional land use and design related motivations that would link developers with transit agencies and cities to implement TODs. The City of Houston will engage the Major Thoroughfare Plan to show streets with strong transit service for TODs (METRO Harris County, TX). Phoenix' Valley Metro will create a redevelopment area around each station, which allows the establishment of feasibility studies prior to definitive action taking place (Valley Metro, 2001). Land assemblage is also used for a TODs in Phoenix (Valley Metro, 2001). Some of these organizations will plug the idea of land adjacent or proximate to transit stations having premiums on the price of land, eclipsing other similar properties in strong markets (Regional Transportation District, 2009). Agencies tout the ability to build pedestrian and bicycle friendly mixed-use activity centers of various scales at transit stations (WMATA,

n.d.). Sustainability incentives for stormwater treatment through bioswales, rain gardens, green roofs, and sand filters are trumpeted to developers (WMATA, 20006). Some unique financial considerations agencies proclaim include formation of Tax Increment financing (TIFs) districts, as well as Business Improvement Districts (BIDs) (WMATA, 2006). LACMTA offers \$10 million for cities near stations that change their zoning to correspond with design elements that induce higher density (LACMTA, 2014). Similarly, Boston offers several million dollars over a 5 year period to finance housing in commercial areas within ¼ mile of transit, ½ affordable at 80% of median household income (Metro Boston Transit Agency, n.d.).

Chapter 4. The City of Houston's Transit Corridor Ordinance (TCO)

Developments in the City of Houston are guided by the code of ordinances, specifically Chapter 42. Collaboration between METRO and the City of Houston to incorporate the Major Thoroughfare Plan with transit robust streets to facilitate more optimal development is considered vital for fostering success (Transit Oriented Development Goals and Strategies, n.d.). All new construction along transit corridor streets (parallel to the light rail lines) and Type A streets (intersecting the light rail and in an ¼ mile radius from stations) are required to have sidewalks that are at least 6 feet wide with a 7 ½ feet height clearance. City engineers are permitted to make adjustments where these features are impractical (City of Houston, 2009). The opt-in section of the corridor ordinance allows development adjoining the transit corridor streets and Type A streets to move closer to the street. The developments must adhere to all design rules, and submit necessary pedestrian mobility plans, along with other permits (Municode, n.d). Additionally, the ordinance gives owners the chance to build up to 15 feet back of the curb, including 6 feet of pedestrian width; the developer must provide for this pedestrian realm (Municode, n.d.).

The goal of this ordinance is to encourage property owners near rail to make more transit friendly developments – areas that are easier for walking, well lit and where patrons feel safe. A comparison of street elements and design distinctions from Chapter 42, articles I – III (which guide developments not along transit streets) to Chapter 42, article IV regarding the TCO is shown in Table 1.

Table 1: Summary of Street Element and Design Distinctions

| | Chapter 42 (Articles I - III) | TCO (Article IV - TCS and Type A streets) |
|----------------------------------|---|---|
| Setback | 25 feet in general (42-150d) | If property owner opts-in, they can build up to property line, but no closer than 15 feet from back of the curb (42-402a). |
| Sidewalk | The hard-surface pedestrian mobility sections bounded by the back of the curb and the property line (42-1) | If property owner opts-in, 15 foot pedestrian realm required, which includes 6 foot wide sidewalk and 6 feet wide and 7 1/2 feet height clearance for a clear pedestrian space (42-402b). |
| Public Door Access | | One or more public entrances along the building façade, within 25 feet of the pedestrian realm, that does not cross a driveway or parking lot (42-402c3). |
| Glass Façade | | 30% of the exterior wall should be transparent, within 10 feet of pedestrian realm and 8 feet high (42-402c6) |
| Softscape (planting area) | Street trees planted within 10 feet parallel of a public right away on private residential, and within 25 feet on private nonresidential. Tree planted are based on the formula $T=(X/30)$, x signifies length in linear feet along each side of the property (33-126a). Also, trees can't be planted closer than 20 feet to each other (33-126c). | Maximum of 20% in pedestrian realm (42-402c8) |

Discussion

When METRO light rail construction is completed between 2014 and 2015, there will be 22.7 miles of light radiating north, east, southeast, and south from downtown. Developers choosing to opt in to the TCO will depend on the economic factors, development trends, and how cognizant the real estate industry is about the municipal code. Figure 1 reflects information about the parameters of the TCO territory. The blue hash shading shows the station areas with Type A streets included. Developable parcels that are eligible to opt into the transit corridor ordinance are pink. There are approximately 10,300 parcels that are eligible for the TCO. These parcels total about 8,850 acres or around 13.5 square miles. (Table 2).

Table 2 Land Area of Transit Corridor Ordinance Parcels

| | Commercial | Industrial | Parks | Residential | Vacant | Other | Total |
|-----------------------|-------------------|-------------------|--------------|--------------------|---------------|--------------|--------------|
| Acres | 1,377 | 207 | 1,535 | 2,499 | 494 | 2,733 | 8,845 |
| Square Mileage | 2.1 | 0.3 | 2.3 | 3.9 | 0.7 | 4.2 | 13.5 |
| Parcels | 1,959 | 114 | 84 | 5,682 | 1,327 | 1,154 | 10,320 |

In 2004, the 7.5 mile Red Line/South opened, which runs mostly along Main Street from the University Houston – Downtown to the Fannin South station outside of Loop 610 (Figure 2). The area is composed of the skyscrapers in the Central Business District, a revitalizing Midtown of small commercial properties and new condominiums, the Museum District, and The Medical Center’s multiple facilities. The Red Line/North extension composes 5.3 miles of the system (Figure 3). It extends from the Northline Transit Center station in the north to the Burnett Transit Center/Casa de Amigos in the south. The area can be defined by its narrow streetscapes. The building typology of this area, north of downtown, is composed primarily of older single family homes, closely spaced together. There are many small family businesses and some franchises, however, new residential units, large retail stores, and educational facilities are remaking parts of the neighborhood along this route.

The Green Line (East End) and Purple Line (Southeast) both have a mix of land uses along their 3.3 and 6.6 miles, respectively (Figure 4). The former stretches down Harrisburg Blvd from Magnolia Park towards the Central Business District, ending at the Theater District Station. The corridor is mostly businesses on either side of Harrisburg Blvd, a surplus of single family homes beyond that, and industrial related activity further east. The Purple Line extends from the Palm Center station and proximate government complex. Beginning just inside Loop 610, this line winds through single family residential areas on Martin Luther King, Jr. Blvd, along Wheeler Avenue to Scott Street adjacent to the University of Houston and Texas Southern University. From there, its meets the Purple Line in the EaDo neighborhood, with its new housing stock and Dynamo stadium, traveling into downtown and ending at the Theater District station.

Since 2009, when the TCO was enacted, only five properties have had owners to opt-in (Table 3). Two of the properties are near the proposed Blue Line/University Line near Richmond Avenue, and are important for the long term of future rail expansion. However, three properties adjacent to the Red Line/North also opted-in. The Dairy Land Restaurant property, at the corner of Cavalcade and Fulton adopted the rules in 2010. Next, Fulton Gardens, in 2009 accepted the guidelines of the TCO for a senior living facility, with a second property preparing to build another building across the street. The acreage for Dairy Land Restaurant is .3 acres the total Fulton Garden complex is about 1.7 acres.

Table 3: Properties That Opted into the TCO

| Application Number | Subdivision Plat Name | Action Date | Land Use | Opted-In | Light Rail Line |
|---------------------------|--|--------------------|-----------------|-----------------|---------------------------------|
| 2010-1728 | Perennial on Post Oak Subdivision | 20-Jan-11 | Unrestricted | Yes | Blue/University Line (Proposed) |
| 2010-0461 | Carrabbas Subdivision | 10-Jun-10 | Unrestricted | Yes | Blue/University Line (Proposed) |
| 2010-0015 | Dairy Land Restaurant Subdivision | 18-Feb-10 | Commercial | Yes | Red Line/North |
| 2012-0660 | Fulton Gardens Development Subdivision | 24-May-12 | Multi-family | Yes | Red Line/North |
| 2009-1019 | Fulton Garden | 12-Nov-09 | Multi-family | Yes | Red Line/North |

The Dairy Land Restaurant property, next to the Cavalcade light rail station, is a one-story sit-down restaurant with parking on all sides, a very narrow sidewalk, and lacks really all the other facets of the ordinance. It has yet to redevelop with the ordinance in mind. However, the Fulton Gardens, completed building has several aspects of the ordinance on its site (Figure 6). The facility is positioned one block from the Moody Park light rail station. It has no extra doors, besides the main doors that open on to the pedestrian realm, the 1st floor façade is about 30% transparent, and parking is much more than 3 feet from the pedestrian realm, behind the building.

Many new developments have been proposed after the TCO was implemented in 2009. Yet, most of the construction taking place currently omits design feature that are most compatible to transit friendly development. For instance, one block from the Ensemble/HCC is Broadstone 3800, a midrise residential building taking shape at the corner of Alabama Ave and Main Street (Figure 7). It will take up the entire block. While under construction, the building illustrates a mix of transit friendly and undesirable elements, with regards to the TCO. It contains the mandatory 6 foot clear zone area on the sidewalk. Yet, the entire pedestrian realm is much less than 15 feet. The softscape area of vegetation is limited, but a few trees do parallel the light rail tracks that run next on the adjoining street. All the parking will be inside of building, which would satisfy the TCO. It appears that very large first floor windows will provide much more than 30% transparency. Future developments could potentially take better advantage of the TCO, as there are nearly 494 acres of vacant land within the parameters of the TCO (Figure 7).

Chapter 5. Summary

The report showcases various techniques and strategies cities and transit agencies are applying to facilitate transit compatible development. There are some unique methods, but also similar patterns show across entities. For instance, zoning bonuses, decreased fees, increased Floor Area Ratios (F.A.R.), reduced taxes and reduced parking requirements are observed for a number of cities. Portland's strategies include finding a site, acquiring it, defining the goals, reaching out for partners, arbitrating the contract, investigating the potential number of revenue trips and coordinating with the Federal Transit Administration. Phoenix has the capacity to create redevelopment authorities around their stations. Best management practices of achieving TODs are explored, as well. Developers have a plethora of incentives they can analyze in different markets to reduce the cost of these projects. Also, some communities have the advantage of a TOD bank that will ease the borrowing pressure for some developers.

The City of Houston and its Transit Corridor Ordinance provides for more transit supportive development to occur along METRO's rail lines. The ordinance enables properties to be built closer to the street and encourages improved landscaping and street furniture; it also facilitates relocation of parking and driveways, reducing interference with pedestrian flow. The allocation for the transparent wall at street level increases the ability to observe street occurrences, thereby increasing the safety of users. This work is designed to increase knowledge of existing conditions and set the framework for a potential future based on collaboration between the City of Houston, Houston METRO and future developers.

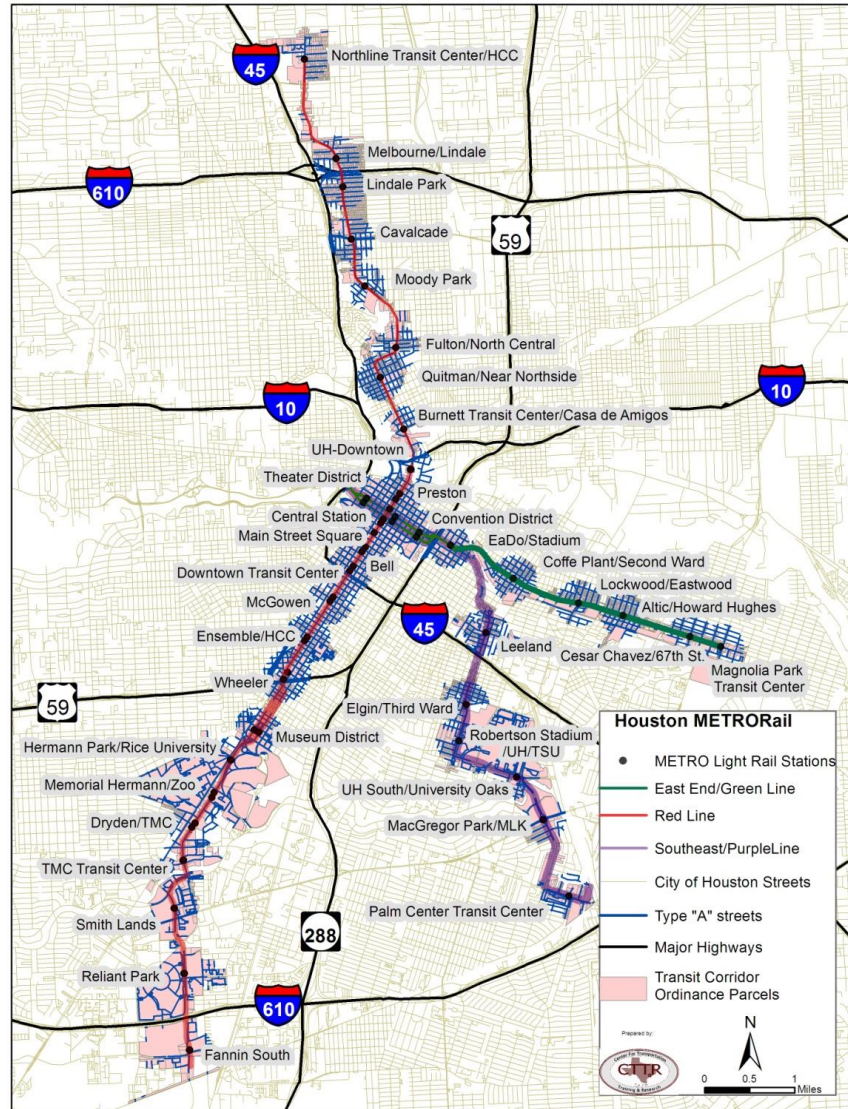


Figure 1: Transit Corridor Ordinance Parcels

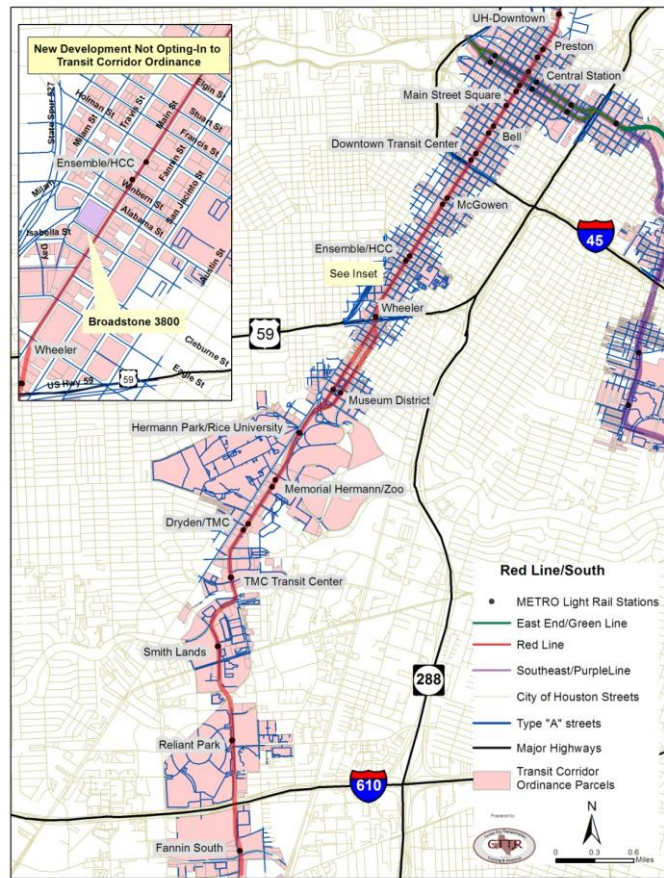


Figure 2: Red Line/South

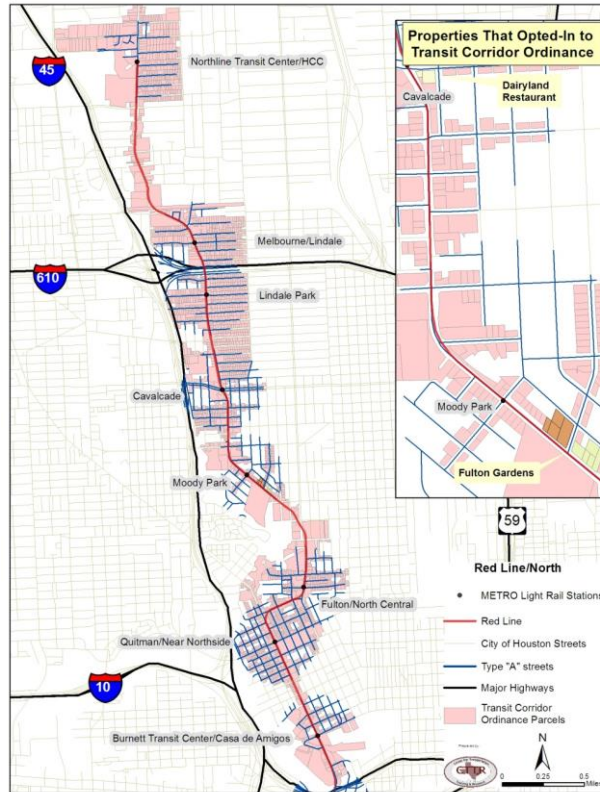


Figure 3: Red Line/North



Figure 4: Green Line/East and Purple Line/Southeast



Figure 5: Fulton Gardens Apartments



Figure 6: Broadstone 3800

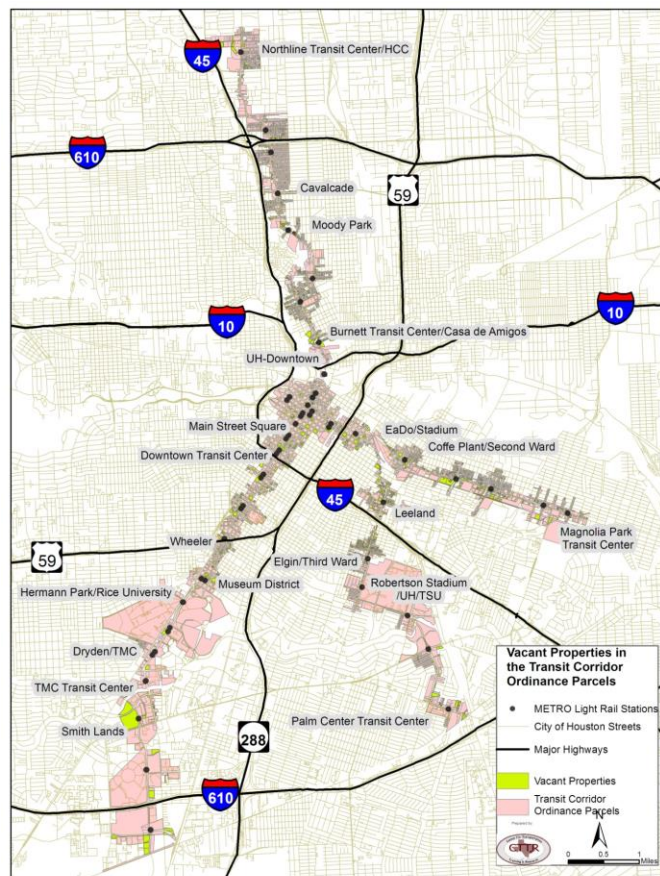


Figure 7: Vacant Properties in the Transit Corridor Ordinance Area

Works Cited

- Arlington County Department of Planning (Arlington, VA). (2012). 40 years of smart growth: Arlington County's experience with transit oriented development in the Rosslyn-Ballston Metro corridor. Retrieved September 29, 2013, from http://www.arlingtonva.us/departments/CPHD/planning/powerpoint/rbpresentation/rbpresentation_060107.pdf
- Bachrach, E. (2013A, October 1). Whoa, Chinatown's blossom mixed-user finally started. Retrieved September 2, 2013, from <http://la.curbed.com/tags/transit-oriented-development>
- Bachrach, E. (2013B, July 24). This is pretty much the look of huge capitol records towers. Retrieved September 2, 2013, from http://la.curbed.com/archives/2013/07/this_is_pretty_much_the_look_of_the_huge_capitol_records_towers.php
- Basile Bauman Prost & Associates, Inc (BBP&A). (n.d.). Making the vision reality: Financing. Retrieved October 19, 2013, from http://www.fltod.com/research/tod_planning_and_fbc_outside_florida/municipalities/denver/today_workshop_2.pdf
- Belzer, D. and Autler, G. (2002, June). Transit-oriented development: Moving from rhetoric to reality. Retrieved September 30, 2013, from <http://www.brookings.edu/~media/research/files/reports/2002/6/cities%20dena%20belzer%20and%20gerald%20autler/belzertod.pdf>
- Cervero, R. (1992). Land market impacts of urban rail transit and joint development: An empirical study of rail transit in Washington, DC and Atlanta. Paper presented at the Sixth World Conference on Transport Research. Retrieved March 30, 2014, from <http://www.uctc.net/papers/135.pdf>
- Cervero, R. (2004). Transit oriented development: State of the practice and future benefits. Retrieved April 6, 2014, from http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_52.pdf
- CityBizList. (2011, December 1). Forest City wins prized Atlanta TOD contract. (2011, December 1). Retrieved September 28, 2013, from <http://atlanta.citybizlist.com/article/forest-city-wins-prized-atlanta-tod-contract>
- City of Houston. (2009). Legal. Retrieved March 23, 2014, from http://www.houstontx.gov/planning/_urban/urban_cor.html
- City of Houston. (2009A). Urban corridors planning assessment. Retrieved March 3, 2013, from http://www.houstontx.gov/planning/_urban/ULI/ULI_UrbanCorridorsPresentation.pdf
- City of Houston. (n.d.). Transit corridor ordinance. Retrieved March 3, 2013, from http://www.houstontx.gov/planning/_urban/TransitCorridorOrdinance_summary_foldable_11X17.pdf
- Epstein, Joel. (2013, May 23). Los Angeles and the case for transit – oriented development (Part 1 of 3) by Joel Epstein. Retrieved September 30, 2013, from <http://la.streetsblog.org/2012/05/23/los-angeles-and-the-case-for-transit-oriented-development-part-1-of-3/>
- Friends of Rhode Island Avenue. (2012). Rhode Island Avenue, NE/Brentwood. Retrieved October 7, 2013, from <http://www.friendsofria.org/wp-content/uploads/2012/07/rhodeislandbrentwood.pdf>

- Lewis, C.A., Onyejekwe, S., Collins, D., McGaughay. (2012, August). Transit agency strategies that encourage mixed uses around stations. Retrieved March 31, 2013, from <http://d2dtl5nnlpfr0r.cloudfront.net/swutc.tamu.edu/publications/technicalreports/476660-00054-1.pdf>
- Los Angeles County Metropolitan Transit Authority (LACMTA). (2000). MTA rights-of-way preservation guidelines. Retrieved October 15, 2013, from http://media.metro.net/images/jdp_preservation_guidelines.pdf
- Los Angeles County Metropolitan Transit Authority (LACMTA). (2009). Los Angeles Co. Metro. Transportation Authority (LACMTA) – Joint Development Policies and Procedures. Retrieved October 4, 2013, from http://media.metro.net/projects_studies/joint_development/images/JDP_polices-procedures.pdf
- Los Angeles County Metropolitan Transit Authority (LACMTA). (2012, February). Transit oriented development grant program guidelines: Round 2. Retrieved October 7, 2013 from http://media.metro.net/projects_studies/tod/images/TOD_Grant_Program_Guidelines_Round_2.pdf
- Los Angeles County Metropolitan Transit Authority (LACMTA). (2014, February). Transit oriented development planning grant. Retrieved October 7, from <http://www.metro.net/projects/tod/>
- Loukaitou-Sideris, A. and Banerjee, T. (n.d.). *The Blue Line blues: Why the vision of transit village may not materialize despite impressive growth in transit ridership*. Retrieved September 2, 2013, from <http://www.uctc.net/papers/425.pdf>
- Menard, J. (2009, February 12). Columbia Heights. Retrieved September 2, 2013, from <http://www.cnu.org/resources/projects/columbia-heights-2009>
- Metro Boston Transit Agency. (n.d.). Resources to help develop TOD. Retrieved October 22, 2013, from http://www.mbta.com/about_the_mbta/t_projects/projects_tod/?id=7018
- Metropolitan Transit Authority of Harris County, TX (METRO Harris County, TX). (n.d.). Transit oriented development goals and strategies. Retrieved October 29, 2013, from <http://www.ridemetro.org/Opportunities/RealEstate/Pdfs/JointDevelopmentGuidelines.pdf>
- Metropolitan Atlanta Rapid Transit Authority (MARTA). (2013, March). MARTA developer day: Atlanta transit oriented development market. Retrieved October 6, 2013, from http://www.itsmarta.com/uploadedFiles/About_MARTA/Planning_and_Projects/TOD_and_Real_Estate/030713%20-%20Bleakly%20MARTA%20Dev%20%20Day%203%2007%2013.pdf
- Municode – City of Houston. (n.d.) Chapter 42 Subdivisions, developments and platting. Retrieved March 4, 2014, from <http://library.municode.com/index.aspx?clientId=10123>
- Peggy, M. (November 8, 2011). October debut for three transit-oriented development projects in Portland region. Oregon Metro. Retrieved October 5, 2013, from <http://news.oregonmetro.gov/1/post.cfm/october-debut-for-three-transit-oriented-development-projects-in-portland-region>
- Puget Sound Regional Council (PSRC). (2013). Best practices in transit oriented and joint development forum. Retrieved October 4, 2013, from

- <http://www.psrc.org/growth/growing-transit-communities/public-involvement-events/best-practices-in-transit-oriented-and-joint-development-forum/>
- Reconnecting America. (December 31, 2009). Forming partnerships to promote transit oriented development and joint development. Retrieved March 31, 2014, from <http://www.reconnectingamerica.org/assets/Uploads/APTA-SUDS-UD-RP-002-09jointdevelopment.pdf>
- Regional Transportation District. (2009). RTD fastracks fact sheet: Transit-oriented development (TOD). Retrieved October 20, 2013, from http://www.rtd-fastracks.com/main_45
- Transit Cooperative Research Program. (2002, October). Transit-oriented development and joint development in the United States: A literature review. Retrieved March 3, 2013, from http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_52.pdf
- Transportation Research Board (TRB). (2004). Transit-oriented development in the United States: Experiences, challenges, and prospects. Retrieved April 6, 2013, from http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_102.pdf
- Trimet. (2010). Livable Portland: Land Use and Transportation Initiatives. Retrieved October 20, 2013, from <http://trimet.org/pdfs/publications/Livable-Portland.pdf>
- ValleyMetro. (2001). Light-rail transit Phoenix, Arizona. Retrieved October 19, 2013, from http://www.valleymetro.org/images/uploads/lightrail_publications/ULI_Final_Report.pdf
- ValleyMetro. (2009). Transit oriented development and proposition 207 in metropolitan Phoenix. Retrieved October 19, 2013, from http://www.valleymetro.org/images/uploads/lightrail_publications/FINAL-REPORT-TOD-and-Prop-207-in-AZ.pdf
- Washington Metropolitan Area Transit Authority (WMATA). (n.d.). Planning, development and real estate committee board action item III – A: Joint development guidelines. Retrieved October 20, 2013, from http://www.wmata.com/about_metro/board_of_directors/board_docs/011008_JointDevGuidelines.pdf
- Washington Metropolitan Area Transit Authority. (2006). Central Avenue transit-oriented development corridor development strategy. Retrieved October 18, 2013, from <http://www.wmata.com/pdfs/planning/CentralAvenueforWeb.pdf>
- Zhao, Z.J., Das K.V., Larson, K. (2012). Joint development as a value capture strategy for public transit finance. *The Journal of Transport and Land Use*, 5 (1), pp. 5 – 17. Retrieved April 1, 2014, from <https://www.jtlu.org/index.php/jtlu/article/viewFile/142/208>