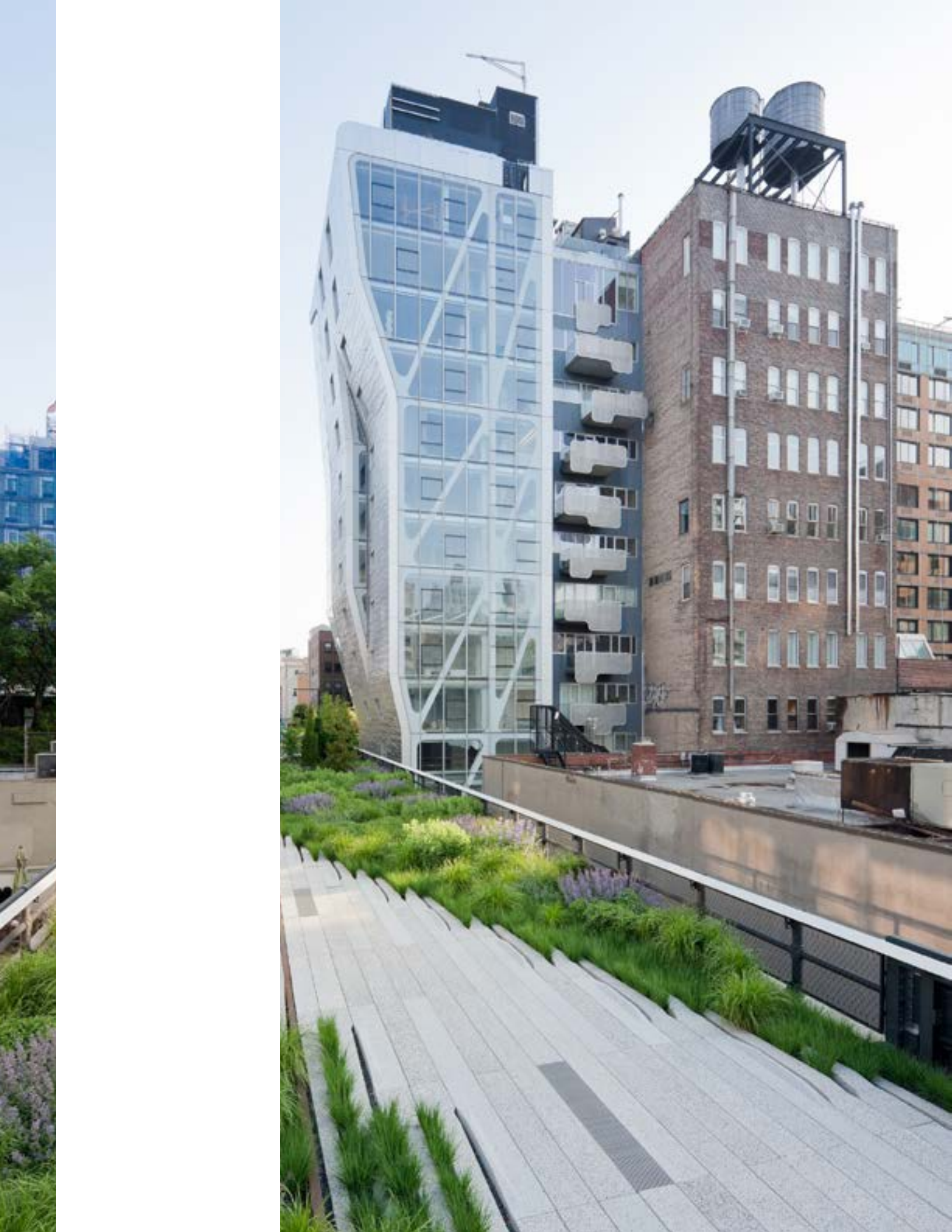

Cover page: Pathway on High Line in West Chelsea, between West 24th and West 25th Streets, looking South.
Source: Iwan Baan,High Line Section 2 (2011)

URBAN CATALYST

By Kate-Issima Francin

Supervised Research Project

Submitted to: Professor Raphaël Fichler
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McGill University
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Figure 1. Section of High Line Park. Gansevoort Slow Stair
Source: Iwan Baan,The High Line Section 1, (2009).

Land suitable for development has become increasingly scarce and expensive in most post-industrial North American and European cities. As a result, underutilized areas that had previously been overlooked have become important assets in the urban development process, and planners must find alternative to traditional urban transformation approaches which relied on massive public investments. Urban catalysts appear to be interesting tools to improve the quality of the built environment, and hence, the quality of life, by jumpstarting and shaping the urban transformation process of underutilized areas. The aim of this study is to examine the practical application of urban catalysts by means of a literature review and a case study of the High Line Park in New York City. The literature review and illustrative case study explore the challenges posed by underutilized areas, the urban transformation approaches that can be used, and the urban catalyst strategy as a means of improving the physical conditions of an area, spurring urban change at a larger scale and therefore improving the quality of life of individuals. The study concludes that well-thought and well-designed urban catalysts can promote quality urban design by connecting the old and the new, improving place identity, and stimulating more coherent development. Urban catalysts should be at the core of a collaborative and integrated planning and design process. This process presents an opportunity for citizen needs and opinions to be considered and integrated into plans and designs. Citizen-led efforts should also be encouraged and supported by planning authorities. Finally, a framework should be established to guide future transformation projects with strategies and guidelines that are adaptable to site- and context- specific conditions.

Figure 2. Section 1 of High Line: Gansevoort End, Plaza, and Stairs .
Source: Iwan Baan,The High Line Section 1, (2009).

Les terrains à développer se font de plus en plus rares et chers dans la plupart des villes post-industrielles d'Amérique du Nord et d'Europe. En conséquence, des aires sous-utilisées, qui avaient été négligées dans le passé, deviennent des atouts dans le processus de développement urbain et les urbanistes doivent trouver des alternatives aux approches traditionnelles à la transformation de la ville, qui dépendaient d'investissements public massifs. Les catalyseurs urbains semblent être des outils intéressants pour améliore la qualité du milieu bâti et donc la qualité de vie, en lançant et façonnant le processus de transformation d'aires sous-utilisées. Le but de cette étude est d'examiner l'application pratique des catalyseurs urbains par l'entremise d'une revue de la littérature et d'une étude de cas sur le High Line Park à New York City. La revue de la littérature et l'étude de cas illustrative explorent les défis posés par les aires sous-utilisées, les approches à la transformation urbaine qui peuvent être utilisées et la stratégie des catalyseurs urbains comme moyen d'améliorer les conditions matérielles d'un lieu, provoquant un changement urbain de plus grande ampleur et améliorant la qualité de vie des individus. L'étude conclut que des catalyseurs urbains bien pensés et bien conçus peuvent promouvoir un urbanisme de qualité en liant le vieux et le neuf, en améliorant l'identité du lieu et en stimulant un développement plus cohérent. Les catalyseurs urbains doivent être au centre de processus de planification et de design collaboratifs et intégrés. Ce processus rend possibles l'écoute des besoins et opinions des citoyens et leur intégration dans les plans. Des efforts venant des citoyens eux-mêmes doivent aussi être encouragés et soutenus pas les autorités. Finalement, un cadre doit être établi pour guider les projets de transformation futurs, par l'entremise de stratégies et de lignes directrices qui peuvent être adaptées aux conditions spécifiques du lieu et du site.

Figure 3. Section 3 of High Line: Detail of one of the three Rail Track Walks .
Source: Iwan Baan,The High Line Section 3, (2014).

I have many people to thank for helping me complete this supervised research project. First, I would like to thank my supervisor, Raphaël Fischler, for his critiques. I would also like to thank my second reader Nik Luka, for his remarks and for taking the time to review my draft. Second, I would also like to thank Gladys Chan, Anand Sood and for their kind words of encouragement. A special thanks to Julie Jones, your introduction to Endnote saved my life.

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Merci ;-)

Figure 4. High Line Wilderness
Source: Joel Sternfeld, Portfolio-The High Line. Places., (2001)14(2), 56.


Elevators,
fireproof,
free parking,
with doorman.
Private,
secure
and in your
neighborhood.

Figure 5. Section 2 of High Line
Source: Iwan Baan,The High Line Section 2 (2011).

Figure 6. Grassland High Line Section 2
Source: Iwan Baan,The High Line Section 2 (2011).

1.1 RESEARCH STATEMENT

Cities change over time, and planners are confronted with new challenges and increasingly complex problems. Currently, issues such as climate change and population and economic changes due to a more globalized world have rendered the process of city-making unsustainable and in need of alteration. Planners and others are finding alternatives and modifying traditional models of urban transformation in order to improve the quality of life of residents, and in order to compete with cities worldwide at a local and global scale. The dynamic nature of cities and their continuous evolution has a tremendous impact on the urban landscape and the lives of people within them. Planners, policy makers, and other members of the urban community need to rethink the current strategies of city-making in order to usher in newer methods of urban transformation. As urban land and buildings become increasingly scarce and expensive, the potential of underutilized areas is being seen that had previously been overlooked. Therefore, the revitalization of derelict urban areas has become a popular and important issue, particularly in post-industrial North American and European cities.

Underutilized areas are urban wastelands and other residual spaces where traditional top-down development approaches have failed. Reusing underutilized areas present many opportunities for areas that were once seen as burdens to cities.

"On average, fifteen percent of a city's land was deemed vacant. This total includes widely varying types of land, ranging from undisturbed open space to abandoned, contaminated brownfields"(Bowman & Pagano, 2001, p.1).

These areas have been abandoned due in part to rapid population shifts in urban areas. Other causes such as deindustrialization, environmental disaster, and contamination have also affected the negative perception of (associated with) urban wastelands. The re-appropriation and reuse of underutilized areas is bringing new life into cities, and the movement is gaining momentum in many cities including New York, Medellin, and Seville. The strategic reuse of underutilized areas can present economic, social, environmental, and architectural opportunities for various types of cities. In the face of underutilization/neglect, crumbling-decaying infrastructure, and sparse undeveloped lands, city-makers (planners, designers, policy makers, etc.) have begun to take inspiration from the self-replicating, symbiotic, and evolutionary characteristics of nature. In order for real and lasting change to occur in and around areas suffering from underutilization/neglect, there needs to be a reassessment of the current methodology of approach that cities utilize in the "making" and "transforming" of cities. There needs to be an evaluation of the best practices and of the resources available to achieve the primary goal of cities, to improve the quality of life for all.

An urban catalyst project is a good example of a strategy that reuses underutilized areas to transform a space. Urban catalyst projects have always existed but underutilized areas haven't been clearly been defined as such, until the late 1970s when architects Attoe and Logan (1989) made a compelling argument for the use of catalysts as a development tool in their book American urban ar-

chitecture: catalysts in the design of cities. Urban catalyst projects vary in size and scope, but have in common their general intent of igniting a transformation within the immediate context. Their goal is to improve the quality of an area, spur change at an incremental pace rather than at a massive scale, and improve the well being of the individuals who come in contact with the catalyst. They offer great possibilities in terms of interventions and effect because they are adaptable and diverse in function. The literature on urban catalyst vary from one source to the next, but urban catalyst's impact on cities is increasingly felt throughout the world with projects such as the High Line Park in New York or the Plaza de la Encarnacion in Seville. The following research seeks to explore the redevelopment process of urban catalysts and how they can transform poorly performing areas in general (i.e. areas lacking in activity, vibrancy, economic opportunity) to contribute to, rather than extract from, local urban landscape.

1.2 OBJECTIVES OF THE RESEARCH

The first objective is to understand the notion of an urban catalyst and its role in the urban transformation process. The second objective is to gain an understanding of the planning a design process of urban catalyst with the High Line. The third and final objective is the presentation of a strategy for the reuse of underutilized areas and the planning of urban catalytic projects. The research project aims to answer the following questions: 1. What is an urban catalyst? 2. How can the urban catalyst strategy spur revitalization and address urban issues such as underutilized areas, and finally? 3. How can the impact of urban catalyst projects be measured?

1.3 METHODOLOGY & STRUCTURE

The methodology used includes a literature review and an illustrative case study in order to come to a general understanding of the problem of underutilized areas, the urban transformation process (trends), and the urban catalyst strategy as a means of revitalization. The report has three sections. First, the literature review will present an overview of theatrical frameworks of underutilized areas, research on the terms associated with urban transformation, and research on urban catalysts. Second, the illustrative case study of the High Line Park will demonstrate the potential of catalytic projects as a tool for revitalization. Finally, the information gathered from the literature review and the case studies will help in the drafting of an urban catalyst strategy for

urban redevelopment of underutilized areas in Montreal.

LITERATURE REVIEW

A brief survey of the literature and diverse theoretical frameworks were used to come to an understanding of the concept of urban catalyst. First, the concept of underutilized areas was defined and the concept of urban transformation was reviewed from a historical and a contemporary perspective. The three expressions associated with approaches to urban transformation of cities are urban redevelopment, urban revitalization and urban regeneration of city transformation trends. Finally, the concept of urban catalyst was defined and explored in terms of strategies, challenges, and impact on the revitalization of an area. In order to solve a problem, it must be well defined.

ILLUSTRATIVE CASE STUDY

Many professions and fields use case studies to impart information and the lessons learned from projects and processes. Defined as " well-documented and systematic examination of the process, decision-making, and outcomes of a project that is undertaken for the purpose of informing future practice, policy, theory and/or education" (Yin, 1994), case studies are frequently used in architecture, landscape architecture, and other design fields to describe and/or evaluate a project and/or a process. They are used not only to illustrate; also to study, analyse, even to generate a theory, concept, or practice and help to inform future projects. Data are is from many sources directly and indirectly related to a project. Their information comes from books, articles, reports, official documents, maps, designer's and organizations' websites, photographs, and interviews.

The High Line project, located on Manhattan's West Side between Gansevoort Street and West 34th Street, is a community park and a major public space in New York City. The structure has a strong industrial history and its surrounding neighbourhoods of Chelsea and the Meatpacking District are tied to the development of New York City. The catalyst is located within an area in need of transformation that had a significant number of urban issues, such as a vacant and decaying infrastructure. Its is also near one of the most important parts of New York City, presented an opportunity to add to the urban form of the city, address urban issues and exemplify 'good design' practices. The project has become a model for future projects as well as spurring more development. The High Line illustrates how an urban wasteland can be redeveloped into a new vibrant public space. The High Line concurrently acts as a catalyst for further development by creating an environment that encourages investment, change, interaction, and confidence. The results show the potential of a comprehensive approach to the transformation process.

2.1 URDERUTILIZED AREAS

Underutilized areas proliferate in contemporary cities and they are part of the cycle of decline that all cities endure. There is an immense number of vacant, abandoned, and idle lands in every city and they are seen as having no productive use. On average, 15% of the land coverage of large American cities is vacant or abandoned (Németh & Langhorst, 2013). In the city of Montreal alone, there is approximately 11 square kilometres of underutilized lands that have been identified as needing to be transformed (Division de l'urbanisme, 2004) (Division de l'urbanisme, 2004) (Montreal masterplan). The number does not take into account the various small lots and neglected or abandoned buildings and areas scattered throughout the city's 19 boroughs. These garbage strew, weed growing, blighted areas are perceived as eyesores, detrimental to a city's image, sustainability and vibrancy when actually they offer many opportunities. While they epitomize blight and neglect (Pearsall & Lucas, 2013), underutilized areas offer many opportunities for urban transformation, improving the built environment, the quality of life of people and the image of cities. They can be redeveloped with meaningful urban design that affects a city's social, environmental, economic, and architectural aspects.

A shift is occurring in the way we look at underutilized areas, particularly in cities with post-industrial landscapes. Municipalities and residents alike are increasingly concerned with sprawl, sustainability, growing urban populations, lack of space, and lack of accessible green spaces. In a fragile economy, they are also struggling to find solutions to revitalize former industrial sites, underutilized areas, and blighted neighbourhoods. Cities are modifying or finding alternatives to traditional top-down models of redevelopment (like megaprojects and urban renewal) in order to improve the quality of life of their residents and to compete with cities at a local and global scale. The re-appropriation and reuse of underutilized areas is bringing new life into cities and the movement is gaining momentum in many cities including New York, Berlin, and Montreal.

Adopted in 2004, the Master Plan of Montréal is an example of the new push towards the reoccupation of the existing fabric. The plan encourages the consolidation of the existing fabric by implementing policies geared to improve the quality of life of Montréalers and of the city itself. One of the actions for improving the living environment within the city is the urban revitalization of underutilized areas.

DEFINITION OF UNDERUTILIZED AREAS

Underutilized areas proliferate in contemporary cities; they are part of the cycle of decline that all cities endure. In order for the public, private, non-profit sector, and residents to understand and resolve underutilization/neglect, the term must be clearly defined. The section attempts to define the most common terms associated with underutilized areas. It also explores the causes, the effect,

the problems, opportunities/benefits of underutilized areas, and how policy can address underutilized areas. Underutilized areas also refer to a wide range of features related to the productivity of an area, land, or building in an urban area. According to Kamvasinou (2011), underutilized areas vary from spaces left-over from development, spaces that are undeveloped, spaces abandoned post-development and/or spaces that are derelict. The literature and definition of underutilized areas is vast and there are many terms associated with underutilized areas. In his book Finding lost space: Theories of urban design, Roger Trancik (1989, pp.3-4) refers to underutilized areas as "lost spaces" that are "undesirable urban areas that are in need or redesign—antispaces, making no positive contribution to the surroundings or user". Vacant land is also, commonly used to describe underutilized areas, Németh and Langhorst (2013) citing (Pagano & Bowman, 2001) defines vacant land as:

"All land that is unused or abandoned for the longer term, including raw dirt, spontaneous vegetation and emergent ecologies, land with recently razed buildings, perimeter agricultural land fallen out of cultivation, brownfields and other contaminated sites, or land that supports long-term, abandoned derelict structures. When no structure exists, one can consider land vacant if the property is not currently used by humans. When a structure sits on the property, some contend that a structure is abandoned, and its lot considered vacant, when it has been unoccupied for 60 days; others use 120 days or longer."

This definition focuses on intent of use rather than length of abandonment. According to the National Land Use Database (2006), derelict lands, another term commonly used to describe underutilized areas, have previously been developed and can be redeveloped. Albeit derelict lands are so damaged, by previous industrial or other development, they often require expensive remediation.

CAUSES OF UNDERUTILIZED AREAS

In their research that encompassed over 200 cities, Pearsall and Lucas (2013) found that underutilized areas were perceived as barriers to urban revitalization by municipalities, developers, and communities. They concluded that underutilized areas epitomize blight and neglect and offer no productive use. Underutilized land itself is not necessarily the problem. The problem lies in the underutilization of the land as it initiates and perpetuates a vicious cycle of decline. There is a lot of social and environmental injustice associated with underutilized areas as a result of their being primarily located in poorer neighbourhoods and foster illegal activities and lower the quality of life of the nearby residents. Underutilized areas also lower the value of properties and disturb the sense of community in their vicinity. With regards to the quality of life, they poses public health threats to resident who live in proximity because they can be subject to illegal waste dumping, breeding ground for vermin, contamination from lead, arsenic, and mercury commonly found on neglected parcels (United States Environmental Protection Agency-EPA, 2013). Underutilized areas develop for a whole host of reasons, many of which are political and economic in nature. In recent years, there has been an increase in underutilized areas due to a shift from a manufacturing to a service economy. Németh and Langhorst (2013) contend that the majority of underutilized areas can be tied to a shift in the urban milieu, which often involved historic and current patterns of uneven developments and investments. Morphological causes such as a steep topography, unsuitable soil, and flood plains are just a few in addition to physical features of a site that can cause underutilized areas. Functional zoning policies that separate uses are another cause. As early as the industrial years, zoning tools like setbacks and buffers have been used to accommodate

infrastructure such as highways, railways and boulevards resulted sometimes in awkward parcels that were problematic for future development. Other zoning measures such as the subdivision bylaws require specific sizes for the creation of parcels suited for traditional development thus making urban lands unsuitable and vacant. Governing bodies can also plan vacant spaces along transportation corridors or areas in transition as placeholders for a later date (Németh & Langhorst, 2013).

There are two major factors according to Goldstein, Jensen, and Reiskin (2001) that cause underutilized areas. The first is the economic cycle and the second is suburban sprawl. Economic causes are often times associated with financial crises and a collapse in local economies. The crises result in job losses, subsequently making it nearly impossible for people to be able to afford decent housing and making it hard to sustain the local economy which in turns causes the loss of local business and the decline of property values and abandonment (Goldstein et al., 2001). This shift in population results in a lack of what Jane Jacobs called "eyes in the street" and creates an invitation for crime to take root in already marginalized neighbourhoods, which subsequently deters newcomers and drives the area further into decline. The outcome is ill-maintained properties, vacant storefronts, and empty spaces that leave holes in the built landscape. Underutilized areas are also closely linked with sprawl. Goldstein et al. (2001) argues that "with every decision to build on greenfield, where there was no need to demolish or rebuild any existing structures, part of the economy of the city exits the urban core" (p.1). A project built on a greenfield has an economic and environmental impact that is detrimental to the preservation of rural areas, and just as important, the survival of the urban core. Goldstein et al. (2001) claim that preserving the undeveloped land itself, "shifting the resources from outward growth to inward development, creates opportunities to make use of existing infrastructure, to revitalize dilapidated neighbourhoods, to provide equitable economic opportunities, to reduce the reliance on automobiles, to support public transportation, and to improve the living and working environments of urban communities" (p.1). Construction on greenfields is an easy and obvious solution in development, but it is not necessarily the one with the higher potential to generate not only profit but also to contribute to the community, the environment, and the built environment.

Németh and Langhorst (2013) found that the problems associated with underutilization are driven by political, economical, social and environmental factors. Politically, the perception of urban blight can bring a city down on its heels, and result in uneven development. The negative perception of urban blight plagues cities like Detroit, consequently lessening their appeal. Economically, problems such as diminishing revenue, delinquent taxes and maintenance, liabilities from environmental impacts and lower property values have affected cities like Pittsburgh when the steel companies left, leaving large tracks of brownfields that deter development. Socially, the problems of image and appearance, real or perceived, have plagued many areas of cities, small and large. The white flight of the 1960s and 1970s, generational poverty, immobility of the poor due to wealth inequality frayed the social and physical fabric of cities like New York City. Ecologically, the problems of brownfields left over from industrial times and problems of environmental injustice resulted in an unsustainable environment. The main effect of underutilized areas is the poor quality of life affected by the many problems plaguing the urban core. The segregation of the local community as many leave the area for better conditions continues to promote the sense of social and economic segregation.

According to Goldstein et al. (2001), cities should be concerned with underuti-

lized areas because of issues such as the loss of tax revenue due to low-density use or zero use and the loss of tax revenue due to non-payment of taxes (from abandoned properties). In order to convert these underutilized areas (properties) from a liability to an asset, cities often acquire the land. The process is oftentimes accomplished by way of foreclosure. Additionally, in order to be able to sell the land, it must then be prepared and maintained. The process can proved to take a considerable amount of time, leaving cities with more properties under their care rather than obtaining revenue from sold properties. Despite these obstacles, the cycle of decline in distressed neighbourhoods is so strong that it is crucial to revitalize these underutilized areas.

BARRIERS TO DEVELOPMENT

The identification of barriers to redevelopment is very important in the process as it can aid in addressing issues that have systematically impeded the revitalization of an area. There are many barriers associated with the redevelopment of vacant land, primarily financial, regulatory and institutional, physical and finally individual.

FINANCIAL BARRIERS

Lending practices aided by government policies dating back to post-WWII years made development in urban (primarily minority) neighbourhoods nearly impossible and this redlining decimated many urban areas and still continues in some areas. In addition, financial institutions and insurance agencies make redevelopment of urban sites challenging. In their feasibility calculation for decisions, they consider factors such as demolition cost, remediation cost, liens and back taxes as having many encumbrances, thus inhibiting their support for urban projects (Goldstein et al., 2001).

REGULATORY AND INSTITUTIONAL BARRIERS

Along with financial barriers', well-intended, poorly implemented regulatory and institutional barriers can also negatively affect the development of cities. Governing bodies implement regulations to encourage redevelopment. On the other hand, their policies, in particular their zoning policies, like the ones that separate uses, hinder their efforts. Redevelopment of vacant lands usually requires interaction with many municipal departments and agencies at multiple scales, which can proved to be problematic due to governmental bureaucracy. In addition, cities' lack of systems to track underutilized lots and to ensure appropriate redevelopment upon sale.

PHYSICAL BARRIERS

Site requirements (size, shape, condition) and poor infrastructure are two physical barriers that impede the redevelopment of underutilized areas. The small and oftentimes awkward shape of some sites, particularly adjacent to railways, presents many challenges for useful development compared to generally unhindered suburban parcels. Environmental constraints such as steep slopes, water features and built constraints such as poor infrastructure also impede development. Consequently, the migration to suburban areas, lack of tax revenue for municipalities, run-down infrastructure and poor maintenance impede construction in the urban core and render their counterparts more appropriate for development.

MENTAL BARRIERS

Metal barriers are often times difficult to measure. They deal with individuals' opinions, beliefs, and their perceptions. People's perception of a neighbourhood is sometimes the most import barrier in the process of redevelopment. Whether it is based in truth or not is not necessarily important as perception still poses a threat to the redevelopment (Goldstein et al., 2001). Financial barriers such

as speculation can impede redevelopment. Property owners may be reluctant to sell a property if it represents a financial loss or if there is a possibility for that the property value to increase in the future. A redevelopment project can also be met with a political barrier from neighbourhood groups leading to its demise if the project does not include sufficient community input that would address the community's needs.

POTENTIAL OF UNDERUTILIZED AREAS

Underutilized areas have the potential to act as critical instruments for social and environmental justice, empowering the marginalized, disadvantaged communities and neighbourhoods (Németh & Langhorst, 2013). They also present many political, economic, social, and ecological opportunities. Politically, underutilized areas can aid in reviving the image of areas in cities suffering from urban blight. They can be used as instruments to alleviate patterns of uneven development and help marginalized groups by incorporating their needs into projects. Finally, they can aid in the establishment of development strategies that require community participation. Economically, they can lower development cost due to existing infrastructure. Socially, they can help to engage communities, create new public spaces, and encourage social interaction. Ecologically, urban land has the ability to protect emerging ecologies and manage the environmental impact of cities with storm water management and heat island mitigations (Németh & Langhorst, 2013). Architecturally, to strengthen the sense of place, the character of underutilized areas can be integrated into future designs, influence subsequent design and create vibrant spaces.

Even small parcels of land (like converting parking spaces to parklets) can have a significant impact at different scales (city, neighbourhood, region, etc.) if they are part of a system that connects parcels with similar functions and performances, creating some sort of network. According to Németh and Langhorst (2013), a combined top-down and bottom-up approach should be used to explore the potential, and benefit of underutilized areas at the lot, neighbourhood, or city levels. Additionally, this approach would require a reconsideration of the zoning, land use and other planning measures associated with the redevelopment process. This collaborative approach to the revitalization of underutilized areas is present in projects such as the High Line Park. In recent years, the change in public opinion regarding underutilized areas and their aesthetic appeal has changed, facilitating their reuse. According to Kamvasinou (2011), argues for the reuse of underutilized areas into public amenity and green space is often beneficial for many. Green spaces also play a vital role in the social, environmental, economic, and cultural development of a sustainable community. They support the urban ecology and social systems of a city by mitigating urban heat islands, filtering the air, absorbing rainwater, boosting property values, and improving public health.

STRATEGY FOR UNDERUTILIZED AREAS

Municipal policies often address underutilized areas by reclaiming the area(s), parcel(s), and or building(s) and attempting to put them to productive use. Goldstein et al. (2001) found that for underutilized areas to be addressed properly they should be addressed through broad policy approaches such as regional governance and land-use planning. In addition, underutilized areas should also be addressed through or with programs that look at specific places and their unique difficulties. The approaches should also be flexible and adaptable. Cities should have redevelopment programs in place that can facilitate the process of 1. acquiring the land, 2. maintaining the land, 3. finding investors for the land, 4. selling the land, 5. design programs for tem-

porarily use of the land until it is sold in order to continue to grow and maintain tax revenues in the interim process.

Along the same lines, Pearsall and Lucas (2013) call for a critical analysis of underutilized areas and their management in cities. Most of the municipal approaches and policies are generally set with the intent to develop permanent uses. The authors "propose an alternate approach for handling" underutilized areas "that embraces the temporary nature" of underutilized areas, with uses that would allow more flexibility and less expenditures for municipalities (Pearsall & Lucas, 2013, p.2). Neighbourhood development rather than city-wide development strategies should be considered in the future of underutilized areas. Most of the place-based strategies suggested by Pearsall & Lucas, based on previous research, that cities can deal with at various levels (neighbourhood, borough, city, and region) and that engage many stakeholders. Municipalities should also consider shifting the management of their vacant lands to the neighbourhood level with more involvement by residents and community organizations. The success of the community-led projects along with public-private partnerships would facilitate the creation and maintenance of planned and unplanned, formal and informal spaces (Pearsall & Lucas, 2013).

2.2 URBAN TRANSFORMATION

HISTORICAL CONTEXT OF URBAN REDEVELOPMENT

Urban planning emerged as a solution for sanitary, social, and economic problems facing industrial cities in the late 19th century (Corburm, 2004). In the beginning of the 20th century, it focused on physical design, land use, and mobility with the establishment of policies centered on establishing standards to improve the welfare and living conditions in industrial cities. Out of the Great Depression emerged the notion of utilizing urban planning to address economic growth, social problems, and the need for modernization (Roberts, 2000). By the 1950s, development policies in urban planning focused on reconstruction and expansion at the same time. The government of many North American and European cities led the charge in the reconstruction of large parts of the older inner core of cities and pushed for growth into the suburbs. They also focused on urban renewal policies that promoted large-scale transportation projects and the improvement of standards of housing and living conditions (Gospodini, 2005; Roberts, 2000). The government (mostly federal) generally contributed larger portions of the investment with some minor contributions by the private sector. These policies continued until the 1960s they concentrated on suburban growth. In the later part of the decade, the public sector turned their focus on the rehabilitation of some areas of the inner cores. In the 1970s, despite continued growth in suburbs, the dissatisfaction with previous policies gave rise to community-based action and empowered community involvement in the development process. The focus of some policies shifted to the problems at the neighbourhood scale. The 1980s policies focused on large-scale redevelopments and flagship projects on a site-specific local scale. The private sector, as the main financial contributor to development projects, shifted the focus on projects that were economically driven (Roberts, 2000). In the 1990s, a balanced public-private sector involvement focused on comprehensive development policies with community input. Interventions were more modest, considered heritage and introduced the idea of sustainability. Beginning in the 2000s, development policies became more neighbourhood-oriented, focusing on community involvement, sustainability and improved well-being for individuals (Roberts, 2000). The financial crisis of 2008 ushered the need for new approaches to redevelopment to address the new and specific urban conditions.

URBAN TRANSFORMATION

The most constant feature of cities is their continuous change. As human society changes, so do cities, and their urban form adapts to reflect the changing social structure. Rapid globalization, shifting economies, population migration, and urbanization brought unprecedented changes in cities since the 1980s. Since, urban transformation shifted its focus to an sustainable development that emphases on environmental and human well-be-

ing. Areas that experienced a reduction in value and meaning resulting in subsequent decline warrant an urban transformation to bring back significance, sustenance and vibrancy. Urban transformations can address general change. Also, it can be a solution to resolve specific issues such as sustainability, economic decline, and underutilized areas.

There are many terms linked with transformation of urban areas, according to Garcia, Spandou, Martínez, and Macário (2010) it includes "regeneration, renewal, redevelopment, rehabilitation, restoration, revitalization, reconstruction, refurbishment, renaissance etc." All of these terms and others are used interchangeably as the difference among them is unclear. The following section will explore three processes of urban transformation, as they commonly speak to the problem of underutilized areas and decline.

URBAN REDEVELOPMENT

Urban redevelopment can generally be defined as "the process by which large areas of derelict and industrial land and rundown housing areas are restored to become thriving communities once more" (Science dictionary, 2012). According to Caves (2005a, p.380), it "represents a process of land development used to revitalize the physical, economic, and social fabric of urban space." Similarly, Narayan Reddy (1996, p.26) define urban redevelopment as "policies, programs and activities that would do away with the major forms of physical blight in cities and bring about changes in urban structures and institutions contributing to a favourable environment for a healthy civic, economic, and social life for all urban dwellers." The expression is frequently used to describe any replacement of old structures with new ones and the transformation of open spaces, and it can be synonymous with slum clearance.

Early 20th century redevelopment efforts focused mainly on improving housing conditions. The efforts shifted to an emphasis on local economic development in the 1970s and by the 1980s. A new approach (to redevelopment) focused primarily on waterfront redevelopment was introduced to raise revenues and boost the local economy. Redevelopment varies among countries, states/provinces and cities, but all redevelopment efforts "generally target areas in cities where one or more of the following conditions are present: 1) land is underutilized; 2) the built environment (building and infrastructure) is deteriorating; and 3) economic opportunities are limited" (W.Caves, 2005a, p. 200) .

The transformation of underutilized (most often industrial) lands became a strategic opportunity and tool for cities to achieve goals while improving the physical environment and local economy (Ibid, p. 380). Urban redevelopment is a tool used by cities to transform parcels of residual lands to reach their goals of physical and economic revitalization. It generally involves the complete transformation of areas for many purposes including commerce, recreation, housing, and transportation. However, the process, which includes policies, laws and priorities of redevelopment, is different for each city as the policies cater to the specific physical, economic, and social needs. The process requires to transform these underutilized areas, which generally has significant costs, includes: 1) a municipal body acquiring private properties, 2) the demolition of existing structures, 3) the relocation of residents, and 4) the assembly of lands suitable for new development projects. However, these procedures are unsuitable because they often displace people who are in need and are marginalized, they destroy the character of the place that could be have been salvaged or adapted to new uses and, finally, they force cities to invest in properties while they are uncertain of the risks associate with the completion of such projects. If a city were already struggling financially, it would be discouraged to undertake such

ventures. There are, correspondingly, many implementation problems associated with redevelopment projects, which include the relocation of businesses and residents (causing resistance), the demolition of older buildings which may be challenged by preservationists and issues associated with environmental problems that may prohibit the redevelopment process from proceeding. A major issue and opportunity related with environmental issues is the presence of brownfields, which proliferate in the post-industrial landscape. Brownfields are "abandoned, vacant, derelict or underutilized commercial or industrial properties where past actions have resulted in actual or perceived contamination and/or threat to public health and safety and where there is an active potential for redevelopment"(Alker, Joy, Roberts, & Smith, 2000). In 2003, there were an estimated 30,000 to 50,000 sites that were classified as brownfields in Canada (DiFrancesco, 2006). Underutilized areas that are available to be transformed are often also considered brownfields. Despite the difficulties in the implementation of the redevelopment process, brownfield developments are seen as mechanism for rebranding cities. They are thought about as good for the environment, the economy, cities, and their residents. Finally, they offer an opportunity to right the wrongs of the past while creating a positive new future.

URBAN REVITALIZATION

Urban revitalization emerged as a way to address the growing problem of decline in the 1970s. Its purpose was primarily to improve the quality of life of the inhabitants of an area in decline. It is define as "a process that comprises a set of urban management strategies to facilitate economic, social, environmental, cultural and historical renewal of problematic, deprived and derelict urban areas" (Garcia et al., 2010). The revitalization process is closely associated with areas experiencing economic crisis, and/or deteriorating significant physical structures (W.Caves, 2005a). Garcia et al. (2010) state that the urban revitalization process utilizes one or many policy measures in addition to interdisciplinary and cross-policy domains to solve issues that impede the sustainability of a city. In the recent decades, cities like Medellin used urban revitalization not only for economic improvement, but also to improve living conditions and address issues such as social inequality. Known once has the murder capital of the World, Medellin is transforming its image with a series of urban design projects aimed at improving the lives of its poorest residents living in the hillsides' informal settlements or *comunas*. Innovative infrastructure and urban design are used as strategic tools for the revitalization of the city. This socially driven strategy utilized transportation as the catalytic element to revitalize an areas. The Creative Class (economic development strategy), tax increment financing and megaprojects are economic, community and culture led strategies in urban revitalization to name a few (Sutton, 2008). The strategies established are dependent on local needs and trends; the interventions can vary in levels and type, from the conversion of a parking space into a parklet to the rehabilitation of an old building, to the transformation of an entire area. Notwithstanding their differences, they are all generally associated with the sustainable programs. The process of revitalization can be applied to tangible elements like physical structures (buildings) and/or to intangible elements such as economic or social interventions in the form of policies.

The physical modernization of existing structures in the urban revitalization process works well with the contemporary mindset of modernization rather than the substitution and/or mindset of the urban renewal policy of the mid-20th century. This process of interventions is popular with cities like Quebec City where there is a strong focus on safekeeping heritage. Although the revitalization of existing structures is facilitated by a city with a focus on heritage, it is difficult to phys-

ically reuse zones that have long been seen as idle or abandoned due to the loss of previous residents. The existing framework of public life is non-existing in these areas and subject requires more than the physical rehabilitation of existing structures. Within the revitalization process, many strategies exist, including rehabilitation, restructuration, and restoration. Urban rehabilitation is "a series of physical acts of revitalization in a city… [that] consists of improving the conditions of existing structures through their substitution or modernization" (Caves, 2001, p. 491). Urban restructuration can occur at the city and building scale, "the project undertaken in a given building that affect its structural elements, causing modifications in its internal morphology" and "refers to the elimination of all interior elements" (Caves, 2001, p. 491). Urban restoration "refers to the restitution of an entire building, or a portion thereof, to its original state and conditions" (Caves, 2001, p. 492). These strategies vary in the level of intervention, depending on the objectives and priorities of the city where the revitalization is taking place. On a different note, urban revitalization can include plans for new economic activities to replace those that became obsolete with the deterioration of the urban area. What were once industrial waterfronts have to be revitalized for new uses. The Old Port of Montreal is one example of re-use of abandoned docks and rail yards into one of the most visited sites in the city of Montreal. The process of urban revitalization can succeed in improving the quality and public image of an area, but it does not ensure the improvement of the living conditions of the population. However, the improvements can help with the process of negotiation on the part of officials and planners, and public participation (Caves, 2005a, pp. 491-493).

URBAN REGENERATION

Urban regeneration is the process of building physical structures and creating schemes and systems to renew an area with a specific vision that is carried out throughout the process. Leary and McCarthy (2013) defined urban regeneration as "an area-based intervention which is public sector initiated, funded, supported, or inspired, aimed at producing significant sustainable improvements in the conditions of local people, communities and places suffering from aspects of deprivation, often multiple in nature." In these projects, governing bodies and communities seek to bring back investments, employment, and consumption and enhance the quality of life within an urban area (Couch, Sykes, & Börstinghaus, 2011). The aim of urban regeneration is to generally restore economic vitality of an area. On the other hand urban revitalization can aim at various factors such as social and cultural vitality. Urban development aims at restoring the physical environment. Its process is a comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting improvement in the economic, physical, social and environmental condition of an area. These are concerted social, economic and physical actions to help people in neighbourhoods experiencing multiple deprivation, reverse decline, and create sustainable communities are comprised of many interconnected elements resulting in a holistic approach to urban transformation (Couch et al., 2011; W.Caves, 2005a, pp. 483-486). The regeneration of an area can be boosted by design-led cultural or art projects such as the Guggenheim in Bilbao or the Metropol Parasol in Seville as they offer many economic and social benefits.

Table 1: Charcateristics of urban redevelopment, revitalization and regeneration

Urban Redevelopment	Urban Revitalization	Urban Regeneration
• Urban redevelopment aims at restorin underutilized and derelict areas. • Urban redevelopment targets areas that are underutilized, have a deteriorating infrastructure, and an economic opportunity. • Urban redevelopment implieds some type of development • urban redevelopment has a general mission and less well defined	• Urban revitalization aims at social and cultural vitality. • Urban revitalization is more detailed • Urban revitalizationfocuses on strategies that are based in many fieldse • Urban revitalization for not have a precise method of approach (Roberts, 2000, p.18)	• Urban regeneration aims at restoring economic vitality of an area. • Urban regeneration can build physical structures and schemes with a specific vision of approach • Urban regeneration is on-going process • Urban regeneration focuses on human capital • Urban design play role regenration of physical and social aspects

All threee process, aim at improving the qulaity of life of residents

2.3 URBAN CATALYST

DEFINITION OF A CATALYST

In chemistry, the term 'catalyst' is defined as "a substance which, when present in small amounts, increases the rate of a chemical reaction or process but which is chemically unchanged by the reaction; a catalytic agent. (A substance which similarly slows down a reaction is occasionally called a negative catalyst) (Oxford,1989). Author Juliet Davis (2009) argued that in various bodies of work, the notion of 'urban catalyst' relate to its properties. The first mention of the term in association to urban transformation is found in architect Aldo Rossi's *The Architecture of the City* (Rossi & Eisenman, 1982). There, he argued that 'catalysts' are urban artefacts, which are not always physical, constructed, or measurable things, and they are primary elements acting in the process of incremental development and redevelopment of a city. These primary elements or 'catalysts' "accelerate the process of urbanization" and exemplify the process of urban transformation (Rossi & Eisenman, 1982). Furthermore, in the late 1980's, architects Wayne Attoe and Donn Logan expanded on Rossi's notion of 'catalyst' and introduced the concept of 'urban catalyst' in relation to urban design/architecture and the revitalization of cities. In their book *American Urban Architecture: Catalyst in the Design of Cities*, Attoe and Logan (1989) propose a new theory 'urban catalyst theory'. The book explores the concept of an US-based urban design as the foundation for the revitalization of American cities. The authors observed that urban design theories used in American cites were based on a European model and they believed that this model was unable to meet the needs of American cities. The idea was based on the premise similar to Christian Norberg-Schulz's 'genius loci' (1980) which emphasized that American cities had their own form, spirit, identity and sense of place. Attoe and Logan analyzed previously used processes of urban renewal and urban revitalization and concluded that they were insufficient in structuring ongoing regeneration. Their proposal of an urban catalyst was meant to create incremental changes, stimulate new life and guide future development.

Attoe and Logan (1989) defined a 'catalyst' in reference to the "positive impact an individual urban building, project, program can have on subsequent projects and, ultimately, the form of a city" (Attoe and Logan ,1989, p. xi). The project or building generates an "incremental, continuous regeneration of the 'urban fabric' and an element that impels and guides subsequent development" (Attoe and Logan ,1989, p. 45). Catalytic projects are comprised of small rather than large or mega-size development projects that influence the creation of other projects and strengthen the possibility for further change.Catalyst can be a tool within the transformation processs (redevelopment, revitalization or regeneration). It can "encourages designers, planners, and policymakers to consider the chain-reactive potential of individual developments on civic growth and urban regeneration" with the intent of promoting the change in a city's structure and mode of development in an incremental manner (Attoe and Logan ,1989, p. xi). Ernest Sternberg (2000, p.31) view urban catalyst as facilities "that generate urban development in their immediate surrounding". Davis (2009) stated "as opposed to coun-

terparts in chemistry, urban catalysts are as subject to change as the varied contexts they influence". Hamilton (2009) argued:

"[Catalytic projects] can be created in individual buildings and in precincts, identifiable groupings of buildings in proximity to one another. They typically are the result of an individual's vision and passion. Once the fuse is lit, the space is readied, the zoning is flexible, and the attraction of the location is promoted, creative individuals and businesses move in, closely followed by interested consumers and audiences".

Alternatively, the research group aptly named *Urban Catalyst*, comprised of Oswalt, Overmeyer and Misselwitz, worked on a two-year-long project at the Technical University of Berlin. Out of their research emerged their definition of urban catalysts as "elements or acts of potentially limited duration, initiating processes that may continue long after they have transformed or disappeared". The authors introduced the notion of temporary uses as urban catalyst for urban transformation (Kamvasinou, 2011; Oswalt et al., 2013). They believe that temporary uses are and should be part of the current discourse on urban development and urban design. They contended that temporary catalytic project are urban transformation without new capital but with the use of available resources and as a result enabled gradual development while promoting coproduction, according to shared values of the community. They also found that temporary catalysts's respect for incompleteness that they possessed and that they had the ability to welcome and respect. Moreover, they reasoned that these catalysts were instrumental in the paradigm shift in the development process (of projects such as community gardens) due to their potential for revitalizing communities by serving or addressing local needs, creating the opportunity for sustained involvement and instilling a sense of participation among the marginalized and often forgotten local community (Oswalt et al., 2013). While temporary projects are not new, Oswalt et al.' study of the theoretical approach and practical application of the issues of urban development through temporary use is ground-breaking.

Oswalt et al. advocate the use of urban catalytic strategy for sustainable and successful (growth) development. They state that conventional tools of development were inadequate and limited by the status quo. They argue for the incorporation of temporary uses into "a new form of urban planning based on the formalization and the informalization of the formal" (Oswalt et al., 2013). While previously seen as a hindrance by owners and developers, temporary uses are seen as pivotal components of new development strategies creating new opportunities within a more holistic approach.

Urban catalyst can be tangible or intangible elements, cultural flagships, transportation hubs, parks, urban development policies, urban events, or sets of guidelines. In this setting, urban design's primary focus is the 'urban' rather than the 'design' and encompasses the complex and rich dynamics of contemporary cities rather than their physical form. Catalytic projects are seen as generators or contributors to long-term development by way of community development, economic development, and international development (Inam, 2002). The well-thought and well-designed projects can help in the redevelopment of an area by engaging in intelligent community participation, the generation of employment on a long-term basis, the attraction of investment into deprived areas and the increase in business and tax revenues. The introduction of these catalytic projects can also be sensitive to surrounding context, generate cross-cultural learning and address of issues resulting from the shift to a globalized economy (Inam, 2002). Additionally, catalysts are great models for encouraging and improving

other design projects as they connect the old and the new, improve identity, and spur more construction.

URBAN CATALYST STRATEGY

The urban catalyst strategy is a deliberate introduction of new elements that can revitalize existing elements of an underutilized area without essentially changing them. It is not an alternative but something that can be integrated in existing redevelopment strategies and it is comprised in part of the economic reaction, form, and character as part of its components. Grodach believe that the strategy is meant to enhance a city's image, attract visitors, and generate commercial activity; catalytic projects are often seen primarily as economic initiatives (Grodach, 2008, 2010). Incidentally, Oswalt et al. advocate the use of urban catalytic strategy for sustainable and successful (growth) development. They argue that conventional tools of development are inadequate and limited by their regimented institutionalized status quo. In fact, they reason for the incorporation of temporary uses into "a new form of urban planning based on the formalization and the informalization of the formal" (Oswalt et al., 2013). Whereas previously seen as a hindrance by owners and developers, temporary use, can be promoted as pivotal components of new development strategies creating new opportunities within a more holistic approach. Furthermore, Walkowiak and Frazier (2000) argue that some catalytic projects offer the opportunity to promote sustainability as well as protecting the environment.

MONITORING CATALYSIS

In order to improve the planning and implementation of urban catalysts needed to tackle problems in underutilized areas, policies/programs evaluations should be conducted to check their effect and to evaluate the policies/programs in terms of necessity, efficiency, validity, etc. Implementation and

Catalystic Strategies

Strategy 1:
according to (Attoe & Logan, 1989)

- Creating incremental change
- Stimulating new life
- Guiding further development

Strategy 2:
according to (Sternberg, 2000)

- Create relationship with community
- Create a cultural and social draw
- Generate activities within and around
- Create a public amenity

Strategy 3: according to (Walkowiak & Frazier, 2000)

- Take advantage of market conditions
- Understand community's needs
- Celebrate existing resources
- Create a framework for action
- Coordinate with surrounding projects
- Create effective partnerships
- Guide future development

Strategy 4: according to (Oswalt et al., 2013)

- Lower initial hurdles and removing obstacles.
- Create a framework for stakeholders involvement.
- Claim and create new "inclusionary" public spaces
- Create a network to train and strengthen self-organized users and uses
- Establish, consolidate, manage legal structures
- Employ catalyst for specific interest

Table 2: Catalystic Strategies

be established to monitor the success of the various actions initiated in terms of a goal. As previously mentioned, urban catalysts (projects and policies/programs) vary in their form, function and intent, their efficacy is problematic and hard to judge but they must be assessed in order to determine if they have been successful or if they require additional changes to ignite or spur redevelopment. Evaluation measures are necessary to appraise the effectiveness of urban catalysts on underutilized areas. According to Sternberg (2000), the relationship between a catalyst and its surrounding development area can be measured by way of an index, but Sternberg does not implicitly specify the categories and weight scale by which the assessment should be conducted. On the other hand, Healey (1992) argued that some of the measures of property-led urban regeneration could be adopted to evaluate the success of an urban catalyst. The measures include a summary of the amount of previously vacant, abandoned, derelict or under-utilized land/buildings that have been rehabilitated, retrofitted, and or reused, the amount of floor space redeveloped since the introduction of the catalyst, and finally the number of jobs created within the surrounding areas during and after the completion of the urban catalyst. Other measures that could be utilized to measure the success of the catalyst is, its influence on the physical appearance of it surrounding context, its influence as an inspiration for future projects but also the perception of user who frequent the surrounding area. It is also worthwhile to state that while these measures are suggested they cannot always be used to define success of catalyst due to their open-ended nature.

An indicator is "a measure or set of measures that describe a complex social, economic, or physical reality (Mullin & Kotval, 2003). Planners should be able to track the changes on the surrounding context, provide a way to measure the success of the catalyst and the quality of life after the introduction of the catalyst. The goal is to focus not only on socioeconomic data but also on physical, cultural, and aesthetic data. Mullin and Kotval (2003) propose a number of indicators that can provide a good sense of the effectiveness of downtown revitalization efforts. While they are not tailored to urban catalyst specifically, the revitalization goal is the same, making the indicators valid for consideration as possible measure of assessment. The indicators are: 1. occupancy rate, 2. diversity of uses, 3. improvement in aesthetics conditions, 4. increase in market capture, 5. better connections between the built and natural environments, 6. strength in organizational management. The indicators were chosen for their relevance, impact, validity, availability of data, simplicity, ability to aggregate information, ability to reflect trends. The evaluation of the catalyst should comprehensive approach over a period to be determined by the stakeholders (5 years, 10 years, 20 years).

CATALYST IN CANADIAN REDEVELOPMENT PLANNING

In the Canadian context, current redevelopment trends vary from one municipality to the next. The varying needs, goals, and objectives of each municipality and its residents result in an array of policies, strategies, and projects that shape the Canadian landscape. The post-industrial Canadian landscape is strewn with brownfields. While many perceive these contaminated parcels of land as negative eyesores and obstacles to development, they are often used as catalyst for the regeneration of neighbourhoods and existing infrastructure for economic development purposes. They "offer the opportunity to promote sustainable, economically feasible projects that protect the environment and revitalize struggling cities" (Walkowiak & Frazier, 2000). Large undeveloped spaces are scarce in the urban cores, forcing Canadian municipalities reuse brownfields to create projects that fit their economic needs. Many revitalization projects in Canada have taken advantage of these brownfields to create new spaces and

bring vitality to areas that had been suffering from neglect. These projects are often times described as (social and economic) catalysts for growth.

One of the first major 'catalytic' projects in Canada was the redevelopment of the Vieux Port of Montréal into a new 131 acres promenade, beginning in the early 1990s. (Old Port of Montréal Corporation, 2012). The promenade was the catalyst for the redevelopment of Old Montréal by reconnecting the city to the river. In 1976 the port activities were relocated further eastward resulting in a large vacant area. A year later, the federal government stated its intention to redevelop the site. From the 1980s to the early 2000s, the area was redeveloped the basin, a converted a rail corridor into a linear park, a science center and other facilities that create a new touristic and cultural destination and breathed life into the city's historic core. In the last thirty years, since the introduction of the Old Port, the urban landscape of Montreal has been changed by many catalytic projects. In the early 2000s, the city enacted a new master plan that called for the revitalization of many sectors of the urban core that had been left vacant with the shift in local economy. Within this mandate, catalytic projects such as the Quartier international de Montreal, and the Quartier des Spectacles were realized by meands of catakytic projects(such as Square Victoria, Place Jean Paul Riolle, Palais des Congres; various festival squares). Other projects, present and future, initiated by the city, developers, and the community are slated to become potential catalyst in the urban transformation of the Island of Montreal.

In Quebec City, urban renewal effort had razed Saint Roch,one of the oldest neighbourhoods of Quebec City, leaving large underutilized areas and destroying the fabric of the neighbourhood. In 1989, Mayor Jean Paul L'Allier initiated the revitalization of the neighbourhood with the desire to breathe new life and vitality. The project emphasized and took into account for the character and history of the area. The planners used culture and education as the driving elements that would help change the urban fabric. The centerpiece of the project was the Jardin Saint-Roch, which is a notable catalytic project.

Current mixed-use projects, like the University Market Place in Vancouver, BC and the Qingdao Blue Biotech Living area in Toronto, ON by IBI Group, were conceived as catalysts for urban change with the intentional integration of community planning, public-private partnerships, sustainability and urban design (Group IBI, 2011). In 2010, the city of Hamilton's Planning and Economic Development Department established a Creative Catalyst Project policy, a part of their 2010 Economic Development Strategy (Hamilton, 2013). The Hamilton Creative Catalyst Project Feasibility Study was based on the Creative Cities concept created by Richard Florida (Florida, 2002). The study used catalysts in the form of physical spaces with activities that generate traffic, growth and transformation (Hamilton, 2009). The goal of the strategy was to "harness the potential of the creative sector to boost Hamilton's economy and transform the urban landscape" (Hamilton, 2009). In Rapid Transit as a Catalyst for Re-urbanization in the Waterloo Region, Durant and Willoughby (2007), use transportation infrastructure as the catalyst for regeneration. In this instance, rapid transit brings together land use planning and transportation infrastructure in an innovative approach to community building. The paper discussed the benefits of using rapid transit as an integral component in the revitalization of the Central Transit Corridor (Durant & Willoughby, 2007). The city of Edmonton's Capital City Downtown Plan (Edmonton, 2010) was drafted around four pillars: policies, zoning, implementation strategies, and catalytic projects. They strategically used public investments to fund catalytic projects such as an integrated at-grade

light-rail-transit (LRT), a warehouse campus, a central park, and a legislature grounds re-development. The projects were intended to stimulate change and enhance vibrancy while increasing the number of people living down-town, in addition to enhancing the neighbour-hood's uniqueness (Edmonton, 2010).

Figure 7 . Aerial View, from West 30th Street, looking South toward the Statue of Liberty and the World Trade Center site. Iwan Baan, 2011 (Section 2)

3.1 PROJECT INFORMATION

DESCRIPTION

Project Name	High Line Park
Client/Owner	New York City (department of Park & Recreation); Friends of the High Line
Park ID	M360
Property Type	Community Park
Zip Code	10001, 10011, 10014
Community Board	02 & 04
Council Member	Corey Johnson
Location	From Gansevoort Street to West 34th Street, between 10th and 12th Avenue
Size	1.45 miles long; 22 blocks long; 30 to 50 feet wide; 25 feet above street level; 6.73 acres
Date Designed	2003 to 2014 in phases
Construction Completed	2006 to 2014 in phases

COST & CONTRIBUTIONS

Construction Cost	Section 1 and 2 cost $152.3 millions (US); Section 3a $35 millions (US) and 3b $86.2 million (US)
Total Cost	$273.5 million (US)
City of New York Contribution	$123.2 million (US)
State Contribution	$400,000 dollars (US)
Federal Contribution	$20.3 million (US)
Friends of the High Line Contribution	$44 million (US)

DESIGN & CONSTRUCTION TEAM

Landscape Architects	James Corner Field Operations (Project Lead), James Corner ASLA
Architects	Diller Scofidio + Renfro
Planting & Landscape	Piet Oudolf
Resident Engineer	LiRo/Daniel Frankfurt; HDR + LiRo/Jim Eckhoff
Community Liaison	Helen Neuhaus & Associates
General Construction	KiSKA Construction; CAC
Construction Management	SiteWorks Landscape; Bovis Lend Lease
Lighting	L'Observatoire International
Signage & branding	Pentagram Design, Inc.

Table 3: High Line project information.

Figure 8. West Chelsea aerial photo.
Source: Friends of the High Line.

3.2 PROJECT HISTORY

NEW YORK ON THE HUDSON

The West Side of Manhattan, in particular the Hudson River, has had a significant importance to New York City's history. The river and its banks had a rich diversity of fish, plants, and animal life that attracted settlers like the Dutch who "established" New Amsterdam in the 17th century. During the American Revolution, the area was the site of about a third of the battle actions and played an important role in the military strategy of George Washington. As the city grew, this area became a major thoroughfare for transportation. First came the steamboats and clippers ships, and then the railroads. The railroads facilitated industrial growth and brought more economic success to the city and its booming West Side. In the second half of the 19th century, the lower West Side of Manhattan was filled with factories for all sorts of goods, which were distributed around the city. Chelsea and the Meatpacking District were at the epicenter of this manufacturing revolution (La Farge, Darke, Mlyn, & Valentin, 2012).

PACK ON THE MEAT

Officially named the Gansevoort Market Historic District, the meatpacking district is located on the southwest side of the island of Manhattan, on the outskirts of the West Village bordering Chelsea. The former home of over 250 meat distribution companies, it is located between the Hudson River east to Hudson Street and from West 14th Street south to Gansevoort Street, where the 1811 grid pattern of the Commissioner's plan meets the irregular street pattern of Greenwich Village (Hatch, 2011; Shockley, 2003). During the mid-1990s, the manufacturing landscape shifted in the Meatpacking District. Growth and development from nearby neighbourhoods created change in the district and the area was in danger of being destroyed by new development . The gritty industrial charm of the district was in danger of extinction (Berman, 2013).

Functioning as a hub of activity from as early as the 1800s to the turn of the 20th century, the district grew from the rows of open-air meat markets, pork and veal packers, meatpacking plants, lumberyards, and tenements into a food processing industrial center from which it took its moniker (Hatch, 2011). Around its heyday in 1900, its thriving meat market conducted business on the distinctive wide Belgian-block paved streets. The irregular street pattern, distinctive pavers, wide streets, and a hodgepodge of market buildings made it distinct from its neighbours. By the 1960s the food processing industry had declined, and the gay community began to have a strong presence with shops, restaurants, galleries, and clubs that catered to the subculture (Parrella, 2014). With the demise of the food processing industry in the 1980s, the area became home to prostitution and drugs. During the 1990s, in the early hours around 4 am, the district meat businesses would begin loading and unloading their products, and by noon, this activity would had died down and the district would be empty until evening when it became populated by club goers, transgendered prostitutes, and drug dealers. When the clubs closed, the cycle was repeated, and an equilibrium and relative harmony existed between the various activities (Berman, 2013). By the late 1990s, a resurgence in popularity and new development in nearby neighbourhoods began to threaten this equilibrium because of the increased desirability of the

area. A local group of preservationists, who had been researching the history of the area since the 1980s, met to find a solution to the imminent redevelopment of the district. Local residents and business owners also joined the fight to secure a landmark designation for their eccentric neighbourhood. Despite having significant changes to the building's architecture , the district was deemed significant and endangered; in 2003, it received its designation.

Today, the district is undergoing another revolution and is a contender for the most glamorous neighbourhood in Manhattan with its innovative restaurants, lounges, and high-end offices that have replaced the meat lockers and gay nightclubs (Kaysen, 2015; Parrella, 2014). Fashionistas and Wall Street financiers have traded places with the meat packers, transgendered prostitutes, and drug dealers. While around 30 meat packing houses like J. T. Jobbagy Inc. remain, leasing prices in the area have almost doubled, forcing old tenants to relocate and be replaced by high-end furniture stores, boutiques, and offices. Glassy commercial buildings have replaced many of the low-rise meat-locker buildings that gave the area its charm. While trying to retain its character, the district's image continues to change, and the distinctive wide Belgian-block paved streets are quickly becoming the only remnant of its past. One exception to this invasion is the Diane Von Furstenberg Studio headquarters located on Washington Street. The six-story adaptive reuse structure is built behind the façade of the original building. This flagship is heralded by New York's Landmarks Preservation Commission as "a new model of adaptive reuse for the city" (Work Architecture Company, 2007). The addition of an estimated 600,000 square feet of commercial space within 3 to 5 years and the new contemporary Whitney Museum's imposing presence are threatening the historic district's survival (Kaysen, 2015). The new activity generated by the new Whitney, new office towers, new Pier 55, and new performance space will bring more pedestrians and tourist traffic to an area that used to host most of its activity at night (Kaysen, 2015).

CHELSEA ON THE HUDSON

In 1750, captain Thomas Clarke purchased a plot of land and built a manor—which he after his hometown of Chelsea—on the western side of Manhattan. Over the next 200 years, the area evolved and grew and even though the original boundaries have changed many times, the name remained (Williams, 2014). Today, the neighbourhood is bounded by the Hudson River to its West, the meatpacking district to the south, the Garment District to the east, and Hell's Kitchen-Clinton to the north. It spans from Fourteenth Street to Thirtieth Street between the Hudson River and Broadway. Thomas Clarke's descendants continued to acquire land and develop Chelsea, and by the early 1800s, they had subdivided lots to build the famous brick row houses for "well to do" New Yorkers. The also donated the apple orchard where the General Theological Seminary stands today.

Simultaneously, the western side of Chelsea became more industrialized, and in 1847, the Hudson River Railroad was built between Tenth and Eleventh Avenue. The construction of the rail line created a divide between two sections of Chelsea that remained until the reopening of the High Line. A large number of immigrants came to West Chelsea and Hell's Kitchen to work in the factories, warehouses, distilleries, and piers. They moved into new tenement housing located nearby and in Hell's Kitchen. During the 20th century, the railroad industry and the businesses that depended on it in the west side of Chelsea shut down. As a result, the area fell into disuse and nefarious activities began to thrive. On the east side, housing development continued with large apartment blocks like the London Terrace, cooperatives, and

public housing like Fulton Houses (Jackson, 2010).

In the 1960s, the cultural landscape of Chelsea shifted as various ethnic groups and a strong LGBT community became more prominent. In the 1990s, Chelsea became the center of the contemporary art scene in New York City. Due to high rent prices in SOHO, gallery owners relocated to the Chelsea neighbourhood. In addition, a large stock of abandoned factories, warehouses, and lofts in Chelsea was zoned for manufacturing, which allowed galleries but not residential units or commercial development. The area grew in popularity and soon became one of the most desirable neighbourhoods in New York.

DEATH AVENUE AND THE WEST SIDE COWBOYS

In the mid-1800s, the lower West side of Chelsea was a vibrant and chaotic place. It was a center for food, storage, manufacturing, and distribution for many decades; trains would come down from upstate bringing food and goods to be distributed to the surroundings areas. A street level rail line was constructed between Tenth and Eleventh Avenue to expedite delivery. The freight rail line at street-level on Tenth and Eleventh Avenue added to the fray and the often dangerous street life. As the trains ran at grade level, many pedestrians were injured and killed, particularly on Tenth Avenue, which became known as "Death Avenue" (Railroad.net, 2011). In an effort to warn pedestrians, the city passed an ordinance that would authorize riders on horseback, later known as the West Side Cowboys, to ride in front of the trains to give necessary warning to pedestrians to move out of harm's way. For 85 years, the West Side Cowboys rode in front of the freight trains to warn people of the oncoming trains. Despite these precautions, the new safety measure was ineffective because it reduced speed of the trains and some accidents continues to occur. The state, city, and Hudson Railroad Company got together to discuss solutions, and numerous plans were proposed, including the building of an elevated rail line that would be incorporated into the Federal West Side Improvement Projects.

Figure 9. West Side Cowboys.
Source: [Photographer unknown].Friends of the High Line. (1911).

Figure 10. Train on West SIde Rail Yards.
Source: James Shaughnessy. Elevatead track

ELEVATED ON THE WEST SIDE (WEST SIDE IMPROVEMENT PROJECT)

During his 40 years in power, Robert Moses was a visionary planner who drastically changed the skyline and shorelines of New York. The West Side Improvement Project (WSIP) was one of his earlier endeavours to make New York the most accessible city. His WSIP design created a parkway along the Hudson River and included many other components such as the expansion and re-landscaping of Riverside Park, the construction of the Henry Hudson Memorial Bridge, and the construction of the High Line, an elevated freight line (Washburn, 2013; Younkain, Carrion, & Lu, 2009). Ironically, his network of highways and parkways would be the stimulus for the death of the High Line less than 30 years later (Younkain et al., 2009).

The High Line eliminated some of the congestion, hazards, and traffic delays in the West Chelsea by freeing the avenues from trains operating at street level. As a public works project, it was used as an economic stimulus and reliable job source during the Great Depression. The project was herald as "bringing a new era for the industrial west side" and was proclaimed as being the "life line of New York" because it brought food and merchandise to the island of Manhattan (Railroad.net, 2011). The rail line was an essential artery for the region because it brought produce, meat, and other goods to the city from all over the country (La Farge, Darke, Mlyn, & Valentin, 2012; Railroad.net, 2011). The 13-mile long rail line was located between Tenth and Eleventh Avenue and from Thirtieth to Sixtieth Street. At Thirtieth Street, the rail line turned west and encircled the Hudson Yards by turning north on Twelfth Avenue. At the Hudson Yards, the rail line went underground without crossing at street level.

Construction started in 1929 and the High Line was dedicated on June 28, 1934. To accomplish this vision, 649 buildings were demolished, including a church and two schools, although when the economy rebounded, warehouses soon replaced them. The billion-dollar project (in today's dollar value) was constructed to increase the efficiency of deliveries to the industrial buildings of West Chelsea and the meatpacking district (Washburn, 2013). The project elevated the freight line over the street and to the doors of industries, which eliminated the cost of trucking for manufacturers. The rail line was built to accommodate fully-loaded freight trains. Additional lines were built to facilitate the ease of loading and unloading for businesses that were located along the High Line. Furthermore, to expedite the process, buildings like the National Biscuit Company plant were retained, constructed, or reconstructed to allow the trains to pass directly thru the build

ing (Railroad.net, 2011). The High Line was used as an active freight line until the 1950s when the trucking and the interstate highway system shifted the way goods were moved around (La Farge et al., 2012; Railroad.net, 2011).

ks, West Side Rail Yards. (1953)

SECRET WILDERNESS IN THE SKY

From the 1950s to 1980, activity on the rail line slowly declined until the last train traveled the High Line in 1980. This train delivered a truck full of frozen turkeys for Thanksgiving. The displacement of the Port of New York to Long Island and the dominance of the trucking industry had made the High Line out-dated. In 1981, the Surface Transportation Board deemed it obsolete. Over the next two decades, the High Line became a haven for graffiti artists and urban adventurers. An urban wilderness began to emerge, including a wild garden and rich flora of 210 species of plants, which were adapting to the urban setting (NYCEDC, 2015). Some of the plants were native to New York and some were not. The theory is that they had come to this urban location in various ways—birds' droppings, the soles of the shoes of trespassers, and the trains that came from all over the country. Like the immigrants who arrived by many modes, the plants managed to find a home in New York. The High Line had created its own ecosystem. Below the structure, blight set in with a giant eyesore as its backdrop. The mix of industrial buildings, abandoned structures, and general neglect brought crime, drugs, transgendered prostitutes and seedy nightclubs

Figure 11. High Line Wilderness
Source: Joel Sternfeld, Portfolio-The High Line. Places.,14(2), 56. 2001.

3.3 PROJECT INCEPTION

AN IDEA IS BORN

Two ordinary residents met at a community meeting and built the most famous linear park in the world. Many steps evolved between these two events but essentially, this is the most compelling part of the High Line's history. I took a lot of chutzpah for these two individuals to take on officials, developers, and owners to preserve what most, at the time, saw as an eyesore. In early 1999, the New York Times ran an article about the long-forgotten elevated rail Line in West Chelsea (Lueck, 1999).

The article mentioned the plans to demolish the structure that divided the neighbourhood and blocked access to the Hudson River. The Giuliani administration saw the High Line as an impediment to residential and commercial redevelopment. This article caught the eye of two Chelsea residents, Robert Hammond and Joshua David, who decided to attend the meeting of community board (4) regarding the future of the elevated rail line. They had previously seen the structure, and thought there was an opportunity to improve the quality of life in the area. As the meeting progressed, they realized that they were alone in holding this opinion, and so they decided to form an advocacy group.

The Friends of the High Line (FHL) was founded in 1999 to legitimize the group and to facilitate its participation in the Federal government's "rail banking" program (Berens, 2011), which was crucial for the feasibility of the project. According to Inam (2014), "At the time, they had no significant funding, no political contacts, no training in landscape or urbanism, and no experience in the field," but they were determined to preserve the structure. They meet with various officials, groups, and the railroad owner and devised a plan to save the High Line. The first task of FHL was to bring awareness to the forgotten rail line. In 2000, they hired landscape photographer Joel Sternfeld to capture the beauty of the wild landscape and the potential of the structure (Sternfeld, 2001). The photographs were used in articles, fundraising events, and exhibitions in the campaign for the preservation of the High Line and its potential as an open space. In 2001, Robert Hammond, one FHL's founders, was working as a marketing director for a retail company when he met with James Biber and Paula Scher of Pentagram. Hammond hired the pair to create a new logo for "Friends of the High Line." What began as a simple graphic of a lime green "H" representing the High Line, the railroad, and its future as a park became a symbol for the park itself (Pentagram, 2011). The firm has continued to work with FHL in their development of the "High Line" brand.

The primary function of FHL was to fundraise for the High Line. As their campaign grew, so did the organization, with the addition of local philanthropist residents such as Diane Von Furstenberg and socialite Amanda Burdens. They also attracted the help of famous Chelsea residents such as Edward Norton, Kevin Bacon, and Martha Stewart, whose involvement brought press, awareness, and more fundraising dollars. The group worked to bring attention to the High Line and its economic potential through clever campaigning that drew the attention of city officials—such as City Council Speaker Christine C. Quinn—and their surrounding community.

Figure 12. Promenade Plantée Coulée Verte
Source: [Unknown photographer]. Promenade Plantée, the first elevated parkin the world. (2012)

INSPIRATION/ PRECURSOR:- FRENCH STEP SISTER

The Promenade Plantée Coulée Verte The Promenade Plantée Coulée Verte is a linear park or greenway located in the 12th arrondissement, known as the Reuilly, on the right bank of the Seine. The 4.7 kilometre long refurbished elevated rail line served as the inspiration for the High Line. The promenade sits on the former Vincennes Rail line that dates back to the late 1850s. The rail line, which operated for over 100 years, had been closed, and part of it has been integrated into what is now the RER rapid transit line A. The neighbourhood and the Bastille station had fallen into decline for 20 years until the Opéra house replaced the station. Beginning in the 1980s, the neighbourhood underwent a slight renewal with many of its former industrial and commercial area becoming a service-oriented sector. The rail line and its surroundings were converted in the early 1990s as a greenway. The project was part of a planning policy established by the city to create new public open spaces out of dated infrastructure and industrial sites.

Architect Philippe Mathieux and landscape architect Jacques Vergely designed the parkway, which opened in 1993 and which includes an elevated portion on a viaduct. The Viaduc des Arts portion of the project was built on top of the former railway viaduct. One and a half kilometers of elevated park spans over 70 renovated and enclosed arches, which now house workshops, restaurants, furniture shops, and galleries. The promenade meanders thru the arrondissement with walkways, new bridges, and gathering spaces that are both modern and traditional. The neighbourhood surrounding the park was revitalized and transformed because of the creation of the park. Once an unwelcoming and blighted section of Paris, the area now draws tourists and locals to the promenade, which is accessible to all at different points throughout the coulée verte. According to Washburn (2013), this green space became the first elevated park in the world and has served as a model for the FHL for their proposal for the reuse of the High Line (Washburn, 2013, p. 71).

STAKEHOLDERS

Stakeholders have the power to impact the outcome of a project. Effective planning takes into account different perspectives and likely impacts, and this information is most often acquired by engaging various stakeholders. They are vital to the process. The High Line exemplifies how many stakeholders can work together, while mitigating various needs and interests, to create an urban park. All stakeholders have their own agendas and interests, but they must engage in dialogue to accomplish a project. The High Line's stakeholders include members of the public sector from federal and city levels, members of the private sector from business and real-estate developers, members of the non-profit sector, members of the community, donors, FHL, other organizations, and the owners of the railroad. Following is a list of the main players in the redevelopment of the High Line and West Chelsea:

Figure 13: Friends of the High Line Identity Logo.
Source: Paula Scher, Pentagram. Identity for Friends of the High Line. (2001).

• Friends of the High Line: The community organization was established as a not-for-profit 501 (c)(3). Its main job is the fundraising and operation of the High Line. They have a public-private partnership with the City of New York's Department of Parks and Recreation.

• CSX Corporation: Owners of the High Line structure.

• City of New York and its agencies (including the Planning Department, Economic Development Corporation, Parks and Recreation Department, Affordable Housing Department): Responsible for the planning of the area, the zoning, regulations, and the direction of the project. They are the owners of the High Line after it was donated to the city by the CSX Corporation. Their policies impact the High Line and all of its surroundings.

• Chelsea Owners and Developers: Private owners who owned small parcels of land underneath the High Line.

• Community: Local residents of West Chelsea.

• Donors: Philanthropists, celebrities, and others who donated and brought awareness to the project.

• Federal Government (including Rail to Trail Conservancy and Surface Transportation Board): Provided funding for the redevelopment and had the power to authorize the reuse of the railroad.

• Community Organizations: Local groups who advocated for the needs of residents.

• James Corner Field Operations and architecture firm Diller Scofidio + Renfro and many other designers, analysts and engineers: Created the masterplan for the High Line and were responsible for bringing the project into reality.

Figure 14. 'Designing the High Line, exhibition at Grand Central Terminal's Vanderbilt Hall.
Source : Pentagram. (New York City,2011).

DESIGN COMPETITION

Design competitions have always been influential and have played an important role in the planning and urban design of cities. In ancient Greece, architects and sculptors submitted proposals for the Acropolis. In modern planning, dating back to the 18th century, design competitions have been prominent in the process of transforming and creating cities and their parts. They are used mainly to generate new concepts and ways of viewing cities, but also to address real urban problems and needs (Alexander & Witzling, 1990). According to Alexander and Witzling (1990) , design competitions can be classified in various ways, notably by their goal/aim, format, or output. The format of the design competition varies depending on its purpose. The competitions are a key method for a client to gather a diversity of ideas and solutions. Design competitions can be a burden due to the time, effort, and expense spent on them without a guarantee of reward. Participating in them can be expensive with fees and material costs and the time spent away from paid work (The American Institure of Architects, 2010).

HIGH LINE IDEA COMPETITION "DESIGNING THE HIGH LINE"

The FHL sponsored a design idea competition in 2003. The open competition sought innovative ideas for the future of the High Line. The founders of FHL wanted to make sure that every possible design idea was put on the table before moving on to the next phase; the purpose was to bring awareness to the preservation of the High Line and to conceptualize ideas for its future. It was a step forward in the campaign initiated by the Friends of the High Line. As an open competition, anyone could enter—students, professionals, and ordinary people. A total of 720 participants from more than 36 countries entered the competition (Friends of the High Line, 2010a). Most well-known architects did not participate because they thought it was a waste of time, since the winning design would not be built (David & Hammond, 2011). The overarching theme of the High Line "ideas" competition was to explore innovative possibilities for the High Line and facilitate discussions among members of community (Friends of the High Line, 2010b).

As an “ideas” competition, the participants were made aware that the winning entries would not be built; rather its “objective was to catalyze the development of truly original designs but those designs did not necessarily have to be realistic or practical” (Friends of the High Line, 2010b). The result was a series of extraordinarily original and imaginative proposals. Some of the submissions were playful, some were daring, some romanticized the past, but none of them stood a chance to be built. The proposals included a grazing farm for cows, a fluorescent fun house, a roller coaster, and a small-scale Appalachian Trail. A judge’s panel composed of three architects and two landscape architects—notably including Steven Holl, Bernard Tschumi, and Julie Bargmann—selected four winners. The winning proposals (none realistic) included an elongated swimming pool, a moving structure with shops and galleries, an alteration of the viaduct through incisions and displacement, and finally letting the structure evolve naturally as it had for the last two decades into a wild meadow. Compensation of $2000 was awarded to all four winners.

The winners of the idea competition were:

A. Ernesto Mark Faunlagui (Hoboken, New Jersey)

B. Matthew Greer (New York City, New York)

C. Benjamin Haupt and Robert Huebser (Berlin, Germany)

D. Natalie Rinne (Vienna, Austria)

A two-week public exhibition was held in Vanderbilt Hall at the Grand Central Terminal to show about 200 of the entries. The exhibition included winners, honourable mentions, and noteworthy proposals.

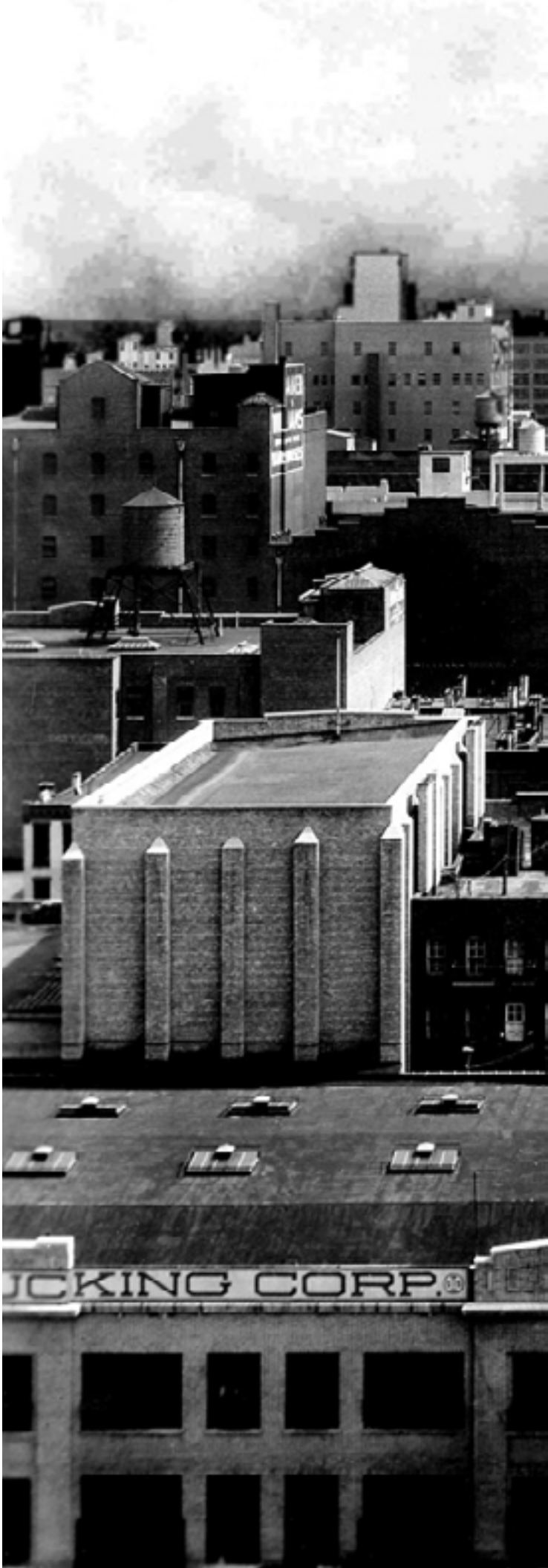

Figure 15. High Line competition proposal Swimming Pools
Source: Natalie Payne. Friends of the High Line. (2003).

3.4 PROJECT PROCESS/ STRATEGY

"You can measure the health of a city by the vitality of its streets and public spaces"
— William H. White

RAIL TO TRAIL

One of the first tasks of the FHL was to apply for Federal funding thru the Rail to Trail Program. The program emerged out a need to transform former rail corridors. The railroad industry was slowly declining as new, more efficient transportation modes were created. By the 1980s, a large number of railroad companies abandoned their tracks, deeming them obsolete. By the 1990s, the Federal government established regulatory frameworks to encourage the reuse of former industrial sites, including rail yards and rail lines (Hollander, Kirkwood, & Gold, 2010). The Rail to Trail Conservancy emerged out of these new policies. The non-profit agency works with communities throughout the United States to convert unused rail corridors into vibrant public spaces that improve the quality of life of the citizens living nearby (Rails-to-Trails Conservancy, 2001-2015). The program helps navigate thru the often-complex ownership that become problematic after a railroad is abandoned. The High Line's ownership was complicated. New York Central Lines and the City of New York built the rail line. The CSX Corporation owned the railroad structure and the land underneath. The city owned the air rights and the easements (street crossings) and small parcels of land along the line. The rest of the parcels underneath the High Line were owned by private citizens (Berens, 2011). In 2005, CSX Transportation was facing a 30 million dollars lawsuit to demolish the structure from the Chelsea property owners. As a result, CSX decided to distance themselves from the project and donate the High Line structure south of 30th Street to the city; in 2011, CSX donated the final section of the High Line. The rail to trail program also helped facilitate the sale of the structure because it encompassed the entire corridor(-Berens, 2011; Rails-to-Trails Conservancy, 2001-2015).

Figure 16. 1999 West Chelsea land use map.

Source: City of New York.1999. Land use map. New York City, NY.

Figure 17. 1999 West Chelsea land use auto related and vacant space map.

Source: City of New York.1999. Land use auto-related and vacant map. New York City, NY.

ZONING AND LAND USE

City planners help manage and control the development of their municipalities by using, regulatory zoning bylaws strategies and incentive strategies. While planners do not have the power to mandate a developer to build anything, they can establish bylaws to control what goes where, and the basic standards of building. Incentives are used as a way to bargain with developers to get what they want in exchange for provisions that meet the needs of the city. Planners also use zoning strategies when they have little recourse in markets like Manhattan where a high demand exists for affordable housing, not much land is available, and high prices are the norm. One of the ways to address this housing issue is to provide incentives to developers to include affordable units with their market-rate units, which is called incentive zoning and is defined as:

Incentive zoning provides a bonus, usually in the form of additional floor area, in exchange for the provision of a public amenity or affordable housing. There are incentive bonuses for the provision of public plazas (privately owned public spaces), visual or performing arts spaces, subway improvements, theater preservation, FRESH food stores and affordable housing (New York City, 2014b).

Inclusionary housing, development right transfers, and mixed-use development are the tools the city of New York used to control the development surrounding the High Line.

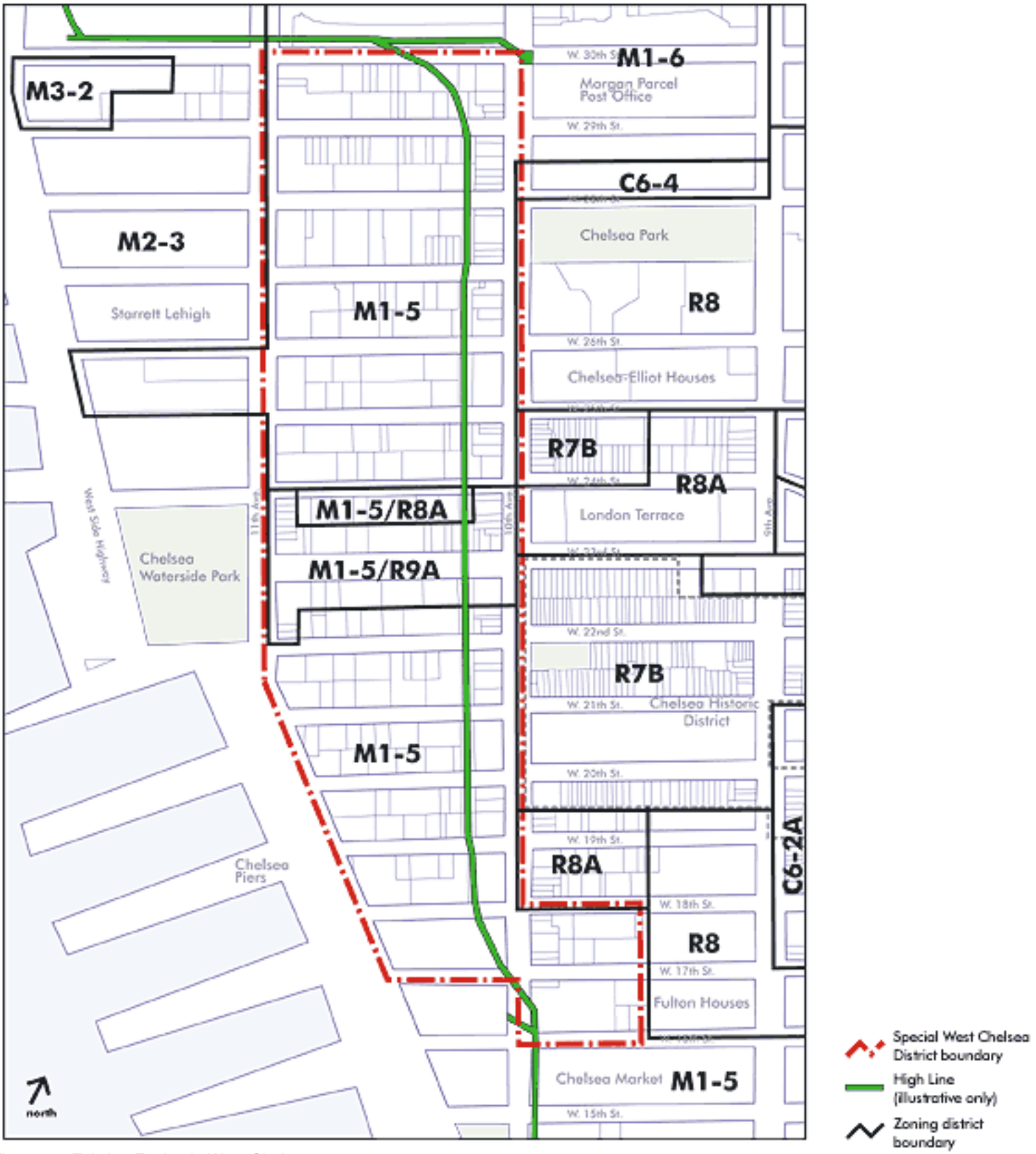

Figure 18. Existing Zoning in West Chelsea.
Source: City of New York.(2002).Existing zoning map. New York City, NY.

Figure 19. Illustration of projected build out under West Chelsea District Proposed District
Source: City of New York.2002.West Chealsea District Proposal. New York City, NY.

WEST CHELSEA DISTRICT PROPOSAL

GIULIANI ADMINISTRATION

In the early 1990s, local property owners (known as the Chelsea Property Owners) sued Conrail to demolish the High Line. They wanted to redevelop the area and felt the structure was an obstacle. The Giuliani administration supported the lawsuit. A federal judge ruled that "the public's interest in a revived transportation service over the High Line must take precedence" over the property owners' grievance (Loughran, 2014). Some revitalization and new development projects had brought new luxury housing and commercial development to the Meatpacking District and parts of East Chelsea. The developers and Chelsea Property Owners wanted to capitalize on the potential raise in property values and the massive growth that had taken over the Lower West Side. The Giuliani administration joined developers and continued their fight to demolish the structure. The administration sued the CSX Corporation for 150 million dollars. The CSX Corporation, which had just acquired Conrail in 1999, decided to open a discussion about alternatives uses for the High Line. The city had a community board 4 meeting to present the proposals to the residents (one was for a park).

In 1999, the Giuliani administration had a plan to change the zoning for the area, which focused around the demolition of the High Line. The legal battle went on for years and in December 2001, in the last days of the administration, they reached a tentative demolition agreement. The FHL and its backers sued on the basis that the agreement involved property easements along the route of the viaduct, the agreement should have been subject to the City's Uniform Land-Use Review procedure known as ULURP (Dunlap, 2002). The previous court ruling was appealed and

the demolition was put on hold. The incoming administration saw the High Line differently and pushed for an agreement with the CSX corporation for "interim trail use." The certificate of interim use was granted by the Surface Transportation Board in 2005, which allowed the CSX Corporation to transfer ownership to the City for use as a public walkway. It allowed the High Line to become part of the Federal Rails to Trails program, and it gave the Bloomberg administration the authority to implement the West Chelsea plan and create the High Line.

BLOOMBERG ADMINISTRATION

From the beginning the Bloomberg administration was more receptive to the transformation of the High Line for three reasons. The reuse of the structure offered many possibilities from housing to green space. It offered the potential to stimulate economic growth in the nearby neighbourhood, and it
would help with the New York City Bid for the 2012 Summer Olympics. The High Line would border their proposal for the redevelopment of the Hudson Rail Yards into the West Side Stadium. The stadium was intended to be the centerpiece of the New York City's bid for the Olympics and part of a larger comprehensive redevelopment of a long-underdeveloped area on the West side of Manhattan. The High Line also was the first priority of the new Chief Planner, Amanda Burden, who had been part of FHL's board, and some of the board's other officials like Christine Quinn.

The City Planning Department held a forum to inform community board 02 and 04 residents of their desire to create a West Chelsea District area from 14th Street to 30th Street. They met resistance from community board 02 because the area from 14th to 16th street was located in the Meatpacking District. In 2002, the district had already been designated as historic. The department modified the proposal to its current limits of 16th street. The personal interests of the planning chair also came up in the discussions. As an art patron, she had witnessed the move of art galleries from SOHO to Chelsea. The galleries within West Chelsea, had previously been priced out of SOHO and forced to move, which had created a strong art community. The chair wished to protect them from the same fate.

The existing zoning was due for an amendment to the master plan. The area was in transition, since most of the manufactures and factories had closed, and a thriving number of art galleries and museums had been established. Yet, the majority of the area was zoned for "light manufacturing and commercial uses, with a zoning designation of M1-5 and a maximum allowable floor area ratio (FAR) of 5.0.manufacturing" (New York City, 2005a). The galleries had migrated to the area because of cheap rents, the large airy spaces of the abandoned factories, and the zoning permitting their use. Residential zoning was added to the 23rd Street corridor, and the existing residential area included the Chelsea Historic District, public housing complexes, and other small pockets of residences.

The proposed zoning change, by the Giuliani administration originally, needed to be changed to accommodate the High Line. The City Planning Department "developed a strategy to link the renewal of the High Line with the renewal of the neighbourhood" by using land use planning tools (Washburn, 2013). The West Chelsea District Plan was proposed in 2003 with primary objectives to "allow for the High Line's reuse, to encourage the continued use of former industrial spaces as art galleries, and to encourage economic growth through residential development along Tenth and Eleventh Avenues" (New York City, 2005b).

The goals of the plan were to:

1. Transform the High Line into a linear park.
2. Provide new housing for the neighbour-

hood.
3. Preserve the character of the existing art gallery district.
4. Add a mix of uses to the neighbourhood.
5. Ensure that new buildings were shaped to enhance light and air
6. Fit in with surrounding neighbourhoods (Washburn, 2013).

ZONING AND LAND USE CHANGE

The zoning kept the central manufacturing zone to protect the galleries' character and scale of the district. The perimeter zoning along Tenth and Eleventh Avenue was changed to allow residential land use with ground-floor retail/commercial space, which is typical of a New York City apartment building located on avenues. A mixed-use zone would keep activity constant in a neighbourhood that had only been "alive" at night or the early hours, and create a vibrant environment. Other regulatory measures such as building heights, setbacks, bulk controls, and FAR were implemented throughout the district.

HIGH LINE CORRIDOR

The department created the High Line Transfer Corridor, which set a 100 feet wide unbuildable passageway for the High Line. The corridor also had provisions to "enhance the proposed High Line open space and to ensure that adjacent developments engage with and relate to the High Line" (New York City, 2005c). In addition, adjacency controls to facilitate the reuse of the High Line were implemented. They would require bulk controls, frontage controls on Tenth Avenue, setbacks next to the High Line, and open space for landscaping; and the West Side of the High Line would require specific setbacks and building heights.

AIR RIGHTS TRANSFER

The ability to transfer development rights convinced the owners and developers to keep the High Line (Washburn, 2013). Owners of lots located within the High Line Corridor were allowed to transfer their unused development rights, up to the equivalent of the base FAR of the lot, to designated sites within the district. They also were required to allow stair and elevator access to the High

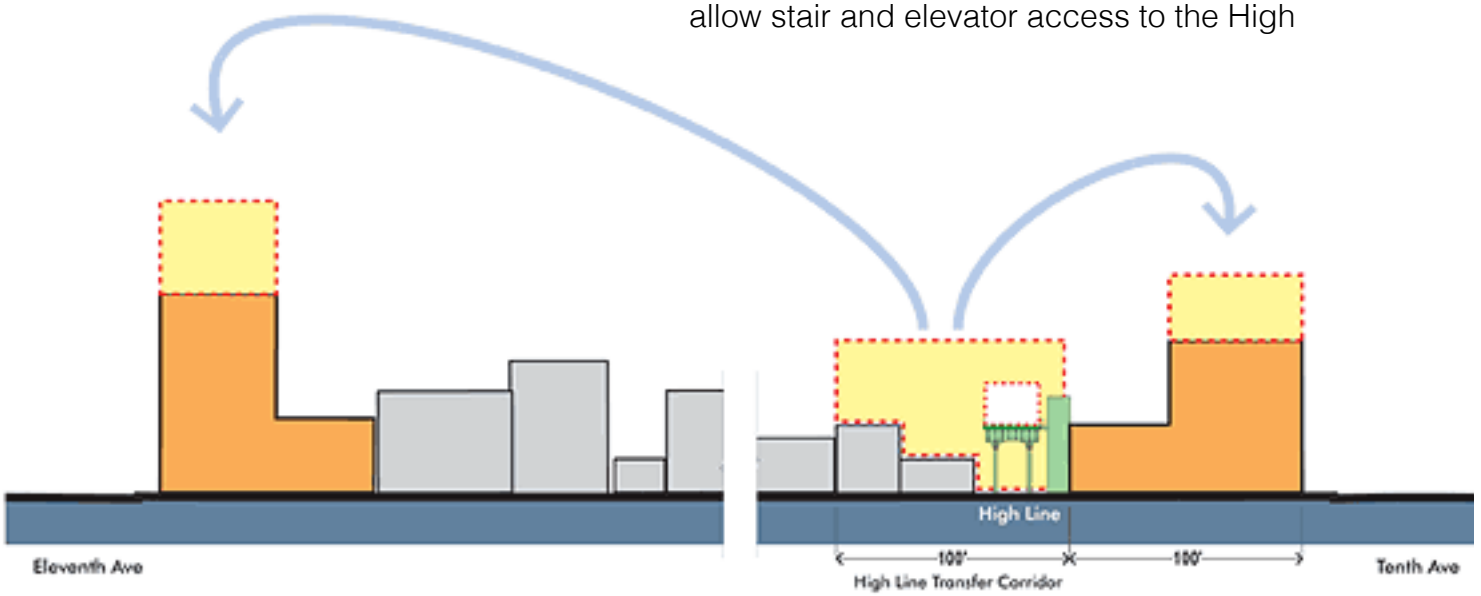

Figure 20. High Line redevelopment rights transfer corridor
City of New York, 2002, Transfer corridor, New York City, NY

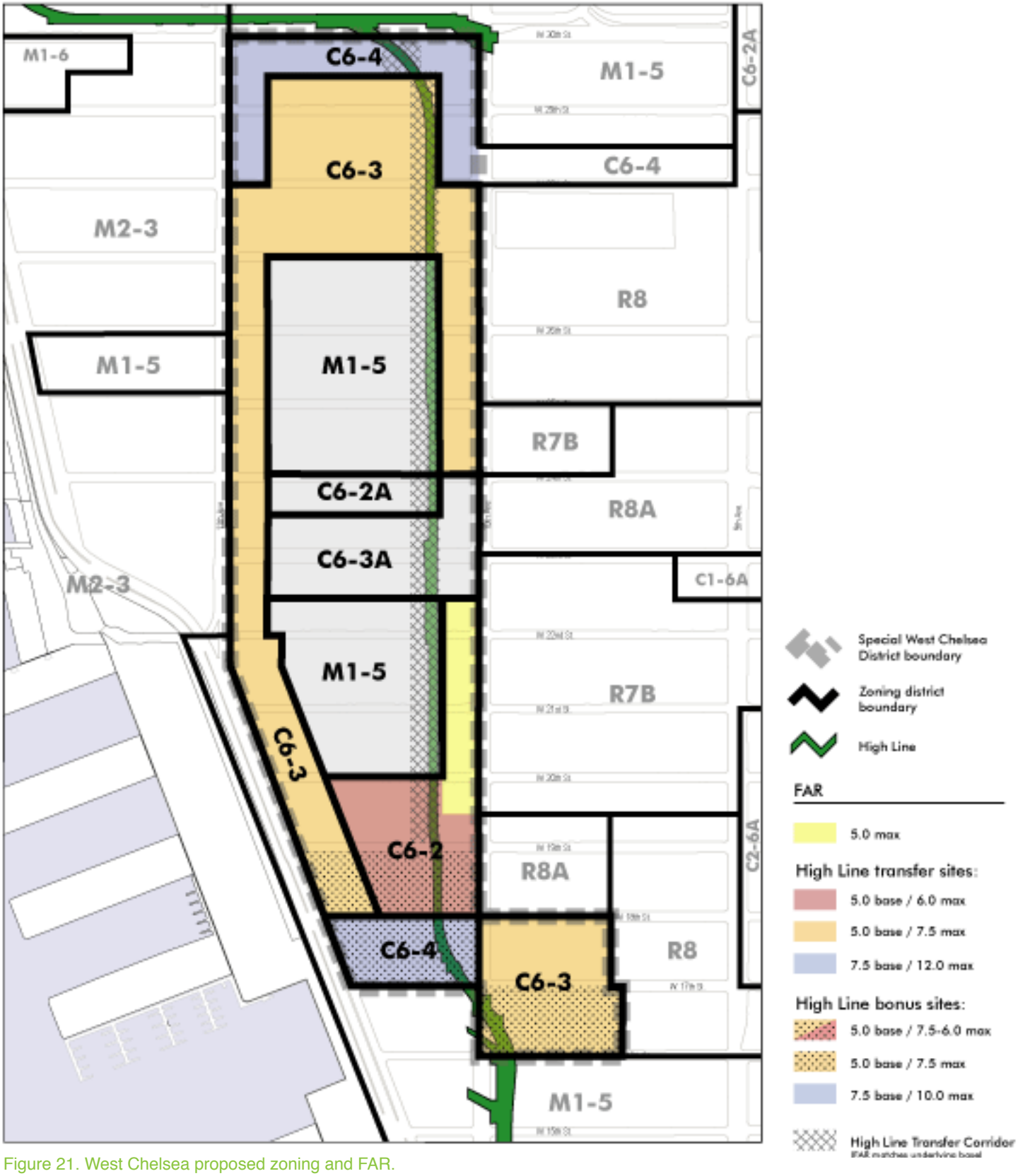

Figure 21. West Chelsea proposed zoning and FAR.
Source: City of New York. 2005. Porposed zoning and FAR map. New York City, NY.

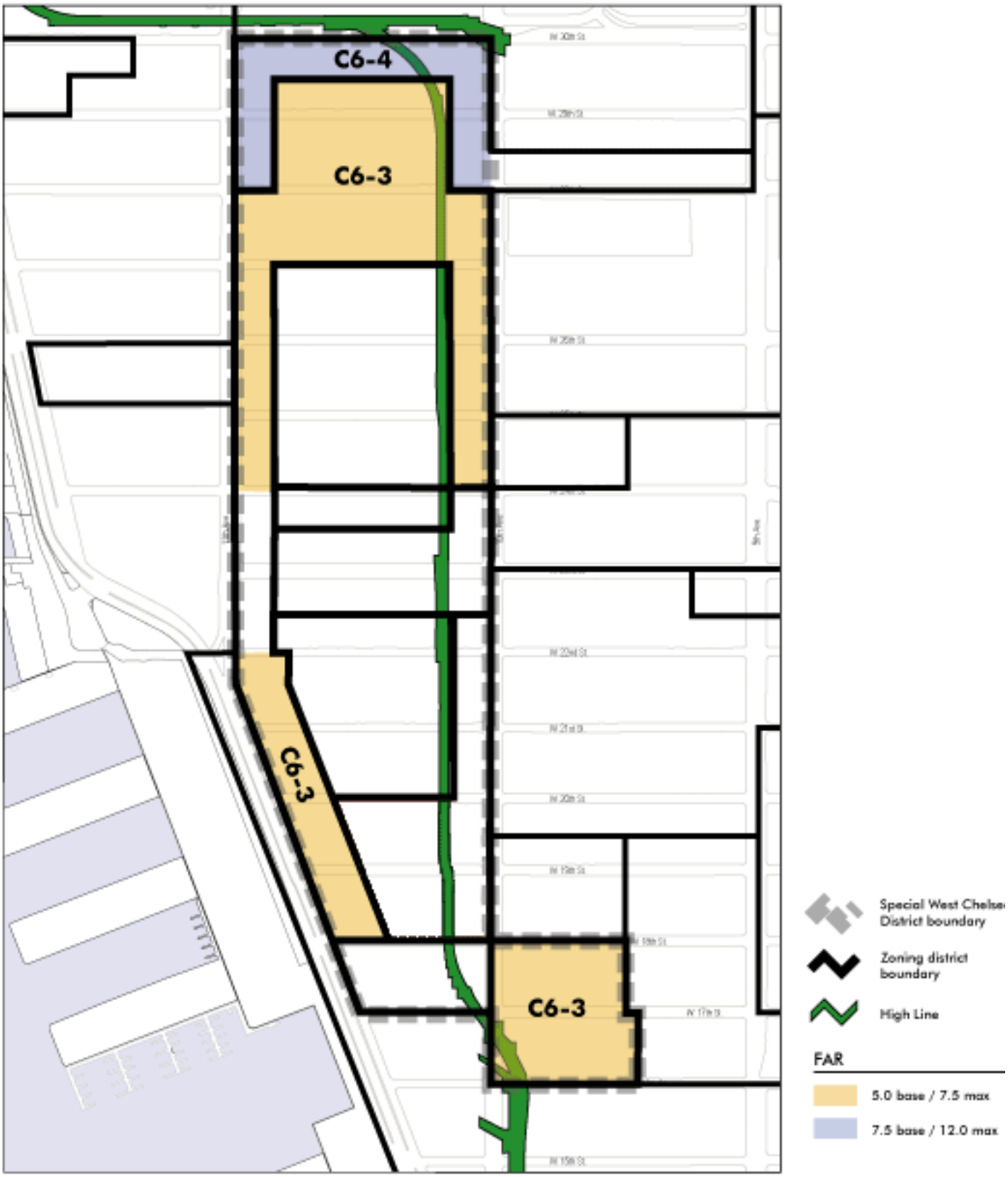

Figure 22. West Chelsea modified inclusionary housing areas.
Source: City of New York. 2005. Modified inclusionary housing areas map. New York City, NY.

Line on their lot. The transfer of the rights offered many benefits to the developers/owners, including the ability to sell these rights to others developers, and the high revenue from future housing development. The close proximity to the High Line/green space and new neighbourhood accommodations also became a selling point, and the association with the High Line enabled them to attract notable starchitects to build their projects. As a result, to date, 31 projects have been built within the district. All have innovative and great designs that complement the contemporary new park. The air rights transfer mechanism changed the program from building a $100 million dollar public park to triggering the revitalization of an entire neighbourhood, and generating $2 Billion dollars in investments for private development projects (Washburn, 2013).

AFFORDABLE HOUSING

Affordable housing is part of the City of New York's priorities and interagency planning goals. To respond to the scarcity of affordable housing in the City, New York planners have devised new and innovative approaches, for example the inclusionary housing program. It offers many benefits, including the strengthening of the community, harnessing the power of the marketplace, stimulating economic development, encouraging economic and social integration, and levelling the playing field in the development process. It also addresses community needs (Brunick, 2003). The city of New York strives to make strategic investments to support new housing and neighbourhood revitalization. The Planning Department of the City understood that "New York has a chronic under supply of housing" (Washburn, 2013). With such a demand from for development rights, the City Planning Department was able to bargain to increase the supply of affordable housing in exchange for additional floor space in the neighbouring development projects. These negotiations were beneficial to the City because it had been and still is struggling to build affordable housing in the rising and expensive market of New York City. The City guaranteed housing advocates that 27% of the housing units, compared to a previous recommendation of 17%, would be affordable.

The Inclusionary Housing Designated Area Program facilitates the development of affordable housing to ensure an economically diverse neighbourhood (New York City, 2005b). In the district, it was modified to provide housing for lower-, middle-, and moderate-income households. The Inclusionary Housing Program allowed the use of city, state, and federal programs for the maximum provision of affordable housing. The program also allowed access to the 80/20 programs, where 80 % of new housing would be at market rate and 20% would be affordable. Additionally, it allowed access to the 421a Program, which grants tax breaks for new housing. Conversions would be allowed to use the programs and additional FAR would be permitted if they contributed to the Affordable Housing Fund (New York City, 2005c).

With respect to the West Chelsea District plan, mixed-use and inclusionary housing were included in to the agreement with developers when they proposed projects within the district and when they negotiated development rights transfers. The program offered "an optional floor area bonus in exchange for the building or preservation of affordable housing, on-site or off site, principally for low income households" (New York City, 2014c). The inclusionary housing program has many advantages, since it can provide a regulatory tool to secure affordability in the market and foster mixed-income communities by promoting balanced housing development. It also can also ensure the provision of housing for many people of different income levels, particularly the middle class that is being driven out of the city by the high cost of living (Rose, Lander, & Feng, 2004, p. 23).

In 2013, a push was on to amend the West Chelsea District plan to expand its boundaries to prevent from development pressures, limit the height and bulk of buildings, and allow for new residential buildings and office towers. The plan would limit the construction of large-scale projects with no affordable housing with FAR restrictions that had been applied near the High Line. Some of the suggestions included the exclusion of certain uses such as hotels in some areas and allowing the construction of some community facilities. The newly amended district would also take into consideration storm surge measures.

In 2005, the Surface Transportation Board ruled in favour of the redevelopment, the CSX donated the High Line to the City, and the West Chelsea District was rezoned.

FEASIBILITY STUDY

Design Trust for Public Space (DTPS) is a non-profit organization that advocates for public space in New York by working with government agencies, community groups, and the private sector to transform the city landscape. Some of their activities include conducting feasibility studies, raising awareness, mounting public exhibitions, and building constituency among the many stakeholders involved. They also employ many strategies to deliver innovative, yet feasible solutions that impact the city's landscape in four key areas: design excellence, environmental sustainability, mobility, and neighbourhood revitalization (Design Trust for Public Space, 2015a). From 1999 to 2002, they worked with the FHL to conduct a feasibility study for the reuse of the High Line as a public space. The study was essential for obtaining the approval of the Mayor and the City of New York to transform the elevated railway.

The feasibility study research was intended to enable designers to come up with the best design possible for the reuse of the elevated railway that would offer the greatest possible long-term benefits to a large number of people. It focused on history, physical conditions, local zoning, current land use, and community needs. The DTPS held advisory sessions over two years with many different stakeholders, which focused on four potential uses: transit, open space, commerce, and development. According to Design Trust for Public Space (2015b), the open space reuse was the most feasible because it:

- met the requirements of the railbanking program
- was the most viable and cost effective plan for acquiring easement from the Surface Transportation Board
- opened the possibility for numerous initiatives that could enhance surrounding areas.
- complemented the 30th Street development (now the Hudson Yards)
- created an opportunity to organize growth in the context of a public space and sustainable transportation
- encouraged art-related uses, which reinforced the neighbourhoods' cultural hub reputation.
- offered a clear aesthetic benefit to the community and the city

The output of the feasibility study was a range of possible scenarios and a summary of the public forum evaluating the redevelopment of the High Line. Following is the summary of the general ideas generated by the study:

- pedestrian use is the best reuse for the High Line
- visitors should enjoy a variety of environments
- plantings should recreate original meadows
- art should be part of the design and programming
- the space should be recreational and contemplative
- the space should include some commercial uses
- the space should not become a mall
- zoning incentives should be used to attract private financing for this public amenity

• the design should evolve as public input and needs change.

REQUEST FOR PROPOSALS

The design process began in the fall of 2003 when the FHL held a series of open public workshops. They took notable proposals from the "idea competition" to open a dialogue about the future use of the High Line. Their intent was to engage the community and get their ideas about what they imagined for the space. FHL wanted to ground the project in the reality of its context and address some of the needs of the community. Compiled comments would be included in a request for qualification for a realizable design that would be sent out to selected design firms. The request for qualification required that an architect, or a landscape architect, should head the design team. Many prominent design firms (such as Zaha Hadid Architects and Foster and Partners) entered the competition, and four were selected to submit their masterplan proposals for the reuse and reintegration of the elevated rail line. The request for proposals also required the design firms to actively engage with the community throughout the design process of the High Line's three phases (Friends of the High Line, 2010b). According to the American Planning Association, a good request for proposals "engages the interest of the consultant and elicits creative approaches to the problem" (Kelly, 1993). It allows the client to find the most suitable firm for a specific project. The proposal also can help determine realistic cost estimates, the requirements of the project, and a timeline for the length of the project. Four design firms presented their visions for the High Line:

• Terragram: Michael Van Valkenburgh Associates With D.I.R.T. Studio and Beyer Blinder Belle

• Zaha Hadid Architects With Balmori Associates, Skidmore, Owings & Merrill Llp, and Studio Mda

• Steven Holl Architects With Hargreaves Associates and Hntb

• James Corner Field Operations and Diller Scofidio+Renfro

In 2004, James Corner Field Operations and Diller Scofidio+Renfro were selected to transform the elevated railway.

Figure 23. Development projects as a result of development rights transfer.
Source: Architectural Record. West Chelsea/High Line Projects. (2006)

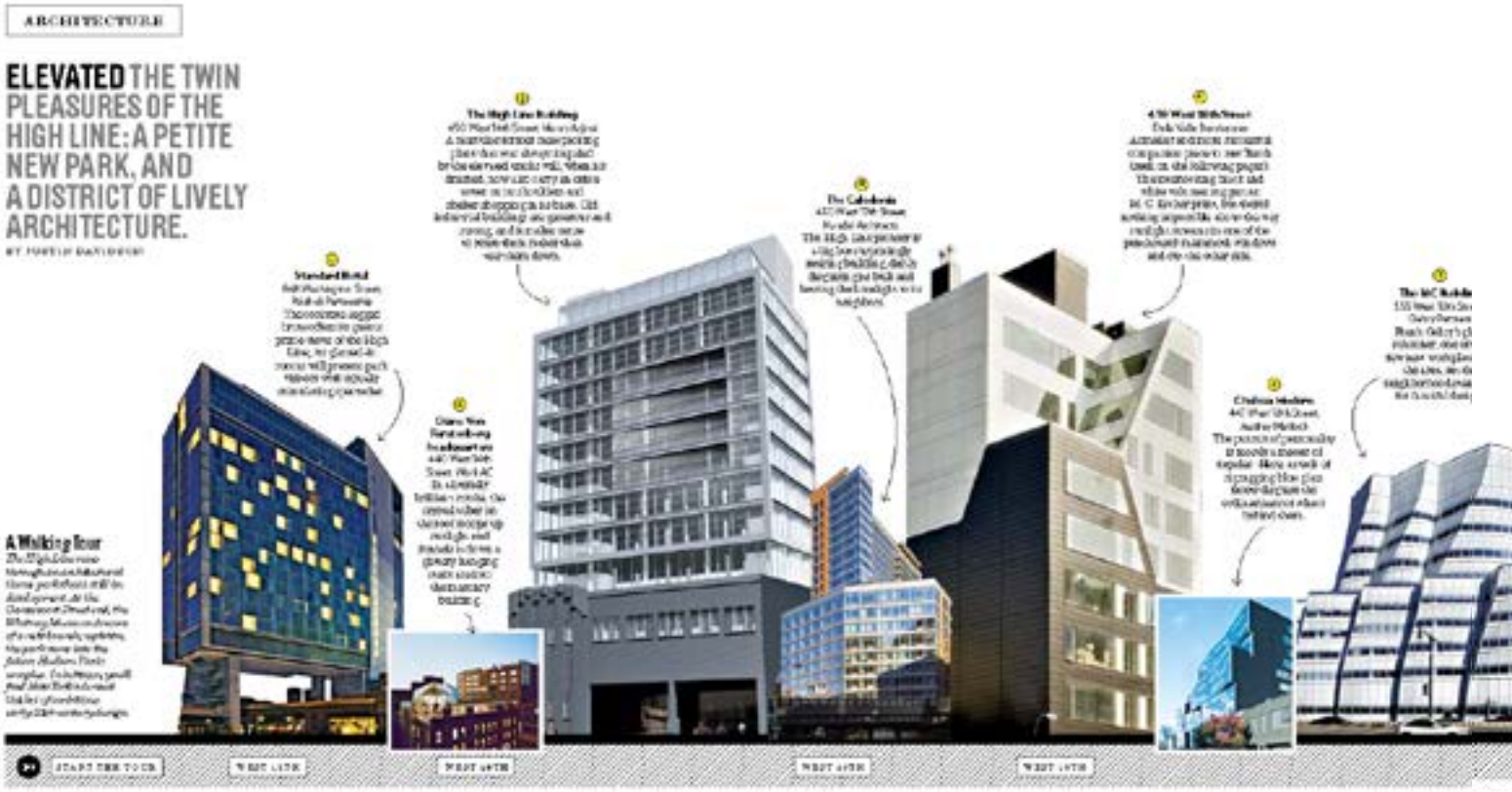

Figure 24. Projects, designed by starchitects, that used development air right from parcels adjacent to High Line

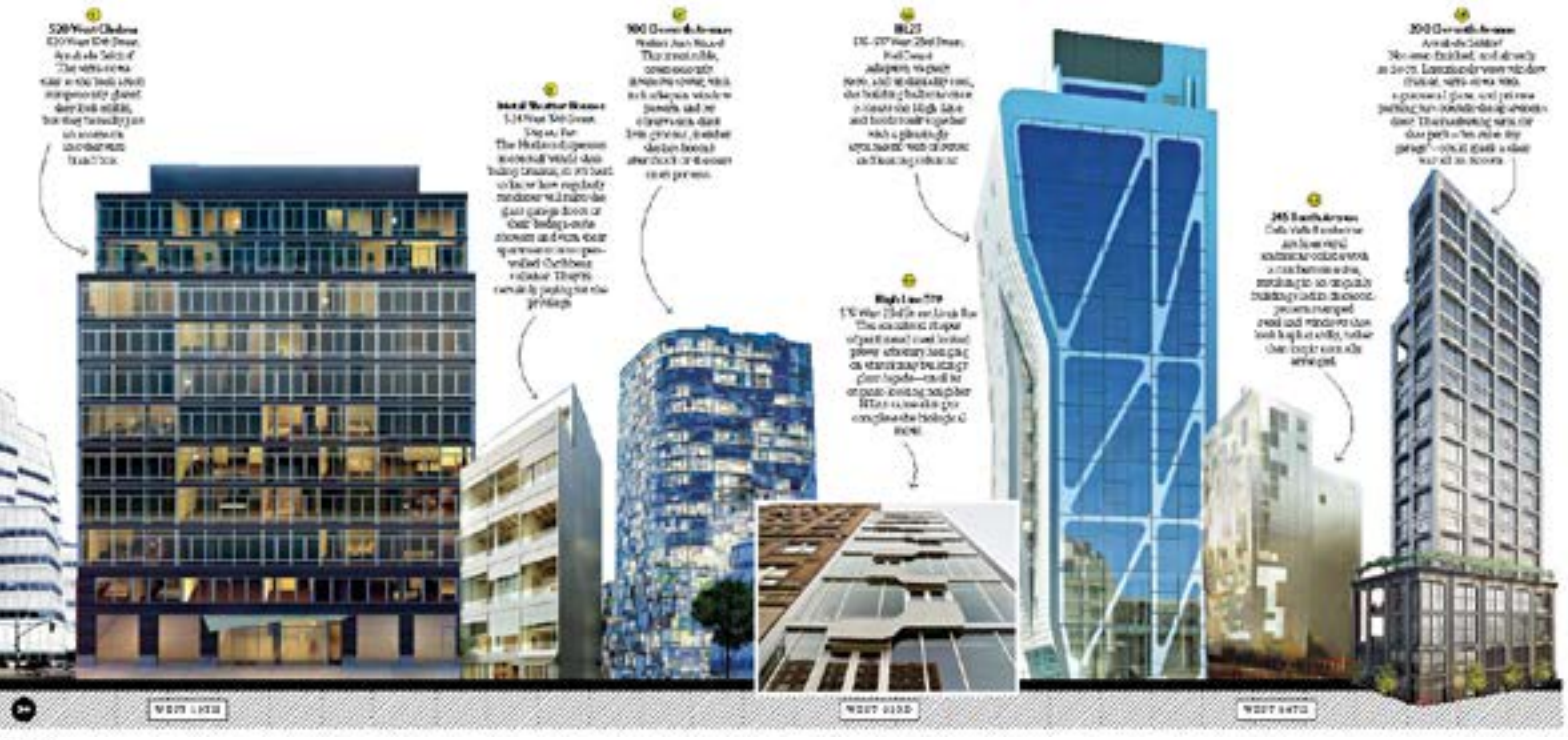

Figure 25. Map of High Line
Source: Friends of the High Line. High Line Map. (2014)


PAGE 3 OF 4
11TH AVENUE
11TH AVENUE
INTERIM WALKWAY
ED RUSCHA, HONEY, I TWISTED THROUGH MORE DAMN TRAFFIC TODAY
26TH STREET VIEWING SPUR
PERSHING SQUARE BEAMS
HIGH LINE AT THE RAIL YARDS (Phase 2 Construction)
10TH AVENUE
10TH AVENUE
23RD STREET LAWN
WEST 24TH STREET
WEST 25TH STREET
WEST 26TH STREET
PHILIP A. AND LISA MARIA FALCONE FLYOVER
WEST 28TH STREET
WEST 29TH STREET
WEST 30TH STREET
WEST 32ND STREET
WEST 33RD STREET
WEST 34TH STREET
WEST 35TH STREET

3.5 PROJECT DESIGN

The landscape architecture and urban design firm James Corner Field Operations (Project Lead) was the project lead for the High Line. They worked with architecture firm Diller Scofidio + Renfro, landscape designer and gardening expert Piet Oudolf and many consultants to accomplish the design and construction of the park.

COMMUNITY PARTICIPATION

The vision for the High Line stems from a grassroot effort. The FHL argued that the High Line "represents a unique opportunity for members of the community to become involved in the planning of a major public amenity that will serve New York City for years to come" (New York City, 2005c). Community input is a vital step for realizing a project and avoiding conflict with the local community. However, according to Berens (2011, p.65), "community input is a double-edged sword," since it can also be the thorn in the side that debilitates a project, even at times killing it. In the High Line project, involvement at an early stage helped to bring more people on board and eliminated most opposition once they had a chance to express their concerns. Community engagement is defined as "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people" (Clinical et al., 2011, p.21). It can "serve as catalyst for changing policies, programs, and practices" (Fawcett et al., 1995, p.678). Throughout the many stages of the project, the FHL held input meetings, charities events, and an open "idea competition." The feasibility study also recommended that the design of the park should evolve as the needs and input of neighbourhood residents changed. In the selection of the design team, one of the criteria included the willingness to work with the public. As a result, over two dozen community input sessions were held on the design of the three sections of the High Line. The design team presented new ideas publicly, and then refined them in response to public input before incorporating them into the design (New York City, 2005c).

CONCEPT

Diller Scofidio + Renfro saw the High Line as "pulling back from architecture" rather than as a grand architectural statement (Diller & Scofidio, 2014). Their intention was not to overdesign but to "intensify the existing context."

In the High Line's design, preservation and innovation meet through adaptive reuse. Adaptive reuse refers "to the reuse of a building by adapting it to accommodate a new use or uses" (W.Caves, 2005, p. 3). Adaptive reuse projects find opportunities in vacant structures and breathe new life into them and their surroundings. James Corner Field Operation + Diller Scofidio + Renfro, won the design competition because of their concept to "keep the High Line" true to its roots. The collaborative design process followed four design principles: 1. Keep it simple, 2. Keep it wild, 3. Keep it quiet, and 4. Keep it slow. The guiding principles informed all of the team's strategies, design, and action. The design strategy of the High Line evolved from "challenging the traditional rules of ecological and pedestrian engagement, and combining organic and built materials into a blend of changing proportions that accommodate the wild, cultivated, intimate, and hyper-social" (Burohappold Engineering, 2015).

Spatially, the narrow and linear design of the park encourages movement, a bucolic walk from one end to the other. The design limits the ability of a large group to gather, and additionally, not many places are available to sit, play, or linger. The design controls the movement, and the organization of the different 'garden rooms' tries to control how people will use the space. Security guards patrol the space; vendors are restricted to specific locations and how they serve their customers and dispose of waste; the number of vendors allowed is limited; and what the vendors sell also is monitored.

The High Line transects thru West Chelsea connecting three neighbourhoods—the meatpacking district, West Chelsea, and Hell's Kitchen-Clinton., the structure serpentines, above the streets of West Chelsea, thru the urban landscape, creating unique vantage points and experiences for residents and visitors. The mix of buildings—old and new, industrial and contemporary, residential and manufacturing—and how they meet and interact with the park make the project unique. In addition, the journey, views, vantage points, interaction with the street below and buildings above, and the diversity of building types make the High Line appealing to many. It seamlessly immerses into its context to create an authentic New York experience.

DESIGN ELEMENTS

PAVING SYSTEM: A key feature of the design is the unitized paving system built from linear concrete planks with open joints, specially tapered edges, and seams that permit intermingling of plants with harder materials (Architecture Week, 2010). The existing Art Deco steel railings were restored; many of the original rail tracks were incorporated into the landscape; and concrete pathways, lighting, and seating were installed.

Figure 26. Integrated paving system.
Source: Design Boom. Leeji Choi. (2009)

STRUCTURE: The structure, apart from some of the railings, is the only remaining element of the original High Line. The nod to preservation was to restore and stabilize it before any construction could begin. Some of the stair accesses display the sawed through structure as people ascend into the park.

Figure 27. High Line Art Deco structure.
Source: Eddie Crimmons, High Line in West Chelsea. (2015)

PLANTING: Piet Oudolf, Dutch planting design and landscape architect, designed the planting of the High Line. His intention was to create a journey through the gardens and park. The sections have different schemes of plants created to provide continuing interest during the four seasons. The different schemes transition seamlessly into one another. Over 250 species of perennials, grasses, shrubs, vines, and trees were selected for the park. Some were the same species that previously had grown in the wilderness that inspired the project. The composition of plants is evolving and creates a feeling of

plants in nature.

Figure 28. Hawere miniature daffodil in Grassland.
Source: Friends of The High Line.Gardens. (2015)

LIGHTING: L'Observatoire International is a lighting design and consulting firm whose work has been included in various projects, such as museums, landscapes, and retails stores. The firm provided the exterior lighting design for the High Line. To keep the views of the city unobstructed, the designers installed LED strips instead of the typical light poles. The light system, all below eye level, is integrated into the handrails, benches, and some vegetation areas. The designers wanted to create a "sensation of being lifted and floated above the city streets as it silhouettes the High Line" (Architizer.com, n. d.).

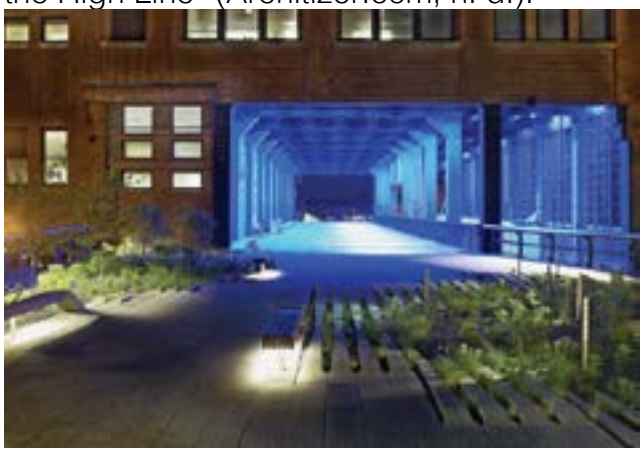

Figure 29. Exterior LED lighting of High Line.
Source: L'Observatoire International. Emilie Dubuisson. (2009)

ART: Art is an important element in the High Line experience. Creative Time served as an advisory partner in the early design stage of the High Line and helped launch an art program. The organization's mandate is to explore sites and communities in the City of New York while helping to facilitate the incorporation of art in the public realm and expanding the notion of what art can be. Their three core values are: " Art matters, artist's voices are important in shaping society, and public spaces are places for creative and free expression" (Creative Time, 1974-2015). The High Line has multimedia art installations and cultural programs (La Farge et al., 2012). The commissioned artwork revolves throughout the year, with different artist exhibiting their pieces throughout the park.

Figure 30. Rashid Johnson's Blocks artwork
Source: High Line Art. Timothy Schenck. (2015)

SIGNAGE AND WAYFINDING: The firm Pentagram helped to create an "integrated communication system that would grow organically from the intelligence of the initial idea" (Wheeler, 2013). FHL's identity is reflects in their creations of books, logos, wayfinding and signage system, merchandise, installations, exhibits, and other items that reflect the High Line. The FHL logo also serves as the symbol for the park.

Figure 31. High Line wayfinding signage
Source: Pentagram

Figure 32. Tenth Avenue Square.
Source: Iwan Baan. The Tenth Avenue Square, with amphitheater-like seating and an unusual view up Tenth Avenue at 17th Street . (2009)

SECTION 1

Section 1: spans from Gansevoort Street to West 20th Street; nine blocks; 0.8km (11290.73 m^2). Planning began 2004, construction in 2006 completed in 2009;
Key features: Gansevoort Plaza; Gansevoort (Tiffany & Co. Foundation) Overlook; High Line Restaurant; 14th Street Passage; Diller-Von Furstenberg sundeck and water feature; Chelsea Market Passage; Northern Spur Reserve; and 10th Avenue Square.
Highlight: The Square required extensive reinforcement to insert and support the bleacher that looks onto 10th Avenue. The feature is was an example of innovative, unique, and popular gathering space thru collaboration between the design team and engineer firm.

Figure 33. 26th Street viewing spur.
Source: Iwan Baan. 26th Street viewing spur. (2011)

SECTION 2

Section 2: spans 0.8 km from West 20th Street to West 30th Street; ten blocks (8660.27 m^2). Planning began 2009, construction in 2009 completed in 2012;
Key features: Ed Ruscha, Honey's I twisted Through More Damn Traffic Today, Chelsea Thicket; 23rd Street Lawn and seating; Philip A. and Lisa Maria Falcone Flyover; 26th Street Viewing Spur; Wildflower Field; 30th Street Cut-Out;
Highlight: Viewing Spur is an ode to the billboards that once graced the High Line; the space frames views of 10th Avenue and Chelsea.

Figure 34. One of three Rail Track Walks.
Source: Iwan Baan. View looking west along one of the Rail Track Walks (2014)

SECTION 3

Section 3: spans 0.72 km from West 30th Street to the Hudson Rail Yards; two blocks (8700.74 m^2); Planning began 2011, construction in 2012 completed in 2014;
Key features: Pershing Square Beams; Interim Walkway; Grassland Grove; Race Track Walk; Eleventh Avenue Bridge; Adrián Villar Rojas's The Evolution of God;
Highlight: The Rail Track Walk has three linear pathways where people can interact with artefacts that are remnant of the former freight rail line and commissioned piece

SUSTAINABILITY

Sustainability was important to FHL and the design team. Born out of the desire to preserve and recycle, the project is an adaptive reuse project that addresses sustainability in an ambitious way. The structure is essentially a green roof, with pathways that meanders through the urban jungle (American Society of Landscape Architects, 2013). Piet Oudolf's planting design incorporated in majority native, drought-tolerant, low maintenance species. The landscape design is site-specific and plant selection depends on the various microclimates. The result is a unique ecosystem that "provides food and shelter for a variety of wildlife species, including native pollinators" (American Society of Landscape Architects, 2013). The design is intended to be low-maintenance and materials were chosen for their durability. The park improves biodiversity, air quality, storm water management, green spaces and community health. It also reduces urban heat island effect and CO2 emissions.

COMMUNITY PROGRAMMING

To counteract the insufficiency of community input into the design, implementation, and maintenance process, the FHL established public programming and outreach efforts over the last few years. The programs are geared toward individuals and groups of all ages from adults, kids, teens, schools, and volunteers. The FHL have tried to create opportunities for people to experience the park in various ways with over 450 public programs like Latin Dance Party, Velvet Gloves Gentleman's Boxing, and Tai Chi.

They also started to provide amenities such as food vendors, which is something that the community requested when the park opened, these new amenities have also become a source of income. The following is a brief list of the current programming offered by the FHL:

•Adults: Tours &Talks, LIVE! (performances), Performances, Channels, Billboard, Commissions

•Kids programs: Arty hours, Lawn Time, Wild Wednesday, Haunted High Line Halloween, Children's Workyard Kit

•Teen programs: Teen Arts Council, Green Corps, Youth Corps; two of the programs are paid education and job-training programs

•Schools: School Field Trips, Local Partnerships, and Self-Guided Visits, After School Programs.

The High Line has a community-engagement initiative program that is geared towards youth. The High Line Teen Program "offers paid opportunities for local youth age 16–21, in cultural production, horticulture and education." Within this branch, two programs yearly select teens to gain experience, leadership skills, and build relationships with their community, local organizations, and fellow workers. The teens contribute to the community by working with the High Line's horticultural staff and other volunteers on High Line-related projects, as well as other projects such as Neighbour Day through which they partner with other organizations in the area to accomplish tasks such as restoring a community garden in the Fulton Houses housing project. In 2003, the FHL stated that the High Line could be a sort of outdoor classroom. At the opening of section 2, the FHL unveiled a school program that offers curriculum guides. Students from grades 2 to 7 can visit with their class and learn about the history of the High Line, horticulture, and green design (American Society of Landscape Architects, 2013).

PROJECT IMPLEMENTATION

COST

Construction Cost: Section one and two of the High Line cost 152.3 million dollars. The first part of section three cost 35 million dollars. The section was the transition portion while the last part, section three was completed. The newly opened section three cost 86.2 million dollars. The overall combined cost of the High Line is 273.5 million dollars (US). The

City of New York invested 123.2 million dollars in the project, which is 69% of its total cost. The Federal Government contributed 20.3 million dollars, the State of New York 400,000 dollars, and to date, the FHL and Neighbourhood developers have raised 44 million dollars (NYCEDC, 2015).

CONSTRUCTION

The construction of the High Line happened in three phases. Before construction could begin, the original structure had to be assessed and repaired. Robert Silman Associates were in charge of the structural engineering for the pre-park work, which included the stabilization and repair of the original structure. With respect to building onto the structure, the firm first conducted a survey to assess the existing conditions of the beams, girders, stringers, and connections. They conducted extensive testing and repairs, which enabled many of the original steel rails to be restored and reused. Buro Happold, another engineering firm, worked on the structural and mechanical, electrical, and plumbing (MEP) portion of the project, as well as consulting on sustainability, building codes, and life safety designs. They were in charge of providing a stable structure for the new landscaping and architectural features. This firm also worked closely with Robert Silman Associates to integrate the stairs and elevator shafts.

In April 2006, the construction of the High Line began when Buro Happold Engineering built two structures—the flyover and the cut out. The landscape portion of construction for Section 1 began in 2008. On June 9, 2009, Section 1 was opened to the public, and on June 8, 2011, Section 2 was opened to the public. In 2011, Section 3's land was donated by CSX Corporation. After the park's first two sections were completed and opened, construction began on Section 3 on September 20, 2012 and was completed in September 2014.

MAINTENANCE

The High Line is managed through a public-private partnership between the New York City Department of Parks & Recreation and the FHL. Parks and Recreation worked with the planning department and FHL, to develop a management and maintenance agreement for the public-private partnership. The agreement, similar to the Central Park Conservancy agreement, stated that the FHL would provide 90% of the High Line's 2 to 4 million dollars operating cost and the day-to-day maintenance (Mirbabaee, 2013). In the licensing agreements, waste removal and snow clearance procedures are established as the responsibility of the FHL. The FHL is currently working to raise the essential private funding to create an endowment for its future operations (cargocollective.com, n. d.).

Volunteers and gardeners maintain the High Line on a daily with environmentally friendly practices. They take care of the planting, irrigation, and other tasks. In addition to rainwater runoff FHL staff and volunteers provide manual supplementary watering as needed. The irrigation system includes options for both automatic and manual watering. The High Line has on-site composting facilities. The staff avoids using pesticides or chemical fertilizers. FHL staff established an Integrated Pest Management (IPM) program to sustainably address any issues dealing with potential pests and diseases. Snow removal is done manually and without large power equipment such as snow throwers and power brooms, when needed, FHL employ an eco-friendly ice melting product that is safe for plants and environment (Friends of the High Line, 2000-2015).

3.6 PROJECT IMPACT

ECONOMIC IMPACT

Beyond the preservation and cutting-edge design, the economic impact of the High Line is its main achievement. What was seen as an obstacle to development has now became its symbol. It has also proven that green spaces have a tremendous economic value and should be considered as an option in the redevelopment of derelict places. According to the NYCEDC (2015) by January of 2015, " a total of 33 new housing, commercial, retail, non-profit and gallery projects [were] completed, in construction, or in the planning stage as a result of the new economic development opportunities provided by the High Line". Since the redevelopment of West Chelsea and reuse of the High Line, 2500 new residential units, 1000 hotel rooms, more than 500,000 square feet of offices and art gallery spaces were created (The New School, 2012). Home property values have increased by 10% and between 2003 and 2011, property values near the park have increased (Free Enterprise Staff, 2014). The construction cost initially invested by the city was recouped in property taxes in less than one year after the park's opening (Levere, 2014). The expectations in the 2002 feasibility study, for the economic impact of the High Line were also surpassed within a year of the park's opening. The study had projected 400,000 tourists/year and $286 million (US) tax revenue over 20 years. The actual numbers as of 2013 were 2.2 billion in economic activity, 5 million visitors per year, an increase of 1150%, and 980 million in tax revenue, an increase of 242.66%. The result made the High Line "the most successful public space transformation in the Unites States, if not the world" (McGinn, 2014).

Although the High Line is heralded as an economic catalyst, it is also known as an example of neoliberal urbanism and inequality (Loughran, 2014). The city made investments in West Chelsea/High Line area by that have been significantly greater than in any other neighbourhoods in New York City. The city and developers used the park for economic profit. While the economic investment and growth is praised as beneficial for all, it most often fuels inequality and displacements when investments are shifted away from other needs such as housing affordability and public health, which helps (caters to) the poor over prosperity (Mirbabaee, 2013). This allocation of funds for economic purposes favours the rich. The inequalities and inequities in the New York City park building planning are seen in the investment spent on parks that generate tax revenue and lack of investment in the underserved parks located in low-income neighbourhoods. The investment in the High Line is greater that in 35 city parks in needy area and there has been proposals to redistribute some of the wealth of private conservancies like Friends of the High Line to neglected public city parks and spaces (Klaus, 2014). The High Line has also affected local businesses. Many have seen their rent increase, sometimes five times more than before, and a loss in the client base resulting in profit loss and forced displacement (Moss, 2012).

ENVIRONMENTAL IMPACT

The High Line's environmental impact is felt not only in the adjacent area but also far beyond built environment but also in its influence. The decision to readapt the structure has had a tremendous impact on the environ-

ment of West Chelsea, because it brought life back to an area that had been neglected. The vision and design set a precedent for projects nearby and projects worldwide, spreading the message of sustainability. Some of FHL's programs have brought awareness to visitors and residents, young and old, of the importance of a sustainable environment. Their youth programs have influenced the lives and career of some of their volunteer as well as instilling a sense of pride. Physically, the 'green roof' design and maintenance of the park has lowered CO2 emission, storm-water runoff, mediated some of the heat-island effect and improved air quality in the urban 'concrete' jungle of New York City. The many gardens 'episodes' with hundreds of plants, shrubs, grasses, and trees have created a unique ecosystem with a thriving fauna that has improved the biodiversity of the park and of West Chelsea.

SOCIAL / CULTURAL IMPACT

Green spaces contribute to the vitality of cities and improve the quality of life of citizens. According to Latham (2012), socially, they "[provide] recreational use: a place to play, meditate, gather, or rest." According to U.S. Environmental Protection Agency (EPA) researcher Laura Jackson, "The outdoor brings people together, so it facilitates social engagement, which is so important, particularly in urban areas where people can become isolated" (McGinn, 2014). Finally, green spaces are beneficial because people value their beauty, which helps to make a city livable.

"Green space and parks do more than promote physical activity," states Laura Jackson, a researcher for the U.S. Environmental Protection Agency (McGinn, 2014). For local governments, green spaces are essential because they generate revenue by increasing property value, especially in urban areas where green space is at a premium. According to Kamvasinou (2011, p. 1), "Parks, urban squares and pedestrian greenways raise the value of surrounding land and contribute to the health, leisure and overall quality of life of communities" (p. 1). The High Line has attracted millions and become a landmark for some and gathering space for many. The former downtrodden post-industrial area of West Chelsea has become a "hot spot in the city's social and cultural scenes" (Mirbabaee, 2013). Although new activity is a positive for an area that has been seen as an eyesore, it has also had a negative impact on the area. Since the High Line's opening, there has been a conflict brewing with some local residents who are not enamoured with the congested park and its tourists. They believe that the High Line and its tourists are destroying their residential neighbourhood and quality of life. As quotes by Jeremy Moss (2012), one flyer states "Attention High Line Tourists. West Chelsea is not Times Square. It is not a tourist attraction. Please consider how you would feel if 3 million people a year from around the world trampled your street, your neighbourhood, and your local park, and act accordingly."

The social fabric of West Chelsea has changed and many feel that the High Line contributed greatly to the gentrification of the neighbourhood (Inam, 2014; Klaus, 2014; Loughran, 2014; Velsey, 2015; Williams, 2014). In an New York Times' article entitled Disney World on the Hudson, the author Jeremy Moss (2012) gave a scatting review of the park as "a tourist-clogged catwalk and a catalyst for some of the most rapid gentrification in the city's history". Gentrification is defined by Caves (2005a) as "the process of renewal and upgrading of neighbourhoods connected with the influx of middle and upper-middle-class people into deteriorating areas of inner cities and resulting displacement of poorer residents" (pp. 471). The High Line and the development projects nearby did not directly cause displacement of poor residents "since they were built on land previously zoned for manufacturing and contain-

ing warehouses and similar structures, not residences" rather, many long-standing local businesses have been displaced and forced to relocate due to rising rents (Halle, 2013). The High Line and construction of luxury condominiums raised property prices, rental prices have almost tripled, and almost half of the low-income renters are burden and/or severely burdened to afford any housing in the area. Simultaneously, the share of racial integration tracks has decreased and the population of blacks (-50.8%) and Latinos (-9.9%) has decreased while the population of whites (155.7%) and Asians (365.1%) has increased. West Chelsea has become richer and whiter.

Affordable housing is an issue in the area. The commitment made by developers has not been met and new proposals for housing involve mostly luxury units for sale rather than rental units on which the provisions for affordable housing were based. The poor quality of current low-income housing (public housing) and theenvironment has also been and issue, while some other 'more affluent' parts of the neighbourhood have become vibrant. One survey conducted by youth in the High Line program revealed that only 15% of people surveyed of Fulton Housing had actually visited the High Line. The consensus among respondents, was that the park was not for them, despite the mayor and FHL founders' claim that the High Line was intended for all New Yorkers. The High Line has been criticized and justly so for being a park for people who have the income and time to leisure (Loughran, 2014). Liz Diller, one of the lead architects for the High Line, joked that "the great success [of the project] has been introducing New Yorkers to doing nothing" (Mirbabaee, 2013). This comment rests on a key oversight: Not everyone earns enough from their work to afford even a few hours of "doing nothing" at the High Line (Mirbabaee, 2013). Low-income families often have two or three jobs to support their relatives, leaving no time for leisure.

The spatial strategy of the design of the High Line and its operation also reflect social exclusion of citizens that are not part of the select group. An inherent mono-culturalism has emerged with the High Line's catering the park features and offerings to a specific group. The subtle messages not to step on the grass, the carefully selected and screened vendors, the artisanal foods and product choices all alienate the common New Yorker. Nevertheless, the High Line succeeds in its community engagement. Over the last few years, FHL's desire to create community engagement, led them to established several public programs and outreach efforts with a focus on inclusion and the environment (Goodsell, 2012). The programs are geared toward individuals and groups of all ages, including adults, kids, teens and volunteers. FHL have tried to create opportunities for people to experience the park in various ways (Inam, 2014). Following the survey conducted by some of the Youth Core teens, FHL implemented programs geared towards the community's needs and wishes. They have also engaged with the users to tailor the food programs and generate more ideas for implementation.

URBAN DESIGN IMPACT

The High Line is a good example of public space and ecological urbanism and it "embraces the urbanity of Manhattan" (Inam, 2014). The park "redefined our understanding of what a park is, and in the process helped create a richer, bold new vision for our public spaces" (McGinn, 2014). The park is pioneering and cutting-edge landscape design marries the diverse built form with a plant community. Alongside a bevy of art galleries, the High Line impacted its context by influencing the surrounding developments and attracting some of the world's most recognized architects, "to create one of the most distinct architecture district" (Topousis, 2007). The park has become a defining feature in the Meatpacking district and Chelsea; it filled a void in the community by creating an open space.

Figure 35. Delancey Underground Rendering.
Source: Delancey Underground.org. Delancey Underground Rendering (2012)

The High Line's policies and approach to urban design are viewed as innovative throughout the world. The 'best practices' of the 'park in the sky' spurred a growing crowd of plans for the resurrection of areas that had long been ignored or forgotten by cities (Inam, 2014; Levere, 2014; McGinn, 2014). In Chicago, the Bloomingdale Trail & Park is a public-private partnership project that is working on the redevelopment of the first linear park in the city. It is expected to be complete in June 2015. In Detroit, the Dequindre Cut Greenway is a 1.35-mile-long railway that opened right before the High Line. The project used a collaborative process made up of stakeholders from the private, public, and non-profit sectors. The riverfront greenway has become a popular destination in the Motor City. In Philadelphia, the Reading Viaduct Project is a mile-long 19th century viaduct slated to become a landscaped public park. The city, state, and a private group fund the project. Finally, in Atlanta, the Beltline is an urban redevelopment project spearheaded by the city. It is built on an existing rail corridor. The project is intended to transform underutilized land and create a network of public green spaces. The process utilized was a public-private partnership. Throughout the world, there are other projects that strive to emulate the success of the High Line as an urban renewal success and money-making tourist attraction (Quirk, 2012).

4.1 CONCLUSION

"The High Line is a triumph of neighbourhood organizing, a visionary civic administration, and a public-private-sector alliance in financing a world-class amenity"
— (Olive, 2014)

This research sought to explore the potential of urban catalyst, in transforming underutilized areas -in ways that contribute to, rather than extract from, the urban landscape. The literature review and illustrative case study explored the problem of underutilized areas, the urban transformation process (trends), and the urban catalyst strategy as a means of improving the quality of an area, spur change and improve the well- being of individuals. The successful transformation of underutilized areas is depends on a broad comprehensive and adaptable approach supported with a strong public-private partnership and community involvement. Programs should be that facilitate the acquisition, maintenance, and use of specific areas should be used in the integration of temporary and permanent use project that celebrate the temporary nature of underutilized areas.

There are many similarities between the three urban transformation approaches, but there are also fundamental distinctions, which differentiate one from another. Urban redevelopment speaks to a physical act aimed at restoring the physical environment. Urban redevelopment targets areas that are underutilized, have a deteriorating infrastructure, and an economic opportunity. In its transformation, urban redevelopment can include programs, or policies to respond to residents needs and concerns. On the other end, thru policies and physical improvement, urban revitalization aims at social and cultural vitality. Urban regeneration aims at restoring economic vitality of an area. It is the process of building physical structures and creating schemes and systems to renew an area with a specific vision. This that is carried out throughout the process. All of the approaches aim at improving the quality of life of an environment and/or quality of environment. The differences occur mainly in how to implementation and planning process.

Urban catalysts are projects, permanent and temporary, created to accelerate the process of urbanization in areas in need of transformation. They ignite the process of transformation and stimulate new life while guiding further development. When catalytic projects engage in intelligent community participation, the generation of employment on a long-term basis and the attraction of investment into underutilized areas, they contribute to long-term development and an increase in business and tax revenues. Catalytic projects can create a distinct image by becoming a symbol within the context. In some case, they can boost municipal revues and provide cities with a source of prestige and pride (Grodach, 2008). While they are considered assets for cities, catalytic projects also face some criticisms. They have the potential to cause social exclusion, and displacement, and to further exacerbate initial problems. In order to mitigate negative results, the process must be implemented with the involvement of many; the process must also be holistic and adaptable and they must address the needs of the

community. Monitoring the impact of catalytic projects on the surrounding context and community is necessary. Indicators should be established, measured, and analyzed to track their impact and to adapt to new needs and criticisms.

FHL played a central role in the adaptive reuse of the High line, an open space that was used as a catalyst for changing (transforming) a neighbourhood of New York City. The West Chelsea District Plan places the High Line at the center of its redevelopment, which is not the norm in the redevelopment process. The planning process of the High Line was led by the city but had input from FHL, developers, and the community. The design process was led by FHL but like the planning process was a collaborative effort. Simultaneously, the two processes developed to create an environment that encourages investment, interaction, confidence, and good design. This collaboration has led to many cities to adapt the redevelopment process to their needs rather than conform.

The High Line is heralded as a "catalyst for investment" for the unprecedented development that occurred around it and their revenue (American Society of Landscape Architects, 2013). In the Last 10 years, a neglected industrial area, had 33 new development projects, saw a doubling of requests for building permits, and an increase of 60% in the population. Not all aspects and impacts of the High Line were positive. Despite being touted as being a park for the public good of all New Yorkers. The High Line is essentially a park for the benefit of the elite rather than a contribution to social equity. In the rezoning of West Chelsea, the majority of the measures were dictated by the developers and the city for economic growth. The remarkable economic impact cannot obscure the social inequalities, like gentrification, that have resulted from the reuse of the High Line. FHL tried to mitigate these problems by engaging the community, placing them at the center of the design process, adapting to their needs, and creating programs that bring the community together and distribute some economic prosperity. Another issue is the FHL's narrative and assertion that the success of the High Line is the result of a grassroots, citizen-led effort and is replicable. They fail to acknowledge that their 'elite' connections and timing were the most vital in the preservation of the High Line. The reality is that without substantial funding, political influence, and municipal power, such a large project would never see the light of day. Ordinary citizens with a desire to transform their surroundings should have the resources to help them achieve their goals regardless of their lack of connections.

Nevertheless by connecting the old and the new, improving the sense of place, and spurring development in neglected spaces, the High Line is a catalyst for the use of open spaces as catalyst for urban redevelopment of neglected areas and a model for other design projects. It challenges the negative perceptions associated with underutilized areas and celebrates the holistic and collaborative approach to redevelopment. The park promotes principles of urban design, community engagement, ecological sustainability, urban transformation, cutting-edge design, and adaptive reuse. The High Line and its redevelopment process were the main influences in the revitalization of West Chelsea. They set an example for many cities on balancing the interests and needs of many while staying true to one's vision. Ultimately, the High Line is a catalyst that added economic, environmental and social value to West Chelsea and its residents.

5.1 STRATEGIC PLAN PART 1

The following section propose two strategic approaches to help guide the reuse of underutilized areas and the creation of catalytic projects.

WHAT IS THE PROBLEM?

1. Montreal, like many North American cities, has and is facing numerous trends that have resulted in underutilized lands, both small parcels and large swaths. The city of Montreal has identified the presence of some areas as underutilized and needing transformation but these do not include various small lots and neglected or abandoned buildings and areas scattered throughout the city.

2. Multiple strategies and plans address the transformation of underutilized areas. However, the plans, policies and strategies are not congruent they lack in coordination between one another. (Plan d'Urbanisme, Demain Montréal: Plan de développement de Montréal, Stratégie de développement, Integrated Urban Revitalization Strategy etc.

3. Locating underutilized areas, plans, strategies and other elements necessary for projects is problematic. Access to the location of the underutilized areas as well as other data is very difficult to navigate. The city of Montreal has a vast amount of data and information but it isn't centrally located.

4. The current plans and strategies do not account for the transformation of underutilized areas with interim projects.

WHAT IS THE SOLUTION?

While underutilized areas are often seen as liabilities or eyesores, they should be seen as opportunities. Most of these areas are located in proximity of the centre of a mature metropolis with few alternative development sites. What's more, if redeveloped properly, such land can be used to catalyze change in the surrounding communities which often have poorer socio-economic and environmental consequences.

VISION:

Underutilized areas should not be seen as eyesores but opportunities to create wealth, improve the built environment and quality of life for residents, in a catalytic way.

STRATEGIC PLAN PART 1: UNDERUTILIZED AREAS TRANSFORMATION PROGRAM

A strategic plan for the City of Montreal regarding underutilized areas

GOAL 1: PROMOTE, RECOGNIZE, EDUCATE, COMMUNICATE THE MISSED OPPORTUNITIES THAT UNDERUTILIZED AREAS REPRESENT FOR CITIZENS, COMMUNITIES AND CITIES

✱Objective 1: Create of underutilized land ownership program

✱Objective 2: Create of an agency that facilitates the reuse of underutilized areas. [a non-governmental organization]

✱Objective 3: Create partnerships between public and private sectors, community organizations and residents (Urbanism division, OCPM, UNESCO Design, Minister of Culture, ADUQ, OUQ, Community organizations, developers, local residents)

✱Objective 4: Create a website with interactive map and database of underutilized areas and projects.

✱Objective 5: Communicate ideas via publications, media, social media

GOAL 2: CHANNEL/CO-ORDINATE PUBLIC, PRIVATE, AND CITIZEN EFFORTS/ENERGY

✱Objective 1: Facilitate land acquisition agreement between owners and citizens/organizations

✱Objective 2: Facilitate permanent and temporary catalyst reclamation of underutilized land

✱Objective 3: Manage the operation of website and broker agreements between parties

✱Objective 4: Develop place-base strategies with stakeholders

✱Objective 5: Facilitate citizen engagement

GOAL 3: MAXIMIZE THE CATALYTIC EFFECT OF PROJECTS THROUGH GOOD DESIGN & GOOD PROCESS

✱Objective 1: Perform a critical analysis of underutilized areas and their maintenance

✱Objective 2: Establish a program of temporary use for interim process projects to generate revenue

✱Objective 3: Do demonstration projects [parks, pop ups, installations] to temporarily animate spaces for the cultural, social and economic needs of the community and to get the community involved.

✱Objective 4: Establish a community engagement structure

✱Objective 5: Facilitate cutting edge and innovative design

GOAL 4: MONITOR UNDERUTILIZED AREAS AND PROJECTS

✱Objective 1: Identify and track indicators for monitoring

✱Objective 2: Establish guidelines for monitoring the status and condition of underutilized areas and projects

✱Objective 3: Establish timetable

✱Objective 4: Publish annual progress report

✱Objective 5: Monitor feedback from users

URBAN CATALYST PROJECT GUIDELINES

A strategic plan outlining how to create a catalyst

✱1: Establish comprehensive land use policy approach (flexible and adaptable)

✱2: Critically analyse underutilized areas and their maintenance

✱3: Establish permanent and temporary use guidelines for redevelopment

✱4: Establish Community engagement process with community input meetings, competitions, design charrettes, public consultations, community programming

✱5: Establish standards for design on connectivity, good design, social/environmental considerations

✱6: Create indicators and monitor underutilized areas and projects identify and track indicators to assist in monitoring, establish guidelines for monitoring status and condition, establish timetables, monitor feedback from users and community, create annual report

Table 4: Urban Catalyst Project Guidelines

PERMANENT USE

- Identify underutilized opportunity
- Establish non profit organization
- Create brand identity for the project
- Coordinate with municipal agencies (to see potential plans for site, establish partnership, incorporation into plan, creation of new plan)
- Find and generate fundraising ability
- Research community needs
- Generate attention for project
- Generate ideas for project (design competition, charette, call for proposals)
- Demonstrate possibilities (stage temporary use on site)
- Get community feedback
- Generate design for project and apply for permit
- Get municipal and owner approval (permits, zoning change, sale of parcel, maintenance, etc.)
- Develop an agreement for maintenance and operation
- Integrate project within broader municipal strategies like the IUR strategy or the strategic projects from the economic development plan.
- Construct project
- Play significant role in addressing community needs with elements such as community programming
- Monitor impact of catalyst on context
- Monitor feedback from users and community
- Adapt to emerging needs of the community

TEMPORARY USE

- Identify underutilized opportunity
- Contact owners of space (offer incentives [like tax break] to property owners to sell or authorize use of their space for permanent or temporary use)
- Establish non profit organization
- Coordinate with municipal agencies (to see potential plans for site, establish partnership)
- Research community needs
- Generate ideas for project (design competition, charette, call for proposals)
- Generate design for project
- Get municipal and owner approval(permits, zoning change, establish an interim use agreement, etc.)
- Management options (self managed, organization managed, city managed)
- Build project
- Establish maintenance agreement
- Monitor feedback from users
- Adapt to changing needs of community and environment

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