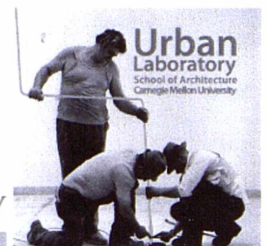


# Reconnecting East Liberty:

## A Case Study of Public Investment in Public Infrastructure.

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In Collaboration with  
East Liberty Development Corporation  
November 2006



**Financing Progressive Urban Infrastructure:**  
Potential Returns on Public Investments  
A Case Study of East Liberty

Matthew Ciccone  
Carnegie Mellon University, Graduate School of Architecture, Masters of Urban Design

***Abstract***

Researched during the summer of 2006 in a collaborative effort between Carnegie Mellon University's Urban Lab and East Liberty Development, Inc. this thesis seeks to develop a model for evaluating the impact of progressive urban design strategies in an existing community by measuring the costs and potential returns of public investment in progressive urban infrastructure.

Using the case study of East Liberty as a laboratory, this study identifies clear baseline assumptions for the costs of urban infrastructure, as well as estimated public returns based on private investment leveraged and new residential and commercial tax revenue streams.

Aimed at providing urban designers a facilitation tool in arguing for public investment in progressive urban infrastructure that reconnects fragmented communities, this study suggests that clear financial and community returns are "hidden" in urban infrastructure investment.

Keywords: Development/revitalization; Urban design; Urban infrastructure; Public investment; Real estate



"Urban Design is Public Policy in 3-D"

- David Lewis

"The City, however, does not tell its past, but contains it like the lines of a hand."

- Italo Calvino, *Invisible Cities*

Reconnecting East Liberty: A Case Study of Public Investment in Public Infrastructure.  
Researched and Written by Matthew Ciccone

Masters of Urban Design  
Carnegie Mellon University  
School of Architecture - Urban Laboratory  
In collaboration with  
East Liberty Corporation

Submitted: November, 2006  
Advised by: Jonathan Kline, Carnegie Mellon University  
Editorial Advice: Jonathan Kline, Rob Stephany, Nathan Wildfire

This Thesis is the result of a collaborative effort between Carnegie Mellon University's  
Graduate School of Architecture and East Liberty Development Corporation.



A number of people helped in the conceiving, research, and composition of this thesis, some tremendously  
and some just a bit, but gratitude is certainly owed to:

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Rob Stephany, Ernie Hogan, and Nathan Wildfire and everyone at ELDI



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Groundbreaking of the Pennley Park Apartment complex in East Liberty, May 1, 1964, part of the Urban Redevelopment Authority's "Renewal" efforts in East Liberty during the mid-to-late 1960's. Decades of poor management and decline would turn the complex into a local eyesore and a symbol of the failure of Urban Renewal. The complex was demolished by ELDI and The Community Builders, Inc. in 1997.

Photo courtesy of the Historical Society of Western Pennsylvania.



# Framing Urban Infrastructure

Can cities and towns make smart investments in essential infrastructure that not only address the necessities of growth, but promote more progressive practices of urban development?

Everyday, cities and towns across America make decisions regarding their investment in infrastructure systems that provide form to our built environment and support for our daily needs and quality of life. These decisions ultimately determine both the form of development in a given community (i.e., walkable, auto-oriented, transportation-oriented, etc.) as well as the long-term civic, social, and financial health of a municipality.<sup>1</sup>

While in newer suburban communities, decisions regarding infrastructure often correlate directly to the demand for growth (i.e., building new roads and utilities to service new residential communities), infrastructure decisions in existing urban communities tend to be more varied. For instance, not only do aging infrastructure systems in these communities need to be maintained or replaced, but municipalities often need to also invest in projects that improve the flow of traffic, people or utilities, to create new amenities for the resident population, address evolving market demands to create new development opportunities, or repair the legacy of failed decisions of the past.

The ability of these communities to secure the necessary financing for their infrastructure needs, particularly in a political landscape that finds many of our large cities in states of economic distress, is an important and relevant



Whether a highway interchange or a village path, the basic infrastructure systems that give form to the built environment remain the same. How these systems are designed, intended, and used is what defines the opportunities and quality of life within the private realms they support.

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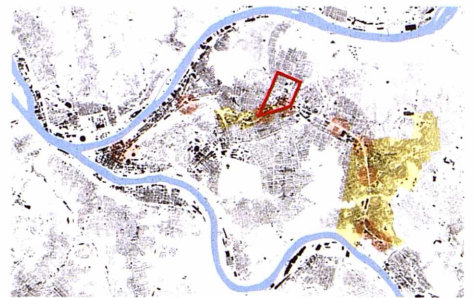
<sup>1</sup> While much has been written in regards to the civic and social effects of infrastructure and land use, more recently, a number of good work has been done on the financial impact of infrastructure, particularly, infrastructure that supports sprawling practices of development. Two notable studies are "Costs of Sprawl 2000" (Burchell and others) and "The Fiscal Costs of Sprawl" (Coyne).

problem.

This thesis, researched in the summer of 2006, strives to address this problem by proposing a framework for evaluating the financial performance of public investment in public infrastructure projects within existing urban communities.

Working in collaboration with East Liberty Development Corporation ("ELDI")<sup>2</sup> and using the East Liberty neighborhood of Pittsburgh's East End as a case study, this thesis hopes to create an argument that strategic public investment in public infrastructure that reconnects urban neighborhoods to provide new opportunities for private development can achieve both a financial and social rate of return along a multiple of bottom lines.

Identifying nine major infrastructure projects currently underway or proposed in East Liberty- ranging from reconnecting historic street patterns to creating opportunities for new infill housing, to building new parks and public spaces, to providing for adequate parking to complement new retail developments without compromising the pedestrian realm- this study used standard financial analysis tools, such as a detailed proforma of each infrastructure project, to evaluate the soft and hard costs of infrastructure, the various potential sources of public funding, the expected change in future property values pending the successful completion of proposed developments, and various other economic indicators (such as job growth) to determine the public return of public investments in the community.



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<sup>2</sup> ELDI is a community-based development group working to revitalize East Liberty, a once vibrant mixed-use neighborhood in Pittsburgh's East End. Their primary mission is to carry out a community-vision plan designed to reverse the effects and influence of Urban Renewal projects during the 1960's that severely disconnected the community from both its historic fabric and surrounding neighborhoods.



New Pennely Place, a new 102-unit mixed-income multi-family apartment complex was one of the first community development efforts realized in ELDI's efforts to reverse the failures of Urban Renewal in East Liberty. The lessons of this project have been significant to informing the future projects planned for East Liberty.

Photo courtesy of ELDI.





Introduction  
Case Study Background  
Question and Process  
Literature Review  
Scope and Limitations



## Introduction

### Case Study Background

### Question and Process

### Literature Review

### Scope and Limitations

## Overview

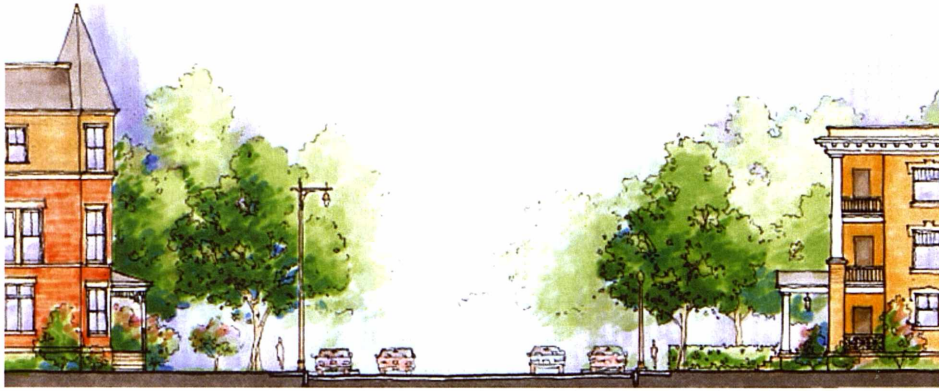
The field of Urban Design is increasingly focused upon repairing broken urban communities. Poor decisions in design and public investment have left a legacy of disinvestment, blight, and disconnection in formerly vibrant neighborhoods in cities across the United States. As these communities seek to revitalize their urban spaces in hope of a better future, their success depends on partnerships between designers, community members, private developers, and public entities. In order to not repeat the mistakes of the past, heightened attention must be placed on smart infrastructure investment blended with progressive urban design principles.

In rebuilding our neighborhoods, both urban designers and policy makers have the same goal- to create sustainable, vibrant communities. Their values however, are often different. Urban designers, working in concert with community developers, value connectivity, accessibility, and public amenities- all principles of progressive urban design.<sup>1</sup> Policy makers value public safety, strong tax revenues, and economic development. The situation is further complicated by both parties having to partner with a private development industry that often values only profit. These groups all speak a different language, but for community development to be successful, all these parties must work in concert.

Increasingly, the role of urban designers is to help bridge this gap. To do this successfully, designers (as well as community and progressive developers) must strive to uncover barriers that inhibit successful projects and identify hidden values in the public realm that speak to the needs of all parties involved. A review of the literature suggests that despite the growing relevance of community revitalization to the fields of urban design, private development, and civic governance, little research has been done to address

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<sup>1</sup> "Progressive Urban Design" Strategies or "Progressive Community Development" refers to development and urban design strategies as exemplified by terms such as "The New Urbanism", "Traditional Neighborhood Development", "Smart Growth", "Sustainable Development", and others. These concepts are generally rooted in "sustainable", pedestrian and civic-oriented placemaking and urban design principles that, at best practice, are socially and environmentally responsible. For purposes of simplicity, this study will use the term "Progressive" in reference to these concepts.



Cross Section of a Proposed Street with the new Liberty Park residential development in East Liberty. Narrow right-of-ways, tree-lined sidewalks, and pedestrian oriented building setbacks and height-limitations are design and infrastructure elements that combine to create a renewed public realm.

Plan and rendering by UDA.

one of the most significant barriers toward moving progressive projects from concept-to-construction: that is, financing the large up-front costs of urban infrastructure.<sup>2</sup> This research, a collaboration between Carnegie Mellon University's Urban Lab (CMU) and East Liberty Development, Inc.(ELDI) conducted over the summer of 2006, seeks to develop a model for evaluating the impact of progressive urban design strategies in an existing community by measuring the costs and potential returns of public investment in progressive urban infrastructure.

For the purposes of this study, urban infrastructure will be defined essentially as the whole of the public realm; i.e., the streets, sidewalks, squares, parks and open spaces, utilities, parking facilities, new "green" facilities such as geothermal loops, and so on – the elements that compose and service both the public and private realm. How we design, arrange, and invest in these public elements and spaces not only frame the qualities of the environment within, but greatly influence- both positively and negatively- our social, natural, and civic health, our daily opportunities, and our overall well-being.

Despite the social incentives of progressive infrastructure design that potentially offer valuable investments toward our collective health, the systems that shape our public realm devalue investment in public spaces. Through a bias toward private, profit-generating models that produce short-term returns to satisfy debt-service, the value of progressive urban infrastructure has largely been ignored. These conventional yet arguably antiquated evaluation processes (utilized by most private sector capital sources as well as equity investors in their real estate decision-making) inherently ignore the potential for long-term appreciated value created by high-quality public infrastructure simply through their criteria for investment.<sup>3</sup> Hence, financing progressive public infrastructure that enhances social and economic value of projects, but does not inherently generate revenue, faces significant barriers under our current development systems.

<sup>2</sup> Gyourko and Rybczynski, 2000.

<sup>3</sup> Leinberger, 2001.





Above: A house in one of East Liberty's historic enclaves. ELDI has for the past decade been buying up historic properties to rehab and resale, injecting the neighborhood's blighted areas with new investment and providing a model for the community's potential.

Photo courtesy of UDA.

Opposite Page:  
Various views of East Liberty's Urban Fabric:  
(top to bottom)

A legacy of Urban Renewal - tower block public housing that bridges what once was, and could again be, East Liberty's main commercial street.

The former Nabisco Plant - now the site of a proposed mixed-use, mixed-income development that could help sustain market forces in East Liberty.

This community landmark once stood as the centerpiece to a pedestrian mall designed during the 1970's. New public space designs relocate to the center of a new public plaza in front of a rebuilt public library.

The impact of Urban Renewal. These lots - some of which remain vacant - will hopefully soon be reconnected into East Liberty's community fabric through infrastructure investment.

This thesis argues that such systems essentially leave cash on the table for developers, municipalities and communities alike. By demonstrating the value of progressive infrastructure investment and communicating this value in accessible terms to a diverse array of change makers, this study hopes to show that urban design strategies can leverage tremendous amounts of investment to a neighborhood, restoring the vitality of the urban fabric, and promoting a socially, environmentally, and financially sustainable future.

To measure the costs and potential returns of progressive urban design strategies, this study will focus on the case study of East Liberty, the historic heart of Pittsburgh, Pennsylvania's East End. East Liberty is a prime example of a community that was broken by poor urban design and public investment decisions that radically altered its infrastructure, isolating it from strong surrounding neighborhoods creating an island of blight, disinvestment, and poverty over the last thirty-plus years. Today however, East Liberty sits on the brink of opportunity due to resurgent market forces, a strong community planning effort, and unique partnerships between civic, community, and private development entities committed to progressive reinvestment in the neighborhood's urban fabric, and yet East Liberty is unable to realize its full potential due to a lack of investment in its dysfunctional infrastructure.

## Background for the East Liberty Case Study

Since its founding in the early 1990's, ELDI has worked to champion and steward the creation and implementation of progressive community-based planning and development strategies in East Liberty. Working with a collection of highly-respected urban design and planning firms dedicated to restoring urban fabric in blighted communities, much of ELDI's work focuses on reversing the pattern of disconnection in the neighborhood by repairing the legacy of failed Urban Renewal strategies from the 1970's.<sup>4</sup>

Once Pittsburgh's "Second Downtown", a vibrant center of commerce, culture, and residential life, East Liberty was severely impacted by Urban Renewal strategies that razed acres of historic urban fabric to make room for the creation of commercial and residential super-blocks and highway infrastructure. Designed to attract new investment and markets, the strategies worked in reverse, isolating the community from its own amenities, from its neighbors, and from market forces. The lasting effect of these failed public investments is a classic scenario of urban blight. Slum landlords, raising vacancy, sinking property values and degrading social indicators all are representative of East Liberty as a community over the past thirty years.

<sup>4</sup> Urban design and planning firms who have worked on public space plans and community revitalization strategies in East Liberty over the past decade include Urban Design Associates (Pittsburgh, PA), Semple Brown Architects (Pittsburgh, PA), Perfidio, Weiskopf, Wagstaff, and Goettel (Pittsburgh, PA), Fukui Architects PC (Pittsburgh, PA) EDGE Studios (Pittsburgh, PA), EDAW (Denver, CO) and others.



Focused on reversing this downward spiral and restoring a high quality of life to the community, ELDI and its urban design partners have identified seven principle initiatives for East Liberty's redevelopment:

1. Reconnecting East Liberty's fractured urban fabric
2. The creation of a "Town Square" within East Liberty's existing commercial core to serve as the community's symbolic and physical civic center
3. Strategic investment in East Liberty's historic housing stock
4. The development of new mixed-income housing
5. Creating new "in-fill" development that is pedestrian-oriented and well connected to existing neighborhoods, the historic commercial core, and surrounding communities.
6. Reestablishing Green Infrastructure, particularly community parks and civic space.
7. Raise community participation in the planning and development process

While none of these principles should sound alien to anyone familiar with community redevelopment or urban design, what differentiates the current situation in East Liberty is the remarkable convergence of market forces, community planning, and private developers that see value in the principles of both. The intersection of these forces is quickly changing the face of East Liberty, and as such, East Liberty offers a unique opportunity for urban designers and policy makers to observe the impact of progressive strategies of design and planning, as well as public investment practices on community revitalization.

The following pages offer a more detailed look at East Liberty, urban design principles at work in the community, and the specific infrastructure case studies.

For further detail on the specific infrastructure case studies, please refer to the appendix.







East Liberty is located in Pittsburgh, Pennsylvania's  
East End - a collection of typically strong  
communities and neighborhoods.

East End Figure Ground  
Courtesy of the Urban Lab.





ELDI's Masterplan for East Liberty.  
A crossroads of community planning and market forces.

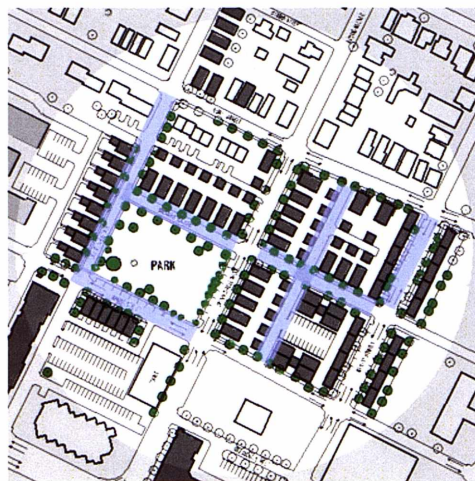
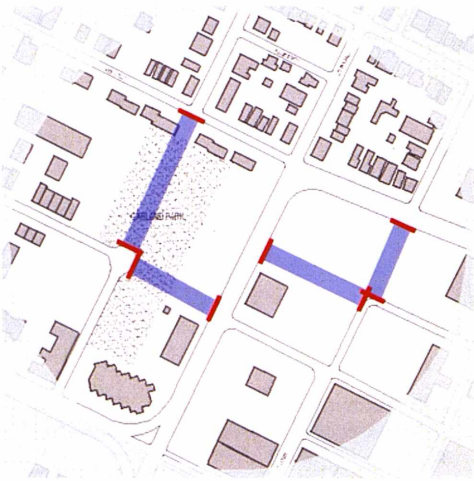
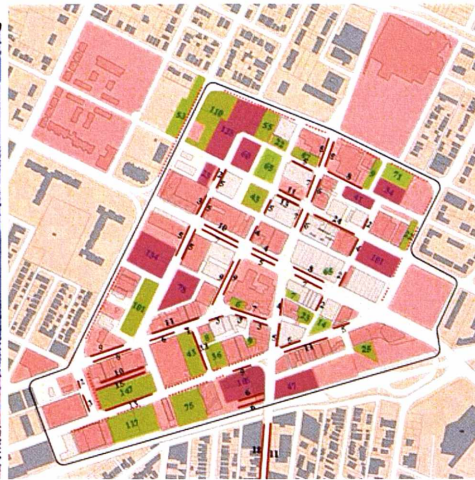
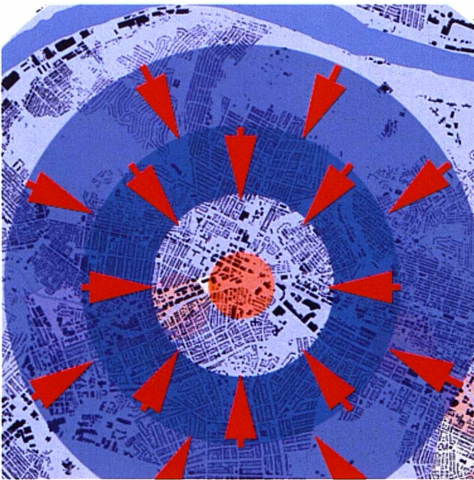
Design by Semple Brown Architects.  
Courtesy of ELDI.



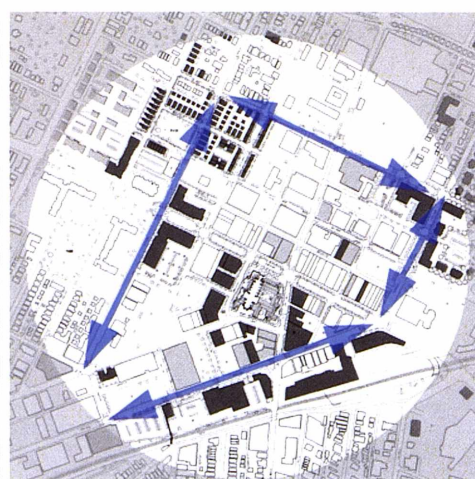
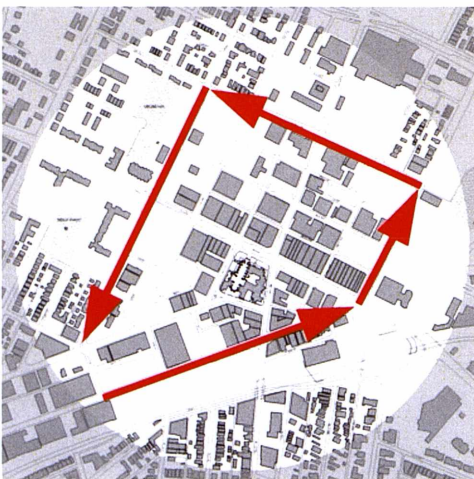
## Urban Design Strategies working to reshape East Liberty's Infrastructure

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Working from the edge  
toward a well designed  
community civic center.



Reconnecting the  
urban fabric to shape  
new development



Reworking  
dysfunctional streets  
to eliminate barriers



### Integrating Green Infrastructure:

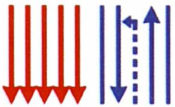
The Mellon Orchard South project will utilize a **Geothermal Column Loop** to provide heating and cooling for 85 new units of mixed-income housing.

### Safe Parks:

Building new parks, redesigning run down parks, and extending trail systems will provide East Liberty with much needed **Community Green Space** that is safe, open, and integrated into residential neighborhoods.

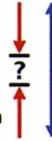
### Reintegrating Penn Circle:

Reworking Penn Circle as a two-way street with parking and redesigning its intersections will remove one of East Liberty's worst **Pedestrian Barriers**.



### Reconnecting Broken Streets:

Reconnecting one block of Sheridan Avenue will **Re-establish** a historical pedestrian pathway from residential Highland Park to East Liberty's commercial core, reknitting the community's **Urban Fabric**.

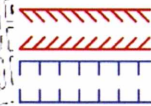


### Infill Residential:

Taking the place of large-scale public housing towers, new **Mixed-Income** residential neighborhoods will be integrated into the existing urban fabric and oriented around tree-lined **Narrow Streets, Parks Space, and Rear Alleys** for parking and utilities- All within **Walking Distance** of East Liberty's commercial core and public transportation.

### Neighborhood Commercial:

Redesigning the streets of East Liberty's commercial core to eliminate barriers to both pedestrian and auto-mobile flow will allow for **Easier Orientation** and movement while activating street fronts.



### Transit Center:

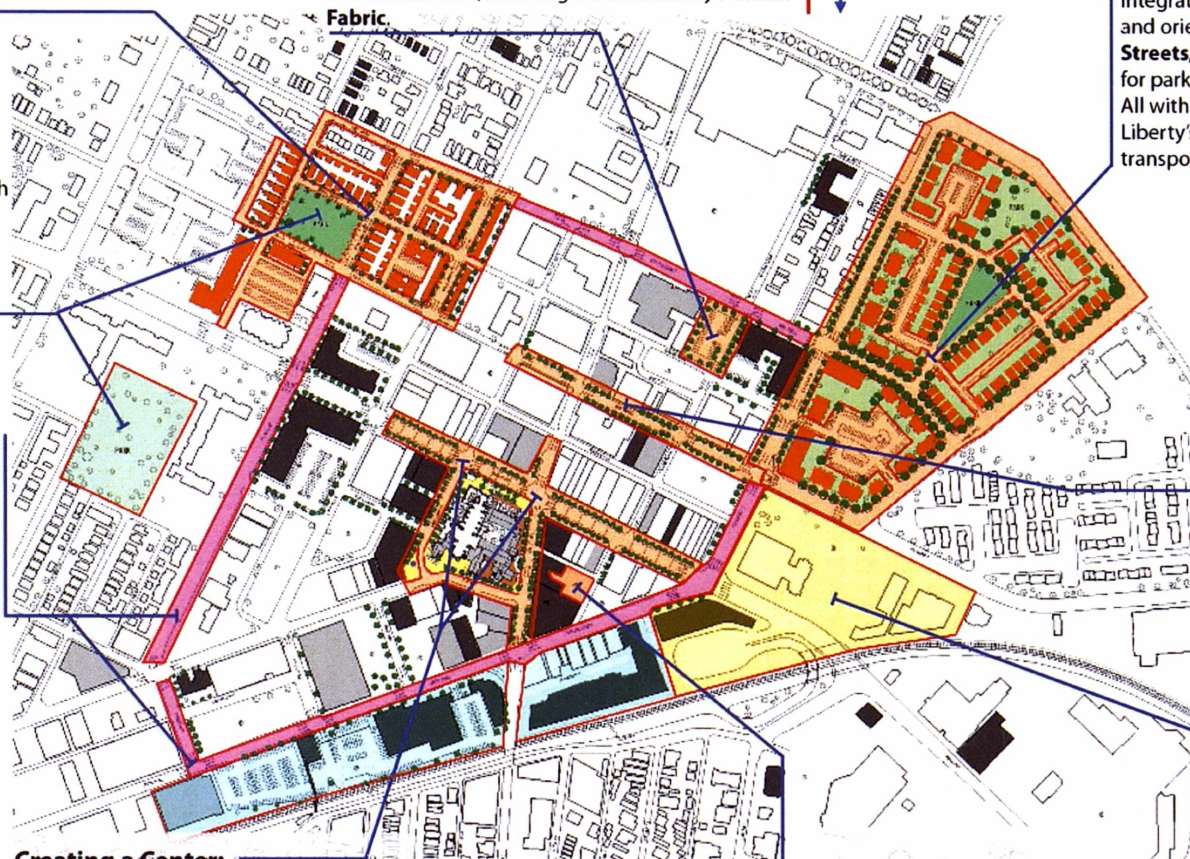
Utilizing the East End Busway, the planning of a **Transit-Oriented Retail Development** will serve as a regional destination as well as a local hub.

### Creating a Center:

Focusing on the Historic East Liberty Presbyterian Church as the community's center, a **Town Square** concept will be an exercise in **Civic Design**, creating two new public plazas, and reorienting major intersections to ease traffic, activate street fronts, and create a renewed Pedestrian Realm.

### Parking Infrastructure:

Well-placed structured parking lots that can serve **Multipul Users** will be essential for growth in East Liberty's commercial core.





## Stepping Stones: Infrastructure Case Studies



**Mellons Orchard South** is a residential development that includes a mix of 61 for-sale homes (single-family detached and townhomes) and 24 rental units (some of which will be affordable) on the fringe of East Liberty's commercial core.

The project, being developed by S&A Homes in partnership with ELDI, is aiming to be a national model of green development in relation to the upcoming LEED for Neighborhood Development certification program. It is also a core piece of East Liberty's community plan- reconnecting the community's commercial core with residential neighborhoods that are currently disconnected and blighted.

Infrastructure elements include reestablishing a historic street grid throughout the development that has been broken since the 1960's by Urban Renewal-designed superblocks and have been covered by parking lots for over three decades. Additionally, an existing park- Garland Park- will be redesigned from an unsafe, neighborhood eyesore into a well-defined local asset bordered by narrow streets and owner-occupied housing.

Mellons Orchard South is currently in the design/planning stage, and construction should begin in 2007.



**Liberty Park** is a new, 14-acre, mixed-income residential community being developed by McCormack Baron Salazar in collaboration with ELDI. The development is the result of an extensive public charrette process led by Urban Design Associates among others, and will feature 175 units of mixed-income rental units in a variety of building types including elevator loft buildings, multi-unit apartment buildings, and townhouses.

The development will include the construction of several new, human-scaled streets that extend the historic street pattern and connect the project to East Liberty's commercial core. It will also feature the construction of two new public parks- Triangle Park and East Liberty Boulevard Park.

Construction on phase one of Liberty Park began in Summer of 2006, with the first units expected for completion in Spring 2007.

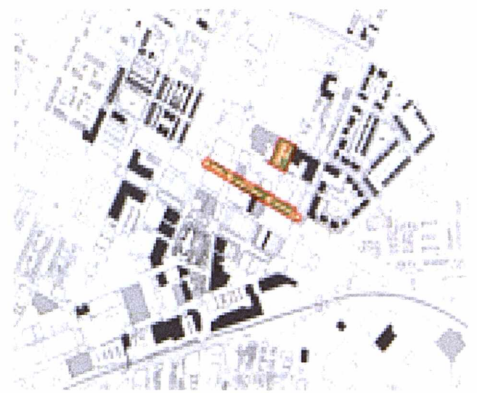


Through a coordinated effort between several design firms including EDAW and Semple Brown Architects, another step of East Liberty's community vision is coming into focus within the **Town Square** concept.

Town Square is the extensive streetscaping of East Liberty's commercial core surrounding the historic East Liberty Presbyterian Church.

Major projects will include the creation of a new public plaza in front of the church in the heart of the community, as well as another smaller plaza in front of the soon to be rebuilt Carnegie Public Library's East Liberty branch.

The Town Square concept will help to support growing investment in the commercial core of East Liberty, including the recently announced rehab of the Highland Building into condo units, and the construction of a new hotel at the corner of Highland and Penn Ave. Both of the projects, along with the ongoing redevelopment of several other core buildings, will help frame the public spaces.

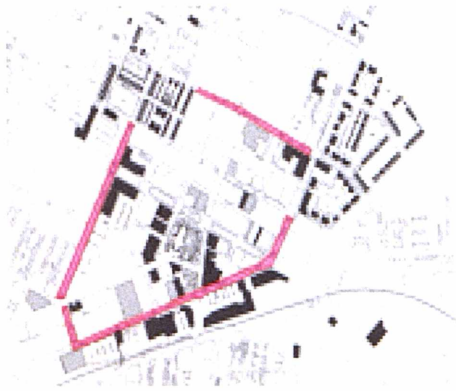


Smaller in nature, the **Broad Street Visionary Plan** and **Sheridan Avenue Plan** are two important pieces to reknitting East Liberty's core back together.

The Broad Street Visionary Plan addresses what was once East Liberty's local "Main Street" (as opposed to Penn Ave as a "regional Main Street"). Reconstructed as a pedestrian mall during the 1960's, and then subsequently turned back into a one-way street, Broad Street no longer serves its purpose within East Liberty's commercial core. By re-straightening the street, widening sidewalks, and changing the parking layout from diagonal to parallel, the intention is to reorient Broad Street for pedestrian and automobile traffic alike in the hope that the street can regain its former vibrancy.

**Sheridan Avenue** was once a major axil from Highland Park into East Liberty, however for decades it has been cut off for one block on the edge of the commercial core. With the help of a private developer, the road will be reconnected through the block, with the development of a new project on one side, and the other half transferred to a local church. At its completion, Sheridan Avenue will once again run continuous from East Liberty to Highland Park.





A central component of Urban Renewal Plans during the 1960's, **Penn Circle** was intended to bring traffic into East Liberty from outside communities, leaving the community's commercial core free of automobile congestion. In reality, the five-lane one-way highway has severed the community, breaking the commercial core from neighboring residential communities and creating a significant barrier to both personal movement and opportunities for high-quality development.

Since the late 1990's, Pittsburgh's office of City Planning has been looking to reverse the effects of this very poor planning decision, however progress has been slow.

In 2002, some progress was made when a small section of Penn Avenue was made two-way to support the opening of Whole Foods Market in the Eastside Development, and the city plans to carry out similar plans along its entire stretch.

While a far-cry from what is needed, redesigning Penn Circle to allow for two-way traffic, reworking its intersections to allow for easier pedestrian crossing, and providing for better movement along its length will help ease a significant barrier that has been inhibiting redevelopment efforts throughout East Liberty and erase a legacy of past failure in the community.

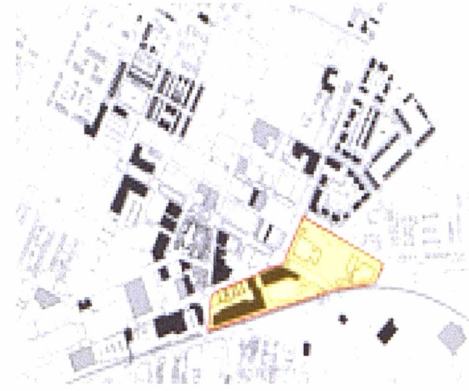


As often noted by experienced developers and designers of urban developments, parking shapes everything.

While East Liberty's community strategy calls for better pedestrian access throughout its neighborhoods, parking remains a prime concern, particularly to support the growing commercial market. Great care is being taken however to ensure that parking is provided in a responsible manner than both meets the needs of local businesses, and also blends into the urban context of the community.

The Eastside development currently under construction offers a unique model for meeting these goals, integrating parking into its design while keeping a street wall and urban feel. It is ELDI's goal to bring similar well designed parking to where it is needed throughout East Liberty.

Three parking projects will be part of this case study: a new parking facility as part of East Liberty's Town Square, supporting the soon-to-be-built hotel and condo developments. The parking facility to be built as part of Eastside III. And surface parking throughout the redesigned core of the community, specifically along Penn Circle.



**Transit Center**, comprised of The Mosites Company's Eastside III and a soon-to-announced retail project on the site of East Liberty's last Urban Renewal public housing tower, will provide retail amenities currently unavailable anywhere in Pittsburgh's East End along a heavily-used public transit route with connections to the heart of Oakland and Downtown Pittsburgh.

The mixed-retail project will continue the urban feel Mosites has established along their Eastside development, integrating well designed, "Green" retail space at a human scale with parking.

While much of the project's infrastructure needs will be addressed in the Penn Circle Project- which runs through the development- as well as in the Parking Facilities project, which has in part been broken out of this Proforma, additional infrastructure work remains at Mosites ties the development into neighboring communities and residential areas.





## The Thesis: Question

This thesis seeks to develop a model for evaluating the impact of progressive urban design strategies in an existing community by measuring the costs and potential returns of public investment in progressive urban infrastructure.

To address this objective, the study collaborated with ELDI to study the potential returns on public investment in infrastructure projects that are either currently underway, or planned for the near future in the community. Together we identified eight infrastructure projects in East Liberty, all of which are aimed at either repairing disconnects left by Urban Renewal's failed legacy, and/or, framing new development and investment in concert with progressive urban design principles and community planning efforts. This thesis is the financial evaluation of the costs and potential returns of these unique projects.

As much of this study is based on assumptions, a thorough review of literature and available data - particularly data that applies directly to the case study- is essential to the methodology. While the literature review will be discussed independently (as will the methodology) this section will focus on the research process and data collection.

## The Thesis: Data Collection

This study relied on four main sources for data to support its models:

1. Interviews
2. PNCIS and City Real Estate Database
3. East Liberty Community Plan and Urban Design Studies
4. Developer (Private/Public/Government) Cost Estimates and Development Proforma

Essentially, nine interviews were held of relevance to the study. These interviews were usually casual in format, and specific in question and content,

Historic Housing Patterns in East Liberty. Many of East Liberty historic houses were pattern book type housing mass developed during the turn of 20th century.

Renderings courtesy of UDA.

with the goal of information gathering and evaluation.

Conducted over the Summer/ Fall of 2006, interviews included:

**Rob Stephany** (ELDI)  
Community planning strategies and finance

**Ernie Hogan** (ELDI)  
Community residential/commercial development strategies and investment

**Kendall Pelling** (ELDI)  
Residential property values and historic housing

**Nathan Wildfire** (ELDI)  
Case study and neighborhood overview

**Ed Jacobs and Bill Waddell** (City of Pittsburgh, City Real Estate)  
Public tax revenues and city real estate database

**Bob Gradeck** (CMU, Center for Economic Development)  
PNCIS Database

**George Whitmer** (PNC Bank, Public Finance)  
Public/private balance of investment in community development

**Sidney Kai Kai** (City of Pittsburgh, City Planning)  
Penn Circle project design and costs

**Mark Minnerly** (The Mosites Company)  
Private development and community planning. Eastside III case study

Further project feedback was also received during a mid-project presentation held August 4, 2006. Presentation attendees included: Lena Andrews (City of Pittsburgh, City Planning), Christine Brill (Architect and M. Landscape Fellow), Walter Boykowitz (CMU School of Architecture), Jonathan Kline (CMU School of Architecture), Peter Coppin (Studio for Creative Inquiry), Elise Gatti (Semple Brown Architects), David Lewis (CMU School of Architecture), Rob Stephany (ELDI), Nathan Wildfire (ELDI).

Statistical analysis of East Liberty (Case Study) property values, real estate taxes, and existing housing stock were done using the PNCIS database and the Pittsburgh Real Estate Database. Primary information sources included Property Assessment Tables (2005 Assessment) and City Real Estate Tax Tables (2005 Actuals). Specific assumptions and use of these statistics will be discussed in the "Returns" section of the methodology.



Community and Urban Plans were collected pertaining to specific projects outlined by the case study. These plans were used in the “Cost” section of the methodology.

Developer (whether private, public, or government- in the case of road infrastructure) cost estimates and Proforma were utilized to assess project costs on a per-line-item basis. Every effort was made to use “up-to-date” projections.

Rendering of townhomes in proposed Mellons Orchard South.

Plan and rendering by EDGE





## Literature Review

A wide body of literature exists on topics related to urban infrastructure and its economics, particularly infrastructure's financial and environmental costs to society in relation to sprawl, land use, public health, transportation planning, and the conservation of open and agricultural land. That said, the hallmark studies in this area, such as the National Resource Council's 2000 report, *Cost of Sprawl – 2000* (Burchell and others) and Environmental Colorado Research and Policy Center's 2003 *The Fiscal Cost of Sprawl: How Sprawl Contributes to Local Governments' Budget Woes* (Coyne), tend to either lean toward providing empirical evidence that confirms long-held assumptions about the ills of sprawling land use patterns and policy decisions, or deal with larger, national-scale infrastructure issues in relation to economic development or environmental problems rather than addressing or providing fresh or renewed approaches to today's infrastructure challenges. For instance, little work has been done to evaluate infrastructure investment decisions in anti-sprawling projects, such as New Urbanist developments, where the need to find financing solutions for public infrastructure rates as one of the most significant barriers to bringing these projects from concept to construction. Similarly, while there is much talk of "Greener" infrastructure in reference to creating more energy efficient and less intrusive infrastructure designs, such as touched upon in the pending LEED-ND program, there is little work of depth in these areas outside of more technical circles.

It seems however that attention is beginning to shift toward more localized, community development challenges with regards to infrastructure. The Urban Land Institute in particular has over the past year begun to focus on the role of infrastructure in supporting community development and its relationship to private development and investment. Their 2005 Policy Forum Report *Financing Urban Infrastructure* (Pawlukiewicz) was an initial foray into the subject, followed-up significantly by a number of focused articles on public infrastructure on a variety of topics published in their magazine *Urbanland*, particularly in the July edition. For instance, Dale Anne Reiss, a principle of Ernst & Young's real estate division, recently authored *Infra-Investment*, a strong review of how national policies governing local infrastructure investment work to attract private development in a number of sectors. Such articles are interesting on a broader perspective because the ULI's involvement is suggestive that the private development community is very interested in addressing some of the root problems that inhibit the development of more progressive urban projects.

Perhaps the study that most closely resembles the question of this thesis, Susan Wachter of Wharton School's *The Determinants of Neighborhood Transformation in Philadelphia – Identification and Analysis: The New Kensington Pilot Study* (2004) looks to measure the impact of public investment strategies in greening infrastructure on community development and revitalization. Greening in this instance refers to the "cleaning and

greening" of vacant lots, as well as the creation of community park space and street tree installation. Using a hedonic regression analysis supported by GIS study of factors that influence property values, Wachter analyzes actual returns (while this study analyzes estimated future returns) to public investments based on a series of criteria.

Always a ready resource, the Brookings Institution Center on Urban and Metropolitan Policy has also published a string of reports of interest in infrastructure topics. *Paying for Prosperity: Impact Fees and Job Growth* (Nelson and Moody) discusses municipalities' continual struggle to find ways of financing growth (read: infrastructure demands) by means other than raising taxes, in this case through establishing "impact fee" programs. The report is interesting in relation to this thesis in that it offers a suburban challenge that parallels the urban one evaluating in this case study. *Civic Infrastructure and the Financing of Community Development* (Bogart) is more directly related to this thesis, addressing the broad relationships involved in community development from the civic, non-profit, and for-profit sectors, and how interactions between these parties impacts financing decisions and abilities in a range of urban development and infrastructure improvement projects. Along these same lines, *City Fiscal Structures and Land Development* (Pagano) discusses the evolving role of land development to city's overall fiscal performance and capacity, obviously a central theme of this case study. Pagano presents a good statistical base of city's historical revenue streams and an evaluation of how important investment decisions are to the fortunes of cities and towns today.

While somewhat dated, Harvard professor Richard Peiser authored a series of articles in the 1980's in regards to urban infrastructure, specifically in relation to its finance and relationship with community and economic development. *Financing Infrastructure to Support Community Growth* (1984) and *Special Districts: A Useful Technique for Financing Infrastructure* (1987) are two that proved especially useful toward informing this thesis.

Another study that proved valuable in learning about cities' changing financial strategies, particularly in relation to urban infrastructure and urban infrastructure investment, is Ernst & Young's 2003 report *How Smart Parks Investment Pays Its Way*, a detailed case study into New York City's parks and green space investment decisions done in collaboration with the non-profit group New Yorkers' for Parks. Analyzing 36 city parks in all five of the City's boroughs, and offering a detailed case study of 6 of these parks, the report concluded that strategic investment in the city's green infrastructure yielded "significant" economic and social returns to the City of New York, as well as to private investors and property owners, and neighboring communities.

In addition to studies dealing directly with infrastructure improvements, a number of writings- two in particular- helped tremendously in providing



perspective on the role and relationship of urban infrastructure to promoting and framing more progressive private development practices.

Financing New Urbanism Projects: Obstacles and Solutions (2000) by Wharton School professors Joseph Gyourko and Witold Rybczyński adds to a growing body of literature about the financing of “progressive” development projects, surveying a cross-section of 55 leading real estate practitioners including developers, lenders, and equity investors about their perceptions of New Urbanist-style projects in regards to the difficulty in obtaining financing. The study found that, particularly in Greenfield settings, the industry perception at large was that such projects are inherently not only difficult to finance, but viewed as high-risk due to their departures from more standard development practices. Additionally, Gyourko and Rybczyński found that one of the prime perceived barriers to financing such projects was the considerable investment needed in public infrastructure.

Christopher Leinberger, a founding partner of Arcadia Land Company, a Philadelphia-based “progressive development firm”, authored an excellent article entitled Financing Progressive Development (2001) that discusses a range of barriers in the financing and investment practices that impede the development of mixed-use, pedestrian-oriented projects. Touching on a wide scope of issues, from the standardization of real estate products on Wall Street, to the lack of long-term investment horizons, to the need to match different investment partners to different stages of a project, Leinberger presents a comprehensive review of the financing problems developers face in taking progressive projects from concept to construction. Arguing that the accounting standards used in the development industry to assess the performance of real estate projects do not adequately value public space, environment, and amenities, Leinberger uses examples from Arcadia’s own experiences (such as fellow partner Robert Davies’ Seaside) to show how investment in public infrastructure and good urban design can yield higher rates of return in the long-term as contrasted with the typical seven-year cycle usually associated with real estate development projects.

In addition to these “thesis specific” resources, a plethora of literature exists on more general topics of community development, the relationships between community-development and the private development industry, and innovative techniques of financing urban development projects. Good sources include the aforementioned Urban Land and Brookings Institutes, the Trust for Public Land, the Aspen Institute’s Community Development and Infrastructure Initiative (CDII), the Funders’ Network for Smart Growth and Livable Communities, and the various White Paper publications of Earth Pledge among others.

## Scope and Limitations

The intention of this section is to provide for the reader a clear understanding of decisions and/or factors that significantly influenced the process of this study so that it can be discussed with full understanding. In other words, the objective here is to provide answers to questions of content and process that may arise in the reading and discussion of this research.

First and foremost, this study is based on the various infrastructure and development projects currently underway or proposed for the near future in East Liberty. These plans were initiated by ELDI in its stewardship of a community-vision and have been designed and being implemented by a number of well-respected local and national urban design, planning, and development firms.

To be very clear, this thesis is not a critique of these designs or plans, nor is its' purpose to recommend alternative or complimentary designs. Rather, this study is using these existing and proposed design and development plans as a base to evaluate the role of public investment in supporting progressive private and community development. There is no original design component to this thesis.

Furthermore, the scope of this study is limited only to the infrastructure improvements proposed across East Liberty, not the content of the private development projects discussed (although the two certainly overlap), nor the impact of these projects on the surrounding communities in Pittsburgh's East End, nor the City of Pittsburgh's looming aging-infrastructure crisis.

Along similar lines, much of this study's research has relied upon the accuracy of estimates and calculations done by others with respect to design and/or development plans. This information, as well as the plans themselves, was made available courtesy of ELDI, their development and design partners, and the City of Pittsburgh. While this study was diligent in checking the reliability of the data used, specifically in reference to measurements and cost of infrastructure elements, it is the nature of development projects to adjust to evolving market conditions both in content and cost, and obviously, there is also the potential for human error, either on my or others behalf. As such, the need for transparency about baseline assumptions and process decisions that influenced this research is essential.

A section of the methodology chapter addresses this study's assumptions specifically and comprehensively. I strongly recommend that the reader review this section carefully before continuing into the case study.

Also in regards to the need for transparency, it is important to note that this study was conducted in close collaboration with a community-development



organization working within the subject community. Obviously, such an arrangement implies certain bias and perhaps even conflicts of interest, especially for a study that argues for certain policy decisions and public investments. As a proponent of good urban design, of progressive development, and of the causes of ELDI in their work in East Liberty, I should be upfront in saying that this project's intentions are, to an extent, biased. I believe in the work, I believe in the process that has informed it and in the people behind it. I also care deeply about the city, its future, and on a personal note, happen to live close to the community of East Liberty, although I am not a property owner in the community or in communities likely to be affected by the scope of this research. I should also note that no financial arrangement existed between ELDI and myself, nor myself and any of the development or design firms working in East Liberty.

Again, by providing transparency into the process and assumptions behind this study, I hope to alleviate the majority of these concerns.

On a broader level, this study touches upon several big concepts including Green Urbanism, Progressive Development, Sustainable Development, Sustainable Infrastructure, the LEED-ND program, as well as design topics relevant to the infrastructure projects within East Liberty, such as Transit-Oriented Development, or specific community-development topics. Any of these topics could and should be individually given the attention of entire thesis, and in and of themselves are outside of the scope of this work.

Lastly, it is important to note where this study falls short. A truly effective evaluation of investments in urban infrastructure would require a cross-section of case studies similar to this in a variety of settings. Limited in time and resources, this study could only offer what amounts to a piece of the puzzle. It is extremely clear that further analysis is necessary to adequately frame the conclusions of this research and present a more complete argument.

It is my hope that this study can act as a guide and a framework for further research and analysis into the barriers that deter community and private development from reaching higher standards in sustainable design principles and placemaking. It is in all of our best interest to do what we can to see that this work continues to progress in our towns, cities, and communities.



# Methodology and Assumptions

## Findings

## Conclusions



## Methodology and Assumptions

Discussion of Findings

Conclusions

Right:

Evaluation model designed by the thesis to measure infrastructure costs, including baseline assumptions, soft costs, and a 20% contingency factor.

### Methodology

The methodology of this study is patterned after standard real estate evaluation practices, such as proforma analysis, sources and uses, and net present value projections. By determining the cost of infrastructure improvements in eight unique case studies currently underway or planned for the near future in East Liberty, and estimating the potential gains in tax revenue that would result from these projects, this study hopes to shed light on potential real returns on public investment in progressive infrastructure.

#### *Cost Definition and Analysis*

To define costs of public investment, a simple model was defined by the researcher to include per line-item, elements of the urban infrastructure, their quantity within a given project (i.e., a new road) and their cost per unit of measurement.

Three steps were involved in this process beginning with the definition of the model, followed by establishing baseline assumptions for estimated costs, and finally, adding a 20% error factor/mark-up to account for errors in assumption.

Using existing development proforma as guidelines, the model (right) includes a line item for each defined element of the urban infrastructure- 24 standard elements, plus additional "green specific" elements as well as miscellaneous cost items such as specific public space improvements. These items were further categorized generally as Streets and Sidewalks, Streetscaping, Utility Lines, Green/Public Space, Parking Infrastructure, "Green" Infrastructure, and Misc. All line-items were designed to be both comprehensive and clear to the user. An additional 5% Hard Cost Contingency factor was also added.

East Liberty Development Corporation  
Data  
Project

Overall Estimated Infrastructure Cost

| Label                                 | Cost Multiplier   | \$/CM       | Total CM | Total Cost | % / Hard-<br>%/Total Soft |     |
|---------------------------------------|-------------------|-------------|----------|------------|---------------------------|-----|
| <b>Hard Costs</b>                     |                   |             |          |            |                           |     |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 0        | \$0.00     |                           |     |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0        | \$0.00     |                           |     |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0        | \$0.00     |                           |     |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 0        | \$0.00     |                           |     |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 0        | \$0.00     |                           |     |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 0        | \$0.00     |                           |     |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 0        | \$0.00     |                           |     |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0        | \$0.00     |                           |     |
| <i>subtotal streets and sidewalks</i> |                   |             |          | \$0.00     | xx%                       | xx% |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 0        | \$0.00     |                           |     |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 0        | \$0.00     |                           |     |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0        | \$0.00     |                           |     |
| 12 Lighting                           | Each              | \$5,000.00  | 0        | \$0.00     |                           |     |
| <i>subtotal streetscaping</i>         |                   |             |          | \$0.00     | xx%                       | xx% |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 0        | \$0.00     |                           |     |
| 14 Hydrant                            | Unit              | \$3,500.00  | 0        | \$0.00     |                           |     |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     | 0        | \$0.00     |                           |     |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  | 0        | \$0.00     |                           |     |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     | 0        | \$0.00     |                           |     |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  | 0        | \$0.00     |                           |     |
| <i>subtotal utility lines</i>         |                   |             |          | \$0.00     | xx%                       | xx% |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 0        | \$0.00     |                           |     |
| 20 Parkspace / Construction           | Square Foot (SF)  | \$13.00     | 0        | \$0.00     |                           |     |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 0        | \$0.00     |                           |     |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 0        | \$0.00     |                           |     |
| <i>subtotal green/public space</i>    |                   |             |          | \$0.00     | xx%                       | xx% |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 0        | \$0.00     |                           |     |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 0        | \$0.00     |                           |     |
| <i>subtotal parking</i>               |                   |             |          | \$0.00     | xx%                       | xx% |
| 25 Geo-Exchange Exploration           |                   | \$15,000.00 | 0        | \$0.00     |                           |     |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0        | \$0.00     |                           |     |
| 27 Green Build Cost Premium (MOS)     |                   | 2.11%       |          | \$0.00     |                           |     |
| <i>subtotal "Green" infra.</i>        |                   |             |          | \$0.00     | xx%                       | xx% |
| 28 Misc.                              |                   |             |          |            |                           |     |
| 29 Contingencies                      | 5%                |             |          |            |                           |     |
| <i>subtotal misc.</i>                 |                   |             |          | 0          | xx%                       | xx% |
| <b>Total - Hard Costs</b>             |                   |             |          | \$0        |                           |     |
| <b>Soft Costs</b>                     |                   |             |          |            |                           |     |
| 30 Environmental                      | 1.00%             |             |          | \$0        |                           |     |
| 31 Engineering                        | 1.00%             |             |          | \$0        |                           |     |
| 32 Design / Architecture Fees         | 5.00%             |             |          | \$0        |                           |     |
| 33 Green Consultant Fees              | 2.00%             |             |          | \$0        |                           |     |
| 34 LEED Fees                          | 0.00%             |             |          | \$0        |                           |     |
| 35 Legal Fees                         | 0.50%             |             |          | \$0        |                           |     |
| 36 Insurance                          | 2.50%             |             |          | \$0        |                           |     |
| 37 Accounting                         | 2.50%             |             |          | \$0        |                           |     |
| 38 Loan and Grant Fees                | 4.00%             |             |          | \$0        |                           |     |
| 39 Taxes                              | 0.00%             |             |          | \$0        |                           |     |
| 40 Mobilization / Surveying           | 5.00%             |             |          | \$0        |                           |     |
| 41 Construction Overhead              | 5.00%             |             |          | \$0        |                           |     |
| 42 Construction Management            | 5.00%             |             |          | \$0        |                           |     |
| 43 Misc.                              | 2.11%             |             |          | \$0        |                           |     |
| 44 Other - Description                | 0.00%             |             |          | \$0        |                           |     |
| <b>Total - Soft Costs</b>             |                   |             |          | \$0        |                           |     |



Project soft costs were also included as a percentage of total hard costs. Soft costs assumptions were based conservatively on existing project estimates.

The model was used on a project-by-project basis, beginning with a break-out for individual pieces of the private infrastructure within a project. In other words, if the project was a new residential development that called for the re-connection of several urban streets across an existing super-lot, as well as the building of a new community park, that project would be broken down to each new street, changes to any existing streets, and the new public park, plus misc. and overhead. If the project consisted of re-building a single road across an existing parking lot to open two development sites, the breakdown consisted of only one road. Measurement data was entered directly into these infrastructure breakdowns, which flowed into the detailed summary. Overhead, soft costs, and contingency factors were added to the cost at this stage. A summary model of this information for quick reference and analysis was also defined.

Important to note is that measurements inputs were either taken directly from developer and/or city works estimates for current and on-going infrastructure work. Measurements for proposed work was taken from Developer estimates when available. When not readily available, or in cases where the researcher was uncomfortable with the accuracy of said information, measurements of proposed infrastructure changes were taken by hand and foot following design schemes as closely as possible.

Due to this and other potential errors in assumption, a 20% contingency factor was added to all project costs.

### *Returns Definition and Analysis*

This study defines “public” returns essentially as financial returns that would influence policy makers in their decision-making regarding urban infrastructure.<sup>1</sup> Based on interviews with stakeholders, such returns can be defined in two ways for this study:

- Private investment leveraged by public investment in infrastructure<sup>2</sup>
- New Tax Revenues, including property taxes from both new development, increased property taxes of existing development resulting from market forces, and commercial sales tax from new retail development.<sup>3</sup>

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1 An important note is that this study is projecting potential returns, not evaluating actual returns through a statistical model such as a regression analysis.

2 With the exception of private investment vs. public investment, returns are based on city investment only (see Sources and Uses)

3 Income taxes, as well as employment creation, are also legitimate and important indicators of “public returns”, however this study does not take these potential returns into account.

For all returns, “public investment” refers obviously to the cost of infrastructure, while “private investment” refers to private money (either developer equity or debt financing) that is committed to unique development projects tied directly to the infrastructure case studies identified.

For example, while “Sheridan Avenue” is a specific infrastructure project (in this case reconnecting a historic street across what is currently a superblock), this public investment will leverage already committed private development along Sheridan Avenue’s new street-front.

The sources of private investment in this study are based on actual as reported by individual developers through either personal interview, written cost estimate, or via ELDI.

Two important variables to note are...

- not every public infrastructure project is directly tied to a specific private development. For instance, the redesign of Penn Circle- one of the lasting failures of Urban Renewal- is not currently tied to any one development, rather, it will benefit all future development as well as existing neighborhoods. **Hence, returns are not identified per project but collectively across all case studies, thereby measuring community-wide impacts.**
- Because more organic private investment – such as that of a single homeowner, or one of the many commercial buildings surrounding East Liberty’s commercial core –is difficult to capture, **this study will focus private investment as only those large development projects tied to particularly infrastructure improvements.** It is thus likely that certain “hidden” returns remain hidden within this study.

Of the three defined returns, the easiest to measure, but perhaps the most influential for policy makers is simply the ratio of private money leveraged by public investment: if the public invests x amount, it unlocks xx amount. This study uses standard practices to identify this ratio: dividing total private investment by total public investment in infrastructure.<sup>4</sup>

The models for estimating property tax revenues and potential sales tax revenues are somewhat more involved due to the increase of variables and assumptions.

Measuring potential property tax revenue was done in two subsets: new development (both commercial and residential) and existing residential development.<sup>5</sup> New development was based on development plans for Mellons Orchard South and Liberty Park (Residential) and Transit Center (Eastside III, Commercial/Retail). Following development programs, average

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<sup>4</sup> For more information, see Peiser, 1984.

<sup>5</sup> Existing commercial development was not taken into account in this study, and hence represents additional hidden value.



unit types and expected sales values were identified as baseline assumptions, and taxes computed for the City of Pittsburgh only.<sup>6</sup>

Commercial and residential development was assessed separately as follows:

New residential development was assessed at 100% to-value based on estimated real estate values set from the asking sales price. City real estate taxes were computed at 10.8 mills.

Assessing existing residential development was somewhat more involved. Because this study is forecasting future property tax increases as a result of future infrastructure improvements, using a hedonic regression model to measure historic data and changes in property value was not possible. This, assumptions had to be made.

Using the PNCIS database to set a community-wide baseline for East Liberty's existing housing stock<sup>7</sup>, average fair market values (FMV) were estimated for seven housing types (Condo, Townhouse, Rowhouse, Single Family Dwelling, and 2, 3, and 4 Family Dwellings). Taxes were then assessed based on a variable percentage (5%) of the difference between the FMV of existing housing, and the expected sales price of new residential development. Taxes were assessed at 100% of value @ 10.8 mills.

New commercial development was assessed at 80% of the cost of construction.<sup>8</sup> Taxes were computed as follows: City real estate tax @ 10.8 mills; Business Privilege tax @ 6 mills; Mercantile tax @ 2 mills.

Projected commercial sales tax generated by new commercial development was calculated through the Regional Asset District Tax of 1% of annual sales, assuming sales/sf valued at \$232/sf.<sup>9</sup>

Total tax revenue for new residential and new commercial (including sales tax) was calculated and projected over 2-, 5-, and 10-years based on a standard Net-Present Value (NPV) process at an estimated cost of capital of 6%.<sup>10</sup> Return on investment was calculated over total public investment and the City of Pittsburgh's estimated investment.

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6 Because this study aims at evaluating the City's potential investment, other costs and returns (i.e., county, state, and federal, were not included in cost and return measurements). All City Tax rates set by the City of Pittsburgh Real Estate Office.

7 Existing vacant, fire-damaged, and condemned properties classified as "residential" were not included in this analysis.

8 Only "Transit Center/Eastside III" was included in the "new commercial development" evaluation.

9 Sales/sf value assumption based on national average for new retail properties. Whole Foods Market posts an extremely high sales/sf average of \$800+. (The Mosites Company)

10 Forbes.com (October 28, 2006)

Revenues creating by raising property values in existing neighborhoods was left out of this total and calculated independently.

#### *Sources and Uses*

This study seeks to create an argument for local policy makers, and it is important to isolate the local commitment to infrastructure improvements in the case study, as it is important to show specific rate of returns based on local investments.

To do this, a simple sources and uses table was defined based on a) already committed financing from federal and state sources, b) already committed financing from Foundations (earmarked for soft costs such as design), and c) assumed TIF financing of parking infrastructure. The remaining necessary public investment is assumed to be local.



## Findings

In general, this study found strong and direct returns to public investment in urban infrastructure in the case study of East Liberty.

### *Costs Analysis*

With regards to costs, the study estimated the total cost of infrastructure improvements proposed by urban design strategies, community planning, and private development in East Liberty to be around \$51 million (\$50,990,471) – in essence the cost of repairing the community's urban fabric.

Out of this total, the largest investment would be, unsurprisingly, the redesign of Penn Circle – estimated at \$12,816,000 including hard and soft costs. While in this model, the Penn Circle project was not tied to any specific revenue-generating developments, there is little doubt Penn Circle currently poses the greatest challenge to East Liberty's sustained resurgence, and hence even the modest changes proposed would represent a major victory for the neighborhoods it serves. Fortunately, thanks to a secured federal highway infrastructure grant that will finance 80% of the project, the City of Pittsburgh is prepared to invest the remaining 20% for this project to become a reality.

After Penn Circle, the next highest public commitment- again unsurprisingly- is in structured parking infrastructure, estimated at \$9 million.<sup>11</sup> A TIF financing program will mostly likely be the solution to these costs.<sup>12</sup>

Perhaps the most interesting finding regarding cost is the level of commitment to public space infrastructure- particularly green infrastructure (community parks)- especially as many of East Liberty's new parks have been planned as centers to new residential development. Such a cost commitment by developers is an interesting indicator of how the private development is beginning to take note of the value of green infrastructure.

### *Returns Analysis: New Development*

Using the model developed for this case study, the potential returns on public investment are significant.

At its most basic, a public investment of \$50,990,471 in urban infrastructure in East Liberty would leverage an estimated \$184,000,000 in private development – a staggering return of 361%. Recalculating the return

<sup>11</sup> the pricetag for all East Liberty's parking needs (structured and unstructured) would be roughly \$14.5 million.

<sup>12</sup> Tax-Increment Financing (TIF) is the topic of sometimes considerable debate as an effective tool of public investment, however, it has become standard practice to assist large or prominent private developments. East Liberty will most likely be no different.

based on an estimated local (City of Pittsburgh) investment in East Liberty's infrastructure of \$20 million, less the commitments of federal, state, and foundation sources, the projected leverage of private money would be 920% public returns.

While such projections are useful and certainly compelling, estimated continued returns through tax-revenue generating development are equally impressive.

New residential development in East Liberty will have a median asking price between \$88-100 per square foot, including single-family detached homes, townhomes, and apartments. At city real estate tax rates, this development will generate annual tax revenue of \$350,000 across only 240 units of housing built on currently vacant, tax-delinquent lots. New commercial development (200,000 SF, not including the proposed hotel development) proposed for East Liberty's core would generate an estimated \$2 million in taxes annually, including real estate, business privilege tax, mercantile tax, and regional asset (sales) tax.

Jointly projected over 20-years, this selective representation of potential returns will provide a Return on Investment for the City of Pittsburgh of 116% - mostly on the principle of providing infrastructure for infill development on





the fringe of existing neighborhoods and communities.

#### *Returns Analysis: Existing Development*

The impact of public infrastructure on existing residential neighborhoods in East Liberty is harder to measure. Studies such as the Wharton Schools case study of greening strategies in New Kensington in Philadelphia, offer a compelling methodology for analyzing the effects of various variables in the public realm to property values through empirical regression models. These models however work best when using actual numbers- such as may be possible in East Liberty three or five years down the road. When projecting however, the outcomes are only as good as the assumptions.

This study assumed that the average home in East Liberty will benefit from infrastructure improvements in three ways a) raising property values from new investment b) green infrastructure that has proven to raise property values in communities, c) greatly increased connectivity that will open access to a mixed of uses and daily amenities.

To keep our estimates conservative, the assumption was made to assess properties at an increased value of 5% of the difference between the asking price of new development, and the fair market value of the average Single Family home in East Liberty as a result of these three benefits from public infrastructure investment. Using this model community-wide would result in an almost 13% rise in property values, and hence a 13% rise in tax generation. Over ten years, this conservative estimate would provide an additional public return, on average, of \$149,015 per home. Note that this raise does not take into account previously proven positive effects of urban amenities such as parks or decreasing vacancy on property values- all of which certainly apply to East Liberty's existing housing stock.

## Conclusions

This thesis, researched over the summer of 2006 in an collaborative effort between Carnegie Mellon University's Urban Lab and East Liberty Development, Inc. sought to develop a model for evaluating the impact of progressive urban design strategies in an existing community by measuring the costs and potential returns of public investment in progressive urban infrastructure.

By establishing transparent baseline assumptions of cost, and clear definitions of public returns, it was the hope of this researcher that this study would help urban designers make reasoned arguments for public investment in public realm infrastructure improvements that greatly benefit our collective social, environmental, and community health.

It was also the hope of this researcher that this study would pass beyond academic walls, helping push a community-based development plan in a resurgent neighborhood from concept and design to implementation and construction.

While the model developed focuses on specific items- almost certainly leaving certain public returns "hidden"- the results of this study are compelling – there are clear public returns to smart infrastructure investment that aims to rebuild communities. The results are all the more incredible when considering the diligent attention paid toward padding cost estimates (such as adding a 20% across the board error contingency) while shaving potential returns.

It is also clear that there is much more research to do, both in studying the impact of urban design strategies in relation to public/private investment, as well as in the community of East Liberty- a community evolving into an amazing laboratory for testing methods of measuring the benefits of progressive urban design, development, and community planning.

In closing, I hope the model proposed in this thesis, as well as the baseline assumptions in identifying costs and returns will provide a model that future urban designers and community-planners can reference and refine. The role of urban designers as facilitators in the discourse surrounding the future of our urban spaces is an important one. The better we are able to support quality design with arguments that appeal to developers, financiers, and policy makers, the fewer barriers we will find.





## **Appendices**

Case Study Details

Community Developments

Written References

Graphic References

Complete Financials

1966 Urban Renewal Plans for  
East Liberty



# Mellons Orchard South



Mellons Orchard South is not only a model community for the principles of progressive development (and possibly, for the LEED-ND pilot program) but for this case study.

Its design is based on reconnecting a portion of East Liberty's historic urban fabric, replacing the superblocks left in this corner of the community by Urban Renewal plans during the 1960's. Replacing blight with new investment, the project brings affordable and market rate for-sale and rental housing within walking distance of East Liberty's commercial core and the new Eastside development, as well as public transit. Designed with narrow streets, alley-loading garages, and a redesigned public park at its heart, Mellons Orchard South has already been referred to as the jewel of ELDI's redevelopment efforts.

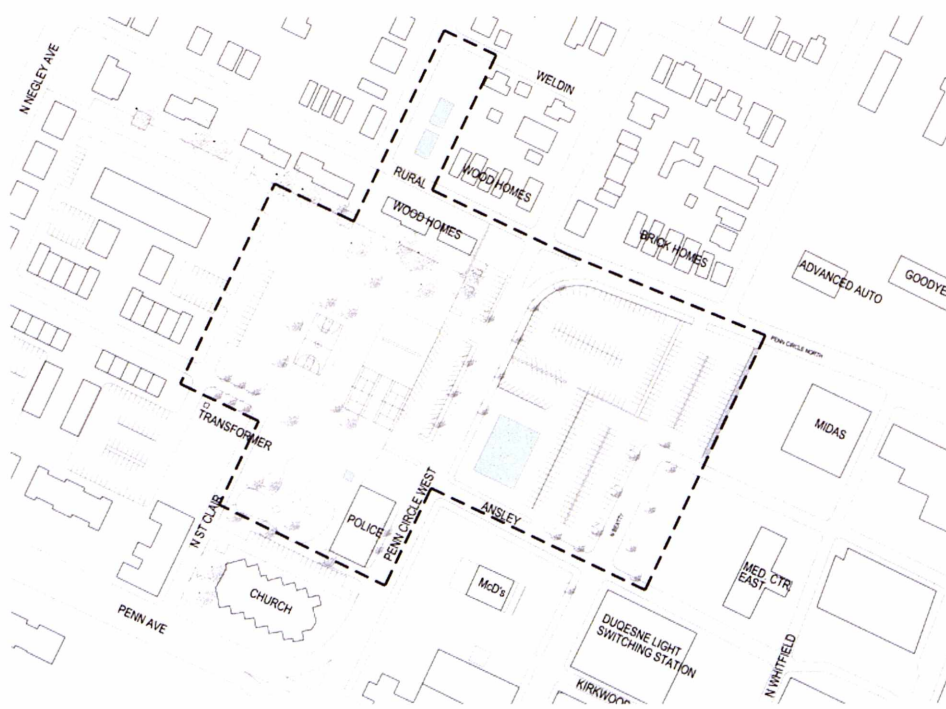
One reason for the anticipation over the project is the progressive decision to strive for a greener approach to its infrastructure design, including the drilling of geothermal wells to provide renewable energy for heating and cooling the development.

Description:  
Status/Delivery Date:

**Infill For-Sale Housing  
Planning/2008-9**

Cost of Public Infrastructure: **\$6.2 M**  
Total Development Cost: **\$43 M**  
Ratio of Public to Total: **14%**

Notes: **MOS is attempting to be one of the nation's first  
LEED-ND certified communities.**



Graphics and design by EDGE Studios.  
Courtesy of ELDI.







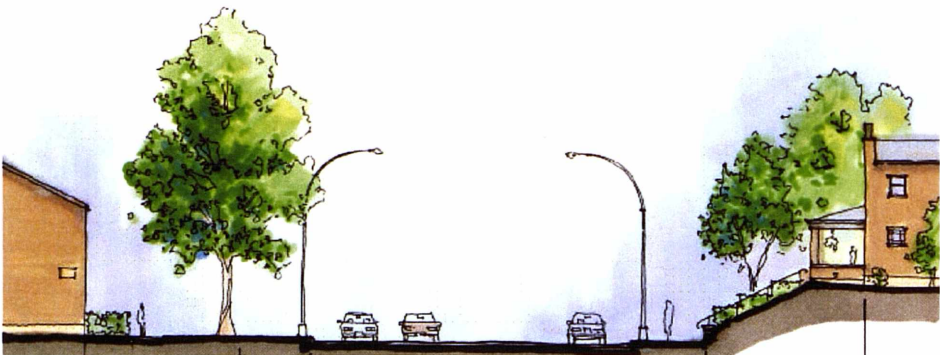
# Liberty Park

Similar to Mellons Orchard South, Liberty Park looks to bring new infill housing and investment to a mostly blighted corner of East Liberty.

Predominately for-rent units, the development was designed through a open-public process, and features narrow, pedestrian-oriented streets, alley-loading garages, a street grid that extends into existing communities and the commercial core allowing for pedestrian and automobile access to retail, employment, and transit, and the creation of two new public green spaces.

Infrastructure investment in Liberty Park includes the financing of interior roads, improvements to existing roads the border the site including Collins Street, East Liberty Boulevard, and Penn Circle, Park Space, public alley ways, and streetscape improvements.

|                                |   |
|--------------------------------|---|
| Description:                   | <b>Infill Rental Housing</b>  |
| Status/Delivery Date:          | <b>1st Phase Construction/2007</b>  |
| Cost of Public Infrastructure: | <b>\$6.2 M</b>  |
| Total Development Cost:        | <b>\$45 M</b>   |
| Ratio of Public to Total:      | <b>14%</b>  |
| Notes:                         | <b>Liberty Park will invest almost \$1 M to two new public park spaces.</b> |





UDA best examples of building and street design from Pittsburgh's East End for use in the design process of Liberty Park.

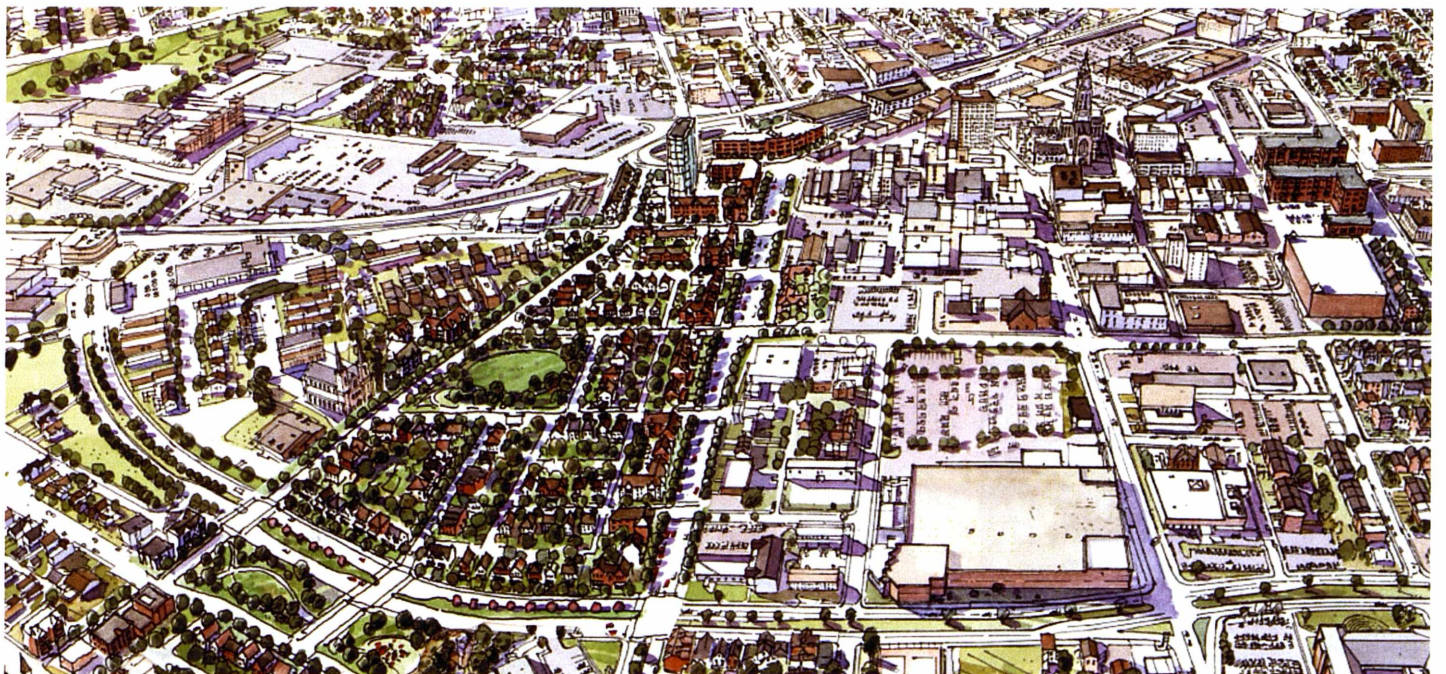
Opposite: Existing (top) and proposed street cross-sections of Collins Avenue, an older street that will run through the new Liberty Park Development.



Right: A perspective of a typical street within Liberty Park, replacing blight and superblocks with a green, human-oriented neighborhood. Note the variety of building types. Liberty Park will include townhouses, multi-unit apartment buildings, and loft-type apartment buildings.



Below: An aerial perspective of Liberty Park offers a good view of the how the development's street grid integrates into East Liberty's urban fabric. Note the development's relation to the commercial core (upper right of drawing), the Home Depot big box store (lower right), and the proposed Transit Center (upper center).





# Town Square

Infrastructure improvements to east Liberty's commercial core include extensive streetscaping and the creation of a clear public realm, captured in the Town Square concept.

Feeding off and supporting private and public investment that is bringing new condo units and a hotel/retail project to an already growing commercial core in the heart of East Liberty, including the rebuilding the branch of the Carnegie Public Library opposite the historic Presbyterian Church, Town Square will create two new public plazas, along with improvements to sidewalks, planting of street trees, and better lightings and signage. The intersection of Whitfield Street and Baum Boulevard will also be modified to allow for better movement and sightlines.



Description:

Status/Delivery Date:

Cost of Public Infrastructure:

Total Development Cost:

Ratio of Public to Total:

**Streetscaping and Public Realm**

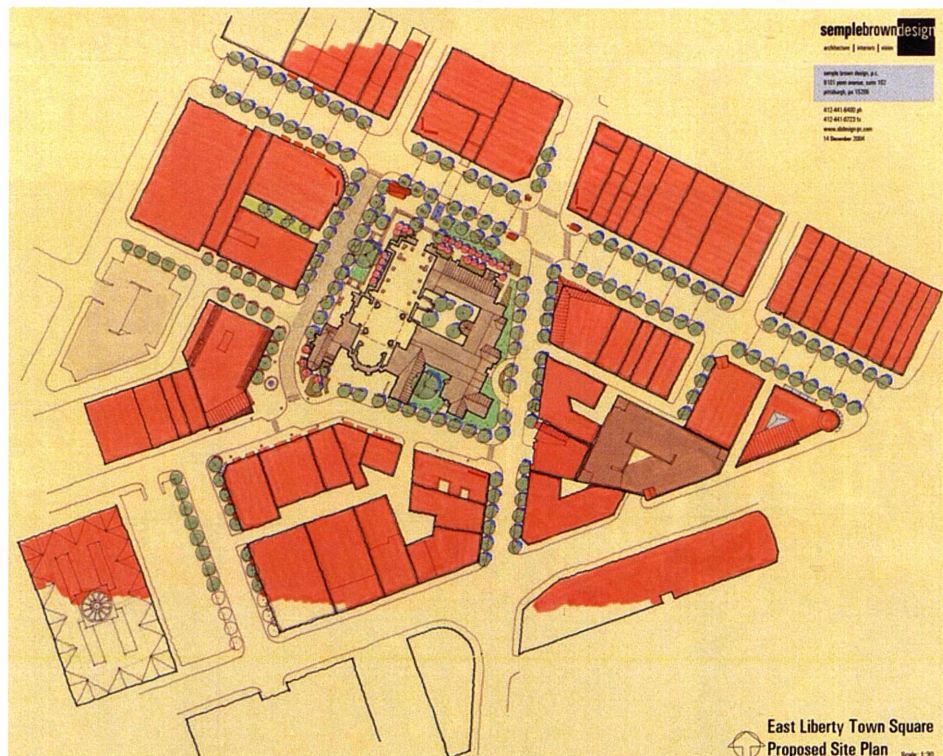
**Planning/ Ongoing**

**\$7.3 M**

**\$32 M**

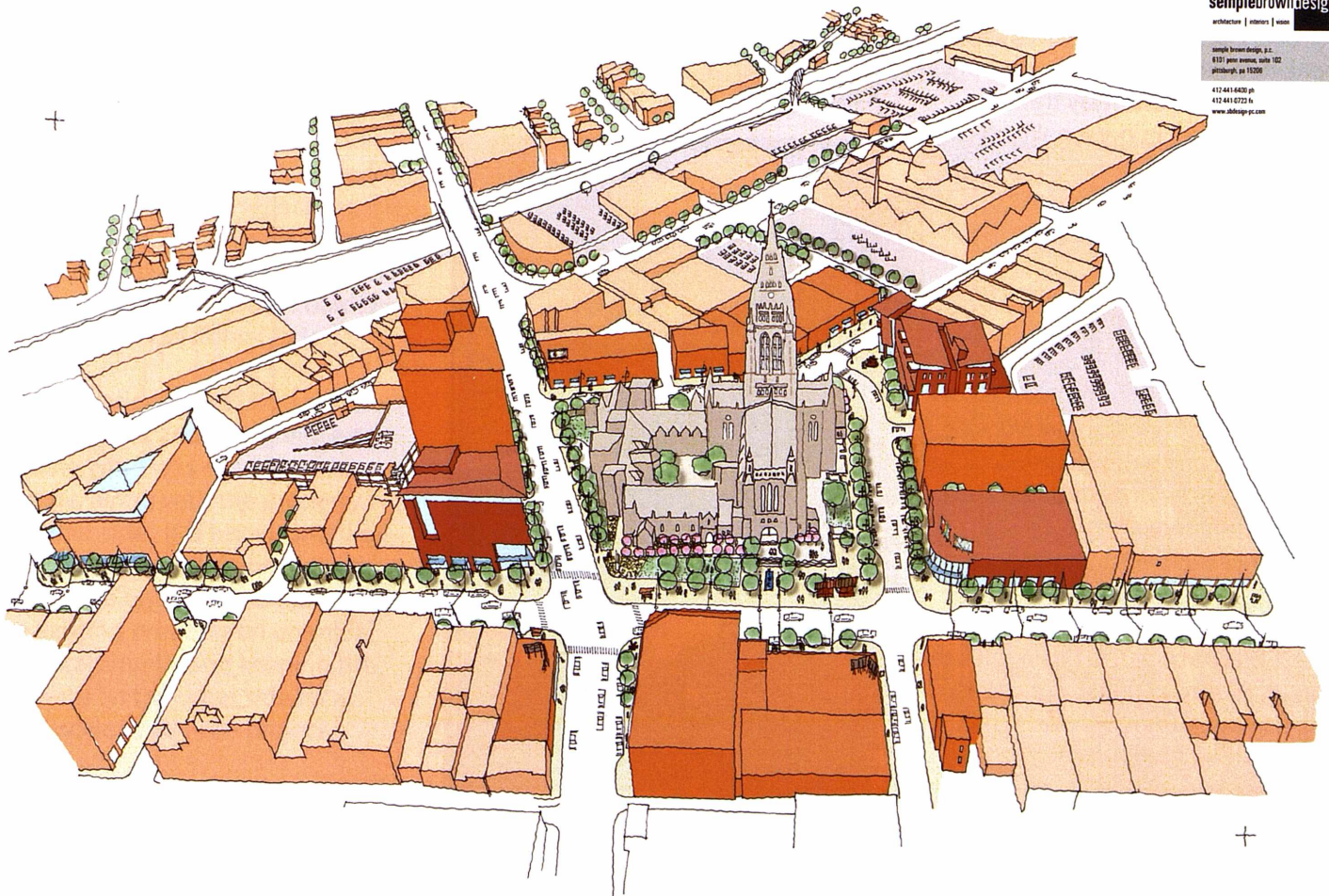
**23%**

**Notes: Infrastructure improvements include the creation of a town square and other public spaces in East Liberty's Core.**



Graphics and design by EDAW and Semple Brown Architects.  
Courtesy of ELDI.





**semplebrowndesign**

architecture | interior | urban

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www.sbdnyc.com



# Broad Street

Broad Street was once East Liberty's local Main Street, as opposed to Penn Avenue, which served a more regional purpose.

During Urban Renewal planning, Broad Street was made first into part of the pedestrian mall proposed for East Liberty's entire commercial core, however it was subsequently redesigned for one-way traffic. These changes in personality, design and use have left Broad Street twisted and hard to navigate, not to mention devoid of a specific use in the neighborhood.

The visionary plan hopes to redesign the street, straightening it throughout the commercial core to create sightlines, and reworking its parking and sidewalks to better provide for pedestrian and automobile movement.

It is ELDI's hope that by investing in these improvements, the street will better serve both the businesses that line it, as well as the whole of East Liberty's commercial core. While Broad Street may never return to its former role, it can adapt and function in a new one within East Liberty's evolving heart.

Description:  
**Streetscaping**  
Status/Delivery Date:  
**Design/2007**

Cost of Public Infrastructure:  
**\$400,000**  
Total Development Cost: **\$400,000**  
Ratio of Public to Total:  
**100%**



Graphics and design by Fukui Architects PC  
Courtesy of ELDI.

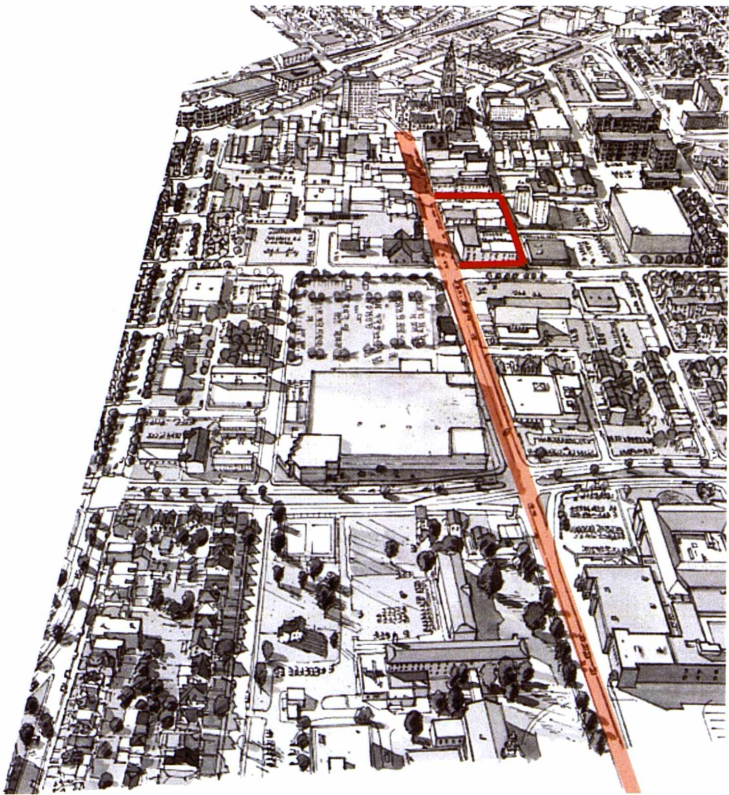
# Sheridan Avenue

For generations, Sheridan Avenue served as the primary path from residential Highland Park into commercial East Liberty. Once a wide, tree-lined promenade, it was the scene of Sunday strolls among the cities elite and working class alike.

While many of these old traditions died with the automobile, the street continued to serve a similar purpose until a housing project built in the 1960's severed Sheridan Avenue for one block (see right), seperating the residential neighborhoods to the north from East Liberty's commerial core and creating a double barrier with the traffic of Penn Circle.

In cooperation with ELDI, a private developer has acquired three lots, framing what was once Sheridan Avenue, along with the property on either side. It is his wish, as well as the Community-Vision Plan, to rebuild the historic road, tranferring the existing property on one side to a local church, and keeping the property on the other side for a small-scale mixed-use project.

|                                |  |
|--------------------------------|--|
| Description:                   | <b>Streetscaping and development site prep</b>                             |
| Status/Delivery Date:          | <b>Planning/ N/A</b>   |
| Cost of Public Infrastructure: | <b>\$155,000</b>   |
| Total Development Cost:        | <b>\$2 M</b>   |
| Ratio of Public to Total:      | <b>6%</b>  |
| Notes:                         | <b>Reconnecting Sheridan Avenue will create two new development sites.</b> |





# Penn Circle

Penn Circle, the five-lane one way highway that cuts East Liberty's commercial core from its residential neighborhoods, has more than any other physical element come to symbolize the failed legacy of Urban Renewal in the East End.

While various proposals have surfaced to right the wrong, City Planning has seriously dealt with two over the past decade.

In the late 1990's a significant study was done into the redesign of Penn Circle, including substantial streetscape improvements (see opposite, top). Despite securing a Federal TIP (Transportation Infrastructure Program) financing that would provide an 80% match of the final construction costs, at \$25 million-plus, this scheme was deemed as too expensive for a City with an ever expanding list of infrastructure needs.

A second round of design proposals has produced the current plans- an \$8 million rework of Penn Circle to make it two-way along its entire length, to create parking on its interior lanes, and to redesign its intersections to make them more pedestrian friendly.

Description:  
Status/Delivery Date:

**Streetscaping / Redesign  
Design / 2008**

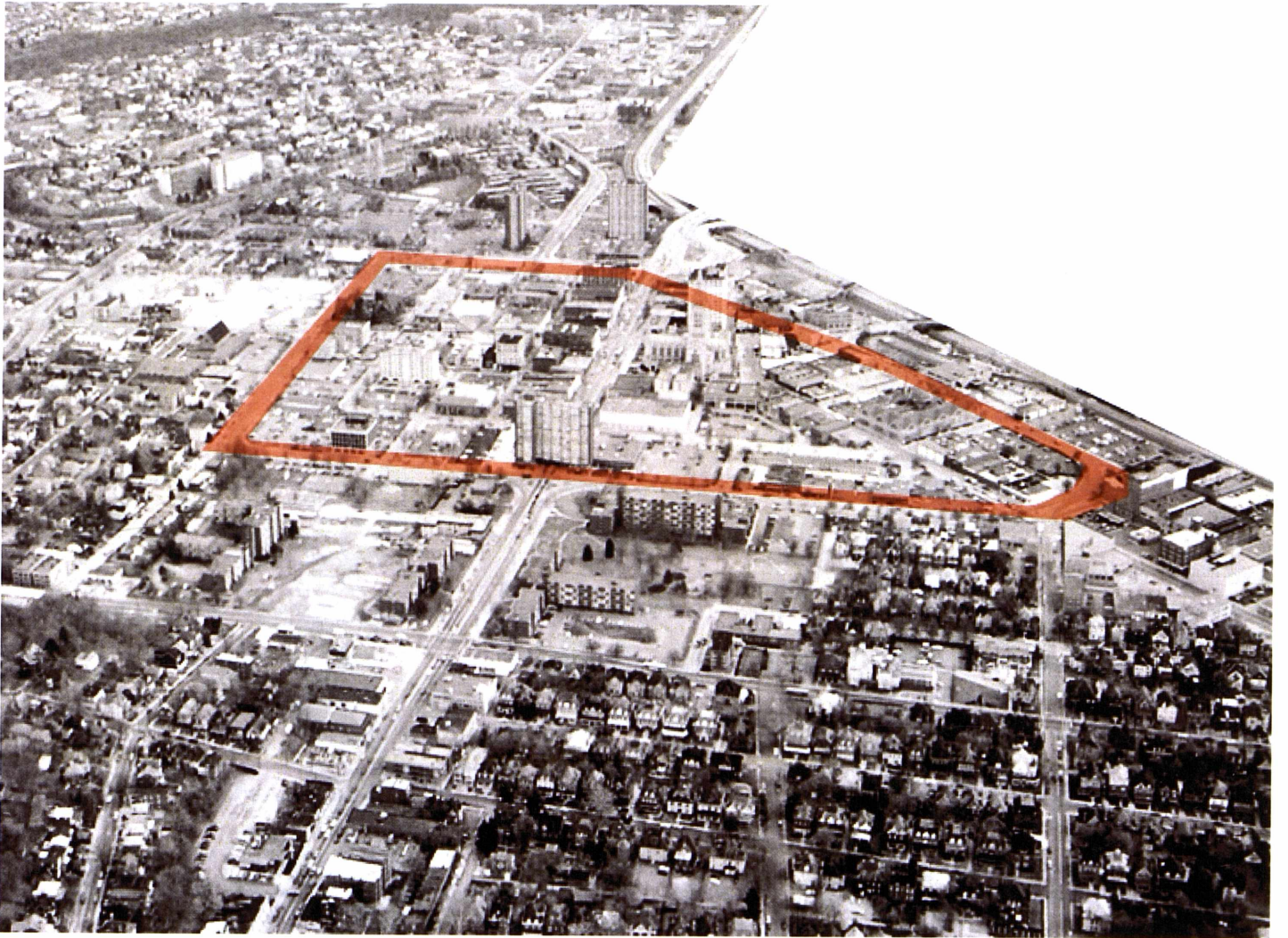
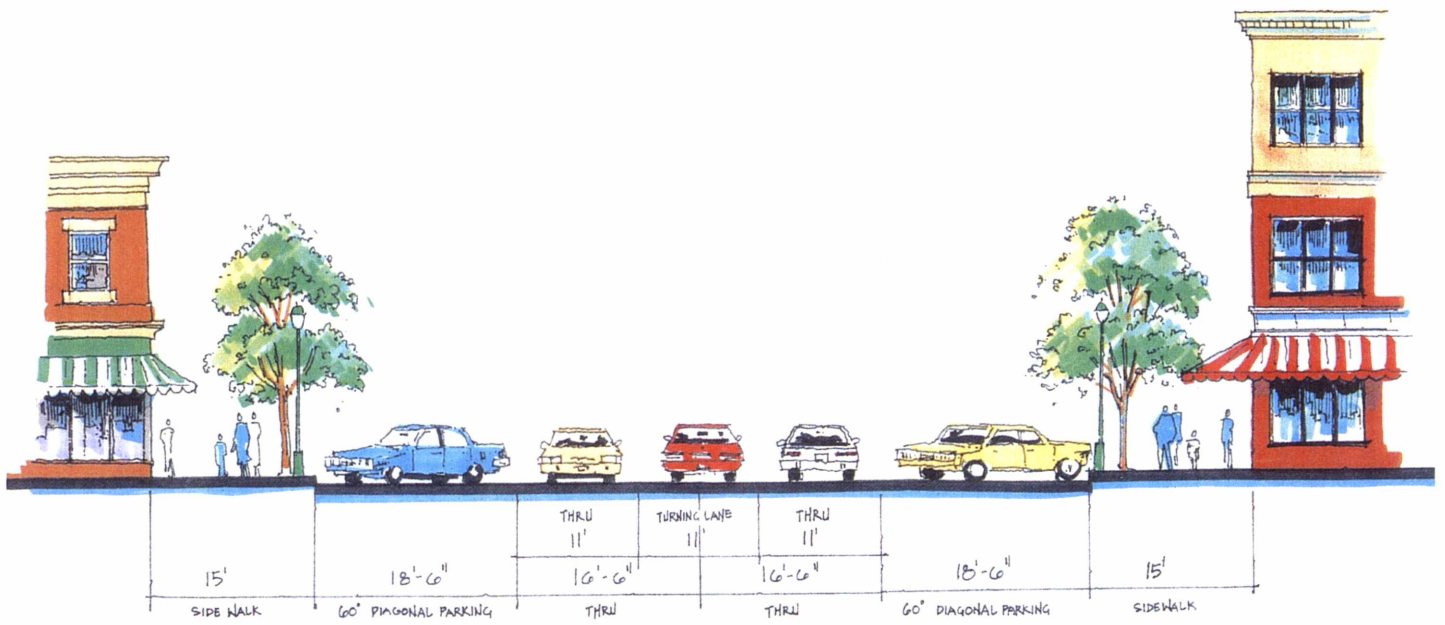
|                                |               |
|--------------------------------|---------------|
| Cost of Public Infrastructure: | <b>\$13 M</b> |
| Total Development Cost:        | <b>\$13 M</b> |
| Ratio of Public to Total:      | <b>100%</b>   |

Notes: **80% of project financing has already been secured through a Federal Transportation Infrastructure Program (TIP) requiring a 20% local match.**



Graphic opposite, top by UDA.  
Courtesy of ELDI.







# Parking Infrastructure

Like many communities on the fringe, East Liberty is juggling an abundance of parking in the form of vacant lots and surface parking, some of which are rarely used, while arguing for investment in expensive, structured parking facilities to support urban growth and private development.

The parking infrastructure analysis is based on three projects:

First, a new, structured parking facility planned to support the proposed hotel/retail complex and the transformation of the Highland Building from vacant into luxury condos.

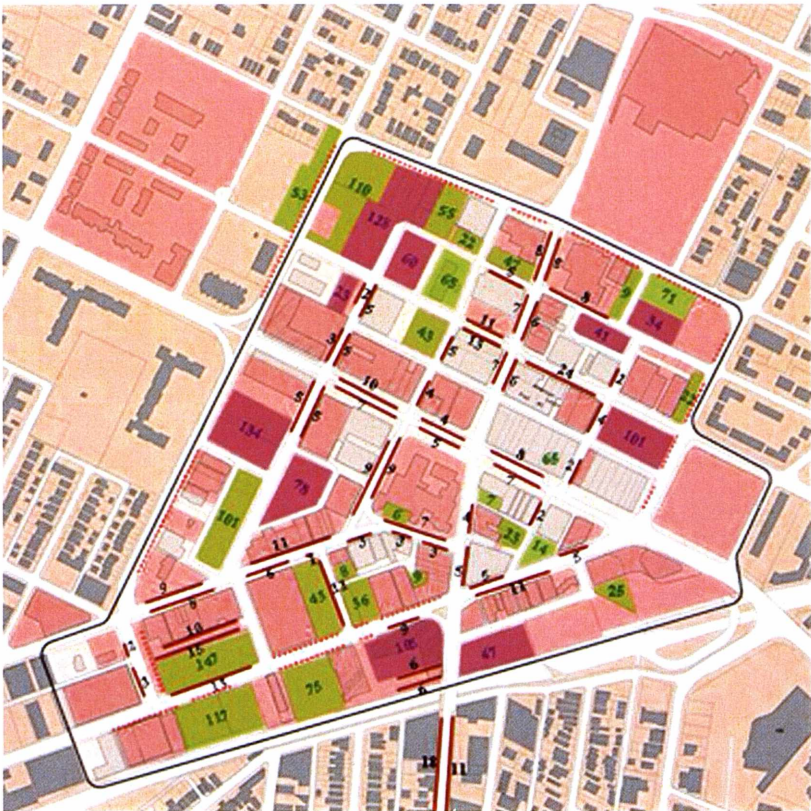
Second, the parking facility required to support Eastside III.

And third, well located street and surface parking that will be needed as currently vacant lots are reinvested and built upon.

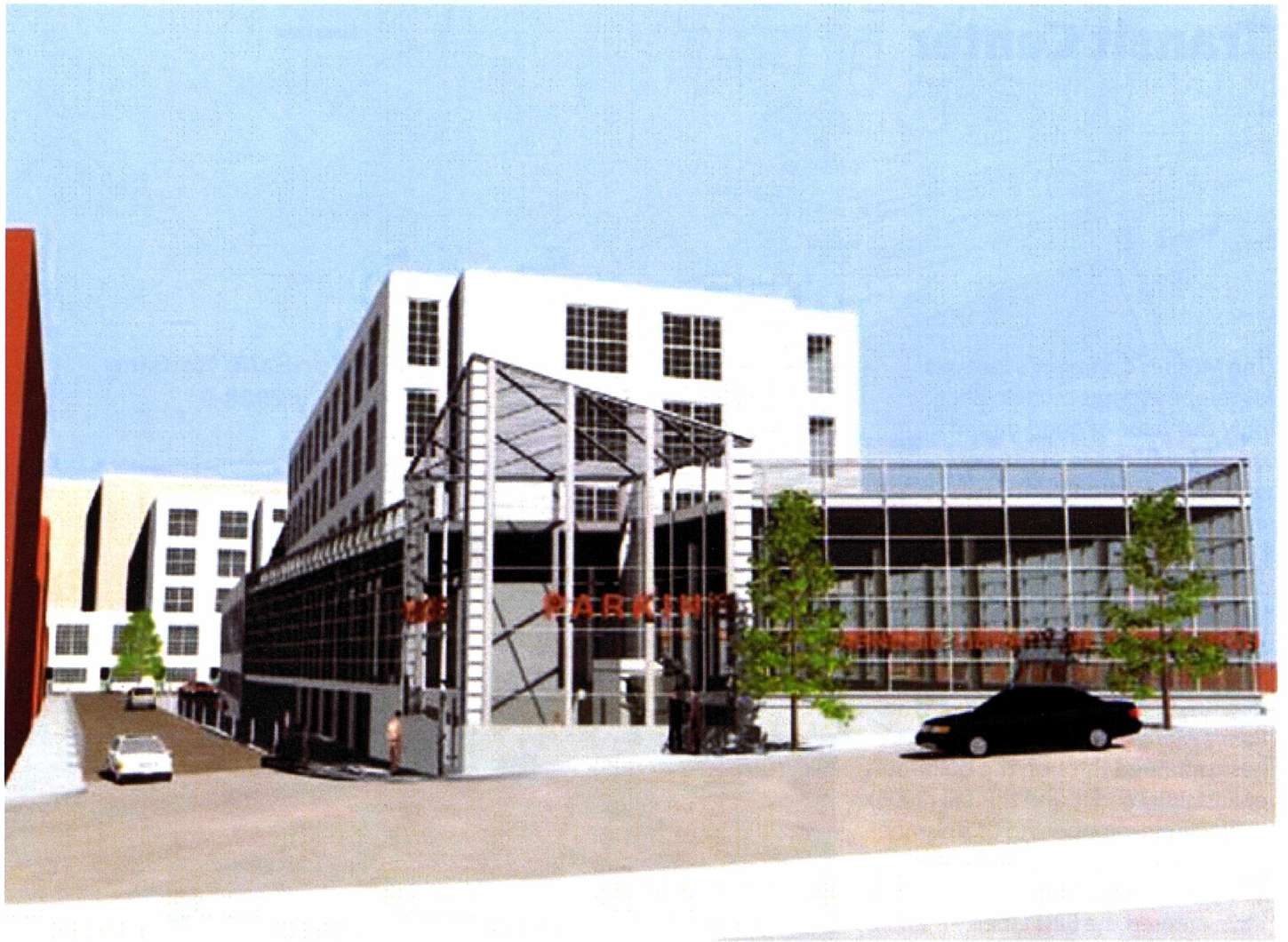
This information was based on current plans for structured facilities, and market/parking reports for unstructured spaces.

|                                |                             |
|--------------------------------|-----------------------------|
| Description:                   | Structured and Unstructured |
| Status/Delivery Date:          | Planning/Design/ Mixed      |
| Cost of Public Infrastructure: | \$14.5 M                    |
| Total Development Cost:        | \$14.5 M                    |
| Ratio of Public to Total:      | 100%                        |

Notes: **Figures include new parking for Eastside III development and new Town Square garage, as well as Penn Avenue street parking.**







Proposed parking facility at Eastside III, with at grade access to Highland Avenue.

Courtesy of The Mosites Company.



# Transit Center

The Mosites Company's Eastside development has modeled not only the value of good design in an urban context, but of the potential of private development working in concert with public community-development efforts.

Working closely with ELDI and other community organizations, Mosites has hit a string of successes beginning with the opening of Whole Foods Market in 2002. This success has continued through the build-out of Eastside I and II, and this fall (2006) will witness the opening of a number of quality retailers such as Borders Book Shop, who otherwise would not have entered the East Liberty market, offering not only quality jobs and raising property-values, but opening new social opportunities for area residents.

Eastside III is perhaps even more ambitious, looking to take advantage of the East End Busway to create a transit-oriented mixed-use development at the door of East Liberty.

While the bulk of infrastructure needs for this development have been broken out into either the Parking Infrastructure or the Penn Circle project, additional street and utility work is required to connect the project into neighboring residential communities.

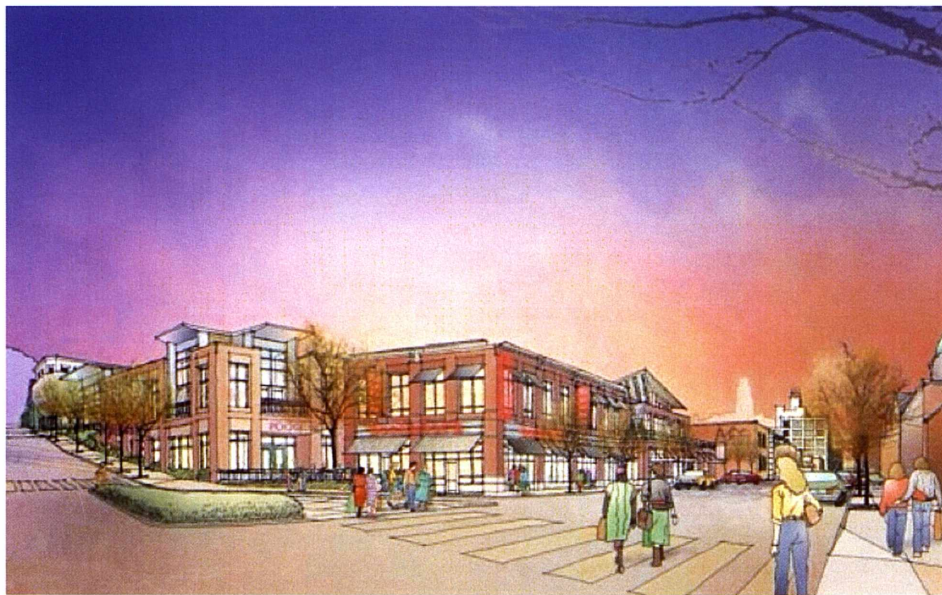
Description:  
Status/Delivery Date:

Cost of Public Infrastructure:  
Total Development Cost:  
Ratio of Public to Total:

**Infill For-Sale Housing  
Planning/2008-9**

**\$3.4 M  
\$62 M  
6%**

Notes: **Numbers do not include substantial work provided through parking project and Penn Circle.**



Graphics and design by  
Perfido, Weiskopf, Wagstaff + Goettel  
and The Design Alliance  
Courtesy of ELDI and The Mosites Company.





# Community Developments Beyond the Case Studies

The following projects are examples of grassroots community development and reinvestment in East Liberty.

While none of these projects is large enough to be directly linked to an urban-scale infrastructure need, they are all examples of private and public investment in the community, and will all be impacted by the infrastructure study discussed in this study.

For that reason, following is a brief overview of some of ELDI's recent progress in the community.

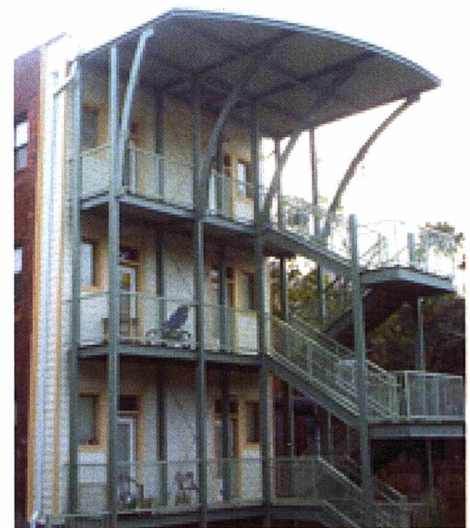


ELDI's **Mellon Street Rowhomes** and **Historic Enclave** programs are focused on bringing reinvestment into East Liberty's historic residential neighborhoods.

Using in-house capacities, ELDI strives to purchase, renovate, and sell rehabbed and new-construction townhomes and rowhouses in the neighborhood in an effort to save historic housing stock from decades of mismanagement, and also to provide a core of reinvestment along often blighted streets.

**Mellon Street Rowhomes** (700 Block of Mellon Street) consists of six, renovated row homes completed by ELDI and offered for sale.

**The Historic Enclave Program** includes over 80 new or restored housing units throughout historic blocks in East Liberty that have suffered continued decay through lack of investment and poor management. Units are offered at both market and affordable rates, and range from townhomes to condo units. Units are purchased by ELDI, renovated if possible, or otherwise demolished for new construction, and then sold.



**Sojourner House MOMS** are 16 units of supportive housing for formerly homeless women who are dually diagnosed and in recovery from substance abuse. Developed by ELDI and financed by PHFA (Penn Homes), the project hopes to provide services and housing for an underserved population through a partnership with Sojourner House, a program that helps women rebuild their lives through a structured program of individual, group, and family counseling.

The project is two-phase, the first six units (above) are already in place with an additional ten units in a second phase beginning construction in Summer 2006.

In a unique community cooperation, the Sojourner House project was "invited" into a neighborhood by the Negley Place Neighborhood Alliance.

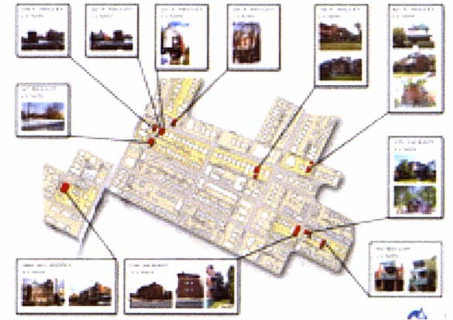
The success of this project has led to the planning of a **Dad's and Safe Haven House**. The "Dad's" project will consist of five buildings and a total 16 units of housing dedicated to formerly homeless parenting men who are dually diagnosed and in recovery from substance abuse.

Descriptions and Graphics courtesy of ELDI.



**Penn Manor Apartments** is the first of three sites dedicated to providing housing for East Liberty residents displaced by the closing of the community's public housing towers. A mixed-income, HUD financed project, Penn Manor Apartments will remake 4 properties and over 1000 units of poorly managed and blighted low-income rental units in a phased-redevelopment. The current phase will deliver 55 units of mixed-income apartments (38 affordable), with all modern amenities.

**Negley Neighbors Apartments** (above, right) is the second site for displaced residents from East Liberty's failed public housing towers, as well as part of the rental housing remake program. ELDI has established a partnership with developer S&A Homes to implement a scattered site Low-Income Housing tax Credit (LIHTC) project of 49 units to affirm long term affordable housing in the historic enclaves of East Liberty and Highland Park. The project will encompass 14 properties, and be a mix of 1, 2, and 3 bedroom units. This project will replace key substandard rental housing that are prohibiting redevelopment efforts in the community. Construction will begin in Spring 2006.



Additional community developments by ELDI include:

**Carriage House Lofts** will take a non-conforming use (repair garage) and convert it into 7 loft condo units. Development is scheduled for 2008.

**Collins Street Townhomes** is a development on a site directly across from the Liberty Park site, in one of the most blighted properties of East Liberty. ELDI has begun to secure this site, totaling 13 properties, and will look to reconfigure it to better protect housing from a busy traffic intersection. Early development schedules are proposing 20 units of affordable housing for the site.



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# Graphic Resources

## EAST LIBERTY DESIGN AND PLANNING PROJECTS

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7. Urban Design Associates. *Liberty Park Project Master Planning*. Pittsburgh, PA.

## MAPS AND GIS ANALYSIS

All Maps and GIS are courtesy of the Urban Lab, Carnegie Mellon University School of Architecture.

## EAST LIBERTY PICTURES

1. Library and Archives Division, Historical Society of Western Pennsylvania. Pittsburgh, PA.
2. East Liberty Development Corporation. Pittsburgh, PA.
3. Library Services, Carnegie Mellon University. Pittsburgh, PA.
4. Matthew Ciccone, Carnegie Mellon University. Pittsburgh, PA.



## Summary Proforma Analysis: Infrastructure East Liberty

The following Proforma Analysis was researched and completed by Matthew Ciccone in corporation with East Liberty Development Corporation over the Summer of 2006. It is enclosed to give the reader a more complete review of the analysis undertaken, as well as provide a more in-depth look at the framework used for future researchers.

If the reader is interested in further detail behind these summaries, or any additional questions about the analysis, its baseline assumptions, or framework, please feel free to contact me at **[mciccone@andrew.cmu.edu](mailto:mciccone@andrew.cmu.edu)**.

Please note that the enclosed information is the property of East Liberty Development Corporation and its development and design partners, including The Mosites Company, S&A Homes, McCormick Barron, EDAW, and the City of Pittsburgh.





# Summary

East Liberty Development Corporation

14 - Aug

## Infrastructure Costs - Total Summary

### By Line-Item:

#### Hard Costs

|                                  |                        |
|----------------------------------|------------------------|
| Total Public Street Improvements | \$4,021,439.50         |
| Total Public Parks               | \$6,120,992.00         |
| Total Utilities                  | \$2,126,100.00         |
| Total Structured Parking         | \$9,026,400.00         |
| Total Misc.                      | \$10,474,100.00        |
| <i>Green Build</i>               | <i>\$901,500.00</i>    |
| <i>General Misc</i>              | <i>\$9,572,600.00</i>  |
| <u>SubTotals</u>                 | <u>\$31,769,031.50</u> |

#### Soft Costs

|                 |                        |
|-----------------|------------------------|
| <u>Subtotal</u> | <u>\$10,723,027.34</u> |
|-----------------|------------------------|

|                        |                       |
|------------------------|-----------------------|
| <i>Contingency 20%</i> | <i>\$8,498,411.77</i> |
|------------------------|-----------------------|

|               |                     |
|---------------|---------------------|
| <b>Totals</b> | <b>\$50,990,471</b> |
|---------------|---------------------|

### By Project:

|                                       |                     |
|---------------------------------------|---------------------|
| 1 Mellons Orchard South               | \$6,200,921.17      |
| 2 Liberty Park                        | \$6,198,023.06      |
| 3 Town Square                         | \$7,286,243.63      |
| 4 Broad Street                        | \$393,667.47        |
| 5 Sheridan Avenue                     | \$155,193.75        |
| 6 Penn Circle*                        | \$12,816,000.00     |
| 7 Structured and Unstructured Parking | \$14,460,292.80     |
| 8 Transit Center                      | \$3,410,658.00      |
|                                       | <hr/>               |
|                                       | <b>\$50,921,000</b> |

|                                    |               |
|------------------------------------|---------------|
| Total Public Investment            | \$50,990,471  |
| Total Private Investment Leveraged | \$184,000,000 |
| <i>Ration of public to private</i> | 361%          |

\*80-20% Federal Highway Grant Match

East Liberty Development Corporation  
10-Aug  
**Infrastructure Costs - Totals Details**

By Line-Item:

| Label   | Cost Multiplier   | \$/CM       | Total CM    | Total Cost     | %/Hard-! %/Total |
|---|-------------------|-------------|-------------|----------------|------------------|
| <b>Hard Costs</b>                                       |                   |             |             |                |                  |
| 1 Site Prep   | Cubic Yard (CY)   | \$45.00     | 18,143      | \$816,428.25   |                  |
| 2 Subgrade Street Base - Normal                         | Square Yard (SY)  | \$10.00     | 0           | \$0.00         |                  |
| 3 Subgrade Street Base - Transit                        | Square Yard (SY)  | \$10.00     | 0           | \$0.00         |                  |
| 4 Street Paving (Bituminous)                            | Square Yard (SY)  | \$25.00     | 40,500      | \$1,012,511.25 |                  |
| 5 Curb  | Linear Foot (LF)  | \$25.00     | 16,910      | \$422,750.00   |                  |
| 6 Sidewalks   | Square Foot (SF)  | \$5.00      | 155,050     | \$775,250.00   |                  |
| 7 Depressed Curb  | Unit              | \$2,500.00  | 9           | \$22,500.00    |                  |
| 8 Street Parking / Cut                                  | Linear Foot (LF)? | \$0.00      | 0           | \$0.00         |                  |
| <i>subtotal streets and sidewalks</i>                   |                   |             |             | \$3,049,440    | 10% 7%           |
| 9 Handicap (HC) Ramps                                   | Each              | \$500.00    | 78          | \$39,000.00    |                  |
| 10 Trees and Grates                                     | Each              | \$1,000.00  | 228         | \$228,000.00   |                  |
| 11 Lawn / Landscaping                                   | Square Foot (SF)  | \$30.00     | 0           | \$0.00         |                  |
| 12 Lighting   | Each              | \$5,000.00  | 141         | \$705,000.00   |                  |
| <i>subtotal streetscaping</i>                           |                   |             |             | \$972,000      | 3% 2%            |
| 13 Water Line   | Linear Foot (LF)  | \$50.00     | 8,260       | \$413,000.00   |                  |
| 14 Hydrant  | Unit              | \$3,500.00  | 22          | \$77,000.00    |                  |
| 15 Sanitary Line  | Linear Foot (LF)  | \$90.00     | 4,990       | \$449,100.00   |                  |
| 16 Sanitary Manhole (MH)                                | Unit              | \$2,500.00  | 36          | \$90,000.00    |                  |
| 17 Storm Line   | Linear Foot (LF)  | \$85.00     | 10,200      | \$867,000.00   |                  |
| 18 Storm MH/Inlet                                       | Unit              | \$2,500.00  | 92          | \$230,000.00   |                  |
| <i>subtotal utility lines</i>                           |                   |             |             | \$2,126,100    | 7% 0%            |
| 19 Park / Public Space Site Prep                        | Acre              | \$50,000.00 | 2.5         | \$125,000.00   |                  |
| 20 Landscaping / Construction                           | Square Foot (SF)  | \$13.00     | 122,004.0   | \$1,586,052.00 |                  |
| 21 Streetscaping / Construction                         | Square Foot (SF)  | \$30.00     | 108,474.0   | \$3,254,220.00 |                  |
| 22 Public Space / Construction                          | Square Foot (SF)  | \$40.00     | 28,893.0    | \$1,155,720.00 |                  |
| <i>subtotal green/public space</i>                      |                   |             |             | \$6,120,992    | 19% 14%          |
| 23 Parking - Unstructured                               | Per Space         | \$100.00    | 264         | \$26,400.00    |                  |
| 24 Parking - Structured                                 | Per Space         | \$18,000.00 | 500         | \$9,000,000.00 |                  |
| <i>subtotal parking</i>                                 |                   |             |             | \$9,026,400    | 28% 21%          |
| 25 Geo-Exchange Exploration                             |                   | \$15,000.00 | 1           | \$15,000       |                  |
| 26 Column Loop Field                                    | Linear Foot (LF)  | \$17.00     | 34500       | \$586,500      |                  |
| 27 Green Build Cost Premium (MOS)                       |                   | 2.11%       |             | \$300,000      |                  |
| <i>subtotal "Green" infra.</i>                          |                   |             |             | \$901,500      | 3% 2%            |
| 28 Misc. - Pavilion (TS)                                | Square Foot (SF)  | \$175.00    | 600         | \$105,000      |                  |
| 28 Misc. - Broken Storm Drains (BS)                     |                   | \$12.00     | 800         | \$9,600        |                  |
| 28 Misc. - Penn Circle Work (Streetscaping)             |                   |             |             | \$8,000,000    |                  |
| 28 Misc. - Additional Improvements (TC Square Foot (SF) |                   | \$30.00     | \$48,600.00 | \$1,458,000.00 |                  |
| 28 Misc.  |                   |             |             |                |                  |
| 28 Misc.  |                   |             |             |                |                  |
| 28 Misc.  |                   |             |             |                |                  |
| 28 Misc.  |                   |             |             |                |                  |
| 28 Misc.  |                   |             |             |                |                  |
| 29 Contingencies  | 20%               |             |             |                |                  |
| <i>subtotal misc.</i>                                   |                   |             |             | \$9,572,600    | 30% 23%          |
| <b>Total - Hard Costs</b>                               |                   |             |             | \$31,769,032   |                  |
| <b>% Estimates</b>                                      |                   |             |             |                |                  |
| <b>Soft Costs</b>                                       |                   |             |             |                |                  |
| 30 Environmental  | 1.00%             |             |             | \$317,690      |                  |
| 31 Engineering  | 1.00%             |             |             | \$317,690      |                  |
| 32 Design / Architecture Fees                           | 5.00%             |             |             | \$1,588,452    |                  |
| 33 Green Consultant Fees                                | 2.00%             |             |             | \$635,381      |                  |
| 34 LEED Fees  | 0.00%             |             |             | \$0            |                  |
| 35 Legal Fees   | 0.50%             |             |             | \$158,845      |                  |
| 36 Insurance  | 2.50%             |             |             | \$794,226      |                  |
| 37 Accounting   | 2.50%             |             |             | \$794,226      |                  |
| 38 Loan and Grant Fees                                  | 4.00%             |             |             | \$1,270,761    |                  |
| 39 Taxes  | 0.00%             |             |             | \$0            |                  |
| 40 Mobilization / Surveying                             | 5.00%             |             |             | \$1,588,452    |                  |
| 41 Construction Overhead                                | 5.00%             |             |             | \$1,588,452    |                  |
| 42 Construction Management                              | 5.00%             |             |             | \$1,588,452    |                  |
| 43 Misc.  | 0.00%             |             |             | \$80,402       |                  |
| 44 Other - Description                                  | 0                 |             |             | \$0            |                  |
| <b>Total - Soft Costs</b>                               |                   |             |             | \$10,723,027   |                  |

**Total Infrastructure Cost** : \$42,492,059  
plus Contingency (20%) : \$8,498,411.77  
**\$50,990,471**



# Mellons Orchard South

East Liberty Development Corporation  
10 - Aug

## MOS Infrastructure

| <b>Cost Overview:</b>     | <b>Totals</b> |
|---------------------------|---------------|
| Total Project Cost        | \$43,000,000  |
| Total Infrastructure Cost | \$1,033,487   |
| Percentage Infra Cost     | 2%            |

### Breakdown by Line-Item:

|                                  |                    |
|----------------------------------|--------------------|
| <u>Hard Costs</u>                |                    |
| Total Public Street Improvements | \$1,375,361        |
| Total Public Parks               | \$580,400          |
| Total Utilities                  | \$953,250          |
| Total Structured Parking         | \$0                |
| Total Misc.                      | \$901,500          |
| <i>Green Build</i>               | \$901,500          |
| <i>General Misc</i>              | \$0                |
| <u>Subtotal</u>                  | <u>\$3,810,511</u> |
| <u>Soft Costs:</u>               |                    |
| <u>Subtotal</u>                  | \$1,356,923        |
| Contingency 20%                  | \$1,033,487        |
| <b>Total Cost</b>                | <b>\$6,200,921</b> |

### Breakdown by Project:

|                                 |                           |
|---------------------------------|---------------------------|
| N. Beatty St (300 Block)        | \$134,027.75              |
| Harvard St. (5700-5800 Block)   | \$643,333.25              |
| Broad St. (Ansley) (5700 Block) | \$187,639.00              |
| N. St. Clair St. (300 Block)    | \$241,250.00              |
| Penn Circle West                | \$379,194.50              |
| Penn Circle North               | \$178,444.50              |
| Garland Park                    | \$580,400.00              |
| 3 Public Alleys                 | \$146,722.25              |
| Overhead and Misc.              | \$1,319,500.00            |
| <i>Soft Costs</i>               | \$1,356,923.06            |
| Contingency 20%                 | \$1,033,487               |
|                                 | <u><b>\$6,200,921</b></u> |

**Overall Estimated Infrastructure Cost**

|                                   |                   |             |             |                | % / Hard-      |     |
|-----------------------------------|-------------------|-------------|-------------|----------------|----------------|-----|
| Label                             | Cost Multiplier   | \$/CM       | Total CM    | Total Cost     | % / Total Soft |     |
| Hard Costs                        |                   |             |             |                |                |     |
| 1 Site Prep                       | Cubic Yard (CY)   | \$45.00     | 0           | \$0.00         |                |     |
| 2 Subgrade Street Base - Normal   | Square Yard (SY)  | \$10.00     | 0           | \$0.00         |                |     |
| 3 Subgrade Street Base - Transit  | Square Yard (SY)  | \$10.00     | 0           | \$0.00         |                |     |
| 4 Street Paving (Bituminous)      | Square Yard (SY)  | \$25.00     | 18194.45    | \$454,861.25   |                |     |
| 5 Curb                            | Linear Foot (LF)  | \$25.00     | 7000        | \$175,000.00   |                |     |
| 6 Sidewalks                       | Square Foot (SF)  | \$5.00      | 105,000     | \$525,000.00   |                |     |
| 7 Depressed Curb                  | Unit              | \$2,500.00  | 0           | \$0.00         |                |     |
| 8 Street Parking / Cut            | Linear Foot (LF)? | \$0.00      | 0           | \$0.00         |                |     |
| subtotal streets and sidewalks    |                   |             |             | \$1,154,861.25 | 22%            | 30% |
| 9 Handicap (HC) Ramps             | Each              | \$500.00    | 41          | \$20,500.00    |                |     |
| 10 Trees and Grates               | Each              | \$1,000.00  | 0           | \$0.00         |                |     |
| 11 Lawn / Landscaping             | Square Foot (SF)  | \$30.00     | 0           | \$0.00         |                |     |
| 12 Lighting                       | Each              | \$5,000.00  | 40          | \$200,000.00   |                |     |
| subtotal streetscaping            |                   |             |             | \$220,500.00   | 4%             | 6%  |
| 13 Water Line                     | Linear Foot (LF)  | \$50.00     | 3500        | \$175,000.00   |                |     |
| 14 Hydrant                        | Unit              | \$3,500.00  | 10          | \$35,000.00    |                |     |
| 15 Sanitary Line                  | Linear Foot (LF)  | \$90.00     | 2250        | \$202,500.00   |                |     |
| 16 Sanitary Manhole (MH)          | Unit              | \$2,500.00  | 15          | \$37,500.00    |                |     |
| 17 Storm Line                     | Linear Foot (LF)  | \$85.00     | 4450        | \$378,250.00   |                |     |
| 18 Storm MH/Inlet                 | Unit              | \$2,500.00  | 50          | \$125,000.00   |                |     |
| subtotal utility lines            |                   |             |             | \$953,250.00   | 18%            | 25% |
| 19 Park / Public Space Site Prep  | Acre              | \$50,000.00 | 1           | \$50,000.00    |                |     |
| 20 Parkspace / Construction       | Square Foot (SF)  | \$13.00     | 40800       | \$530,400.00   |                |     |
| 21 Streetscaping / Construction   | Square Foot (SF)  | \$30.00     | 0           | \$0.00         |                |     |
| 22 Public Space / Construction    | Square Foot (SF)  | \$40.00     | 0           | \$0.00         |                |     |
| subtotal green/public space       |                   |             |             | \$580,400.00   | 11%            | 15% |
| 23 Parking - Unstructured         | Per Space         | \$100.00    | 0           | \$0.00         |                |     |
| 24 Parking - Structured           | Per Space         | \$18,000.00 | 0           | \$0.00         |                |     |
| subtotal parking                  |                   |             |             | \$0.00         | 0%             | 0%  |
| 25 Geo-Exchange Exploration       |                   | \$15,000.00 | 1           | \$15,000.00    |                |     |
| 26 Column Loop Field              | Linear Foot (LF)  | \$17.00     | 34500       | \$586,500.00   |                |     |
| 27 Green Build Cost Premium (MOS) |                   | 2.11%       |             | \$300,000.00   |                |     |
| subtotal "Green" infra.           |                   |             |             | \$901,500.00   | 17%            | 24% |
| 28 Misc.                          |                   |             |             |                |                |     |
| 29 Contingencies                  | 5%                |             |             |                |                |     |
| subtotal misc.                    |                   |             |             | 0              | 0%             | 0%  |
| Total - Hard Costs                |                   |             |             | \$3,810,511    |                |     |
| Label                             |                   |             | % Estimates |                |                |     |
| Soft Costs                        |                   |             |             |                |                |     |
| 30 Environmental                  | 1.00%             |             |             | \$38,105       |                |     |
| 31 Engineering                    | 1.00%             |             |             | \$38,105       |                |     |
| 32 Design / Architecture Fees     | 5.00%             |             |             | \$190,526      |                |     |
| 33 Green Consultant Fees          | 2.00%             |             |             | \$76,210       |                |     |
| 34 LEED Fees                      | 0.00%             |             |             | \$0            |                |     |
| 35 Legal Fees                     | 0.50%             |             |             | \$19,053       |                |     |
| 36 Insurance                      | 2.50%             |             |             | \$95,263       |                |     |
| 37 Accounting                     | 2.50%             |             |             | \$95,263       |                |     |
| 38 Loan and Grant Fees            | 4.00%             |             |             | \$152,420      |                |     |
| 39 Taxes                          | 0.00%             |             |             | \$0            |                |     |
| 40 Mobilization / Surveying       | 5.00%             |             |             | \$190,526      |                |     |
| 41 Construction Overhead          | 5.00%             |             |             | \$190,526      |                |     |
| 42 Construction Management        | 5.00%             |             |             | \$190,526      |                |     |
| 43 Misc.                          | 2.11%             |             |             | \$80,402       |                |     |
| 44 Other - Description            | 0.00%             |             |             | \$0            |                |     |
| Total - Soft Costs                |                   |             |             | \$1,356,923    |                |     |

**Total Infrastructure Cost** : \$5,167,434  
29 plus Contingencies (20%) : \$1,033,487  
**\$6,200,921**



# Liberty Park

East Liberty Development Corporation  
10 - Aug  
**Liberty Park Infrastructure Costs**

| <b>Cost Overview:</b>            | <b>Totals</b>      |
|----------------------------------|--------------------|
| Total Project Cost               | \$45,000,000       |
| Total Infrastructure Cost        | \$6,198,023        |
| Percentage Infra Cost            | 14%                |
| <b>Breakdown by Line-Item:</b>   |                    |
| <b>Hard Costs</b>                |                    |
| Total Public Street Improvements | \$1,898,178        |
| Total Public Parks               | \$923,900          |
| Total Utilities                  | \$1,046,850        |
| Total Structured Parking         | \$0                |
| Total Misc.                      | \$0                |
| <i>Green Build</i>               | \$0                |
| <i>General Misc</i>              | \$0                |
| <b>Subtotal</b>                  | <b>\$3,868,928</b> |
| <b>Soft Costs:</b>               |                    |
| <b>Subtotal</b>                  | <b>\$1,296,091</b> |
| Contingency 20%                  | \$1,033,004        |
| <b>Total Cost</b>                | <b>\$6,198,023</b> |

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|   |                    |
|---|--------------------|
| <b>Breakdown by Project:</b>            |                    |
| Broad Street                            | \$46,000.00        |
| Larimer Place 1,2,3                     | \$435,250.00       |
| Collins Street                          | \$134,000.00       |
| Station Street                          | \$393,250.00       |
| B Street 2,3                            | \$370,550.00       |
| C Street 1,2,3                          | \$370,550.00       |
| East Liberty Blvd                       | \$91,500.00        |
| New Public Alleys                       | \$229,000.00       |
| Utilities (Specific Needs)              | \$175,500.00       |
| New Parks (Triangle and East Lib. Blvd) | \$923,900.00       |
| Site / Overhead, Misc                   | \$699,428.25       |
| <i>Soft Costs</i>                       | <i>\$1,296,091</i> |
| <i>Contingency 20%</i>                  | <i>\$1,033,004</i> |
|   | <b>\$6,198,023</b> |

**Overall Estimated Infrastructure Cost**

| Label                                 | Cost Multiplier   | \$/CM       | Total CM | Total Cost   | %/Hard-Soft | %/Total |
|---------------------------------------|-------------------|-------------|----------|--------------|-------------|---------|
| <b>Hard Costs</b>                     |                   |             |          |              |             |         |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 15,543   | \$699,428    |             |         |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0        | \$0          |             |         |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0        | \$0          |             |         |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 9,030    | \$225,750    |             |         |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 8,170    | \$204,250    |             |         |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 36,750   | \$183,750    |             |         |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 7        | \$17,500     |             |         |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0        | \$0          |             |         |
| <i>subtotal streets and sidewalks</i> |                   |             |          | \$1,330,678  | 34%         | 26%     |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 33       | \$16,500     |             |         |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 191      | \$191,000    |             |         |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0        | \$0          |             |         |
| 12 Lighting                           | Each              | \$5,000.00  | 72       | \$360,000    |             |         |
| <i>subtotal streetscaping</i>         |                   |             |          | \$567,500    | 15%         | 11%     |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 4,260    | \$213,000    |             |         |
| 14 Hydrant                            | Unit              | \$3,500.00  | 11       | \$38,500     |             |         |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     | 2,240    | \$201,600    |             |         |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  | 19       | \$47,500     |             |         |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     | 5,250    | \$446,250    |             |         |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  | 40       | \$100,000    |             |         |
| <i>subtotal utility lines</i>         |                   |             |          | \$1,046,850  | 27%         | 20%     |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 1.5      | \$75,000.00  |             |         |
| 20 Landscaping / Construction         | Square Foot (SF)  | \$13.00     | 65,300   | \$848,900.00 |             |         |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 0        | \$0.00       |             |         |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 0        | \$0.00       |             |         |
| <i>subtotal green/public space</i>    |                   |             |          | \$923,900    | 24%         | 18%     |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 0        | \$0          |             |         |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 0        | \$0          |             |         |
| <i>subtotal parking</i>               |                   |             |          | \$0          | 0%          | 0%      |
| 25 Geo-Exchange Exploration           |                   |             | 0        | \$0          |             |         |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0        | \$0          |             |         |
| 27 Misc. Green Build                  |                   |             | 0        | \$0          |             |         |
| <i>subtotal "Green" infra.</i>        |                   |             |          | \$0          | 0%          | 0%      |
| 28 Misc.                              |                   |             | 0        | \$0          |             |         |
| 29 Contingencies                      | 5%                |             | 0        | \$0          |             |         |
| <i>subtotal misc.</i>                 |                   |             |          | \$0          | 0%          | 0%      |
| <b>Total - Hard Costs</b>             |                   |             |          | \$3,868,928  |             |         |
| <b>Soft Costs</b>                     |                   |             |          |              |             |         |
| 30 Environmental                      | 1.00%             |             |          | \$38,689     |             |         |
| 31 Engineering                        | 1.00%             |             |          | \$38,689     |             |         |
| 32 Design / Architecture Fees         | 5.00%             |             |          | \$193,446    |             |         |
| 33 Green Consultant Fees              | 2.00%             |             |          | \$77,379     |             |         |
| 34 LEED Fees                          | 0.00%             |             |          | \$0          |             |         |
| 35 Legal Fees                         | 0.50%             |             |          | \$19,345     |             |         |
| 36 Insurance                          | 2.50%             |             |          | \$96,723     |             |         |
| 37 Accounting                         | 2.50%             |             |          | \$96,723     |             |         |
| 38 Loan and Grant Fees                | 4.00%             |             |          | \$154,757    |             |         |
| 39 Taxes                              | 0.00%             |             |          | \$0          |             |         |
| 40 Mobilization / Surveying           | 5.00%             |             |          | \$193,446    |             |         |
| 41 Construction Overhead              | 5.00%             |             |          | \$193,446    |             |         |
| 42 Construction Management            | 5.00%             |             |          | \$193,446    |             |         |
| 43 Misc.                              | 0.00%             |             |          | \$0          |             |         |
| 44 Other - Description                | 0.00%             |             |          | \$0          |             |         |
| <b>Total - Soft Costs</b>             |                   |             |          | \$1,296,091  |             |         |

**Total Infrastructure Cost** : \$5,165,019  
29 plus Contingencies (20%) : \$1,033,004  
**\$6,198,023**



# Town Square

East Liberty Development Corporation  
11 - Aug  
**Town Square**

| <b>Cost Overview:</b>            | <b>Totals</b>      |
|----------------------------------|--------------------|
| Total Project Cost               | \$32,000,000       |
| Total Infrastructure Cost        | \$7,286,244        |
| Percentage Infra Cost            | 23%                |
| <b>Breakdown by Line-Item:</b>   |                    |
| Hard Costs                       |                    |
| Total Public Street Improvements | \$306,525          |
| Total Public Parks               | \$4,136,692        |
| Total Utilities                  | \$0                |
| Total Structured Parking         | \$0                |
| Total Misc.                      | \$105,000          |
| <i>Green Build</i>               | \$0                |
| <i>General Misc</i>              | \$105,000          |
| Subtotal                         | \$4,548,217        |
| Soft Costs:                      |                    |
| Subtotal                         | \$1,523,653        |
| Contingency 20%                  | \$1,214,374        |
| <b>Total Cost</b>                | <b>\$7,286,244</b> |

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| <b>Breakdown by Project:</b> |                    |
|------------------------------|--------------------|
| Penn Avenue Streetscape      | \$1,572,210.00     |
| Highland Avenue              | \$446,730.00       |
| Baum Boulevard               | \$401,100.00       |
| Whitfield Street             | \$660,705.00       |
| Liberty Plaza                | \$924,840.00       |
| Baum/Whitfield Plaza         | \$230,880.00       |
| Church Gardens               | \$238,560.00       |
| Liberty Plaza Pavilion       | \$105,000.00       |
| Soft Costs                   | \$1,523,653        |
| Contingency 20%              | \$1,214,374        |
|                              | <b>\$7,318,052</b> |

**Overall Estimated Infrastructure Cost**

| Label                                 | Cost Multiplier   | \$/CM       | Total CM | Total Cost  | %/Hard-S | %/Total |
|---------------------------------------|-------------------|-------------|----------|-------------|----------|---------|
| <b>Hard Costs</b>                     |                   |             |          |             |          |         |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 0        | \$0         |          |         |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0        | \$0         |          |         |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0        | \$0         |          |         |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 12,261   | \$306,525   |          |         |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 0        | \$0         |          |         |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 0        | \$0         |          |         |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 0        | \$0         |          |         |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0        | \$0         |          |         |
| <i>subtotal streets and sidewalks</i> |                   |             |          | \$306,525   | 7%       | 5%      |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 0        | \$0         |          |         |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 0        | \$0         |          |         |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0        | \$0         |          |         |
| 12 Lighting                           | Each              | \$5,000.00  | 0        | \$0         |          |         |
| <i>subtotal streetscaping</i>         |                   |             |          | \$0         | 0%       | 0%      |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 0        | \$0         |          |         |
| 14 Hydrant                            | Unit              | \$3,500.00  |          | \$0         |          |         |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     |          | \$0         |          |         |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  |          | \$0         |          |         |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     |          | \$0         |          |         |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  |          | \$0         |          |         |
| <i>subtotal utility lines</i>         |                   |             |          | \$0         | 0%       | 0%      |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 0.0      | \$0         |          |         |
| 20 Landscaping / Construction         | Square Foot (SF)  | \$13.00     | 15,904.0 | \$206,752   |          |         |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 92,474.0 | \$2,774,220 |          |         |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 28,893.0 | \$1,155,720 |          |         |
| <i>subtotal green/public space</i>    |                   |             |          | \$4,136,692 | 91%      | 68%     |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 0        | \$0         |          |         |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 0        | \$0         |          |         |
| <i>subtotal parking</i>               |                   |             |          | \$0         | 0%       | 0%      |
| 25 Geo-Exchange Exploration           |                   |             | 0        | \$0         |          |         |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0        | \$0         |          |         |
| 27 Green Build Cost Premium           | 2.11%             |             | 0        | \$0         |          |         |
| <i>subtotal "Green" infra.</i>        |                   |             |          | \$0         | 0%       | 0%      |
| 28 Misc. - Pavilion (TS)              |                   | \$175.00    | 600      | \$105,000   |          |         |
| 29 Contingencies                      | 5%                |             | 0        | \$0         |          |         |
| <i>subtotal misc.</i>                 |                   |             |          | \$105,000   | 2%       | 2%      |
| <b>Total - Hard Costs</b>             |                   |             |          | \$4,548,217 |          |         |
| <b>Soft Costs</b>                     |                   |             |          |             |          |         |
| 30 Environmental                      | 1.00%             |             |          | \$45,482    |          |         |
| 31 Engineering                        | 1.00%             |             |          | \$45,482    |          |         |
| 32 Design / Architecture Fees         | 5.00%             |             |          | \$227,411   |          |         |
| 33 Green Consultant Fees              | 2.00%             |             |          | \$90,964    |          |         |
| 34 LEED Fees                          | 0.00%             |             |          | \$0         |          |         |
| 35 Legal Fees                         | 0.50%             |             |          | \$22,741    |          |         |
| 36 Insurance                          | 2.50%             |             |          | \$113,705   |          |         |
| 37 Accounting                         | 2.50%             |             |          | \$113,705   |          |         |
| 38 Loan and Grant Fees                | 4.00%             |             |          | \$181,929   |          |         |
| 39 Taxes                              | 0.00%             |             |          | \$0         |          |         |
| 40 Mobilization / Surveying           | 5.00%             |             |          | \$227,411   |          |         |
| 41 Construction Overhead              | 5.00%             |             |          | \$227,411   |          |         |
| 42 Construction Management            | 5.00%             |             |          | \$227,411   |          |         |
| 43 Misc.                              | 0.00%             |             |          | \$0         |          |         |
| 44 Other - Description                | 0.00%             |             |          | \$0         |          |         |
| <b>Total - Soft Costs</b>             |                   |             |          | \$1,523,653 |          |         |

**Total Infrastructure Cost** : \$6,071,870  
29 plus Contingencies (20%) : \$1,214,374  
**\$7,286,244**



# Broad Street Visionary Plan

East Liberty Development Corporation  
11 - Aug  
**Broad Street Visionary Plan**

| <b>Cost Overview:</b>            | <b>Totals</b>    |
|----------------------------------|------------------|
| Total Project Cost               | \$393,667        |
| Total Infrastructure Cost        | \$393,667        |
| Percentage Infra Cost            | 100%             |
| <b>Breakdown by Line-Item:</b>   |                  |
| Hard Costs                       |                  |
| Total Public Street Improvements | \$279,500        |
| Total Public Parks               | \$0              |
| Total Utilities                  | \$0              |
| Total Structured Parking         | \$0              |
| Total Misc.                      | \$9,600          |
| Green Build                      | \$0              |
| General Misc                     | \$9,600          |
| Subtotal                         | \$289,100        |
| Soft Costs:                      |                  |
| Subtotal                         | \$96,849         |
| Contingency 20%                  | \$7,719          |
| <b>Total Cost</b>                | <b>\$393,667</b> |

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|                              |                  |
|------------------------------|------------------|
| <b>Breakdown by Project:</b> |                  |
| Broad Street Project         | \$269,100.00     |
| Soft Costs                   | \$96,849         |
| Contingency 20%              | \$7,719          |
|                              | <hr/>            |
|                              | <b>\$373,667</b> |

## Broad Street Visionary Plan

## Overall Estimated Infrastructure Cost

| Label                                 | Cost Multiplier   | \$/CM              | Total CM | Total Cost | %/Hard-Soft | %/Total |
|---------------------------------------|-------------------|--------------------|----------|------------|-------------|---------|
| <b>Hard Costs</b>                     |                   |                    |          |            |             |         |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00            | 2,000    | \$90,000   |             |         |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00            | 0        | \$0        |             |         |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00            | 0        | \$0        |             |         |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00            | 500      | \$12,500   |             |         |
| 5 Curb                                | Linear Foot (LF)  | \$25.00            | 800      | \$20,000   |             |         |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00             | 1,400    | \$7,000    |             |         |
| 7 Depressed Curb                      | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00             | 0        | \$0        |             |         |
| <i>subtotal streets and sidewalks</i> |                   |                    |          | \$129,500  | 45%         | 34%     |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00           | 0        | \$0        |             |         |
| 10 Trees and Grates                   | Each              | \$1,000.00         | 25       | \$25,000   |             |         |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00            | 0        | \$0        |             |         |
| 12 Lighting                           | Each              | \$5,000.00         | 25       | \$125,000  |             |         |
| <i>subtotal streetscaping</i>         |                   |                    |          | \$150,000  | 52%         | 39%     |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00            | 0        | \$0        |             |         |
| 14 Hydrant                            | Unit              | \$3,500.00         | 0        | \$0        |             |         |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00            | 0        | \$0        |             |         |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00            | 0        | \$0        |             |         |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| <i>subtotal utility lines</i>         |                   |                    |          | \$0        | 0%          | 0%      |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00        | 0.0      | \$0        |             |         |
| 20 Landscaping / Construction         | Square Foot (SF)  | \$13.00            | 0.0      | \$0        |             |         |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00            | 0.0      | \$0        |             |         |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00            | 0.0      | \$0        |             |         |
| <i>subtotal green/public space</i>    |                   |                    |          | \$0        | 0%          | 0%      |
| 23 Parking - Unstructured             | Per Space         | \$100.00           | 0        | \$0        |             |         |
| 24 Parking - Structured               | Per Space         | \$18,000.00        | 0        | \$0        |             |         |
| <i>subtotal parking</i>               |                   |                    |          | \$0        | 0%          | 0%      |
| 25 Geo-Exchange Exploration           |                   |                    | 0        | \$0        |             |         |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00            | 0        | \$0        |             |         |
| 27 Green Build Cost Premium           | 2.11%             |                    | 0        | \$0        |             |         |
| <i>subtotal "Green" infra.</i>        |                   |                    |          | \$0        | 0%          | 0%      |
| 28 Misc. - Broken Storm Drains (BS)   |                   | \$12.00            | 800      | \$9,600    |             |         |
| 29 Contingencies                      | 5%                |                    | 0        | \$0        |             |         |
| <i>subtotal misc.</i>                 |                   |                    |          | \$9,600    | 3%          | 2%      |
| <b>Total - Hard Costs</b>             |                   |                    |          | \$289,100  |             |         |
| <b>Soft Costs</b>                     |                   |                    |          |            |             |         |
| <b>Label</b>                          |                   | <b>% Estimates</b> |          |            |             |         |
| 30 Environmental                      | 1.00%             |                    |          | \$2,891    |             |         |
| 31 Engineering                        | 1.00%             |                    |          | \$2,891    |             |         |
| 32 Design / Architecture Fees         | 5.00%             |                    |          | \$14,455   |             |         |
| 33 Green Consultant Fees              | 2.00%             |                    |          | \$5,782    |             |         |
| 34 LEED Fees                          | 0.00%             |                    |          | \$0        |             |         |
| 35 Legal Fees                         | 0.50%             |                    |          | \$1,446    |             |         |
| 36 Insurance                          | 2.50%             |                    |          | \$7,228    |             |         |
| 37 Accounting                         | 2.50%             |                    |          | \$7,228    |             |         |
| 38 Loan and Grant Fees                | 4.00%             |                    |          | \$11,564   |             |         |
| 39 Taxes                              | 0.00%             |                    |          | \$0        |             |         |
| 40 Mobilization / Surveying           | 5.00%             |                    |          | \$14,455   |             |         |
| 41 Construction Overhead              | 5.00%             |                    |          | \$14,455   |             |         |
| 42 Construction Management            | 5.00%             |                    |          | \$14,455   |             |         |
| 43 Misc.                              | 0.00%             |                    |          | \$0        |             |         |
| 44 Other - Description                | 0.00%             |                    |          | \$0        |             |         |
| <b>Total - Soft Costs</b>             |                   |                    |          | \$96,849   |             |         |

**Total Infrastructure Cost** : \$385,949  
 29 plus Contingencies (20%) \$7,719  
**\$393,667**



# Sheridan Avenue Connection

East Liberty Development Corporation  
14 - Aug  
**Sheridan Avenue**

| <b>Cost Overview:</b>            |     | <b>Totals</b>    |
|----------------------------------|-----|------------------|
| Total Project Cost               |     | \$2,000,000      |
| Total Infrastructure Cost        |     | \$129,328        |
| Percentage Infra Cost            |     | 6%               |
| <b>Breakdown by Line-Item:</b>   |     |                  |
| Hard Costs                       |     |                  |
| Total Public Street Improvements |     | \$96,875         |
| Total Public Parks               |     | \$0              |
| Total Utilities                  |     | \$0              |
| Total Structured Parking         |     | \$0              |
| Total Misc.                      |     | \$0              |
| <i>Green Build</i>               | \$0 |                  |
| <i>General Misc</i>              | \$0 |                  |
| Subtotal                         |     | \$96,875         |
| Soft Costs:                      |     |                  |
| Subtotal                         |     | \$32,453         |
| Contingency 20%                  |     | \$25,866         |
| <b>Total Cost</b>                |     | <b>\$155,194</b> |

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|                              |                  |
|------------------------------|------------------|
| <b>Breakdown by Project:</b> |                  |
| Broad Street Project         | \$96,875.00      |
| <i>Soft Costs</i>            | \$32,453         |
| <i>Contingency 20%</i>       | \$25,866         |
|                              | <hr/>            |
|                              | <b>\$155,194</b> |

**Overall Estimated Infrastructure Cost**

| Label                                 | Cost Multiplier   | \$/CM              | Total CM | Total Cost | %/Hard-Soft | %/Total |
|---------------------------------------|-------------------|--------------------|----------|------------|-------------|---------|
| <b>Hard Costs</b>                     |                   |                    |          |            |             |         |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00            | 600      | \$27,000   |             |         |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00            | 0        | \$0        |             |         |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00            | 0        | \$0        |             |         |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00            | 515      | \$12,875   |             |         |
| 5 Curb                                | Linear Foot (LF)  | \$25.00            | 440      | \$11,000   |             |         |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00             | 4,400    | \$22,000   |             |         |
| 7 Depressed Curb                      | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00             | 0        | \$0        |             |         |
| <i>subtotal streets and sidewalks</i> |                   |                    |          | \$72,875   | 75%         | 56%     |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00           | 4        | \$2,000    |             |         |
| 10 Trees and Grates                   | Each              | \$1,000.00         | 12       | \$12,000   |             |         |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00            | 0        | \$0        |             |         |
| 12 Lighting                           | Each              | \$5,000.00         | 2        | \$10,000   |             |         |
| <i>subtotal streetscaping</i>         |                   |                    |          | \$24,000   | 25%         | 19%     |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00            | 0        | \$0        |             |         |
| 14 Hydrant                            | Unit              | \$3,500.00         | 0        | \$0        |             |         |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00            | 0        | \$0        |             |         |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00            | 0        | \$0        |             |         |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00         | 0        | \$0        |             |         |
| <i>subtotal utility lines</i>         |                   |                    |          | \$0        | 0%          | 0%      |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00        | 0.0      | \$0        |             |         |
| 20 Landscaping / Construction         | Square Foot (SF)  | \$13.00            | 0.0      | \$0        |             |         |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00            | 0.0      | \$0        |             |         |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00            | 0.0      | \$0        |             |         |
| <i>subtotal green/public space</i>    |                   |                    |          | \$0        | 0%          | 0%      |
| 23 Parking - Unstructured             | Per Space         | \$100.00           | 0        | \$0        |             |         |
| 24 Parking - Structured               | Per Space         | \$18,000.00        | 0        | \$0        |             |         |
| <i>subtotal parking</i>               |                   |                    |          | \$0        | 0%          | 0%      |
| 25 Geo-Exchange Exploration           |                   |                    | 0        | \$0        |             |         |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00            | 0        | \$0        |             |         |
| 27 Green Build Cost Premium           | 2.11%             |                    | 0        | \$0        |             |         |
| <i>subtotal "Green" infra.</i>        |                   |                    |          | \$0        | 0%          | 0%      |
| 28 Misc.                              |                   | \$12.00            | 0        | \$0        |             |         |
| 29 Contingencies                      | 5%                |                    | 0        | \$0        |             |         |
| <i>subtotal misc.</i>                 |                   |                    |          | \$0        | 0%          | 0%      |
| <b>Total - Hard Costs</b>             |                   |                    |          | \$96,875   |             |         |
| <b>Soft Costs</b>                     |                   |                    |          |            |             |         |
|                                       |                   | <b>% Estimates</b> |          |            |             |         |
| 30 Environmental                      | 1.00%             |                    |          | \$969      |             |         |
| 31 Engineering                        | 1.00%             |                    |          | \$969      |             |         |
| 32 Design / Architecture Fees         | 5.00%             |                    |          | \$4,844    |             |         |
| 33 Green Consultant Fees              | 2.00%             |                    |          | \$1,938    |             |         |
| 34 LEED Fees                          | 0.00%             |                    |          | \$0        |             |         |
| 35 Legal Fees                         | 0.50%             |                    |          | \$484      |             |         |
| 36 Insurance                          | 2.50%             |                    |          | \$2,422    |             |         |
| 37 Accounting                         | 2.50%             |                    |          | \$2,422    |             |         |
| 38 Loan and Grant Fees                | 4.00%             |                    |          | \$3,875    |             |         |
| 39 Taxes                              | 0.00%             |                    |          | \$0        |             |         |
| 40 Mobilization / Surveying           | 5.00%             |                    |          | \$4,844    |             |         |
| 41 Construction Overhead              | 5.00%             |                    |          | \$4,844    |             |         |
| 42 Construction Management            | 5.00%             |                    |          | \$4,844    |             |         |
| 43 Misc.                              | 0.00%             |                    |          | \$0        |             |         |
| 44 Other - Description                | 0.00%             |                    |          | \$0        |             |         |
| <b>Total - Soft Costs</b>             |                   |                    |          | \$32,453   |             |         |

**Total Infrastructure Cost** : \$129,328  
29 plus Contingencies (20%) : \$25,866  
**\$155,194**



# Penn Circle Project

East Liberty Development Corporation  
14 - Aug  
**Penn Circle**

| <b>Cost Overview:</b>            | <b>Totals</b>       |
|----------------------------------|---------------------|
| Total Project Cost               | \$12,816,000        |
| Total Infrastructure Cost        | \$12,816,000        |
| Percentage Infra Cost            | 100%                |
| <b>Breakdown by Line-Item:</b>   |                     |
| <u>Hard Costs</u>                |                     |
| Total Public Street Improvements | \$0                 |
| Total Public Parks               | \$0                 |
| Total Utilities                  | \$0                 |
| Total Structured Parking         | \$0                 |
| Total Misc.                      | \$8,000,000         |
| <i>Green Build</i>               | \$0                 |
| <i>General Misc</i>              | \$8,000,000         |
| <u>Subtotal</u>                  | <u>\$8,000,000</u>  |
| <u>Soft Costs:</u>               |                     |
| <u>Subtotal</u>                  | \$2,680,000         |
| Contingency (20%)                | \$2,136,000         |
| <b>Total Cost</b>                | <b>\$12,816,000</b> |

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|                                 |                            |
|---------------------------------|----------------------------|
| <b>Breakdown by Project:</b>    |                            |
| N. Beatty St (300 Block)        | \$0.00                     |
| Harvard St. (5700-5800 Block)   | \$0.00                     |
| Broad St. (Ansley) (5700 Block) | \$0.00                     |
| N. St. Clair St. (300 Block)    | \$0.00                     |
| Penn Circle West                | \$0.00                     |
| Penn Circle North               | \$0.00                     |
| Garland Park                    | \$0.00                     |
| 3 Public Alleys                 | \$0.00                     |
| Overhead and Misc.              | \$8,000,000.00             |
| <i>Soft Costs</i>               | <i>\$2,680,000.00</i>      |
| Contingency (20%)               | <i>\$2,136,000</i>         |
|                                 | <u><b>\$12,816,000</b></u> |

**Overall Estimated Infrastructure Cost**

| Label                                 | Cost Multiplier   | \$/CM       | Total CM | Total Cost     | %/Total | %/Hard-Soft |
|---------------------------------------|-------------------|-------------|----------|----------------|---------|-------------|
| <b>Hard Costs</b>                     |                   |             |          |                |         |             |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 0        | \$0.00         |         |             |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0        | \$0.00         |         |             |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0        | \$0.00         |         |             |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 0        | \$0.00         |         |             |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 0        | \$0.00         |         |             |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 0        | \$0.00         |         |             |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 0        | \$0.00         |         |             |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0        | \$0.00         |         |             |
| <i>subtotal streets and sidewalks</i> |                   |             |          | \$0.00         | 0%      | 0%          |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 0        | \$0.00         |         |             |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 0        | \$0.00         |         |             |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0        | \$0.00         |         |             |
| 12 Lighting                           | Each              | \$5,000.00  | 0        | \$0.00         |         |             |
| <i>subtotal streetscaping</i>         |                   |             |          | \$0.00         | 0%      | 0%          |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 0        | \$0.00         |         |             |
| 14 Hydrant                            | Unit              | \$3,500.00  | 0        | \$0.00         |         |             |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     | 0        | \$0.00         |         |             |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  | 0        | \$0.00         |         |             |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     | 0        | \$0.00         |         |             |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  | 0        | \$0.00         |         |             |
| <i>subtotal utility lines</i>         |                   |             |          | \$0.00         | 0%      | 0%          |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 0        | \$0.00         |         |             |
| 20 Parkspace / Construction           | Square Foot (SF)  | \$13.00     | 0        | \$0.00         |         |             |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 0        | \$0.00         |         |             |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 0        | \$0.00         |         |             |
| <i>subtotal green/public space</i>    |                   |             |          | \$0.00         | 0%      | 0%          |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 0        | \$0.00         |         |             |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 0        | \$0.00         |         |             |
| <i>subtotal parking</i>               |                   |             |          | \$0.00         | 0%      | 0%          |
| 25 Geo-Exchange Exploration           |                   | \$15,000.00 | 0        | \$0.00         |         |             |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0        | \$0.00         |         |             |
| 27 Green Build Cost Premium           | 2.11%             |             | 0        |                |         |             |
| <i>subtotal "Green" infra.</i>        |                   |             |          | \$0.00         | 0%      | 0%          |
| 28 Misc. - Penn Circle Work           |                   |             |          | \$8,000,000.00 |         |             |
| 29 Contingencies                      | 5%                |             |          |                |         |             |
| <i>subtotal misc.</i>                 |                   |             |          | 8000000        | 75%     | 100%        |
| <b>Total - Hard Costs</b>             |                   |             |          | \$8,000,000    |         |             |
| <b>% Estimates</b>                    |                   |             |          |                |         |             |
| <b>Soft Costs</b>                     |                   |             |          |                |         |             |
| 30 Environmental                      | 1.00%             |             |          | \$80,000       |         |             |
| 31 Engineering                        | 1.00%             |             |          | \$80,000       |         |             |
| 32 Design / Architecture Fees         | 5.00%             |             |          | \$400,000      |         |             |
| 33 Green Consultant Fees              | 2.00%             |             |          | \$160,000      |         |             |
| 34 LEED Fees                          | 0.00%             |             |          | \$0            |         |             |
| 35 Legal Fees                         | 0.50%             |             |          | \$40,000       |         |             |
| 36 Insurance                          | 2.50%             |             |          | \$200,000      |         |             |
| 37 Accounting                         | 2.50%             |             |          | \$200,000      |         |             |
| 38 Loan and Grant Fees                | 4.00%             |             |          | \$320,000      |         |             |
| 39 Taxes                              | 0.00%             |             |          | \$0            |         |             |
| 40 Mobilization / Surveying           | 5.00%             |             |          | \$400,000      |         |             |
| 41 Construction Overhead              | 5.00%             |             |          | \$400,000      |         |             |
| 42 Construction Management            | 5.00%             |             |          | \$400,000      |         |             |
| 43 Misc.                              | 0.00%             |             |          | \$0            |         |             |
| 44 Other - Description                | 0.00%             |             |          | \$0            |         |             |
| <b>Total - Soft Costs</b>             |                   |             |          | \$2,680,000    |         |             |

**Total Infrastructure Cost** : \$10,680,000  
29 plus Contingencies (20%) \$2,136,000  
**\$12,816,000**



# Parking

East Liberty Development Corporation  
14 - Aug  
**Structured Parking Scheme**

| <b>Cost Overview:</b>            | <b>Totals</b>       |
|----------------------------------|---------------------|
| Total Project Cost               | \$14,460,293        |
| Total Infrastructure Cost        | \$14,460,293        |
| Percentage Infra Cost            | 100%                |
| <b>Breakdown by Line-Item:</b>   |                     |
| Hard Costs                       |                     |
| Total Public Street Improvements | \$0                 |
| Total Public Parks               | \$0                 |
| Total Utilities                  | \$0                 |
| Total Structured Parking         | \$9,026,400         |
| Total Misc.                      | \$0                 |
| <i>Green Build</i>               | \$0                 |
| <i>General Misc</i>              | \$0                 |
| Subtotal                         | \$9,026,400         |
| Soft Costs:                      |                     |
| Subtotal                         | \$3,023,844         |
| Contingency 20%                  | \$2,410,049         |
| <b>Total Cost</b>                | <b>\$14,460,293</b> |

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|                              |                     |
|------------------------------|---------------------|
| <b>Breakdown by Project:</b> |                     |
| Town Center Facility         | \$4,526,400.00      |
| Eastside III Facility        | \$4,500,000.00      |
| Soft Costs                   | \$3,023,844.00      |
| 20% Contingency              | \$2,410,049         |
|                              | <b>\$14,460,293</b> |

**Overall Estimated Infrastructure Cost**

| Label                                 | Cost Multiplier   | \$/CM       | Total CM            | Total Cost     | %/Total | %/Hard-Soft |
|---------------------------------------|-------------------|-------------|---------------------|----------------|---------|-------------|
| <b>Hard Costs</b>                     |                   |             |                     |                |         |             |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 0                   | \$0.00         |         |             |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0                   | \$0.00         |         |             |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0                   | \$0.00         |         |             |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 0                   | \$0.00         |         |             |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 0                   | \$0.00         |         |             |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 0                   | \$0.00         |         |             |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 0                   | \$0.00         |         |             |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0                   | \$0.00         |         |             |
| <i>subtotal streets and sidewalks</i> |                   |             |                     | \$0.00         | 0%      | 0%          |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 0                   | \$0.00         |         |             |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 0                   | \$0.00         |         |             |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0                   | \$0.00         |         |             |
| 12 Lighting                           | Each              | \$5,000.00  | 0                   | \$0.00         |         |             |
| <i>subtotal streetscaping</i>         |                   |             |                     | \$0.00         | 0%      | 0%          |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 0                   | \$0.00         |         |             |
| 14 Hydrant                            | Unit              | \$3,500.00  | 0                   | \$0.00         |         |             |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     | 0                   | \$0.00         |         |             |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  | 0                   | \$0.00         |         |             |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     | 0                   | \$0.00         |         |             |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  | 0                   | \$0.00         |         |             |
| <i>subtotal utility lines</i>         |                   |             |                     | \$0.00         | 0%      | 0%          |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 0                   | \$0.00         |         |             |
| 20 Parkspace / Construction           | Square Foot (SF)  | \$13.00     | 0                   | \$0.00         |         |             |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 0                   | \$0.00         |         |             |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 0                   | \$0.00         |         |             |
| <i>subtotal green/public space</i>    |                   |             |                     | \$0.00         | 0%      | 0%          |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 264                 | \$26,400.00    |         |             |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 500                 | \$9,000,000.00 |         |             |
| <i>subtotal parking</i>               |                   |             |                     | \$9,026,400.00 | 75%     | 100%        |
| 25 Geo-Exchange Exploration           |                   | \$15,000.00 | 0                   | \$0.00         |         |             |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0                   | \$0.00         |         |             |
| 27 Green Build Cost Premium           | 2.11%             |             | 0                   |                |         |             |
| <i>subtotal "Green" infra.</i>        |                   |             |                     | \$0.00         | 0%      | 0%          |
| 28 Misc.                              |                   |             |                     |                |         |             |
| 29 Contingencies                      | 20%               |             |                     |                |         |             |
| <i>subtotal misc.</i>                 |                   |             |                     | 0              | 0%      | 0%          |
| <b>Total - Hard Costs</b>             |                   |             |                     | \$9,026,400    |         |             |
| <b>Soft Costs</b>                     |                   |             |                     |                |         |             |
| 30 Environmental                      | 1.00%             |             |                     | \$90,264       |         |             |
| 31 Engineering                        | 1.00%             |             |                     | \$90,264       |         |             |
| 32 Design / Architecture Fees         | 5.00%             |             |                     | \$451,320      |         |             |
| 33 Green Consultant Fees              | 2.00%             |             |                     | \$180,528      |         |             |
| 34 LEED Fees                          | 0.00%             |             |                     | \$0            |         |             |
| 35 Legal Fees                         | 0.50%             |             |                     | \$45,132       |         |             |
| 36 Insurance                          | 2.50%             |             |                     | \$225,660      |         |             |
| 37 Accounting                         | 2.50%             |             |                     | \$225,660      |         |             |
| 38 Loan and Grant Fees                | 4.00%             |             |                     | \$361,056      |         |             |
| 39 Taxes                              | 0.00%             |             |                     | \$0            |         |             |
| 40 Mobilization / Surveying           | 5.00%             |             |                     | \$451,320      |         |             |
| 41 Construction Overhead              | 5.00%             |             |                     | \$451,320      |         |             |
| 42 Construction Management            | 5.00%             |             |                     | \$451,320      |         |             |
| 43 Misc.                              | 0.00%             |             |                     | \$0            |         |             |
| 44 Other - Description                | 0.00%             |             |                     | \$0            |         |             |
| <b>Total - Soft Costs</b>             |                   |             |                     | \$3,023,844    |         |             |
| <b>Total Infrastructure Cost</b>      |                   |             |                     |                |         |             |
|                                       |                   | :           | \$12,050,244        |                |         |             |
| 29 plus Contingencies (20%)           |                   |             | \$2,410,049         |                |         |             |
|                                       |                   |             | <b>\$14,460,293</b> |                |         |             |



# Transit Center

East Liberty Development Corporation  
14 - Aug  
**Transit Center**

| <b>Cost Overview:</b>     | <b>Totals</b> |
|---------------------------|---------------|
| Total Project Cost        | \$62,000,000  |
| Total Infrastructure Cost | \$3,410,658   |
| Percentage Infra Cost     | 6%            |

**Breakdown by Line-Item:**

|                                  |                    |
|----------------------------------|--------------------|
| Hard Costs                       |                    |
| Total Public Street Improvements | \$65,000           |
| Total Public Parks               | \$480,000          |
| Total Utilities                  | \$126,000          |
| Total Structured Parking         | \$0                |
| Total Misc.                      | \$1,458,000        |
| Green Build                      | \$0                |
| General Misc                     | \$1,458,000        |
| Subtotal                         | <u>\$2,129,000</u> |

**Soft Costs:**

|          |           |
|----------|-----------|
| Subtotal | \$713,215 |
|----------|-----------|

|                 |           |
|-----------------|-----------|
| Contingency 20% | \$568,443 |
|-----------------|-----------|

|                   |                    |
|-------------------|--------------------|
| <b>Total Cost</b> | <b>\$3,410,658</b> |
|-------------------|--------------------|

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**Breakdown by Project:**

|                    |                    |
|--------------------|--------------------|
| Overhead and Misc. | \$1,458,000.00     |
| Soft Costs         | \$713,215.00       |
| Contingency 20%    | <u>\$568,443</u>   |
|                    | <b>\$2,739,658</b> |

**Overall Estimated Infrastructure Cost**

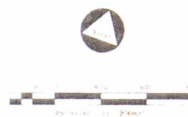
| Label                                 | Cost Multiplier   | \$ / CM     | Total CM | Total Cost         | %/Total | %/Hard-Soft |
|---------------------------------------|-------------------|-------------|----------|--------------------|---------|-------------|
| <b>Hard Costs</b>                     |                   |             |          |                    |         |             |
| 1 Site Prep                           | Cubic Yard (CY)   | \$45.00     | 0        | \$0.00             |         |             |
| 2 Subgrade Street Base - Normal       | Square Yard (SY)  | \$10.00     | 0        | \$0.00             |         |             |
| 3 Subgrade Street Base - Transit      | Square Yard (SY)  | \$10.00     | 0        | \$0.00             |         |             |
| 4 Street Paving (Bituminous)          | Square Yard (SY)  | \$25.00     | 0        | \$0.00             |         |             |
| 5 Curb                                | Linear Foot (LF)  | \$25.00     | 500      | \$12,500.00        |         |             |
| 6 Sidewalks                           | Square Foot (SF)  | \$5.00      | 7500     | \$37,500.00        |         |             |
| 7 Depressed Curb                      | Unit              | \$2,500.00  | 2        | \$5,000.00         |         |             |
| 8 Street Parking / Cut                | Linear Foot (LF)? | \$0.00      | 0        | \$0.00             |         |             |
| <i>subtotal streets and sidewalks</i> |                   |             |          | \$55,000.00        | 2%      | 3%          |
| 9 Handicap (HC) Ramps                 | Each              | \$500.00    | 0        | \$0.00             |         |             |
| 10 Trees and Grates                   | Each              | \$1,000.00  | 0        | \$0.00             |         |             |
| 11 Lawn / Landscaping                 | Square Foot (SF)  | \$30.00     | 0        | \$0.00             |         |             |
| 12 Lighting                           | Each              | \$5,000.00  | 2        | \$10,000.00        |         |             |
| <i>subtotal streetscaping</i>         |                   |             |          | \$10,000.00        | 0%      | 0%          |
| 13 Water Line                         | Linear Foot (LF)  | \$50.00     | 500      | \$25,000.00        |         |             |
| 14 Hydrant                            | Unit              | \$3,500.00  | 1        | \$3,500.00         |         |             |
| 15 Sanitary Line                      | Linear Foot (LF)  | \$90.00     | 500      | \$45,000.00        |         |             |
| 16 Sanitary Manhole (MH)              | Unit              | \$2,500.00  | 2        | \$5,000.00         |         |             |
| 17 Storm Line                         | Linear Foot (LF)  | \$85.00     | 500      | \$42,500.00        |         |             |
| 18 Storm MH/Inlet                     | Unit              | \$2,500.00  | 2        | \$5,000.00         |         |             |
| <i>subtotal utility lines</i>         |                   |             |          | \$126,000.00       | 4%      | 6%          |
| 19 Park / Public Space Site Prep      | Acre              | \$50,000.00 | 0        | \$0.00             |         |             |
| 20 Parkspace / Construction           | Square Foot (SF)  | \$13.00     | 0        | \$0.00             |         |             |
| 21 Streetscaping / Construction       | Square Foot (SF)  | \$30.00     | 16000    | \$480,000.00       |         |             |
| 22 Public Space / Construction        | Square Foot (SF)  | \$40.00     | 0        | \$0.00             |         |             |
| <i>subtotal green/public space</i>    |                   |             |          | \$480,000.00       | 17%     | 23%         |
| 23 Parking - Unstructured             | Per Space         | \$100.00    | 0        | \$0.00             |         |             |
| 24 Parking - Structured               | Per Space         | \$18,000.00 | 0        | \$0.00             |         |             |
| <i>subtotal parking</i>               |                   |             |          | \$0.00             | 0%      | 0%          |
| 25 Geo-Exchange Exploration           |                   | \$15,000.00 | 0        | \$0.00             |         |             |
| 26 Column Loop Field                  | Linear Foot (LF)  | \$17.00     | 0        | \$0.00             |         |             |
| 27 Green Build Cost Premium           | 2.11%             |             | 0        | \$0.00             |         |             |
| <i>subtotal "Green" infra.</i>        |                   |             |          | \$0.00             | 0%      | 0%          |
| 28 Misc. - Additional Improvements    | Square Foot (SF)  | \$30.00     | 48600    | \$1,458,000.00     |         |             |
| 29 Contingencies                      | 5%                |             |          |                    |         |             |
| <i>subtotal misc.</i>                 |                   |             |          | 1458000            | 51%     | 68%         |
| <b>Total - Hard Costs</b>             |                   |             |          | \$2,129,000        |         |             |
| <b>Soft Costs</b>                     |                   |             |          |                    |         |             |
| 30 Environmental                      | 1.00%             |             |          | \$21,290           |         |             |
| 31 Engineering                        | 1.00%             |             |          | \$21,290           |         |             |
| 32 Design / Architecture Fees         | 5.00%             |             |          | \$106,450          |         |             |
| 33 Green Consultant Fees              | 2.00%             |             |          | \$42,580           |         |             |
| 34 LEED Fees                          | 0.00%             |             |          | \$0                |         |             |
| 35 Legal Fees                         | 0.50%             |             |          | \$10,645           |         |             |
| 36 Insurance                          | 2.50%             |             |          | \$53,225           |         |             |
| 37 Accounting                         | 2.50%             |             |          | \$53,225           |         |             |
| 38 Loan and Grant Fees                | 4.00%             |             |          | \$85,160           |         |             |
| 39 Taxes                              | 0.00%             |             |          | \$0                |         |             |
| 40 Mobilization / Surveying           | 5.00%             |             |          | \$106,450          |         |             |
| 41 Construction Overhead              | 5.00%             |             |          | \$106,450          |         |             |
| 42 Construction Management            | 5.00%             |             |          | \$106,450          |         |             |
| 43 Misc.                              | 0.00%             |             |          | \$0                |         |             |
| 44 Other - Description                | 0.00%             |             |          | \$0                |         |             |
| <b>Total - Soft Costs</b>             |                   |             |          | \$713,215          |         |             |
| <b>Total Infrastructure Cost</b>      |                   |             |          |                    |         |             |
| <b>Total Infrastructure Cost</b>      |                   |             |          | \$2,842,215        |         |             |
| 29 plus Contingencies (20%)           |                   |             |          | \$568,443          |         |             |
|                                       |                   |             |          | <b>\$3,410,658</b> |         |             |



## Urban Renewal Plans for East Liberty

The following plans accompanied Pittsburgh's Urban Redevelopment Authority's original renewal plans for East Liberty, submitted to the Council of the City of Pittsburgh in June, 1966.

Please note that they have been scaled and cropped from their original dimensions.



## Penna. R-8-4

Urban Redevelopment Authority of Pittsburgh  
Pittsburgh, Pennsylvania DWG 7





# LEGEND

- PROPOSED STREETS
- MALLS OR SPECIAL TREATMENT RIGHT-OF-WAY
- EASEMENTS FOR UTILITIES
- URBAN RENEWAL AREA BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- LIMITED INDUSTRIAL
- PRIVATE INSTITUTIONAL
- PUBLIC INSTITUTIONAL AND RECREATIONAL
- PARKING RESIDENTIAL RELATED
- PARKING NON-RESIDENTIAL

Where parking lots are to be publicly owned the word "PUBLIC" is shown on this map.

## PROPOSED LAND USE EAST LIBERTY Penna. R-84

DATE: 1-24  
REV: 1-24  
BY: [Signature]  
CHECKED: [Signature]  
APPROVED: [Signature]  
PITTSBURGH  
PLANNING DEPARTMENT  
DWG: 2



# LEGEND

PROPOSED STREETS

MALLS OR OTHER SPECIAL TREATMENT RIGHT-OF-WAY

EASEMENTS FOR UTILITIES

URBAN RENEWAL AREA BOUNDARY

TO BE ACQUIRED FOR CLEARANCE AND REDEVELOPMENT

TO BE ACQUIRED FOR REHABILITATION

TO BE ACQUIRED FOR PUBLIC FACILITIES

TO BE SEVERED FROM PARCELS & ACQUIRED

RIGHTS-OF-WAY TO BE VACATED

## LAND ACQUISITION EAST LIBERTY

Penna. R-84

Urban Redevelopment Authority of Pittsburgh  
Pittsburgh, Pennsylvania DWG

DATE 1-84  
REV 1-84  
2-84  
3-84  
4-84





# LEGEND

|   |       |
|---|-------|
| COMMERCIAL                                  | C-3   |
| COMMERCIAL                                  | C-4   |
| LIMITED INDUSTRIAL                          | M-1   |
| LIMITED INDUSTRIAL                          | M-2   |
| LIGHT INDUSTRIAL                            | M-3   |
| MULTIPLE-FAMILY RESIDENCE                   | R-3   |
| MULTIPLE-FAMILY RESIDENCE                   | R-4   |
| MULTIPLE-FAMILY RESIDENCE(UNLIMITED HEIGHT) | R-4-H |
| MULTIPLE-FAMILY RESIDENCE(UNLIMITED HEIGHT) | R-5-H |
| PLANNED RESIDENTIAL                         | RP    |
| SPECIAL                                     | S     |
| ZONING DISTRICT BOUNDARY                    | ---   |
| PROJECT BOUNDARY                            | ---   |



## EXISTING ZONING

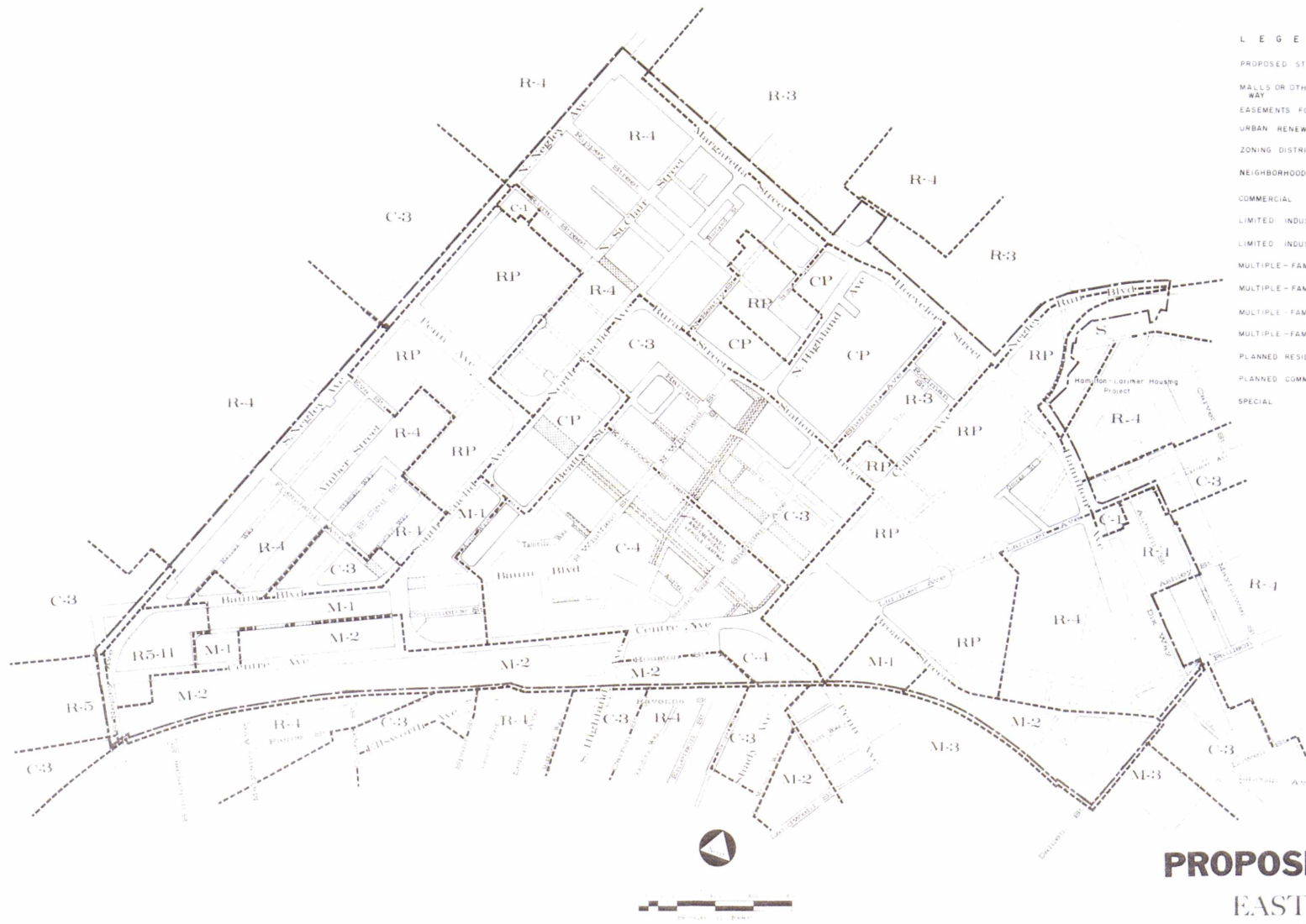
### EAST LIBERTY

Penn. R-84

Office, Redevelopment Authority of Pittsburgh  
Pittsburgh, Pennsylvania DWO

DATE: 1-14  
REV: 1-14

3



# LEGEND

- PROPOSED STREETS
- MALLS OR OTHER SPECIAL TREATMENT RIGHT-OF-WAY
- EASEMENTS FOR UTILITIES
- URBAN RENEWAL AREA BOUNDARY
- ZONING DISTRICT BOUNDARY
- NEIGHBORHOOD RETAIL
- COMMERCIAL
- LIMITED INDUSTRIAL
- LIMITED INDUSTRIAL
- MULTIPLE-FAMILY RESIDENCE
- MULTIPLE-FAMILY RESIDENCE
- MULTIPLE-FAMILY RESIDENCE (Unlimited Height)
- PLANNED RESIDENTIAL
- PLANNED COMMERCIAL
- SPECIAL

- C-1
- C-3,C-4
- M-1
- M-2
- R-3
- R-4
- R-5
- R5-H
- RP
- CP
- S

## **PROPOSED ZONING** **EAST LIBERTY** Penna. R-84

Urban Redevelopment Authority of Pittsburgh  
 Pittsburgh, Pennsylvania

DATE: 11-14-84  
 REV: 11-14-84

DWG







**LEGEND**

- PROPOSED STREETS
- MAJORS OR SPECIAL TREATMENT RIGHT-OF-WAY
- EASEMENTS FOR UTILITIES
- URBAN RENEWAL AREA BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- LIMITED INDUSTRIAL
- PRIVATE INSTITUTIONAL
- PUBLIC INSTITUTIONAL AND RECREATIONAL
- PARKING RESIDENTIAL RELATED
- PARKING NON RESIDENTIAL

(Where parking lots are to be publicly owned the word "PUBLIC" is shown on this map.)

**PROPOSED  
PLAN CHANGES**  
MODIFICATION NO.2  
**EAST LIBERTY**  
Penn. R-84

DATE: 1-84  
REV: 1  
4  
Urban Redevelopment Authority  
Pittsburgh  
Pittsburgh









