

Belt Line - Atlanta
Design of Infrastructure

as a Reflection of Public Policy

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in memory of **Alan Gravel** (1970-1980)
in many ways you defined my perspective on living.

also in memory of **Hank Gravel** (1972-1996)
you knew me, and you always believed in me.

thanks Randy, Richard & Chris.

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Chapter 1

Defining the Thesis Project

In *Toward the Contemporary City*, Rem Koolhaas observes that the project of the modern city was built only in fragments and the challenge now is to remodel and augment the different parts of the city without destroying them, much the way Milan or Paris did in the nineteenth century. By working in between the different fragments, both the idealism of modern urbanism and the imagery and scale of the traditional city are compromised, but valuable new themes to work with are opened up that allow us to deal with the complexities of contemporary life.

The contemporary city ... ought to yield a sort of manifesto, a premature homage to a form of modernity, which when compared to cities of the past might seem devoid of qualities, but in which we will one day recognize as many gains as losses. Leave Paris and Amsterdam – go look at Atlanta, quickly and without preconceptions.¹

If Atlanta may be considered the poster child of the contemporary city, then we need look no further for a thesis challenged by the complexities of contemporary urban life as the subject of architecture and city planning. This metropolitan area, with both uncontrollable suburban growth and extensive inner city gentrification, suffers most of all from traffic congestion and the ecological consequences of unmitigated sprawl. The popular press has finally raised the issue for public debate, and the recent election of Georgia Governor Roy Barnes on an anti-sprawl platform underscores the public's attention. Real change in the way we build cities, however, will require a significant shift in the attitude of a region that has for too long prioritized the automobile as the primary tool for urban expansion.

Much the same way an infrastructure of highways led to suburban expansion and inner city depopulation in the second half of this century, an expansion of mass transit infrastructure will lead to both the revival of the inner city and the protection of our natural ecology and agricultural resources. When the design of public infrastructure

¹ Koolhaas, Rem. "Toward the Contemporary City." *Design Book Review* no. 17. (Winter 1989) 15, 16.

directs private action, architecture and planning become political. Five arguments lead to a physical space to construct such an infrastructure: 1.) Infrastructure has a dramatic impact on urban development, therefore the design of such infrastructure should reflect the public's best interest. 2.) Metro area public policies should support downtown Atlanta as the primary and logical center of the metropolitan region. 3.) Developing an infrastructure to handle increasing density in that center suggests particular models. 4.) The central city has a social and political history that such a project will engage. 5.) Within that history is a physical space for intervention, one that divides and connects home and destination, rich and poor, black and white.

Argument One

It is no surprise that the design of infrastructure has the potential to dramatically alter urban development. A historical look at the growth of public transportation in Atlanta in the 1860's reveals how infrastructure directed early urban expansion. George Adair and Richard Peters formed the Atlanta Street Railroad Company, offering horsecar service for the first time in the city. This allowed them to "capitalize on those routes with population density sufficient to insure profitable ridership levels" and terminate their lines at key points including West End and Ponce de Leon Springs. Adair and Peters learned quickly that streetcar lines had a significant impact on urban growth.² The direction of growth could be channeled by the location of new lines and so controlling property along those lines proved quite lucrative. Entrepreneurs like Joel Hurt and Lemule Grant followed the example of the Atlanta Street Railroad Company with their Victorian streetcar suburbs, Inman Park and Grant Park in the 1880s and 90s.³ "The tripling of average travel speeds relative to horsedrawn carts brought a large band of open space into commuting range, fueling the suburbanization of residences and eventually shops, stores, and factories."⁴ Around WWI, in addition to streetcar lines and growing automobile mobility, other infrastructure including electrical, telephone, gas, water and

² Klima, Don L. "Breaking Out: Streetcars and Suburban Development, 1872-1900." *The Atlanta Historical Journal*. Ed. Timothy J. Crimmins. (Atlanta: The Atlanta Historical Society, Inc., Summer-Fall 1982) 72.

³ Klima. "Breaking Out." 81.

sewer lines promoted a new ring of bungalow suburbs such as Home Park, Candler Park and Washington Park.⁵

Perhaps no infrastructure has made such a change in the way we build cities than the Interstate highway system. "From early in the twentieth century, highway building had been subsidized by the government as contributing to public welfare in a way that mass transit, considered a private investment, had never been."⁶ Initially, municipal and state governments constructed highways. Federal aid for the upgrade of state primary roads into an interstate system of highways began with the Federal Highway Act of 1921.⁷ But while highways allowed unprecedented vehicular access to the central business districts of large American cities, they, along with FHA loans and other subsidies also permitted the mass exodus of predominately middle and upper class whites from the central city. Suburban-style expansion began to colonize the surrounding countryside leaving central cities to the poor and non-white.⁸ Eventually, business followed residential development to the suburbs, further drying the central city's economy and tax base. As cities became more poor and black, whites left in droves. The highway system certainly accomplished its goal of mobility, but it also caused many problems that its visionaries could not have predicted at the time, not least the inefficient use of land and near death of downtowns across the nation.

Both streetcars and Interstates had dramatic impacts on urban development.

"From the Lochner report through the planning and building of MARTA to the approval of Georgia 400, [Atlanta's] governing coalition has used public authority and funds to connect the business district with a growing and spreading hinterland. These transportation decisions not only cut through neighborhoods but also alter land values and determine the attractiveness of sites for high-density development."⁹

⁴ Bernick, Michael and Robert Cervero. *Transit Villages in the 21st Century*. (New York: McGraw-Hill, 1997) 38.

⁵ Crimmins, Timothy J. "Bungalow Suburbs East and West." *The Atlanta Historical Journal*. Ed. Timothy J. Crimmins. (Atlanta: The Atlanta Historical Society, Inc., Summer-Fall 1982) 84, 85, 89.

⁶ Chudacoff, Howard, and Judith Smith. *The Evolution of American Urban Society*. Third edition. (Englewood Cliffs, N.J.: Prentice Hall, 1988) 214.

⁷ Chudacoff. *The Evolution of American Urban Society*. 215.

⁸ Chudacoff. *The Evolution of American Urban Society*. 266.

⁹ Stone, Clarence N. *Regime Politics - Governing Atlanta 1946 - 1988*. (Lawrence, KS: University Press of Kansas, 1989) 35.

Any new investment in infrastructure should be deliberately designed to reflect public policy. The definition of that public policy is up for debate and differs greatly around the metro area and state.

Argument Two

To build a project on the thesis of infrastructure designed specifically to reflect and employ public policy, it must be determined what those policies propose or support. In this particular metropolitan area, an argument must be made for downtown Atlanta as the dominant and logical center of its region. Though perhaps obvious to many, this assumption has been challenged on too many fronts to leave exposed.

Rem Koolhaas describes Atlanta as a "sparse, thin carpet of habitation,"¹⁰ with splintered, sprawling, glittering edge cities scattered north of downtown whose apron strings have long been cut and burned. The near abandonment of downtown landscapes has created a general northward tendency for these generic suburban series of peripheries with a the idea that "Atlanta is now a centerless city, or a city with a potentially infinite number of centers."¹¹ While there is value in exercising this argument, it is also important to realize that the idea is exaggerated to make a point: Atlanta "reveals some of the most critical shifts in architecture/urbanism of the past 15 years, the most important being the shift from center to periphery, and beyond."¹²



Downtown has certainly lost much of the political and economic clout central cities have historically held, but the Atlanta region is beginning to choke on its own success and evidence exists that the central city's demise may be a premature conclusion.

¹⁰ Koolhaas, Rem and Bruce Mau. *S.M.L.XL*. (New York: The Monacelli Press, 1995) 835.

¹¹ Koolhaas, *S.M.L.XL*. 836.

¹² Koolhaas, *S.M.L.XL*. 836.

Traffic and pollution are sacrificing the things that made Atlanta attractive to investment in the first place. Since 1997, the metro area has been non-compliant with Federal clean air standards and has been cut off from Federal dollars for road building until a plan is developed to bring its air quality back into compliance. This break in the flow of public investment offers a point of departure for the delineation of an expressed public policy: Downtown Atlanta is and should remain the dominant center of the region in terms of infrastructure, density, government, culture and identity.

Infrastructure

Railroads, roads, highways and public transportation converge on downtown Atlanta. The origin of the city itself is the result of a deliberate public investment in infrastructure to access north Georgia and Tennessee with rail. Between 1839 and 1851, the Western and Atlantic Railroad was constructed from a point in the Georgia piedmont near the Chattahoochee River to Rossville, Tennessee by acts of the two state legislatures at a cost of over \$4 million to the taxpayers of Georgia.¹³ Although the initial settlement dubbed Terminus was not expected to survive, other railroads soon extended to it and Atlanta was born as a regional hub,¹⁴ complete with trolleys and interurban lines centered on downtown by the early twentieth century. The Interstate highway system reinforced those radial rail lines, heightening the capitol city's prominence in the region and state in the 1950s and 60s by intersecting three major highways in the central city. MARTA (Metropolitan Atlanta Rapid Transit Authority) followed in the 1970s, crossing its first two rail lines at Five Points. New infrastructures such as underground fiber optics have recently made the central city attractive to high-tech dominated development of infrastructure we have today supports that centrality, making downtown the most obvious site for public investment to support new urban density. (See Figure 1: *State highways* and Figure 2: *Highways, rails, MARTA*)



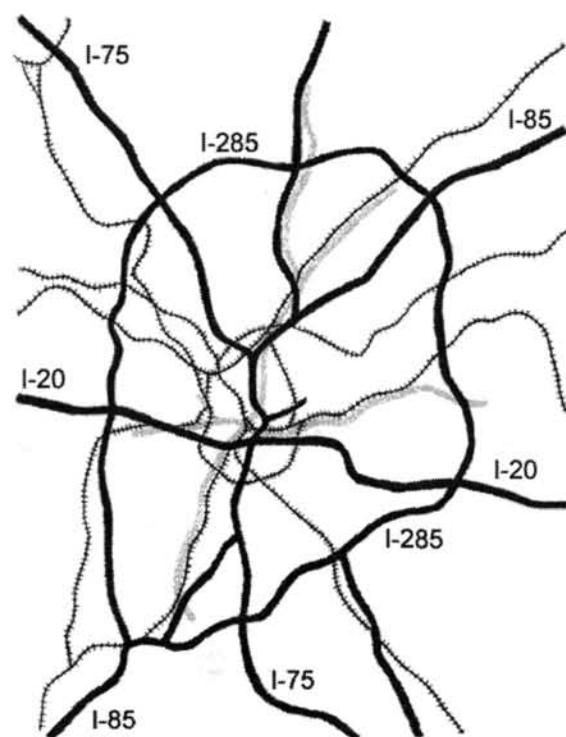
¹³ Bogle, James G. "The Western and Atlantic Railroad – 1864." *The Atlanta Historical Journal*. Ed. Timothy J. Crimmins. (Atlanta: The Atlanta Historical Society, Inc., Summer 1981) 45, 46.

¹⁴ Morris, A.E.J. *History of Urban Form – Before the Industrial Revolutions*. Third edition. (Edinburgh Gate: Addison Wesley Longman Limited, 1994.) 359, 360.



Context

Figure 1: State Highways



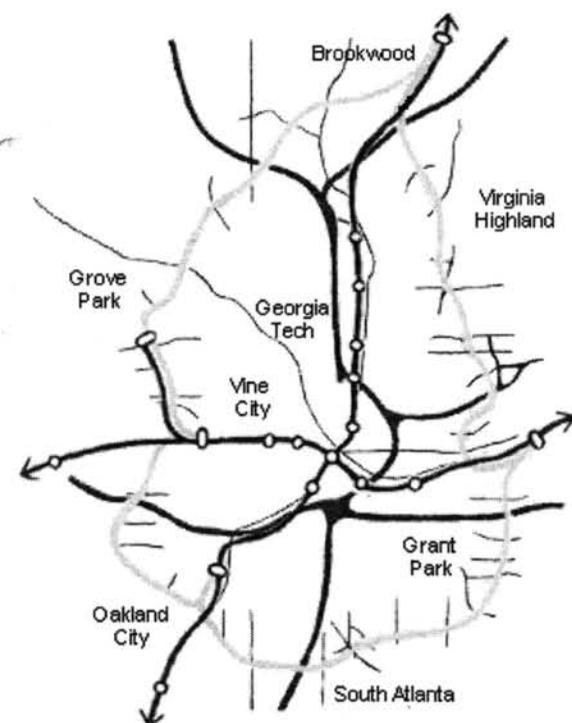
Context

Figure 2: Highways, Rails, MARTA



Context

Figure 3: Belt lines in metro context



Context

Figure 4: Belt lines in central Atlanta

Density

Downtown Atlanta has the densest concentration of office and residential buildings in the metro area. While other sub-markets in Atlanta compete with downtown in terms of office space, downtown is more concentrated - a quality that makes it much more compatible with mass transportation. For example, while several market research companies claim Perimeter Center has the largest share of the office market in metro Atlanta, those offices are strewn across a geographical area significantly larger than downtown, midtown and Buckhead combined. And while Perimeter Center is served by MARTA rail, most destinations are not within walking distance from stations, unlike downtown, making transit less convenient, and therefore less desirable for commuters.

Government

The City of Atlanta is the seat of Fulton County, a 20-county metropolitan state of Georgia. It is the largest municipality one of the most populous counties in the regional center for Federal courts and offices



government for region and the and resides in state. It is a including the

Federal Reserve and the EPA. It is home to two of the three largest public universities in the state, Georgia Institute of Technology and Georgia State University, as well as five of the most recognizable and respected African American colleges in the country and numerous other schools including the Atlanta College of Art.

Culture

In addition to four professional sports teams, the city boasts far more cultural institutions than its suburban counterparts, including the Atlanta Symphony Orchestra, Atlanta Ballet, Atlanta Opera, High Museum, a host of theatrical troupes, musical ensembles, galleries, shopping districts and the hoppingest bar scenes in the metro area. Atlanta is not the oldest city in the region, but it is by far the most historically significant as a turning point in the American Civil War and arguably the cradle of the American Civil Rights movement.

Identity

Finally, Atlanta gives identity to the metro area. Its politics, history, culture, sports teams, airport, universities, density and skyline give Atlanta a unique flavor recognizable to the rest of the country and the 1996 Olympics, people Alpharetta. The suburbs are suburban residents when Atlanta for its recognition.



many parts of the world. During were gathered downtown, not in so interchangeable that even they travel will say they live in

If we accept Atlanta's central city as the dominant center of the metropolitan area and want to reinforce that status, we must see what is going on there to find some basis for a thesis project. To some extent already, developers are rediscovering the virtues of the central city. While by no means a reversal of continued growth in the suburbs, the central city has begun to see signs of revival due to traffic congestion and a decreasing quality of life in the suburban peripheries. What began with the transformation of white working class neighborhoods like Virginia Highland is now moving south, pressuring neighborhoods that experienced white flight in the 1960s like Grant Park and West End and historically black neighborhoods like Summerhill and the Old Fourth Ward. Midtown, in particular has leveraged a sizable share of development recently that promises to transform it from a wasteland of parking lots and derelict housing into a dense mix of retail, office, housing and cultural attractions. Condominium construction and conversions have exploded in the last two to three years. BellSouth recently announced its plans to move 8,000 employees from the suburbs to new buildings near MARTA stations in midtown and Buckhead. It is early yet to determine if BellSouth's move heralds a corporate trend, but in the last year several companies have announced similar plans to transfer some suburban employees to the central city including Coca Cola and Equifax.

Because the metro area's underlying infrastructure and capacity for density inherently supports downtown, and density supports transit which relieves traffic congestion, the historic core is the most likely candidate for becoming the dominant center of a new, denser, more dynamic metropolitan region of the 21st century. A recent

study by the Brookings Institute and Fannie Mae Foundation shows that downtowns¹⁵ across the country are increasing in population. Residential growth in Atlanta's central business district is expected to increase from 17,000 people today to 25,000 in 2010, a 47% increase.¹⁶ Adjacent intown areas will likewise increase in density. Taking the lead of the development industry, John Williams, CEO of Post Properties thinks growth in the inner city will only continue. He has changed Post's focus from suburban garden apartment complexes to quality urban redevelopment in the city. The Atlanta Business Chronicle quotes Williams:

What you'll see is more and more development downtown, closer to transit locations and high-density areas, and, in Atlanta for the first time, extensive high-rise development... We'll see less and less development in the suburbs because people won't want apartments in the suburbs, and the outlying areas will have moratoriums because they don't have the ability to accept high density.¹⁷

What the Atlanta Business Chronicle article offers is the mark of a new day in the Atlanta, because even big-name developers are now talking about projects that reject a sprawl mindset. Success, however, yields both problems and opportunities. Traffic in the city is getting worse. The gentrification of neighborhoods by the middle class is homogenizing older communities, pushing out the resident poor. While a thesis of infrastructure might reinforce downtown, it should also find ways to accommodate both the growing middle class and those residents of established communities.

Argument Three

These arguments lead us to a project that accommodates density in the central city through the design of infrastructure as a public investment. In recent history, Atlanta has relieved congestion by building more and larger freeways, ultimately contributing to the urgent state of the metro area, now thoroughly dependent on automobiles for everyday

¹⁵ Downtowns are defined by the Brookings Institute as the central business district and areas immediately adjacent.

¹⁶ "Downtowns gaining population nationwide." New Urban News. January-February 1999. 6.

¹⁷ Paire, Jennifer Rampey. "Post CEO Williams helps bring people back intown." Atlanta Business Chronicle. March 5-11, 1999. 4B. "Blueprint History."

transportation. Other cities have addressed the issue of congestion with public transit. Today, increasing urban density in Atlanta can become the basis for a thesis to revive a cultural sense of the city and also relieve congestion and accommodate growth through the expansion of mass transit service. Particular models – Paris, Chicago, Portland and Berlin – suggest ways of understanding the possibilities for that transformation.

Paris

Paris is an excellent example of the layering of mass transit systems. The Metro and bus systems primarily serve the central city. The RER serves suburban commuters coming in, out and through the central city (much like MARTA). Commuter lines serve further suburbs. The SNCF trains are inter-city lines that serve the rest of France, not solely Paris but with Paris at its center. The TGV provides high-speed train service to larger cities in France and major European cities like London, Brussels and Frankfurt. It is important to understand how the layering of these systems reflects the different levels of service needed and how each system reflects the centrality of the historic core of Paris.

Chicago

Chicago's El, or elevated line, is a nice example of how mass transit stations are scaled to serve their particular community. Like their underground counterparts in the Paris Metro, the stations in Chicago orient to their immediate context, with simple structures composed of turnstiles, stairs, platforms and roofs. By avoiding large parking lots, they are designed for riders arriving on foot, unlike most MARTA stations, which are designed to transfer riders from automobiles to trains.

Portland

Portland, Oregon has become a leader in the management of urban growth through the careful marriage of transportation and land use planning. It has had exciting success in organizing new growth areas around transit stations along its new light rail system. This transit-oriented development accommodates growth in a way that is less harmful to the natural environment by discouraging dependence on automobiles and

reducing congestion. It also improves transit ridership, protects natural features like wetlands and reduces the land area required for growth.

Berlin

Finally, Berlin's S-Bahn station at Onkel Toms Hütte shows how a station can incorporate another program in its design, in this case, retail stores are conveniently located along the train platforms. Originally designed as almost 2,000 units of subsidized housing, the development at Onkel Toms Hütte designed by Bruno Taut in 1931 is now some of the most sought after housing in the city. Stations could just as easily program a homeless shelter, technical school or industrial complex.

Argument Four

While accommodating growth through the design of mass transit that directs private development to intensify the core of the region, we must also acknowledge the implications for the specific territories that we intend to traverse. If we want to reinforce downtown, then we must look at it in spatial terms. As in most cities, race and class laid the primary lines in the demarcation of territory in Atlanta. Delores Hayden writes "understanding the history of urban cultural landscapes offers citizens and public officials some basis for making political and spatial choices about the future."¹⁸ A brief dive into the history of territorial boundaries reveals the depth of the issue in Atlanta.

After the Civil War, newly freed blacks settled in Shermantown immediately east of the central business district, Jennings town to the west and Summerhill just south of the state capitol.¹⁹ At the same time, Richard Peters leveraged the Atlanta Street Railroad Company and his real estate holdings north of downtown to attract wealthy whites to the

¹⁸ Hayden, Delores. "Urban Landscape History: The Sense of Place and the Politics of Space," The Power of Place: Urban Landscapes as Public History. (Cambridge: The MIT Press, 1995.) 43.

¹⁹ White, Dana F. "The Black Sides of Atlanta: A Geography of Expansion and Containment, 1970-1870." The Atlanta Historical Journal. Ed. Timothy J. Crimmins. (Atlanta: The Atlanta Historical Society, Inc., Summer-Fall 1982) 208-210.

north side of the city along the Peachtree Street ridge²⁰ through what is now considered midtown. Under Mayor Hartsfield in the 1950s, an unofficial committee guided the demarcation of land available to blacks for residential development on the west, south and east sides, but "north Atlanta remained firmly off limits to black expansion."²¹ As the city's black population grew to the west and south and wealthy whites migrated further north, the center of white commercial activity was dragged north from Five Points to Peachtree Center in the 1960s and 1970s, with secondary clusters further north in midtown and beyond. The initial white northward trend and subsequent decisions made to protect it remain evident today in the affluent white suburbs spread north of the city and the success of north side development in places like Buckhead, Perimeter Center and Alpharetta.

With some exceptions like midtown, Atlanta's neighborhoods remain thoroughly segregated. Color lines have historically played a critical role in the demarcation of territory for blacks and whites in Atlanta. As housing demand increased around WWI, blacks remained confined to particular neighborhoods, strictly by practice until the 1960s. Whites had more freedom to expand. But in 1921, blacks had gained enough voting power to leverage several new schools including Booker T. Washington High, and importantly, the breaking of the west side color line which had been held at Ashby Street.²² This coincided with the development of the ring of bungalow suburbs around downtown enabled by trolley, water and electrical lines and the automobile. So while the bungalow houses and neighborhoods in any direction from downtown were substantially the same, deliberate lines of race differentiated them. To the north, east and south, white neighborhoods predominated, but to the west, suburbs like Washington Park were developed specifically for middle class blacks.²³



Around the turn of the century, competition for menial work produced by the *migration of both poor blacks and poor whites to Atlanta from rural Georgia heightened*

²⁰ Klima. "Breaking Out." 71-75.

²¹ Stone. *Regime Politics*. 35.

²² White. "The Black Sides of Atlanta," 216.

racial tensions. Since both groups depended on streetcars for transportation, they became an early venue for racial conflicts in the city and subsequently, Jim Crow segregation. A race riot occurred on September 22, 1906 when a white mob began a killing spree with the murder of three blacks on a streetcar at Five Points.²⁴

Streetcars continued to play a vital role in the segregation of Atlanta. Transit companies made deliberate decisions about serving African-American neighborhoods like Washington Park. In many cases, white-owned trolley and bus companies refused to serve many black neighborhoods, forcing residents to pay fares to both the black-owned bus company and the white-owned trolley that connected them into the central business district. Black bus and jitney companies that competed with white companies were deliberately put out of business.²⁵ But even as blacks complained of poor service, white transit companies refused to serve them because they did not want to encourage the residential migration of blacks further west. When service was finally extended to Mozley Park after its white-to-black racial transition, "the transit company [still] neglected the transportation needs of... black residents, forcing them to walk long distances to their destinations or to transit stops and thereby making the section less attractive to black immigration."²⁶ Even as a federal district court determined the city's transit segregation laws unconstitutional in 1959, routes and service were not altered. "As is typical in Atlanta, change skimmed the surface to give a façade of reform while more serious racial issues remained."²⁷ This sentiment was expressed clearly in 1962 when the City built barricades across entrances to Peyton Forest, a new white subdivision to the far west of the city in an attempt to stop the migration of blacks into the area. The event attracted negative national press and at that point the demarcation of spatial boundaries became less overt in the real estate of Atlanta.²⁸

So while whites expanded their territory beyond the city limits, blacks remained confined to relatively little land within the city, and along with poor whites and Jews, were

²³ Crimmins. "Bungalow Suburbs," 88, 89.

²⁴ Martin, Jean. "Mule to MARTA, Volume II, 1902-1950." *The Atlanta Historical Bulletin*. Ed. Franklin M. Garrett. (Atlanta: The Atlanta Historical Society, Inc., Winter 1976. Vol. 20, No. 4.) 17-19.

²⁵ Bayor, Ronald H. *Race and the Shaping of Twentieth-Century Atlanta*. (Chapel Hill: University of North Carolina Press, 1996) 189.

²⁶ Bayor. *Race and the Shaping of Twentieth-Century Atlanta*. 190.

²⁷ Bayor. *Race and the Shaping of Twentieth-Century Atlanta*. 190.

refused FHA loans in suburban developments.²⁹ Because growth of the white population within the city limits was lessened by suburban expansion, the black population grew more rapidly and black voting power began to threaten Atlanta's white political structure. White City leaders were forced to negotiate with black community leaders for deals including a buffer zone around the central business district and sites for urban renewal projects and public housing.³⁰ The Lochner Plan of 1946 laid the 75/85 Interstate highway around the east of downtown instead of the railroad and industrial dominated near west side deliberately to buffer the central business district from black neighborhoods to the east and south.³¹ The 1951 Plan of Improvement was a deliberate move to annex affluent white suburbs, particularly wealthy Buckhead, in an attempt to maintain a white majority electorate. The Plan of Improvement tripled the land area within the city limits and increased the city's population by 100,000.³²

These negotiated deals came to a head in Atlanta's quest for rail transit service beginning in the mid 1960s. With 36 miles total, initial plans for MARTA's rail system included only 4.3 miles devoted to Atlanta's predominately African American west side neighborhoods. So at the end of 1966, blacks forged the Atlanta Summit Leadership Conference to discuss black dissatisfaction with MARTA's plans and reveal their increasing voting power in city politics. With insufficient response from white leadership, the summit recommended the MARTA referendum in November 1968, which was defeated. Afterwards, MARTA affirmative action, minority priority for the east-west line, black residential areas and black residents vote against November 1968, which was responded with support for representation, construction improved routes between employment centers, and the Proctor Creek rail spur to Bankhead and Perry Homes in the city's industrial northwest quadrant. In 1971, although defeated in suburban counties, the referendum passed in both Fulton and DeKalb Counties with large support from African Americans.³³ Policy changes and construction on the east-west line began within a year, but the Proctor



²⁸ White. "The Black Sides of Atlanta," 220, 221.

²⁹ Chudacoff. *The Evolution of American Urban Society*. 262.

³⁰ Stone. *Regime Politics*. 162.

³¹ Stone. *Regime Politics*. 32.

³² Stone. *Regime Politics*. 30.

Creek spur has continued to be a sticking point for the transit authority. In 1993, the line opened to Bankhead, but Perry Homes, 1.5 miles further out and now boarded up waiting for reconstruction, has still not received rail service.

Ultimately, the white power structure was unable to annex enough white suburbs and Maynard Jackson became Atlanta's first black mayor in 1973. To be sure, white corporate power remains strong and has formed a new coalition with the black middle class and black political structure.

Argument Five

This project proposes new transit service to generate redevelopment of the central city in a way that also recognizes the many social and political histories that it might engage. Frequently, the lines between these histories are drawn at railroads, and in Atlanta railroads have been a dominant influence in determining spatial relationships. Railroads, then, become the physical site for this project. As profound spaces that elicit multiple readings, simple definitions of railroads as engineering feats, architectural types, or planning boundaries do not fully explain the railroad's role in the "production of space."³⁴ Railroads defined Atlanta's origins and continue to influence spatial relationships. According to Hayden, the inhabitants of cities must understand the social and political histories that define their spatial boundaries, the "complex forces that have led to present configurations," so that informed public policy might make positive changes in their community.³⁵

Within or between these social and political histories and among these spatial boundaries, perhaps too conveniently, lies a series of profound physical spaces for the intervention of this project. These linear spaces originated from the central business district as infrastructure, behaved historically as spatial, social and political boundaries, joined vastly different parts of the city rather freely, have been long ignored and

³³ Bayor. *Race and the Shaping of Twentieth-Century Atlanta*. 191-195.

³⁴ Hayden. "Urban Landscape History." 21.

occasionally abandoned and are ideal for the intervention of public transportation. They are the main railroad lines that converge on downtown Atlanta and the historic belt lines, a set of minor lines that wind through the Victorian and bungalow suburbs encircling downtown and midtown. These lines are not just spaces of connection, but include vast redevelopable land, particularly to the southeast, south and northwest of downtown, created by the shift away from railroad-dominated industry and capable of accommodating a large proportion of the central city's increasing population. Figure 5 shows Southern Railway's old belt line north and east of the central business district, before much of midtown developed and before the construction of bungalow suburbs like Virginia-Highland.

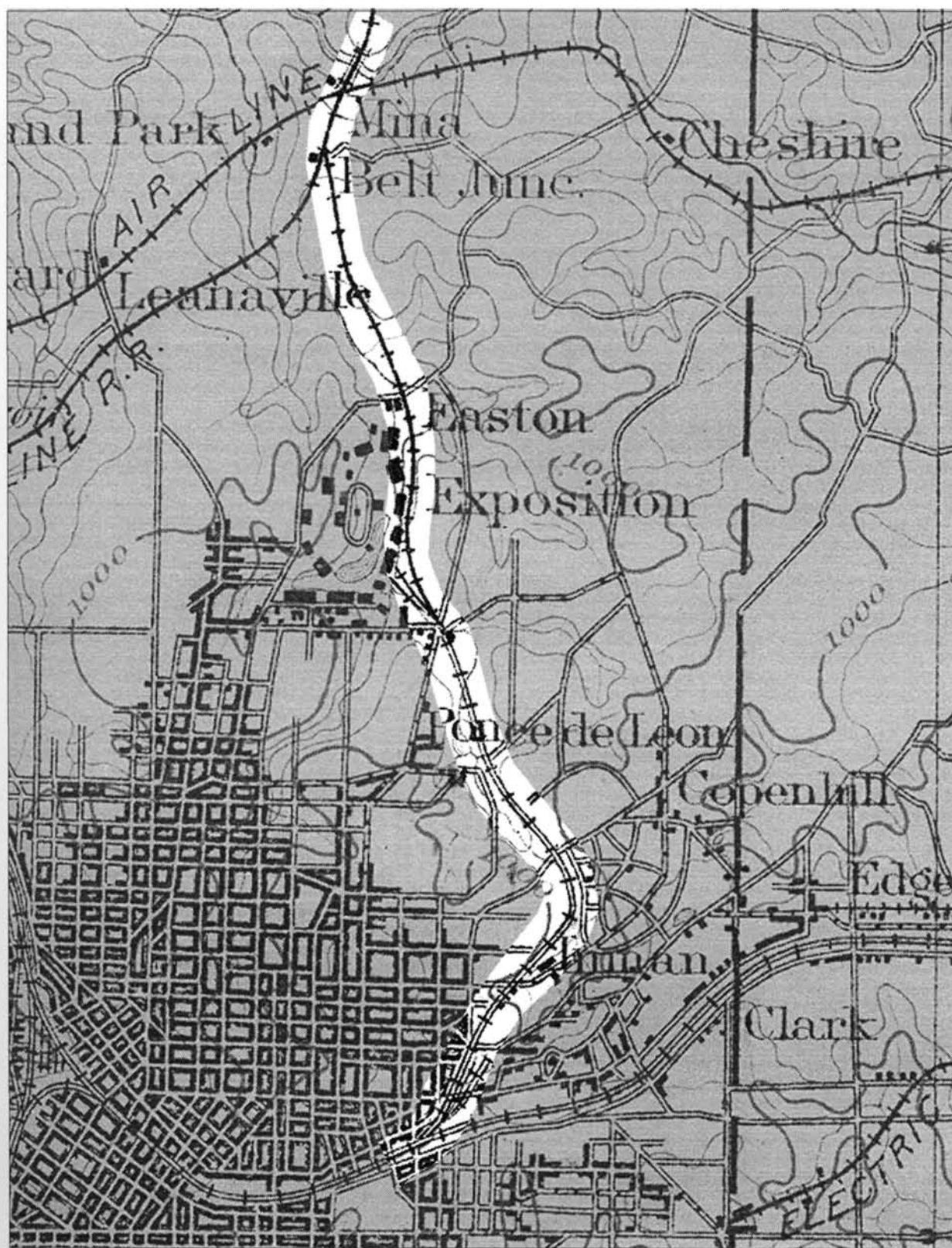


New layers of infrastructure can be designed specifically to spur private redevelopment of this land in ways that reflect the public's best interest. By learning from the Paris model, a thesis based on such arguments might be accomplished at several different levels. Inter-city lines could promote revitalization of major cities like Augusta, Macon, Columbus and Chattanooga by making trips to those cities as reasonable as a drive to Gwinnett County. Commuter lines could invigorate the small town commercial and residential development patterns of outlying towns before suburban development destroys them by placing stations in the downtowns of cities like Covington, Dallas, Winder and LaGrange. Heavy rail like MARTA could further link the close suburbs to each other via the central city. Within the city, new smaller lines can engage the existing city structure, relieving congestion by offering an alternative to driving and opening up territory for urban redevelopment.

Thesis Project Proposal

This project concentrates on the most intimate of these levels of infrastructure. While heavier layers of rail transportation work the main lines going into downtown, new

³⁵ Hayden. "Urban Landscape History." 42.



Space of Intervention

Figure 5: 1919 United States Geological Survey showing historic belt lines

lighter transit lines could be woven through the city, connecting neighborhoods and accessing developable land in new ways that present more than just an improved network of public transportation. Atlanta's historic belt lines offer a profound physical space for intervention that engages parts of Atlanta as different as Brookwood Hills and Pittsburgh, Piedmont Hospital and Zoo Atlanta. In a similar way that streetcars and real estate holdings influenced early urban expansion in Atlanta, the restructuring of the belt lines and their associated territories might impact redevelopment in the early 21st century.

The design project becomes a transit line or collection of lines that access the neighborhoods immediately surrounding downtown and midtown along the historic belt lines. (See Figure 3: *Belt lines in metro context* and Figure 4: *Belt lines in central Atlanta*) The route(s) and stations will be designed to connect to MARTA stations on the north, south, east, west and Proctor Creek lines. Some stations will anticipate future lines extended from the city to suburban destinations. Some stations will include additional programs like retail spaces, parks or entire new mixed-use districts. For example, a station at Boulevard would include an electric bus shuttle to Zoo Atlanta and a neighborhood plan for the vast, adjacent developable territory just south of the Grant Park neighborhood. A station at Memorial Drive would reuse an existing depot as a cafe or gallery. A station at Sylvan Road might have a small academy for nearby Fort McPherson.

It must be clear, however, that this is not a transportation study. It does not justify light rail transit according to current ridership projections, but proposes that if the redevelopable territory associated with the Belt Line is handled appropriately, future population and employment growth on those sites will support it. On the other hand, this study is also not an abstract thesis on infrastructure used as a tool for redevelopment. The Belt Line engages sites with very specific conditions that must be acknowledged in any proposal for re-use. These include differences in topography, road network, adjacent community history, needs and structure, historic sites and buildings, all in addition to the likelihood of serious soil contamination and other environmental problems on old industrial sites.

The Belt Line should accomplish more than just an improved system of public transportation. It has the potential to change the way we look at Atlanta, how we understand our space within the city and within the region. "The design of urban infrastructure... offers a way of reinvigorating the public meaning of landscape by highlighting the interrelationship between natural systems and everyday urban life and restoring civic meaning to what is now relegated to a separated functional realm."³⁶

This new visible to civic imagery and existing city and of relationships and to discover identity revealed through



infrastructure is "capable of contributing identity."³⁷ By working with both the new technologies, between existing sets new development patterns, opportunities and meaning for adolescent Atlanta are the design of public works. Specifically, this is done by making evident the lines and peripheries that divide and connect home and destination, rich and poor, black and white.

³⁶ Rosenberg, Elissa. "Public Works and Public Space: Rethinking the Urban Park." Journal of Architectural Education. (November, 1996 Vol. 50 No. 2) 89.

³⁷ Rosenberg. "Public Works and Public Space." 90.

Chapter 2

Agenda, Context & Precedent

This thesis formulates the idea that the design of public infrastructure, such as a road, mass transit line or park system, can accomplish public goals. Atlanta must establish a goal to pursue new infrastructure systems that will accommodate increasing population while avoiding traffic gridlock. Instead of building new highways, (surely we have learned that lesson), this project focuses on the adaptive re-use of Atlanta's historic freight rail lines. The Belt Line, as we will call the project, uses light-rail technology similar to Portland, Oregon's MAX line and other streetcars around the world. The Belt Line, however, is not the only answer. While this is not a transportation thesis, it should be understood that the Belt Line must be connected to new rail lines, new bus routes and a broader dedication to public transportation and urban ecology.

Urban projects of this scale pose significant challenges because they engage many aspects of city building. Main objectives can easily get lost in tangent ideas. This complexity must be focused into something comprehensible. Construction of the Belt Line could make other mistakes. It could be reduced to a historic trolley tour with insufficient speeds and stops to achieve its potential as a transportation alternative. Or it could become something so bold and intrusive that it not only severely disrupts neighborhoods along its route, but also overpowers the subtle qualities that make it profound as a space that offers important information about Atlanta's history and urban form. The design of a new layer of infrastructure within this space should contribute to Atlanta's identity by making evident its history of settlement and spatial boundaries.



In order to make conscious decisions about the design specifics of the Belt Line (to be discussed in Chapter 3), we must first establish an urban agenda or perspective for restructuring the historic rail lines and their associated territories. This position forms an important theoretical framework on which public officials can base decisions affecting both the new transit line and adjacent redevelopment sites. First we will position the

project within a range of urban strategies including New Urbanism and a more open vision of cities in the 21st century. Then we will orient the Belt Line within a brief history of rail transit in the United States including MARTA in Atlanta. Last, we will revisit some models of transit-oriented development that investigate the important relationship between urban design, land use and transportation planning.

The New City

One of the unmistakable truths of the South's current golden age is that it's not the grand old Southern Cities like New Orleans, or Mobile, or Savannah, or Charleston, the most Southern cities of the South, that are leading the charge. Instead it's places like Atlanta, and Dallas, and Orlando, and Nashville, and Raleigh-Durham, and Charlotte... that as a group in the 1980s and 90s have been the most successful cities in America.³⁸

Unlike northern cities like Boston or Chicago, and unlike older southern cities like Savannah or New Orleans, these new, brash Sunbelt boom towns have had little experience in tightly-knit, quality urban growth. Their intense period of development is coming at a time when automobiles dominate the design of our urban framework, creating cities that are significantly less dense and far more disconnected than previous eras. This new way of city building - one defined by regional malls and cul-de-sacs - has created a vast periphery of low density, disconnected development that is not going away any time soon. New solutions to solving the problems presented by this kind of development will not likely come directly from older, more traditional towns. They will require a new thinking and ultimately, a new kind of city. That new city is what Koolhaas speaks of - "which when compared to cities of the past might seem devoid of qualities, but in which we will one day recognize as many gains as losses."³⁹

³⁸ Applebome, Peter. *Dixie Rising - How the South is Shaping American Values, Politics, and Culture*. (New York: A Harvest Book, Harcourt Brace and Company, 1996) 151.

³⁹ Koolhaas. "Toward the Contemporary City." 15, 16.

Koolhaas is not alone in interpreting the new city. Architectural and urban critics have been writing about it since the supposed demise of modernism. Bernard Tschumi even writes that the function of buildings has become irrelevant:

Architecture is constantly a subject of reinterpretation. In no way can architecture today claim permanence of meaning. Churches are turned into movie houses, banks into yuppie restaurants, hat factories into artists' studios, subway tunnels into nightclubs, and sometimes nightclubs into churches.⁴⁰

We can no longer control the use of architecture, so to recreate traditional urban forms and building types the way New Urbanism proposes, does not necessarily resolve or placate the needs of the contemporary city. "History, memory, and tradition, once called to the rescue by architectural ideologists, become nothing but modes of disguise, fake regulations, so as to avoid the question of transience and temporality."⁴¹ Some New Urbanists, however, like Peter Calthorpe defend the movement, recalling its philosophical basis – regional design and economic diversity, not architectural style. In that sense, New Urbanism is radical. "It advocates mixing income groups in a way that is very frightening to many communities."⁴²

New Urbanism has at least achieved a national discourse about the way we build cities, perhaps because it is easy to understand and can be organized into a simple checklist. For the most part, the popular press has championed the cause. Newsweek's article "15 Ways to Fix the Suburbs" offers a list of solutions like "Give up big lawns," "Bring back the corner store," "Drop the cul-de-sac," "Mix housing types" and "Plan for mass transit."⁴³ James Kunstler, a popular New Urbanist author, makes it a little more complicated by arguing that the ugliness of suburban strip development in America and the separation of people by land use is merely "the surface expression of deeper problems - problems that relate to the issue of our national character."⁴⁴ He makes a legitimate point. The "disconnection from the past and the future, and from the organic

⁴⁰ Tschumi, Bernard. Architecture and Disjunction. (Cambridge: The MIT Press, 1996) 217.

⁴¹ Tschumi. Architecture and Disjunction. 217.

⁴² Calthorpe, Peter. "Beyond Norman Rockwell." The Denver Post. (April 26, 1998).

⁴³ Adler, John. "15 Ways to Fix the Suburbs" Newsweek. (May 15, 1995) 47-51.

⁴⁴ Kunstler, James Howard. "Home From Nowhere." The Atlantic Monthly. (September, 1996, Vol. 278 No. 3) 44.

patterns of weather and light, done for the sake of expedience, ends up diminishing us spiritually, impoverishing us socially, and degrading the aggregate set of cultural patterns that we call civilization.”⁴⁵ A commercial strip in Atlanta appears much the same as a commercial strip in Seattle or Phoenix despite the significant differences in climate and history. Ultimately, however, while rightly criticizing the separation of people by land use and household income, Kunstler gets mired in the same image-based criticism for which New Urbanism has become widely discredited. Instead of searching for solutions to deal with the new complexities in our culture and society, Kunstler looks backward, attacking those same surface expressions and blaming architects for abominations like flat roofs and horizontal windows.⁴⁶

For that reason, many urban critics find New Urbanism a little too easy. Today, the spatial relationships and systems that organize and operate the contemporary city are far more complex than the historic monocentric urban model. They involve remaining portions of the old city plus profoundly new conceptions like edge cities, international airports and superhighways, not to mention the influence of virtual reality and the Internet. The difference between modern commercial strips and traditional town centers has little to do with the pitch of the roof or the orientation of the window. Real differences exist in the scale of the economics, which is reflected in physical size. Large national chain stores beat out local independent stores because they buy and ship products in bulk and serve large geographical areas. They don't fit into traditional towns because they usually require the cheap development costs of undeveloped land for large buildings and parking lots. Attempts to revive the city without addressing this economic and cultural reorganization are simplistic and empty, but also increasingly popular.

There is no argument that conventional strip-style development has altered our perspective of the city itself. These consumer-oriented landscapes have dissolved the clarity of relationships that once gave coherence and identity to older communities, those same relationships that New Urbanism attempts to revive. Hans Stimmann writes about the similar dissolution of European cities saying that the trend against urban forms has

⁴⁵ Kunstler. "Home From Nowhere." 46.

...spawned not only urban sprawl, but also illegible urban plans and formations that lack any architectural coherence, where there is no dialectic between house and street, between private and public sphere. In short: cities without identity, without character, without resistance to uprootedness, alienation, disorientation.⁴⁷

Creating the new city, however, is much more complicated than researching a handful of urban models. It blends new and old in ways that make each metropolis distinctive and unique. "In a time when the energy of conurbations like Hong Kong, Shanghai, and Mexico City seems to stifle the very idea of the European city, the return to prominence of East European cities delivers the perfect counter-argument."⁴⁸

Prague is often described as a city that has seen dramatic cultural and political change and has accepted that change reflected in architecture. The result has been "continuity in a century of rupture and catastrophe"⁴⁹ as the city itself becomes a reading of history through architecture. The possibilities for the modern metropolis are endless, and just as Prague has achieved a new urbanism far different from Hong Kong but equally successful and seductive, Atlanta can find its own place, discovering new solutions to the problems facing Sunbelt boom towns after decades of sprawl. Atlanta can find "as many gains as losses," and once again reinvent the modern American city.

The goal, then, is to discover new ways to create cities where people want to live, within the economic, cultural and spatial conditions of the contemporary city. We cannot recreate the streetcar systems that built Atlanta's first periphery of suburbs because those neighborhoods have learned to accommodate automobiles and the destinations of residents are far less likely to be concentrated downtown like they were fifty years ago. There is a need, however, to connect these areas to a broader network



⁴⁶ Kunstler. "Home From Nowhere." 62.

⁴⁷ Stimmann, Hans. "Tradition and Modernity in Urban Development in Architecture." in *Bernhard Winking – Architektur und Stadt, Architecture and the City*. Klaus-Dieter Weiss, ed. (Berlin/Boston: Birkhäuser Publishers, 1999) 10.

⁴⁸ Weiss, Klaus-Dieter, ed. *Bernhard Winking – Architektur und Stadt, Architecture and the City*. (Berlin/Boston: Birkhäuser Publishers, 1999) 218.

⁴⁹ Weiss, ed. *Bernhard Winking* 218, 219.

of rail transit so that they can accommodate increasing population while avoiding traffic gridlock. At the same time, we do not want that increasing population to damage established neighborhoods through auto-intensive development, which threatens quality of life. At the seam of the City's goals to protect and revive historic neighborhoods, accommodate an influx of new residents, redevelop available land and provide alternative means of transportation, we find the historic belt lines and their associated territories ripe for redevelopment and ready for mass transit.

Transit in America

In the same way that streetcar suburbs allowed downtown workers to escape the urban core, freeway suburbs gave them even more mobility. Streetcar suburbs "were soon overshadowed by a new kind of suburb in the 1920s, one devoted almost exclusively to automobile ownership and usage." This meant "the vast majority of houses were no longer within a 5-minute walk of a rail stop."⁵⁰ The new standard for the American neighborhood soon became low-density areas with curvilinear streets and large parcels completely separated from not just commercial and industrial development, but multi-family projects as well. Residents of these areas are almost completely dependent on automobiles for getting around and most bus routes have been ineffective because for the most part, the long routes are not competitive with cars as an efficient means of daily transportation.

As transit companies folded due to decreasing ridership and other factors, the federal government stepped in to aid transit, notably with the Urban Mass Transportation Act of 1964, and later the Urban Mass Transportation Assistance Act of 1970. Atlanta joined San Francisco and Washington DC in opening rapid rail service in the 1970s. But the political favor for public transportation evident in the 1970s went sour in the 1980s as President Reagan slashed federal support and inflation cut deeper into federal transit dollars. State and local governments took up much of the slack, and while ridership

⁵⁰ Bernick and Cervero. Transit Villages. 29.

continued to increase slightly in the 1980s, transit's share of commuter trips dropped because people began driving more than ever before. In fact, the number of "vehicle miles of urban automobile travel increased 43 percent during the 1980s, and the share of commute trips by solo drivers rose from 64.4 percent to 73.2 percent."⁵¹

In their recent book, Transit Villages in the 21st Century, Michael Bernick and Robert Cervero cite three major causes for transit's decline in the 1980s. First, the rapid decentralization of jobs out of the central city made transit less efficient because no longer was there a single node of employment. Second, a 45 percent drop in the average cost per mile for operating an automobile meant that transit could no longer compete economically. Third, the US encountered significant demographic changes including the shift of baby boomers to mid-life when "disposable incomes and amount of travel are usually at their highest."⁵²

The 1990s have been better for mass transit as government has begun to tighten its grip on pollution and realize the limits of automobile-oriented development. The 1990 Clean Air Act Amendments promote transit as one way to battle air pollution for cities in violation of national clean air standards. The 1991 Intermodal Surface Transportation Efficiency Act, (ISTEA), supports "integrated land use and transportation planning as well as attention to the social, economic and environmental impacts of investment decisions."⁵³ Given the sprawling state of Atlanta's metropolitan region, its non-compliance with air quality standards, and the renewed interest in transit as a legitimate transportation alternative, a project like the Belt Line is timely.

The investment made in the 1970s and 80s by Fulton and DeKalb Counties in Atlanta's existing MARTA rapid rail system will prove incredibly valuable for the metropolitan region. These heavy rail stations and vehicles are designed to handle large crowds with frequent service, and are ideal for middle-tier suburban commuters and large events like ballgames, conventions or concerts. MARTA's existing rail lines, like most subway systems, are considered heavy rail – they require a dedicated, protected

⁵¹ Bernick and Cervero. Transit Villages. 41.

⁵² Bernick and Cervero. Transit Villages. 41, 42.

⁵³ Bernick and Cervero. Transit Villages. 42.

right-of-way and a third rail for electrical supply. Light rail is less intensive because it has an overhead electrical source. Heavy rail is faster than light rail and bus lines because they have their own right-of-way, travel at higher speeds and typically make fewer stops.

Transit-Oriented Development

One of the most unfortunate aspects of the MARTA system is the underdevelopment of the land immediately adjacent to most stations. Transit stations should attract high-density development. Bernick and Cervero argue that the general failure of mass transportation in the United States has had less to do with the systems themselves, and more to do with the lack of consistent support for station area development through policy and public/private investment.⁵⁴ Instead, we surround

stations with huge park-and-ride lots, limiting the possibility for dense nodes of mixed-use which would allow residents and workers mobility with less dependence on automobiles. these developments transit transit-oriented development, or



lots, limiting the possibility development at each station, workers mobility with less Bernick and Cervero call villages. What some call TOD's, transit villages can

reinvigorate established neighborhoods or small towns, or create new dense, walkable suburbs as an alternative to contemporary sprawl. "As places that bring people of different ages, incomes and walks of life into daily contact and that encourage social interaction, transit villages can be important catalysts to community rebuilding."⁵⁵ They combine different housing types with offices, stores and park space, all within an easy walk to a transit station. Bernick and Cervero argue that transit villages are not a threat to the low-density suburbs that many Americans prefer. Instead, they "provide a kind of safety valve: they produce additional housing that minimizes impacts on local and regional roads, does not contribute to sprawl, and enables existing neighborhoods to

⁵⁴ Bernick and Cervero. Transit Villages. xi.

⁵⁵ Bernick and Cervero. Transit Villages. 10.

remain intact." ⁵⁶ Further, unlike many previous attempts at combating urban decay, transit villages establish a public infrastructure that encourages private investment toward revitalization. ⁵⁷

Atlanta has begun to look at the potential for transit-oriented development at MARTA stations outside of the central city. Construction will soon begin on a large project at Lindbergh Station that will include office, retail and residential components. There are many models to look at for transit-oriented development, but perhaps one system sums up the nation's new trend toward light-rail transit. Portland, Oregon's MAX line offers more than just public transportation; it is specifically intended to change private development patterns, protect the natural environment and change the way we think about urban development.

Portland's most important lesson for Atlanta is a strong commitment to the public realm – not just public transportation, but also sidewalks, parks, and broader concepts like sustainability and quality of life. Public investment is made deliberately to reinforce regional goals by supporting concentrated, transit-oriented development that protects wetlands and other natural features. Since the late 1970s, Portland has invested in light rail and bus service instead of highways. They even replaced an existing expressway with a new waterfront park. A new light-rail system called MAX began construction in the mid 1980s. Since then, over 2.4 billion dollars in development has been made within an easy walk of the east and west lines. ⁵⁸ MAX has become a key component in the successful marriage of land use and transportation planning in Portland. (See Figure 6: *Images of Portland's light rail transit line*)

The MAX light rail transit line is operated by Tri-Met (Tri-County Metropolitan Transportation District of Oregon) and currently extends east-west through the Portland metropolitan area from Hillsboro at the western terminus through Beaverton and downtown Portland to Gresham at the eastern terminus, a one and a half hour trip. The

⁵⁶ Bernick and Cervero. *Transit Villages*. 8, 9.

⁵⁷ Bernick and Cervero. *Transit Villages*. 8-10.

⁵⁸ Arrington, G.B. Jr. "At Work in the Field of Dreams: light rail and smart growth in Portland." (Portland, OR: Tri-Met, September 1998).



MAX at grade crossing



Elmonica Station and grade crossing



MAX follows rail and road infrastructure



New urbanism development at Orenco



New development at Beaverton Central



New infrastructure in Gresham with future rail stop

Lessons from Portland

Figure 6: Images of Portland's light rail transit line

east line was completed in 1986 with 19 stations on approximately 15 miles of track. The west line opened in 1998 and includes 20 stations on approximately 18 miles of track. Portland's central business district has 12 stations, partially in a loop along one-way city streets. Vintage trolleys connect downtown on a less frequent schedule to the Amtrak station on the northern edge of the central business district and the Oregon Convention Center, Rose Garden Arena and Lloyd Center Mall to the northeast, just across the Willamette River, (the latter destinations also have regular service on MAX's east line). Although a north-south line was voted down last year, other projects are planned for the near future. Construction has already begun on a new 5.5 mile MAX spur line to Portland International Airport. At \$125 million, it will open in Fall 2001, departing the east line's Gateway Transit Center. Studies are also underway for an Interstate MAX, following I-5 from the Oregon Convention Center 5.6 miles north to the Portland Expo Center. Tri-Met operates the first low-floor light rail vehicles used in North America for revenue service. It has 46 model SD 600's manufactured by Siemens Transportation Systems. They are double articulated, bi-directional and require 200 feet of platform. They have 72 seats each and space for 4 wheelchairs.

Learning from Portland, once a new transit line is designed, care must be taken to protect properties adjacent to proposed stations from speculative development that does not conform to transit-oriented station area plans. Portland attempted to do this by creating Interim Zoning Overlay Districts that allow increased density, encourage mixed uses, and include design standards such as setbacks, building heights, block lengths and parking ratios and access. Results from these attempts have been mixed:

Hillsboro

Hillsboro, Oregon, with a current population just under 50,000, is the county seat of Washington County, just west of Portland's Multnomah County. It was incorporated in 1876 and grew tremendously in the 1960s as a bedroom community to Portland. Hillsboro was included within the Portland Metropolitan Urban Growth Boundary in 1979 and has since attracted a significant amount of industrial and residential development. In 1998, Hillsboro became the western terminus of the region's west light rail transit line from Portland. The line enters the city through a new arched gateway bridge on open

track, then butchers a city thoroughfare on paved track before arriving at the government complex. In time, new development will certainly improve the line's relationship to Washington Avenue. A new 500 space parking garage supports both Hillsboro city parking and MAX line commuters.

Orengo

Orengo was a small community built by the Oregon Nursery Company in the early 1900s, just east of Hillsboro. The company convinced the Oregon Electric Railroad Company to reroute its new line to Hillsboro through the proposed town site and advertised it as "the garden spot of the Willamette Valley."⁵⁹ When Portland's west side light rail line was designed to go through Orengo in the 1990s, it was envisioned that the growth of the small settlement would become the model greenfield transit community of the MAX line. To date, it has succeeded in beginning to develop its northwest quadrant with a new town center, Orengo Station, which includes storefront buildings with apartments above, rowhouses with parking in the rear and dense single family homes fronting a large public green – a shiny example of model New Urbanism. As of September 1999, a wine store and a Starbucks have moved into newly completed town buildings at Cornell Road.

Beaverton

Beaverton, Oregon was founded in 1868 as a transfer point on the Oregon Central Railroad and named after the area's many beaver dams. It lies between Portland and Hillsboro and is the largest city in Washington County. It has developed dramatically in the last few decades in a classic suburban strip style with fast food restaurants and service stations dominating its main arterials. Away from the historic town center, the Beaverton Central MAX station includes an unfinished round of four story office and apartment buildings built behind several car dealerships that front the main road. A collapse of uncertain financing has left these projects abandoned in mid-construction, but signs promise the area to develop as a dense, urban, transit-oriented community.

⁵⁹ Promotional pamphlet for Orengo Station development.

Gresham

Gresham, Oregon with a population over 80,000, is the fourth largest city in Oregon and lies just east of Portland near Portland International Airport and the Port of Portland. It is the eastern terminus of the region's MAX light rail transit line, which runs half a mile north of the historic town center. In 1996, Gresham completed a new City Hall adjacent to the Gresham Central transit station and has plans for a mixed-use district on the largely vacant territory immediately west of the new City Hall. The city constructed a new street bisecting the area, complete with benches, street trees and brick paved intersections at stub outs for future city blocks. Where the new street crosses the MAX line, the foundation for a future station is built. No new private development has occurred yet. Other plans for Gresham include a 575 space parking deck for driving commuters and a loop extension of the line that connects Mt. Hood Community College, Medical Center and the historic downtown.

The City of Atlanta has an important opportunity to once again play an influential role in the metro area's urban development. Troubled by pollution and congestion, Atlanta can seize this chance to redefine itself with a new understanding of city form and redefine urban life in the 21st century South. As one small part of that new understanding, the Belt Line light rail transit line can restructure urban brownfield redevelopment sites associated with underutilized historic freight lines. In order for this public investment to be effective, leaders must make a necessary commitment of public policy for continued support of station area development. They must understand not only the importance of the location, phasing and design of transit line itself, but more importantly, recognize that the restructuring of redevelopment sites through subdivision and zoning codes is critical to the project's success.

Chapter 3

Project Design

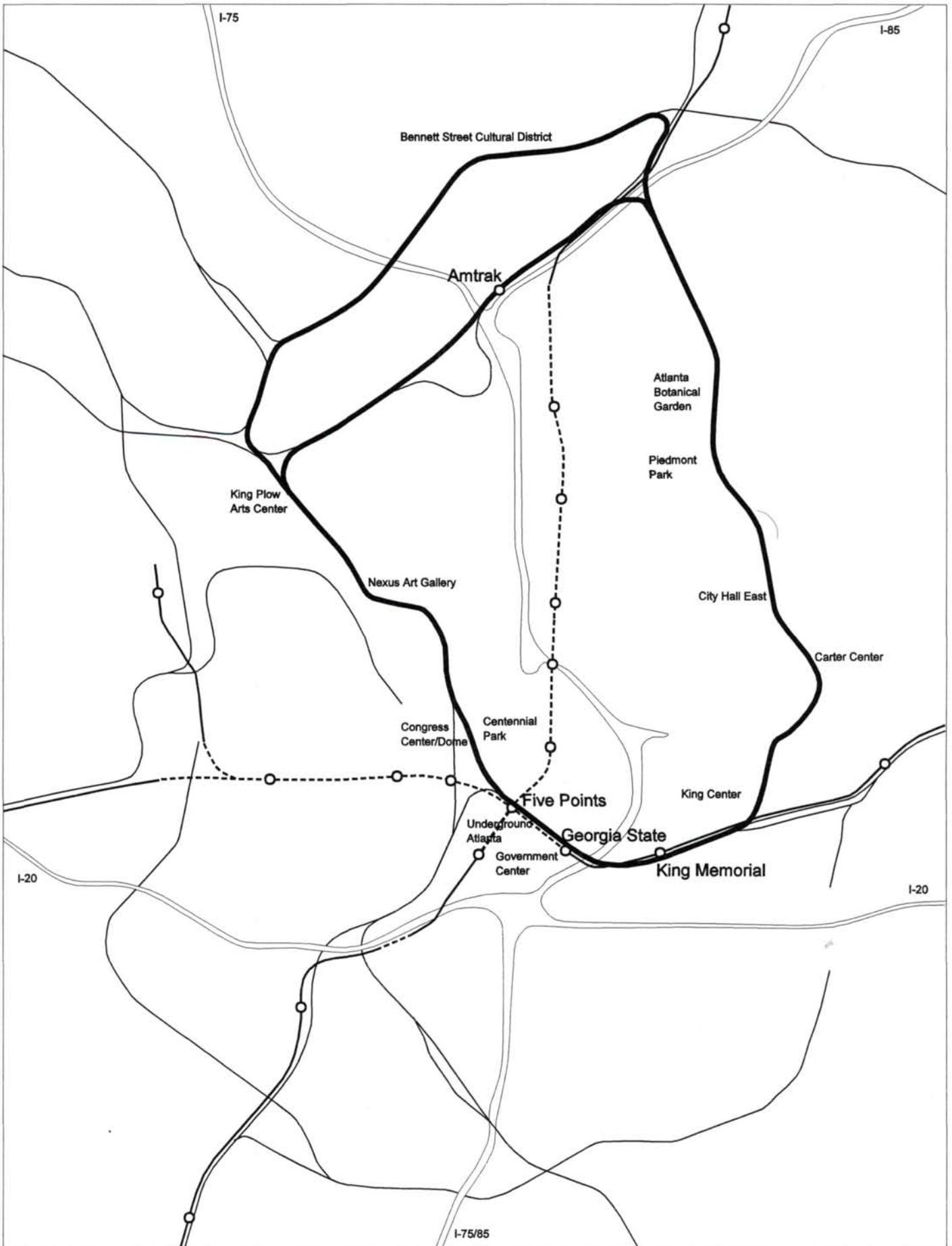
Ideas about the re-use of Atlanta's historic belt lines have been tossed around before. Just a few years ago, in addition to an excursion to Stone Mountain, the New Georgia Railroad ran steam train tours east from downtown, looping north around Southern Railway's belt line past Piedmont Park and returning just west of Georgia Tech along the Marietta Street corridor. Prior to the Olympics in 1996, the Corporation for Olympic Development in Atlanta (CODA) proposed a "Cultural Ring" using that same route, which happens to connect many cultural points of interest in the city including the King Center, Carter Center, Atlanta Botanical Gardens, King Plow Arts Center and Nexus Art Gallery. At the same time, the City's Parks and Recreation Department proposed using the route for both rail transit and bike paths, with a second phase to include Atlanta & West Point Railroad's belt line to the south and southeast, and Louisville and Nashville Railroad's abandoned line in the city's west and southwest.⁶⁰ (See Figure 7: CODA's "Cultural Ring")

Instead of selling the project as a cultural tour, however, this thesis proposes that the belt lines have much more potential. In a similar way that the Atlanta Street Railroad Company leveraged streetcars and real estate holdings to profit from urban expansion over a century ago, the Belt Line investment in light rail transit to urban redevelopment, attracting new jobs to the city. The Belt Line, can revive the inner city and ecology and agricultural resources urban redevelopment areas for Atlanta's growing population as an alternative to suburban sprawl. With this as an agenda on which to base planning and design decisions that affect redevelopment sites, these sites can be restructured within a broad,



can leverage public achieve public goals like both new residents and used as infrastructure, protect our natural by providing access to

⁶⁰ Atlanta Parks, Open Space and Greenways Plan. (City of Atlanta Department of Planning and Development-Bureau of Planning in conjunction with the Department of Parks and Recreation-Bureau of Cultural Affairs and the Mayor's Green Ribbon Committee with Assistance of EDAW, Inc., Norrell Services and Park Pride Atlanta. December, 1993) 63.



Previous Projects

Figure 7: CODA's "Cultural Ring"

regional perspective for transit-oriented residential, commercial and industrial redevelopment.

The Belt Line proposal uses light-rail technology similar to Portland, Oregon's MAX transit line. It proposes the same vehicles and fare system, and would most likely be operated by MARTA. Like MAX, the Belt Line serves both existing developed areas and new, transit-oriented development on redevelopment sites. It makes conscious efforts to spread awareness of and protect the natural environment, and contributes significantly to that goal by providing clean, efficient transportation and maximizing the use of valuable urban land. Of course the route is also considerably different from Portland. Instead of a suburban commuter spoke line, it is an inner wheel, making lateral connections between MARTA's heavy rail lines. Instead of spawning predominately new greenfield development, the Belt Line engages existing brownfields for redevelopment. This chapter describes design and planning decisions made for everything from route alignment to recommended changes to the City's subdivision and zoning codes.

Route

Atlanta was founded as the terminus of the Western and Atlantic Railroad in 1837. Although the initial settlement dubbed Terminus was not expected to survive, other railroads soon extended to it and Atlanta was born as a regional rail hub.⁶¹ Belt lines forming a periphery around the city were constructed soon after the Civil War to serve an expanding industrial base and were critical to Atlanta's rise to prominence as the hub of the Southeast.⁶² Currently, although the government does not allow railroads to abandon lines if they are still needed by customers, most of these belt lines are underutilized. The route of the Belt Line light rail transit line is a loop formation made up primarily of four historic belt lines (see Figure 8: *Historic freight belt lines*). Each of these

⁶¹ Morris, A.E.J. History of Urban Form – Before the Industrial Revolutions. Third edition. (Edinburgh Gate: Addison Wesley Longman Limited, 1994.) 359, 360.

⁶² Atlanta Parks, Open Space and Greenways Plan. 63.

lines encounters special site conditions and carries different volumes of train traffic (see Figure 9: *Intensity of rail use*). Clockwise, they are:

Southern Railway

This portion of the belt line winds south from I-85 and the Armour industrial district south through Piedmont Park and DeKalb Avenue, four blocks east end currently services about two Ralph McGill Boulevard, the line actually runs into the ground at



past the Carter Center to of Boulevard. The northern trains per week. South of is not maintained and DeKalb Avenue.

Atlanta & West Point Railroad

This portion of the belt line splits Reynoldstown in two, running from the CSX freight transfer facility south, past an old depot on Memorial Drive toward Blue Circle's concrete recycling plant on Glenwood Avenue south of I-20. The line curves southwest just south of Grant Park and heads west toward Oakland City, crossing under Southern Railway's trunk line at McDonough Road and under I-75/85 just south of University Avenue. The line has been abandoned between Reynoldstown and Glenwood Avenue and its right-of-way was re-used to create the Glenwood-Memorial Connector at I-20. The line carries light freight traffic between Blue Circle and Oakland City, but is expected to be abandoned when Blue Circle moves its plant to the suburbs in the next few years.

Louisville and Nashville Railroad

This portion of the belt line connects directly to Atlanta & West Point's line a block or so west of Metropolitan Parkway and just south of Adair Park. It skims the western edge of West End, crosses under I-20 at Langhorn Street and heads north past Washington Park. MARTA's Proctor Creek line to Bankhead takes over the line for a short segment between Washington and Maddox Parks. Finally, L & N's line bisects Maddox Park, passes near the Fulton County Jail before tunneling under Marietta Street into Inman Yard. The line is completely abandoned between Adair and Washington Parks. North of the MARTA segment, the line is used fairly often.

Seaboard Air Line Railroad

This portion of the belt line enters Inman Yard from Vinings, cuts north around the Hemphill water reservoirs before heading east, under I-75 and into Brookwood. It skims past Piedmont Hospital before crossing Peachtree Road and continues east toward the Armour industrial district and eventually to Emory University. The line is still used by several trains per day, although it is not one of the city's main lines.

With a few significant exceptions, these lines form a relatively easy loop through Atlanta's intown neighborhoods. In some cases it would be easier and less costly to design a series of transit segments that were not connected as a loop, (see Figure 10: *Possible transit routes*). For the system to be effective as a transportation alternative, however, a loop formation is advantageous because it minimizes the number of transfers from one part of the city to another. Further complicating the transit route, a connection must be made to a MARTA station unfortunately, MARTA stations were not located on each of MARTA's spokes, and anticipating the re-use of the belt lines as a light-rail transit route. These connections will require awkward diversions from the historic belt lines, particularly at Inman Park/Reynoldstown, West End and Ashby stations. (The line also engages Lindbergh and Bankhead stations, see Figure 11: *MARTA connections*.)



As a lesson from these costs and logistical problems, Belt Line stations, in turn, must anticipate the possible paths of future rail transit lines into the city, (also shown in Figure 11). For example, we can expect that a future line might connect Lindbergh or Arts Center to Emory University along the former Seaboard Air Line, also the probable route of commuter train service to Athens. And while the Proctor Creek spur may be a more financially and logistically feasible connection to northwest Atlanta and Cobb County, other Belt Line stations must anticipate political decisions to instead cross the line through the Atlantic Steel property to Arts Center Station on MARTA's north line. Finally, the Belt Line should plan for a possible new south line out of Georgia State or

Garnett stations, past Turner Field into southeast Atlanta and Henry County along the Southern Railway toward Macon.

Other conditions must also be dealt with, such as adjacent communities (see Figure 12: *Neighborhoods*), rider destinations (see Figure 13: *Points of interest*), existing road networks (see Figure 14: *Street crossings*), and sites with development potential (see Figure 15: *Target sites and corridors*). These factors, combined with diversions toward MARTA stations and possible future lines present a wide array of physical environments encountered by the Belt Line and a complex system for analysis.

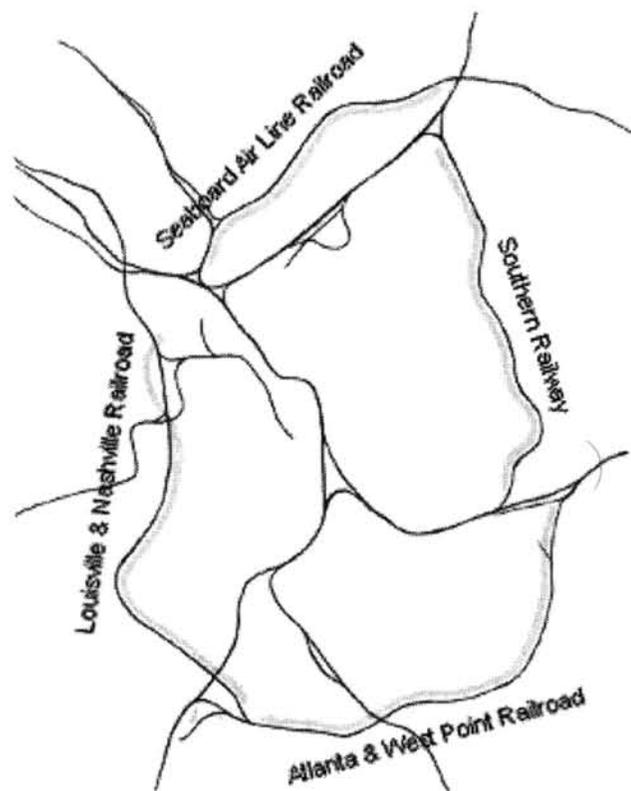
The route of the Belt Line, then, generally follows the old freight belt lines but must deviate from those lines to make necessary connections, (see Figure 16: *Belt Line route proposal*). For financing, design and construction phasing, the loop would need to be broken down into segments. This can happen at each of the main four MARTA stations, dividing the loop into four quadrants. Each line has specific problems, opportunities, costs and social issues. Clockwise, they are:

Northeast

The northeast line follows primarily Southern Railway's old belt line from the Lindbergh MARTA station south to Inman Park/Reynoldstown MARTA station. While connecting to King Memorial MARTA station might be much easier and less costly for the northeast line as an independent line, a difficult (and expensive) link under CSX's freight transfer terminal at Cabbagetown is necessary to connect the northeast and southeast lines at Inman Park/Reynoldstown and form the loop. Because the northeast line connects some of the most important points of interest in the city, such as the King Center, Carter Center, City Hall East, Piedmont Park and the Atlanta Botanical Gardens, it is probably the most viable of the four lines in terms of initial ridership. (See Figure 17: *Images from the northeast belt line*).

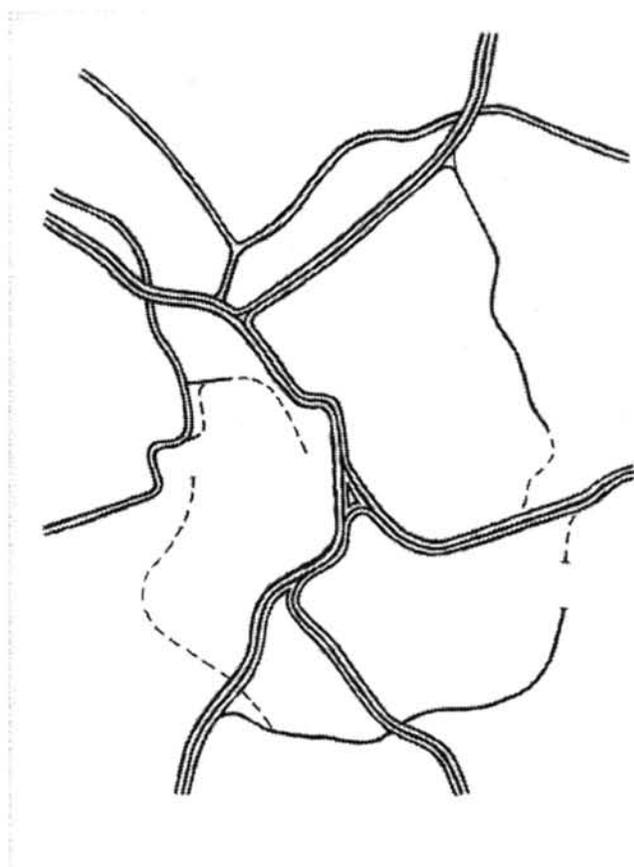
Southeast

The southeast line follows primarily Atlanta & West Point's old belt line from the Inman Park/Reynoldstown MARTA station west to the West End MARTA station. In



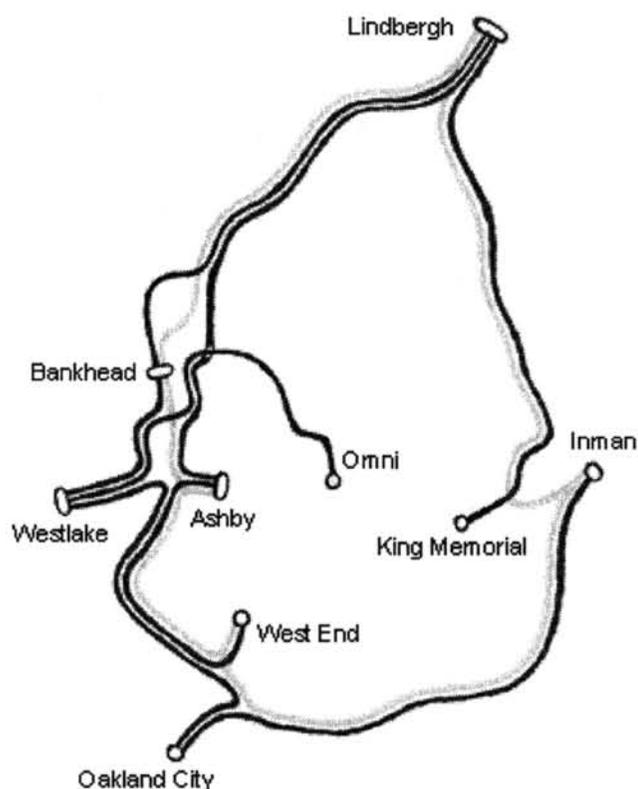
Belt Line Route

Figure 8: Historic Freight Belt Lines



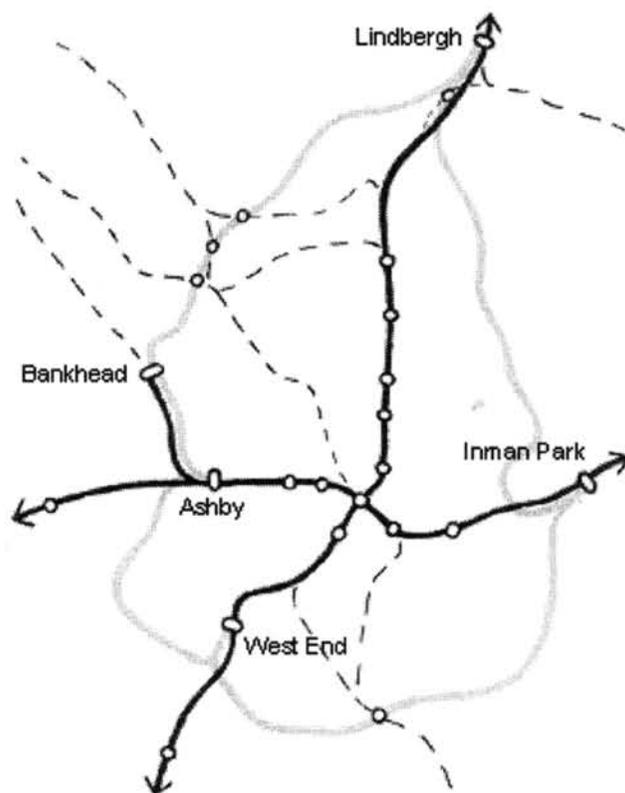
Belt Line Route

Figure 9: Intensity of Rail Use



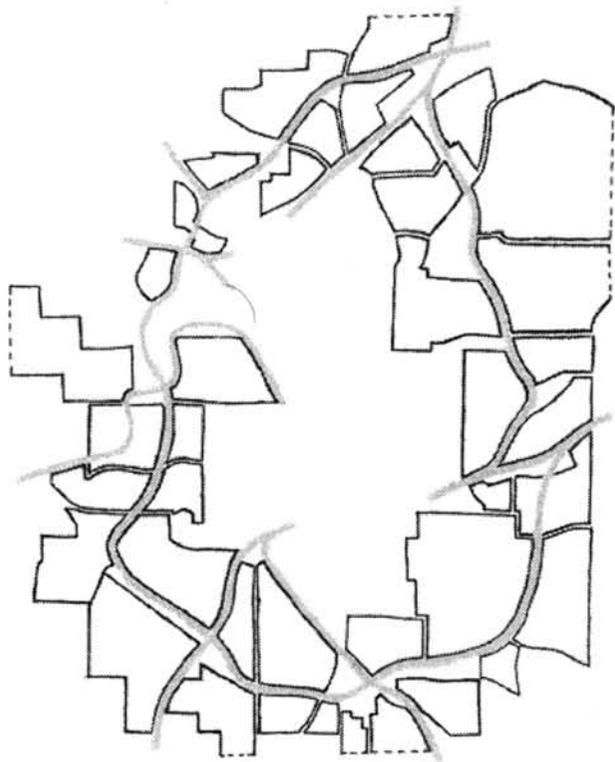
Belt Line Route

Figure 10: Possible Transit Routes



Belt Line Route

Figure 11: MARTA Connections



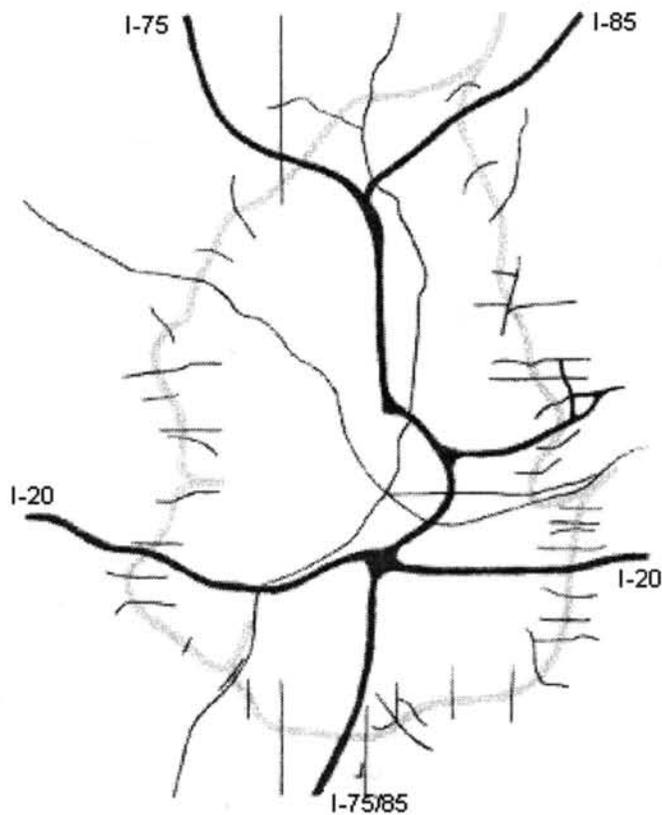
Belt Line Route

Figure 12: Neighborhoods



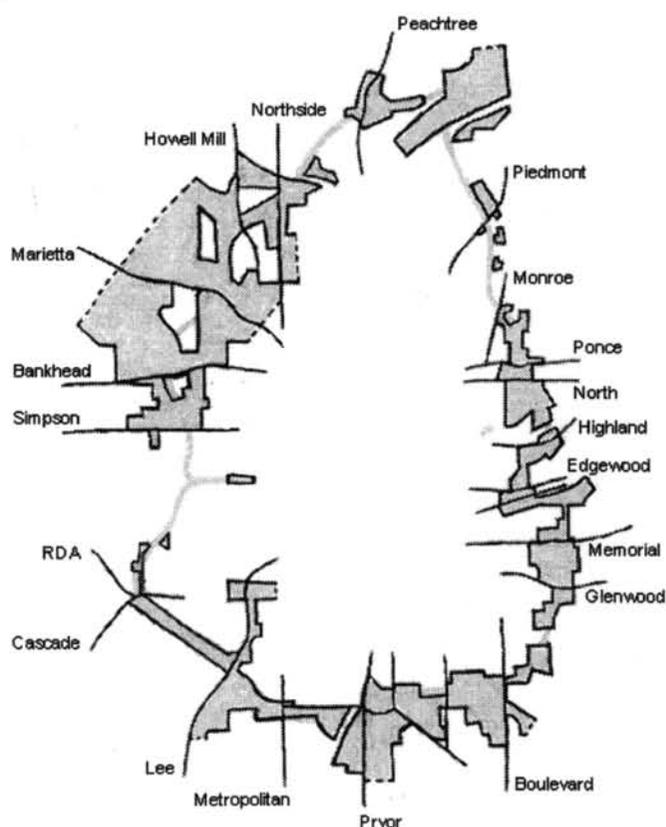
Belt Line Route

Figure 13: Points of Interest



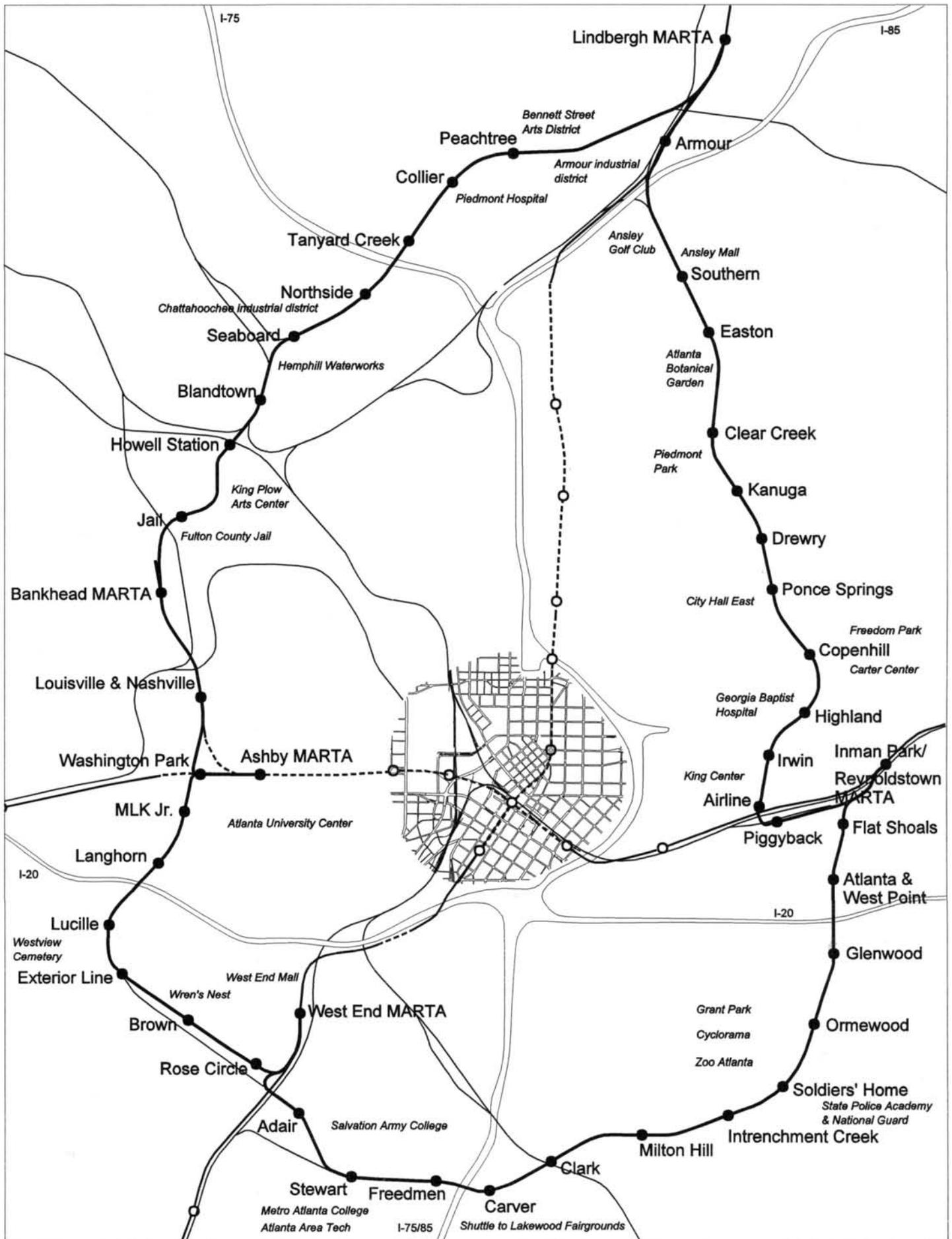
Belt Line Route

Figure 14: Street Crossings



Belt Line Route

Figure 15: Target Sites and Corridors



Belt Line Route

Figure 16: Belt Line Route Proposal

order to make a connection between the southeast and southwest lines at a MARTA station, the transit line must deviate from the railroad right-of-way. The connection could occur at Oakland City MARTA station, but connecting to West End MARTA station along Lee Street supports the established historic commercial district at West End. The southeast line also anticipates a potential new transit spoke line intersecting at McDonough Road. Because the southeast line connects so many redevelopable sites and neighborhoods with significant infill possibility and gentrification pressure, it is probably the most viable of the four lines in terms of development potential. (See Figure 18: *Images from the southeast belt line*).

Southwest

The southwest line follows primarily Louisville & Nashville's old belt line from the West End MARTA station to the Ashby MARTA station. As stated, the connection to West End is difficult; likewise, Ashby's connection is awkward, following above MARTA's underground west line from Washington Park east along Lena Street. Because the southwest line's portion of L & N's old track is already abandoned and because the southwest line is short, it is probably the most viable of the four lines in terms of initial cost. However, the southwest line also offers relatively few redevelopment sites and it alone solves few transportation problems. (See Figure 19: *Images from the southwest belt line*)

Northwest

The route of the northwest line is not as easy as the other three lines, but does connect the Ashby, Bankhead and Lindbergh MARTA stations. It follows Louisville & Nashville's old belt line between Washington Park and Bankhead MARTA station, then goes cross-country around the Howell Station neighborhood and Fulton County Jail before connecting to the moderately trafficked Seaboard Air Line and continuing on to Lindbergh. Because the latter line does see a fair amount of freight traffic, sharing the existing track will not be possible. The northwest line also anticipates a potential new transit spoke line intersecting between Marietta Street and Howell Mill Road. Because the northwest line's territory is dominated by heavy industrial uses, and because it will require intensification of Seaboard's old right-of-way, it is probably the least viable of the



at Piedmont Avenue



at Piedmont Park



at Ponce de Leon Avenue



at Ralph McGill Avenue



at Irwin Street



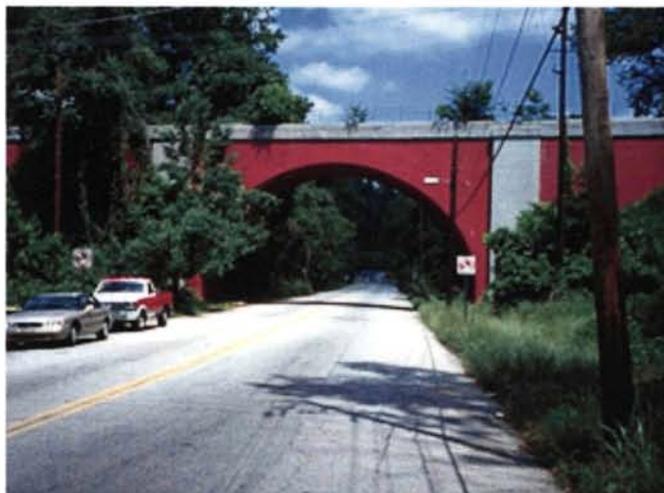
at DeKalb Avenue

Belt Line Route

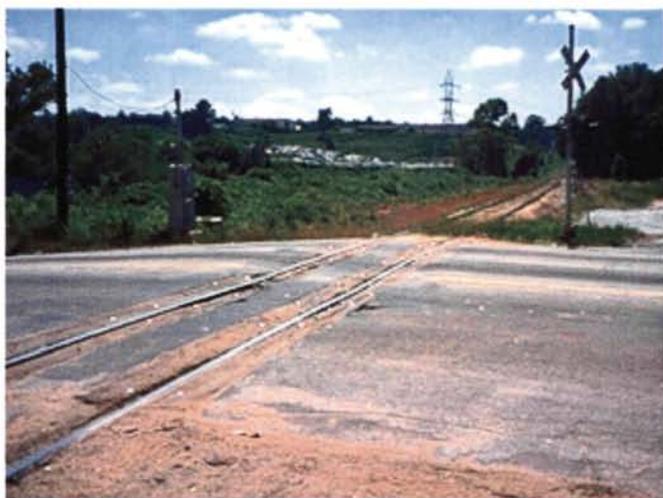
Figure 17: Images from the northeast belt line



at Memorial Drive



at Ormewood Avenue



at Boulevard



at Milton Avenue



at Metropolitan Parkway



at Murphy Street

Belt Line Route

Figure 18: Images from the southeast belt line



at Lee Street



at Ralph David Abernathy Boulevard



at I-20 and Westview Drive



at Martin Luther King, Jr. Drive



at Lena Street

Belt Line Route

Figure 19: Images from the southwest belt line



at Simpson Road



at Howell Mill Road



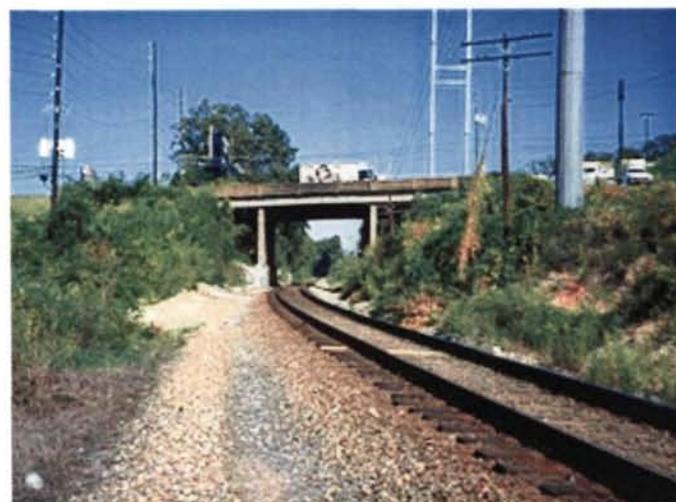
at Northside Drive



at I-75 North



at Collier Drive



at Peachtree Street

Belt Line Route

Figure 20: Images from the northwest belt line

four lines for initial construction. It is necessary, however, in the larger scheme of the Belt Line because it seals the loop formation and connects it to any possible northwest transit line to Cumberland Mall, Smyrna and Marietta. Furthermore, the northwest Belt Line used as a tool for industrial redevelopment provides an opportunity to reinvigorate Atlanta's industrial base. (See Figure 20: *Images from the northwest belt line*).

Redevelopment Sites

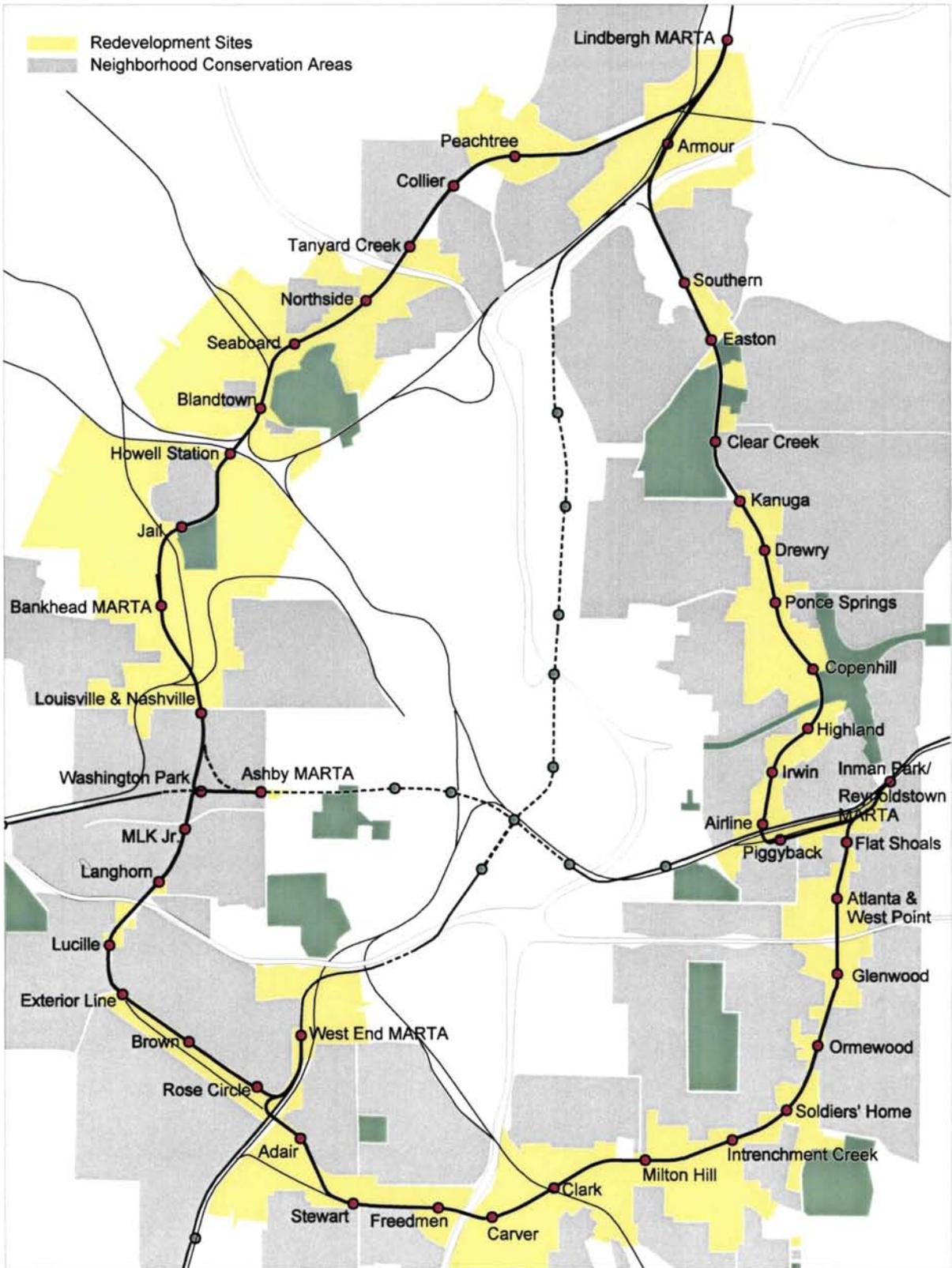
Belt Line redevelopment sites consist primarily of the industrial zoned areas woven through intown neighborhoods following the historic freight lines. Adjacent obsolete, disconnected apartment complexes and automobile-style commercial strips are also included. (See Figures 21-27: *Belt Line route with redevelopment sites*) Using these simple criteria, over 4,000 acres, (6.25 square miles) of redevelopment sites have been designated. As a comparison, Figure 28 shows that these sites roughly equal in size all of downtown and midtown Pershing Point, Grady Hospital to also anticipate development what Calthorpe calls Secondary lines leading to and within three In Atlanta's case, these typically historic neighborhoods and should be protected by designation as neighborhood conservation areas for infill development only. The definition of both redevelopment sites (shown in yellow) and neighborhood conservation districts (shown in grey) is supported by many interrelated arguments for public policy. There seem to be close relationships between goals of accommodating increasing residential density, neighborhood revitalization, public transportation and economic development.



Atlanta, from Turner Field to the Georgia Dome. We can impacts on adjacent areas, Areas, located along bus miles of a transit station.⁶³ secondary impact areas are

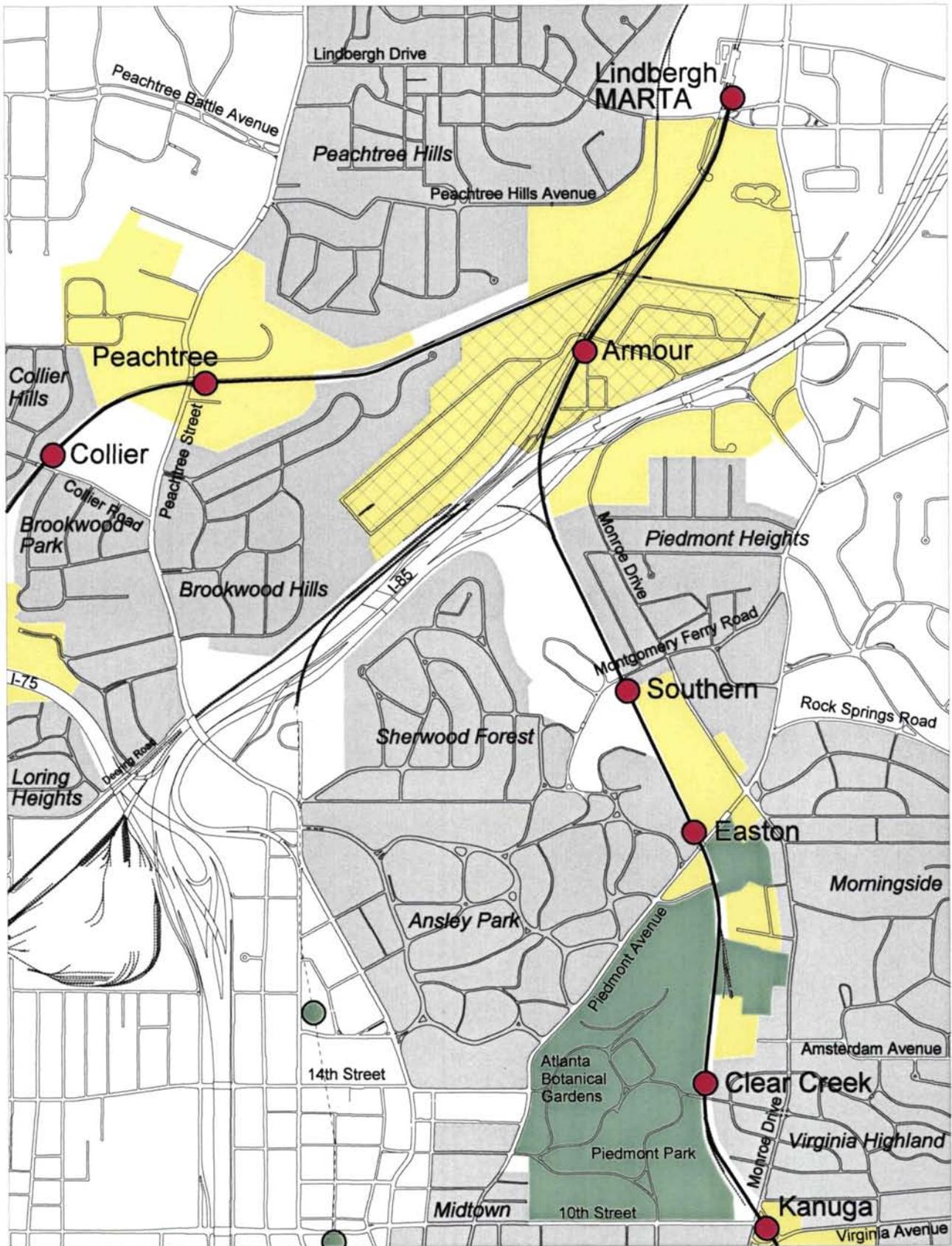
One problem for neighborhood revitalization lies in the shift in industry from rail-based freight to truck-based freight. The industries that originally located around

⁶³ Calthorpe, Peter. *The Next American Metropolis - Ecology, Community and the American Dream*. (New York: Princeton Architectural Press, 1993) 57.



Belt Line Redevelopment Sites

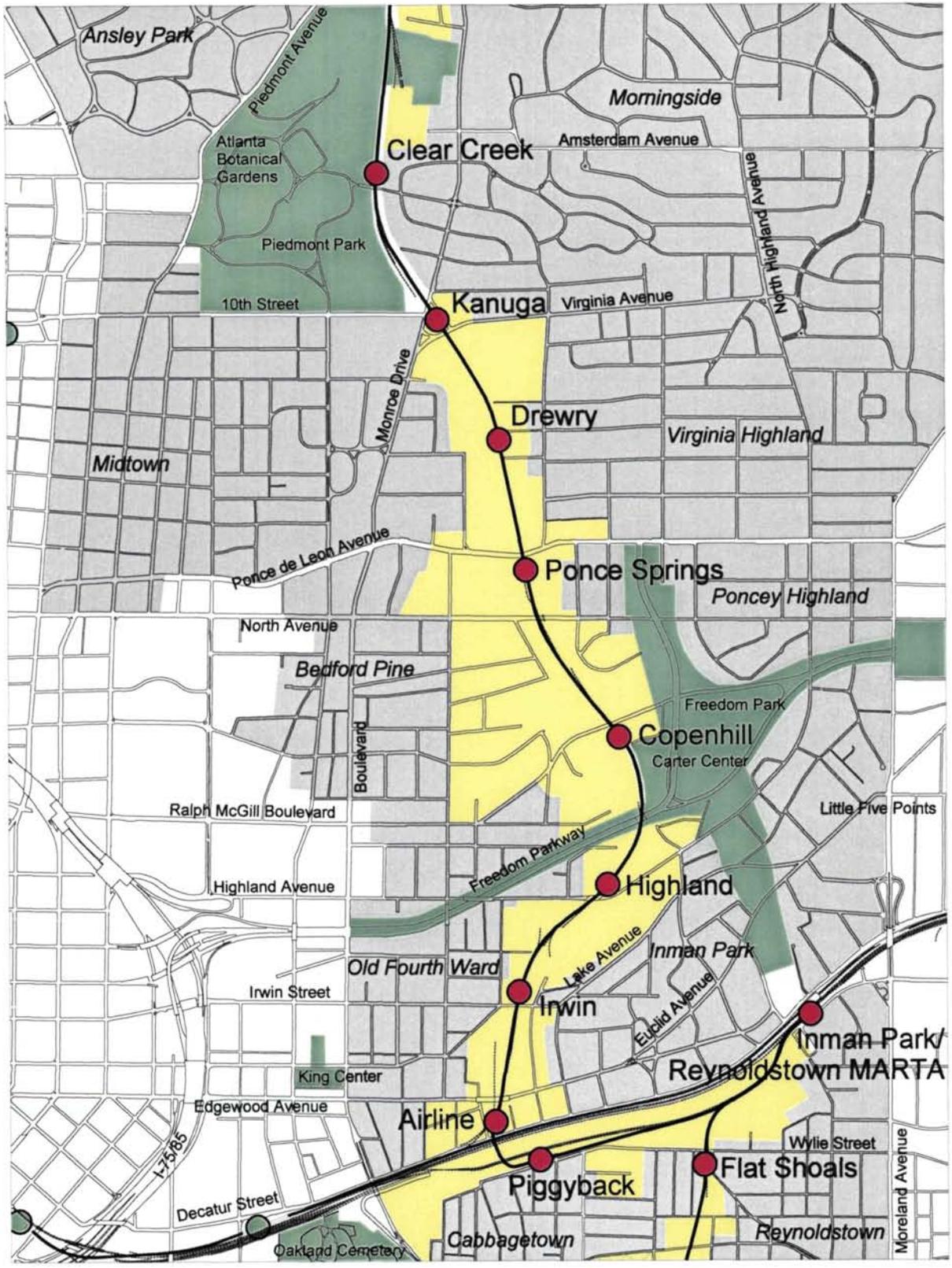
Figure 21: Belt Line route with redevelopment sites



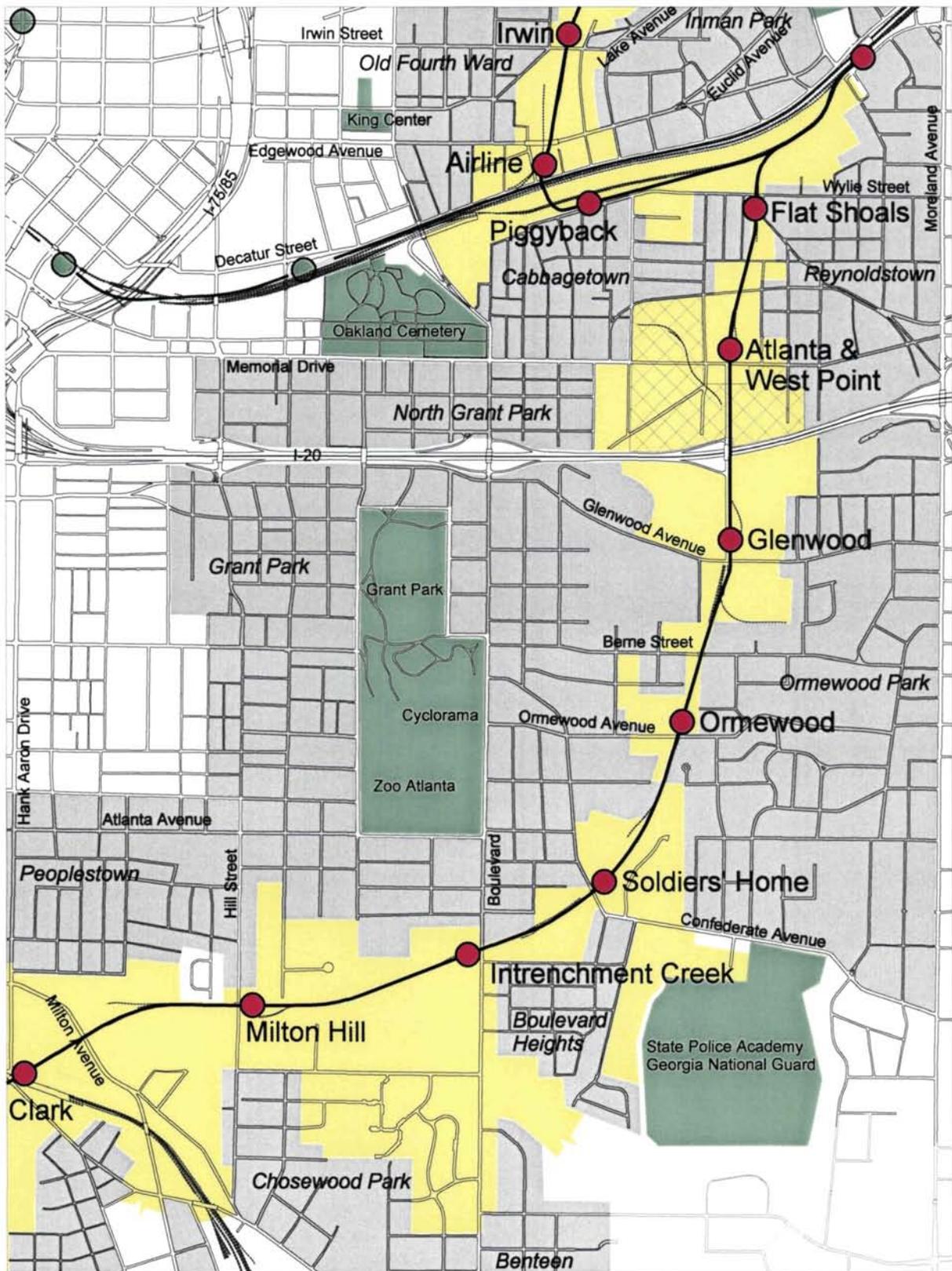
Belt Line Redevelopment Sites

Figure 22: Collier to Kanuga

0 2000

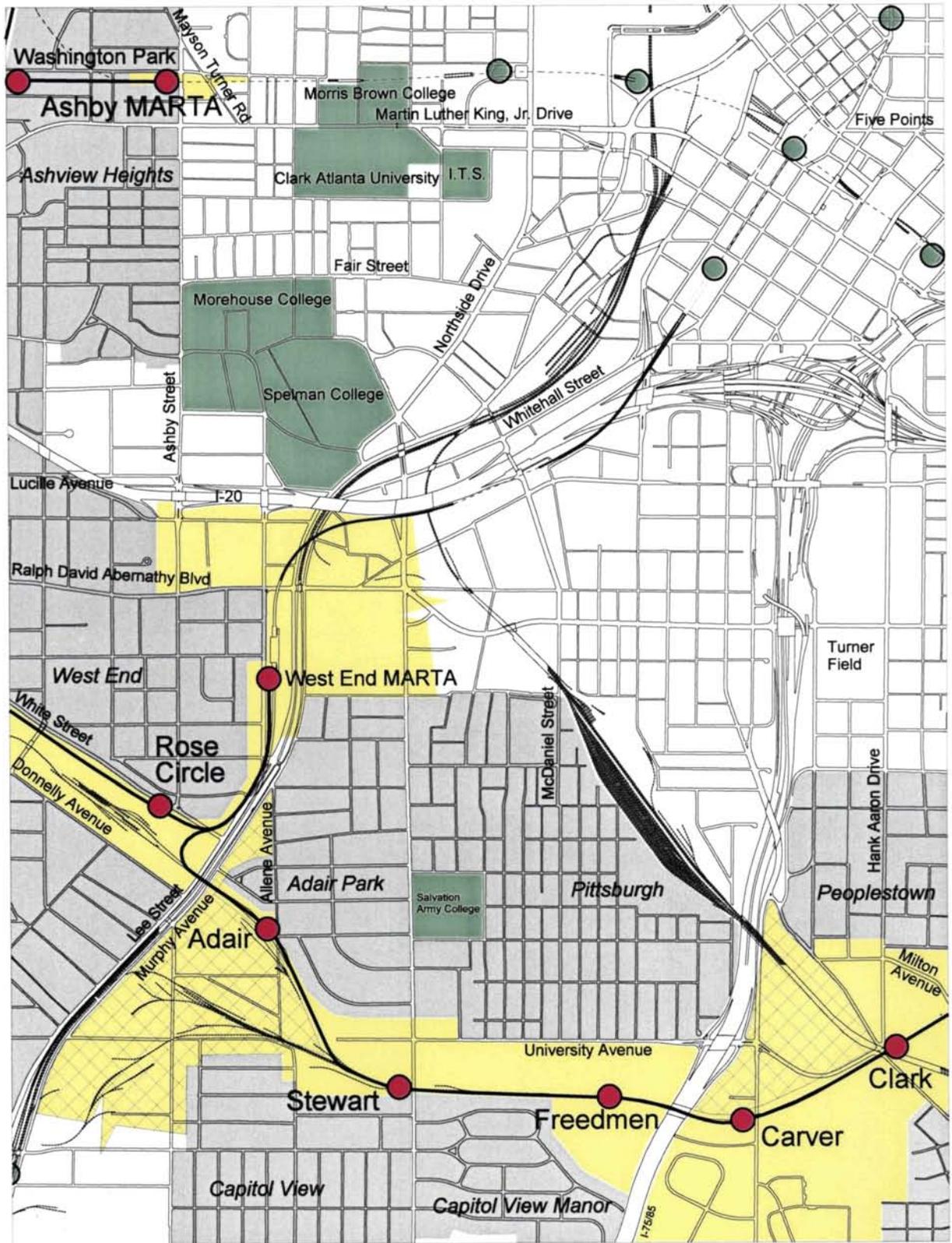


Belt Line Redevelopment Sites
 Figure 23: Clear Creek to Flat Shoals



Belt Line Redevelopment Sites
 Figure 24: Irwin to Clark

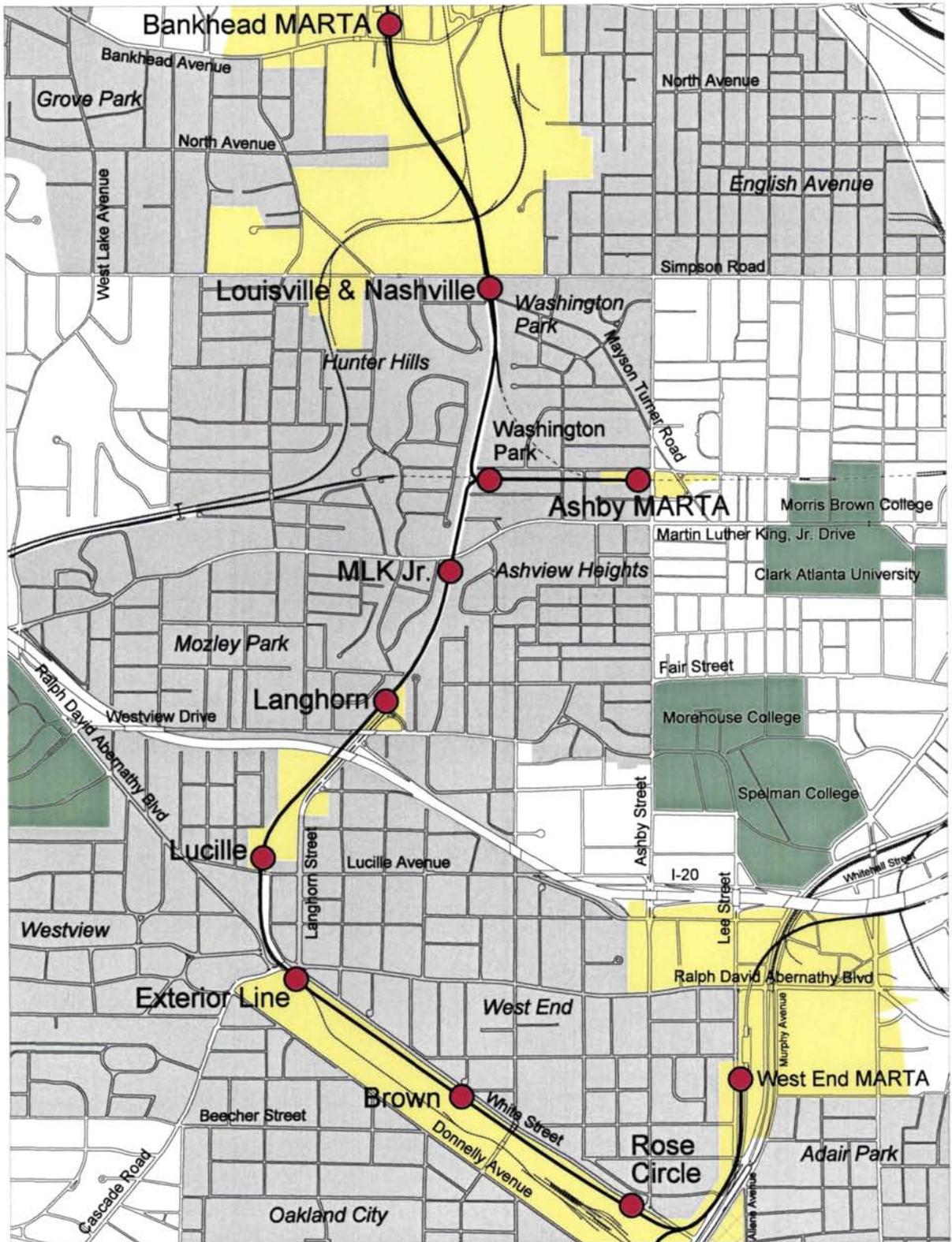
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Belt Line Redevelopment Sites

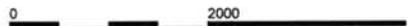
Figure 25: Clark to Rose Circle

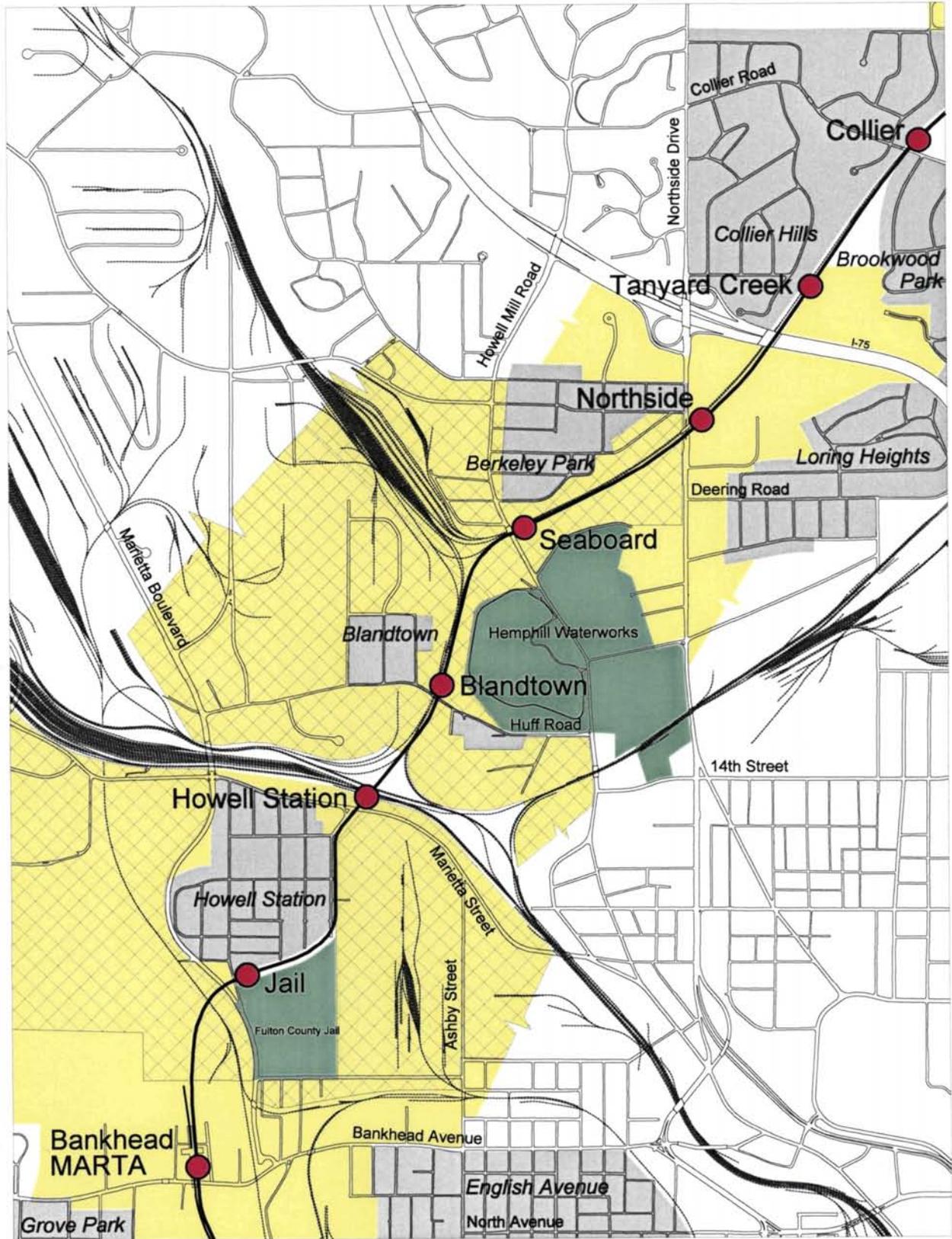




Belt Line Redevelopment Sites

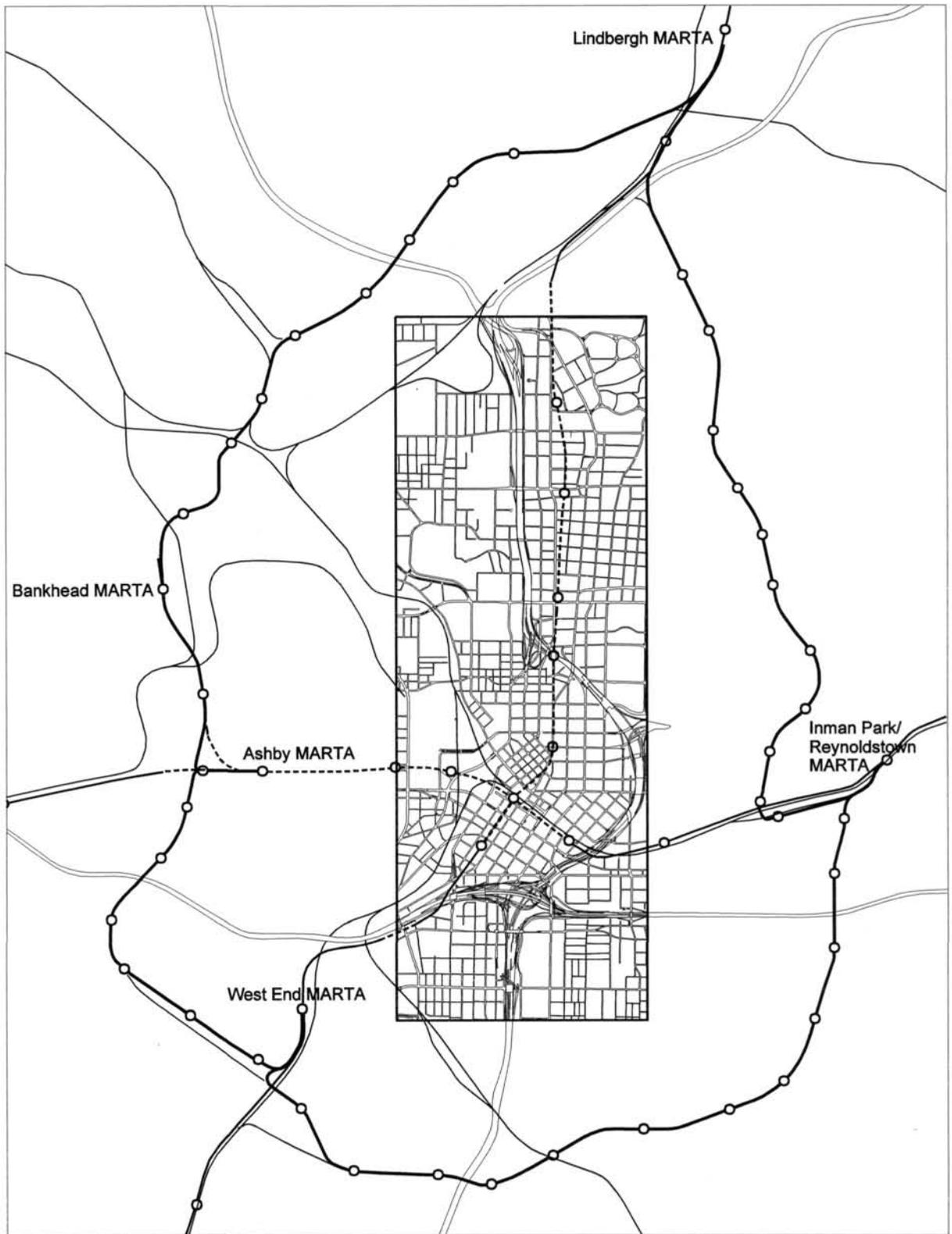
Figure 26: West End to Bankhead





Belt Line Redevelopment Sites

Figure 27: Bankhead to Collier



Belt Line Redevelopment Sites

0 5000

Figure 28: Scale comparison on downtown and midtown Atlanta

Atlanta's belt lines did so because they required railroad access for freight deliveries of supplies and products. These businesses complemented the neighborhoods built around them because employees could live nearby in modest houses and compact communities. Other industries located adjacent to these belt line industrial zones. Then, almost all of those industries shifted to truck-based freight systems and the belt lines became largely abandoned. In many cases, as trucks leave the belt line industrial zones, they must travel down narrow residential streets before getting to the freeways, and these neighborhoods have taken quite a beating. The physical environment has suffered as truck-based freight helped blight urban neighborhoods like Reynoldstown, Cabbagetown, Pittsburgh and English Avenue by breaking sidewalks, streets and trees, and creating traffic, pollution and noise.

The City also has goals for job growth and economic development. Atlanta must retain industry and keep the City competitive in the metro area's industrial market. Redeveloping small intown brownfields for new truck-based industry is a hard sell to both adjacent neighborhoods and prospective companies. Residential development is pressuring many of these sites anyway, particularly around gentrified east-side neighborhoods. Atlanta's industrial districts are aging as companies develop large, easy greenfields in the suburbs. What the City can offer, however, are industrial zones with easy connections to mass transit. Following the logic of BellSouth's recent proposal, as vehicular traffic congestion continues to increase throughout the metro area, some industries may desire a location that is better connected to public transportation in order to find a broader employee base. Atlanta may be able to attract new industry if it can restructure its industrial zones around public transportation in a way that accommodates both truck and rail-based freight systems. The vast underdeveloped area between Bankhead Highway and Inman Yard in the city's northwest quadrant is particularly well suited for this kind of industrial redevelopment, organized around the extended Proctor Creek line.

Finally, redevelopment frequently implies a clean-slate approach to design, which poses a threat to landowners and businesses. It also creates more problems for both neighborhood revitalization and economic development because older structures are

essential to expressing a community's unique character and also offer opportunities for small new companies to keep overhead expenses low. Redevelopment sites are broad areas, many of which include small residential settlements, the edges of established neighborhoods, schools, public valuable traces of Atlanta's designation of a redevelopment potential for more intense, yet not endorsement of a 1960's of any entire district.



parks, historic landmarks and settlement patterns. The site should mean the incremental redevelopment, urban renewal-style overhaul

Transit Stops

Once the route of the Belt Line is determined and redevelopment sites are defined, the location of transit stops becomes critical. Transit stations will serve two purposes – to access existing districts and to organize redevelopment sites. They will be located primarily at principal streets so that they maximize their service area, connect to bus routes and help revitalize major corridors. A few stations (Freedmen, Tanyard Creek) are located away from thoroughfares and suggest the development of an entirely new district.

Portland's MAX line becomes the model for station spacing. Atlanta's Belt Line engages territory roughly equivalent in density to the Hillsboro and Gresham city centers in the Portland metro area. Most track segments within those areas are between one third and half a mile in length. Calthorpe suggests that transit-oriented developments be set between one half mile and one mile apart or closer if the market allows,⁶⁴ and in an urban condition like Atlanta, that increased demand should be a reasonable assumption.

Field and map analysis suggest designation of 45 stations along the proposed Belt Line route, including five MARTA stations. Table 1: *Station Information* and Table 2:

⁶⁴ Calthorpe. *The Next American Metropolis*. 57.

Table 1: Station Information

#	Station Name (clockwise)	Adjacent Streets	Neighborhoods Served
1	Lindbergh MARTA	Lindbergh/Piedmont	Peachtree Hills/Piedmont Road
2	Armour	I-85	
3	Southern	Montgomery Ferry	Sherwood Forest/Piedmont Heights
4	Easton	Piedmont	Ansley Park
5	Clear Creek	Lake	N. Boulevard Park/Virginia Highlands
6	Kanuga	Monroe/Virginia/Kanuga	Virginia Highlands/Midtown
7	Drewry	Drewry/Greenwood	Virginia Highlands
8	Ponce Springs	Ponce de Leon	Virginia Highlands/Poncey Highlands
9	Copenhill	Ralph McGill	Old Fourth Ward/Poncey Highlands
10	Highland	Highland	Old Fourth Ward/Inman Park
11	Irwin	Irwin	Old Fourth Ward/Inman Park
12	Airline	Edgewood/Decatur/Airline	Old Fourth Ward/Inman Park
13	Piggyback	Wylie/Estoria	Cabbagetown
14	Inman Park/Reynoldstown MARTA	DeKalb/Seaboard	Inman Park/Reynoldstown
15	Flat Shoals	Wylie/Chester	Reynoldstown
16	Atlanta & West Point	Memorial	Reynoldstown
17	Glenwood	Glenwood-Memorial Connector	Ormewood Park
18	Ormewood	Ormewood	Ormewood Park/Grant Park
19	Soldiers' Home	Confederate	Ormewood Park/Grant Park
20	Intrenchment Creek	Boulevard	Grant Park/Boulevard Heights
21	Milton Hill	Hill	Peoplestown/Grant Park/Chosewood Park
22	Clark	McDonough/Hank Aaron	Peoplestown/South Atlanta/Carver Homes
23	Carver	Pryor	High Point/Carver Homes
24	Freedmen	University	Pittsburgh/Capitol View Manor
25	Stewart	Metropolitan	Pittsburgh/Capitol View/Capitol View Manor/Adair Park
26	Adair	Allene	Adair Park
27	West End MARTA	Lee	West End/Adair Park
28	Rose Circle	White	West End/Oakland City
29	Brown	White	West End/Oakland City
30	Exterior Line	RDA/White/Cascade	West End/Oakland City/Westview
31	Lucile	Lucile	West End/Westview
32	Langhorn	Langhorn	Mozley Park/Ashview Heights
33	MLK, Jr.	MLK Jr.	Mozley Park/Ashview Heights/Washington Park/Hunter Hills
34	Washington Park	Lena	Washington Park
35	Ashby MARTA	Lena/Ashby	Washington Park/Vine City
36	Louisville & Nashville (L & N)	Simpson/Mayson Turner	Washington Park/Hunter Hills
37	Bankhead MARTA	Bankhead	Bankhead/Grove Park
38	Jail	Marietta Blvd.	Howell Station
39	Howell Station	Marietta Road	Howell Station
40	Blandtown	Huff	Blandtown
41	Seaboard	Howell Mill	Berkeley Park
42	Northside	Northside	Berkeley Park, Underwood Hills, Loring Heights
43	Tanyard Creek	26th/I-75	Collier Hills, Brookwood Park
44	Collier	Collier	Collier Hills, Brookwood Park
45	Peachtree	Peachtree	Brookwood Hills, Peachtree Hills

Destinations/Points of Interest	Ideas for Station Programs
Lindbergh business/commercial district	MARTA North/Northeast Lines + future spur to Emory
Armour industrial district	coffee shop for commuters
Ansley Golf Club	
Piedmont Park & Atlanta Botanical Garden, Ansley Mall	commercial district, restaurants and galleries
Piedmont Park	stretching area for joggers in Piedmont Park
Piedmont Park, Grady High, Inman Middle, Va-Hi commercial district	2-3 neighborhood shops
City Hall East	commercial development under track + public space
Carter Center & Freedom Park	information kiosk for Freedom Park and Carter Center
Georgia Baptist Hospital & Freedom Park	
King Center & loft district	2-3 neighborhood shops
loft district	2-3 neighborhood shops
Fulton Cotton Mill Lofts, Cabbagetown commercial district	
Freedom Park	MARTA East Line
Reynoldtown commercial district, Lang Carson Community Center	2-3 neighborhood shops
Loft district, Hubert Elementary	Café & gallery in old Atlanta & West Point Depot
Southside High	high-density transit development
Beulah Heights Bible College, West/Slaton Elementary	
State Police Academy/National Guard	2-3 neighborhood shops
Grant Park, Cyclorama & Zoo Atlanta	Shuttle stop to Zoo & Cyclorama
Stanton Park	2-3 neighborhood shops
Carver High, bus to Atlanta Federal Penitentiary	MARTA Anticipated new SE Line
Slater Elementary, shuttle to Lakewood Fairgrounds	neighborhood commercial district
	public amphitheater
Atlanta Metro College, Atlanta Area Tech, Capitol View Elementary	neighborhood commercial district
Adair Park, Salvation Army College, industrial district	
West End commercial district & West End Mall	MARTA South Line
Rose Circle Park	
Wrens Nest, Brown Middle, Outdoor Activity Center	
Gordon White Park, Cascade/RDA commercial district	2-3 neighborhood shops
Westview Cemetery, Westview commercial district	park along Muse Street, small arts school
AUC campus bus to Morehouse, Spelman	high-rise apartment tower
Booker T. Washington High	
Washington Park	stretching area for joggers at existing multi-use path
AUC campus bus/West Side Village commercial district	MARTA West Line
Herndon Elementary	neighborhood commercial district
Maddox Park	MARTA Proctor Creek Line, Anticipated new NW Line
Fulton County Jail, Fulton County Animal Control, industrial district	correctional officer training academy
industrial district	neighborhood commercial district
Hemphill Waterworks/Chattahoochee industrial district	
Chattahoochee industrial district	bus transfer to northwest industrial jobs
	2-3 neighborhood shops
Tanyard Creek Park	high-density transit development
Tanyard Creek Park, Piedmont Hospital, Bobby Jones Golf Course	
Brookwood commercial/medical district, Bennett Street arts district	high-density transit development

Table 2: Track Segment Information

#	Track Segment (clockwise)	Railroad	Length (miles)	Track Status
1	Lindbergh MARTA - Armour	MARTA North Line	0.75	MARTA North Line
2	Armour - Montgomery Ferry	Southern Railway	0.89	Rarely used dead end
3	Southern - Easton	Southern Railway	0.38	Rarely used dead end
4	Easton - Clear Creek	Southern Railway	0.62	Rarely used dead end
5	Clear Creek - Kanuga	Southern Railway	0.39	Rarely used dead end
6	Kanuga - Drewry	Southern Railway	0.33	Rarely used dead end
7	Drewry - Ponce Springs	Southern Railway	0.32	Rarely used dead end
8	Ponce Springs- Copenhill	Southern Railway	0.46	Rarely used dead end
9	Copenhill - Highland	Southern Railway	0.39	Abandoned
10	Highland - Irwin	Southern Railway	0.34	Abandoned
11	Irwin - Airline	Southern Railway	0.31	Abandoned
12	Airline - Piggyback	n/a	0.19	n/a
13	Piggyback - Inman MARTA	n/a	0.80	n/a
14	Inman MARTA - Flat Shoals	Atlanta & West Point Belt Line Railroad	0.49	Abandoned
15	Flat Shoals - Atlanta & West Point	Atlanta & West Point Belt Line Railroad	0.35	Abandoned
16	Atlanta & West Point - Glenwood	Atlanta & West Point Belt Line Railroad	0.46	Re-used as new streetcar
17	Glenwood - Ormewood	Atlanta & West Point Belt Line Railroad	0.45	Lightly used dead end
18	Ormewood - Soldiers' Home	Atlanta & West Point Belt Line Railroad	0.43	Lightly used dead end
19	Soldiers' Home - Intrenchment Creek	Atlanta & West Point Belt Line Railroad	0.37	Lightly used dead end
20	Intrenchment Creek - Milton Hill	Atlanta & West Point Belt Line Railroad	0.54	Lightly used dead end
21	Milton Hill - Clark	Atlanta & West Point Belt Line Railroad	0.59	Lightly used dead end
22	Clark - Carver	Atlanta & West Point Belt Line Railroad	0.41	Lightly used dead end
23	Carver - Freedmen	Atlanta & West Point Belt Line Railroad	0.38	Lightly used dead end
24	Freedmen - Stewart	Atlanta & West Point Belt Line Railroad	0.46	Lightly used dead end
25	Stewart - Adair	Atl. & West Point Railroad - L & N Railroad	0.53	Lightly used / Abandoned
26	Adair - West End MARTA	Louisville & Nashville Railroad	0.83	Abandoned
27	West End MARTA - Rose Circle	Louisville & Nashville Railroad	0.59	n/a
28	Rose Circle - Brown	Louisville & Nashville Railroad	0.49	Abandoned
29	Brown - Exterior Line	Louisville & Nashville Railroad	0.49	Abandoned
30	Exterior Line - Lucile	Louisville & Nashville Railroad	0.33	Abandoned
31	Lucile - Langhorn	Louisville & Nashville Railroad	0.49	Abandoned
32	Langhorn - MLK Jr.	Louisville & Nashville Railroad	0.36	Abandoned
33	MLK Jr. - Washington Park	Louisville & Nashville Railroad	0.27	Abandoned
34	Washington Park - Ashby MARTA	n/a	0.36	n/a
35	Washington Park - L & N	Louisville & Nashville Railroad	0.51	Abandoned / MARTA
36	L & N - Bankhead MARTA	Louisville & Nashville Railroad	0.70	MARTA Bankhead
37	Bankhead MARTA - Jail	n/a	0.52	n/a
38	Jail - Howell Station	n/a	0.60	n/a
39	Howell Station - Blandtown	n/a	0.33	n/a
40	Blandtown - Seaboard	Seaboard Air Line Railway	0.46	Lightly used through
41	Seaboard - Northside	Seaboard Air Line Railway	0.51	Lightly used through
42	Northside - Tanyard Creek	Seaboard Air Line Railway	0.42	Lightly used through
43	Tanyard Creek - Collier	Seaboard Air Line Railway	0.45	Lightly used through
44	Collier - Peachtree	Seaboard Air Line Railway	0.42	Lightly used through
45	Peachtree - Lindbergh MARTA	Seaboard Air Line Railway	1.59	Lightly used through

Train Volume (approximate)	Street Crossings
n/a	New grade crossing Lindbergh Drive
2 per week	Share existing underpass I-85, share existing overpass Buford Highway
2 per week	Share existing underpass Montgomery Ferry Road
2 per week	Share existing underpass Piedmont Avenue & Park Drive
2 per week	Share existing grade crossing Monroe Drive
2 per week	Share existing underpass Virginia Avenue
2 per week	Share existing overpass Ponce de Leon Avenue
2 per week	Share existing overpass North Avenue & Ralph McGill Blvd.
0	Share existing underpass Freedom Parkway & Highland Avenue
0	Share existing grade crossing Irwin Street
0	Share existing grade crossing Airline Street
n/a	New underpass CSX Piggyback Transfer Station
n/a	New underpass/grade crossing CSX Piggyback Transfer Station
0	New grade crossing CSX facility, Existing grade crossing Wylie Street
0	Existing grade crossing Kirkwood Avenue, existing overpass Sasseen Street
n/a	New street track along Glenwood Connector, new overpass I-20, new grade crossing Memorial
very light	New grade crossing Glenwood Avenue, share existing underpass Berne Street
very light	Share existing overpass Ormewood & Confederate Aves., new grade crossing Boulevard
very light	New grade crossing Boulevard
very light	
very light	New grade crossing Milton Avenue
very light	Share existing underpass McDonough Blvd./Hank Aaron Dr.
very light	Share existing underpass I-75/85
very light	Share existing overpass Metropolitan Parkway
very light/0	Existing grade crossing Allene Avenue
0	Existing underpass Murphy Ave/CSX tracks/Lee St., new tunnel under Lee Street
n/a	New tunnel under Lee Street
0	New on-street line along White Street, existing underpass Lawton Street
0	New on-street line along White Street
0	Existing underpass Ralph David Abernathy Boulevard, Lucile Street
0	Existing underpass I-20
0	
0	Existing overpass MLK Jr. Boulevard
n/a	New grade track along Lena Street above underground MARTA line
0	New overpass North Avenue, new grade crossing Mayson Turner Road
n/a	New grade crossing Simpson Road
	New overpass Marietta Blvd
	New on-street line along Herndon Street, new grade crossing Marietta Road
	New overpass Inman Yard, new grade crossing Huff Road
6-8 per day	New grade crossing Howell Mill Road
6-8 per day	New overpass Northside Drive
6-8 per day	Existing underpass I-75
6-8 per day	New overpass Tanyard Creek, new grade crossing Collier Road
6-8 per day	New underpass Peachtree Road
6-8 per day	New grade crossing Lindbergh Drive

Track Segment Information, give details about each stop and each segment of track including neighborhoods served, destinations, length of segment, current status of track and probable upgrades for street crossings. Station names attempt to illuminate something interesting about the station area, whether a significant historical event or simply an unfamiliar street name. Ideally, communities adjacent to each station would generate their own names.

Station Design & Program

MARTA stations are complex. Because the electrical source is a third rail in the track bed, platforms must be vertically separated from circulation areas. MARTA's fare system divides paid zones from free zones with turnstiles, and frequently, stations are significantly below grade (Peachtree Center) or high above grade (King Memorial). All of these complications mean heavy rail stations are typically large and dominate their immediate context.

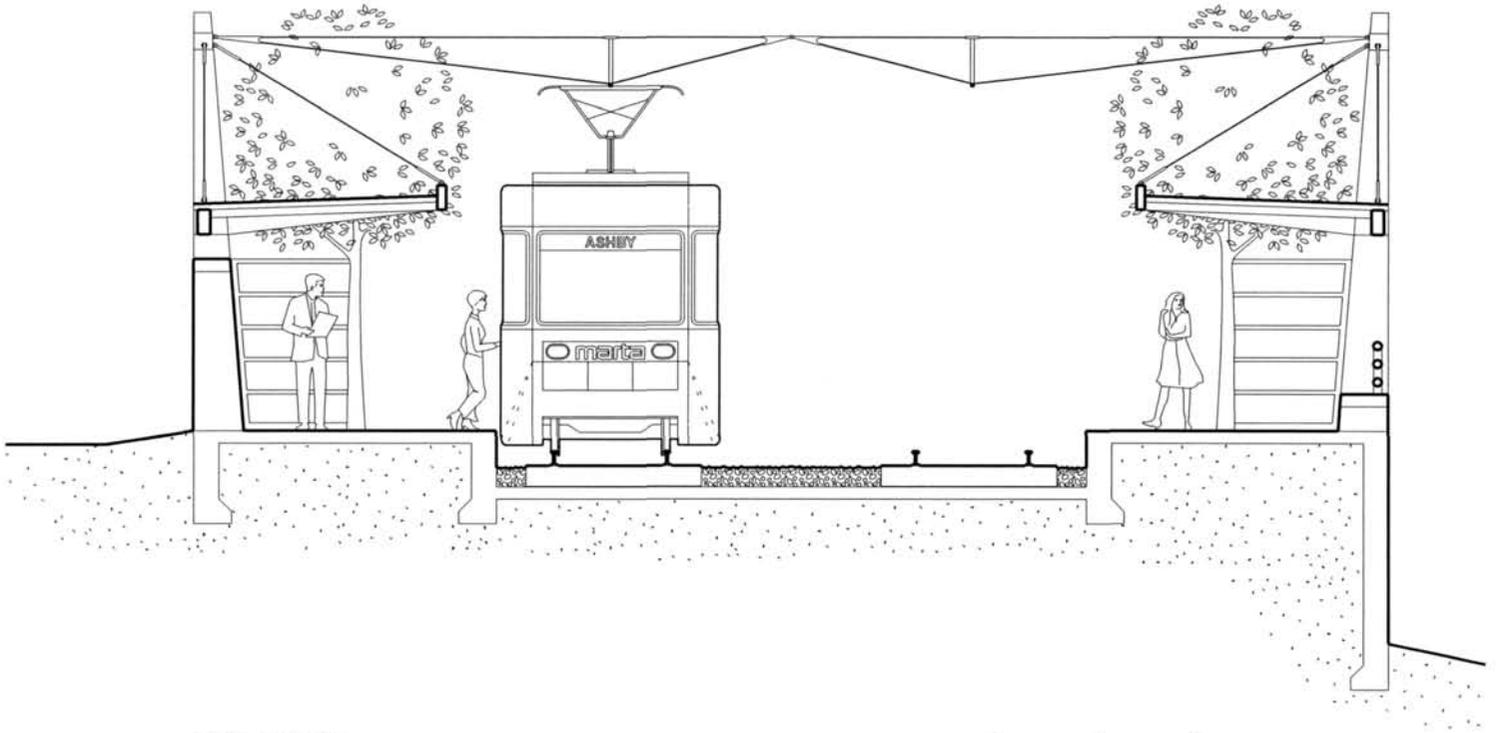
Belt Line stations, on the other hand, will be simple. Like Portland's MAX line, electrical supply is overhead, so tracks are free for pedestrian crossings. Lines can cross streets at grade with ordinary grade-crossing signs and flashers. Stations consist of just a few simple elements: a shelter extending most of the platform's length, glass walls to protect passengers from wind and blowing rain, benches, shade trees, an electronic ticket machine with validator, a uniform station sign that includes train schedules and area maps, a pay telephone and trash cans. Portland's stations are 200 feet long, but many light-rail systems in other cities have 300 foot long platforms. Belt Line stations may start at 200 feet and extend to 300 if ridership mandates such an expansion.

As the Belt Line passes through different parts of the city, it maintains cohesiveness through station design. Unlike MARTA's heavy rail stations designed as individual projects, Belt Line stations will be made up of modular station elements like

canopies, benches and platform surfaces, configured in ways that adjust to a station's particular context or program while maintaining unity of design. (See Figures 29-35) Although the line engages different types of redevelopment sites and various station-specific programs like newsstands or cafes, it retains identity as a whole. Chicago's elevated lines operate similarly, with unified wooden platforms, stairs and construction elements, while engaging individual stations with site-specific moves. These stations form an integral part of each neighborhood, and adjacent stores take advantage of the foot traffic, forming a natural density at the transit stop.

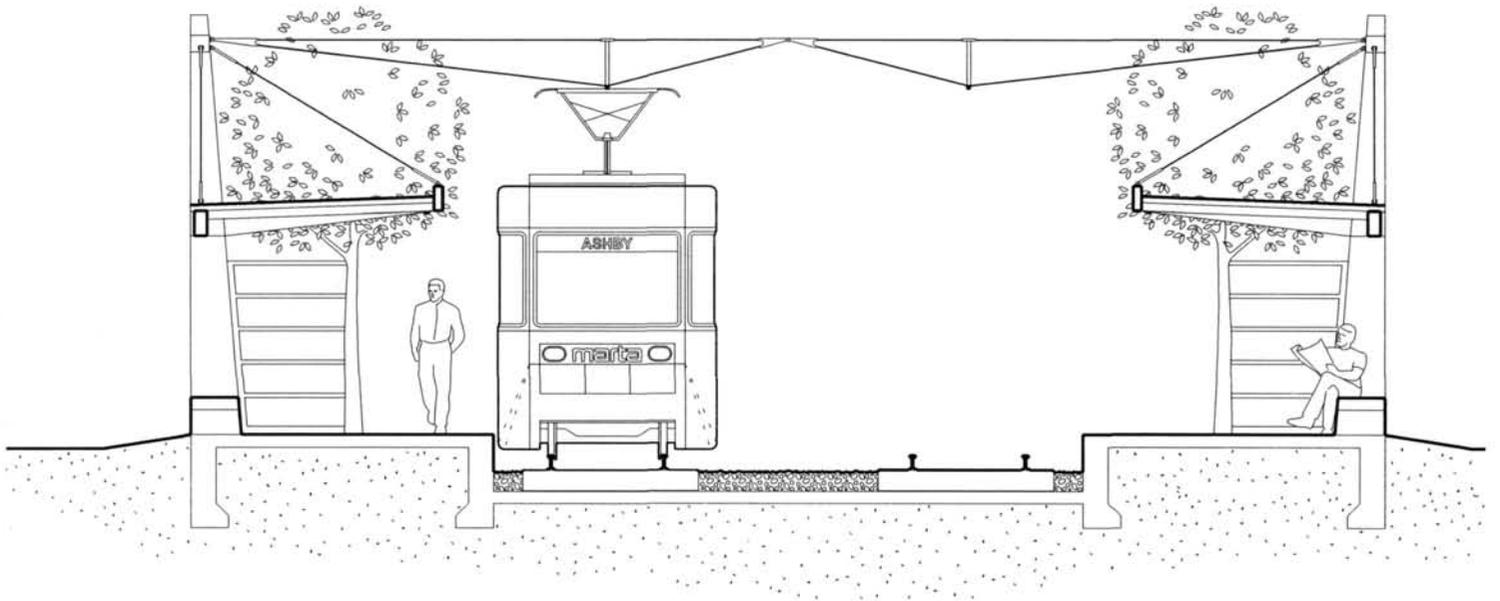
The Belt Line engages a wide range of topographic, land use and other physical conditions, suggesting a list of criteria that might define the interaction between station and urban context. For example, as it passes through established neighborhood conservation areas such as Morningside or Westview, stations should support development that does not threaten neighborhood vitality – i.e. less truck traffic, minimal parking and small lot sizes. As it passes through established industrial zones or commercial corridors, stations should support development that accomplishes other goals like a reestablished industrial base, regional retail stores or high-density residential. Physical differences begin to delineate a series of station area types. Table 3 shows the relationship of each station to a list of criteria concerning urban context, major existing land uses and significant redevelopment and infill opportunities. This table begins to inform urban design issues and the possibility for station programming.

Like Berlin's Onkel Toms Hütte station, which has retail spaces directly on the platform, Belt Line stations might engage additional programs like a small newsstand or cafe. Foot traffic between home or work and the transit station suggests that stations could take on a convenience retail component, and many Belt Line stations are perfectly sited for such projects. Older pedestrian-oriented commercial districts in Atlanta like Little Five Points or Westview occurred naturally at trolley stops, and just as Little Five Points is at the seam between residential neighborhoods, the Belt Line winds between neighborhoods, not through the middle of them. This positions it perfectly for small, walkable commercial nodes where the Belt Line crosses main thoroughfares like Metropolitan Parkway, Simpson Road, Peachtree Street or Memorial Drive.



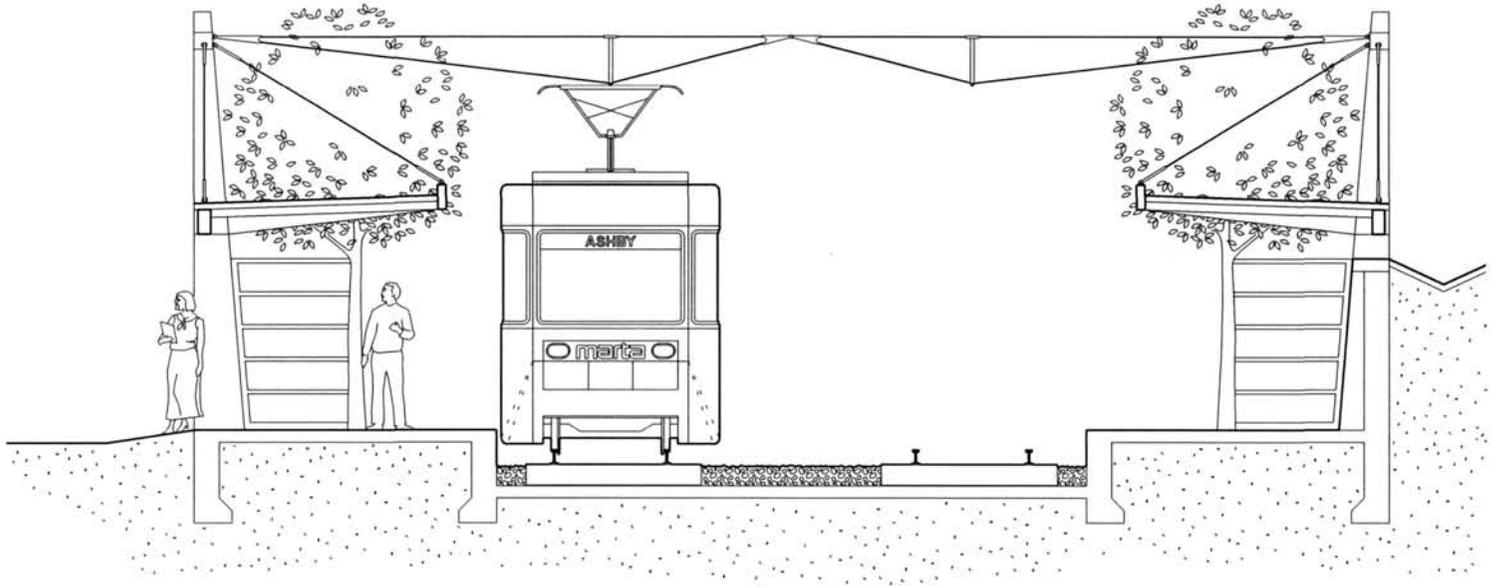
Station Design

Figure 29: Cross section with station filled over slope



Station Design

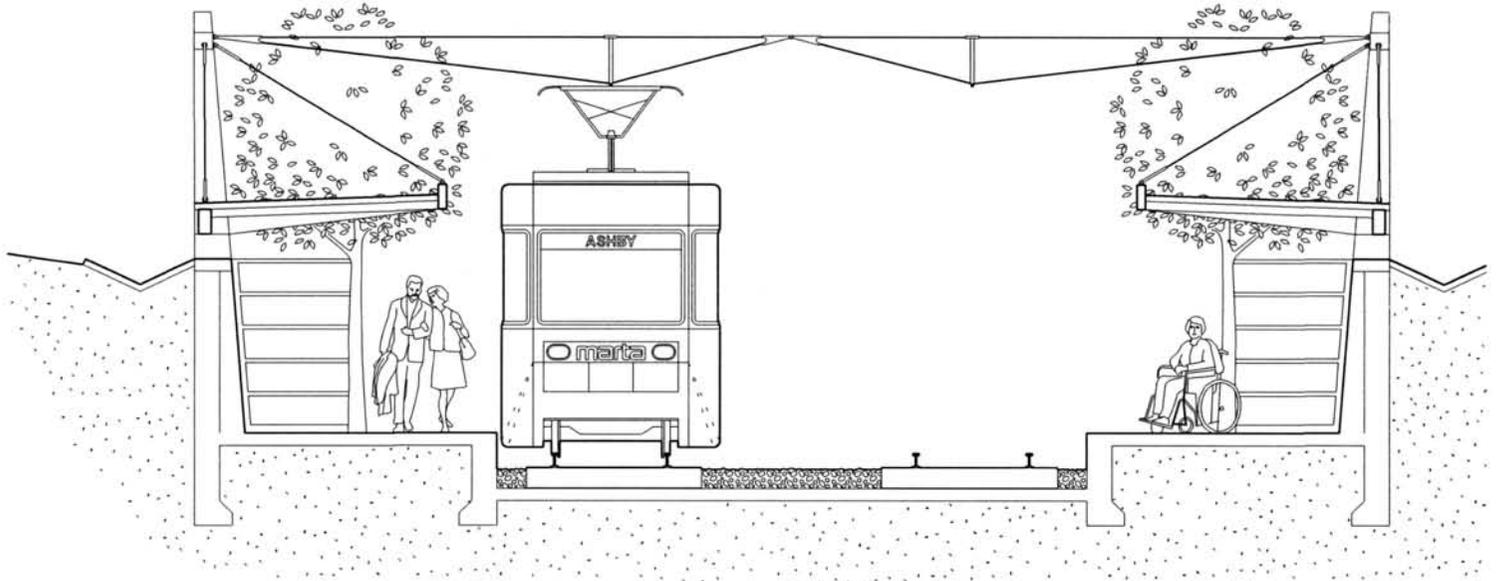
Figure 30: Cross section with station at grade



Station Design



Figure 31: Cross section with station cut into a slope



Station Design

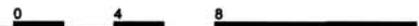
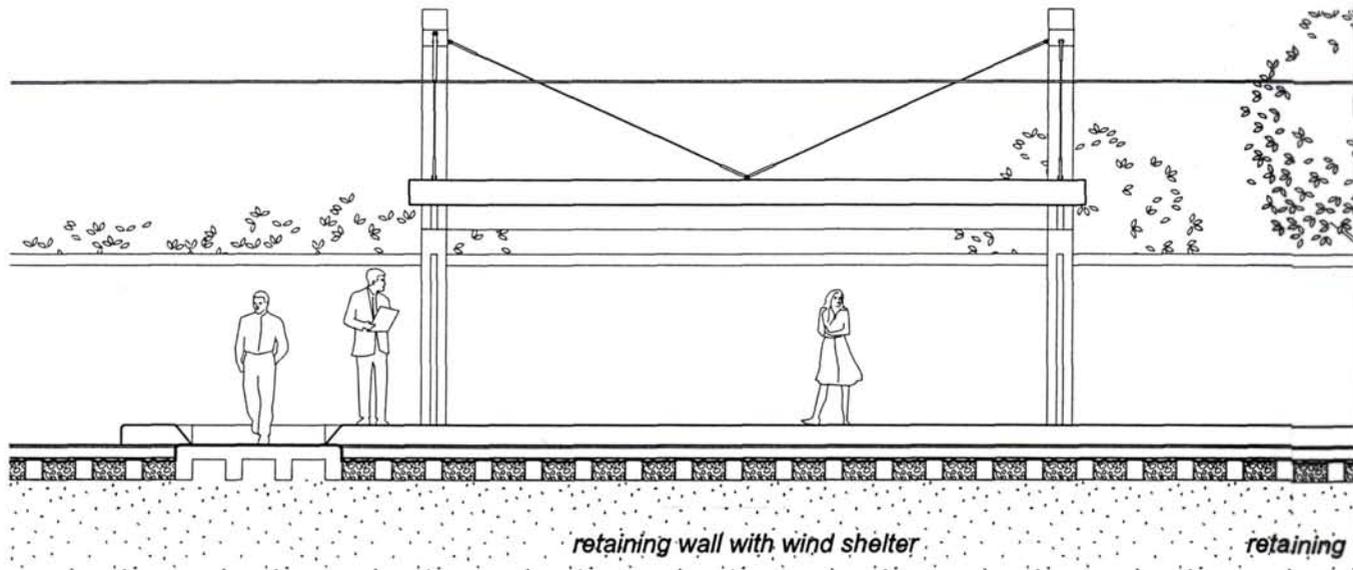
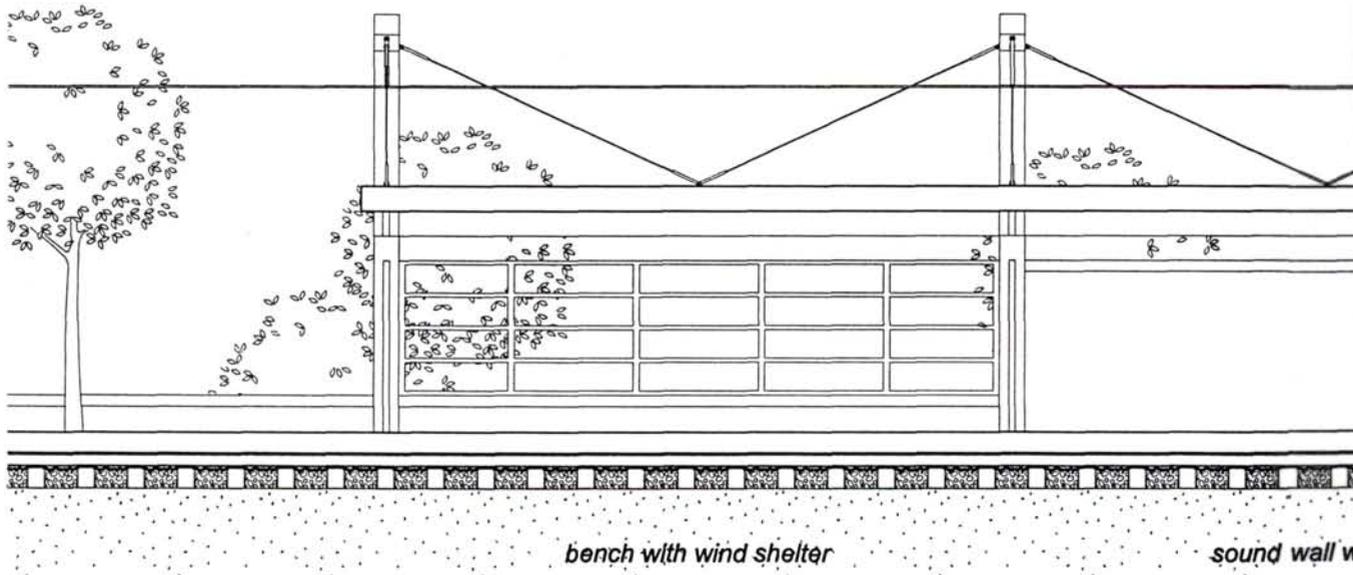


Figure 32: Cross section with station recessed in the ground



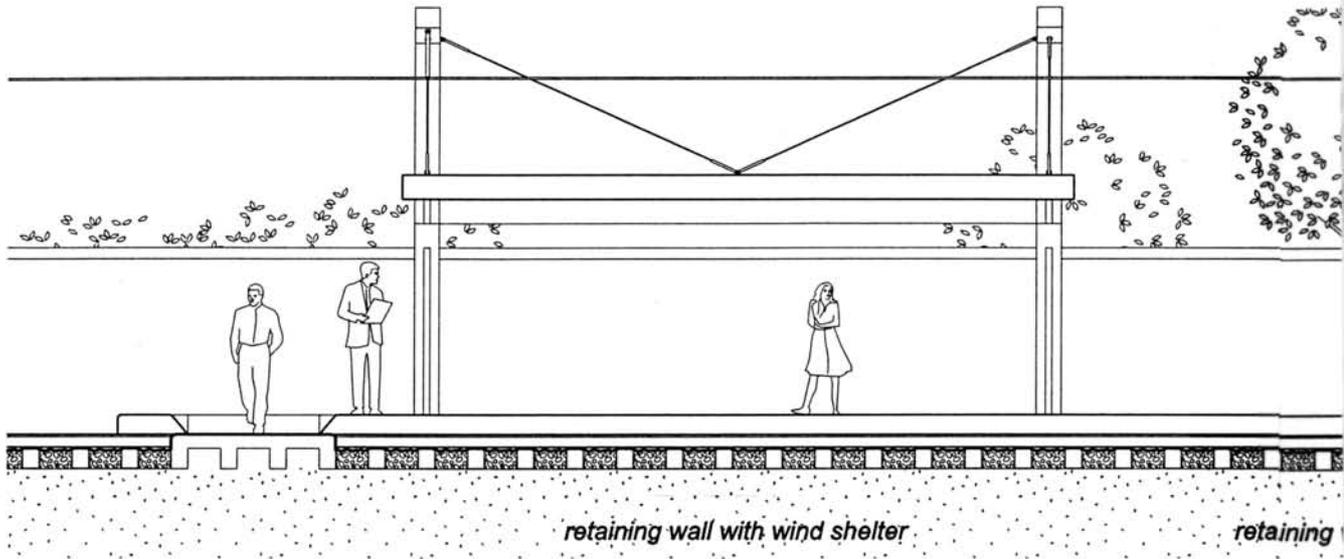
Station Design

Figure 33: Longitudinal section with modular elements



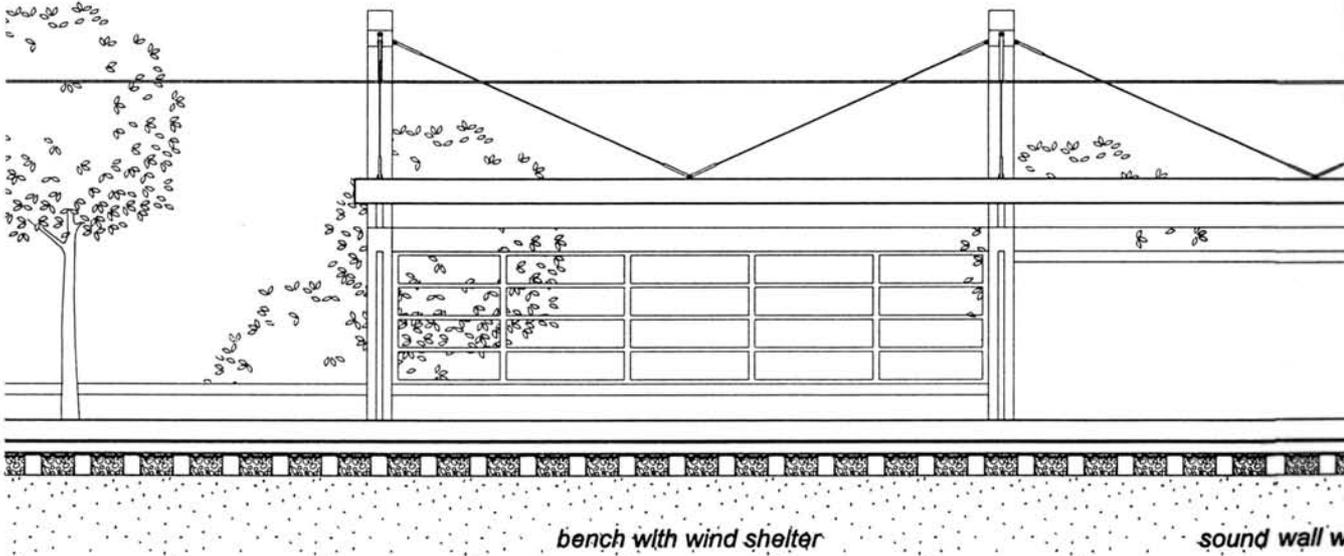
Station Design

Figure 34: Longitudinal section with modular elements



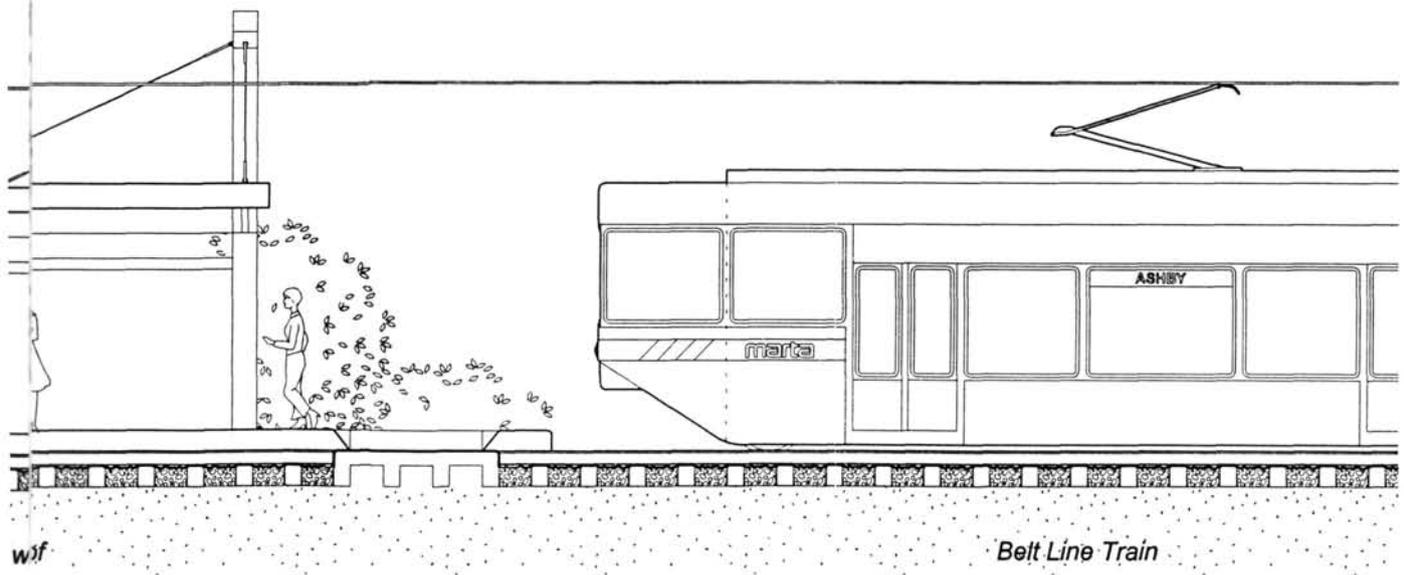
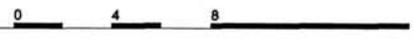
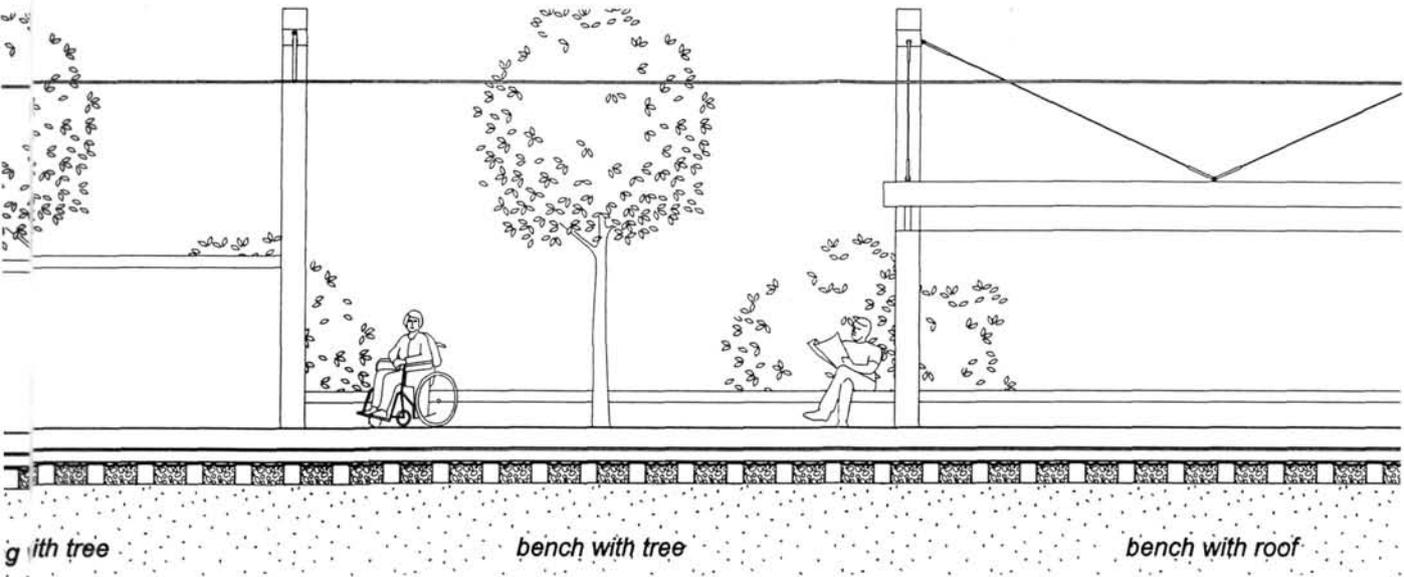
Station Design

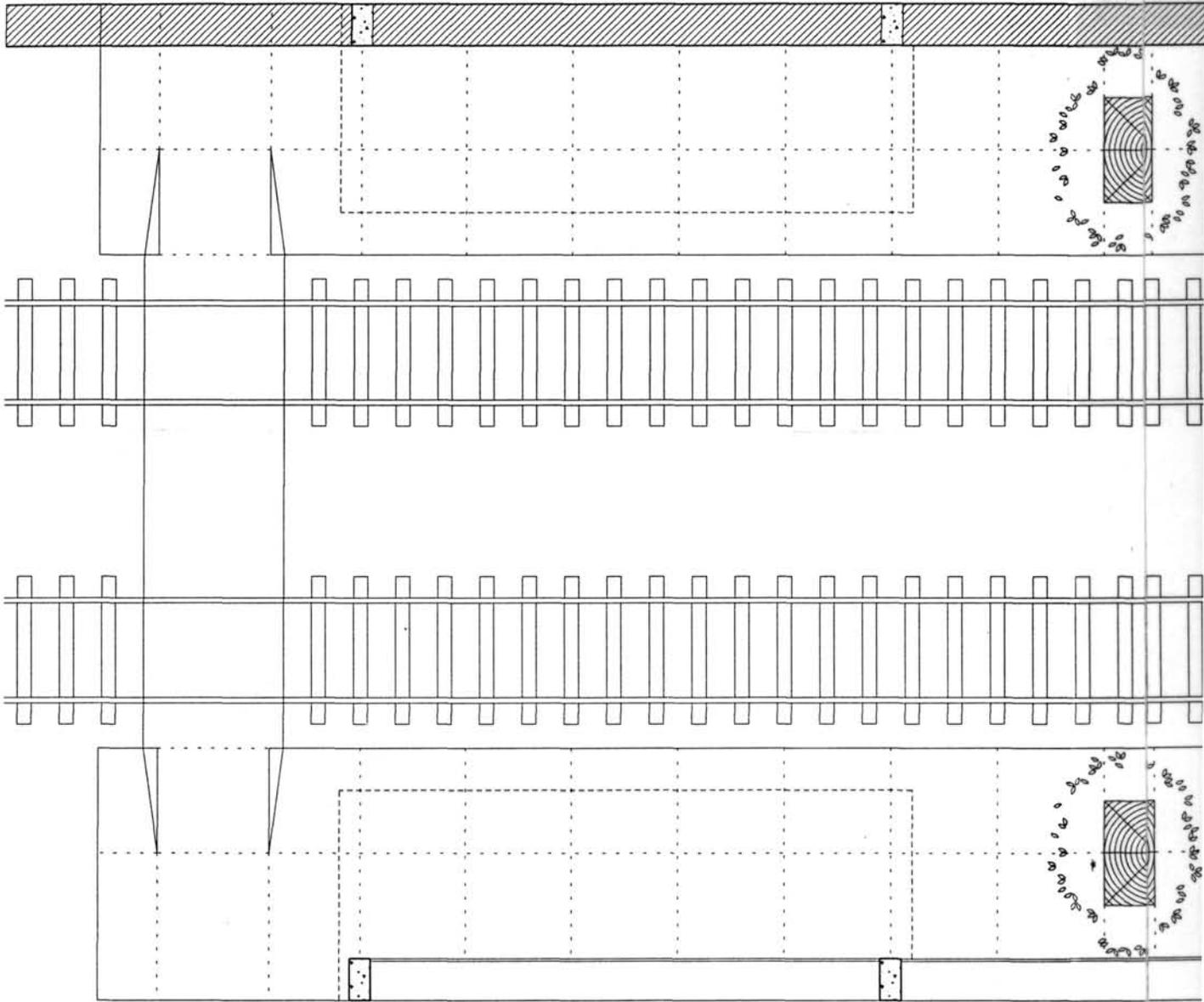
Figure 33: Longitudinal section with modular elements



Station Design

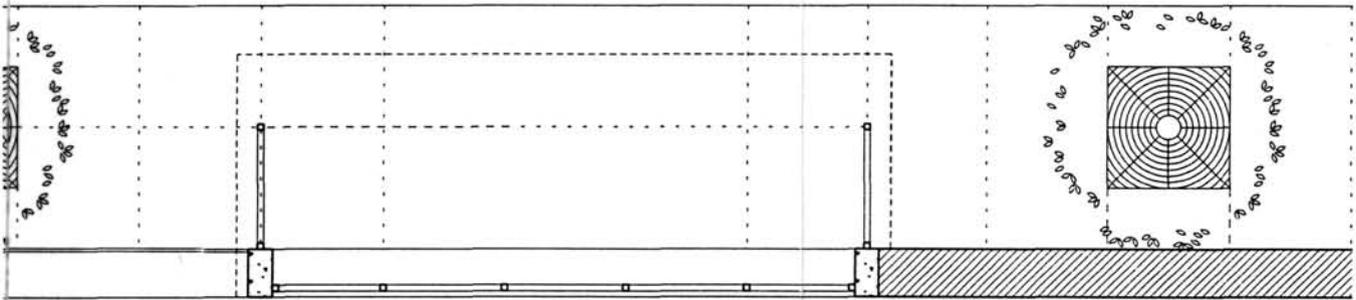
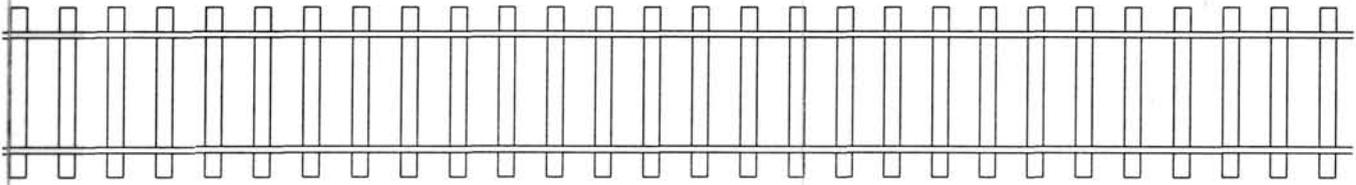
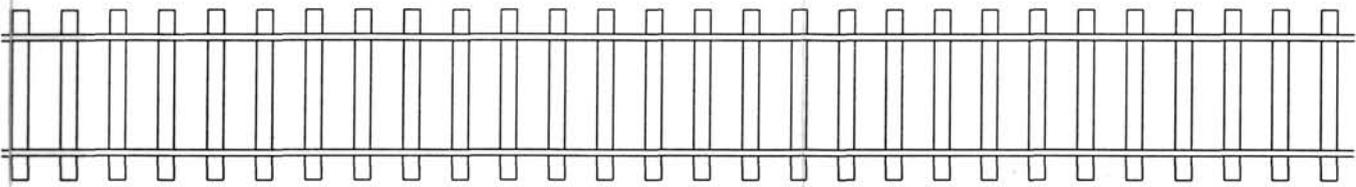
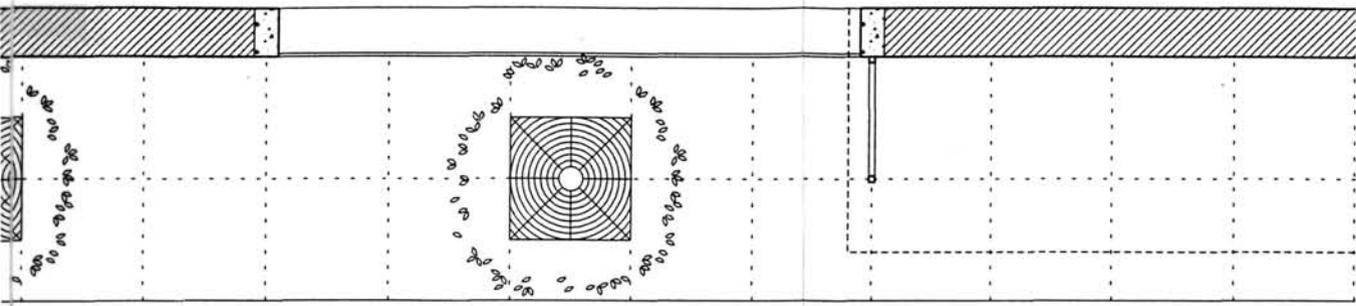
Figure 34: Longitudinal section with modular elements





Station Design

Figure 35: Plan with modular elements



0 4 8

Table 3: Station Area Characteristics

#	Station Name	Urban context	Major existing land uses	Significant redevelopment opportunities	Significant infill opportunities
1	Lindbergh MARTA	MARTA station	Residential	Residential	Residential
2	Armour	Potential connection to future transit	Commercial	Commercial	Commercial
3	Southern	Easy interstate access	Industrial	Industrial	Industrial
4	Easton	At major commercial thoroughfare			
5	Clear Creek	At minor street			
6	Kanuga	Within redevelopment site			
7	Drewry	Within neighborhood conservation area			
8	Ponce Springs	Station at overpass			
9	Copenhill	Station at underpass			
10	Highland	Station at grade crossing			
11	Irwin				
12	Airline				
13	Piggyback				
14	Inman Park/Reynoldstown MARTA				
15	Flat Shoals				
16	Atlanta & West Point				
17	Glenwood				
18	Ornewood				
19	Soldiers' Home				
20	Intrenchment Creek				
21	Million Hill				
22	Clark				
23	Carver				
24	Freedmen				
25	Stewart				
26	Adair				
27	West End MARTA				
28	Rose Circle				
29	Brown				
30	Exterior Line				
31	Lucile				
32	Langhorn				
33	MLK, Jr.				
34	Washington Park				
35	Ashby MARTA				
36	Louisville & Nashville				
37	Bankhead MARTA				
38	Jail				
39	Howell Station				
40	Blandtown				
41	Seaboard				
42	Northside				
43	Tanyard Creek				
44	Collier				
45	Peachtree				

Thought of more inventively, Belt Line stations might take on more challenging programs like a technical school, public amphitheater or high-rise condominium tower. Stations could incorporate office space for neighborhood professional services like dentists and barber shops, or gathering spaces for public events. They could program homeless shelters or athletic facilities or child daycare centers. Atlanta & West Point Station could renovate the old depot as a gallery or cafe. The station at Copenhill might include an information kiosk for Freedom Park and the Carter Center. Freedmen Station might have a small wilderness area in the beautiful, isolated wooded area south of the rail line.

Recommended Changes to City Codes

Once redevelopment sites and neighborhood conservation areas have been designated, new policies must be determined to make the best use of the new transit line. We must make sure that Belt Line redevelopment zones prioritize pedestrians, cyclists and transit over automobiles. There are plenty other areas of the city suitable for automobile-oriented projects and Belt Line sites should not be wasted on such development. "The intensity of development along the trunk line network should reflect the significant investment necessary to construct the transit system and should generate the greatest number of transit-bound trips."⁶⁵ Atlanta should remember Bernick and Cervero's warning that the general failure of transit systems stems from the lack of consistent public/private support for station area development.⁶⁶ If Belt Line sites are reserved for transit-oriented development, it follows that stations will not have park and ride lots, and parking will not be a significant factor in the design of station areas. These sites should be designed to attract new residents and other users who require a more urban, transit-oriented lifestyle.

Such an urban environment of humanly scaled buildings and mixed land uses is very similar to areas that developed naturally in Atlanta when streetcars defined urban

⁶⁵ Calthorpe. The Next American Metropolis. 57.

expansion. Since those kinds of environments no longer develop naturally under automobile culture and existing regulations, we must adjust the rules to require it. One way to determine the dimensions and physical relationships for defining those regulations is to write an urban code for places in the city that have those same qualities. Although a full encoding process is beyond the scope of this thesis, we could potentially encode every block length, street width, setback and building height in order to emulate the old streetcar development of places like Virginia Highland or Little Five Points. This information would then inform subdivision, design and zoning regulations for specific kinds of environments - tight commercial districts mixed with dense residential neighborhoods.

Subdivision regulations are the most important tools available to control Belt Line redevelopment. The most permanent changes made to a city have to do with land subdivision – the organization of streets and other public spaces as a framework for private development. The next most important tool is the regulation of building design. Design regulations define the relationship of private buildings to the public realm, including pedestrian and vehicular access, height, setback and parking, aspects which impact the public environment. The least important tool for the redevelopment of Belt Line sites is zoning. Zoning controls land use, and land uses change fairly easily over time. "Churches are turned into movie houses, banks into yuppie restaurants, hat factories into artists' studios, subway tunnels into nightclubs, and sometimes nightclubs into churches."⁶⁷

Land Subdivision

The primary challenge for the redevelopment of Belt Line sites is to ensure connectivity. For the most part, these sites were never significantly subdivided, and that subdivision is critical to creating a pedestrian and transit-oriented environment. Subdivision regulations should ensure a dense network of interconnected streets. Blocks should be oriented for convenient access to the transit station from all areas. Streets should provide a pleasant walking environment, connect to existing

⁶⁶ Bernick and Cervero. *Transit Villages*. xi.

⁶⁷ Tschumi. *Architecture and Disjunction*. 217.

neighborhoods and provide lots of on-street parking. At the same time, one danger is the creation of a street system that directly follows the transit line. This would enable automobile traffic to move along the rail corridor, defeating the purpose of the entire project.

Related to land subdivision is street design. When used in conjunction with building design regulations and land use zoning, new street dimensions can be tailored to accomplish urban design goals of traffic volume, parking capacity and speed of travel. To enforce connectivity, cul-de-sacs are prohibited within Belt Line redevelopment sites except in isolated cases to protect severe topographic slopes and natural drainage areas, but gated communities are prohibited without exception. Where possible, alleys should provide vehicular access to rear yards.

Building Design

The second challenge for the redevelopment of Belt Line sites is to ensure density and quality urban space. Building design should prioritize dense development and pedestrian access to public sidewalks and transit over vehicular access and parking.

This means buildings face and have main entrances on public streets. Their height and bulk do not overpower coherent public space. dimensions, we can built all over Atlanta mode of transportation. *density*). There we find

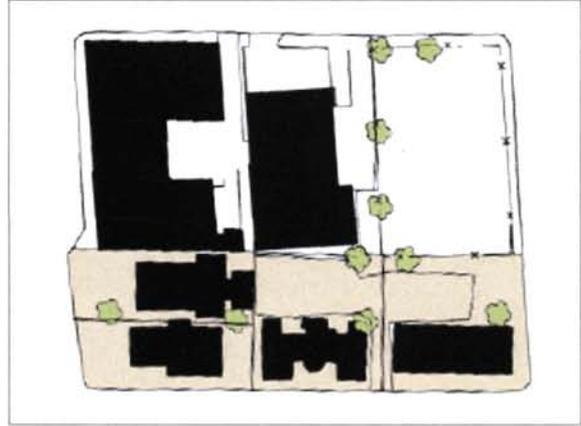


pedestrians, but actually define a In order to determine those physical encode older apartment buildings when streetcars were the primary (See Figure 36: *Encoding residential* buildings with densities ranging from

30 to 60 units per acre. Those buildings sit on parcels that range from 50' wide by 120' deep to 180' wide by 180' deep. Over time, those buildings learned to accommodate limited parking, but the design prioritized pedestrian access to public sidewalks and transit. Similarly, older commercial buildings in areas like Little Five Points sit fully on parcels that range from 24' wide by 120' deep to 70' wide by 200' deep. A more thorough encoding process can be used to make decisions about the regulations that influence urban form.



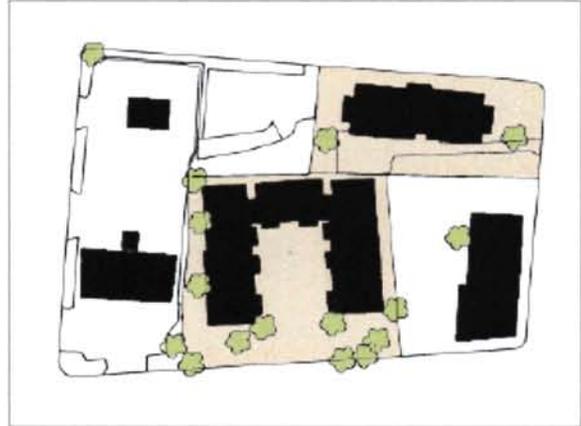
635 Myrtle Street - 9 units (31 units per acre)



635 Myrtle at bottom center of block



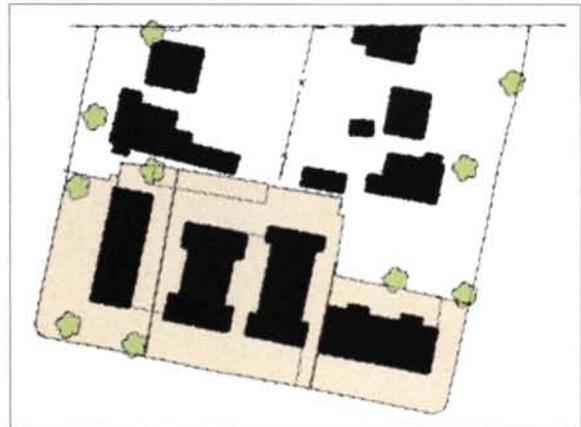
198 Ponce de Leon - 44 units (55 units per acre)



198 Ponce at bottom center of block



18 & 20 Collier Drive - 36 units (62 units per acre)



18 & 20 Collier at bottom center of block

Building Design Regulations

Figure 36: Encoding residential density

Land Use Zoning

The last challenge for the redevelopment of Belt Line sites is achieving desired land uses. If the public framework is a dense network of interconnected streets, and if buildings are oriented toward that public realm prioritizing pedestrian access, land use matters less because land uses change over time. When the public framework is largely disconnected, allowing buildings that are unrelated to any public realm and prioritize vehicular access, land use matters a lot because that is the only tool available to control development.

Assuming that the former is the case and Belt Line sites are appropriately subdivided and developed, land use zoning is used solely to limit particular uses so that they do not adversely affect neighborhood conservation areas and transit station developments.

That said, the City should have a flexible agenda for land uses on Belt Line sites. Mixed residential and neighborhood commercial uses are most desirable because they resolve many of the public policy goals discussed earlier in Chapter 3 such as neighborhood revitalization, economic growth and accommodation of new residents. Peter Calthorpe suggests that zoning should support transit-oriented commercial nodes by limiting commercial zoning beyond a short walk of transit stops.⁶⁸ This supports Bernick and Cervero's argument that public policy and related public projects should support transit station area development.

When freight traffic is very light, tracks can be shared with light rail transit. This type of shared use is proposed for all of the Belt Line except on the north side between Maddox Park and the Armour industrial district. There, the right-of-way must be intensified with additional track for separated freight and transit use. In all cases, even where the line was previously abandoned, scheduled freight use, particularly at night, would be permitted as an incentive to spur rail-based industrial redevelopment of existing industrial areas. This allowance adds flexibility to the redevelopment of sites, already burdened with many other limitations.

⁶⁸ Calthorpe. The Next American Metropolis. 82.

Land use of Belt Line redevelopment sites will be significantly influenced by environmental conditions. Because most of these sites have had industrial uses in their past, many may have soil contamination. The cost of cleaning the sites, or the types of uses permitted over specific types of contamination will determine land use in many cases. Industrial uses will be permitted when rail freight is used or where truck freight will not have a negative impact on adjacent communities. Where environmental contamination prevents other land uses and industrial re-use makes sense, truck routes to highways must be upgraded so as to minimize further negative impacts on adjacent communities.

One strategy for applying these ideas within Atlanta's codes for development is to establish a new Special Public Interest (SPI) District. SPI districts are overlay zoning districts that frequently blur the lines between subdivision and zoning regulations. MARTA stations within the City of Atlanta currently each have an SPI district, as do other areas with highly local and unique impacts on the city. MARTA SPI's encourage high-density, pedestrian-oriented development within walking distance of stations, as well as relieve parking requirements and tailor other regulations to the unique urban conditions of each station.

Another strategy would be to apply the City's proposed Neighborhood Commercial (NC) and Multi-Family Residential (RG) zoning districts on designated redevelopment sites, particularly those immediately adjacent to each station. These zoning districts, however, do not deal with the primary issue of land subdivision. While writing new zoning and subdivision regulations is beyond the scope of this project, it remains clear that certain key issues should be included. These are: the orientation of streets and blocks so that residents have easy access to transit stations; the orientation of buildings to public streets for pedestrian access; the maximization of land use for residential, commercial and industrial redevelopment that supports transit use by eliminating emphasis on vehicular access and parking; and the development of projects that work sensitively with the Belt Line sites so that Atlanta retains a sense of the profound history these belt lines have had on urban development.

Phasing and Costs

Construction priority for the four Belt Line segments involves not just economic feasibility but historical equity. It may make the most economic sense to construct the northeast line first because it provides tourists access to several cultural attractions. This line, however, engages primarily gentrified, middle class east side neighborhoods and construction priority for this line might exacerbate historical discrimination in public transportation against African American neighborhoods. The southwest line is too short with too few redevelopment sites to make a sizable improvement in mobility or economic development, and the northwest line is too costly because it requires intensification of Seaboard's old right-of-way. The southeast line is best suited for first priority construction. It engages racially and economically diverse areas and has a tremendous amount of redevelopable territory. Several neighborhoods along its route are currently experiencing gentrification and Belt Line redevelopment sites may soon be threatened with low-density growth. It also provides access to destinations such as Zoo Atlanta, Cyclorama, Grant Park, Atlanta Metro College & Atlanta Area Tech, Salvation Army College and the West End commercial district. Table 4 summarizes arguments for construction phasing.

Portland's west MAX line, completed in 1998 with 20 stations on 18 miles of track, cost approximately \$963 million. Table 5 shows the break down of this total cost. It should be noted that construction costs include a \$180 million, three-mile twin bore tunnel under the West Hills, insurance, and systems costs like signals, vehicles, traction, electrification, communications and fare collection.⁶⁹ A direct correlation cost estimate for Atlanta's Belt Line is not possible because right-of-way costs are unknown and because the Belt Line has over twice as many stations on a slightly longer route. While Atlanta does not have the cost of a three-mile tunnel, it will have other major costs including the route alignment and tunnel through the CSX Piggyback facility and

⁶⁹ Source: Tri-Met Capital Projects and Facilities Management Division, Portland, Oregon.

diversion along Lee Street into the West End MARTA Station. With these considerations, it is easy to expect that the cost of the Belt Line could reach \$1 billion.

Table 4: Line Comparisons for Phasing

	Northeast	Southeast	Southwest	Northwest
<i>Length (in miles)</i>	6.2	6.3	3.4	6.9
<i>Number of stops (not including MARTA*)</i>	12	12	7**	10**
<i>Average distance between stops (in miles)</i>	0.5	0.5	0.4	0.6
<i>Track</i>	shared track	shared track	shared track	separate track
<i>Easy MARTA connections</i>	1 - Lindbergh	1 - Inman Park/Reynoldstown		2 - Lindbergh & Bankhead
<i>Difficult MARTA connections</i>	1 - Inman Park/Reynoldstown	1 - West End	2 - West End & Ashby	1 - Ashby
<i>Approximate acres of redevelopment sites</i>	800	1300	300	1800
<i>Positives</i>	most points of interest significant traffic problems	significant redevelopable land significant residential infill opportunity track expected to be abandoned	shortest line/already abandoned track significant residential infill opportunity	significant redevelopable land massive industrial redevelopment track expected to be abandoned
<i>Negatives</i>	decreasing residential infill opportunity track will not be abandoned		relatively little redevelopable land	few points of interest moderate residential infill opportunity expensive intensification of right-of-way
<i>Notes</i>	beginning with the northeast line would exacerbate historical discrimination in public transportation against African-American neighborhoods.	the southeast line traverses racially diverse neighborhoods, vast developable land and a possible new MARTA line toward Henry County.	because the southwest line is so short, it would be least effective in changing city-wide commuting patterns.	though most difficult, the northwest line makes important connections to both the Bankhead and Buckhead areas and any possible Cobb County MARTA line.
Recommended Construction Phasing	Second/Third	First	Second/Third	Fourth

* The Belt Line engages five MARTA stations - Lindbergh, Inman Park/Reynoldstown, West End, Ashby & Bankhead

** Washington Park is a stop on both the southwest and northwest lines

Table 5: Cost of Portland's West Line MAX

	Cost (in millions)
Design	\$90
Right-of-way	\$64
Construction (including \$180 million tunnel)	\$682
Construction management	\$119
Start up	\$8
Total	\$963

Source: Tri-Met Capital Projects and Facilities Management Division, Portland, Oregon.

Chapter 4

The Southeast Belt Line

To illustrate the concepts defined in Chapter 3 concerning physical conditions, station types, station programs and City codes, the Southeast Belt Line has been selected for further design study. As discussed earlier, the southeast line is a good choice for construction priority because it engages an enormous amount of redevelopable land (over 1,300 acres) and diverse neighborhoods with both significant infill development potential and gentrification pressures. In fact, following already transformed east side neighborhoods like Inman Park, Virginia Highland, Midtown and Morningside, the southeast line represents the probable next wave of lucrative intown real estate reinvestment. Southeast line neighborhoods like Cabbagetown, Reynoldstown, Grant Park, Ormewood Park, Peoplestown and West End are currently in varying stages of early gentrification.

Urban Design

Once the route and transit stops are located and redevelopment opportunities are defined, a more detailed design approach must be taken to understand more fully the physical challenges and opportunities posed by station areas. Looking broadly at issues like topography and storm drainage, road network connections or disconnections, destination points, established communities, landmark buildings and historic sites helps inform policy decisions that affect specific sites. Following is a list of the fourteen stations on the southeast line. Accompanying these narratives are three-dimensional diagrams (Figures 37-42) showing major physical relationships, and two-dimensional plans (Figures 44-51) showing existing building footprints and topographic contours (at five foot increments).

SE 1: Inman Park/Reynoldstown MARTA

This is the third stop from Five Points on MARTA's east line. It provides access to significant redevelopment sites at the CSX Railroad Intermodal Transfer Terminal, which transfers freight containers between trains and trucks and is popularly known as the CSX Piggyback Facility. This station also provides access to limited residential infill sites in Reynoldstown and Inman Park. The station is also the southern end of Freedom Park and is within a half mile from the Little Five Points commercial district.

SE 2: Flat Shoals

This station is named after an adjacent street. It provides access to significant redevelopment sites at the CSX Piggyback site and significant residential infill sites in Reynoldstown and Cabbagetown. It is less than a quarter-mile from the heart of Reynoldstown and offers attractive potential for a few neighborhood shops and restaurants next to residential buildings and churches at Wylie Street and Flat Shoals Street. It also provides immediate access to the Lang Carson Community Center. Critical moves for restructuring the Piggyback redevelopment site include breaking it into blocks that provide efficient access to the transit station.

SE 3: Atlanta & West Point

This station is named after the southeast section of the historic belt line and sits adjacent to its old freight depot. It provides access to many residential, commercial and industrial redevelopment sites along Memorial Drive and significant residential infill sites in Reynoldstown and Cabbagetown. Immediately adjacent to the station are several older industrial warehouse buildings, likely candidates for residential loft conversion. Along with the old depot, circa 1900, and despite their battered appearance, these buildings create a station area with an urban most of Memorial Drive. With the Glenwood-Memorial Connector rerouted to allow track alignment for this station and redesigned to accommodate truck-based industries along Memorial Drive, Atlanta & West Point Station offers employee access to over 60 acres of industrial redevelopment sites that currently include Parmalat (Atlanta



Dairies) and Mack Trucks. Critical connections for the immediate station area include new east-west streets between the northern end of the station platforms and local streets to minimize walking distances for residents of Cabbagetown and Reynoldstown.

SE 4: Glenwood

This station is named after an adjacent street. With excellent interstate access, a large amount of redevelopable land, and flanking gentrifying neighborhoods, Glenwood is a prime location for higher-density mixed-use development. This is the current site of the Blue Circle concrete recycling plant, the sole remaining user of Atlanta & West Point's old belt line. The plant is expected to shut down and move to the suburbs in the next few years. Critical connections to be made here include streets south to Berne Street and east into Ormewood Park. Southside Comprehensive High School blocks connection to Grant Park to the west. Local landmarks include the old Roosevelt High, built in 1924 and now an apartment building, and the old Atlanta Stockade, 1897, 1905.

SE 5: Ormewood

This station is named after an adjacent street. It provides access to limited residential redevelopment sites and limited remaining residential infill sites in Grant Park and Ormewood Park. It offers access to Beulah Heights Bible College on Berne Street and West/Slaton Elementary School. It is within a half mile of Grant Park. The rail line crosses Ormewood Avenue along a large, arching red concrete bridge.

SE 6: Soldiers' Home

This station is named after the old Confederate Soldiers' Home on Confederate Avenue, now the site of the State Police Academy. It provides access to some significant residential redevelopment sites, but limited remaining residential infill sites in Grant Park and Ormewood Park. In addition to the Police Academy and State National Guard, Soldiers' Home is within a half mile of Grant Park and Zoo Atlanta. Critical moves to be made include new streets connecting Confederate, Eden and Delmar Avenues on the east side of the transit line in Ormewood Park, currently the site of a disconnected apartment complex.

SE 7: Intrenchment Creek

This station is named after a nearby creek. It provides access to significant residential redevelopment sites along Boulevard and Englewood Avenue and residential infill sites in Grant Park and Boulevard Heights. This is the likely site for a tourist shuttle to Zoo Atlanta and the Cyclorama, less than half a mile north in Grant Park. High-tension power lines complicate redevelopment of the territory southwest of the station, crossing the site diagonally to a large substation on Mead Street at the end of Cherokee Avenue. Critical moves in the vicinity include the subdivision of the large, underutilized area north of Englewood Avenue with public streets on small, blocks oriented toward Intrenchment Creek and Milton Hill Stations. These sites are currently scarred by low industrial buildings and storage yards, but many have commanding views of the downtown skyline.

SE 8: Milton Hill

This station is named after a nearby (Milton), and an adjacent street (Hill). It provides access to significant residential redevelopment sites and Englewood Avenue and residential Park, Peoplestown and Chosewood Park.



In addition to the land north of Englewood Avenue discussed in the previous section, other sites west of Hill Street are particularly high (1,050 feet) and offer spectacular views of downtown Atlanta. Currently, these views are scarred by obsolete industrial buildings and parking lots for tractor-trailers.

educational facility provides access to along Hill Street infill sites in Grant

SE 9: Clark

This station is named after Clark College (now Clark Atlanta University) which was formerly located nearby. It provides access to significant industrial, commercial and residential redevelopment sites along McDonough Road, Hank Aaron Drive and University Avenue and residential infill sites in Peoplestown and South Atlanta. The intersection of these three roads and Southern Railway's at-grade trunk line to Macon complicates a station that also anticipates a possible future MARTA line following the main railroad. The Belt Line, however, slides easily under this complex intersection

through an existing tunnel. A local landmark is George Washington Carver High School, originally built in 1920 as Leete Hall of Gammon Theological Seminary.⁷⁰ Critical moves for the station area include the subdivision of industrial land immediately north and east of the station into blocks that provide access to the transit station from Peoplestown. Also critical are pedestrian improvements for residents of South Atlanta to the station.

SE 10: Carver

This station is named after the nearby George Washington Carver High School and adjacent Carver Homes, a public housing project currently under redesign and reconstruction into a mixed-income community. The station provides access to significant commercial and residential redevelopment sites along Pryor Road. It is also a likely connection for a shuttle running south to Lakewood Fairgrounds and the Coca-Cola Lakewood Amphitheater. It is immediately adjacent to Slater Elementary School. North of the station will most likely remain industrial. The redevelopment of Carver Homes and adjacent sites south of the station are critical to Carver station. The sites must be subdivided into residential blocks integrated with the South Atlanta neighborhood, and provide efficient pedestrian access to the transit station.

SE 11: Freedmen

This station is named after the Freedmen's Aid Society, which formerly owned the property on the south side of University Avenue. It is a second-priority station because it requires the redevelopment of the Aid Society's old property, which is currently a closed recycling facility. It provides access to significant residential, commercial and possibly industrial redevelopment sites. If redeveloped, it could also provide access to significant residential infill sites in Pittsburgh, and limited infill sites in Capitol View Manor. Just south of the station, tucked between Capitol View Manor and Interstate 75/85 is a beautiful, isolated piece of forest, marred only by a small, unidentified water treatment or pumping facility. Critical moves for the station area include the subdivision of existing sites with public streets allowing residents of Pittsburgh efficient pedestrian access to the transit station.

⁷⁰ Atlanta's Lasting Landmarks. (a publication of the Atlanta Urban Design Commission, 1987.) 50.

SE 12: Stewart

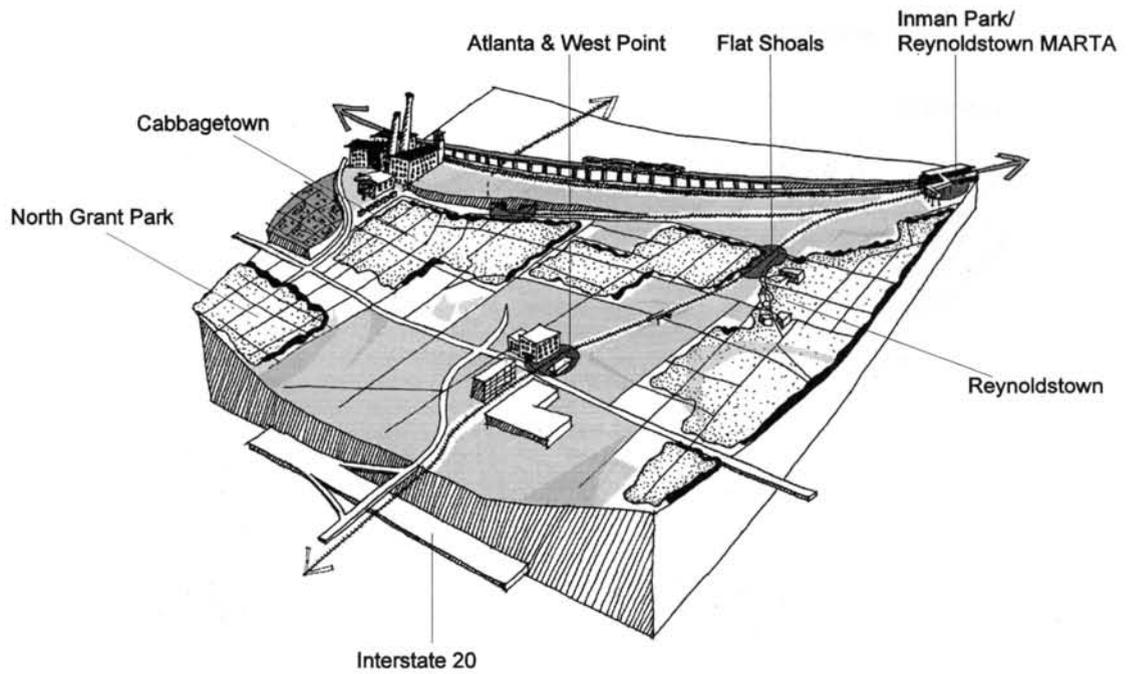
This station is named after Stewart Avenue, the former name of Metropolitan Parkway. It provides access to significant commercial and residential redevelopment sites along Metropolitan Parkway and University Avenue, significant residential infill sites in Pittsburgh, and limited infill sites in Adair Park and Capitol View. It is the last station on Atlanta & West Point's old belt line before the route veers northwest onto Louisville and Nashville's abandoned line. Stewart Station is within a half mile of the Salvation Army College and within a three-quarter mile of Atlanta Metro College and Atlanta Area Tech. It is two blocks north of a neglected commercial node that includes several beautiful buildings like the Postal and Federal Employees Local 305 lodge and the Anchor community service center, an old church.

SE 13: Adair

This station is named after the neighborhood it serves. It provides access to significant industrial redevelopment sites along Murphy Street and limited remaining residential infill sites in Adair Park. It is within a half mile of the Salvation Army College. Also nearby at Sylvan Road and Murphy Street are several obsolete industrial warehouse buildings ripe for residential loft conversion. Critical moves for the station area include subdivision of the industrial land immediately west of the station, providing residents of Oakland City pedestrian access along public streets to the transit station.

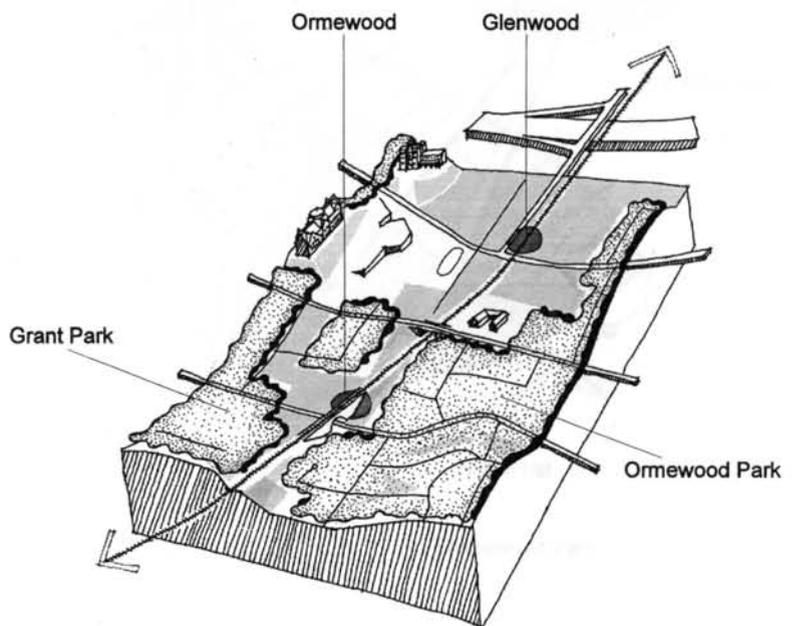
SE 14: West End

This is the second stop from Five Points on MARTA's south line. It provides access to significant industrial, commercial and residential redevelopment sites along Lee and Murphy Streets and residential infill sites in West End and Adair Park. It also accesses the West End commercial district and West End Mall, an area with unappreciated potential for high-density, transit-oriented residential and commercial redevelopment. Local landmarks include the old Candler warehouses immediately east of the station within the redevelopment site, now converted to artists' studios and lofts. Critical moves for the station area include better access to areas immediately east of the station on the other side of the railroad tracks.



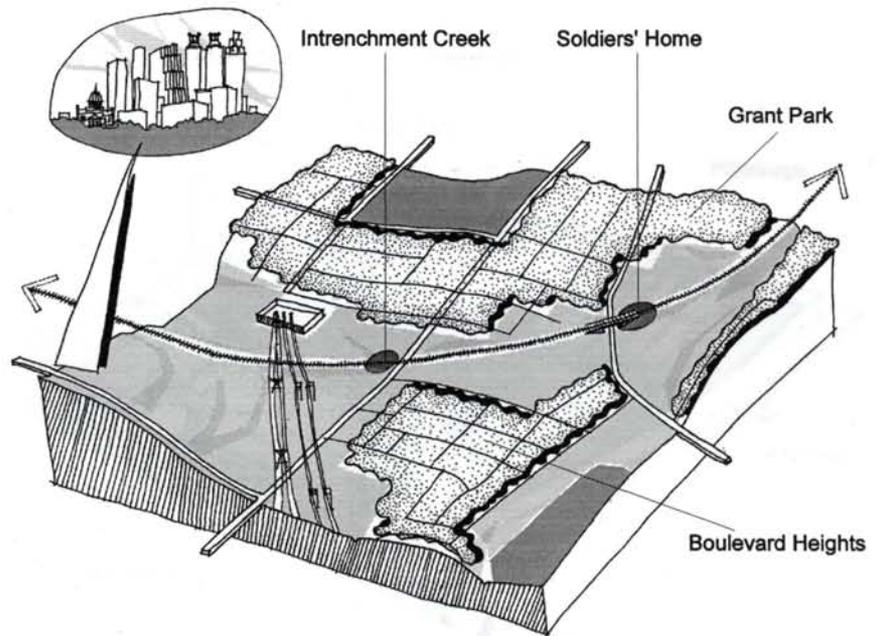
Southeast Belt Line - Physical Relationships

Figure 37: Inman Park MARTA, Flat Shoals and Atlanta & West Point Stations



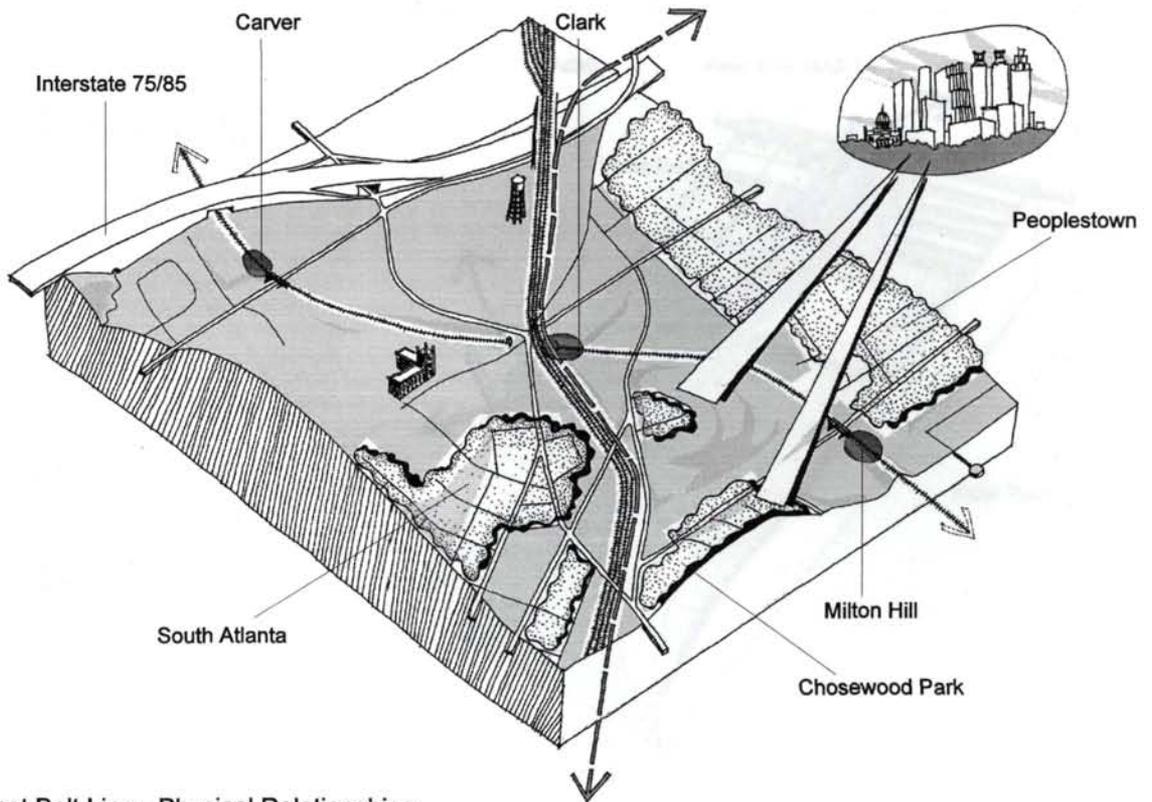
Southeast Belt Line - Physical Relationships

Figure 38: Glenwood and Ormewood Stations



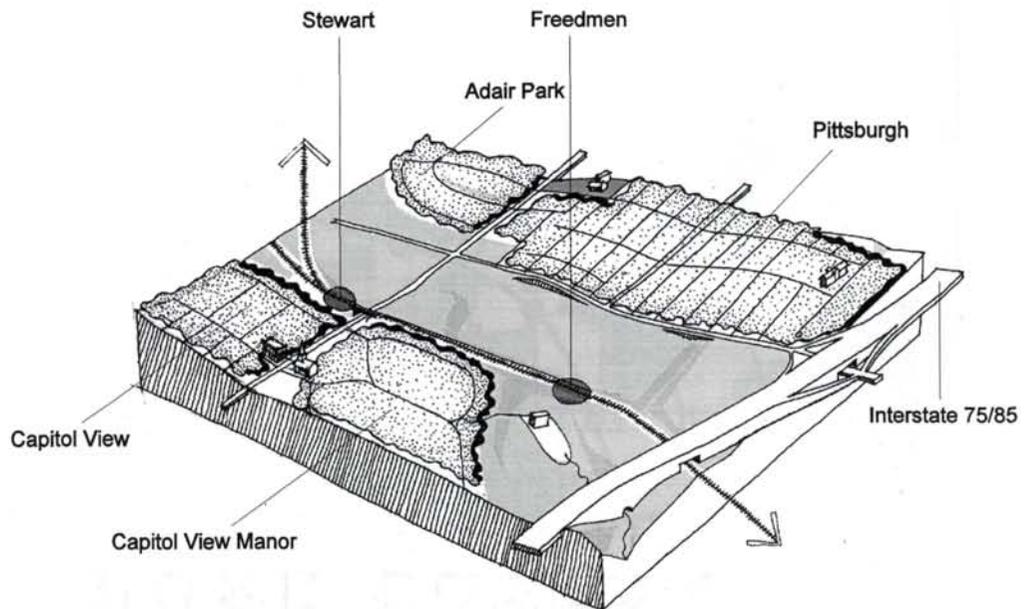
Southeast Belt Line - Physical Relationships

Figure 39: Soldiers' Home and Intrinment Creek Stations



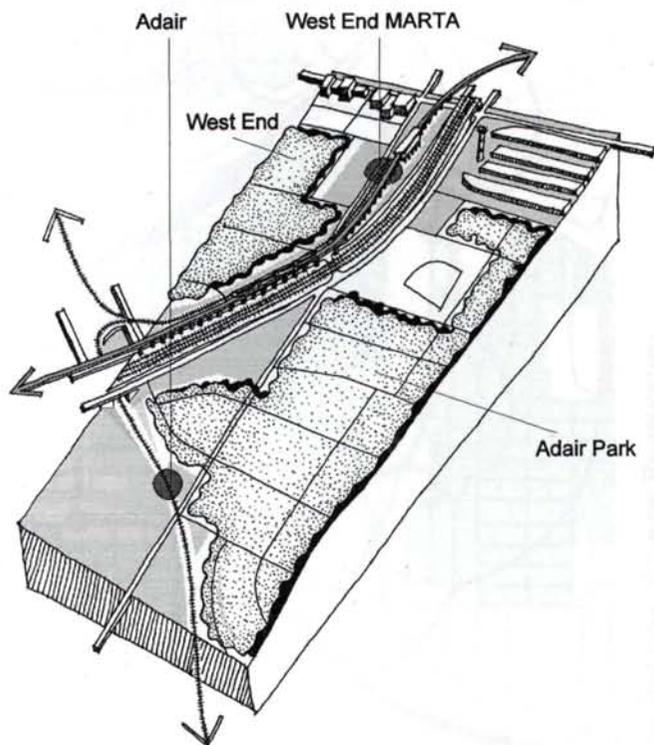
Southeast Belt Line - Physical Relationships

Figure 40: Milton Hill, Clark and Carver Stations



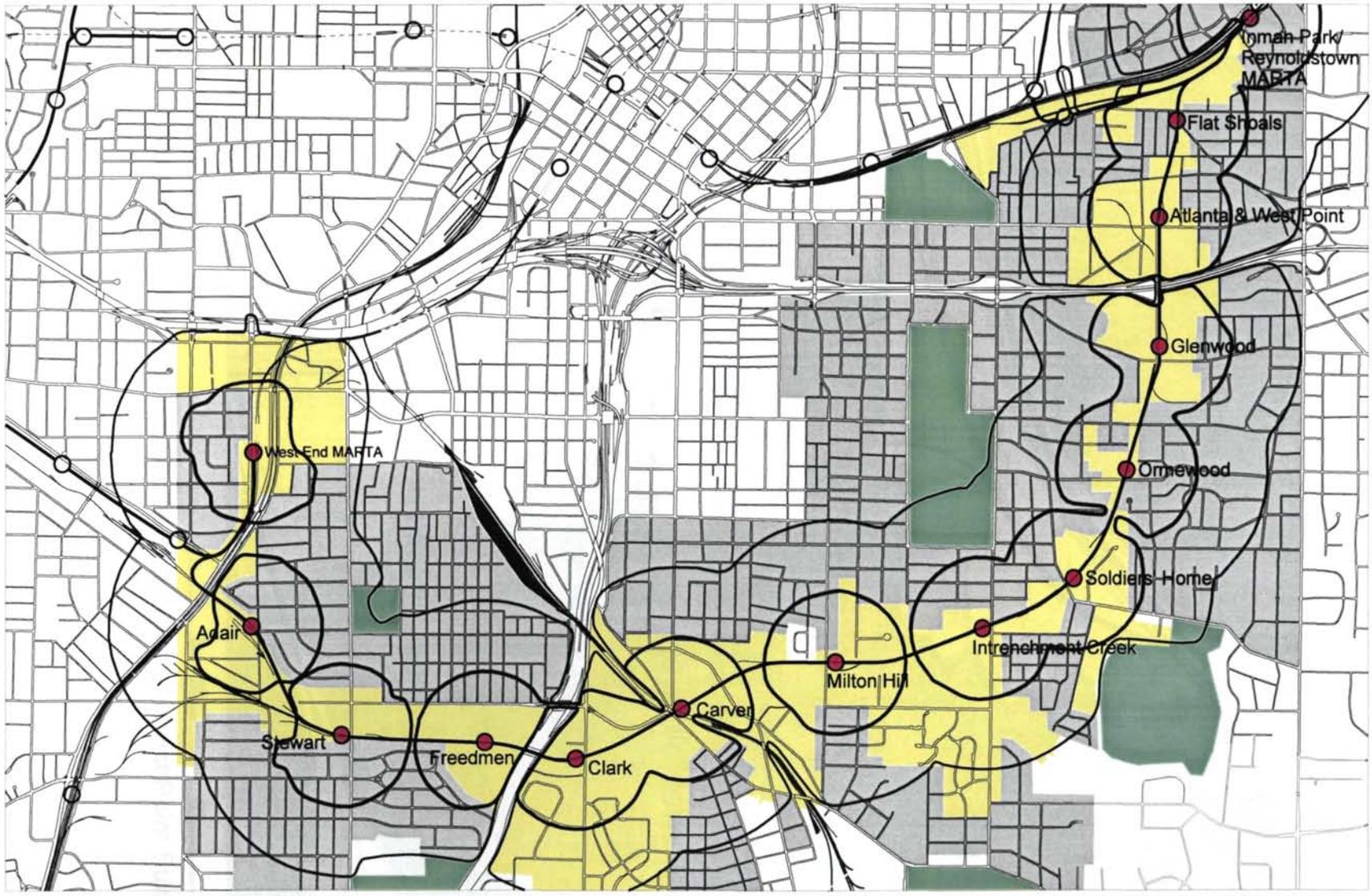
Southeast Belt Line - Physical Relationships

Figure 41: Freedmen and Stewart Stations



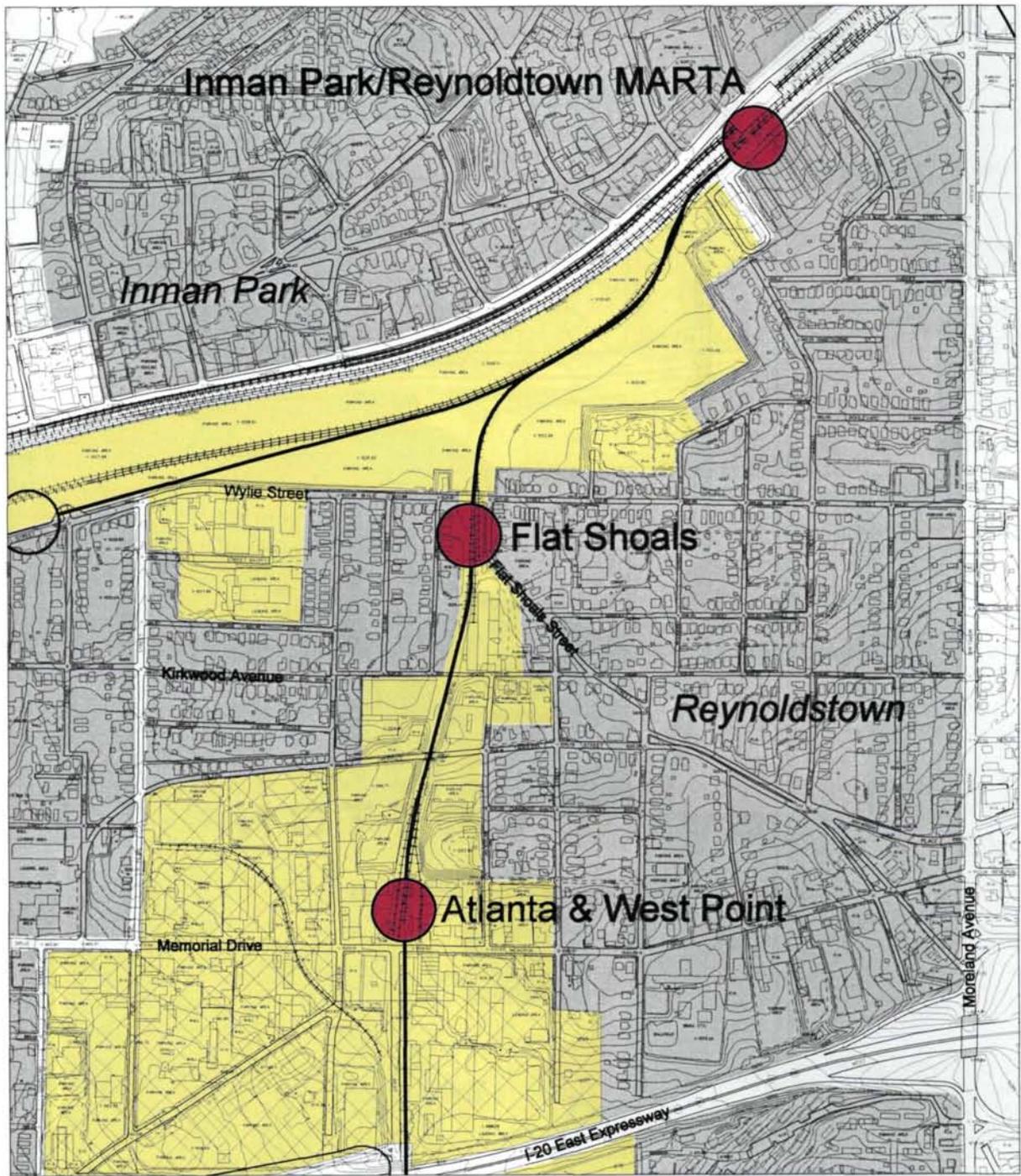
Southeast Belt Line - Physical Relationships

Figure 42: Adair and West End MARTA Stations



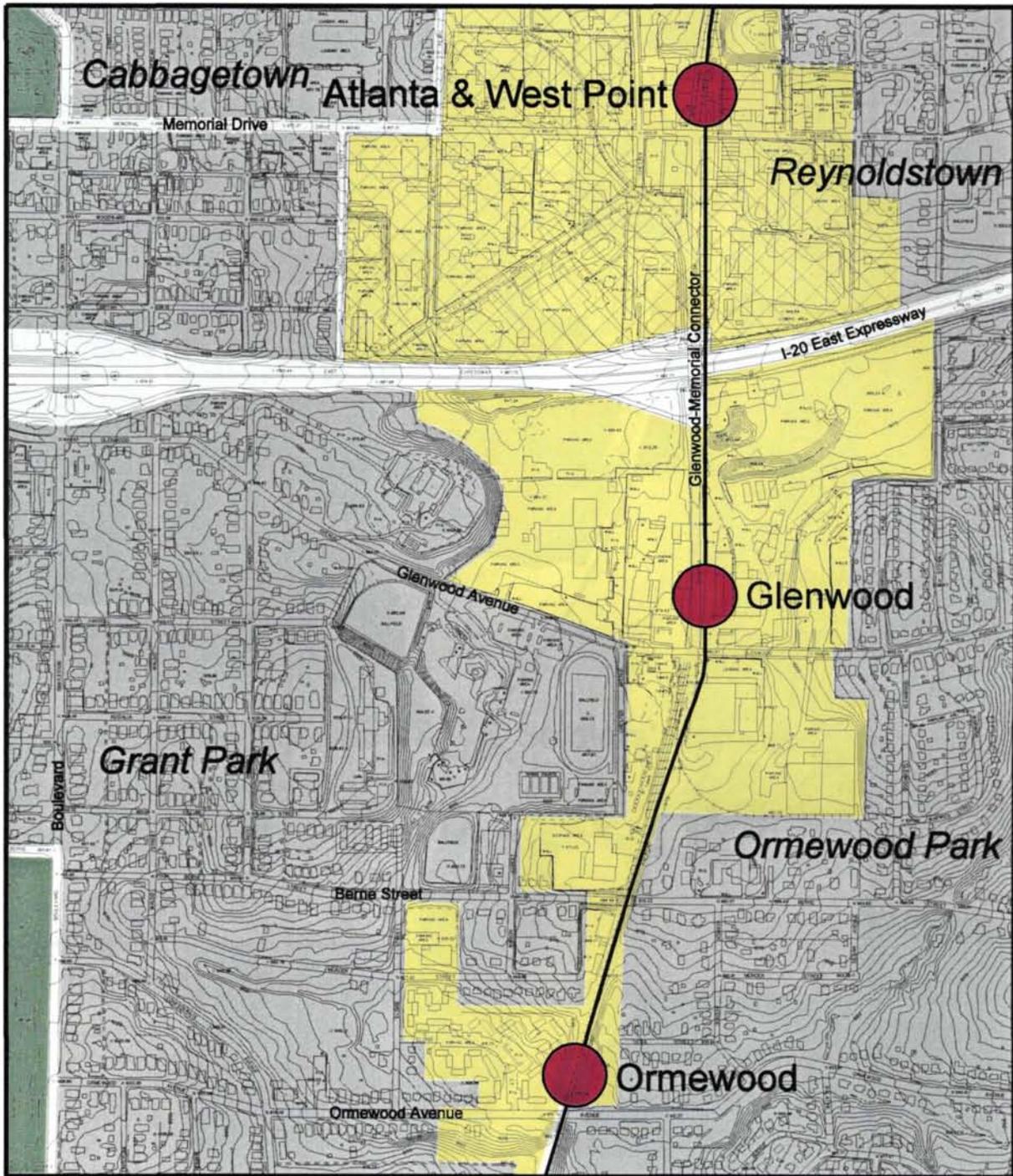
Southeast Belt Line - Physical Relationships

Figure 42: Quarter-mile and half-mile walking distances



Southeast Belt Line - Plans

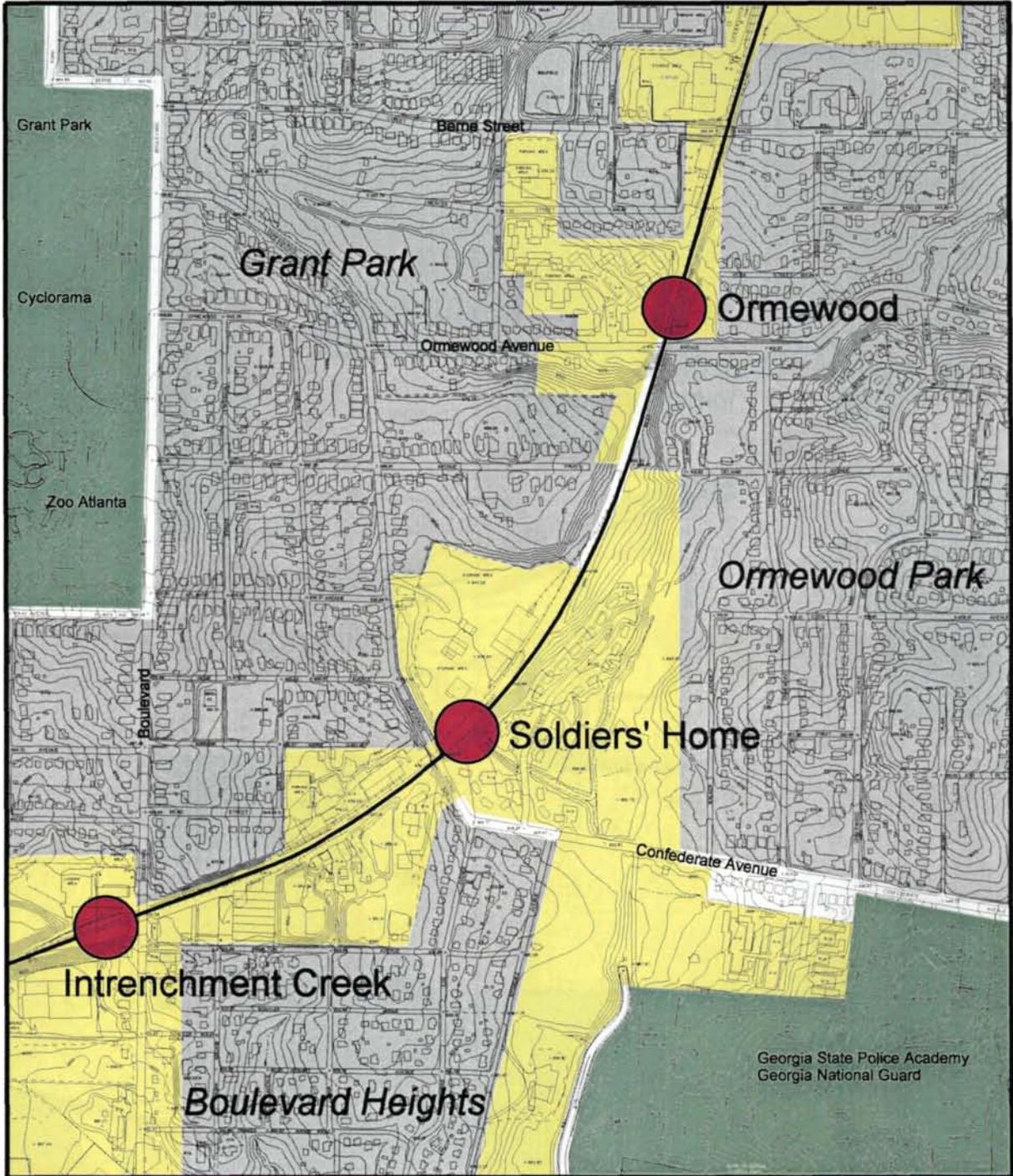
Figure 44: Inman Park MARTA, Flat Shoals and Atlanta & West Point Stations



Southeast Belt Line - Plans

0 200 800

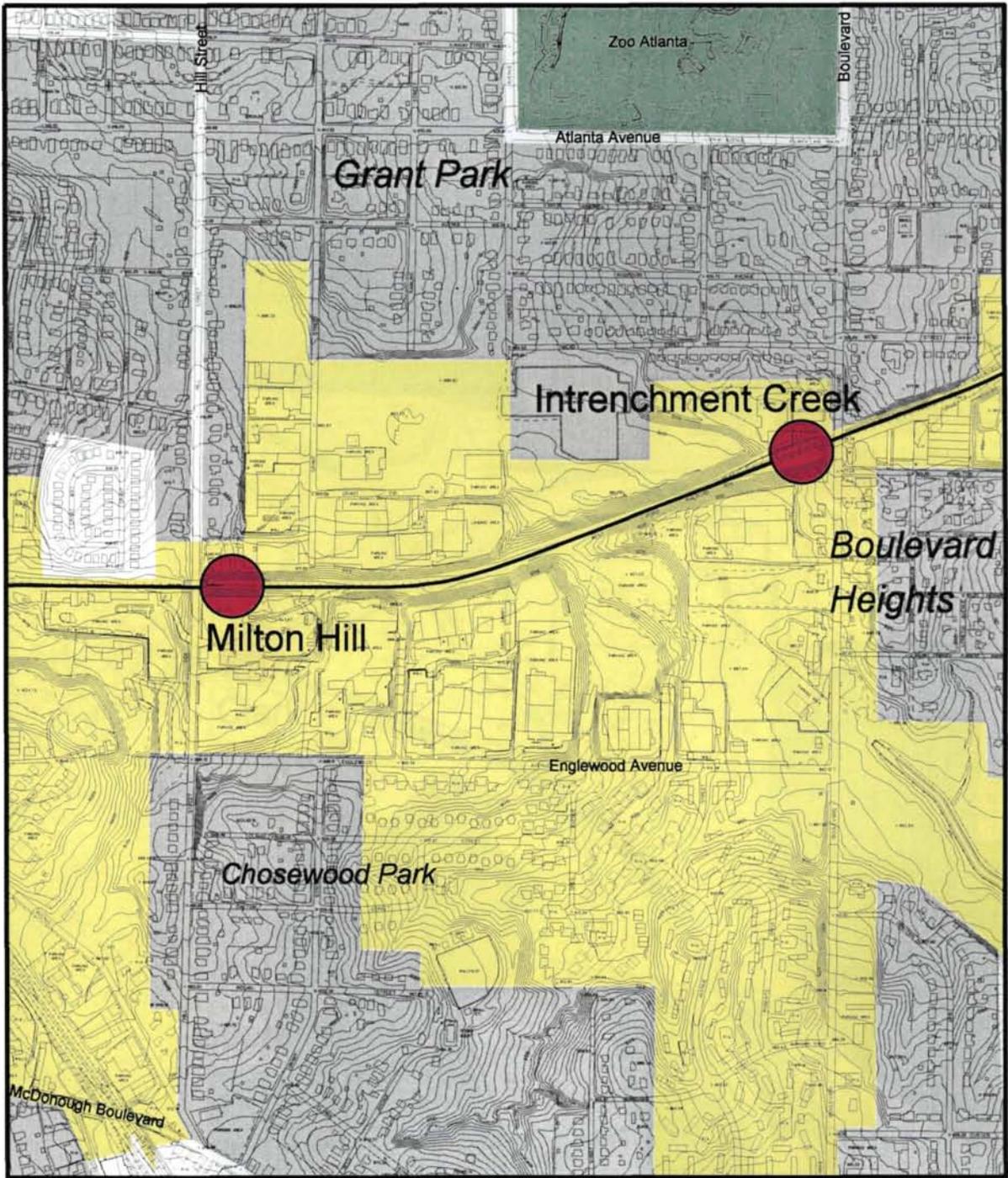
Figure 45: Atlanta & West Point, Glenwood and Ormewood Stations



Southeast Belt Line - Plans

0 200 800

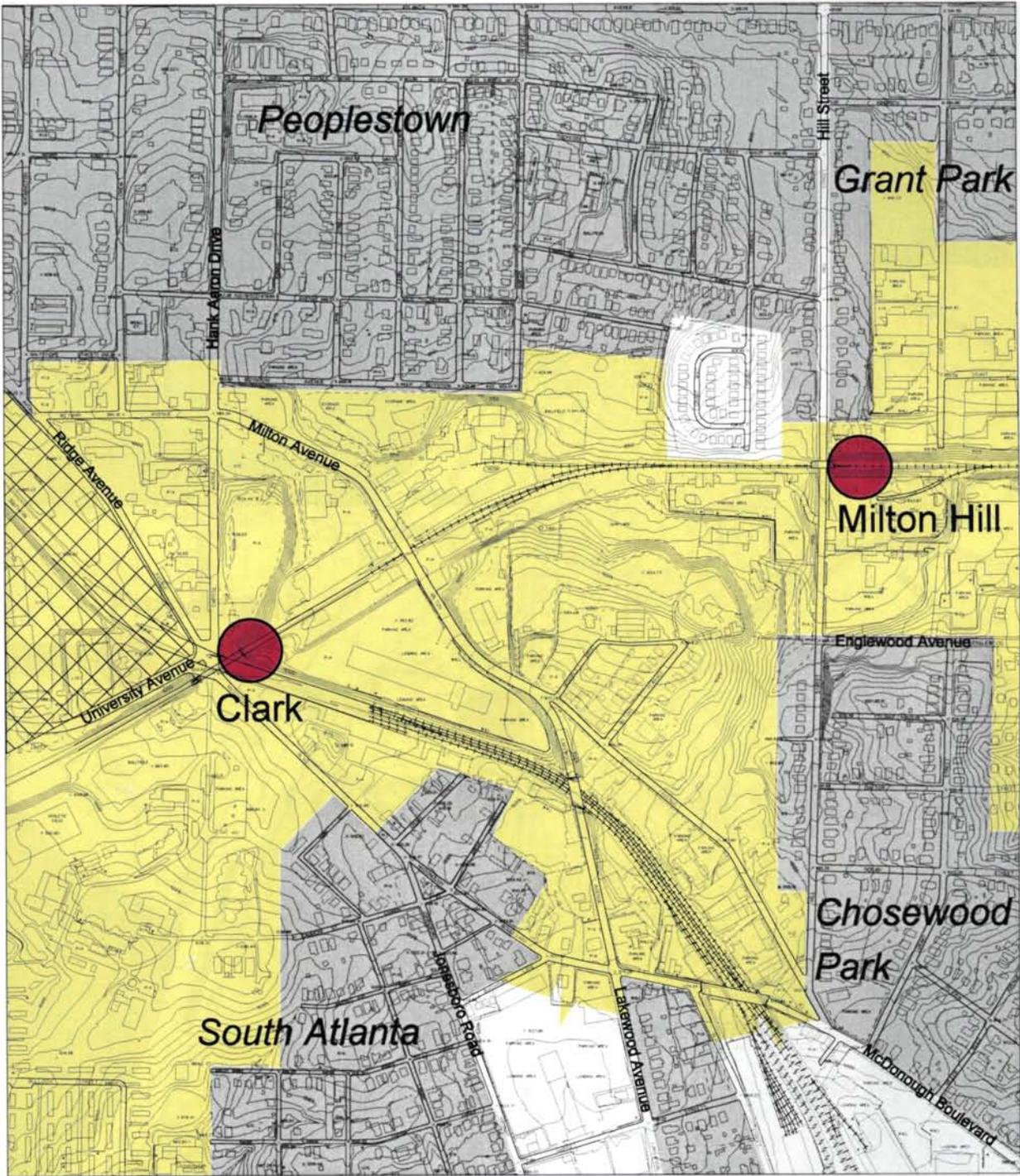
Figure 46: Ormewood, Soldiers' Home and Intrenchment Creek Stations



Southeast Belt Line - Plans

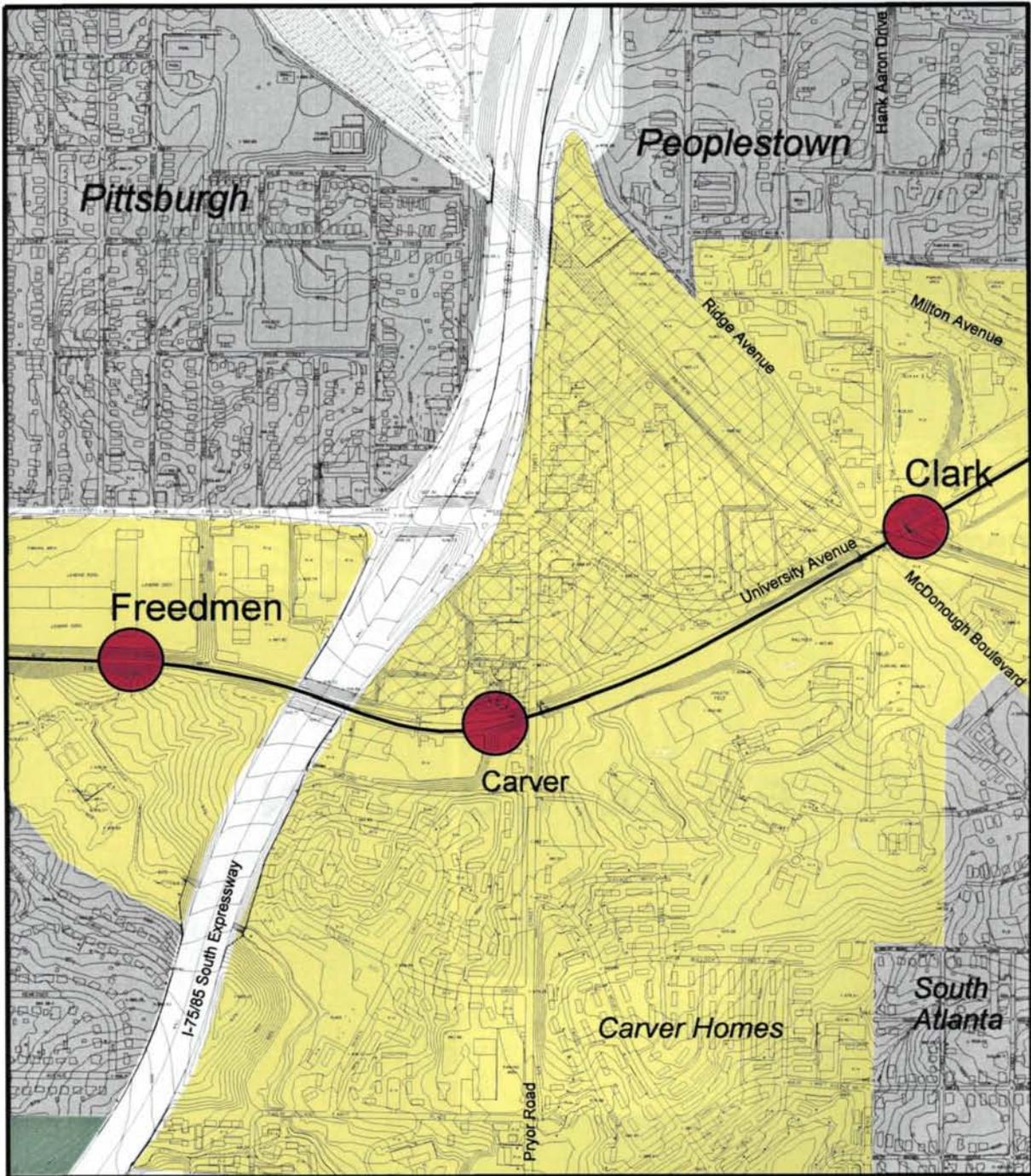
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Figure 47: Intr trenchment Creek and Milton Hill Stations



Southeast Belt Line - Plans

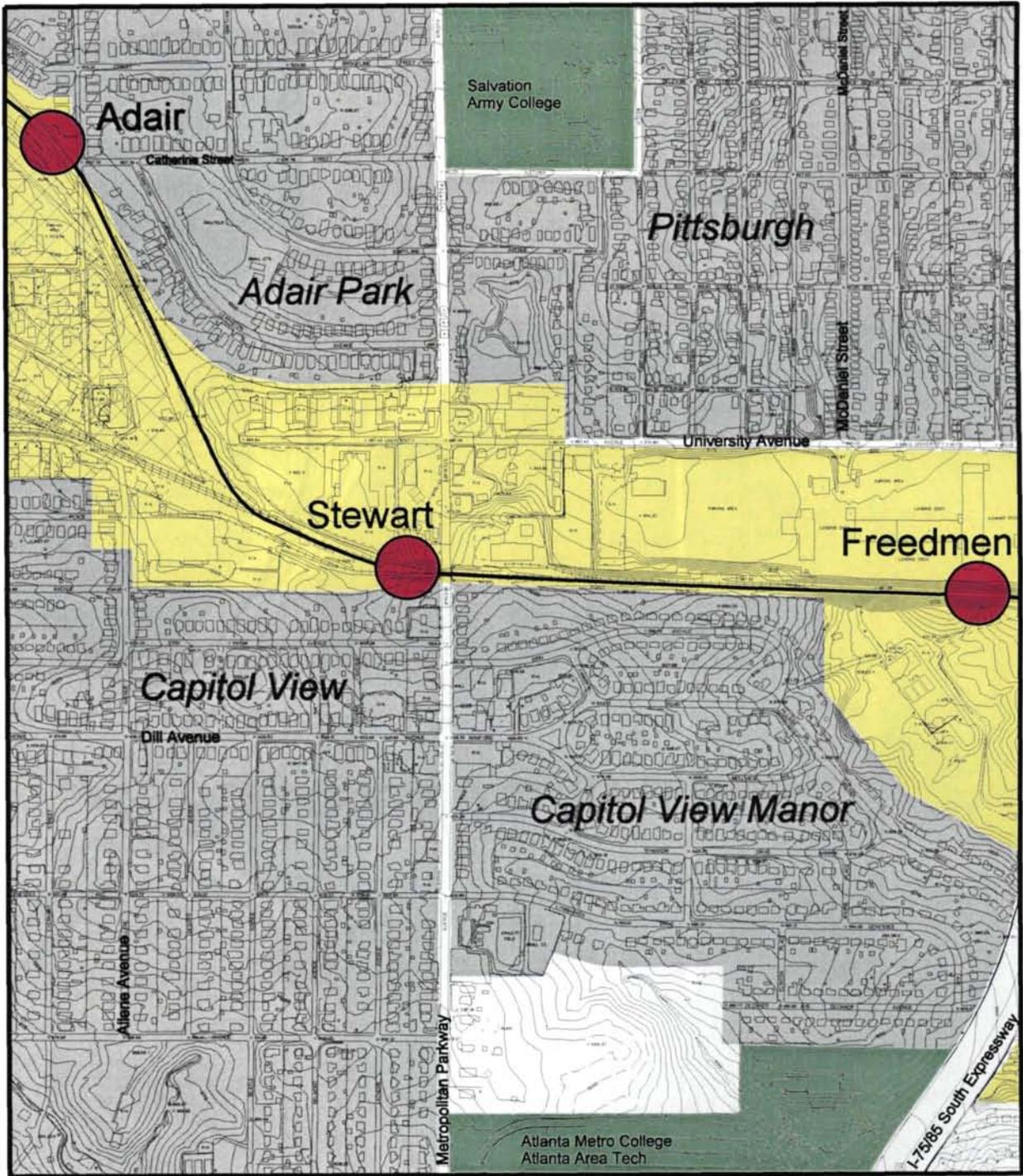
Figure 48: Milton Hill and Clark Stations



Southeast Belt Line - Plans

0 200 800

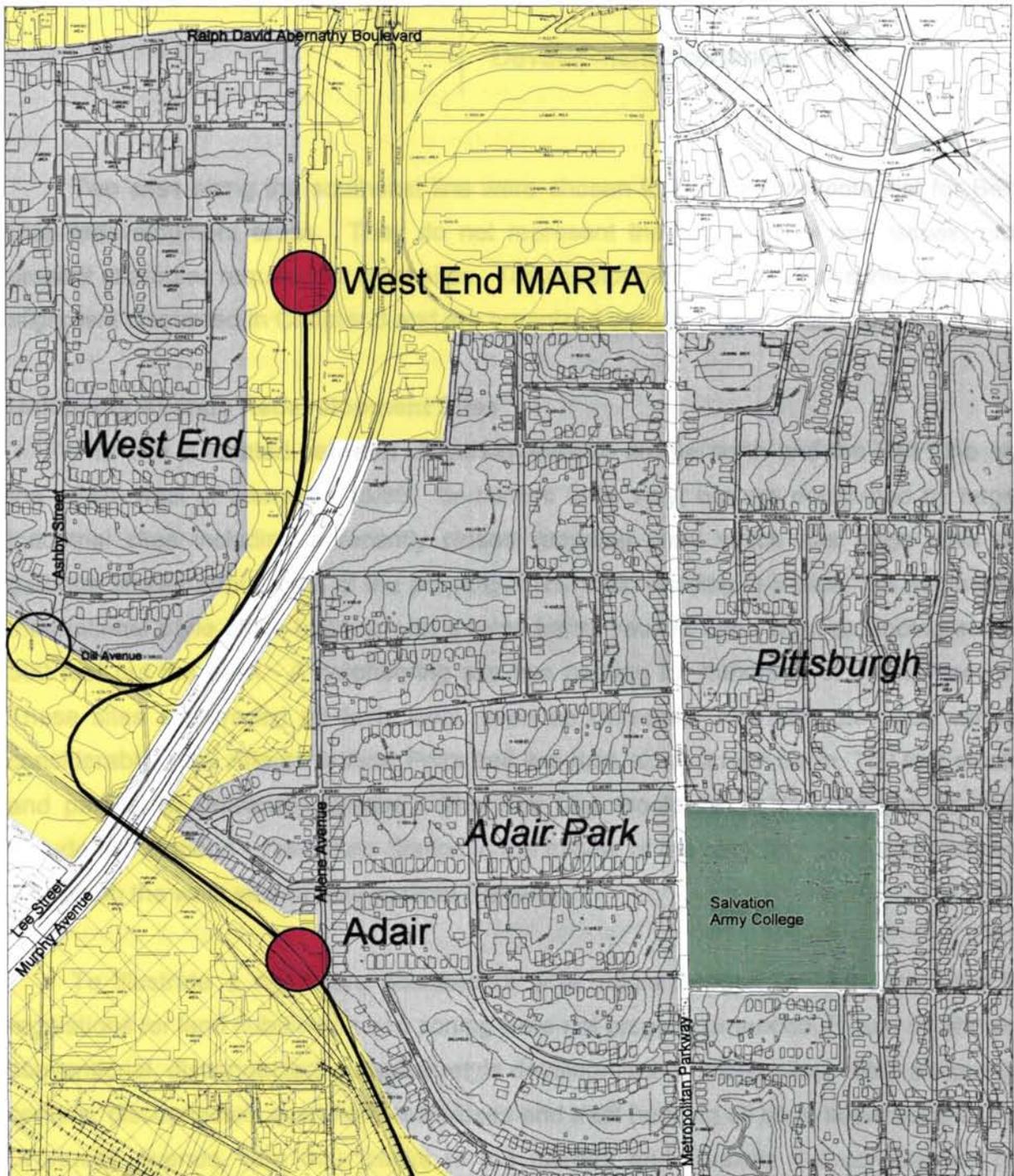
Figure 49: Clark, Carver and Freedmen Stations



Southeast Belt Line - Plans

0 200 800

Figure 50: Freedmen, Stewart and Adair Stations



Southeast Belt Line - Plans

Figure 51: Adair and West End MARTA Stations

Development Scenarios

Two sites along the southeast line were chosen to illustrate the potential for Belt Line redevelopment areas. They do not represent the full range of site issues, but present strategies required for most sites. The development scenarios assume the route alignment discussed in Chapter 3 and are organized around those transit stops.

University Avenue Redevelopment Sites

This site is located between University Avenue on the north and the Belt Line on the south, west of Interstate 75/85. Its current uses vary, but are dominated by large industrial sites including a recently closed recycling plant which has large piles of garbage strewn about most of the property. The main building is a nice, but neglected International Style office building with a large barrel vaulted open shed extending some 300 feet out the back. A neighboring site has parking for hundreds of tractor-trailers. These sites are graded off fairly level, even as University Avenue's elevation varies considerably. The Atlanta & West Point belt line runs along a high berm, 700 feet south and parallel to University Avenue. The Belt Line would follow the same route and include two stations - *Freedmen Station* in the middle of the recycling plant and *Stewart Station* on the west side of Metropolitan Parkway.

To illustrate a nightmare scenario of what might happen to Belt Line sites if regulations for land subdivision and zoning were not properly amended, Figure 54 shows conventional, disconnected, suburban-style development on these sites. Strip shopping centers, disconnected apartment complexes and tract housing all have separate exits to University Avenue, turn their backs to the railroad and disallow the construction of Freedmen Station.

Figure 55: *Residential scenario*, however, extends the street grid of Pittsburgh south across University Avenue. Multi-family housing conforms to new City design regulations by filling out these blocks with transit-supporting densities. Freedmen

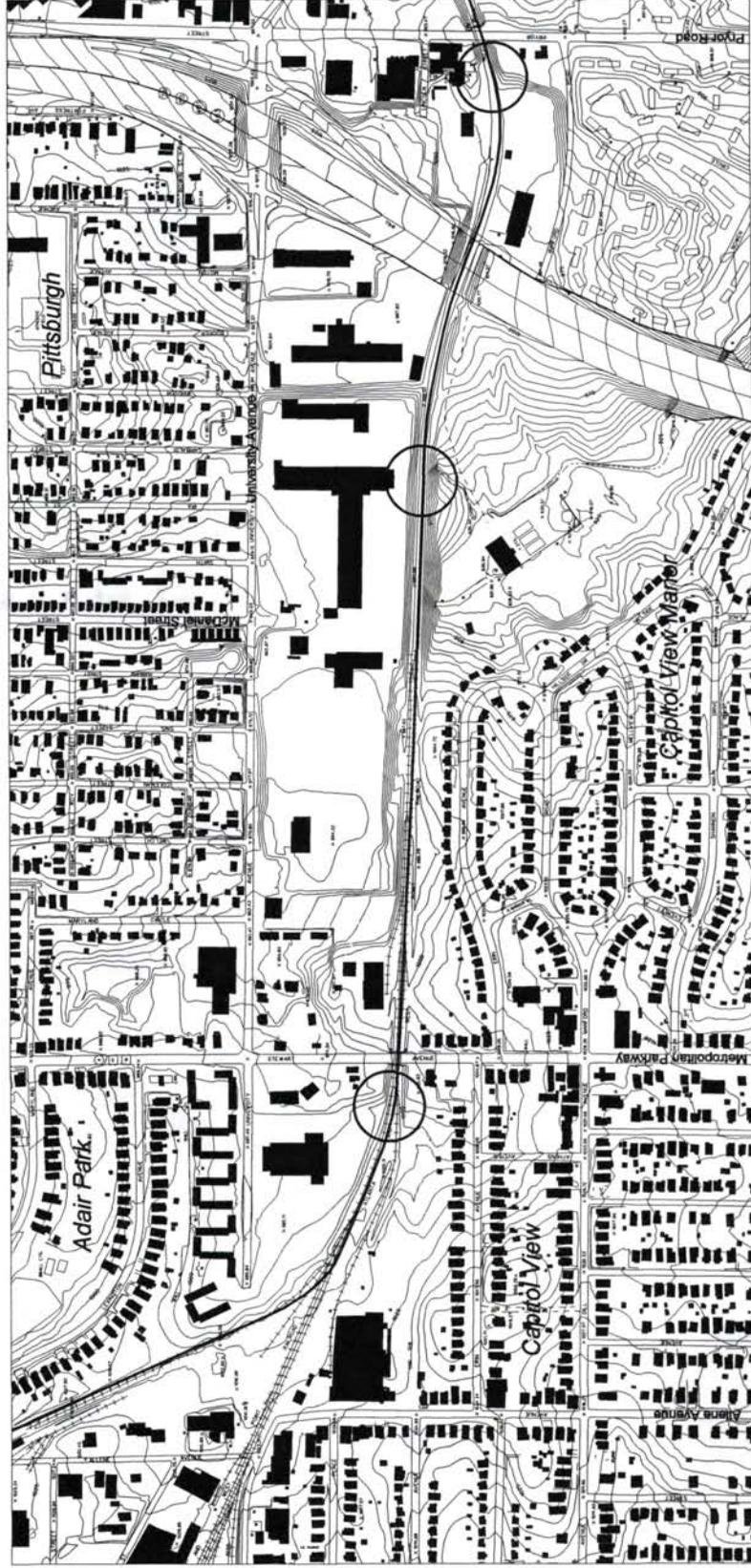
Station is used to further organize the public framework with a small greenspace fronting a new east-west boulevard through the south side of the site. The barrel vaulted shed is re-used as an indoor community center. While most of the current topography is graded flat, the corner of University Avenue and Metropolitan Parkway has natural topography and large trees and is designated a community park. The eastern corner adjacent to the interstate is reserved for ball fields.

Because the existing sites may have soil contamination due to their long industrial use, an industrial redevelopment scenario is also examined. Here, in Figure 56: *Industrial scenario*, blocks are larger to allow larger buildings, but the site retains an interconnected network of streets. Streets for trucks are wider with larger curb radiuses and University Avenue is upgraded to lessen negative impacts on Pittsburgh between Metropolitan Parkway and I-75/85. The community park on the corner of Metropolitan is retained in this scheme. Freedmen Station allows access for commuters to local industrial jobs and public streets allow residents of Pittsburgh access to the transit station.

Memorial Drive Redevelopment Sites

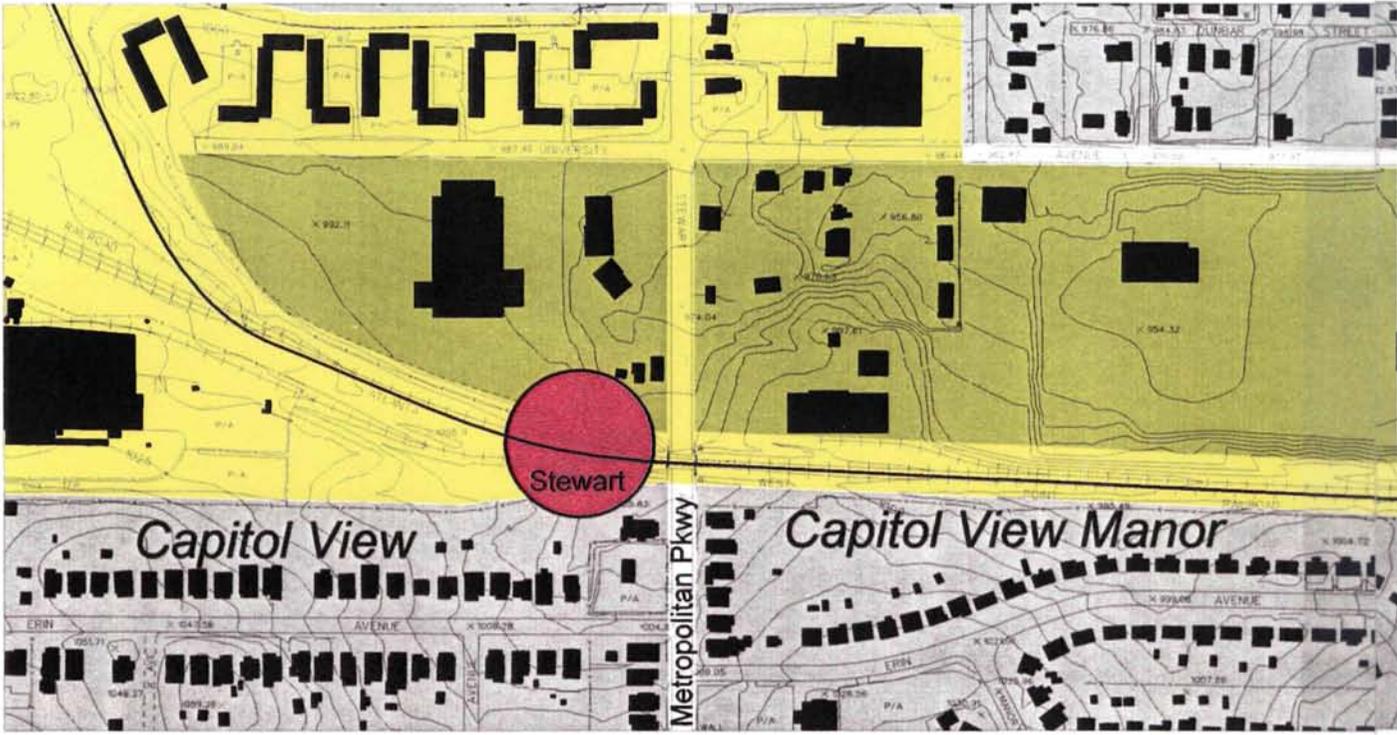
This site is located on either side of Memorial Drive, just north of Interstate 20 at the Glenwood-Memorial Connector. The alignment of the Belt Line proposes the rerouting of the Glenwood-Memorial Connector just west of its current site in order to free Atlanta & West Point's old belt line right-of-way for light rail transit. The uses of surrounding sites vary, but are dominated by both large and small industrial sites including Parmalat (Atlanta Dairies) and Mack Trucks. There is an old freight depot on Memorial Drive and the Belt Line station is its namesake - Atlanta & West Point Station. Just adjacent to the depot are several buildings that seem to be in the process of residential loft conversion. The Belt Line crosses Memorial Drive at grade and heads north into Reynoldstown.

The development scenario for Memorial Drive (see Figure 59: *Industrial/residential scenario*), includes both industrial and residential redevelopment. Sites with good truck access to the rerouted Glenwood-Memorial Connector remain primarily industrial. The

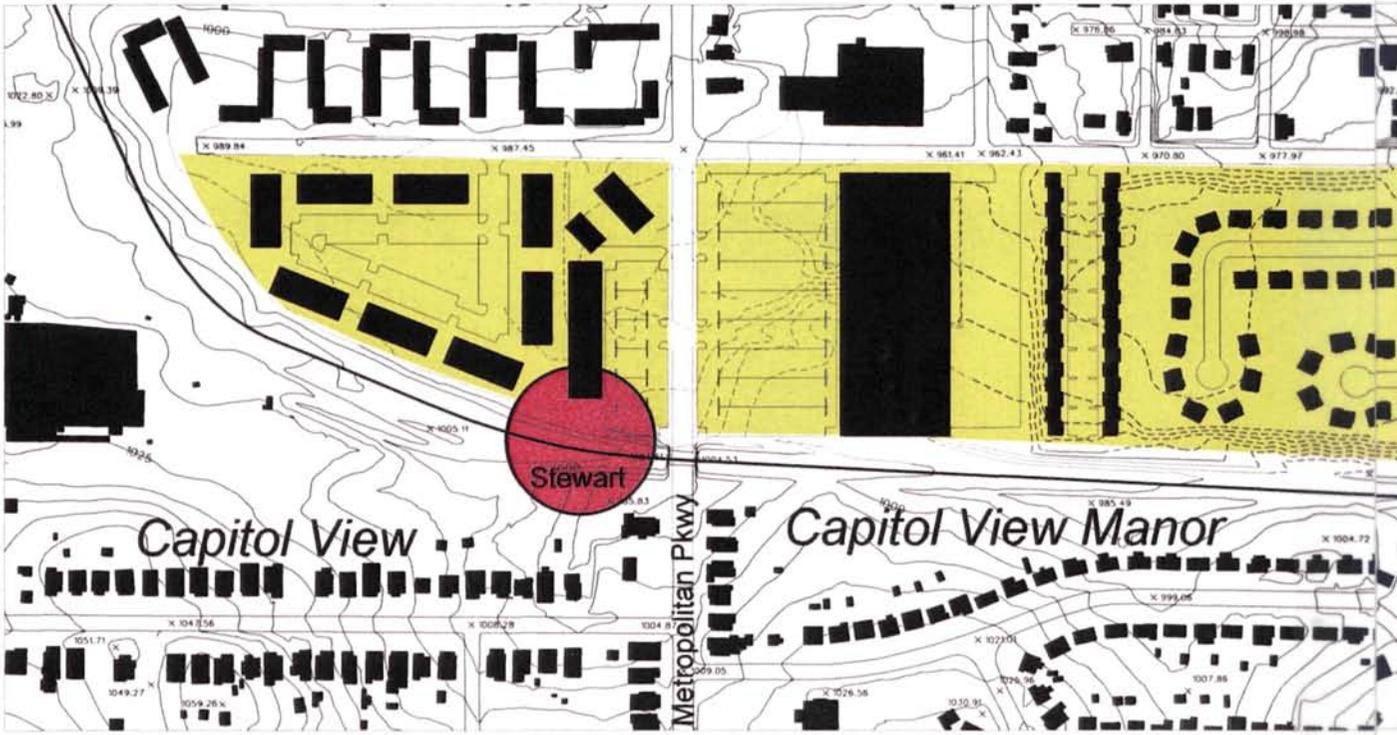


University Avenue Redevelopment Sites

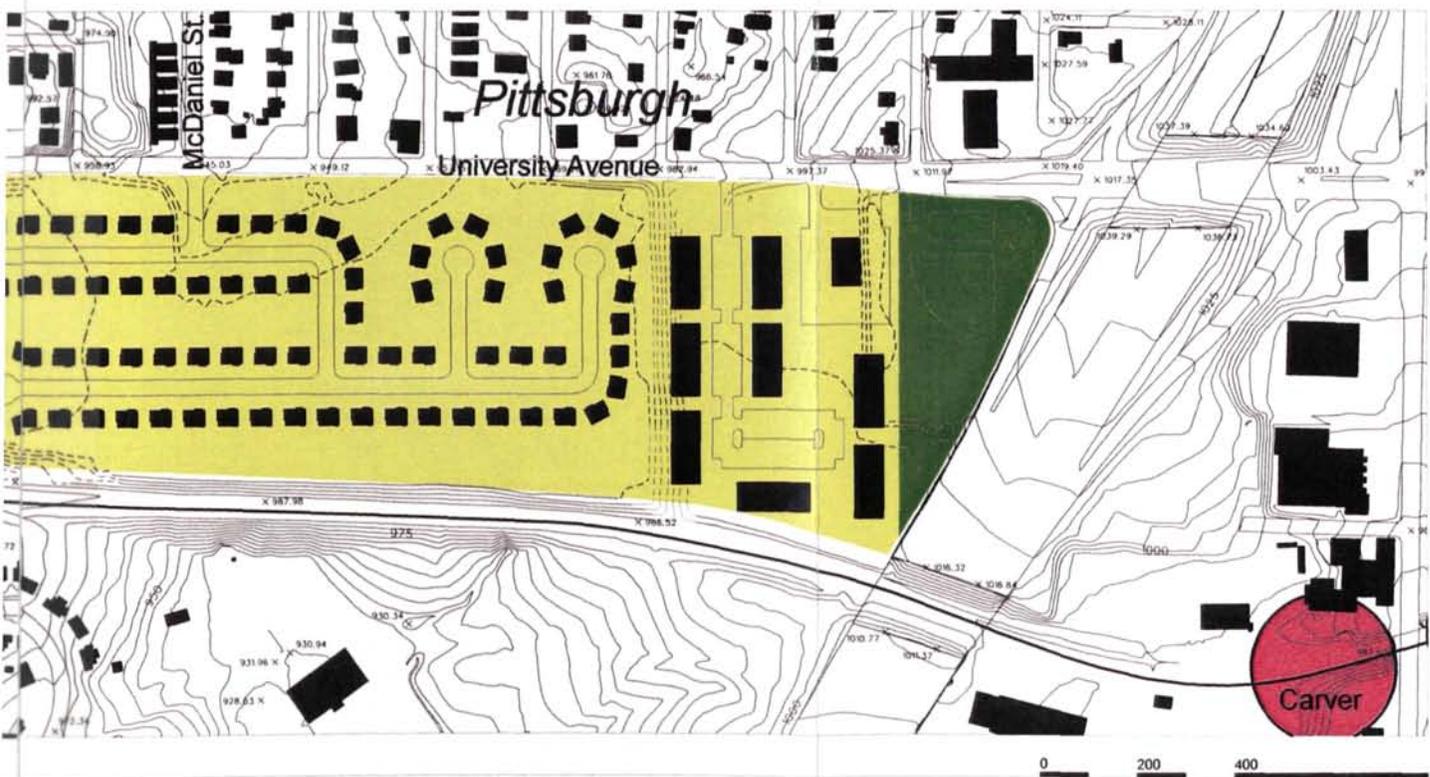
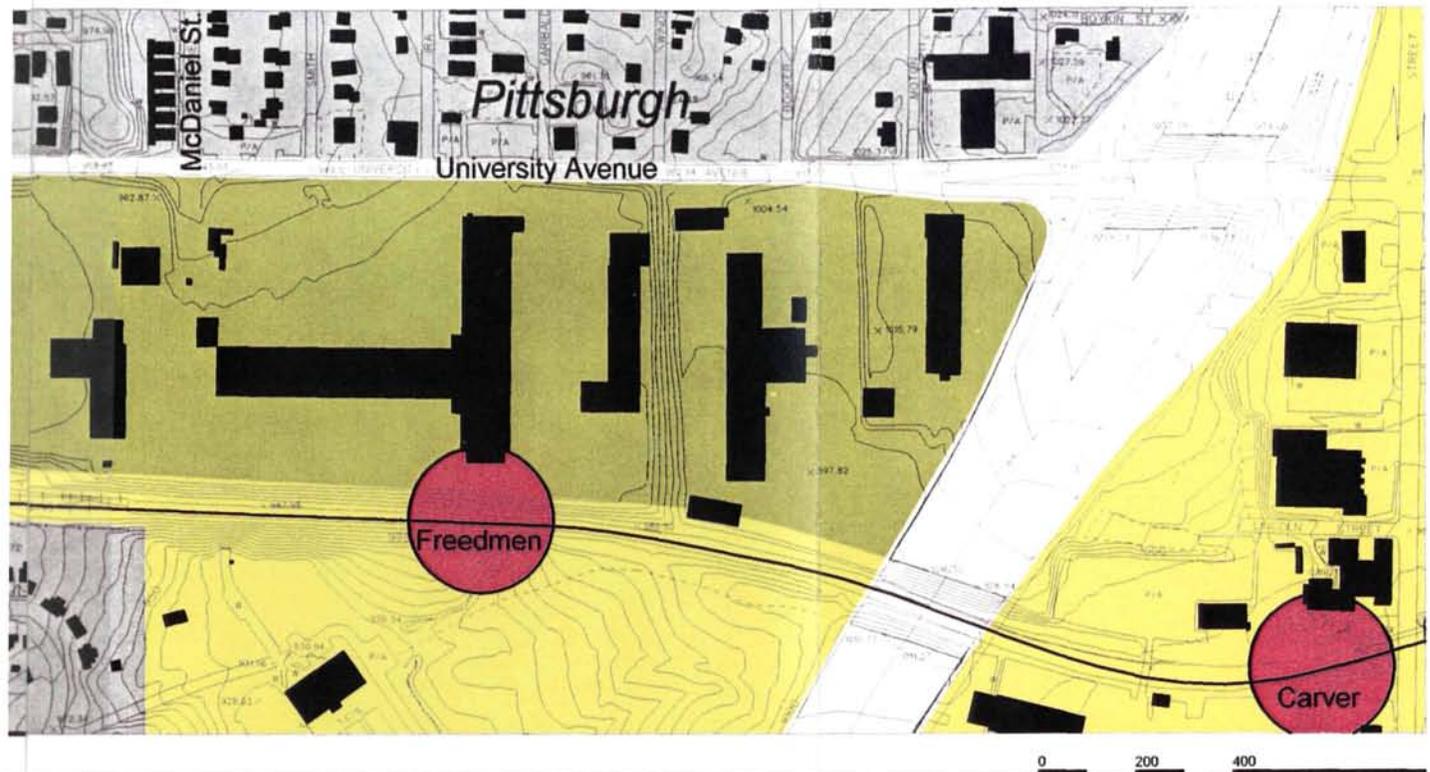
Figure 52: Figure-ground - existing conditions

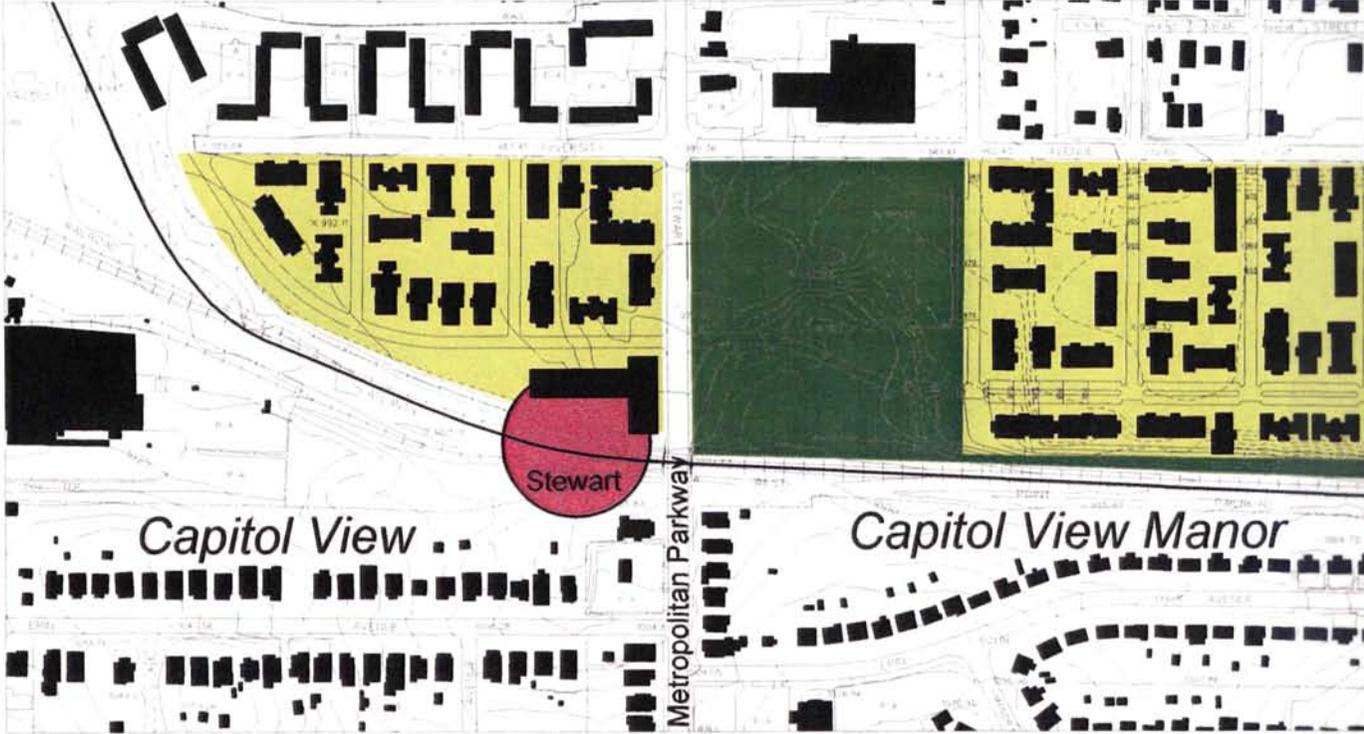


University Avenue Redevelopment Sites
 Figure 53: Existing conditions with selected site



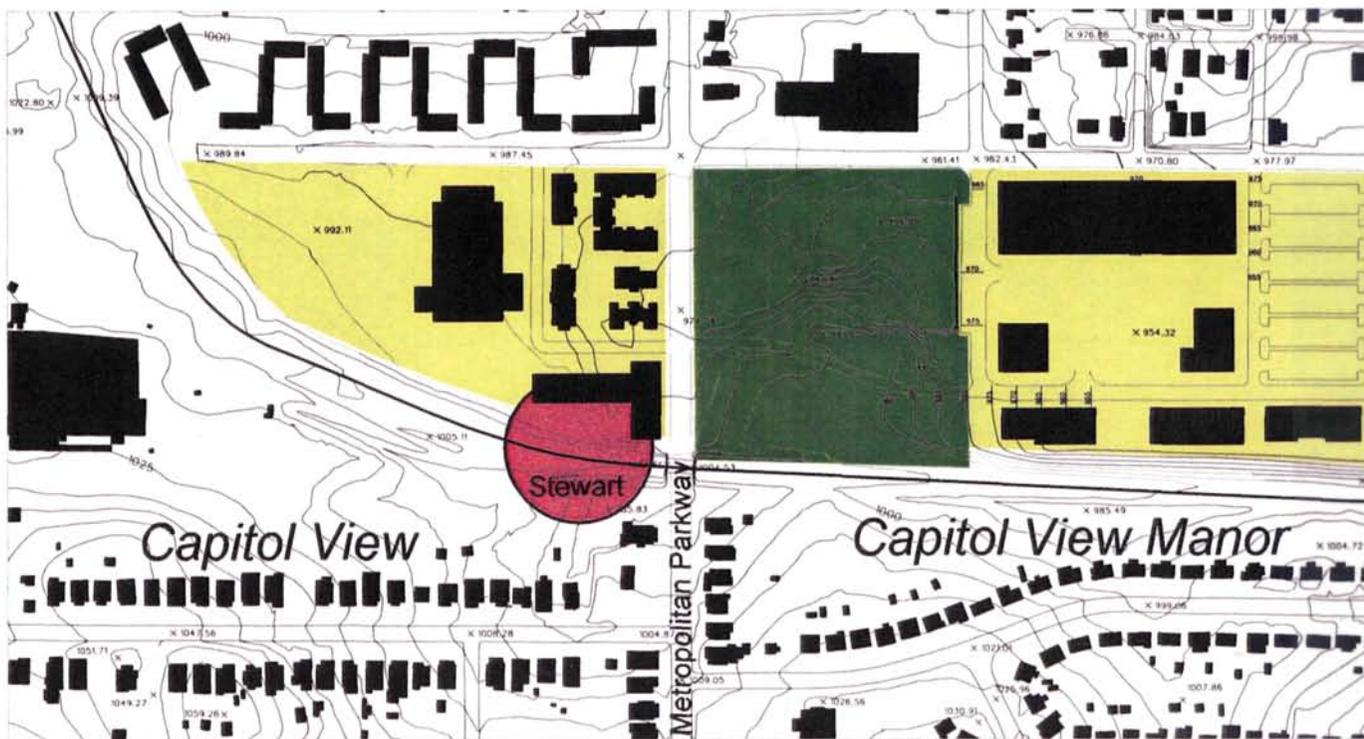
University Avenue Redevelopment Sites
 Figure 54: Nightmare scenario - conventional disconnected development





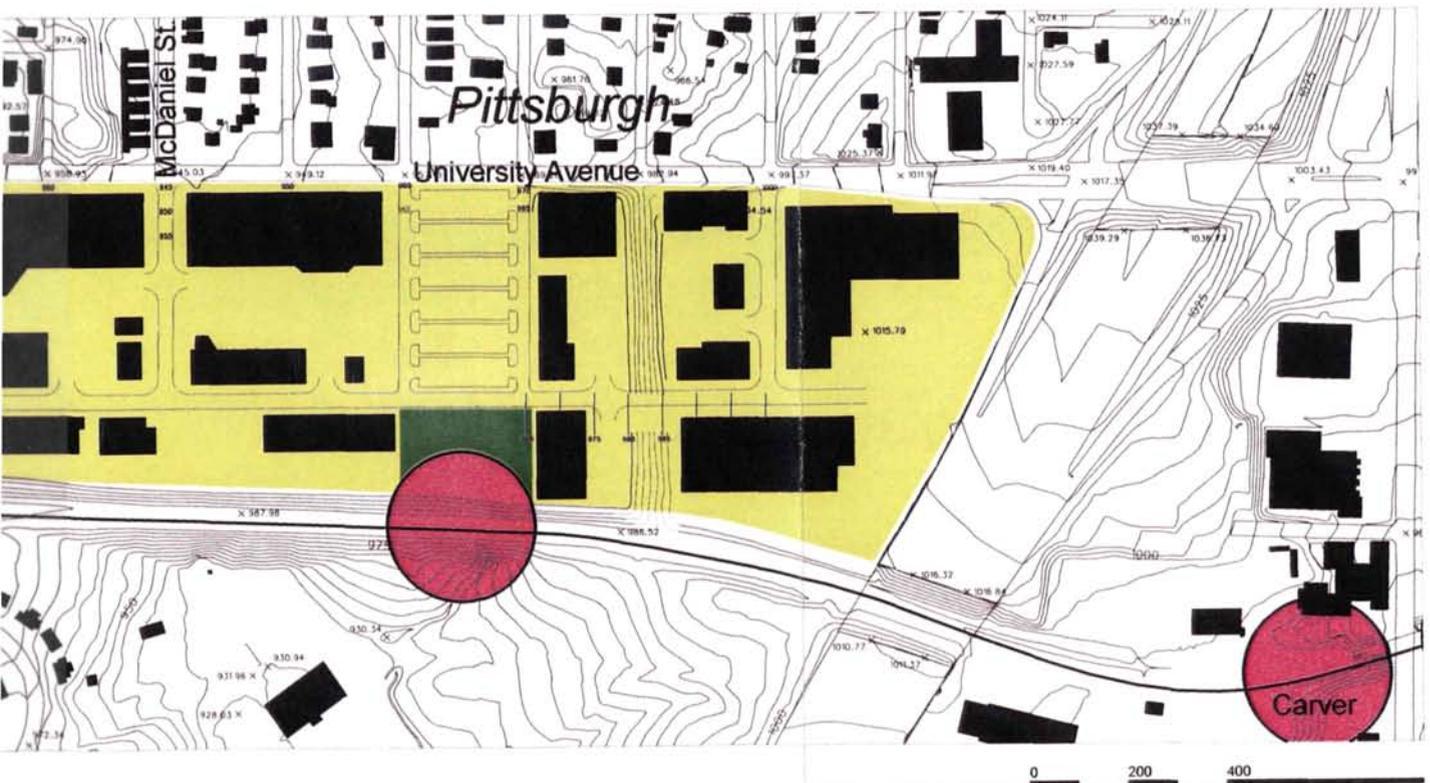
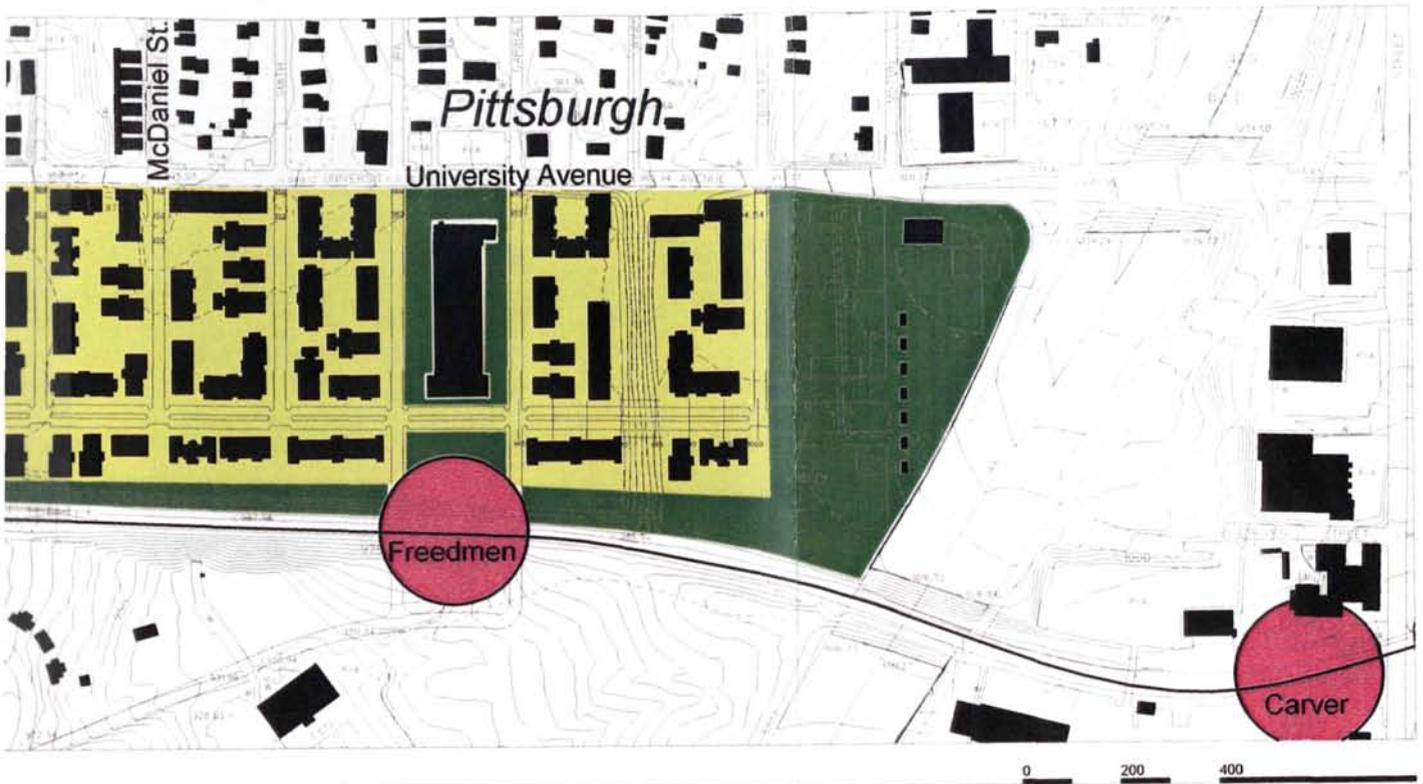
University Avenue Redevelopment Sites

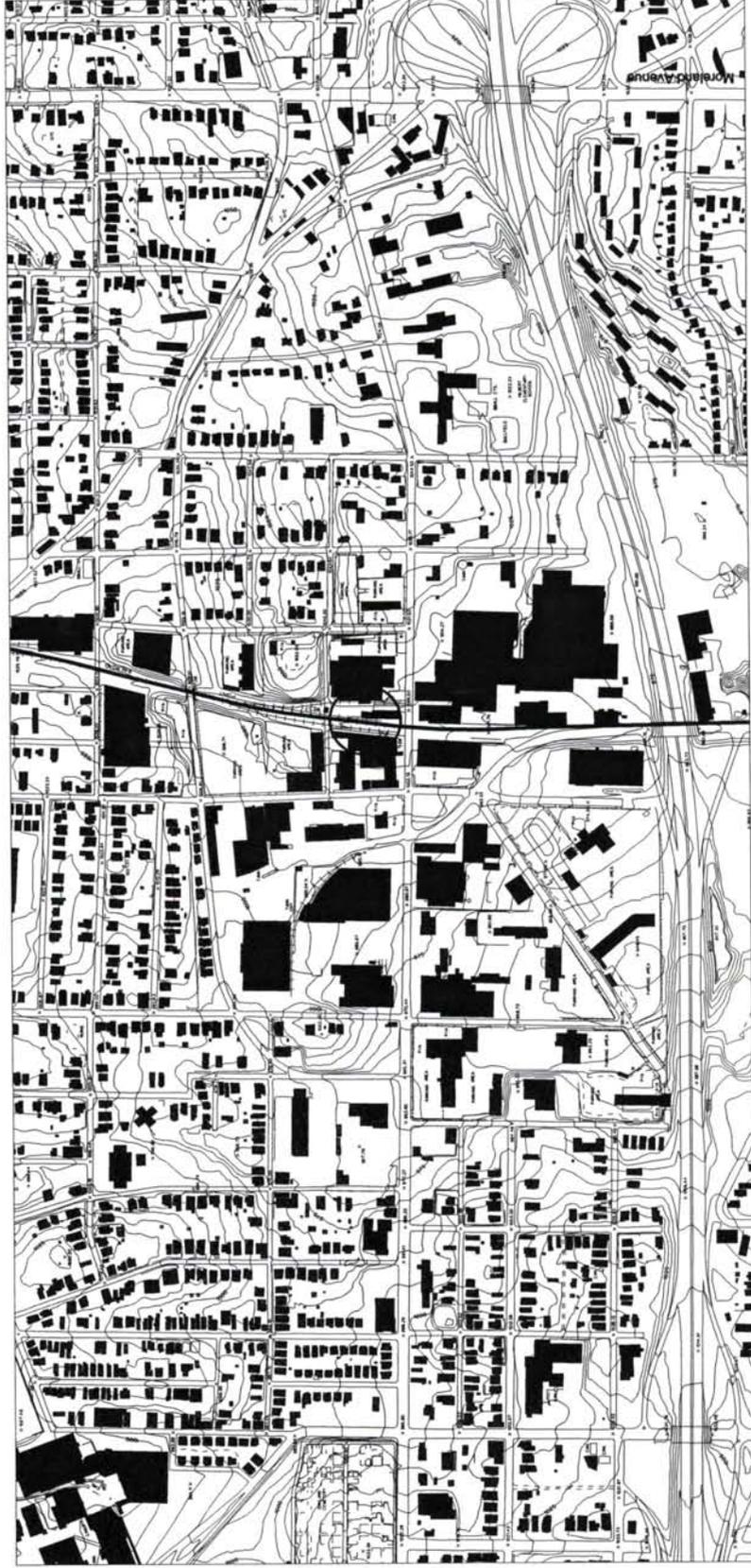
Figure 55: Residential scenario with new parks



University Avenue Redevelopment Sites

Figure 56: Industrial scenario with upgraded truck access





Memorial Drive Redevelopment Sites

Figure 57: Figure-ground - existing conditions



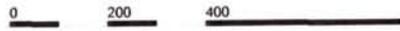
Memorial Drive Redevelopment Sites

Figure 58: New route of Glenwood-Memorial Connector to allow alignment of Belt Line



Reynoldstown

A & WP





Memorial Drive Redevelopment Sites

Figure 59: Industrial/residential scenario



Reynoldstown

A&WP

Chester Street

Glenwood-Memorial Connector

0 200 400

old warehouse buildings immediately surrounding the transit stop and all the territory extending north into Reynoldstown become residential at densities that support transit.

Program Examples

Finally, the three stations involved in the development scenarios, plus one MARTA station are looked at more in depth. It is important to understand the Belt Line, not just in broad, regional terms, but also how a single station fits within a specific site context. While the ideas the following stations present need to be developed thoroughly through an in-depth design study, these diagrams show how individual stations might begin to take on other programs to integrate with adjacent conditions.

Inman Park/Reynoldstown MARTA Station

There is plenty of room for this stop on Seaboard Avenue adjacent to the MARTA bus transfer area at Inman Park/Reynoldstown MARTA Station. A new elevator and stairway connect the platforms to an existing pedestrian bridge. Riders can change between heavy rail, bus and Belt Line with a fare system similar to Tri-Met in Portland. (See Figure 60)

Atlanta & West Point Station

This stop forms a dynamic public space between the old depot and an adjacent warehouse building. The depot is converted into a restaurant with outdoor seating that spills toward the transit station. The warehouses nearby are converted to residential lofts with ground-floor retail. (See Figure 61)

Freedmen Station

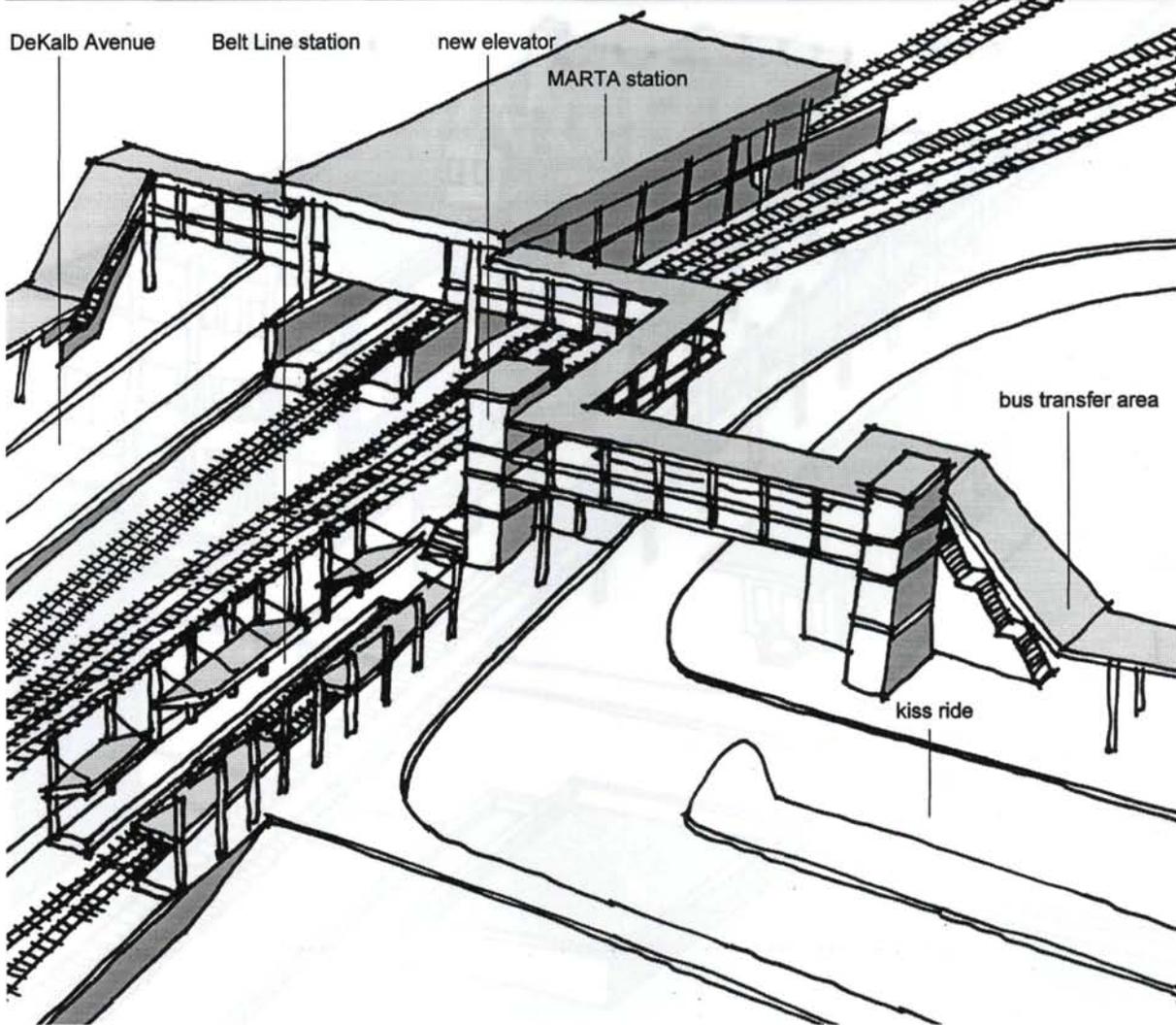
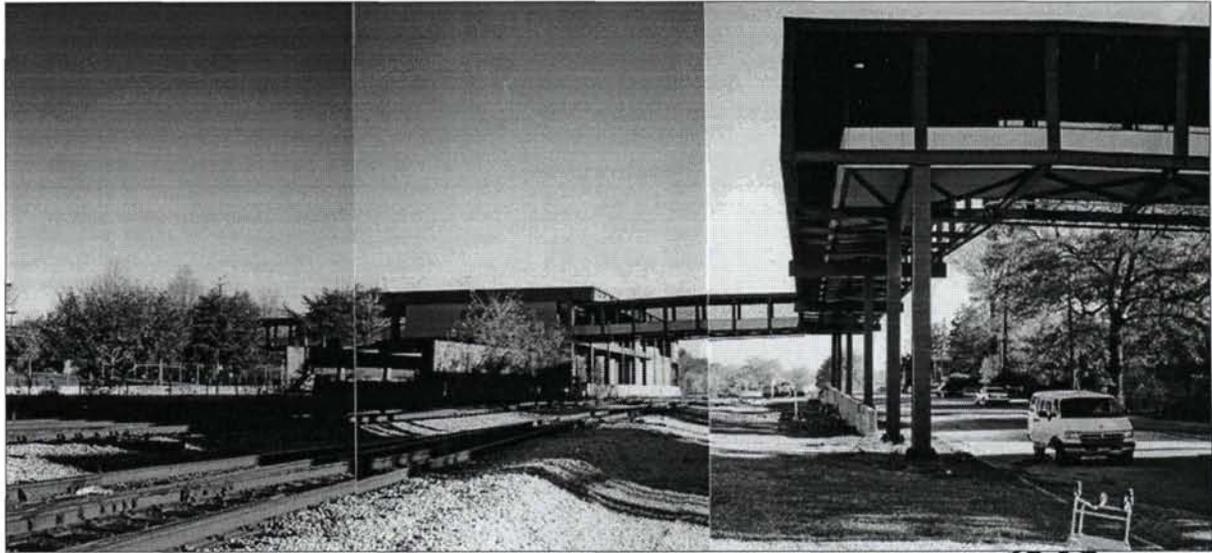
This stop is built atop a high berm and requires stairs and ramps to get down to street level. Taking this topographic opportunity, Freedmen Station incorporates a public amphitheater into the side of the hill. (See Figure 62)

Stewart Station

Atlanta & West Point's old belt line crosses Metropolitan Parkway at an overpass. The transit stop, then, is high above street level. Stewart Station takes advantage of the difference in elevation by installing small shops along the street and using their roofs as public access to the station platforms. A larger building has a retail space facing the street and office space facing the upper level station plaza. (See Figure 63)

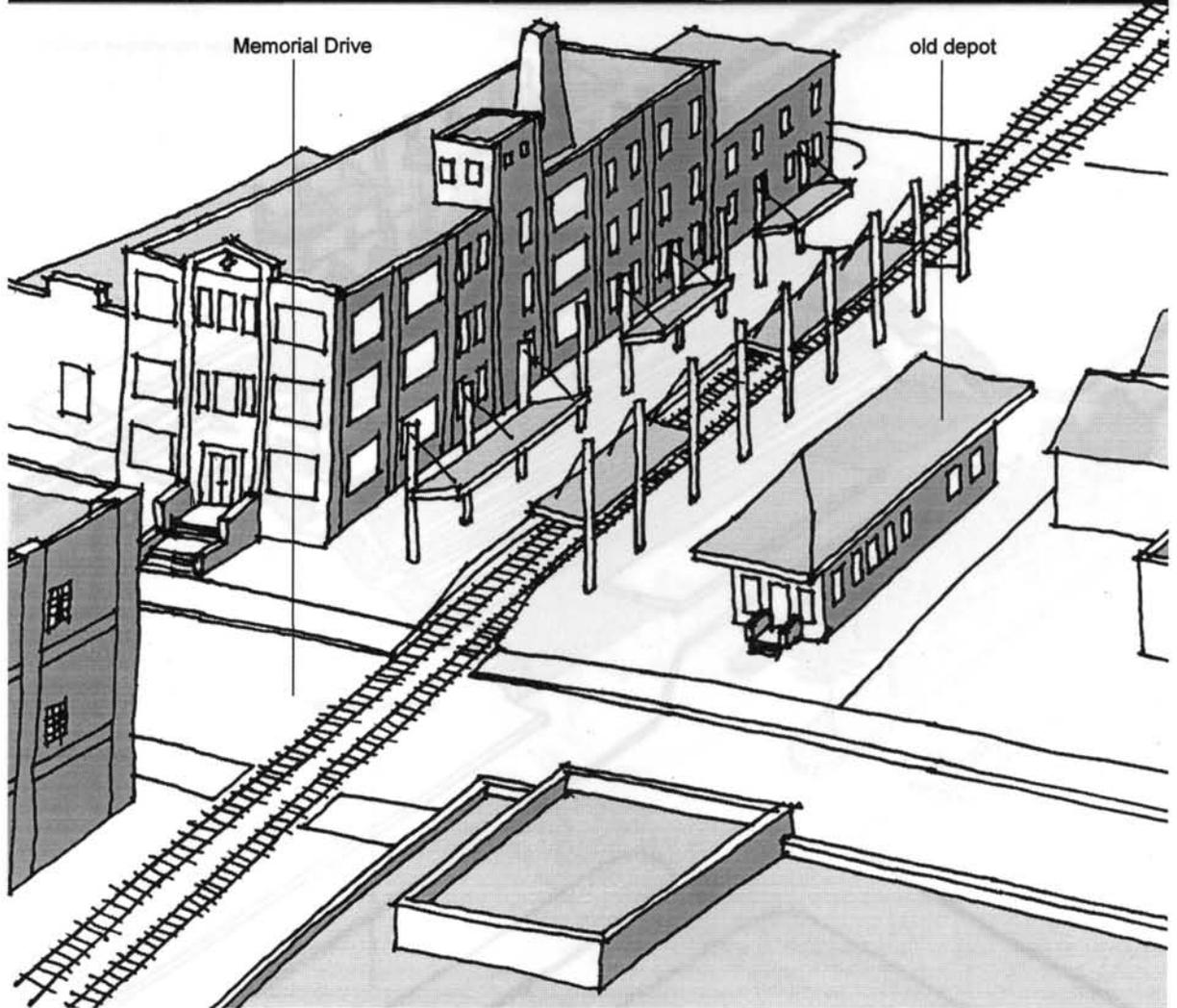


Figure 63



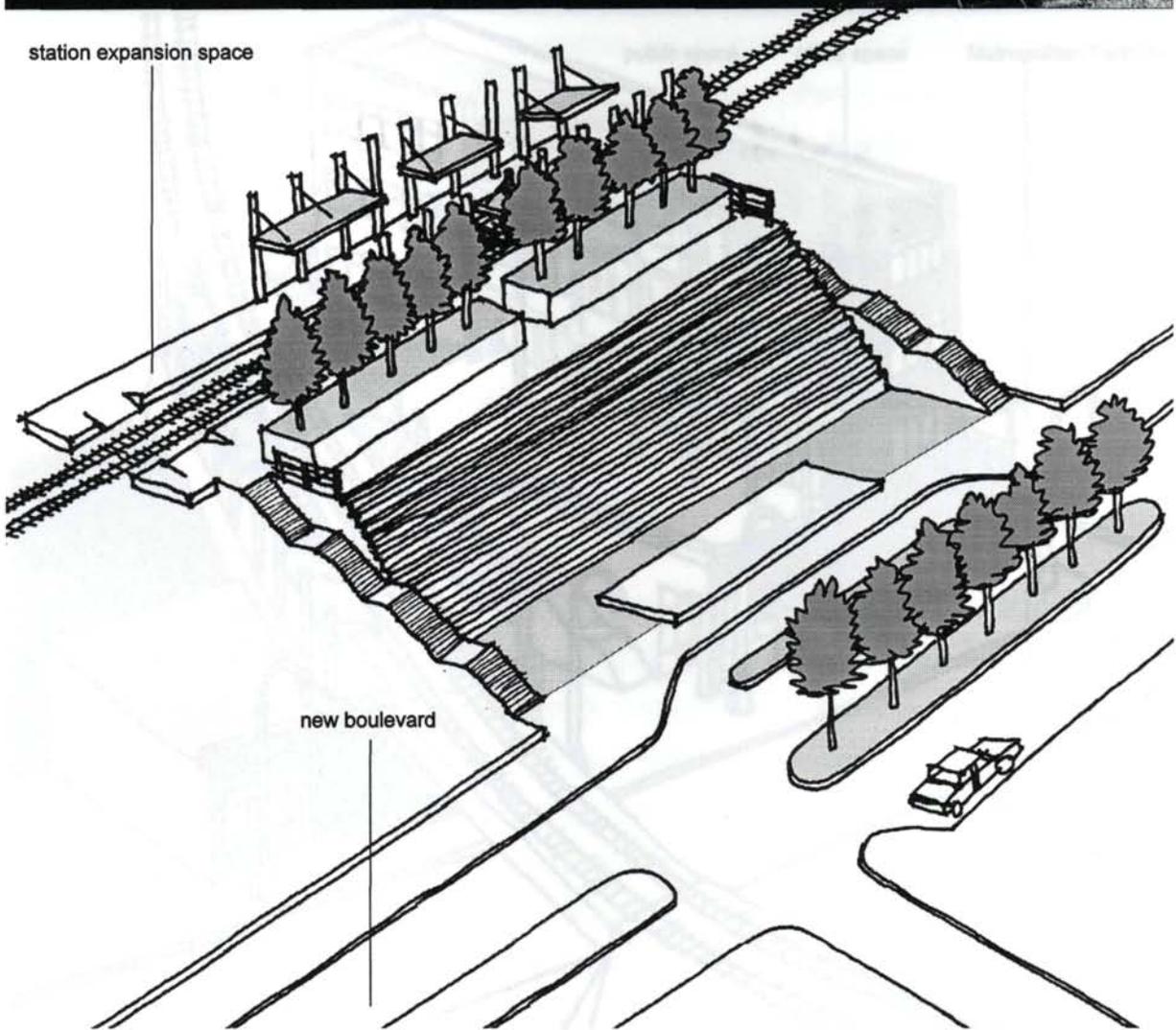
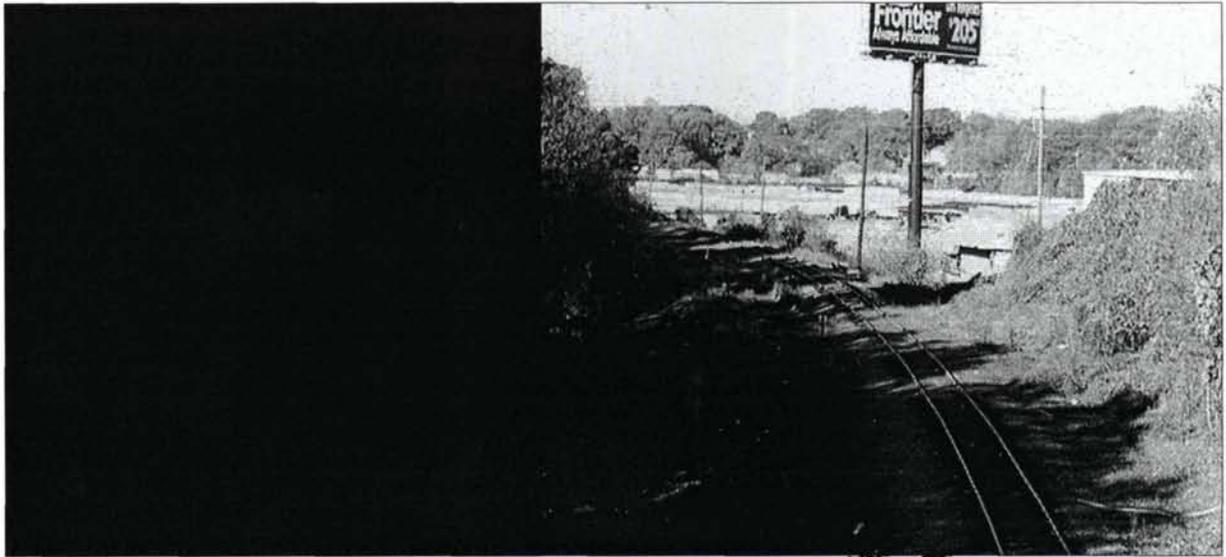
Station Programs

Figure 60: MARTA Station - Inman Park/Reynoldstown Station



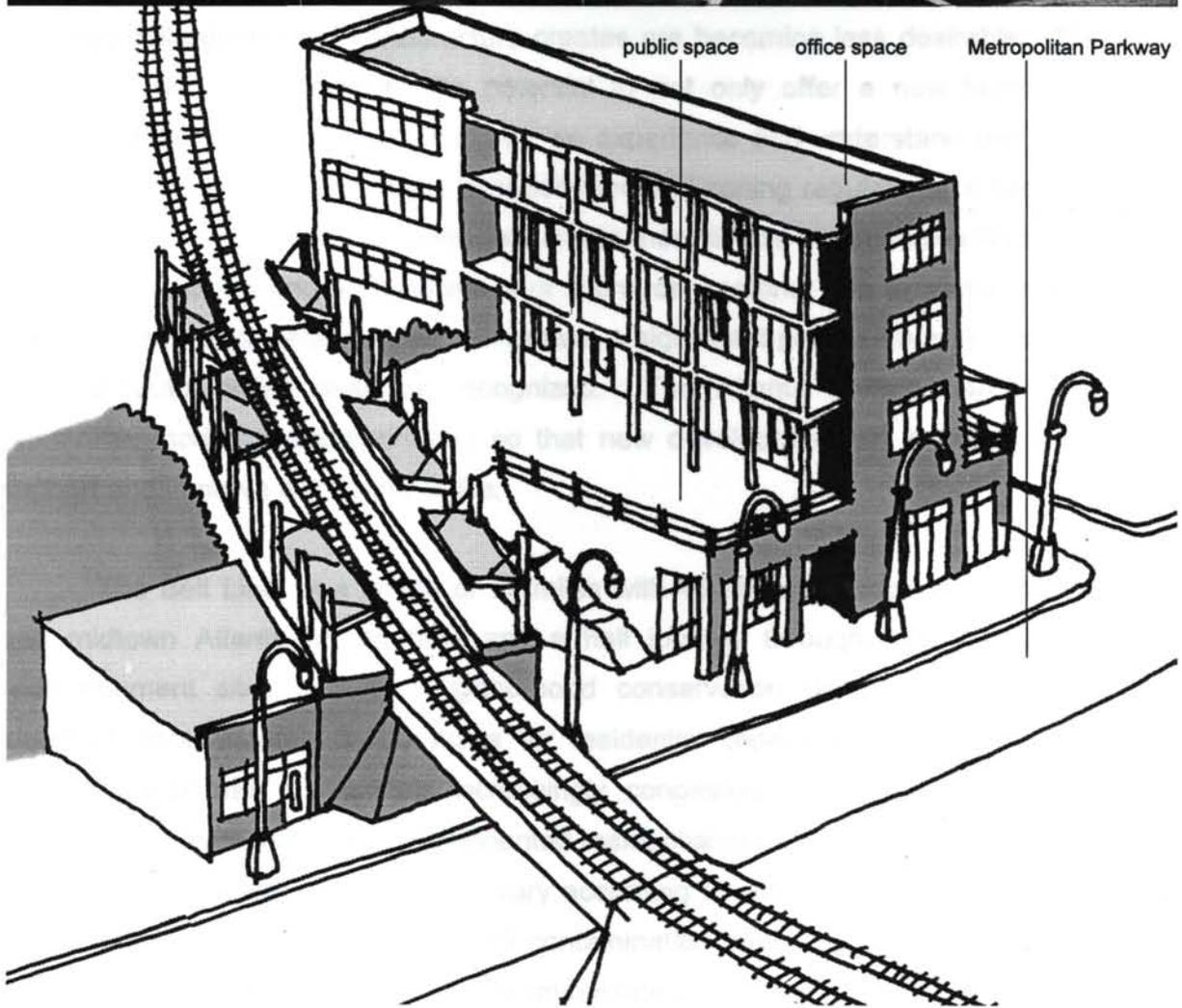
Station Programs

Figure 61: New loft district on Memorial Drive - Atlanta & West Point Station



Station Programs

Figure 62: Public amphitheater - Freedmen Station



Station Programs

Figure 63: Street-front shops and office building - Stewart Station

Chapter 5

Conclusions

This thesis project takes the invitation to “go look at Atlanta, quickly and without preconceptions.”⁷¹ As perhaps the most lucid case study in contemporary American urban development, Atlanta has an important opportunity to make deliberate moves to restructure itself, recognizing considerable changes in the economic, cultural and spatial conditions of the contemporary city. Using infrastructure as a tool to facilitate development can have a dramatic impact on urban growth – witness the Interstate highway system. But metro Atlanta must recognize that the kinds of environments that an automobile-dominated infrastructure creates are becoming less desirable. The Belt Line light rail transit line has the potential to not only offer a new layer of public transportation, but also change the way we experience and understand the city. With appropriate support from changes to subdivision and zoning regulations, it can alter and refine development patterns in ways that create more livable communities with economic and social diversity and an awareness of a broader regional role in transportation and ecological systems. Automobiles will remain a significant part of life in Atlanta, but the limits of automobiles must be recognized. The Atlanta metropolitan region can reprioritize modes of transportation so that new development will occur in ways that support and improve our quality of life.

The Belt Line, at a length of 22 miles with 45 stations, loops around downtown and midtown Atlanta on an hour and a half journey through over 4,000 acres of redevelopment sites and 41 neighborhood conservation districts. This study has identified approximately 2,800 acres for residential redevelopment at densities that support transit use in Atlanta’s increasingly congested intown communities. Peter Calthorpe recommends that transit-oriented residential development net at least 15 units per acre.⁷² Certainly density would vary according to specific site conditions. In fact, site limitations like topography and soil contamination may mean that development can achieve only 10 units per acre. Areas immediately adjacent to transit stops, however,

⁷¹ Koolhaas. “Toward the Contemporary City.” 15, 16.

might achieve densities that compare to apartment buildings built when streetcars defined Atlanta's urban development – 30 to 60 units per acre. (See Figure 36: *Encoding residential density*) In any case, a conservative figure of 10 units per acre translates into 28,000 new households in the central city – roughly 64,000 new residents living in new mixed-use, transit-oriented districts. Adjacent neighborhoods are solidified with infill development and provide a larger base of transit riders.

Furthermore, the territory engaged by the Belt Line is precisely the space most desirable to accommodate a dramatic increase in both urban population and industrial redevelopment. Perhaps too conveniently, these linear spaces join together vastly different parts of the city rather freely, are associated with thousands of acres of redevelopable land and lie at the seam of historic neighborhoods, which makes them suitable for higher density, mixed-uses and pedestrian environments. As largely underutilized right-of-ways, these priceless spaces are also ideal for the intervention of public transportation. The Belt Line and its associated properties can accommodate tens of thousands of new residents (not to mention 1,200 acres of industrial redevelopment) in the central city in ways that reduce dependence on automobiles, re-use valuable urban land, create economic growth for the city, improve mobility in traffic-congested Atlanta and make evident historic spatial boundaries and settlement patterns, contributing to civic identity.

⁷² Calthorpe. *The Next American Metropolis*. 83.

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