

## ABSTRACT

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An interesting line of tension happens when wildness is physically juxtaposed with order. This tension is an emblematic feature of the urban wildscape. This research/design thesis explores ways to inject qualities of wildness into the urban environment where order, functionality, and safety are a necessary part of the landscape. This exploration is primarily focused on aesthetics: the full engagement of the senses in the perception of the environment. Nevertheless, the sustainability of urban wildscapes has important implications for its survivability. With appropriate research and design, a degraded urban landscape can be transformed into a minimal maintenance wildscape. The goal of this project is to identify design parameters and apply them to a specific place: Baltimore's "Highway to Nowhere" with designed acts of intervention and a restrained approach to maintenance. The intent of these interventions is to encourage a predictable succession of urban wildlife habitats with varying levels of human presence.

WILDNESS AS INFRASTRUCTURE

By

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## Dedication

This thesis is dedicated to my wonderful husband Tim and my loving parents Robert and Donna Wharton who have always encouraged me to follow my dreams.



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This thesis would not have come together without the help of many people.

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## Chapter 1: Introduction

“After all, we are partners in this land, co-signers of a covenant. At my touch the wild braid of creation trembles.” (Kunitz 2000, 221, *The Snakes of September*)

My thesis inquiry begins with a question: “What are the qualities of wildness in the landscape that have the power to lure us back again and again?” This question has relevancy within the city landscape as well as the home garden.

The debate between the aesthetics of “wild gardens” versus the orderly landscape is not new. William Robinson (1838-1935) was a Victorian era gardener and writer who explored ways to allow wildness to enter the domesticated landscape in order to bring serendipity and complexity to the garden (Darke 2009).

Wildness already exists within cities at multiple scales and contexts. Sometimes it is intentionally preserved as in a wilderness park with conservation status. It also occurs spontaneously on abandoned and neglected spaces ranging from large industrial sites to cracks in a sidewalk. This unintentional wildness is visually dominated by “ruderal vegetation”; pioneer plant species that thrive in areas of recent disturbance. This vegetation is typically perceived as unsightly because it is a symptom of neglect and disorder in an environment where complete control is the expectation or desire. Usually it is the plant enthusiast with an understanding of the processes of growth that notices the beauty and develops an appreciation for this wildness in the city. A rare occurrence in cities, sometimes ruderal vegetation becomes manifestly apparent in the form of wild beauty. The abandoned elevated railway that became the site for the High Line in Manhattan was one such place.

Although historic preservationists were concerned about saving the structure of the abandoned railway, it was the discovered beauty of the “meadow like” spontaneous vegetation that inspired its transformation into a unique park. To this day, the most popular photographs of the High Line are those by photographer Joel Sternfeld taken before the restoration. For the structure to be saved, the wildness had to be removed and re-created. This process was undertaken by horticulturists and designers who admired the beauty of the wildness that was found there.

The beauty of the High Line was not just in the vegetation patterns. Other elements played equally important roles in creating moods and contributing to the wild experience. The decaying ruins of the structure combined with the overgrowth transformed the space into “the epitome of the aesthetic of melancholy” (Bowring 2009, 128). Ruins have the ability to captivate our imagination through qualities of incompleteness, nature, and juxtaposition (Jorgensen and Keenan 2012). Light and shadow, framing, distance, pattern, smell, and touch all add value, mystery, and wonder to a place of wildness; qualities that have nothing to do with blooms.

In order to take notice of these fleeting patterns, it is necessary to see them frequently. When our experience is more intimate, then we become more acquainted with the complexity of wildness in our environment. It is not enough to travel to a wilderness park on the occasional weekend. Encounters with the dynamics of wildness should be a part of everyday life whether you live next to a wilderness or within a dense urban neighborhood. The importance of wildness and “nature” in our lives has been articulated by poets such as Ralph Waldo Emerson and scientists such as E. O. Wilson.

How can true wildness exist in a dense urban environment where functionality, care, and safety are necessary on a civic scale? It is difficult to live in pure wilderness. Humans must change the environment in order to survive. However, it is not as healthy to live in an environment that is completely artificial.

An interesting line of tension happens when you physically juxtapose order with wildness. This research/design thesis is about finding ways to incorporate qualities of true wildness into an urban design. This research acknowledges that human experience is vital in such places, and the focus on aesthetics (the full engagement of all the senses in the perception of the environment) is important. Nevertheless, people are the secondary user group. The creation of habitats for multiple species drives this design. This approach requires accepting that the sustainability of urban wildscapes has important implications for its survivability. They do not require the resource inputs of conventional urban landscapes and are by definition, low maintenance. The goal of this project is to identify design parameters and apply them to a specific place with designed acts of intervention and restrained approach to maintenance.

## Chapter 2: Literature Review and Precedent Studies

The concept of “wilderness” has recently emerged as a subject of interest for urban planners, ecologists, and designers. Urban wilderness landscapes refer to places in the city where human use was either prevented or has ceased long enough to allow for a process of “re-wilding”. From the urban planning perspective, this concept of “re-wilding” is a potential asset for creating a positive image of urban wastelands. Once viewed as low quality nature, these areas have become interesting to urban ecologists who are beginning to recognize them as quality sources of biodiversity with potential for conservation status. Urban designers are interested in these wild areas as a resource for people and inspiration for design. These spaces provide qualities lacking in more regulated places including access to wild nature and relief from too much programmed space. In order to explore a theory of urban wilderness landscapes it is important to define keywords. This step is particularly important because words such as *wilderness*, *nature*, and *landscape* have multiple meanings and it is not intuitive to relate them to the urban environment.

The first section of this literature review will present keywords and their definitions to help clarify the subject of inquiry. The second section will provide an overview of common themes that emerge from writings of urban wilderness theory for the purpose of understanding what is valuable or problematic about these landscapes, and how it can inform urban design. The last section is a review of relevant precedent studies that provide demonstrate ways to present and use wild vegetation under its own dynamic within public landscapes.

## **Section 1: Keywords (alphabetical)**

### *Landscape*

*Landscape* is an ambiguous term whose definition changes with the user. It is related to but not synonymous with nature, scenery, environment, places, region, or geography. *Landscape* can be defined as the unity we see and the impressions of our senses (Meinig 1979), but also the dynamic relationship that exists between people and place (Spirn 1998). In this way, landscapes can reflect our collective and personal relationship with the environment. *Landscape* is composed of the visible and invisible features of an area of land, including physical elements and man-made interventions such as paving, lighting, and other structures (Thadani 2010). This definition is inclusive of the city at multiple scales.

### *Nature*

“A singular term for the real multiplicity of things and living processes.” (Williams 1980, 69, Ideas of Nature).

“Not me.” (Emerson 2003, 4, Nature, Introduction).

The word nature is one of the most complex terms in the English language, however it can be easily separated into three areas of meaning: (1) referring to an essential quality of something, (2) the inherent force directing the world with or without humans, or (3) the material universe itself with or without humans (Williams 1985). The word comes from the root *nasci* (Latin) to be born. A controversy exists with the definition of *nature* which centers on the question of whether humans are included as part of nature. The difficulty with this definition comes from the fact that

the human and the natural are indivisible, yet different (Berry 1987). This difference comes from the extent that we are a product of our culture as well as nature (Berry 1987). Many use the word nature to refer to plants and creatures other than humans, assuming a clear division exists. This division can cause further problems when traits such as goodness are assigned to one and not the other, strengthening beliefs that everything we touch degrades *nature*, and “true nature” only exists in the unspoiled places such as the countryside or a primeval wilderness.

Descriptions of *nature* in the urban context can vary from: everything green in the city, everything alive large and small, structured and tended or wild, private or public, native or exotic (Kowarik and Körner 2004). These definitions of urban nature typically refer to the “other” nonhuman nature and have different perceived values ranging from rare and precious to a low form of “surrogate nature”(Kowarik and Körner 2004). The term *naturalistic* is often used to describe urban places that appear “wild” but have been intentionally designed and continuously maintained to look so.

To argue that we need daily contact with *nature* to be healthy and that our cities must be “wild and nature-ful” (Beatley 2010) requires a definition of *nature* that explains exactly what cities are lacking. For this thesis, the word *nature* refers to a wild environment full of autonomous organisms and processes which reveal the complex world from which we evolved.

### *Palimpsest*

A *palimpsest* is a parchment that has been written upon several times where the previous texts were imperfectly erased and remain partially visible. This word is

brought up repeatedly to describe urban wilderness landscapes which contain visible traces of past human use such as railroad tracks or the crumbling foundations of buildings. If not completely removed, these objects can add to the mystery of the surrounding wildness as a ruin because the memory of the physical past remains visible.

### *Plant Succession*

Plant succession is a directional, cumulative change in the species which occupy a given area, within a timeframe between 1 and 500 years (Barber, Burk, Pitts, Gilliam, Schwartz. 1999). This time span is intended to exclude seasonal (yearly) and long term climatic (10,000 years) and evolutionary (10,000,000 years) change (Barber, Burk, Pitts, Gilliam, Schwartz. 1999). Plant succession can be further categorized according to site conditions and processes:

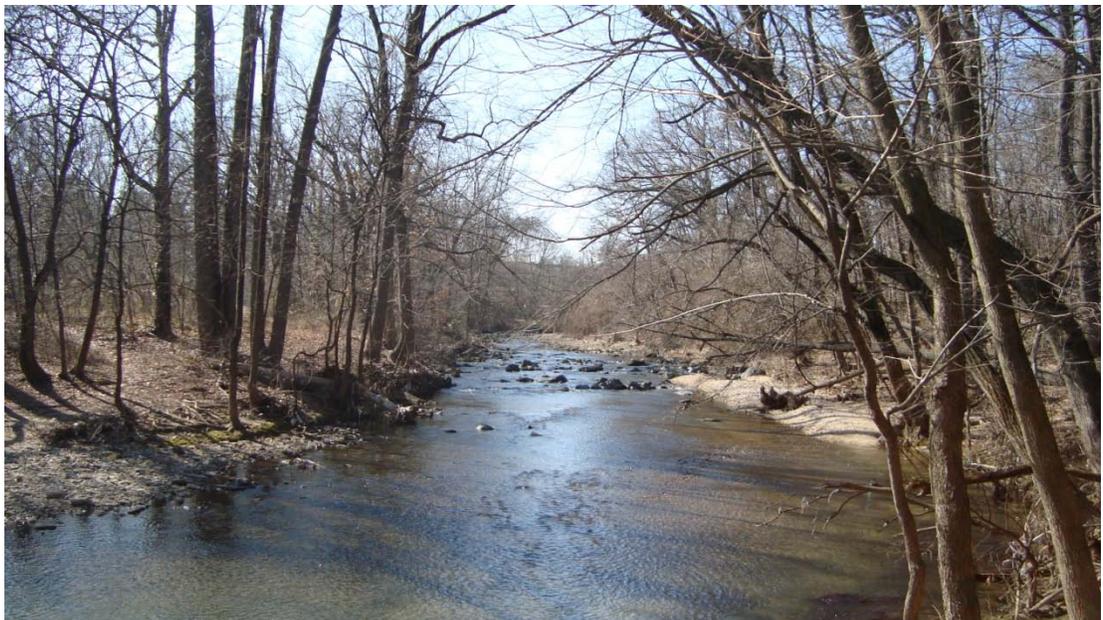
1. Primary vs. Secondary
2. Autogenic vs. Allogenic
3. Progressive vs. Retrogressive
4. Cyclic vs. Directional
5. Chronosequence vs. Toposequence

### *Urban Wilderness*

In the urban context, when an area of disuse begins to show signs of successional plant growth it is often described as a “secondary wilderness” (Richter and Weiland 2012). Wild vegetation can exist in cities for a multitude of reasons which can either

be intentional or the result of neglect. No clear dichotomy exists between regulated and wild urban places but rather a continuum ranging from designated ‘wilderness’ areas to ordered spaces all with various levels of wildness occurring at different scales (Jorgensen and Keenan 2011). Nevertheless, it is helpful to examine some general categories of wildness based upon scale and context. Urban wilds can differentiate into three broad categories (Richter and Weiland 2012):

1. *Urban Wilderness* is defined as designated (nature) conservation areas within or near urban centers, less than 2500 acres with “low human impact”. These places include sensitive areas (streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes), and urban wilderness parks such as Gwynns Falls in southwest Baltimore or Herring Run Park in East Baltimore.



**Figure1: Herring Run Park 2012, Author**

2. *Urban rewilding areas* are defined as abandoned urban, industrial and commercial sites of less than 1200 acres with succession but no conservation status and different forms of human use. These sites include brownfields, abandoned railways, landfills, and quarries. This is usually a landscape of recovery (Jorgensen and Keenan 2011). Here the spontaneous vegetation often helps to naturally remediate the soils of toxic substances left from prior industry.



**Figure 2: The High Line 2010, Author**

3. *Rewilding microcosms* are small areas (several acres) such as public and private gardens, edges of parks, streams, ponds, harbors with no conservation status and different forms of human uses. This category also includes fragments within dense urban neighborhoods. These sites are the most challenging because the tolerance level for spontaneous wild plants is low in

the context of these spaces even though they can tolerate growing conditions with low management (Jorgensen and Keenan 2011).



**Figure 3: Rewilding Microcosm, Jones Falls Expressway Baltimore 2012,**

**Author**

### *Urban Wildscape*

A *Wildscape* is a term that includes all spaces where “wild” as opposed to human agency is the dominant force shaping the land (Jorgensen and Keenan 2012).

An *urban wildscape* includes urban wilderness, re-wilding areas, re-wilding microcosms, and derelict areas that received minimal intervention or are designed or intervened in a way that preserves or allows for wildness to exist and alter the space over time. Also included in this definition are spaces, “Between or on the margins of

more programmed and controlled urban spaces characterized by the opportunities they provide for a diverse range of human and non-human activities and processes” (Jorgensen and Keenan 2012, 221).

### *Wasteland*

A *wasteland* refers to sites of different sizes and locations that were formerly used in various ways and are now (in the short or long term) no longer, or only sparsely, used (Richter and Weiland 2012). A wasteland can emerge for many reasons including environmental contamination and economic change. These sites are often colonized by ruderal vegetation allowing them to be classified as an *urban rewilding area*. In the United States, contamination that impedes use or redevelopment is the primary criterion for classifying a site as a wasteland.



**Figure 4: Derelict Concert Hall, Tallinn, Estonia 2011, Author**

## *Wilderness*

*Wilderness* derives from the Old English *wilderne*, which comes from *wildeor*, meaning “wild beast” (Webster's New World College Dictionary Fourth Edition, s.v. Wilderness). The word *wilderness* is complex because it has been used to describe many things for many different purposes ranging from the entire universe to the wilderness that exists within topsoil (Berry 1987). It is often referenced to describe the qualities of infinite complexity, incomprehensibility, chaos, or places of struggle. The meaning and significance of this word has undergone a dramatic transformation since its first use. *Wilderness* was once a negative term synonymous with *wastelands*; that is deserted and barren places having no value (Spirn 1998). This attitude changed by the end of the nineteenth century with the transcendentalists such as Henry David Thoreau and John Muir. Their reflections on the changing relationship between humans and “non human” nature caused by industry played a significant role in altering perceptions about the concept of wilderness. For many, progress required cutting trees to convert wild forests into productive farmland. It is now perceived as the opposite of a wasteland; a rare place holding pristine nature and elevated to the highest value of sacred space. This perception cannot be separated from the belief that humans degrade everything they touch (Spirn 1998).

The word *wilderness* today is most commonly used to define an area that has not been significantly modified by human activity (Thadani 2010). Places of untouched nature such as the primeval forests of national parks easily fit within this context.



**Figure 5: Desolation Wilderness, California 2011, Author**

The wilderness category presented by the International Union for the Conservation of Nature and Natural Resources (IUCN) has become the operative definition for conservationists and academics:

“A large area of unmodified or slightly modified land/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition” (IUCN 2012).

This definition is too narrow to apply within the city. In order to use the word *wilderness* in a context of urban environments, it is necessary to distinguish between

the IUCN's "Primary Wilderness" definition and areas within a city which appear wild due to lack of maintenance and the process of natural succession. The term *secondary wilderness* has been proposed to describe places that have been significantly altered by humans and then allowed to become wild again usually from neglect (Richter and Weiland 2012).

The idea of designing a "wilderness" as a landscape has its origins in eighteenth-century gardening. The definition of *wilderness* in this context refers to a planned geometrical arrangement of trees with understory growth, located in a remote section of the grounds (O'Malley 2010).

Walks were created to encourage strolling using quick turns to create experiences of surprise and mystery. Native plants were sometimes used to re-create the sense of the untamed environment in which the plants were found originally. A.J. Downing once referred to the creation of a native woodland at Montgomery Place called "The Wilderness" describing it as being like a primeval forest (OMalley 2010).

The common theme among the various definitions for the word *wilderness* is its reference to any place that humans are not a dominant force of change, where the "other" nature is left to take its course without intervention. This includes any place large or small where, "No human work is done and people go only as guests" (Berry 1987, 17). By this definition, a true wilderness cannot be designed.

### *Wildness*

It is important to clarify that *wildness* is not *wilderness*. The essence of *wilderness* derives from the idea of *wildness*: something not controlled by humans

(Thadani 2010). *Wilderness* refers to a particular kind of place whereas *wildness* is a quality that can manifest itself almost anywhere. *Wildness* has the ability to affect us through experiences of discovery, surprise, independence, and the unknown (Callicott and Nelson. 1998). It is also characterized as a source of health and vigor through the necessity of evolutionary survival. It is difficult to separate ourselves from wildness. Our bodies are more than half wild, dependent upon reflexes and instincts that we do not intend and cannot (or should not) stop (Berry 1987).

The word *wildness* in this thesis refers to urban nature, which is inherently human impacted or influenced, but not controlled by us (Beatley 2010).

## **Section 2: Common themes in Urban Wilderness Theory**

### *Urban Rewilding in Planning*

Within the past two decades, the concept of wilderness as an urban restructuring tool has become a topic of discussion for planners in Europe especially in East Germany. This idea is popular in Europe because of a prevalence of these “wastelands” which have reverted to “wilderness” coinciding with a lack of development resources. Most of Europe no longer has extensive areas of primary wilderness, yet has abundant smaller urban rewilding areas. Historically these were perceived as unsightly places of neglect and a loss of value. Cities have always had areas of spontaneous vegetation and wildlife on abandoned places. Nevertheless, these areas were commonly viewed as low quality nature and therefore assigned no conservation status. These attitudes have changed since the late 1990’s, and the

ecological and recreational potential of these wild abandoned wastelands is now being considered within the planning field (Richter and Weiland 2012) .

Replacing the word “wasteland” with “wilderness” is a way for urban planners to more accurately describe the evolved character of these places while taking advantage of the wilderness idea’s popularity with environmentalists and conservationists (Richter and Weiland 2012). However, using the word “wilderness” to describe these small and isolated areas can cause confusion, and it is necessary to clarify that advocates of the urban wilderness idea believe that it can be applied at any scale or context. Aldo Leopold is often noted for discussing the value of small wilderness:

Aldo Leopold said,

“One of the symptoms of immaturity in our concept of recreational values is the assumption, frequent among administrators, that a small park or forest has no place for wilderness. No tract of land is too small for the wilderness idea. It can, and perhaps should, flavor the recreational scheme for any woodlot or backyard.” (Diemer, Held, and Hofmeister 2003, 7).

There is a range of planning perspectives on urban wilderness ranging from the radical to mainstream. One of the more radical approaches is called “wilderness venture” where rewilding is part of a “shrinkage process” which is not controlled completely, but characterized by “uncontrolled perforations” in the city (Richter and Weiland 2012). Rewilding on a city scale is considered by some as an opportunity to find a new balance between nature and the city. This interpretation is controversial

because these “uncontrolled perforations” could be seen as a warning that the city cannot sustain itself. A more moderate approach involves using spontaneously occurring vegetation in planning or design as it develops. The key to this strategy is “the use of vegetation development under its own dynamic” (Richter and Weiland 2012, 86) This implies there is ultimate control over the growth and direction of the rewilding process, but it is allowed to flourish for the purpose of “minimizing costs for the site and development” (Richter and Weiland 2012, 86). Landscape urbanists use the term “Second Nature” to describe a similar concept of steering a process of rewilding for the large scale renewal of degraded sites into a “new wilderness” (Geuze 2010). In his essay *Second Nature*, West 8 architect Adriaan Geuze proposes we “build the landscape in advance of the city” following the example of Frederick Law Olmsted with his regional parks (Geuze 2010, 42). This process would involve planners, ecologists, and designers to prepare the groundwork for pioneer vegetation to rebuild the soil and form an ecologically rich landscape over a period of time. This does not mean we should just let it go and do nothing such as the “wilderness venture” approach, but he recommends using “design to dramatize the new nature” and accelerate the process (Geuze 2010, 42). Geuze argues that the value of having these wild spaces is that city dwellers, constantly surrounded by programmed space, crave these undefined sites which have no function. That is why wild open areas are ideal textures to have close to the city. These places of new nature have the potential to create the allure of wilderness and act as magnets for new development with higher economic values, livable neighborhoods and sustainable designs (Geuze, 2010).

The wilderness concept is becoming more accepted in urban planning, but it is often given an alternative name such as the “urban wild space movement, urban wildlife areas, or urban wildspace” as in the United Kingdom (Richter and Weiland 2012). All of these concepts are less popular in the United States where we have the ability to redevelop wastelands more quickly; with the notable exception of Manhattan.

New York’s High Line is a well known example of how the wildness in a derelict space became something of value to an urban community in the United States. The transformation from an industrial elevated railway to urban wasteland evolved to “wilderness” which inspired a community to develop it into an unconventional urban park. This is an example of how the chaos of wildness can offer unimagined alternatives to the current conventions of urban design. Jill Stoner, an architect and associate professor at Berkeley, is an advocate for introducing “porosity” into the city “shot through with wildness” with “pockets of decidedly non-human use”, and that these empty spaces have more potential to stir the imagination and be the source for innovative ideas (Marcus and Neuman. 2007, 230).

The Manahatta project, a ten year investigation into the ecological and cultural landscape history of Manhattan inspired by and based upon a “remarkably accurate” map of the area drawn in September of 1609, has captured the imagination of many New Yorkers. This indicates an interest in opening the city to wildness on a greater scale. Eric Sanderson, a landscape ecologist and creator of the Manahatta project, discusses how many New Yorkers celebrate the nature of their city and seek to

understand the city's place in nature; viewing it as an ecosystem with cycles, flows, interconnections, and mechanisms for self-correction (Sanderson 2009).

Urban wilderness concepts in planning are still new and untested. It is unknown to what extent wilderness will play a role in urban restructuring and what forms it will take. There seems to be a growing interest in these concepts in the United States. The usefulness of these concepts will vary from city to city based upon their rates of vacancy, abandonment and economic future. Cities such as Detroit have wastelands on a scale that most U.S. cities have not experienced, and reversing its decline will take more than open space planning strategies.

#### *Urban Rewilding in Conservation and Ecology*

The vegetation and wildlife in urban wastelands was viewed for a long time as poor quality, "second class nature" with little ecological value. These attitudes changed as urban ecology emerged as a field of study in the 1970's and 80's. Habitat mapping research has revealed that areas of urban rewilding are much higher in biological diversity than previously thought. This high diversity is a result of several factors including: variety of substrates and soil conditions due to multiple levels of disturbance; microclimates; varied intensities of use; greater variety of structures on sites (walls, tracks, and rubble); site histories; and extremes in environmental conditions. Sites with the greatest diversity of vegetation are industrial wastelands, followed by commercial wastelands, abandoned railways, and derelict green spaces. This is due to the size and stage of plant succession. Biodiversity of a rewilding area decreases with increased maturity of the vegetation. The question of biodiversity in

wastelands is still controversial and described by some as the “pseudo-diversity of urban nature (Richter and Weiland 2012, 87).”

Peter Del Tredici, a senior research scientist at the Arnold Arboretum and an associate professor of landscape architecture at Harvard GSD, discusses how urban habitats characterized by high levels of disturbance and stressors such as heat and drought promote the growth of stress-tolerant, early successional vegetation on unmaintained land. These plants whether they are native or exotic, provide important ecological services including food and shelter for wildlife, soil improvement, and water purification. He argues that learning how to manage spontaneous vegetation to increase its ecological and social value may be a more sustainable approach than trying to restore historical ecosystem conditions (Del Tredici, 2010).

Another promising discovery about urban rewilding ecology research is how places deeper in the city have become havens for endangered species. Many “Red-listed” species (those whose habitat has been destroyed by suburban development and agriculture) have found protection within rewilding areas. For some creatures, the city’s built environment can provide the ideal environment for survival. In *The Falcon’s Return*, Jill Stoner talks about the recovery of the peregrine falcon from near extinction. In the 1970’s, wildlife biologists proposed transplanting the falcons in boxes to high rise buildings where their prey would be free of the DDT that was disrupting their reproduction. The program was a success and the falcon was taken off the endangered species list. These are extreme measures and should only be executed under the expertise of wildlife biologists in order to prevent stress or death of wildlife in an unsuitable environment.

The effectiveness of urban greenways to sustain native species is the subject of continuing research and evaluation (Hellmund and Smith 2006). Scholars and scientists are studying the issue, but connectivity seems to be critical to viable species recovery and thriving.

### *Urban Rewilding in Design*

Another important aspect of urban wild space investigation is about understanding how it is perceived. In order for wildness and wild vegetation to be sustainable, it has to be acceptable and appreciated by those that have to live, work, and play nearby (Dunnett and Hitchmough. 2004).

Researchers who conducted an empirical study through the UFZ Centre for Environmental Research Leipzig-Halle in 2005, discovered three common responses to spontaneous forms of vegetation in the urban landscape (Kowarik and Körner 2004):

1. They are perceived as good if nature has completely re-conquered the land and is not trashed.
2. The area must be accessible.
3. There must be a perceived intention behind its existence such as conservation.

The context of fallow nature plays a crucial part in how it is received by the public. For instance, the closer these wild areas are to particular homes, the less desirable they become in general. Wild places that are further away are acceptable as long as there is a clear indication that people (the city) are in control of the situation.

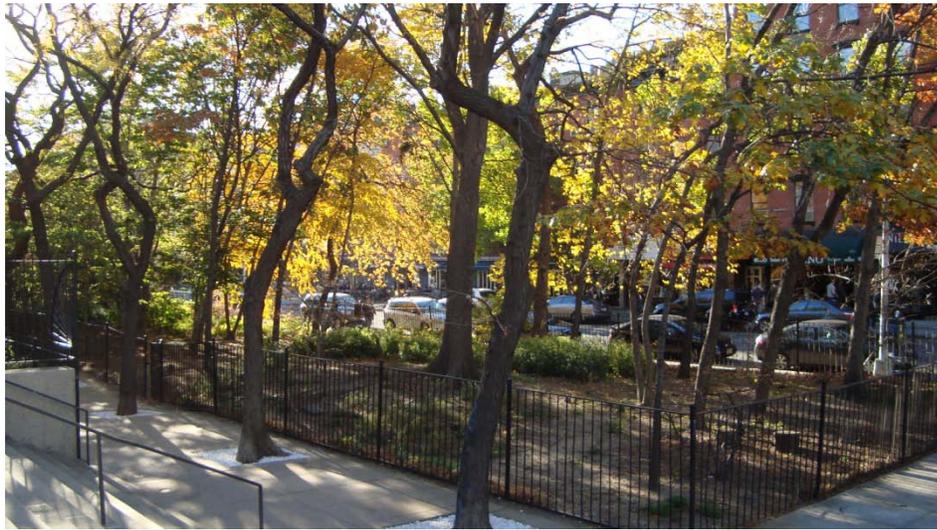
If the purpose is unclear, it will not be perceived as valuable. Therefore if spaces are allowed to go wild in the city, a “communication strategy” must be developed to cope with the expectations of abandonment and resulting lack of value (Kowarik and Körner 2004).

The authors of this study suggest that we should differentiate between various forms of fallow and spontaneous nature, and that the criteria should include size, usefulness, aesthetics, and location (Kowarik and Körner 2004). This can be a basis for an effective communication strategy. The long-term processes involved in developing an urban wilderness make the challenge of public awareness difficult. The wild vegetation on the High Line’s railway took 30 years to establish, although it was out of public view during the rewilding process.

It is difficult to protect these rewilding areas because they go against standards of order and cleanliness set by current cultural management practices. Their existence also challenges long established traditions of landscape design and expectations of how nature in cities should appear. These are not ecological but aesthetic issues (Kowarik and Körner 2004).

The United States has inherited a tradition of landscape and garden style that reaches back to the eighteenth and nineteenth century England where the Picturesque and Gardenesque styles were popularized by Capability Brown and John Claudius Loudon, and entered this country through the work of Andrew Jackson Downing. These styles characterize our cultural perception and understanding of natural city parks which the wilderness idea fails to match. Time Landscape® in Manhattan is a good example of what happens when the wilderness concept is inserted into the city.

Without the green sign providing an explanation of intent, most people would not understand what it means and why it's there. Even with the sign and the intention revealed, the community still makes efforts to care for it by raking leaves, removing dead trees, and setting out bird feeders.



**Figure 6: Time Landscape®, Manhattan 2010, Author**



**Figure 7: Time Landscape® Sign 2010, Author**

The urge to care for this landscape in spite of its declared intended state of non-human intervention is why the wilderness concept does not appear suitable for promoting new design options or communication about nature in the city. To stylize spontaneous urban nature as a wilderness doesn't work because wilderness is linked with different associations such as the national parks of Yosemite and Yellowstone. It is inevitable that the deficient character of urban nature will be strongly emphasized, and researchers caution to use the word wilderness carefully when discussing urban design (Kowarik and Körner 2004).

In her paper, "Messy Ecosystem's Orderly Frames," Joan Iverson Nassauer provides an alternative for the design challenge of incorporating messy, wild vegetation into areas that are perceived as tended parkland. She argues that our focus should be on finding ways to present functioning ecosystems through the use of physical and cultural frameworks which do not mask or compromise the wildness or "ecological function", but sets it up for viewing in the same way as the artist Joseph Cornell does with his collections in boxes. The seeming randomness of the objects recedes and they are seen as a whole because they are framed inside the box. In the landscape, something as simple as a mown strip or path is enough to provide a "cue" that a place is under the care of a person. These structural elements provide assurance that the wildness is intentional.

### *The Social and Cultural context of Urban Rewilding*

There are no clear guidelines for the social dimensions of planning or designing with ecological plantings, especially for wild landscapes. More research is

needed to evaluate public attitudes. Personal factors such as education, income, occupation, gender, age, familiarity, cultural background, and ethnicity, have powerful effects on landscape preference, but not enough is known to predict outcomes. One study shows that people have a surprising need for woodlands close to their home (Dunnett and Hitchmough. 2004). Where this resource is locally available, it is an important part of everyday urban life. Alternatively, there are neighborhoods in Baltimore where the majority of residents do not want street trees because they are concerned about foundation damage and cleanup. Perception goals are highly subjective and always changing. For this reason we must constantly re-evaluate.

#### *Educational and Emotional Value of Urban Wilds*

In a 1956 *Woman's Home Companion* article called "Help Your Child to Wonder" Rachel Carson said,

"If I had influence with the good fairy who is supposed to preside over the christening of all children I should ask that her gift to each child in the world be a sense of wonder so indestructible that it would last throughout life, as an unflinching antidote against the boredom and disenchantments of later years, the sterile preoccupation with things that are artificial, the alienation from the sources of our strength." (Carson, 1956, 46)

In his book entitled *Biophilic Cities*, Timothy Beatley said,

"We need the design and planning goals of cities to include wonder and awe and fascination and an appreciation for the wildness that every city harbors.

The incredible and abundant nature around us even in dense cities represents an important antidote to the boredom and sameness that otherwise characterizes much of our built form and lives”(Beatley 2010, 15, Nature and the Wonder of Urban Living).

Carson and Beatley both share a similar message. Wildness has intrinsic value and it is important to develop an appreciation for the nature because we protect what we care about.

### *Wildness in Placemaking*

Wildness is not only about vegetation and wildlife but also independence and freedom of use. Wildscapes allow designers alternative strategies for enhancing place distinctiveness and identity by providing freedom for the space to develop organically rather than top down. An example of how “wastelands’ are appropriated by people for a special occasion is the 2011 Alternative Roots Festival held in Baltimore’s “Highway to Nowhere”.

### **Section 3: Precedent Studies**

#### *University of Antwerp, Belgium*

#### *Focus: Framing wildness, Developing powerful landscape character*

The University of Antwerp was a new campus, but it was given an atmosphere of authority apparent at older universities by adding trees and a landscape of alleys, passages, quadrangles and courtyards. The site also had an abundant supply of water

that was used to enhance the flatness of the site. This design makes up for a low budget by using native tree plantings in woodlands for lower maintenance. A few areas incorporate specimen groves, but most of the landscaping is kept wild. People do not enter these wild spaces, but are given paths to walk through them. These paths are lined with neatly clipped hedges and regularly spaced understory trees as the “orderly frame” which allows the untamed growth to be as wild as it can. Roads and parking lots are thickly lined with trees screening the sights and sounds of traffic. The diverse plantings and water have created a habitat for birds, adding to the wildness of the landscape. This landscape is an example of how wildness can exist in places where a sense of care and control are crucial: particularly important for the Belgian culture and university culture. (Taylor 2011)

*Duisburg-Nord Landscape Park, Duisburg Germany*

*Focus: Creative reuse of infrastructure, Framing wildness, Activities*

This park was formerly the site of the Thyssen Steelworks composed of old engine houses, mill buildings, bridges, empty coke and ore bunkers, and rail lines. The designer Peter Latz decided to use these remnants rather than completely erase the past which would have been “fiscally irresponsible if not impossible” (Reed and Museum 2005, 124).

The combination of industrial ruins and nature creates a rich experience which has broadened the idea of what a park can be. Paths for walking and cycling weave through the site over bridges and along old rail lines. Old walls are used for rock climbing or enclose gardens creating more meditative space. There are playgrounds,

courtyards, a water canal, retention pools, and bridges to view the site from different levels.

Vegetation is used as a structuring element in some areas and allowed to grow wild in others. Geometric groves of cherry trees and landscaped gardens provide a sense of order which makes the nearby untamed growth acceptable and even desirable a melancholic aesthetic. The overall poor soil quality of the site limits what species will grow, however pioneer plants such as poplar trees, raspberries, native and exotic wildflowers, grasses, and lichens are allowed to flourish and over time will improve the soil through the process of succession.

A special lighting installation gives the old structures an interesting show in the evening. After hours the lights are shut off and according to the designers, there is no problem with vandalism or crime at night.

### *Nature-Park Südgelände, Berlin*

#### *Focus: Restrained management approach*

Nature-Park Südgelände is one of the few inner city urban rewilding areas granted official protection status. It is a derelict rail yard that was left to natural succession for 50 years. This is a milestone in urban nature protection and acknowledges the value of wild spontaneous growth (Jorgensen and Keenan 2011).

The design principles for this site are about balancing access and use, protecting the wild ecology for scientific study and managing it for the purpose of greater biodiversity. Researchers discovered that an ongoing process of succession would lead to complete reforestation in a short period of time causing a decline in the

characteristic species, plant communities, and a loss in spatial diversity. A decision was made to combine natural dynamics with controlled interventions. Three principles were applied throughout the site (Jorgensen and Keenan 2011):

1. Definition of space typology – clearings, groves, and woody stands were designated to create different spatial characteristics for both nature conservation and landscape aesthetics. This becomes demonstration areas and increases the sites biodiversity making it more attractive for visitors.
2. Access – A path system followed the old rail tracks. Elevated ramps and walkways make the most sensitive conservation areas accessible without causing negative impacts from visitors or disturbing the wild processes.
3. Preservation of natural and cultural elements – Old built elements were kept as ruins, adding a historic and cultural frame to the site. These are used by artists for painting and sculpting and add qualities of cultural enrichment.

Increased management of the vegetation has become necessary because of the clearings which are vulnerable to invasive species and are removed. The dry meadows are maintained by sheep which are brought to the site for a few days in the summer. Monitoring measures are continually reviewed and altered as needed to adapt to changing circumstances.

*Houtan Wetland Park – Expo 2010, Shanghai*

*Focus: Cultural frame*

Houtan Wetland Park is a helpful precedent for understanding ways of connecting people and wildspaces through culture and heritage. The cultural background is expressed through a timeline of pre-existing nature, cultivation, and industrial eras (Jorgensen and Keenan 2011). These cultural periods are demonstrated in three different landscapes of existing wetland, artificial wetland, and the riverside landscape. The existing wetlands represent pre-existing nature. The farming era is demonstrated by agricultural crops planted in terraces. Relics from the industrial era are used to frame views and become tourist attractions. The “red ribbon” bench is culturally symbolic through its color and holds personal significance to the designer.

*Greenwich Peninsula, London*

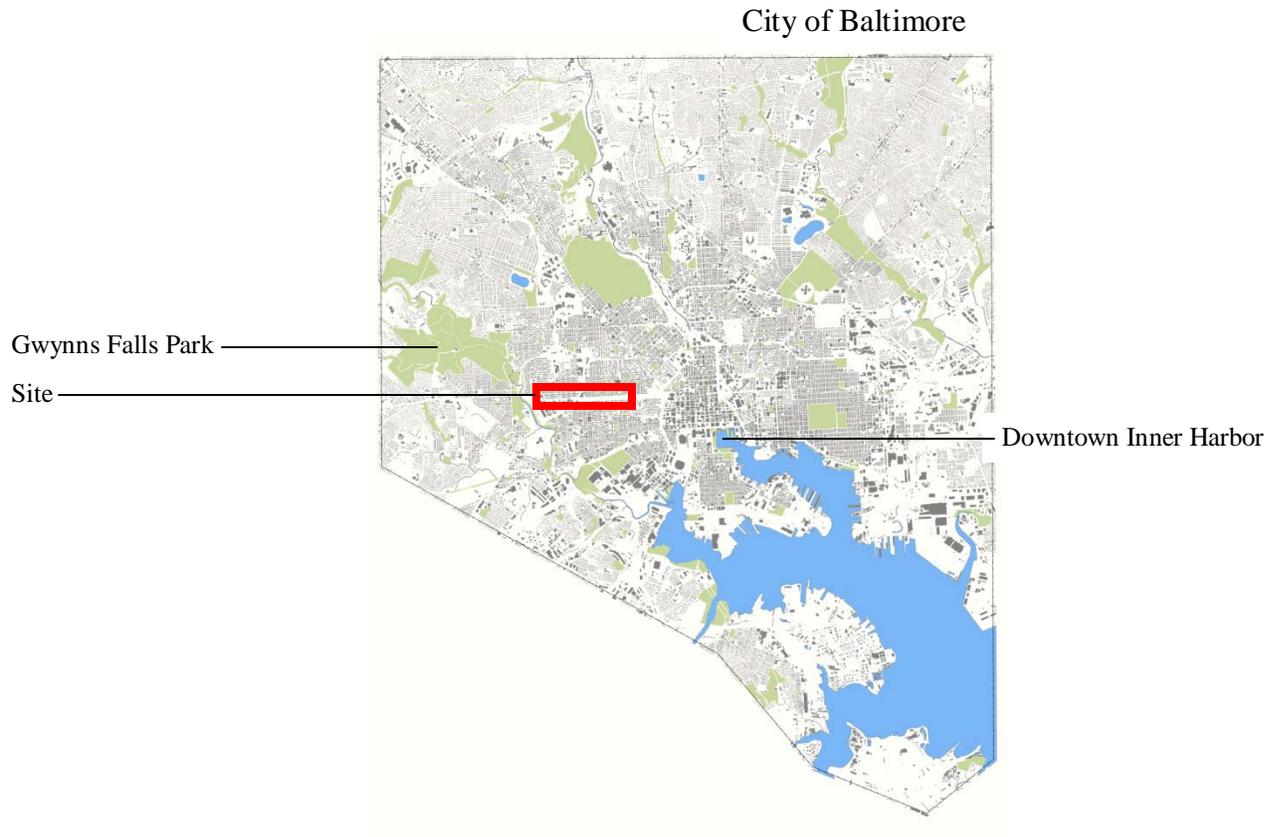
*Focus: Model for accelerated plant succession*

This landscape is similar to Baltimore’s “Highway to Nowhere” because of its emptiness, lack of previously built traces or vegetation. French designer Michel Desvigne decided to introduce an “intermediate landscape to give texture and density to the formless site in a way that is flexible enough to be incorporated into future development once a program is determined”(Reed and Museum 2005, 148). He used the scale of an alluvial forest as what might have existed on the peninsula prior to development.

Hornbeams were planted because they were better suited to the site conditions and clearings were incorporated for park activities. Over time the fast growing trees

would be thinned out and replaced by species that will grow into more mature woods such as alder and oak. Future clearings would be made as needed. The result is a new landscape that acts as a catalyst for future development.

## Chapter 3: The Site



**Figure 8: Vicinity Map, Author**

### Site Context

The location of this thesis site is Baltimore’s “Highway to Nowhere” which is south of historic West Baltimore’s neighborhood of Harlem Park. It is approximately 1.4 miles of expressway originally intended to connect downtown Baltimore with I-70 by cutting through Gwynns Falls Wilderness Park. Construction of the highway began in 1975 and ended in 1979 after successful protests by several Baltimore communities. These actions ended the project, but not before thirteen blocks of homes between Franklin and Mulberry streets were demolished and the residents displaced.

## Site Selection Process

### *Urban Exploration*

This thesis site was discovered after a three month search for an urban area within Baltimore's city boundaries with the potential for rewilding. Places of rewilding in the city are usually forgotten or abandoned lots with little or no ownership documentation available for research. Therefore, a broad exploration on foot was necessary to locate these areas, understand their context, and study their value as wild spaces. This method of urban exploration was undertaken to accomplish two goals:

1. Study what urban wilds might mean in Baltimore.
2. Find a thesis site that fulfills criteria determined in the original thesis goal which coincides with The City of Baltimore Comprehensive Master Plan goals.

In order to narrow the city wide search, two guide maps were created using GIS information from the City of Baltimore. The first map contains data layers revealing Baltimore's land reserves of wildness, such as: railroad right of ways, vegetation patches, parkland, undeveloped land, protected natural areas, streams and stream beds, and cemeteries. (See Appendix A: Baltimore Urban Wilds Guide Map). The second map ranked Baltimore's neighborhoods by the number of vacant buildings (See Appendix B: Neighborhood Vacancy Map). The purpose of this map was to find abandoned and unproductive properties which are more likely to be in some state of rewilding. Brownfield sites were considered as part of this search;

however, those documented as EPA Superfund Sites are currently in a state of redevelopment and are neither wild nor likely to be desired in a wilderness state.

The City of Baltimore Comprehensive Master Plan states that Baltimore has sufficient large park space, yet lacks green, pedestrian friendly connectivity between these parks. One goal outlined in the Comprehensive Master Plan is to build an extensive greenway system connecting existing park spaces. (See Appendix C: Baltimore Greenway Map Existing and Proposed) The intention is to realize the original vision (not the exact plan) presented in the Olmsted Report commissioned in 1904 by The Municipal Art Society of Baltimore. This report, written by the Olmsted Brothers, recommended the preservation of recreational and wild park space connected by a system of green corridors, similar to Boston's Emerald Necklace (Olmsted Brothers 1904). This information provided another set of criteria to include in the search which is: neighborhood areas disconnected from large parks and greenway corridors.

The following list contains the final criteria for site selection:

1. Area targeted for densification (high vacancy rate)
2. Dense urban environment (23 dwelling units per acre)
3. Wasteland reverting to wildness
4. Disconnected from large parks and greenways

At one point during the process, the urban wilds guide map revealed an interesting residential area with a high proportion of vegetation and park space

compared to most Baltimore neighborhoods. This concentration of unbuilt space within a densely built residential area was unusual and prompted a site visit.



**Figure 9: Urban Wilds Guide Map Showing Inner Block Parks, Data Source: Baltimore, Author**

The neighborhood with an unusual amount of unbuilt land is Historic Harlem Park. It currently suffers from the highest vacancy rate in Baltimore. The green courtyards are not community gardens enjoyed by residents, but rather empty, semi-wild areas surrounded by crumbling row houses. Although this place contains wildness and ruins, they are of the wrong kind for the purposes of this thesis investigation. This wildness is undesirable because it is the unintended consequence of poor planning decisions and closely associated as evidence of economic stress, urban decay, and social dysfunction.



**Figure 10: Harlem Park “Inner Block Park” 2012, Author**

These “inner block parks” resulted from failed attempts by planners in the 1960’s to improve neighborhood conditions by increasing the amount of community park space. One reason for this failure is because the land is city owned, and residents did not feel responsible for the landscape’s care. The parks remained full of trash and generally unoccupied, and therefore felt unsafe. These wild courtyards eventually led the site search to its final destination: Baltimore’s “Highway to Nowhere”.

Although the wildness of Harlem Park’s courtyards triggered a venture to this area, it was the blank space seen as a large cut through or gap between the neighborhood and its adjoining community that ultimately became the point of interest for this thesis.



Figure 11: Urban Wilds Guide Map, Data Source Baltimore

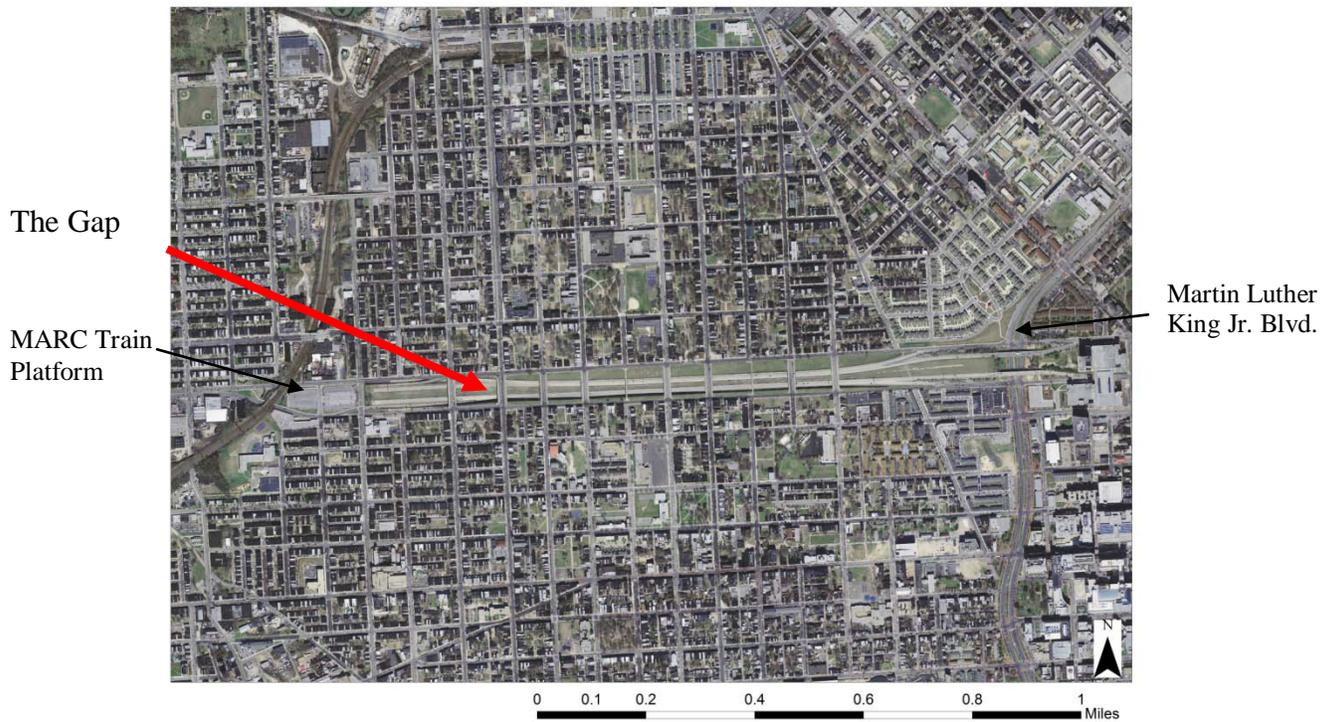
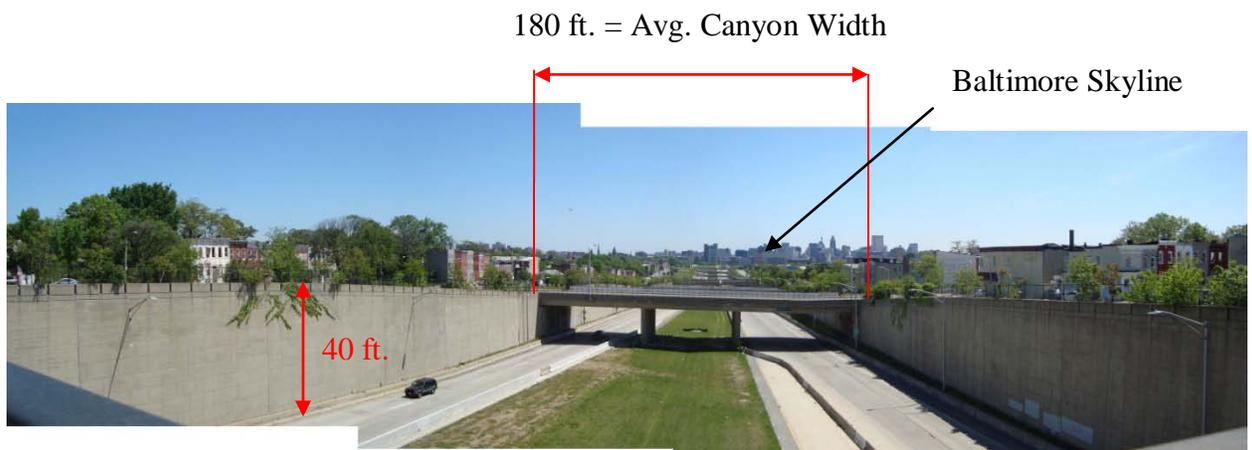


Figure 12: Aerial View of Highway, Data Source Baltimore

The narrow white gap on the map is Baltimore’s “Highway to Nowhere”. The discovery of this place changed the trajectory of the entire site search; shifting it from finding an area already in a state of rewilding to exploring the possibility of allowing wildness to enter a place where there is virtually none.



**Figure 13: Panorama Looking East From Fulton Street Bridge 2012, Author**

What makes this site so intriguing for a thesis exploration is the great feeling of potential it holds. This comes from the combination of the impressive open views east to downtown and west to Gwynns Falls, the enormous scale of the site, and being surrounded by once beautiful, now dilapidated, historically significant homes and landmarks. This feeling of potential in the landscape coalesced with a sense that there is an important piece missing where the “Highway to Nowhere” currently sits. If the missing piece; that is the right landscape were introduced, it is possible to change the current social dynamic, and shift this area from one of the least desirable places in Baltimore to one of the most desirable. Much of this site’s potential lies in the fact

that it's a spine that has the ability to join and to affect many neighborhoods in West Baltimore. This part of town could have the civic amenities usually associated with preferred urban dwelling: a place made up of small communities with the advantages of being close to downtown, and also connected to parks and wilder areas.



**Figure 14: Panorama Looking West From Fulton Street Bridge, Author**

Baltimore's Highway to Nowhere and the surrounding neighborhoods met all the criteria for this thesis site search except one: it does not exist in a state of rewilding. More accurately, this site can be defined as an urban wasteland. It is a forgotten place except to those who live in the surrounding neighborhoods and feel its negative effects.

## **Site Analysis**

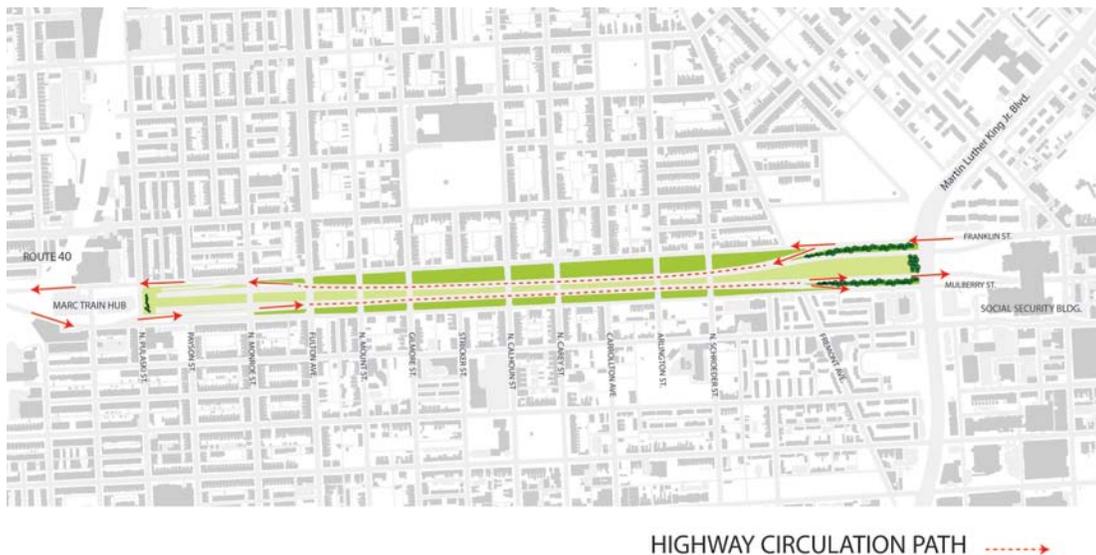
### *Community History*

The neighborhoods of West Baltimore developed as residential suburbs from the 1840's to the 1960's (Ryon and University 1993). In 2004 it became a nationally registered historic district with monuments, memorials, and historic buildings such as

the homes of Edgar Allen Poe and H.L. Mencken. The surrounding architecture is a mixture of privately-owned or rented Italianate rowhouses, single family homes, older estates, apartment buildings, and public housing. This area also has a long tradition of African American neighborhood culture that dates from the early 1900's.

### *Access and Circulation*

The highway is below grade, and high retaining walls and chain link fences were installed to keep the highway inaccessible to everything except the automobile. The highway starts to the east, crossing over Martin Luther King Jr. Boulevard via bridges and ends at Pulaski Street. Route 40 to the west, divides into one way lanes and enters and exits the highway via ramps.



**Figure 15: Highway Circulation, Author**

## *Site Elements*

### Retaining Walls

The highway canyon is supported by concrete retaining walls approximately 24 inches thick. The retaining walls vary in height as a result of the changing topography that surrounds the canyon and range from 40 to 8 feet before tapering at either end.



**Figure 16: Retaining Wall along Mulberry Street, Author**

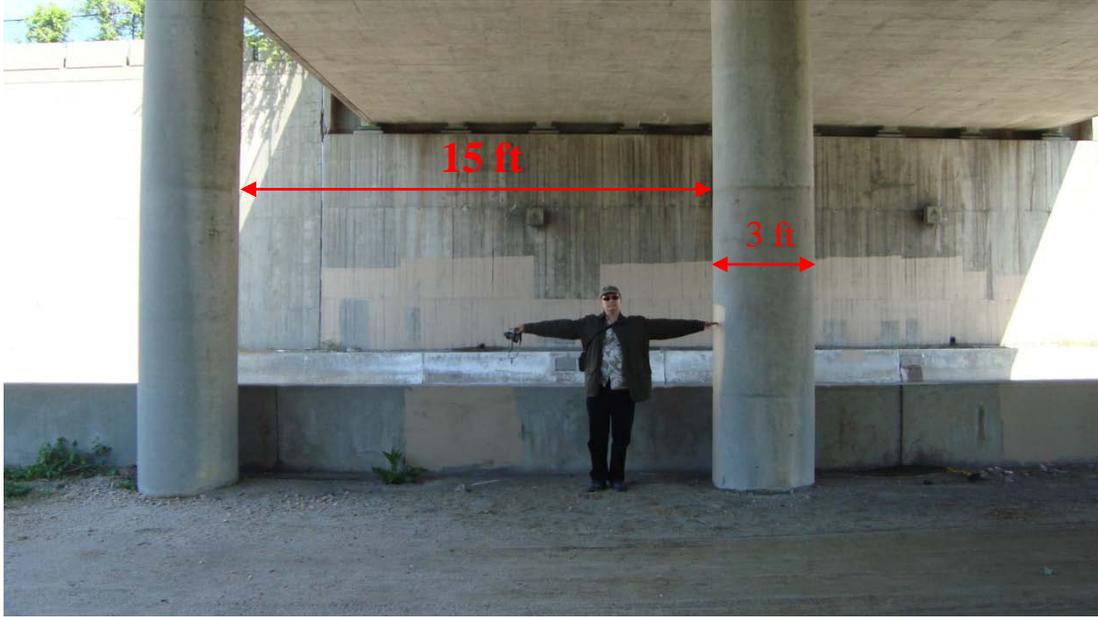


**Figure 17: Piece of Retaining Wall Removed, Author**



**Figure 18: Retaining Wall Tapering Towards Fremont Avenue, Author**

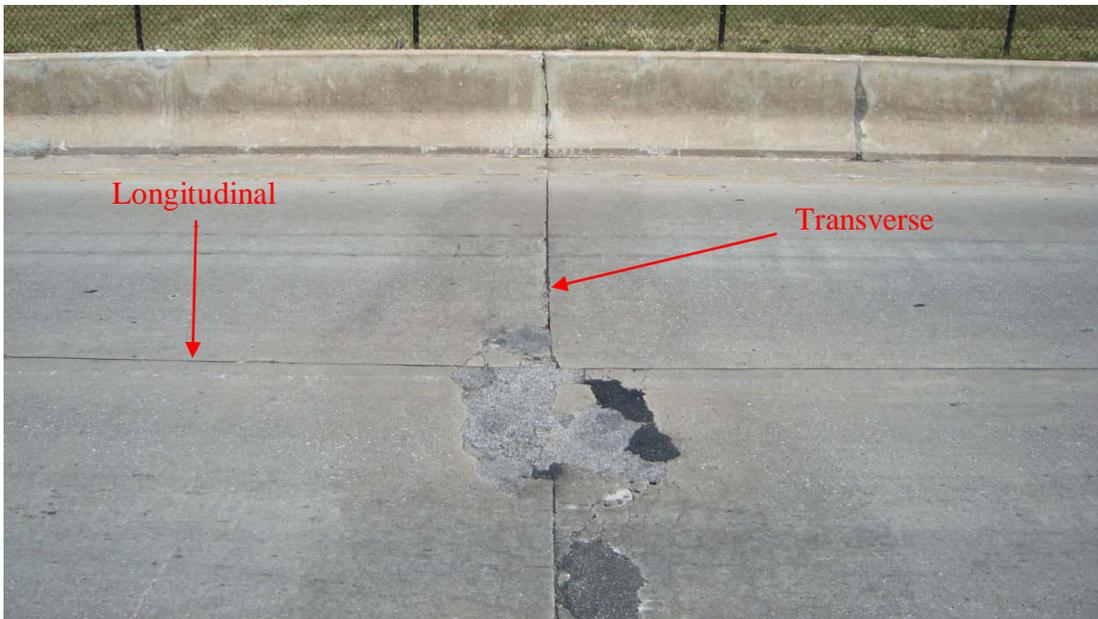




**Figure 20: Bridge Column Spacing, Author**

*Roadway*

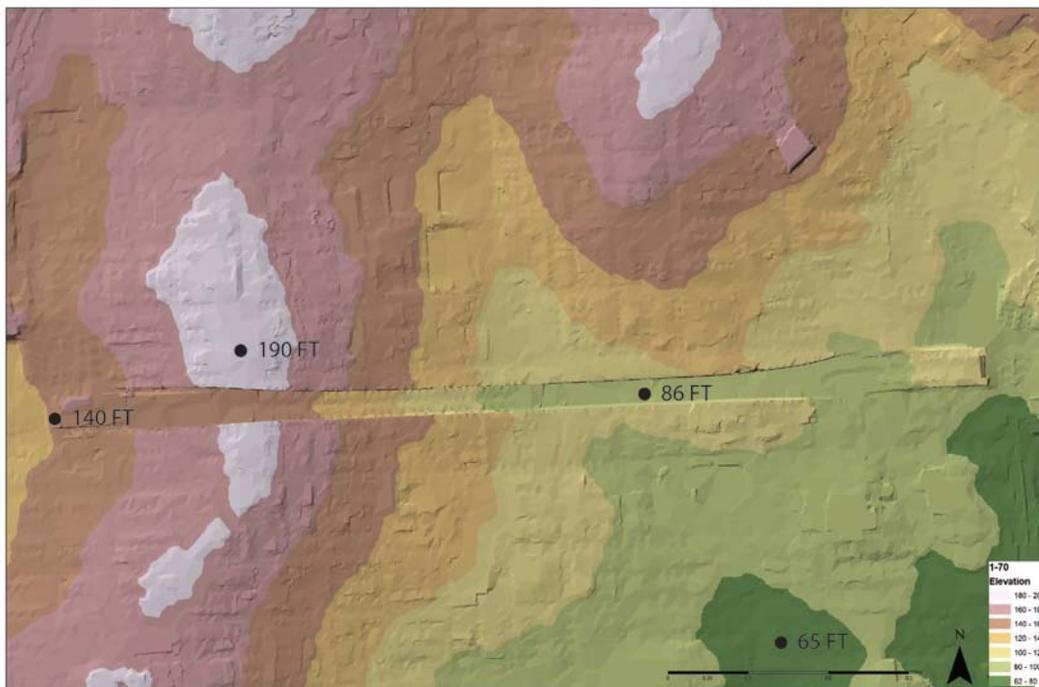
The highway concrete has longitudinal and transverse expansion joints which will facilitate the deconstruction process by providing a way to create sizeable pieces for reconstruction.



**Figure 21: Concrete Expansion Joints**

## *Topography*

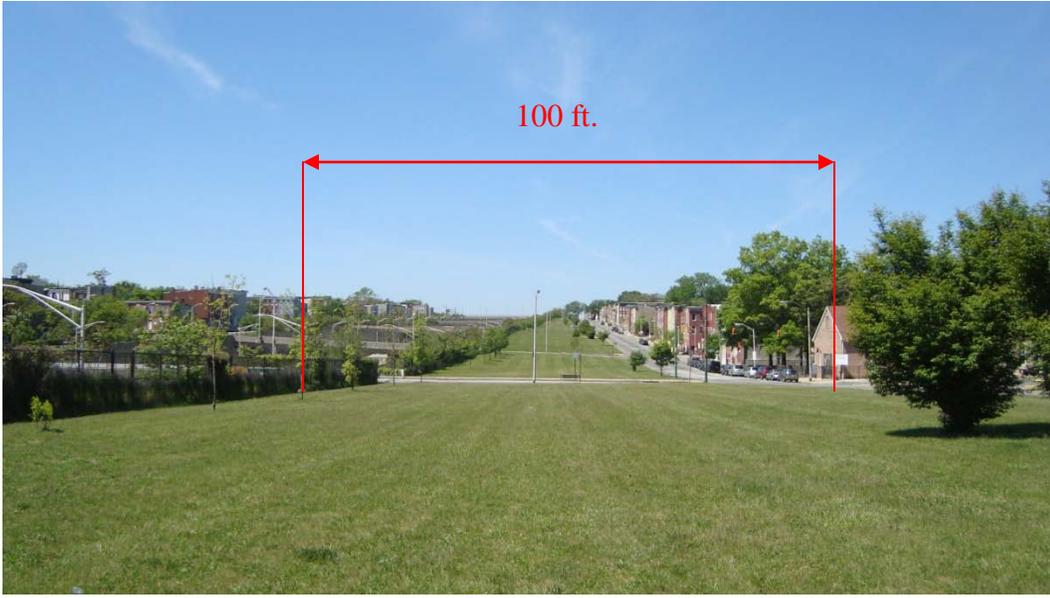
The most striking aspect about the highway is the huge canyon it forms in the middle of the city. This canyon, combined with the regional topography, presents a direct open view of downtown Baltimore's skyline. This neighborhood was once the highest point in the city until 1888 (Ryon and University 1993). The undulating topography along the Franklin/Mulberry corridor presents an interesting series of high and low points.



I-70 West Baltimore Elevation

**Figure 22: Elevation High and Low Points, Data Source Baltimore, Author**

There is a significant amount of open space above the canyon to the north. This area is part of the highway right of way and has potential for framing the wildspace with places that are more “tamed” in design.



**Figure 23: View Looking West above Canyon, Author**

*Soils*

The soil within the site is classified as urdorthents loamy very deep 8-15% slope. This is typical for highway construction to facilitate drainage. However, these soils are classified as group C which means they have a slow filtration rate when thoroughly wet. (See Appendix D Soil Classification Map and E Drainage Map)

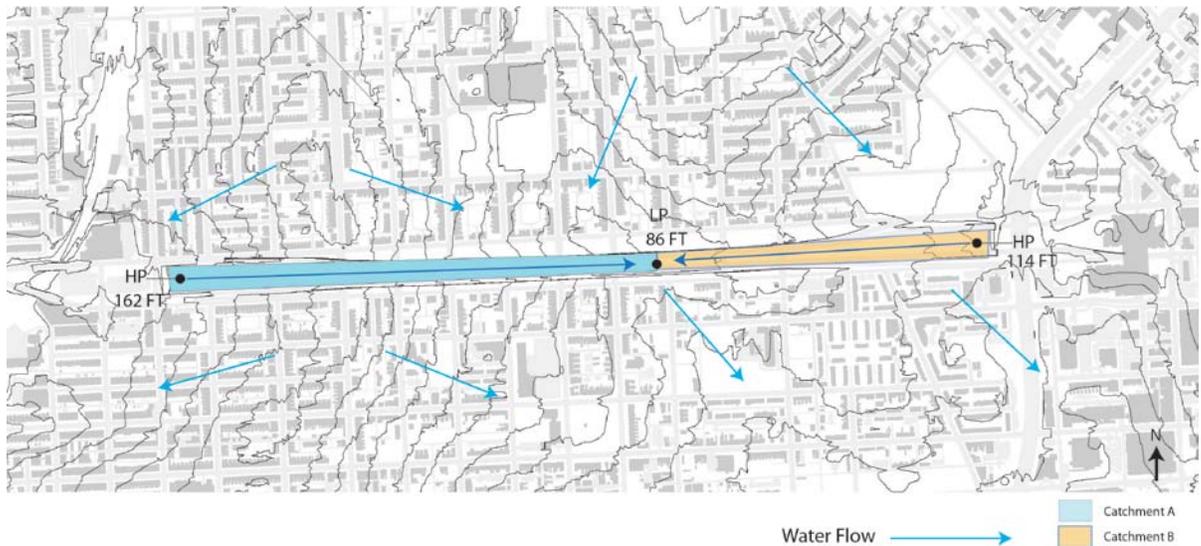
*Hydrology*

Storm water is sent to drains along the outer edge of the shoulder. A series of similar drains lie within the median between the bridges. It is possible to redirect storm water by altering these low points and allowing the water to naturally filter through soils and vegetation.



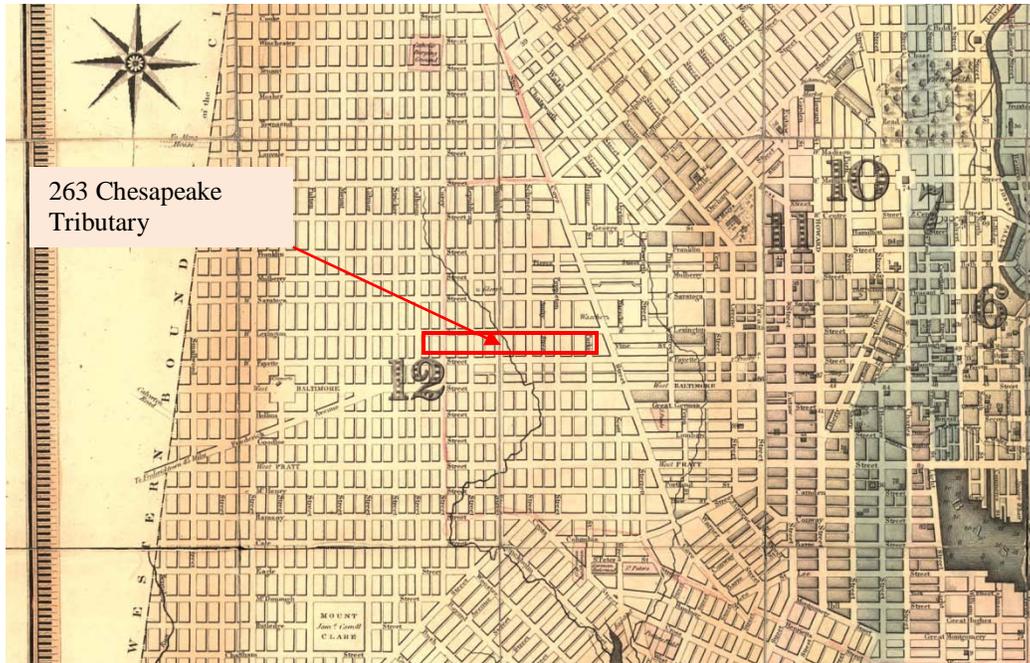
**Figure 24: Storm Drain in Highway Median, Author**

A hydrology analysis indicates that if water is diverted along the highway instead of to the storm drains, it would flow towards a low point near the center of the site. This creates opportunities for altering the character of vegetation and types of habitat based upon moisture levels.



**Figure 25: Regional and Site Hydrology Diagram, Author**

Historic maps dating from 1818 show that a stream used to flow from the original Harlem Park through the highway to Middle Harbor. This hidden stream, named 263 Chesapeake Tributary, runs behind the Nicodemus Baptist Church at 1300 West Franklin Street. The stream disappears under the street and highway construction.



**Figure 26: Map of West Baltimore 1822, Source: Library of Congress**

### *Vegetation*

The vegetation within the canyon is managed with frequent mowing. Ruderal vegetation grows along the fences and along the tops of the retaining walls. Some of the trees are causing the retaining walls to break apart.



**Figure 27: Mown Median, Author**



**Figure 28: Ruderal Vegetation along Fence Margin, Author**



**Figure 29: Tree Breaking Retaining Wall, Author**

*Wildlife*

There are few signs of wildlife within the canyon. The surrounding neighborhoods with their unintended open spaces are filled with song birds that you can hear from the street. This suggests that as habitats develop within the canyon, it will be similarly occupied.

*Population Demographics*

The neighborhood's community statistics indicate that West Baltimore has some of the highest home vacancy rates in the city at thirty-two percent compared to the city average of eight percent (As of May 2012 the Baltimore Neighborhood Indicators Alliance Jacob France Institute stated on its website: <http://www.bnijfi.org/>). This becomes evident after seeing block after block of boarded up windows and empty lots. The statistics show this area as being

economically depressed with a high rate of violent crime as compared to other places in Baltimore (See Appendix F for Community Statistical Data).

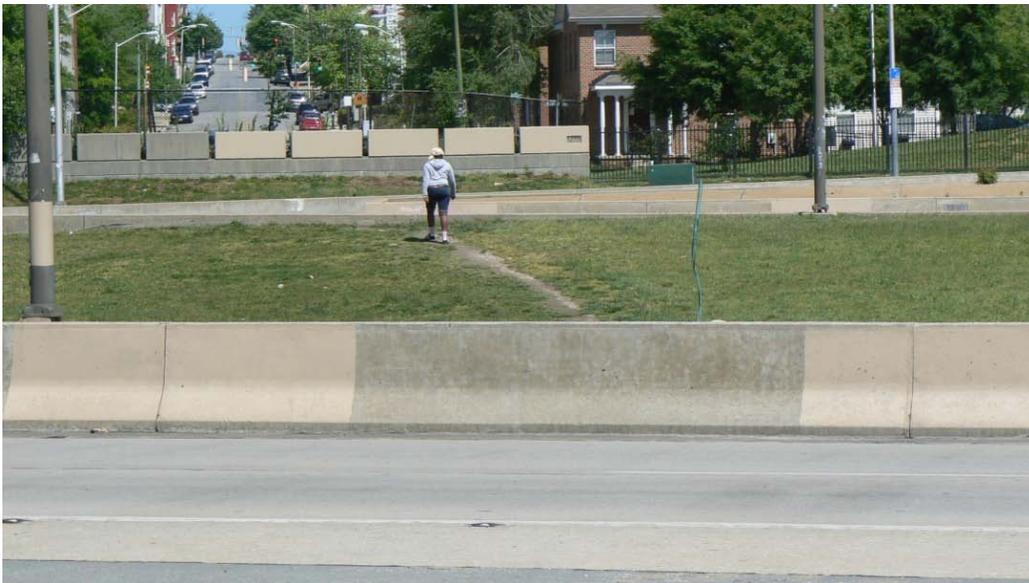


**Figure 30: Vacant Homes along Franklin Street, Author**

What statistics can't show is the community pride that remains here despite these obstacles. Signs of resilience can be seen in public art, community gardens, and most notably during the Alternative Roots Festival which took place inside the "Highway to Nowhere" in June of 2011. This arts festival was a clear message that the community wants to claim this site for the neighborhood.



**Figure 31: Franklin Square Mural, Author**



**Figure 32: Path of Desire at Fremont Avenue, Author**

Paths of desire indicate a need for improved pedestrian circulation. There are several of these paths throughout the neighborhoods. The site contains a frequently used path where the highway severed Fremont Street.

## Red Line Transit Development

There is a current proposal to extend the Red Line light rail through the site to meet with the MARC Train transit hub (As of May 2012 the Maryland Transit Authority presented on its website: <http://www.baltimoreredline.com/>). This expansion is intended to revitalize the area and provide a much needed east-west transit connection in Baltimore. The proposal could make this area a major transit oriented development and regional transportation hub capable of changing the dynamic of this blighted area by bringing new opportunities for businesses and amenities to the community. One stop is allocated along the site between the neighborhoods of Harlem Park and Franklin Square (See Appendix G for MTA Red Line Map). There is enough space at grade to have the light rail located along Franklin and Mulberry Streets, and not be routed through the canyon. Keeping the light rail above the canyon provides better access to transit users and increases the potential of this site as a wildspace.

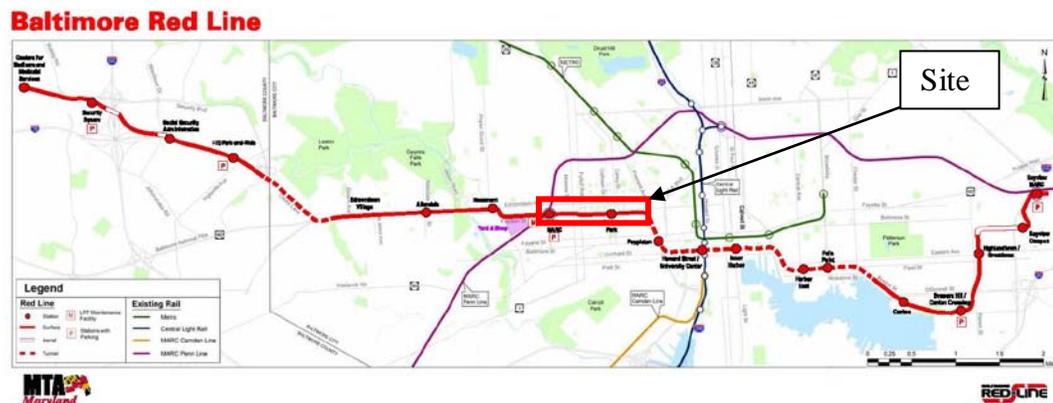


Figure 33: Red Line Light Rail Proposal Map, Source MTA

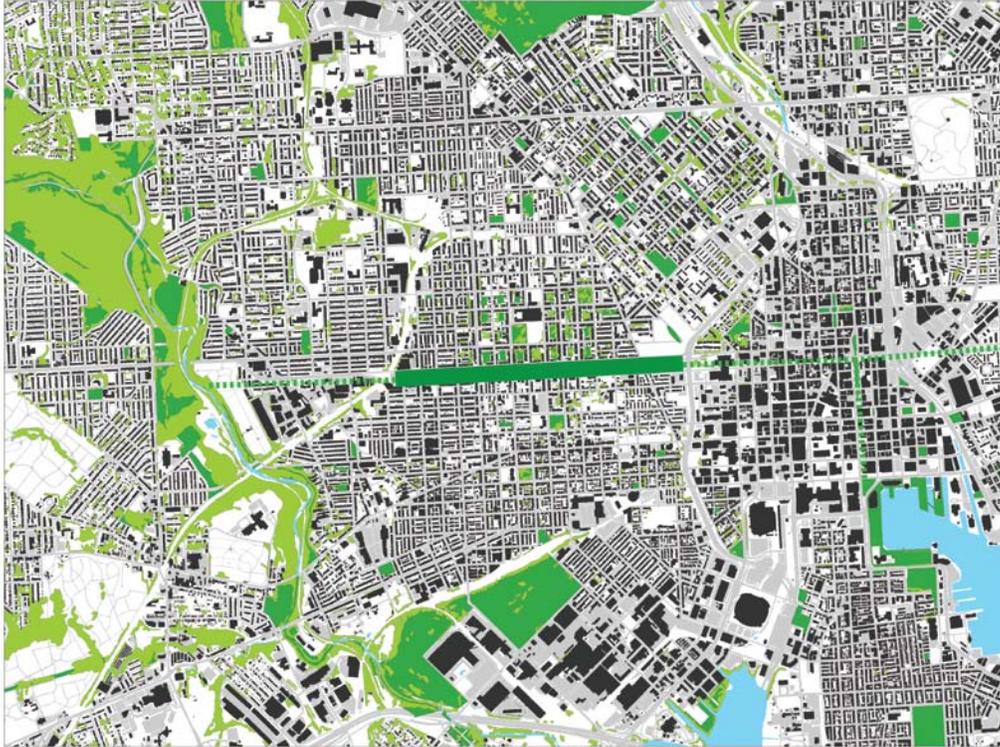
## Chapter 4: Design Goals and Methods

### *Design Goals*

Three broad design goals were developed to explore the subject of this thesis and satisfy the needs of the communities in West Baltimore and the City of Baltimore. These goals reflect key findings from the literature review, urban exploration, and site analysis. Each goal addresses sustainability in a different way.

The first goal is to *program disturbances to the benefit of wildness*. Although the human experience is a vital part of this project, the creation of habitats for multiple species drives this design. Every design decision is intended to increase the potential for wildness in this site and its full ecological implication. This means that every intervention is meant to maximize opportunities of wild urban nature to exist on its own terms. This requires setting boundaries for use and in some areas proposing non-human use. Different levels of accessibility and human presence are explored in the design.

The second goal is to *increase connectivity on three scales: ecological, urban, and community*. For the design to be ecologically sustainable, viable habitat connections must be given an advantage whenever possible. To be economically sustainable the expenses of intervention should be as low as possible and the final design should be able to adapt to Baltimore's future needs. To be socially sustainable, it must be acceptable to the people who work, live and play nearby.



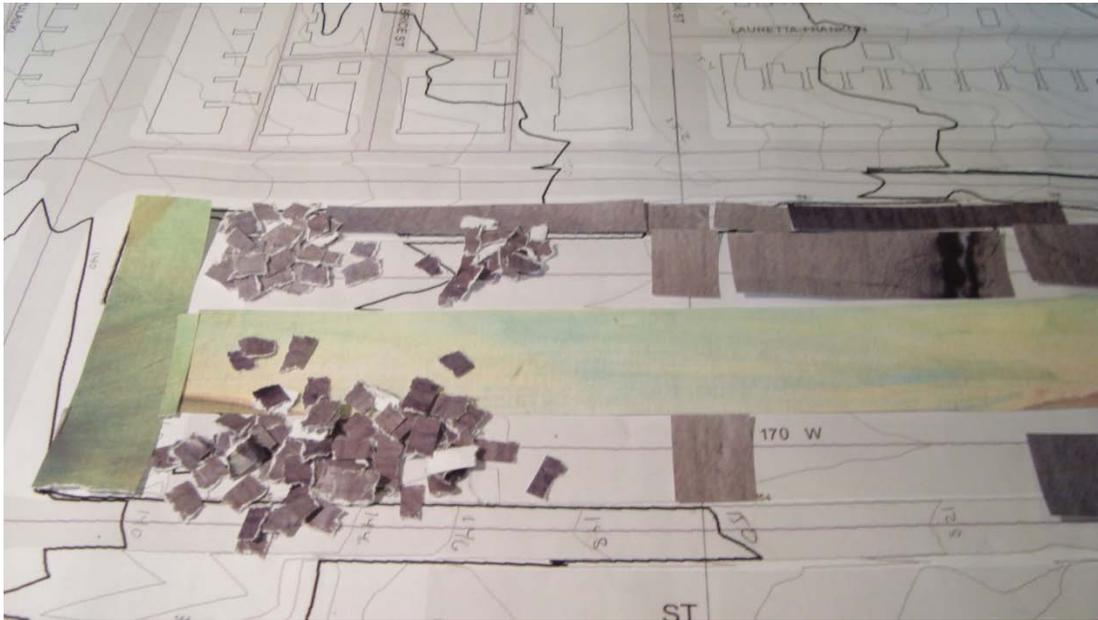
**Figure 34: Diagram of Potential Connectivity through Wildness, Author**

The third goal is to find ways of *re-purposing the material on site*. The aim of this is to remove the infrastructure that has failed as an urban artery as well as splitting a community, and replace it, with a new, sustainable infrastructure of wildness with greater potential to heal some of the damage to the community that has occurred. Finding ways of using the material on site is a way to strive towards a higher level of sustainability by reaching beyond current metrics for re-purposing construction materials.

### ***Methods***

“Leaving a hole is not like flattening a hill. I prefer a quarry that leaves as much, if not more, surface area than before work began.” (Goldsworthy 2004, 74)

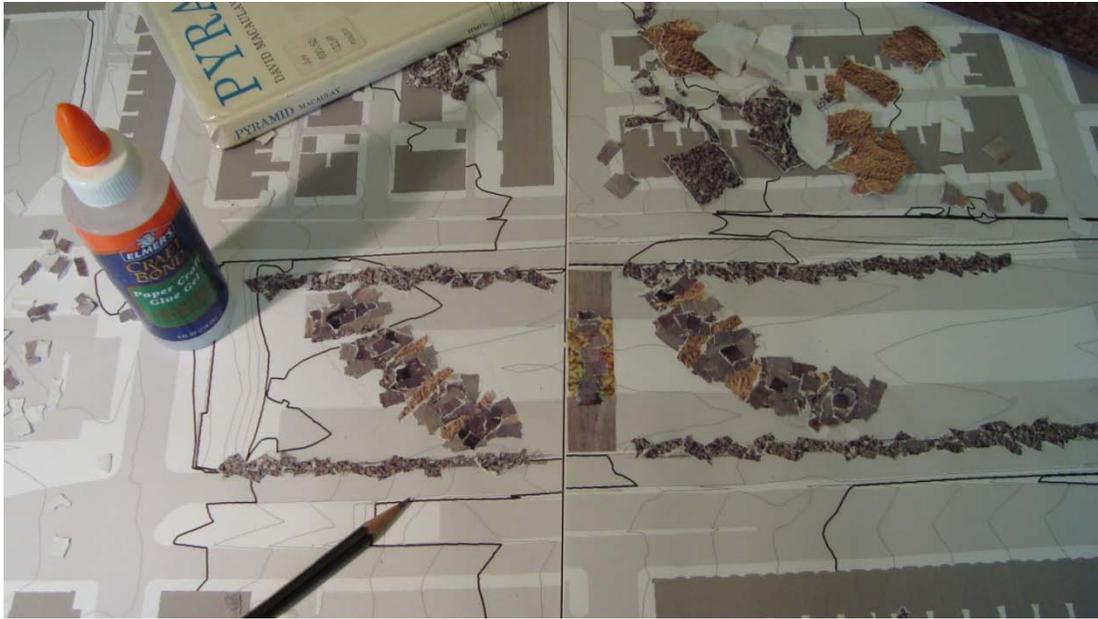




**Figure 36: “Concrete Slab” Deconstruction, Author**



**Figure 37: The “Urban Quarry”, Author**



**Figure 38: Constructing Topographies, Author**

Modeling with clay and Plaster of Paris was another method for revealing the capabilities of the deconstruction and reconstruction process.



**Figure 39: Plaster of Paris Model of Concrete Slabs, Author**



**Figure 40: Plaster of Paris Model of Concrete Slabs, Author**

The writing of narratives was helpful for describing the aesthetics of each habitat and provided a way to think about design from the animal's perspective.





**Figure 42: View of Focus Area 1 from Payson St, Author**

This end is close to where Baltimore’s future Red Line light rail will meet with an existing MARC train platform. The Ice House structure will likely be renovated as part of a regional transportation hub stimulating transit oriented development in the surrounding neighborhoods.

Four elementary schools are near this end of the park. Lockerman Bundy Elementary sits closest just south across Mulberry Street. The Payson Street line is a good opportunity to provide access to the park because the topography can be easily leveled. Payson Street can be reconnected as a pedestrian walkway to increase connections between the neighborhoods that were severed by the highway.

## Focus Area 2



Focus Area 2: Stricker Street Pedestrian Bridge

**Figure 43: Focus Area 2 Context Map, Author**

The highway section between the bridges of Fulton Avenue and Calhoun Street are surrounded by retaining walls with heights varying from 20 to 40 feet. These walls are too deep to remove without great expense or significantly impacting the surrounding streets and buildings. They are valuable to keep for three reasons:

1. They provide structural strength for possible future institutional buildings.
2. They shelter the park from surrounding traffic and provide greater control of access.
3. They potentially provide a richer spatial experience along the greenway.

The space under the Fulton Avenue street bridge is the top of a ridge that gently slopes down at a three percent grade as you travel east. This topography will cause the vegetation to change in character constituting a toposequence based upon

drainage and soil wetness. The solar orientation of the retaining walls will add complexity to the forest and microclimate development.

The Stricker Street pedestrian bridge is centrally located along the highway and an ideal place for a future Red Line light rail stop for that reason. It is also a good opportunity as an access point to the park because people will already be on foot. This mini-hub could influence future development and economic growth in the surrounding area.

### Focus Area 3



Focus Area 3. N. Carey Street to Carrollton Ave. Pedestrian Bridge

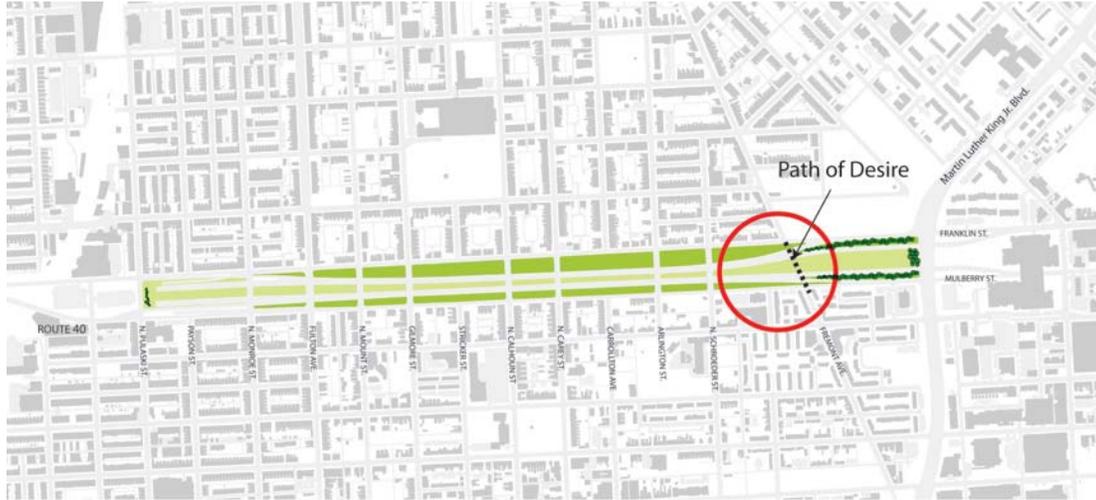
### Figure 44: Focus Area 3 Context Map, Author

The highway section between Carey Street and N. Arlington Avenue is the lowest part of the project with an elevation of 90 feet. A hidden stream called 236 Chesapeake Tributary used to flow through this area, but was buried by road construction. It runs behind Nicodemus Baptist Church and would have continued

under the Cary Street bridge towards the neighborhood of Poppleton. It is possible to daylight this hidden stream within the canyon to form an ephemeral cascade bringing water to form streams, pools, wet meadows, and swampy woods. The stream would collect stormwater from the alleys above; a welcome solution for those with flooding basements.

The North Carrollton pedestrian bridge is another opportunity to access the park from above. The wall is 20 feet high on the Franklin Street side and 10 feet high on the Mulberry Street (south) side. These walls could support terraced steps to transition from the park space above to below.

#### Focus Area 4



Focus Area 4: Schroeder St. to Fremont Ave.

**Figure 45: Focus Area Context Map, Author**

This area of the highway bisects North Fremont Avenue. Here the retaining walls taper to an end and the topography becomes level with the adjacent streets making it accessible to the surrounding neighborhoods, but only if you climb over two jersey barriers and cross the highway. A footpath is worn in the turf that connects the severed ends of North Fremont Avenue. This is called a path of desire. Its wearing indicates a need from the community that provisions should be made to reconnect Fremont Street or provide easy pedestrian access across or through the canyon. The walls that taper can be removed without causing damage to the streets of Franklin and Mulberry. The ground can spill into the canyon so people can enter in a more direct, yet sloping way.

The intersection of the park with Fremont Avenue is a good opportunity for the second proposed Red Line light rail stop.

After passing under the Schroeder Street bridge, a wide open space of lawn appears. This sight could be the visual entrance to downtown. Travelling in the other direction, this area becomes the gateway to the canyon.



**Figure 46: View Looking East from Schroeder Street Bridge, Author**

### *Approach for Paths*

The highway is approximately 1.4 miles long with an east-west orientation. The average width of the highway canyon is 180 feet. This is well within the minimum critical width necessary for a variety of paths, nodes, and micro-rooms to form within the space as a greenway corridor. A main path is intended to connect with the greater greenway system joining Gwynns Falls Wilderness Park to downtown Baltimore.

Some paths are intentionally created; others will be formed over time as paths of desire. A primary greenway trail will be incorporated last, after the habitats have reached a stage that will tolerate human activity.

## Chapter 5: Design Proposal

### *Overview of Design*

The highway can be viewed as a series of Joseph Cornell boxes ready to be filled with an assortment of urban wildness elements. The retaining walls frame the wildspace and present it for viewing from the park edges above. Selected access points allow entrance into the site for a different kind of experience – more tactile, and full of sounds and smells.

The site is large enough to contain a diverse series of habitats revealing the many forms and characteristics that urban wildness can take. This diversity is enhanced by the variety of substrates and soil conditions due to multiple levels of disturbance, microclimates, varied intensities of human use, greater variety of structures on sites (walls, paths and landforms), and extremes in environmental conditions (Richter and Weiland 2012). Habitat development will occur through the process of guided plant succession. This in turn is guided by soil manipulation and selective removal and construction of topography types made out of the concrete slabs and pieces. The final collage and master plan drawings illustrate a mosaic of microclimates whose development is based upon extremes in moisture and light levels. The wild vegetation will constitute a toposequence reflecting the topographic differences such as south facing versus north facing slopes, pool basins, soil textures, and drainage. The vegetation is used under its own dynamic with restrained maintenance to protect important structures such as the existing bridges.

The design proposal contains four primary habitats: *dry meadow*, *eastern deciduous forest*, *woodland stream*, and *wet meadow*. Each habitat description begins

with a narrative that inspired the character and intended experience of the wildspace. This narrative is written from the perspective of the animal chosen to inspire design decisions for the habitat. Some of these species hold particular significance for Baltimore. All of these species can thrive in the rewilded urban environment anticipated in the design.

Design decisions are based upon analysis of the site and surrounding context. Each design includes the habitat type, plant palette, topography types, special design elements, and pedestrian access.



**Figure 47: Master Plan Collage, Author**



Figure 48: Master Plan and Longitudinal Section, Author

## *The Designs*



**Illustration 1: Goldfinch, Author**

### **Park for a Goldfinch, *L. Carduelis tristis***

The Goldfinch is an acrobat, who flies through the air with a bouncy, undulating pattern and grabs onto the tops of seed heads swaying in the breeze. He draws attention to himself wearing bright yellow and singing as he flies. A strict vegetarian, the Goldfinch likes living near weedy fields abundant with seeds, especially thistles. His mate weaves her nest with downy seed fibers and spider silk, tucked safely away within the boughs of an evergreen thicket.

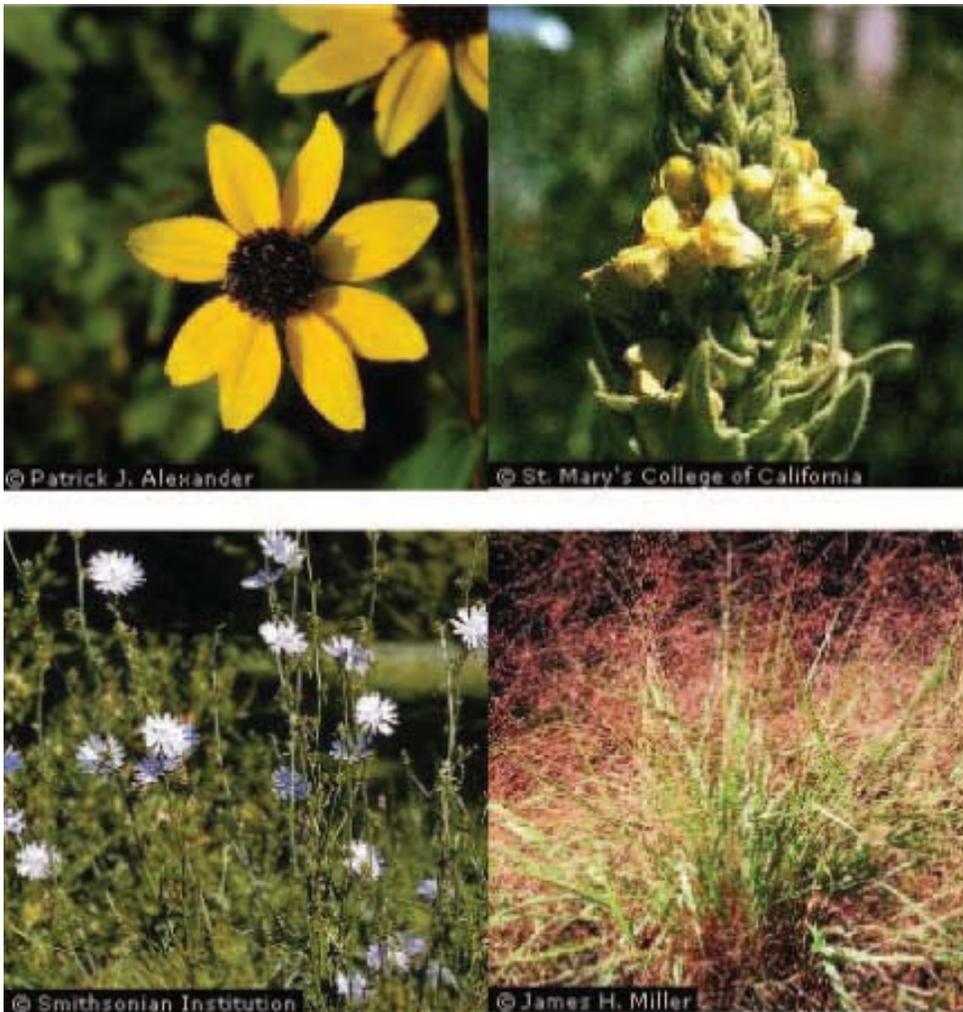
### **Design Elements:**

*Habitat: Dry Meadow*

The *Dry Meadow* is a horizontal space intentionally defined and set up by manipulating the soil underneath. It is dominated by small, slow growing, and stress tolerant plants such as thistle, Queen Anne's lace, Verbascum, and Asters that prefer

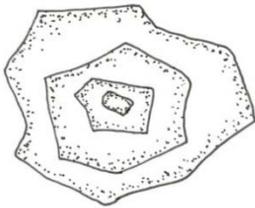
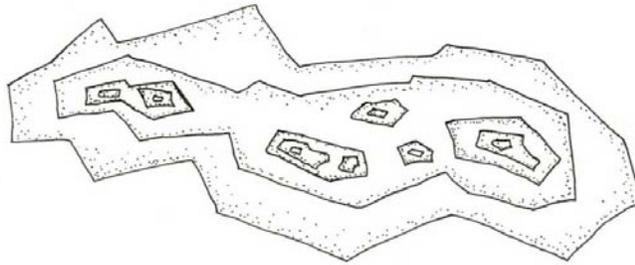
growing in infertile materials such as crushed highway rubble, sand, and gravel. They are intolerant of shade, but this is not an issue here because very few plants will tolerate these conditions including trees. The plants are slow to establish and may take two years to become attractive. Mowing in summer as an aid to persistence will not be required.

*Plant Palette*



**Figure 50: Dry Meadow Plant Palette Collage, Image Source USDA**

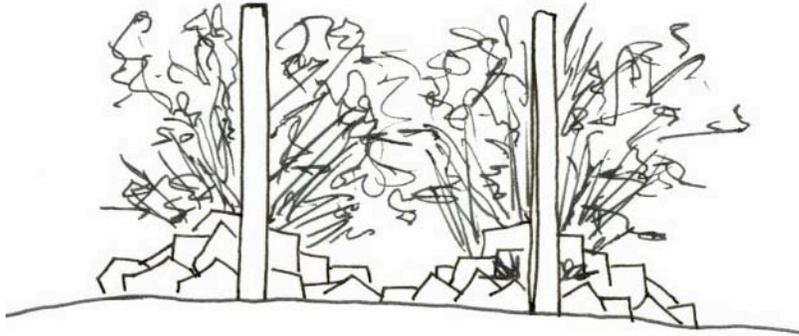
*Topography types: Ridges and Mounds*



**Illustration 2: Ridge and Mound, Author**

The low undulating mounds within the meadow add variety to the flatness of the *dry meadow*. The ridges undulate in a rhythmic pattern that mimics the bouncy flight of the Goldfinch. This area is designed to let kids run wild while their parents or teachers relax in the shade around the park edges.

### *Hedgerow – A wild fence*

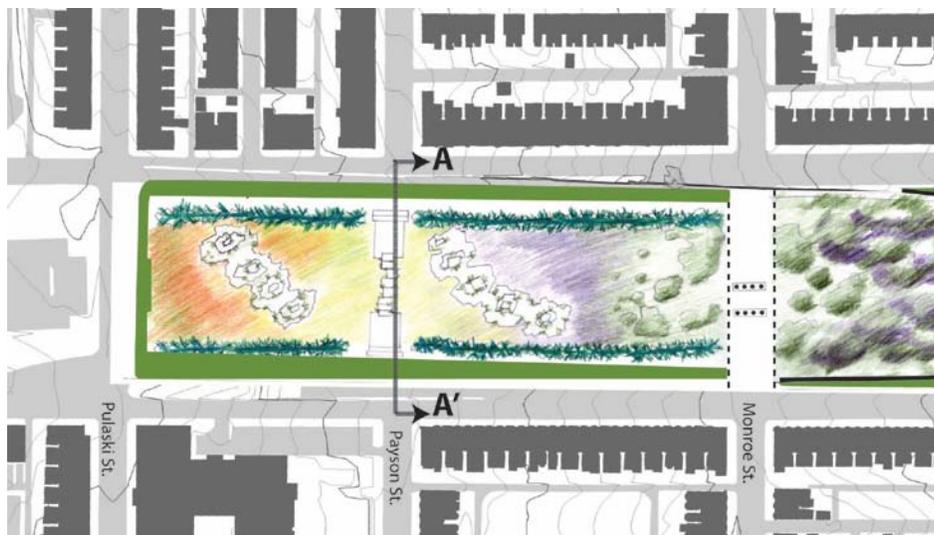


#### **Illustration 3: Agricultural Hedgerow, Author**

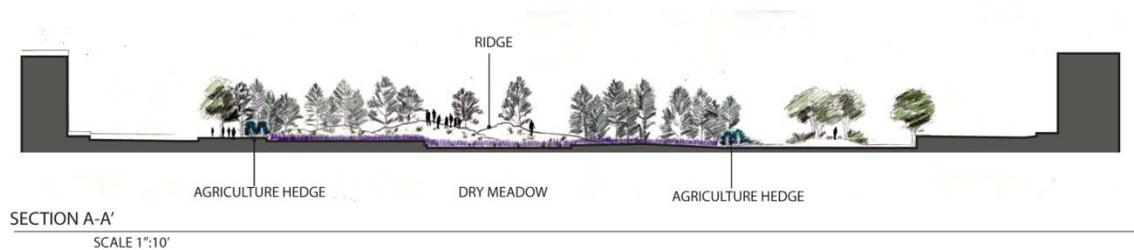
The traditional English hedgerow is an agricultural relic that can become a haven for wildlife, especially birds. Constructing an agricultural hedgerow in this design begins by making a fence with posts and wire and laying concrete rubble along its axis. The concrete rubble dissuades pedestrians from walking through the fence. Birds perch on the wires and deposit seeds of plants they like to eat. These seeds germinate to form thick tangles of vegetation which will eventually cloak the fence and rubble. The hedgerow can be trimmed neatly as a frame and still provide habitat for birds and other kinds urban wildlife. Raspberries, blackberries and a variety of native wild urban plants could be planted to jumpstart the process.

*Thicket*

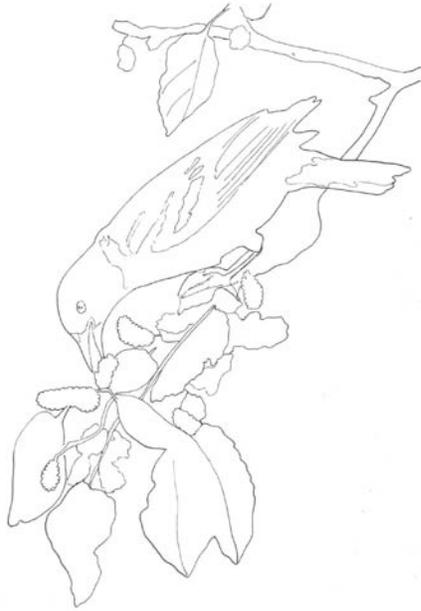
Thickets of evergreens such as Pines and Cedars can function as corridor stepping stones in this exposed and highly urban section of the park, providing shelter for birds and pockets of shade for relief from the sun. These thickets form the Pine ramble that leads to the forested canyon to the east.



**Illustration 4: Dry Meadow, Plan, Author**



**Illustration 5: Section A-A', Dry Meadow, Author**



**Illustration 6: Baltimore Oriole, Author**

**Park for a Baltimore Oriole, *L. Icterus galbula***

The Baltimore Oriole is a culinary hedonist, passing over unripe mulberries and cherries, selecting only the darkest and sweetest fruits. She prefers feasting high in the tree canopy along open forest edges where the selection of insects is greater. Her favorite drink is tulip poplar nectar, but she's been seen sneaking a sip from a hummingbird feeder in a pinch.

**Design Elements:**

*Habitat: Eastern Deciduous Woodland*

In the temperate Mid-Atlantic region, woodland is the natural state for the long-term development of landscape vegetation. This section of the canyon would be best suited as a deciduous forest. Without a ceiling of forest canopy the space feels

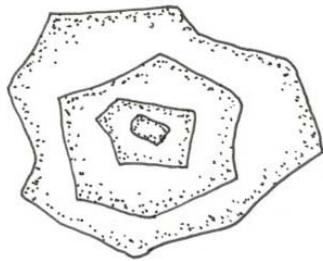
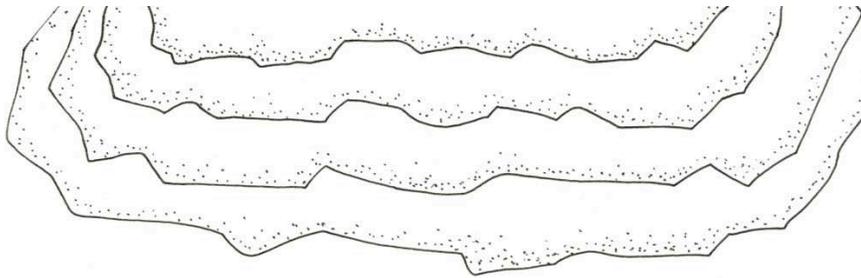
over exposed, oppressive, and unsettling. The larger trees can be managed by a thinning process to form forest rooms providing enclosure and relief from the sun. In some areas, the highway rubble is busted and left for the trees to break apart. Other areas are completely excavated for the trees to grow to a large size more rapidly. Over time the tree canopy will eventually reach the upper level of the street. This increases the chances of someone seeing an actual Baltimore Oriole in Baltimore.

*Plant Palette*



**Figure 51: Deciduous Forest Plant Palette Collage, Image Source: USDA**

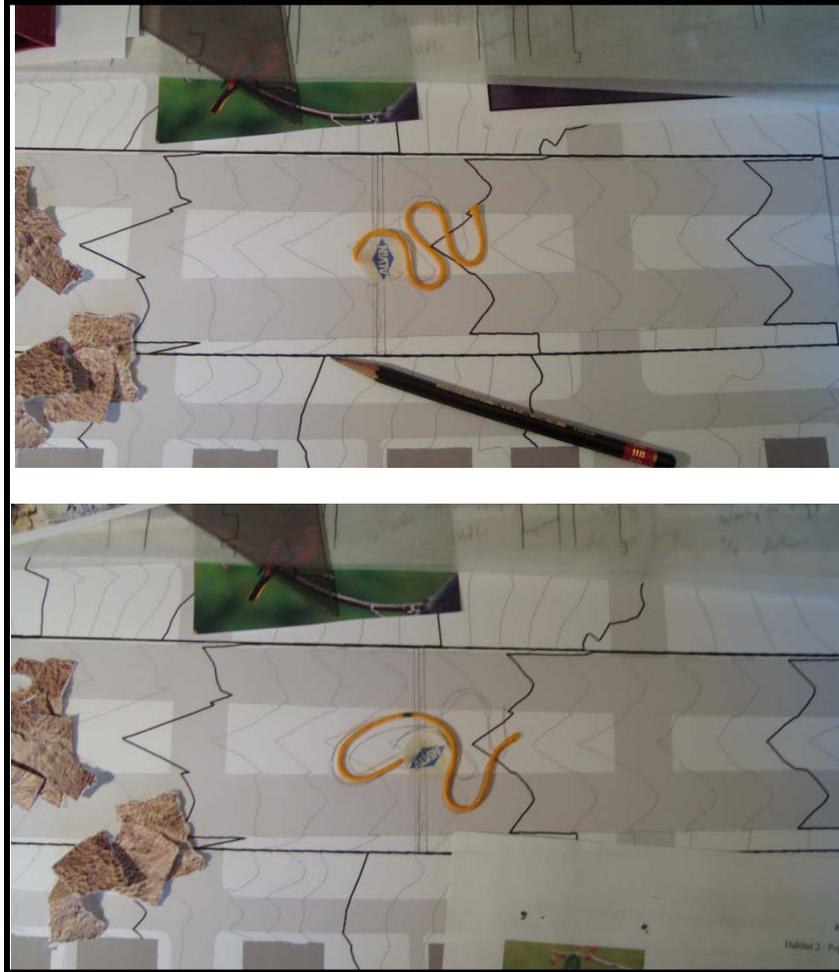
*Topography Types: Banks and mounds*



**Illustration 7: Bank and Mound, Author**

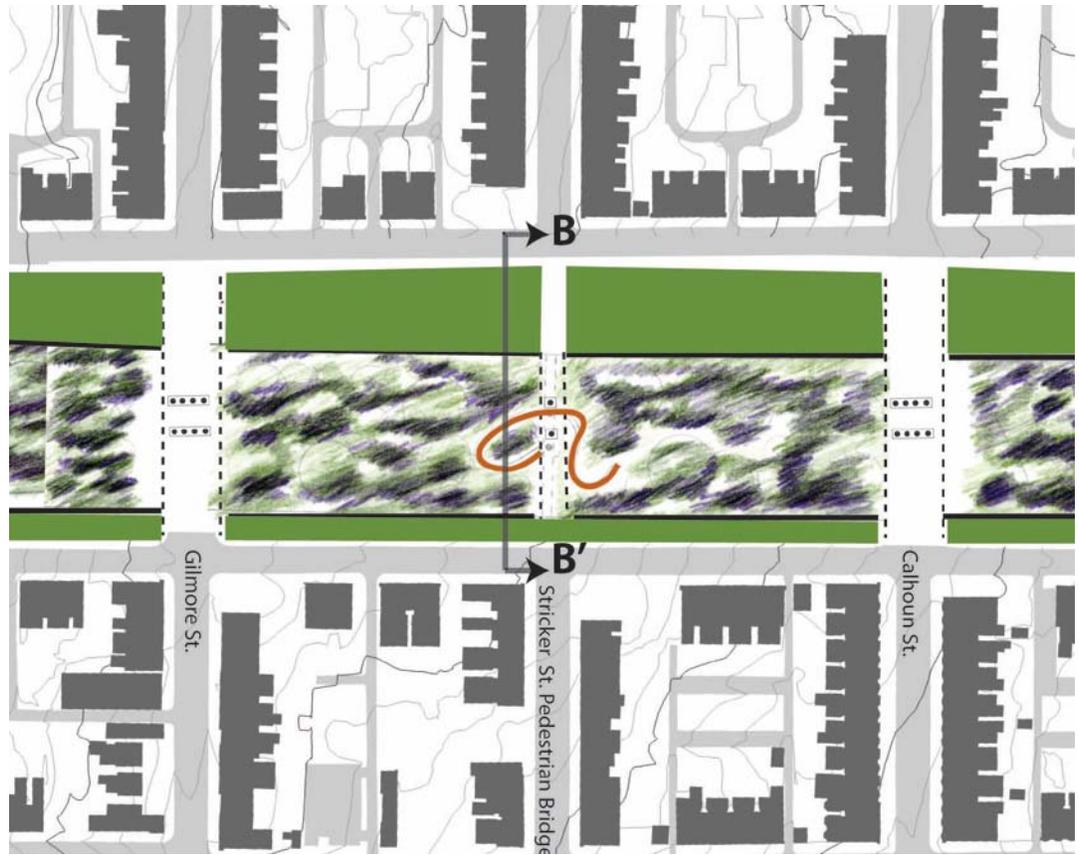
The topography forms gentle banks and mounds to protect the retaining walls and bridges. The hills and sloping banks will guide future path placement.

*Pedestrian access: The Ramp*

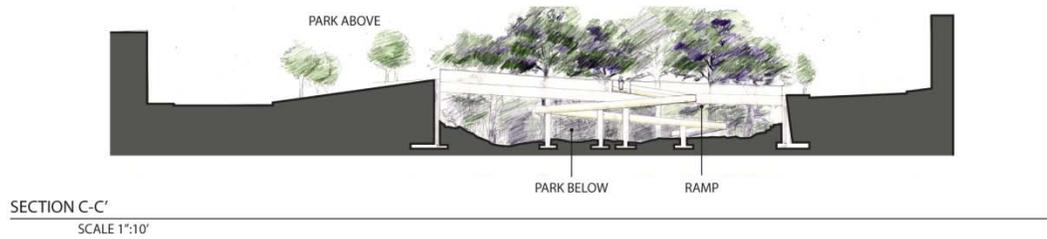


**Figure 52: Collage of Ramp, Author**

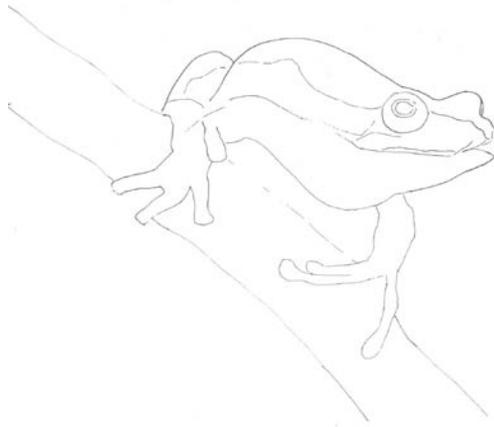
The ramp was designed using a piece of yarn measured to scale and the proper length needed for a five percent slope to drop a distance of 20 feet. An Ultra High Performance Concrete ramp weaves through the canopy to mimic the slow fluttery flight of the Baltimore Oriole as it makes its way down from the canopy. This ramp is designed to provide easy access between the two levels of this park.



**Illustration 8: Eastern Deciduous Forest and Access Ramp Plan, Author**



**Illustration 9: Section B-B', Access Ramp, Author**



**Illustration 10: Spring Peeper, Author**

**Park for a Spring Peeper, *L. Pseudacris crucifer***

The Spring Peeper likes to be first. Always the first one to tell you it's spring, he notices when the ice first starts to melt and the sound of water begins trickling again. White knuckled, he grips the branches of a Red Maple waiting and waiting until he just can't hold it in any longer.

**Garden Design Elements:**

*Habitat:* Woodland Stream

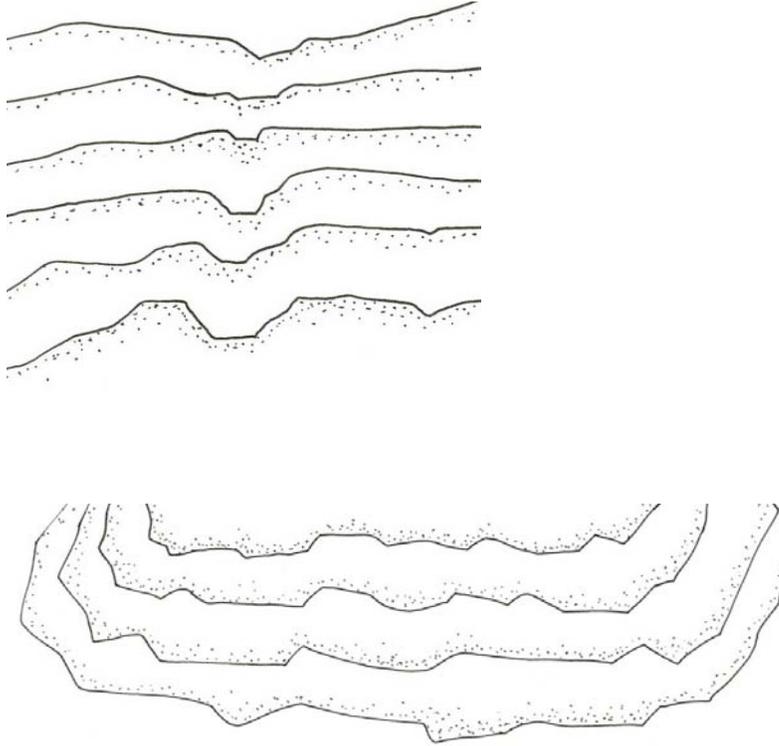
The increase in moisture level from the stream and hydrology of the site makes this area a suitable habitat for water tolerant trees such as Sycamores and Red Maples. As trees die, they should be left to decay on the ground, providing shelter for salamanders, food for insects and birds, as well as places for moss and lichens to grow. The character of this space is cool, shaded, and mossy with the sound of flowing water.

*Plant Palette*



**Figure 53: Woodland Stream Plant Palette Collage, Image Source**

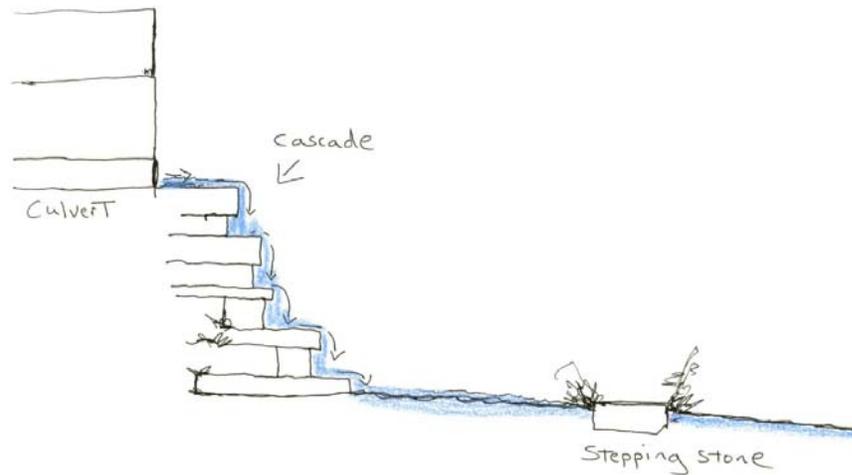
*Topography Types: Swales and Banks*



**Illustration 11: Swale and Bank, Author**

The re-purposed concrete slabs are used to shape the stream banks and guide the water towards the wet meadow under the footbridge. The pieces are broken more finely with the aggregate separated from the cement so that the stone rubble forms the stream bed.

## *Cascade*



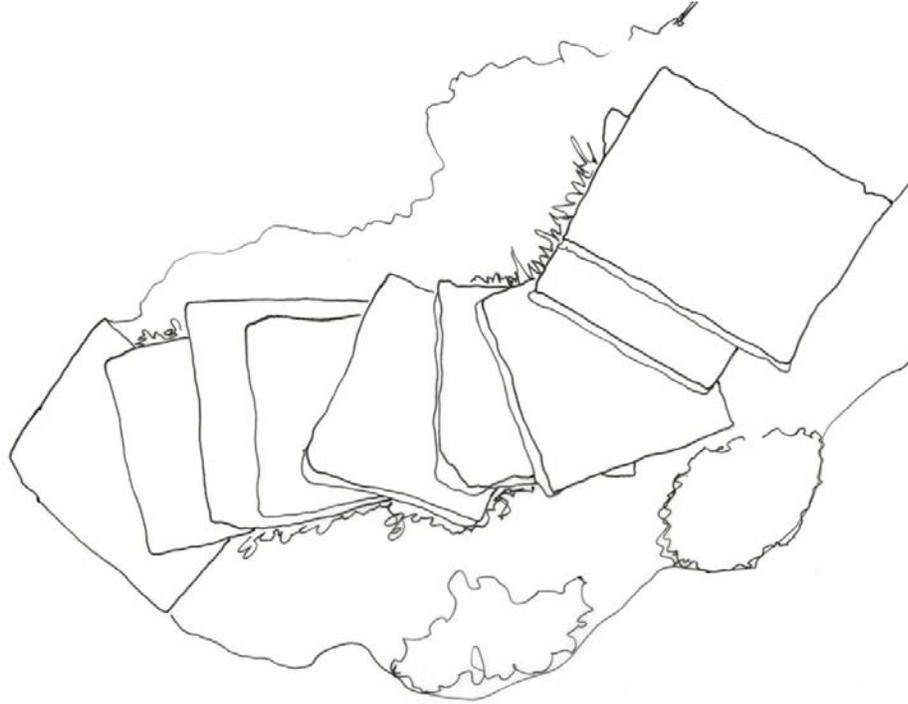
**Illustration 12: Cascade, Author**

To daylight the stream, the retaining wall is cut away at Franklin Street and Mulberry Street. These new crevices create two “rooms” off the main corridor. The culvert opens to a terraced cascade of concrete slabs where storm water fills a series of wide catchments one foot deep, each spilling into the next for maximum oxygenation and cleansing.

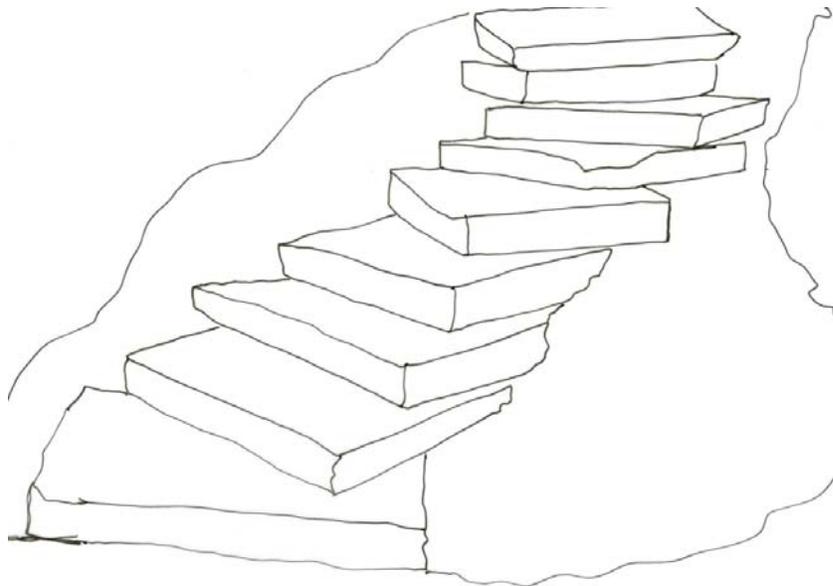
## *Stream*

The water at the bottom pool follows a daylighted portion of the 237 Chesapeake Tributary. The stream is formed in an alternating pattern of pools and riffles. Larger slabs of concrete become weirs to form the pools. Vegetation along the stream helps to purify the water before it reaches the Middle Harbor.

*Pedestrian Access: Terrace Steps*

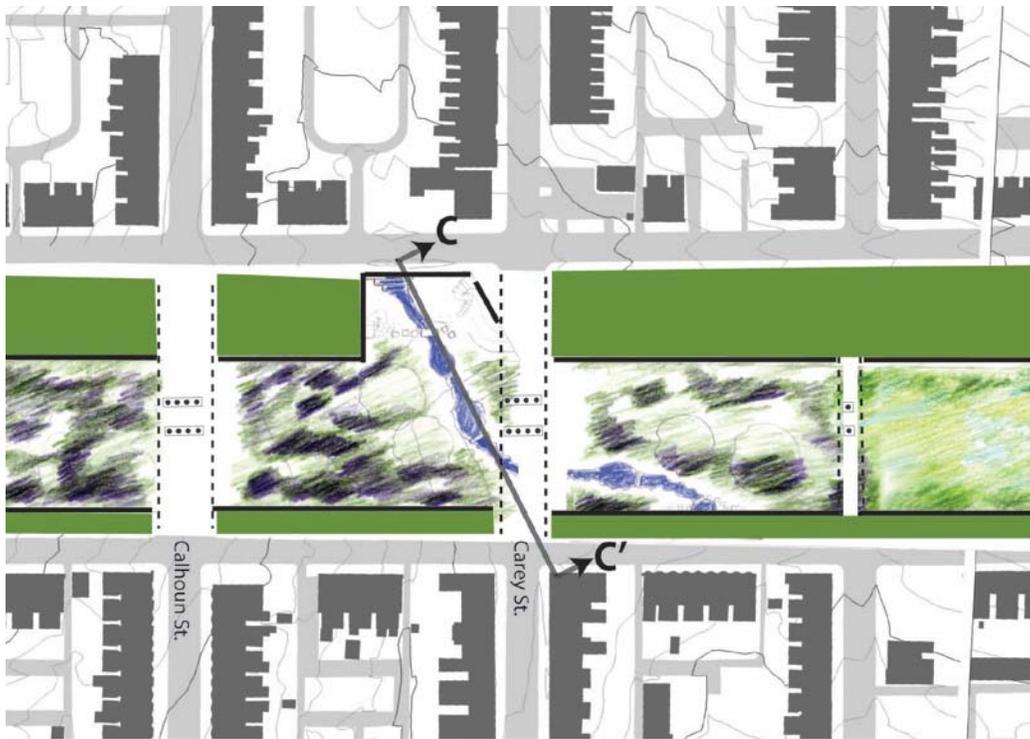


**Illustration 13: Concrete Slab Steps Plan, Author**

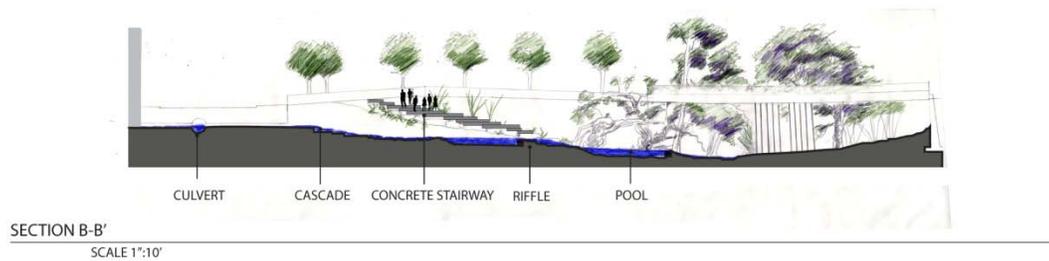


**Illustration 14: Concrete Slab Steps Perspective, Author**

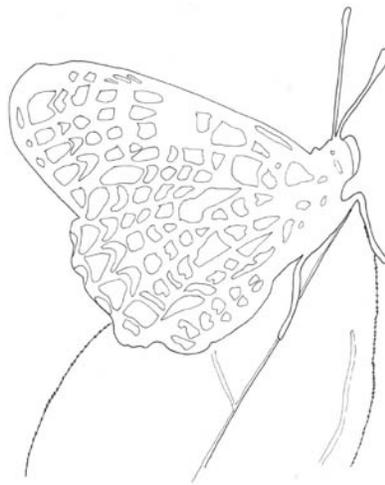
The steps are made from concrete slabs that are approximately 10 inches thick. They are stacked one on top of another to form a winding staircase down the slope. The expansion joints from the highway are likely to separate with a clean edge that can form firm and even step edges. The irregular edge will be turned to the sides and will form pockets where plants and lichens can attach and grow.



**Illustration 15: Woodland Stream Plan, Author**



**Illustration 16: Section C-C' Cascade, Stream, and Steps, Author**



**Illustration 17: Baltimore Checkerspot, Author**

Park for a Baltimore Checkerspot, *L. Euphydras phaeton*

The Baltimore Checkerspot waits. Perched on a leaf, he looks with keen eyes for his future mate to flit across the meadow. This gives him time to reflect. It's amazing how much he's changed; no longer obsessed with chewing on white turtleheads with his siblings. He likes this more independent life. He's just waiting to find someone to share it with.

## Design Elements

### *Habitat: Moist Meadow*

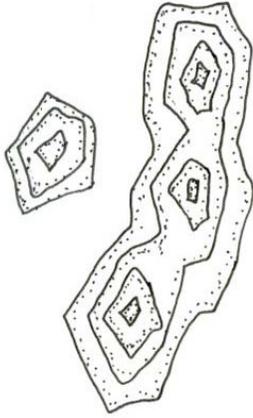
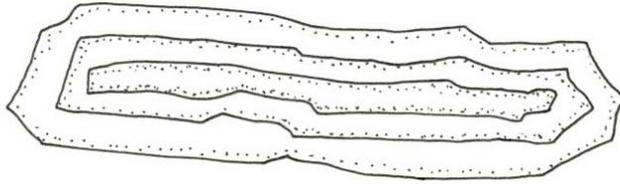
The earth is graded to accept water from surrounding open spaces becoming suitable as a moist meadow habitat. The meadow is the place where community space ends and the space for wildness begins.

### *Plant Palette*



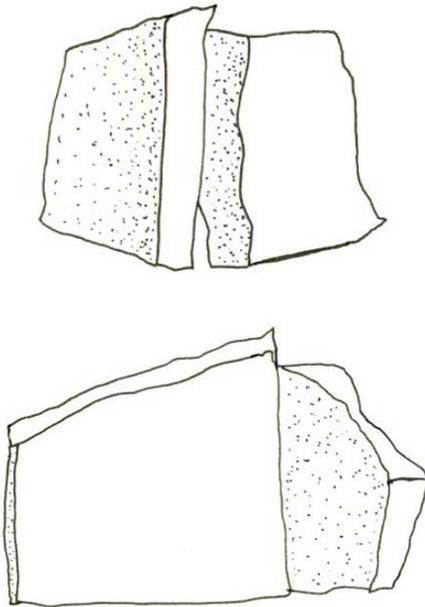
**Figure 54: Deciduous Forest Plant Palette Collage, Image Source USDA**

*Topography Types*



**Illustration 18: Berms and Hillocks**

### *Trail Markers: Concrete Slabs*



### **Illustration 19: Sketch of Concrete “Butterfly”**

Concrete “butterflies” become places for people to perch and watch a game, objects to throw a ball against or paint graffiti. They are also placed as trail markers transitioning the pedestrian to and from the park like the hint bread crumbs instead of the command of a path.

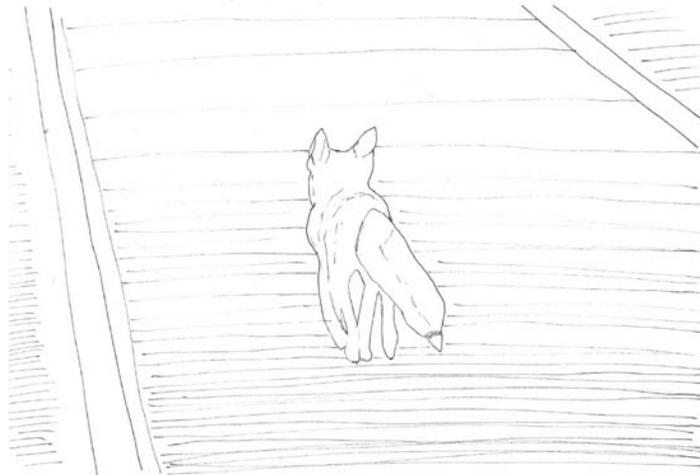
### *Community Open Space*

This space feels tied to the community because it is level and open. With the right interventions, it can be accessed easily from the surrounding neighborhoods of Heritage Crossing and Poppleton. The end of the site is left open for the community to use as needed, whether as community gardens, a recreational field for pick-up

games and skateboarding or as an open space for concerts and festivals such as the Alternative Roots Fest that was held there in the summer of 2011.



**Illustration 20: Moist Meadow and Community Space Plan, Author**



**Illustration 21: Red Fox, Author**

**Path for a Fox, L. *Vulpes vulpes***

Now you see him, now you don't. He moves quietly, ducking under low tree branches, slipping through a hole in the wall. If no one's around, he'll stick to the open path. There he can keep a steady pace, jogging around a hill and over shallow puddles. The Fox will make a temporary stop to eat whatever is around: scavenged meat, insects and earthworms, berries, even a rat. Always on the move, he never stays long; just passing through.



**Illustration 22: Path, Author**

## Chapter 6: Design Conclusions and Reflections

This thesis began as a journey without preconceived ideas about where it would end or what would be discovered. It was motivated by a question asking if urban public landscapes could embrace an alternate vocabulary to the pastoral and recreational types now commonly used. Could elements offer users something of value? Wildness was the constant guide through the process. It informed every decision that was made from venturing into the unknown of Baltimore's urban wilds, to using the "wild" medium of collage, to discovering the possibilities for concrete reuse. The final design has remained true to the criteria originally set by making wildness the primary driver for design.

This design is not about making a finished landscape, but about creating a beginning. The openness of the design allows others to enter into the work and to see its potential for themselves. One of the most interesting aspects about this thesis is the similarity of reaction seen while explaining the project concept. People become very engaged and enjoy exploring their own ideas for the site, but this is clearly predicated on the parameters set by this thesis.

Wildness is fundamentally opposite to control and order, that is, one is the privation of the other. On concluding observation is that there is value to people in the unfamiliarity of the wild landscape. This value is part of a universal struggle to understand our full nature as human beings which includes the "wild" inside all of us. We are curious creatures by nature, and for centuries the unknown wilderness has inspired endless exploration. There is also value in the familiarity of managed spaces

for public use. In such designed landscapes, we feel safe and in control because we understand them.

Throughout this process I developed an appreciation for the differences that exist between the unfamiliar experience of wildness and the familiar experience of an orderly place. The experience of some measure of wildness is not possible only to encounters with large wildernesses, nor is it excluded from the wild microcosms randomly encountered within an urban environment. People are drawn to places of wildness of any scale because they balance our, need for sense of order and place. We grow when we are unsettled; we can become complacent when our experiences are predictable.

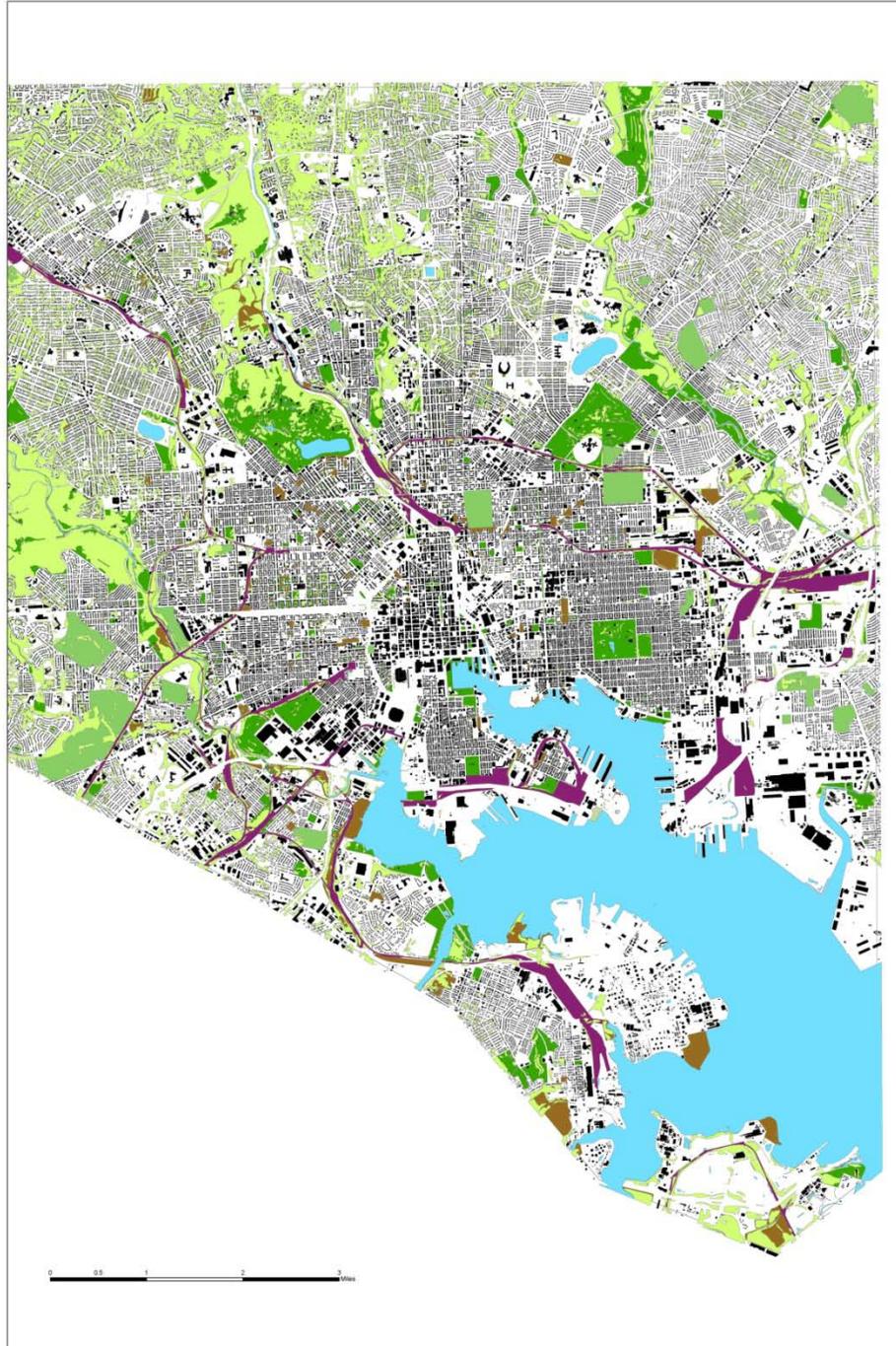
We live in a world that is more controlled than ever before. Part of this is because our world is highly developed. Public parks are destinations with entertaining features, squeezed into left-over spaces between dense development quickly accessible by highways and other infrastructure. These things signal all of us where to go and what to do when you get there. Tied to this are laws and regulations that limit the use of these spaces. Too much of this programmed urban landscape cannot help but create feelings of oppression. We need a full life which includes wild things - animals and plants in their activities uninhibited by human concerns – that are by definition beyond our control because if we lose this, we lose a part of our humanity. This appeal for wildness in the landscape is intended to address this fundamental, (primordial) human need.



**Figure 55: Taxi Garage, Brooklyn NY, credit: Robert Wharton**

# Appendices

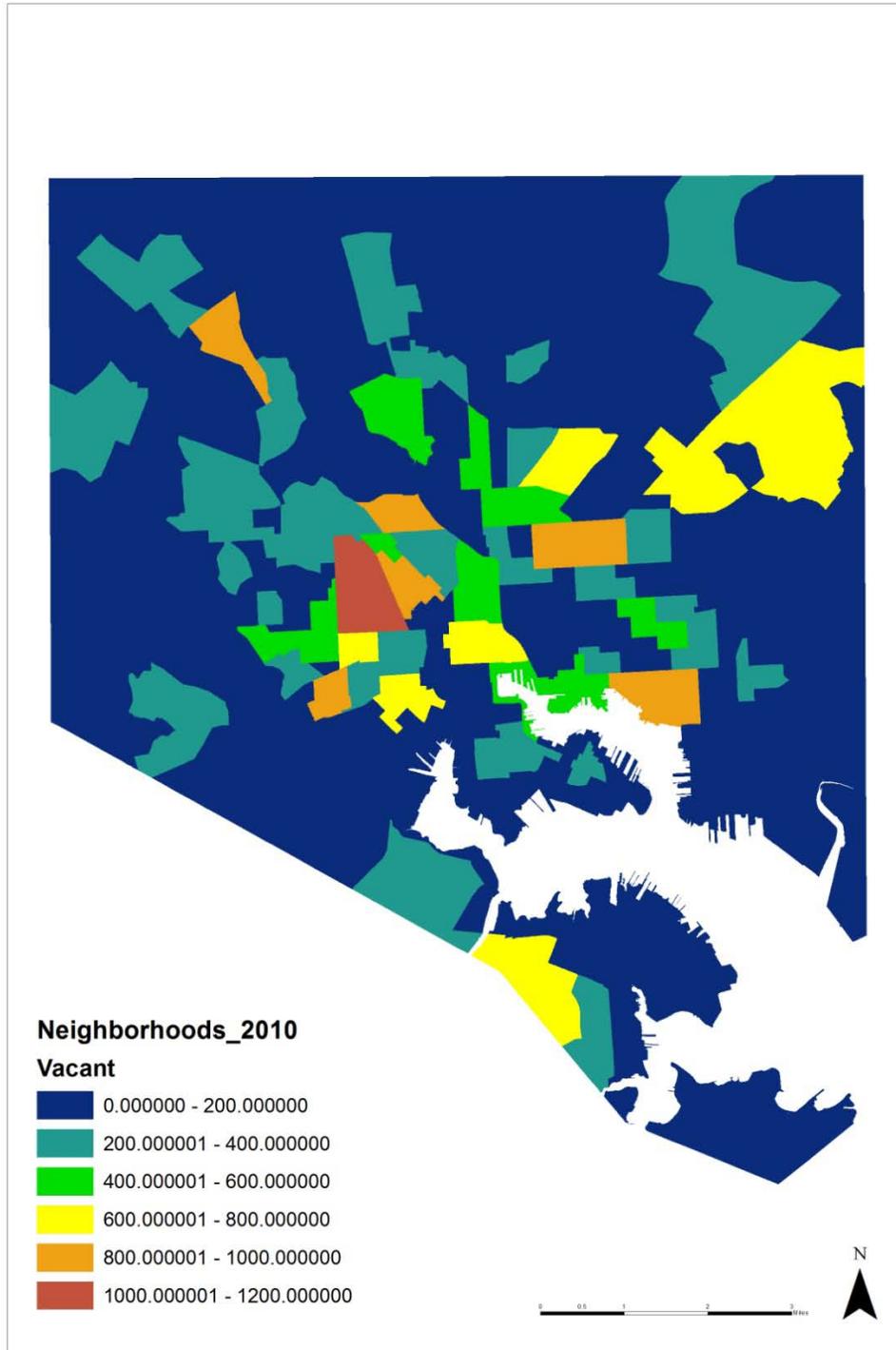
**Appendix A:** Baltimore Urban Wilds Guide Map, Data Source: Baltimore, Author





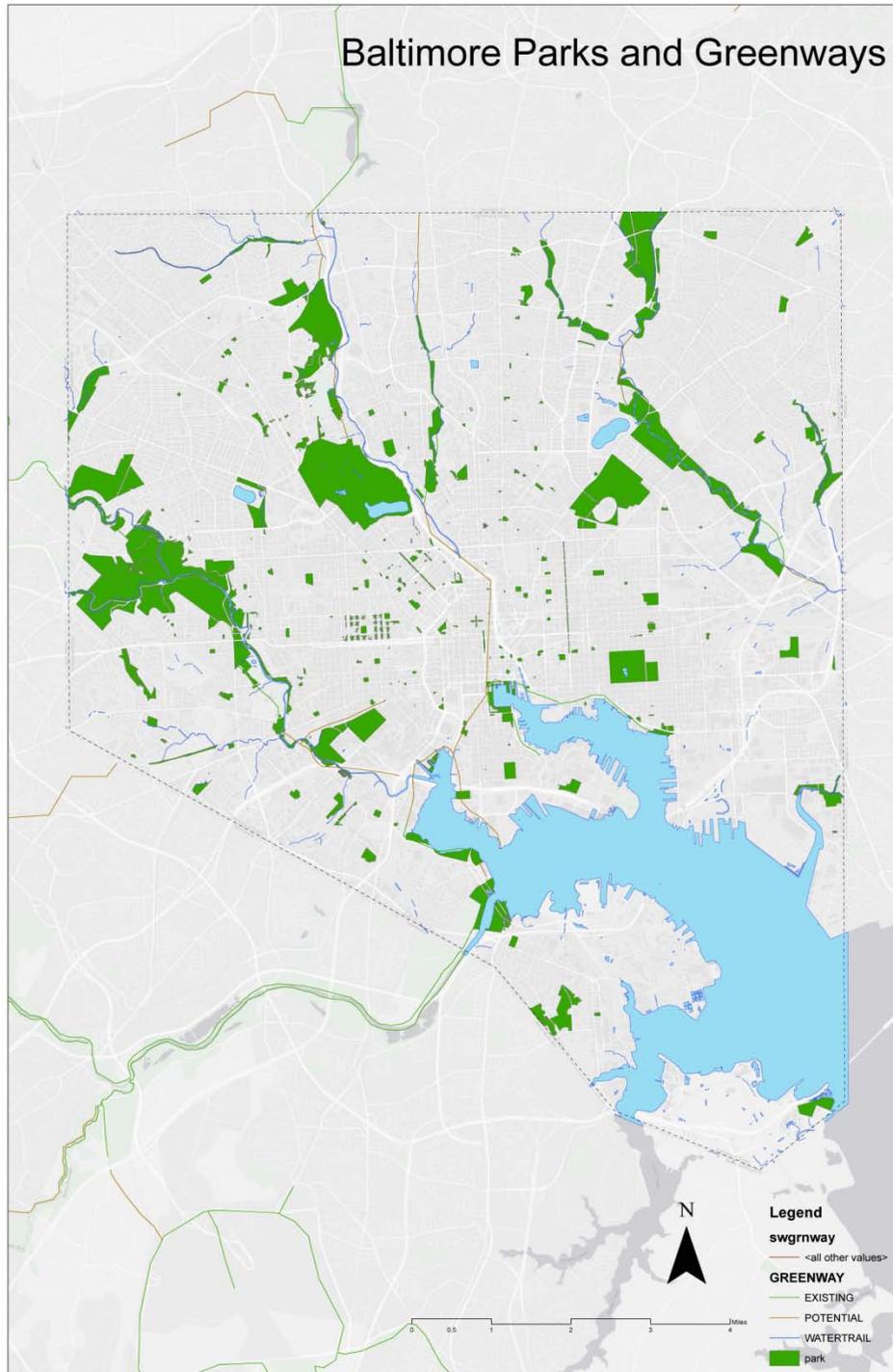
**Appendix B:** Baltimore Neighborhood Vacancy Rate Data Source: Baltimore

Neighborhood Indicators Alliance Jacob France Institute, Author



**Appendix C: Baltimore Greenway Map, Existing and Proposed, Data Source:**

Baltimore, Author







**Appendix F:** Community Statistical Data Table, Data Source: Baltimore

Neighborhood Indicators Alliance, Jacob France Institute, Author

<b>HOUSING AND COMMUNITY DEVELOPMENT</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City Avg.
The percentage of homeowners who are the principle residents of the home out of all housing units. (2009)  Source: Maryland Property View	33.38	29.79	34	59.11
Percent of vacant and abandoned homes out of all residential properties in that area that year (as reported by Maryland Property View). Properties are considered vacant/abandoned by Baltimore City if the property is not habitable. (2009)  Source: Baltimore City Housing	32.09	23.83	20.65	8.09
The selling price of a home that falls in the middle of the most expensive and least expensive home sale price in that area. (2009)  Source: First American Real Estate Solutions (FARES)	\$30,000.00	\$45,000.00	\$109,000.00	\$145,000.00
Number of households that pay above 30 percent of their income on rent or mortgage out of all households in the area.  Source: U.S. Census 2000	Rent: 40.19%	Rent: 41.33%	Rent: 36.32%	Rent: 40.04%
	Mortgage: 35.96%	Mortgage: 34.86%	Mortgage: 28.65%	Mortgage: 31.62%

<b>EDUCATION</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
The percentage of students enrolled in public school in grade 12 who receive a Maryland High School diploma or certificate of completion for that year.  Source: Baltimore City Public School System	76.3	75.42	79.6	81.35
The percent of the population aged 25-64 (as reported by 2000 Census) with a high school diploma or G.E.D. only (no college).  Source: U.S. Census 2000	35.08	32.63	27.96	29.39
The percentage of the population aged 25-64 (as reported by 2000 Census) with some college education (associate degrees, bachelor's degrees, graduate/professional degrees, or some college coursework without obtaining a degree).  Source: U.S. Census 2000	24.92	22.98	29.1	45.09

<b>WORKFORCE AND ECONOMIC DEVELOPMENT</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
The percentage of the population aged 16-64 that is employed.  Source: U.S. Census 2000	45.95	46.1	42.53	58.63
The rate of the population aged 16-64 that is unemployed and actively looking for work per 1,000 residents.	18.52	19.67	18.16	10.86

Source: U.S. Census 2000				
The total number of businesses during the fourth quarter of a year. (2009)	243	441	166	20,193
Source: InfoUSA				
The percentage of all businesses with fifty employees or less that are over four years old at the end of the fourth quarter of a year. (2009)	58.44	428	160	19,162
Source: InfoUSA				

<b>NEIGHBORHOOD ACTION</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
The number of groups of people, generally living in the same area, who organize themselves in to more formal arrangements comprised of mostly volunteers whose goals are generally to maintain the quality of life for their families, friends, and neighborhoods. (2009)	20	9	7	482
The percentage of registered voters who voted in the General Election. (2008)	46.4	38.29	47.66	50.73
Source: Baltimore City Board of Elections				
The percentage of the adult population (as reported by 2000 Census) that is registered to vote in Baltimore City. (2008)	61.02	58.53	61.92	66.97
Source: Baltimore City Board of Elections				
The number of groups of people organized to	0	1	0	32

<p>improve and maintain the quality of parks and watersheds, both public and private, in their respective areas.</p> <p>Source: Parks &amp; People Foundation; Baltimore City Planning Department</p>				
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<b>URBAN ENVIRONMENT</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
<p>The percentage of a CSA covered by trees/foliage.</p> <p>Source: Ikonos, Maryland Department of Natural Resources</p>	5.02	6.05	3.03	19.86

<b>TRANSPORTATION</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
<p>The percentage of the working population (as reported by 2000 Census) who use a mode of transportation other than a car to get to work each day. These may include bikes, public transit, and walking.</p> <p>Source: U.S. Census</p>	24.21	27.29	37.09	22.68
<p>The percentage of the working population (as reported by 2000 Census) who use public transportation (bus, light rail, subway) to get to work each day.</p> <p>Source: U.S. Census</p>	16.35	20.27	16.46	15.24

<b>CHILDREN AND FAMILY HEALTH</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City

The total income earned by all persons in a household that falls in the middle of the highest household income and lowest household income in a CSA.  Source: U.S. Census	\$18,924.00	\$23,070.00	\$17,063.00	\$30,078.00
Number of "other" families with less than six children who earn below the Family Self Sufficiency Standard out of all "other" families with less than six children. "	86.83%	88.46%	86.67%	81.70%

<b>CRIME AND SAFETY</b>				
	Sandtown-Winchester/Harlem Park	Southwest Baltimore	Poppleton/The Terraces/Hollins Market	Baltimore City
The number of reported violent crimes including homicide, rape (and attempted rape), aggravated assault, and robbery per 1,000 residents (2009)  Source: Baltimore City Police Department	23.89	24.14	22.56	15.29

<b>Community Population</b>								
	Population			Percent Population by Age				
	Total	Male	Female	Under 18	18-24	25-44	45-65	65 +
Sandtown-Winchester/Harlem Park	17,495	7919	9576	31.2	8.9	27.5	20	12.6
Southwest Baltimore	20,965	9757	11,208	29.9	9.3	28.8	20.4	11.6
Poppleton/The Terraces/Hollins Market	5364	2428	2936	28	10.3	31.5	19.4	10.8

<b>Ethnicity %</b>								
	African American	Caucasian	Native American	Asian	Hispanic	Pacific Islander	2 or more	Other
Sandtown-Winchester/Harlem Park	97.6	0.5	0.1	0.3	0.7	0	0.7	0.1
Southwest Baltimore	71.2	24.6	0.2	1.1	1.5	0.1	1.6	0.1
Poppleton/The Terraces/Hollins Market	81.7	14.5	0.1	1.5	0.7	0	1.5	0.1

<b>Number of Households</b>				
	Population			Percent Population by Age
	Total # of Households	Total Families with related children	% of Families with related children	Average household size
Sandtown-Winchester/Harlem Park	6418	2539	39.6	2.7
Southwest Baltimore	7482	2975	39.8	2.8
Poppleton/The Terraces/Hollins Market	2162	735	34.6	2.7

<b>Household Earnings</b>					
	< \$25,000	25,000-40,000	40,000-60,000	60,000-75,000	> 75,000
Sandtown-Winchester/Harlem Park	63.6	17.3	11.4	4.6	3.6
Southwest Baltimore	52.8	22.3	15	4.2	5.7
Poppleton/The Terraces/Hollins Market	62.1	13.9	11.1	4.6	8.4



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