Pop-Up Tysons
Building the Future of Tysons Now
Prepared for Fairfax County by the 2013 Practicum

George Mason University, School of Public Policy
Transportation Policy, Operations & Logistics Program

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Executive Summary

Each spring the Master’s program in Transportation Policy, Operations and Logistics (TPOL) at the George Mason University (GMU) School of Public Policy, conducts a semester practicum where students perform a client-based field study utilizing the skills acquired during the course of their study. This year, the 2013 TPOL practicum had the unique opportunity to assist Fairfax County with research into the viability of implementing “pop-up” temporary solutions aimed to attract Metro passengers as well as residents, business owners, and developers in the Tysons area.

“Pop-Up” terminology refers to the quick development of temporary establishments or activities, which can include one or a combination of special events, retail, artwork, or services (e.g., dining, refreshments, beauty, cleaning). Pop-up development can also include basic communal offerings such as museums, gardens, parks or seating. It is a growing trend in cities around the world as city planners, developers and property owners realize the many benefits of pop-up development. Perhaps the most important benefit is the sustainment of economic growth through business and employment opportunities. In addition to building opportunities for revenue and employment, pop-ups help promote artists, entrepreneurs and other service providers. Some pop-ups are used for retail experimentation where new ideas are introduced to the public and evolve into permanent creations. Pop-up development is helping to bridge the financial gap for many cities, around the world, facing tense economic conditions.

Although interest in pop-up development is growing in cities across America, similar ideas are traced back several centuries, when suburbanization left vacant spaces scattered throughout urban regions. Resurgence of pop-up in the last decade has taken hold as a means of providing cost effective solutions through flexible retail and commercial space as current real estate prices have increased.

The Tysons area is transforming into a “walkable, sustainable urban center” and during this extensive construction, opportunities exist for business, artwork and other community services through pop-up development. Realizing this opportunity, Fairfax County turned to the TPOL program at GMU School of Public Policy to research options, economic viability and general logistics for pop-up infrastructure in and around the Tysons Metro area to promote attraction and gain ridership along the new Silver Line.

In considering pop-up opportunity for the Tysons area, the practicum team reviewed the Fairfax County Comprehensive Plan for “Transforming Tysons”2. As concepts were explored throughout this study, the team was cognizant of the principles for the Tysons planning framework3 to ensure recommendations to the County could be easily adopted. Through pop-up development solutions, the team envisions the idea of creating the future vision of Tysons, as outlined in the plan for a vibrant, accessible urban center, sooner, rather than over the span of many years. Success will depend on the timely implementation of pop-up attractions in

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2 Ibid.
3 Ibid.
order to carry out the goals of its intent to provide immediate opportunity during construction activity. Strong coordination is needed among landowners, tenants and developers as well as marketing, outreach and support with the community, retailers and other sponsors.

The practicum study includes the areas along the new Silver Line Metro Stations: McLean, Tysons, Greensboro and Spring Hill (Figure 1). Conceptual ideas contained in this report highlight the most potential for pop-up development along the Tysons and Greensboro Metro stations, however, variable pop-up concepts could apply at other Metro stations or other vacant properties. The team determined that these stations appear to provide the most potential for pop-up development given the current availability of land space and current development plans (already approved by the County). These locations occupy the space north of Route 123 at the Tysons station and east of Route 7 at the Greensboro station.

**Aerial View of Silver Line Metro Stations, Opening December 2013**

To ensure a balanced consideration of stakeholder needs, the team considered four fundamental types of resources typically found at Metro stations:

- **Information and Signage** to provide users with information and guidance upon arrival at a new station;
- **Arts and Entertainment** to ensure the station is aesthetically pleasing and fosters a positive experience;
- **Retail Offerings** to stimulate economic activity in the region and establish potential sources of revenue for additional station development, operations and maintenance; and
- **Continued Mobility** to expand the range of destinations accessible from each stop.

The following sections summarize the ideas from each component section of the proposal.
Information and Signage
As new Metro stations develop, the use of modern information signs and maps could provide riders with an additional travel experience by offering tailored and interactive information. Electronic displays allow real-time information on time advisories, other station alerts and can be customized to show location information or directions. As with traditional signs, advertising opportunities exist. Finally, development of electronic signs can build on the Tysons branding of a modern and accessible region.

Arts and Entertainment
The proposal suggests that an art competition to select artwork from local artists could be conducted annually to support revolving events. The entertainment section highlights several projects to support seasonal-themed attractions throughout the year on properties that offer large land areas. Projects include the repurposing of nearby rooftops as green spaces for recreational use, outdoor seating areas around the Metro stations and surrounding businesses, and creating space for mobile food vendors or food truck events. Additional ideas for sculpture, gardens, parks, and outdoor exercise equipment are also discussed.

Retail Offerings
There are two major facets to the retail proposal; a digital Metro platform market and a multi-use shipping container park. The digital market is based on the rise of mobile consumption, where Quick Response codes (or “QR Codes”) provide a barcode legible to most smart phones that automatically direct users to a mobile webpage where they can purchase goods and services. Partnerships with vendors like Groupon or Living Social could be used to subsidize the extra cost of the electronic equipment by offering dedicated marketing space on interactive displays.

The shipping container park would provide space for revolving use that could offer seasonally changing retail, food and beverage or serve as information and educational resources or small-scale museums. The County could consider taking part of the shipping container park and open a satellite office to provide citizen services along with information on Tysons history and updates on its transformation.

Installation costs are significantly lower than a permanent facility and could generate profits from rent until permanent development plans are finalized. Shipping container facilities are easy to install, modify and remove while providing sufficient space for retailers.

Continued Mobility
Many travelers exiting the station still have significant distances to travel to their destinations. To supplement existing County plans for new bus services at the new Metro stations, the proposal suggests considerations for rental cars and bike share to get travelers to their final destinations.

The proposal suggests reconsideration of a bike path beneath the Metro rail tracks, as well as provision of space at the Metro station for bike sharing facilities, which have become popular in recent years in many urban centers. Similarly, the proposal recommends dedicated parking
spaces that can be allocated for car sharing services, which have the potential to remove 15 cars from the road for every car sharing vehicle provided⁴.

**Conclusions**

The report concludes with a layout example of the proposed ideas at the new Metro stations (found in figures 19-22). An appendix offers additional information to support some of the pop-up concepts along with contact information for organizations which could support the different activities.

⁴ “Seeing the Back of the Car”
Introduction

Project Background

The Transportation Policy, Operations, & Logistics (TPOL) program at George Mason University’s School of Public Policy culminates in a practicum course for its students to craft a plan of action for a client-based field study of a current policy or planning issue. The objective is to apply knowledge and skills acquired through the program coursework to collaboratively develop an innovative solution. For the spring 2013 practicum, Fairfax County has requested a plan for temporary, “pop-up” infrastructure along areas near the Washington Metropolitan Area Transit Authority’s (WMATA) new Silver Line Metro stations in Tysons, Virginia, scheduled to open by the end of 2013.

As the Tysons area continues to be developed, the region will be subjected to dynamic consumer and traveler demands and subjected to ongoing construction activity. The client requested plans for infrastructure that would serve a variety of purposes, including provision of a welcoming aesthetic, useful information, commercial space and extended mobility to ensure travelers are greeted with a cohesive and attractive set of resources.

The core challenge for this project is to cultivate ideas that will be feasible within the available spaces and will benefit travelers in a manner that is consistent with the interests of local residents, businesses, developers and government. Ideally, these ideas will fit into the “rebranded” image of each station and with a Tysons that can become a dense, walkable, and economically attractive urban climate.

History of Pop-Up

Cities around the country are experiencing major changes, especially in light of increasing population growth in urban areas more than in other regions⁵. Consequently, city landscapes are adapting to higher demands for living space, commercial structures, and other urban amenities, posing a challenge for planners and developers to use existing space in more creative and efficient ways. “Pop-up” infrastructure is temporary installation of space for social gatherings, entertainment, and retail endeavors that has become an attractive planning framework because it can be dynamically adapted, moved or removed as the region around it develops and changes.

Pop-up infrastructure first appeared during the 20th Century in response to shifts in housing patterns, specifically post-World War II as the nation’s economic prosperity initiated movement to the suburbs, increased private automobile ownership, and left vacant spaces in every corner of the urban landscape; near water fronts, at train stations, in residential blocks and commercial areas. Little demand for redevelopment of these spaces left large properties vacant for decades. Developers commonly seize up these kinds of spaces while property values are low and may hold onto the parcels for years waiting for market conditions to improve. Pop-up infrastructure began to emerge as an intermediary: allow the vacant space to generate some form of activity, social, economic or both, and simultaneously attract individuals to the

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⁵ U.S. Census Bureau. “Growth in Urban Population Outpaces Rest of Nation”
undeveloped area and allow growing interest to spark demand for the permanent development of housing and commercial structures.

Modern pop-ups became popular in U.S. and European cities in the early 2000s as high vacancy rates made landowners more flexible with short-term lease agreements. Numerous retailers have experimented with the model including Target, which opened a 1,500-square foot store in Rockefeller Center for five weeks, and the Gap, which used an old school bus as a traveling pop-up store for vintage apparel. Since then, other retailers have begun integrating the pop-up model into their marketing and sales strategies, demonstrating a fast-growing trend.

Since 2007, Cleveland is host to several other examples of successful pop-up infrastructure, initiated by the Cleveland Urban Design Collaborative (CUDC) which has been “bringing empty places to life through temporary events and installations that occupy vacant buildings and lands in ways that shine a spotlight on some of Cleveland's spectacular but underutilized properties.” One of the CUDC’s temporary installations was an event called “Hipp Deck,” where a parking garage was transformed into a performance venue featuring food concessions. The installation effectively responded to a demand for change in response to declining private automobile usage: spaces that previously supported car-oriented lifestyles can be repurposed for an urban population.

Most often, pop-up development is created from existing infrastructure to allow the quick transformation of vacant properties into business establishments or event spaces. Redevelopment of unused properties or desolate communities has allowed pop-up viability. A combination of new or failed construction (due to real estate market and economic issues) has created an environment for urban planning that employs otherwise dormant, sometimes unappealing, land space.

**Pop-Up Development for Tysons**

Supporting this study into pop-up development for Tysons, is discussion of advanced technologies to incorporate emerging mobile data and connectivity to serve Metro passengers and pop-up infrastructure in a number of ways. One such example is electronic signage where, through interactive displays, engage travelers to create their own experience of an area and gain access to information tailored for their individual purposes. Services to offer WiFi in transit stations and city centers support the unique aspects of pop-up infrastructure in providing online support for retailers and mobile users.

Government and business within Tysons can learn from popular temporary efforts within the Washington D.C. metropolitan area. The D.C. Office of Planning and Initiatives provides a plan for “Temporary Urbanism”, which sponsors temporary events and infrastructure within the district such as “temporiums”. These projects aim to convert empty stores or spaces into a pop-up commercial space for local entrepreneurs, arts and other community events. Washington D.C. is home to the popular “Fairgrounds”, a shipping container enclosure used for

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7 Ibid.
8 Ibid.
9 Kent State University: College of Architecture & Environmental Design, “Cleveland Urban Design Collaborative.”
retail and events across from the Navy Yard Metro station creating an attractive spot for food, beverage, retail and entertainment.

The demand for change in Tysons is driven by the shift from an area of the county that has been a commercial center and office park, accessible only by automobile into a walkable, living community that will be better served by new transit services. The Silver Line Metro is a central development component of this shift, bringing in a more urban-oriented population, and provision of pop-up infrastructure at the new stations will buttress the shift by providing interim goods, services and entertaining options for new travelers.

Overview of Sites

The first phase of the Dulles Corridor Metrorail Project consists of five Metro stations along the new Silver Line and is scheduled for completion in late 2013. Four of the stations are located within Tysons: two on Route 123 and two on Route 7. The last station is located in Reston at the intersection of the Dulles Toll Road and Wiehle Ave. In order of travel from east to west, the Metro stations are McLean, Tysons Mall, Greensboro, Spring Hill, and Wiehle-Reston East. (Reference Figure 1 on page 5.)

McLean

The McLean Metro Station is the farthest east of the four Tysons stations. It sits along on Route Route 123 (Dolley Madison Blvd.) at Scotts Crossing Road and Colshire Drive. The surrounding area is characterized by large, fast flowing vehicle movement, several large corporate campuses with minimal pedestrian walkways. With two station entrances on each side of Route 123, a pedestrian bridge crossing, bus station, and kiss & ride roundabout, the McLean station is mostly tailored as a commuting station serving area workers.

There is not much available land space for pop-up infrastructure at the McLean station, other than creative signage (discussed further in the report) or small retail. Capital One office buildings and corporate-owned park and sports facilities make up the area immediately adjacent to the station on the north side of Route 123. The east side of station, further up Colshire drive, is the corporate campuses of MITRE and Northrop Grumman. An apartment complex and small shopping center are also located in this area.

Tysons Mall

The Tysons Mall Metro station is located on Route 123 (Chain Bridge Road) near the intersection with Tysons Boulevard. It will largely serve the Tysons Mall locations on either side of Route 123. A pedestrian bridge is being constructed to facilitate safe crossing to the south side of Route 123, which is six lanes wide with turn lanes and signals at each intersection. According to traffic counts published by VDOT10 in 2011, current traffic is approaching 34,000 vehicles per day, and although there is not a continuous sidewalk on either side of Route 123, pedestrian infrastructure is currently under construction along the southern side.

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10 Virginia Department of Transportation, *Average Daily Traffic Volumes with Vehicle Classification Data on Interstate, Arterial, and Primary Routes.*
Immediately north of Route 123 and the Metro station are two, vacant, rectangular land bays (currently grass and empty parking lots), the Tysons Galleria shopping center, and several mid-rise office buildings. The western-most of the two vacant properties is the 11-acre Lerner property. This parcel offers immediate opportunity for pop-up development including retail and large-scale events. The Metro station is located along the property’s Route 123 frontage and has an at-grade pedestrian connection to the site.

The southern side of Route 123 is dominated by the existing Tysons Corner Center and construction of a new 22-story tower which will contain over 510,000 square feet of office and more than 14,000 square feet of retail and leave little room or demand for new pop-up infrastructure. However, when construction clears, there may be opportunities and for smaller aesthetically-focused temporary infrastructure in the plaza that surrounds the bridge touchdown point.

**Greensboro**

The Greensboro Metro station is located near the intersection with Pinnacle Drive, above the midpoint of a six-lane section of Route 7 (Leesburg Pike). This area is a dense neighborhood of corporate offices that draws an average of nearly 59,000 vehicles every day\(^\text{11}\). A pedestrian bridge with landings on either side of Leesburg Pike will accommodate pedestrian and bicycle traffic. The destinations accessible from the east side of the station include office parks (SAIC, Booz Allen Hamilton), retail (MVC, Big Screen Store, Evolution Audio Video, ABC, Men’s Warehouse), restaurants (Clyde’s), the Sport & Health Club, and the University of Fairfax. The west side of the station comprises mainly retail vendors (TJ Maxx, Marshall’s, Sports Authority, Staples), coffee and food vendors (Starbucks, Panera Bread, Wendy’s).

The east side of Leesburg Pike appears to have the most potential for temporary infrastructure at the Greensboro Metro station, where a paved lot, approximately 300 by 150-feet, is accessible from the station exit and local retail. It is adjacent to a large, parking garage wall and storm water runoff, which present opportunity for artwork and community space dwellings.

**Spring Hill**

The Spring Hill Metro Station is the western-most of the four Tysons stations. It is located at the intersection of Route 7 (Leesburg Pike) at Spring Hill Road. The station has two touchdown points for pedestrian bridges; one on each side of Route 7 just north of Spring Hill Road.

The predominant existing land uses along the western side of Route 7 are car dealerships, such as Mercedes-Benz of Tysons Corner, Honda of Tysons Corner, and Rosenthal Nissan-Mazda. Also located within walking distance of the western pedestrian bridge touchdown point are several mid-rise office buildings and the Sheraton Premiere hotel. There is not much available space on the western side of the Metro station for pop-up infrastructure as most of the “open” spaces are dealership parking lots used for showcasing vehicles for sale.

\(^{11}\) Ibid.
The eastern side of the Metro station is characterized by similar land uses. Auto dealerships along Route 7 north of the Metro station include Koons Tysons Toyota and Aston Martin Washington DC. The properties immediately east and south of the Metro station include mid-rise office buildings, auto repair shops, fire station, gas station, Citibank drive-in bank, and restaurants such as Starbucks and McDonalds. Much of the “open” spaces in this area are parking lots that are full on the weekdays. There may be opportunities for smaller aesthetic-focused temporary infrastructure in the plazas that surround the pedestrian bridge touchdown points.

**Station Focus Areas**

It is the intent of the Practicum that all recommendations in this report for pop-up development could easily adapt to other stations not only along the Silver Line but other Metro stations and other urban planning initiatives of the County.

After site evaluations, the team determined pop-up development along the Tysons Mall and Greensboro station stops offer the most significant availability of open land space for such ideas. The station stops at McLean and Spring Hill do not offer as much opportunity yet, could benefit from added signage with unique retail and advertising features, artwork, bike share stations and other service like coffee or newsstands.

The Lerner Property at the Tysons Mall Metro station offers exciting opportunities for temporary events and other pop-up development 11 acres of paved area. The sizable tract of land allows for large-scale events and to attract Metro passengers, Tysons Mall shoppers and non-Tysons residents to the area. The Greensboro site while much smaller, with a paved area of about 300 by 150 ft, offers opportunity for smaller scale temporary development that would primarily serve people commuting to and from the surrounding office buildings.

**Methodology**

The practicum team met with a County representative and member of the Tysons Partnership\(^{12}\) to gain understanding of current Metro extension projects and surrounding development plans. After discussing project needs and objectives, the team outlined a methodology to ensure that each site had a comprehensive set of resources to serve future travelers and attract the public-at-large to the Tysons area. The team agreed concepts should include consideration of four major components: Mobility; Arts and Entertainment; Information; and Commercial or Retail Operations.

To better understand the potential opportunities for development at each site, the team divided into four groups corresponding to each of the four Metro stations, and conducted site evaluations. Following the site evaluations each group explored components to brainstorm different development ideas. In the next phase, working cohesively in a single group, the team pursued additional information, data and sample case studies, around the world, to determine

\(^{12}\)Tysons Partnership is a nonprofit association of people and organizations planning and working together to redevelop Tysons into a beautiful, vibrant, sustainable urban center (Partnership, 2013)
which ideas were best suited for each site, keeping in mind the four core components to promote a balanced proposal.

The organization of this report is intended to provide complete information about each of the proposed ideas, which are depicted graphically on aerial maps of each site. This report contains information regarding similar deployments and other pop-up development, with a focus on the recommendations for Tysons.

In addition to the proposal for pop-up development concepts, considerations are discussed to address important limitations or obstacles the County will have to resolve in order to pursue successful pop-up development in the Tyson area. Appendices in this report covering several case studies of other U.S. cities with successful pop-up deployments should be carefully reviewed in order to gain a strong understanding of the criteria for efficient pop-up development programs sponsored by state counties.

Proposal

Information & Signage

In anticipation of increasing pedestrian traffic and a persistent need for detours around ongoing construction, information and signage will be a critical resource for people traveling through the region. Maps and display boards provide passengers with relevant information necessary to complete their trip. Interactive signage is an increasingly popular method to provide tailored information to travelers and will lend itself towards the rebranding of Tysons as a more modern area keeping with new technological trends and opportunities better than traditional signage.

Interactive Signage

Interactive signage can be implemented using digitally powered monitors to replace traditional methods such as billboard maps and informational brochures. In an increasingly “digital age” where users frequently seek information from mobile devices, it is no surprise that digital and interactive methods of signage and information are revolutionizing the way industries promote goods and information. Interactive signage provides several benefits, including:

• **Attractive Advertising:** Back-lit signage with motion attracts more attention, and can be programmed with revolving messages to include more ads on the same space.

• **Real-time Display:** Information can be updated in real-time, which is critical for emergency updates and breaking news.
• **Targeted Audiences**: Interactive and digital signage can be programmed to target specific demographics during peak and off-peak periods.

• **Visibility**: Information is presented to users in an aesthetically appealing, from multi-user interactive touch-screens to individualized self-service electronic kiosks.

Use of digital and interactive signage will provide a focal point for attractive graphical display of all relevant traveler information. Marketing at the Tysons Metro stations will reach many shoppers and commuters, which can be a point of leverage for partnerships with vendors such as LivingSocial or Groupon who might subsidize purchase of the equipment in exchange for dedicated space on the display. Similarly, retailers will have interest in purchasing promotional marketing space to bring pedestrians in for special sale events and new products.

The potential for electronic signage is especially strong at the Tysons Mall station as travelers will require assistance navigating the dense local retail and extensive bus service without confusion. Electronic, interactive signage would allow travelers to provide input about their trip to receive tailored information about what resources are available to get them to their destination and how best to access available services. The Tysons Mall Metro station may utilize interactive signage as a way to inform visitors where specific retail stores and restaurants are located. Ultimately, digital and interactive displays area more modern medium through which information is dynamically displayed to cater to users better than traditional signs. These displays will modernize the way critical and relevant information can be communicated to users at the Tysons Metro stations that can be deployed quickly and updated easily to cater to a growing population of residents and consumers.

**Arts & Entertainment**

Attractive art displays increase the aesthetic experience of riders and can promote a positive perception of public transit. Visual design considerations can significantly impact the perceived quality of service of public facilities, and is increasingly involved in the decisions of users and consumers. Urban aesthetics can be promoted by the use of murals, sculptures, groundwork art, gardens, or functional art, such as customized seating areas and walkways. There is potential for use of any combination of these mediums at Silver Line Metro stations, which should ultimately be tied into rebranding efforts and aim to attract new travelers to the area.

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13 Gillian Rose et al., “Urban Aesthetics.”
14 Aaron M. Reen, “The Importance of Aesthetic Design in Transportation Facilities.”
Art Competition

Use of local artists can simultaneously enhance the aesthetic experience and promote local economic activity. An annual art competition would establish a means to connect with local talent pools and establish a revolving display of new artwork to draw new visitors to the area.

There are abundant local mediums to advertise and appeal to the public for aesthetic enhancements to Tysons Metro stations. Development and distribution of an attractive ad for an annual competition to solicit work that suits new branding schemes in the first year will establish the foundation for future competitions that will gain recognition and reduce the need for extensive future marketing efforts.

Pop-Up Gardens: Two Rooftops, Three Acres of Green Space

Green rooftops can address a number of important economic, social and environmental challenges facing urban areas. They provide a quality improvement, reduction in greenhouse gases, stormwater quality and quantity improvements as well as long-term economic benefits for building owners. For air quality alone, a green roof provides nitrous oxide reductions of 24.5 to 40.2 percent from that of conventional roofs. As urban areas have become overtaken by pavement and other impermeable surfaces, green roofs can provide a park-like refuge for city dwellers, while mitigating flooding, high temperatures, and many other environmental impacts.

There are a number of local and international studies that indicate tree cover increases property values. Green roofs offer similar visual and environmental benefits to that of tree cover, and can impact how tourists and visitors perceive their environment. For example, the tree-lined, “Central Park,” constructed on top the Kaiser Center parking garage in Oakland, California attracts visitors to rooftop concerts, weddings, luncheons, corporate events, book signings and more. Its restaurant, pond, lawns, and trees have enough room for 1,500 guests.

There are two rooftop sites in the Tysons area that are especially well-suited for gardens in conjunction with the opening of the new Silver Line Metro stops: the parking lots adjacent to Lord & Taylor at the Tysons Mall station and the SAIC building at the Greensboro station. The top level of the parking garage near Lord & Taylor is eye level with the Tysons Mall Metro platform and is only about 40 yards away. The parking garage next to the SAIC building is within walking distance to the Greensboro Metro stop, about 150 yards away.

Figure 4: Rendering of vacant rooftop at Greensboro station

15 Steven W. Peck et al., Greenbacks from Green Roofs: Forging a New Industry in Canada.
16 Corrie Clark, Peter Adriaens, and Brian Talbot, Green Roof Valuation: A Probabilistic Economic Analysis of Environmental Benefits.
17 Steven W. Peck et al., Greenbacks from Green Roofs: Forging a New Industry in Canada.
18 Eric K. Arnold, “Oakland’s Kaiser Center Redoes Rooftop Garden and It’s A Honey.”
19 Ibid.
Parking structures are ideal for rooftop gardens because they are designed to withstand repeated, heavy, live-loads. Each rooftop deck could handle an urban garden with a soil layer of about 3.6 inches or a layer of substrate of about 6 inches.\textsuperscript{20}

As rooftop gardens, the parking garages by Lord & Taylor and the SAIC building could offer tremendous benefits for capturing storm water runoff. Combined, they could prevent 162,000 to 210,000 gallons from being lost as runoff during a typical rainstorm\textsuperscript{21}. Tysons could become an exemplar of storm water management, in a metropolitan area that suffers the fourth highest water loss in the nation.\textsuperscript{22}

With effective planning and execution, a rooftop parking deck could be transformed into a pop-up enterprise that is profitable, offers a favorable branding experience for Tysons, and meshes with the goals of sustainability for the area.

Some rooftop concepts that could be adopted for either site are outlined below:

1) **Pie in the sky**: A temporary wood-burning pizza café  
2) **Children’s Activities**: Such as Science Museum or other educational activities  
3) **AtmosTheatre**: A rooftop theatre could be used for performances  
4) **Penthouse Pool**: Refuge to swim and lounge during the dog days of summer  

**Table Games & Lunch Sitting Area**

Proximity to several large are employers, including SAIC and Booz Allen Hamilton, makes the Greensboro station a prime location for an outdoor seating area catering to local workers. Installation of seating and activity, such as stone chess tables, would foster a sense of community while providing relaxing options to area workers and commuters. Many creative options exist for outdoor recreation, including life-size table games and fitness.

\begin{center}
\includegraphics[width=0.5\textwidth]{figure5.png}
\caption{Chess tables in Washington Square Park, NYC. Photo Source: Modelinia website.}
\end{center}

\textsuperscript{21} Steven W. Peck et al., *Greenbacks from Green Roofs: Forging a New Industry in Canada.*  
\textsuperscript{22} S. Weiler and K. Scholz-Barth, *Green Roof Systems.*
**Outdoor Exercise Equipment**

Another way to encourage recreational use of the outdoor space around the Metro stations is to provide self-weighted exercise equipment that can attract commuters and local-area residents. Outdoor exercise parks are growing in cities across the country and becoming a part of state initiatives to promote healthier living. In addition to the health benefits the exercise machines offer, they do not require power and require little or no maintenance, making them less expensive than traditional equipment.

The equipment featured in the images is manufactured by a company that promotes partnerships with non-profit organizations with missions to raise awareness of the importance of exercising. These partnerships provide great support to communities in the ability to procure equipment and build exercise parks.

![Figure 6: Recreational users getting a work-out on self-weighted elliptical machines and a sit-up bench.](image)

Photo Source: [Outdoor-Fitness](http://www.outdoor-fitness.com) website.
Seasonal Events

Seasonal events are popular in open spaces of urban areas to provide goods, services, entertainment and other activities coinciding with the time of year. Table 1, below, includes a list of ideas for potential events that would maximize use of large land areas.

<table>
<thead>
<tr>
<th>Event</th>
<th>Brief Description</th>
<th>Time of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Truck Festival</td>
<td>Event for local Food Trucks</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>Tysons Corner Market</td>
<td>Featuring a combination of farmers’ market, arts &amp; crafts, vintage &amp; unique goods,</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>Beer, Wine, Cuisine Festival</td>
<td>Showcase area vineyards, breweries, dining</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>“Taste of Tysons”</td>
<td>Event to promote local restaurants – potential for corporate sponsorships and more</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>Fashion Show</td>
<td>Local designers and retailers</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>Outdoor Cinema</td>
<td>Offering movies or sports (World Cup, Super Bowl, MLB)</td>
<td>Potential for year-round</td>
</tr>
<tr>
<td>Spring &amp; Summer Events</td>
<td>“Tysons Roll”, Memorial Day, 4th of July Tysons BBQ, cook-off</td>
<td>Spring, Summer</td>
</tr>
<tr>
<td>Fall Harvest Festival</td>
<td>Event celebrating Fall-themed activities</td>
<td>Fall</td>
</tr>
<tr>
<td>Winter Holiday Festival</td>
<td>Event celebrating the Winter Holidays</td>
<td>Winter</td>
</tr>
<tr>
<td>Temporary Ice Rink</td>
<td>Coinciding with Winter Festival</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>Concert Series</td>
<td>Performing artists, music, dance</td>
<td>Spring, Summer, Fall</td>
</tr>
<tr>
<td>Amusement Fairs, Circus</td>
<td>Small-scale amusement park or circus entertainment</td>
<td>Summer</td>
</tr>
<tr>
<td>Cirque du-Soleil</td>
<td>Popular traveling show</td>
<td>Potential for year-round</td>
</tr>
<tr>
<td>Sports Competition</td>
<td>Known as X-games: BMX biking, skate park. Could include area high-school sports</td>
<td>Potential for year-round</td>
</tr>
</tbody>
</table>
Children’s Science Museum

Another concept for Arts and Entertainment is a temporary children’s science museum. Teamed with other educational activities, a science-themed event would likely gain large participation given the attention to science and math for children in America. Exposing children to science outside of the classroom is crucial, as this is where much of the motivation for the topic is and new information can be absorbed23.

This event could be a regular, summer installation in a tent at the Shipping Container Park or at a unique location such as a rooftop like the Lord & Taylor’s garage deck. Surrounding the event by other retail offerings would attract consumers and their children to a family-friendly weekend activity pulling residents from the Tysons area and greater metro DC region. Partnering with local organizations would create a buzz for the Tysons area and point consumers to satellite events or other museums in and around the Tysons area. More details on local science organizations and event logistics may be found in Appendix E.

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23 Lynn D. Dierking, Linda Kekelis, and Susan Singer, Rethinking How Kids Learn Science.
Retail Offerings

Quick Response (QR) Code Metro Platform Market

With increasing mobile accessibility and connectivity, more people buy goods online, and the nearly ubiquitous smartphone has increased access to product information to purchase items. Although shoppers may not need to travel to stores to make these purchases, they still have to find the desired product online. Consequently, many companies use Quick Response (QR) codes, square barcodes readable by most smartphones, to increase product visibility and provide quicker access to product information and e-commerce websites. QR codes are currently used in pamphlets, magazines and kiosk displays, such that a consumer scans the QR code with their smartphone and is automatically routed to a website with coupons, additional product information, or other incentives to purchase the product.

Advertising spaces along the new Metro station platforms and walkways are a perfect location for a “QR code Platform Market,” allowing busy travelers to buy products with a quick scan of their phone. Many companies have started to use this strategy to broaden their customer base and reach out to customers who may not have the time to travel to the store or know about the products at all.

The British supermarket chain Tesco has deployed QR code markets on subway platforms in Seoul, South Korea. As depicted in Figures 8 and 9, supermarket items are displayed on posters like store shelves. Shoppers can quickly scan the item’s QR code, pay, and items are delivered to their home. In the US, Proctor & Gamble and Wal-Mart joined forces to deploy QR codes on the sides of trucks driving through major U.S. cities to promote mobile shopping. Kmart and Sears have teamed up to place “mobile shopping walls” with pictures of products in airports, malls, and movie theaters.

QR Code Markets implemented alongside interactive signage could be used to generate revenue and recover the cost of electronic displays. Major supermarkets in the area, local stores and online retailers could rent advertising space to sell their products from Metro platforms and walkways. For example, the new Wal-Mart retailer at the Spring Hill Metro station might be particularly interested in sponsoring a display for the QR Code Market to draw in customers who use ads from the Metro to purchase goods at the local store.

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24 Li, Sindy. “Subway Platform Supermarket”.
25 De Boer, Joop. “Proctor & Gamble Launches QR Truck Store”.
26 Ueland, Sig. “12 New QR Code Campaigns”.

Pop-Up Tysons
Shipping Container Park

New and used, customized shipping containers can be utilized as retail and shops in vacant land and property areas such as in and around Metro stations. The shipping containers are economical, strong, and convenient temporary infrastructure that can serve multiple commercial purposes. Containers are popular for their appeal of repurposing of material, the versatility and the cost savings of infrastructure (over standard brick and mortar structures).

A standard container used as pop-up infrastructure is 20 feet long, 80 inches wide, and 8’6” feet high. A single shipping container can hold 8 to 10 containers on the top of it. Shipping containers can be customized to meet the needs of individual projects. The available structural options include windows, custom entryways and doors, cooling, heating, finished interior with wall covering, fiberglass insulation, wood frame, cabinetry, shelving, dividers, electricity, and more.

Around the world, clusters of commercial shipping containers are used for shopping malls, retail outlets, coffee shops, farmers markets, and other purposes. A shipping container can be even turned into a mobile kitchen including wood-fired ovens and other specialized appliances.

Metro commuters could benefit from customized shipping containers installed outside of the stations. At the paved lot on the east side of the Greensboro Metro station, a shipping container park could provide food, beverage and retail where commuters can quickly stop on their way in and out of work for small purchases.

Washington D.C. is home to the popular Fairgrounds, a food, beverage, retail and entertainment spot near the Major League Baseball stadium. For the Tysons area, a similar establishment could be at the 11-acre lot west of the Tysons Mall station. A shipping container park could house a number of shops and services, such as the Children’s Science Museum.

Figure 10: Photograph of stacked shipping containers. Photo Source: Retail Design Blog website.

Figure 11: Shipping Fairgrounds at Nationals Stadium. Photo Source: Fairgroundsdc

27 “SHIPPING CONTAINERS | Popshopolis.”

28 Bridgette Meinhold, “Muvbox Fast Food Shipping Container Restaurant.”
Continued Mobility

The four new Metro stations will bring enhanced mobility with vast economic potential. The initial period following the opening of the new stations will largely shape public perception of the new facilities and the demand for transit to the area. The following sections outline proposals to ensure new travelers are afforded resources for continued mobility to reach their final destination.

Bike Paths

Though generally called “bike paths,” these pathways are typically designed for pedestrians, skaters, and other non-motorized uses\(^\text{29}\). Bike paths can contribute to areas where they are established by providing increased property values, recreation, transportation, a sense of community, and lower crime\(^\text{30}\). Real estate studies in Indianapolis and the Seattle metropolitan area found that property in close proximity to bike paths experienced increased values of 11 percent\(^\text{31}\) (Indianapolis) and six percent (Seattle metropolitan area)\(^\text{32}\). Similarly, bike paths can mobilize economic growth in an area. For example, a 33-mile bike-pedestrian network is currently being built in Atlanta, which is estimated to add up to $20 billion to the local tax base\(^\text{33}\). New apartments, coffee shops, and restaurants are opening in close proximity to the network, while business owners, already existing along newly opened trail segments, are experiencing an increase in sales. Atlanta’s experience seems to validate the 2012 Transportation Alternative’s Study,\(^\text{34}\) which found non-motorized consumers spend more money per capita at local retailers than drivers. A dedicated path for pedestrians, bikers, and runners would promote recreational use of the region, attracting a new demographic from the existing commuter-based population.

Current bike plans and suggestions

Tysons master bike plan\(^\text{35}\) is comprehensive, well-designed, and allows for excellent bike and pedestrian mobility in the long run; however, the plan requires attention for the near future. For instance, the plan does not accommodate bicycle mobility across I-495 until the spring. This time gap may impose risk to safety of bikers needing to cross over I-495 when the Metro stations open at the end of the year.

Though there are several parks or other assets in Tysons that are within walking distance from each other, there is no easy way for pedestrians to access them. For instance, Scott’s Run Park, the existing forested path just southwest of Westpark Drive, and Raglan Park are perhaps the three biggest assets for runners, bikers, or walkers who desire outdoor exercise. Yet, there is no

\(^{29}\) David P. Racca and Amardeep Dhanju, *Property Value / Desirability Effects of Bike Paths Adjacent to Residential Areas.*

\(^{30}\) Ibid.


\(^{35}\) Fairfax County Master Bike Plan
connectivity between the three assets, nor will Raglan Park have a trail available for public access within the next 5-10 years.

Raglan Park is one of the largest green spaces in Tysons. It is in close proximity to the Greensboro and Spring Hill Metro stops, which makes it a valuable asset for pedestrian use. Access to Raglan Park could enhance public enjoyment and the overall perception of the area. Additionally, Raglan Park, the forested path by Westpark Drive, and Scott’s Run Park should all connect together, and serve to feature Tysons’ walkability goals when the Metro stops come online.

_Space underneath the elevated Metro tracks_

The space underneath the elevated Metro tracks has great potential for the mobility and overall aesthetic of Tysons. Its long, unobstructed, serpentine shape naturally lends itself to bike path use. However, it could also be used as an art corridor. Japan used the space beneath its Keihin railway tracks and turned it into an art center featuring a gallery, café, studio, and hall for artists to present their work.36 Chicago has used the space underneath its elevated rail for retail, restaurants, art, bike path and other uses.

_Capital Bikeshare_

Capital Bikeshare is a bicycle sharing program that provides a fun, convenient, healthy, and low-cost alternative to the automobile. Since its launch in 2010, Capital Bikeshare has proven that it can serve the needs of most riders, for example, tourists visiting Washington, DC for the weekend that would like to see the monuments, local residents that do not own vehicles and need to run errands around town, business persons needing to get to/from work, or occasional riders looking to get some fresh air. There are membership plans to fit any level of bicycle rider. Riders can purchase one day or three day passes with a time-based usage fee or a one month or one year membership with discounted usage fees. Prices for membership plans and usage fees are provided in Appendix E.

Currently, Capital Bikeshare has more than 175 stations with over 1,670 bicycles scattered across Washington, DC, Alexandria, and Arlington. Stations are conveniently located around Metrorail stations, as well as densely populated areas, apartment buildings, office buildings, and commercial areas37.

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36 Anthea Quay, “In Japan, Spaces Under Elevated Train Tracks Get Turned Into Art Hubs.”
37 “Capital Bikeshare.”
Car Sharing Services – ZipCar

Car sharing services provide an alternative to private vehicle ownership by providing access to rental cars distributed throughout a region at designated locations, situated in areas of high mobility and allowing subscribers to pay for vehicle use for only the duration of time or miles traveled in a given day. According to the World Carshare Consortium, availability of car sharing services has spread to more than 1,000 cities across the globe and has become increasingly popular in the DC metro area as ZipCar has deployed vehicles throughout the region.

Several analyses have been conducted to evaluate the success factors of effective car sharing programs and found that neighborhoods with low vehicle ownership is an important indicator for car sharing success, with the strongest, most consistent correlation to the amount of neighborhood car sharing activity. Because Tysons is not currently an established neighborhood for residency, implementation of a car sharing program in advance of housing development has the potential to drastically reduce the total number of vehicles in the area; with estimates that a single rental vehicle can replace 15 private vehicles.

ZipCar currently has a dense network of vehicles deployed across the DC area, including several locations adjacent to Metro stations, which can be seen in Figure 13, where ZipCars have been deployed within short walking distance of the Rosslyn, Courthouse, Clarendon and Virginia Square Metro Stations. Alternatively, as seen in Figure 14, there are no existing ZipCar deployments within two miles of the proposed Silver Line stations. It is likely that ZipCar will look to add new vehicles closer to the stations once the Silver Line opens, but it is important that any development plans implemented in the region incorporate dedicated space for car sharing services.

Figure 13: Distribution of ZipCars across DC Metro Area. Locations circled in red are adjacent to Orange Line Metro Stations. Photo Source: ZipCar Website

Figure 14: Map of Existing ZipCar Locations near Tysons. Source: Google Maps.

39 “Seeing the Back of the Car.”
Tysons Traffic Predictions, Interim Parking Considerations

The Tysons Corner comprehensive plan envisions a lively, active, dense urban work-walk-play environment across the proposed Metro stations along the Silver line. Without surprise, the highest intensity of activity is expected to center around the several Metro stations that will call Tysons home (Mclean, Tysons Mall, Greensboro, & Spring Hill). Planners, developers, and students can look across to neighboring Arlington County to see similar efforts and results of this work-walk-play environment. Within Arlington County, VA, the Rosslyn-Ballston corridor provides a great perspective to the effects infrastructure and transportation have on each other. In fact, comparing land use diagrams provided through the county, similarities between the two areas are evident, including the prevalence of dense/mixed use development in the direct vicinity of Metro stations. Figure 15 depicts the Tysons of today as we know it; dense with office and retail.40

The Tysons of the future results in a paradigm shift with respect to how land use is adjudicated. In Figure 16, we see Tysons where mixed-use facilities are centered around the expected Metro stations. This transformation gives Tysons the flexibility to acclimate and adjust to the changing demographics that may come to the area post-Metro.

In neighboring Arlington County, we see similar results from the transformative shift that took place along the Rosslyn-Ballston Metro, which started in the late 1970s, and is still on-going today. The successes of land use and transportation management along the Rosslyn-Ballston corridor are obvious. The area is home to many who consider it a preferred location due to the proper balance of work-walk-play along with ease of access to several Metro stations along the Orange line. In Figure 16, we can see similarities between the Tysons envisioned as part of the comprehensive plan and the Rosslyn-Ballston corridor of today. Mixed-use facilities dominate the areas in direct proximity of the Metro stations. Retail, office, and housing complexes are strategically placed fanning away from the stations.

40 Fairfax County - Tysons Corner Planning Commission, Report to Board of Supervisors on Tysons Corner.
41 Ibid.
42 Fairfax County DPZ, Arlington General Land Use Plan, Rosslyn-Ballson Metro Corridor.
With such significant changes occurring in the Tysons area, it’s prudent to understand the implications land use has on transportation and vice-versus. Transportation and land use planning is evolving. Transportation planners should understand how transportation activities relate to or affect land use development and land-use planners and developers must understand how their activities relate to or affect transportation. Coordination of land-use and transportation is now considered “smart growth” or “new urbanism”\(^43\). Those who transit to Tysons are no stranger to some of the congestion it is notorious for; although this is not to be unexpected given such dense proximity of retail and offices.

Pop-up infrastructure (or any infrastructure) developments in the Tysons area require an understanding of associated transportation effects. In addition, on-going developments will surely affect existing traffic flows and patterns.

**Traffic Now**

As part of the Tysons Corner Urban Comprehensive Plan, the Tysons Corner Planning Commission has made several recommendations with regard to traffic studies and funding for transportation improvements in the area. In the 2011-2012 timeframe, the Fairfax County Department of Transportation has supported a number of transportation studies that will support the Tysons Corner Comprehensive Plan. The studies are as follows\(^44\):

1. Consolidated Traffic Impact Studies at Tysons East [McLean], Tysons Central [Tysons Mall and Greensboro], and Tysons West [Spring Hill]
2. Dulles Toll Road Ramp Study

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\(^{43}\) “Land Use & Transportation Planning - Processes - Planning - FHWA.”

\(^{44}\) Fairfax County - Tysons Corner Planning Commission, *Report to Board of Supervisors on Tysons Corner.*
3. Jones Branch Connector
4. Tysons Circulator Study
5. Tysons Metrorail Station Access Management Study
6. Tysons Neighborhood Traffic Study – Phase II
7. Countywide Transit Network Study

Parking

If successful, pop-up infrastructure at Tysons Metro stations will draw users from various modes of transportation. Those who choose to visit Metro stations via automobile will require parking. The Tysons planning commission is working to delicately balance the needs of parking and proper land-use development. Initially, parking is expected to be a mix of public parking and on-street parking of which several options presently exist. As development progresses, on-street parking availability will reduce to begin the transformation to a walk friendly environment.

The Tysons planning commission is actively monitoring the area for parking direction. Parking availability monitoring requires a five-year update and parking plans will be adjusted as a result of each update. A baseline Parking Supply Demand Analysis will be complete in 2013\(^45\). In the meantime, the Fairfax County Department of Transportation has issued a Request for Interest (RFI) regarding Interim Metrorail Parking in the Tysons Corner area. Based on the prevalence of automobile traffic in the Tysons area, parking will be a critical aspect to including those who choose to access the Metro and associated pop-up development via automobile. A possibility to handle additional parking requirements created by weekend pop-up activity is to coordinate with landowners and businesses for the use of empty surface parking lots. Regardless of the method for accommodating additional traffic, parking will be necessary for vendors and suppliers to deliver and load goods or equipment. Additionally, any changes in Tyson parking will need to be met with proper regulation that addresses not only the present needs of the community but also the needs of Tysons envisioned in the future. As mentioned in a recent

\(^{45}\) Ibid.
Washington Post article\textsuperscript{46}, Fairfax County is working to address issues regarding food vendor citations for distributing merchandise on state roadways. Given that pop-up infrastructure and the Tysons Metro may see an increase in mobile vendors it is vital that the county address policy to cater to the transformative shift expected to occur in the area.

Bus Route

With the implementation of the Silver line, many of today’s Tysons bus routes will shift to accommodate a new transit network not yet seen in the area. Presently, 14 bus routes serve the Tysons area. Additionally, there are currently two major bus route transfer locations to the north and south of the Tysons area. New bus routes (a combination of WMATA and Circulator) will be implemented with the opening of the Silver line. AECOM has produced the “Tysons Corner Circulator Study”\textsuperscript{47} which lays out a proposed network of Circulator routes with Silver line operation. The new bus transit plan as proposed by the Tysons Corner Planning Commission expects that existing bus transit points will move to the proposed Metro stations providing multi-modal opportunities to users. New bus routes, along with Metro stations acting as transfer points, will bring more people to Metro stations regardless of whether they may ride the rail or not. This is an important consideration for the development of pop-up infrastructure as much thought should be given to the types and frequencies of users expected at each stop. More importantly, bus transfer stations take up valuable Metro real-estate and any proposed infrastructure should take into account the priorities of each station.

\textit{Walking & Accessibility}

The Fairfax County Board of Supervisors approved funding for the Tysons Metrorail Station Access Management Study (TMSAMS) in June of 2009\textsuperscript{48}. The study was designed to spur public though on how they will reach proposed Silver line Metro stations through a multi-modal approach. As a result of the study, several recommendations were made regarding sidewalk, crosswalk, trail, bicycle, and bus priorities. These recommendations if acted upon will influence how pedestrians and bicycles navigate the Tysons area in the future. Pedestrians and bicycles are expected to be a primary customer of pop-up infrastructure at several of the Tysons Metros. Without significant changes in the pedestrian/bicycle infrastructure of Tysons, one could expect that attendance to proposed Metro stations could be limited to only a subset of the total population. Recommendations and observations for pedestrian / bicycle access in Tysons from the TMSAMS include\textsuperscript{49}:

1. Due to multiple entrance and exit ramps onto the Dulles Toll Road and I-495 from Rt.7 and from Rt.123, pedestrian and bicycle access into Tysons Corner is difficult and dangerous along these corridors, specifically along Rt.7 from areas north of Tysons Corner and along Rt.123 from areas east of Tysons Corner. Linear, median-running,\

\textsuperscript{46} Kali Schumitz, “Tysons Food Trucks Cite Conflict in Fairfax County Policy, Seek Solution - The Washington Post.”

\textsuperscript{47} AECOM, “Tysons Corner Circulator Study.”

\textsuperscript{48} The Perspectives Group, \textit{Tysons Metrorail Station Access Management Study Final Report}.

\textsuperscript{49} Ibid.
pedestrian/bicycle parks are a possible solution to provide safe and attractive pedestrian and bicycle access into the core of Tysons Corner while bypassing the entrance and exit ramps along Rt.7 and Rt.123.

2. FCDOT staff should conduct a more extensive sidewalk and trail analysis to evaluate and identify necessary sidewalk, and crosswalk facility improvements with an emphasis on a three-mile area surrounding the Tysons Metrorail stations. Priority should be given to pedestrian and bicycle facility improvements providing direct access to bus stops or that provide direct, longer distance, connections to the Metrorail stations in Tysons Corner. Suggested priority corridors to be evaluated are as follows:
   a. Rt. 123 into Tysons Corner from the Mclean Central Business District
   b. Magarity Road to the Tysons East Metrorail Station
   c. Gallows Road to the Tysons Central 123 Metrorail Station
   d. Old Courthouse Road, from Trap Road, to the Tysons Central 7 Metrorail Station
   e. Rt.7 from Trap Road and Spring Hill Road, to the Tysons West Metrorail Station
   f. Rt. 123, from the Town of Vienna, to the Tysons Central 7 [Greensboro] and Tysons Central123 [Tysons Mall] Metrorail Stations

3. Increase pedestrian safety with enhanced crosswalk design, including colored pavement, to identify a crosswalk in an urban area and special “pedestrian refuge” areas in medians.

4. Continue the Washington Metropolitan Area Transit Authority (WMATA) plans for the Vienna Metro pedestrian/bike improvements within the immediate vicinity of the Vienna Metro station.

5. Phasing recommendations in the Tysons Corner Bicycle Master Plan should be re-evaluated based on public input obtained through the TMSAMS process. Corridors prioritized for bicycle facility improvements in the TMSAMS effort should be “fast-tracked” into the near term.

6. Where possible, Fairfax County staff should contact Tysons Corner property owners to obtain permission for pedestrian and bicycle access, across private property, to Metrorail stations. Access, through private property, between Gosnell Road and the Tysons Central 7 Metrorail stations is an example that should be explored to address this recommendation.
Considerations for a Tysons Pop-up Program

Pop-up development offers creative solutions for the generation of revenue for the many actors associated with urban development. In order to successfully create a strategy for pop-up development, the County should consider using resources like the Fairfax Economic Development Authority and agencies similar, such as the Fairfax Chamber of Commerce, to help with the overall management for this type of activity. These agencies are well-suited to provide the county with tactical plans to sponsor pop-up initiatives to promote and enable the re-development of vacant commercial and privately owned properties. The agencies could operate as “program sponsors” given their established knowledge of local property and business owners. Sponsors can help facilitate the coordination of matching tenants-to-owners and other partnerships, such as corporate sponsors, non-profit organizations, or service providers (transit or other public-services).

It is through these organizations that marketing, outreach and logistics can occur in a fairly efficient manner given the mission of these groups in seeking opportunities for economic development and providing resources to businesses and public entities. Partnerships with technical media groups could create fun and innovative ways to engage the public with social media awareness and mobile connectivity. They can also help coordinate important support for fire, rescue, safety and public works to make sure that adequate needs are provided for water, plumbing or sewage for pop-up establishments and events.

Other U.S. municipalities in cities with successful pop-up development have basic programs in place for entrepreneurs, property and business owners, as well as artists and educators. County planners in Dallas established a redevelopment program with specific guidelines for pop-up retail\(^5\). The program offers information and guidelines for participating in retail space development, special events and it encourages property owners to participate. Case studies in Appendix B discuss other U.S. cities with successful pop-up development.

Additional considerations must be given to County policies, regulation and guidance for what could be seen as economic barriers related to real-estate tax issues, permitting and zoning regulations, licenses and other legal issues. Ease of some of these restrictions and the expedition of application processes would help to support the temporary or pop-up environment which is successful on its ability to “quickly” be available for public consumption.

Plans should encourage the flexibility of land or property owners. Programs that offer grants to owners which support reduced rental fees, to allow start-up companies or the temporary establishment of a retailer could be offered as incentives. Other incentives to consider include tax increment financing or reimbursement programs. Such programs are currently developed and operated under local jurisdictions within the County and could be created for the Tysons area relatively quickly to allow the establishment of retail and services to Metro passengers and the local community with these amenities in time of the Silver Line opening at the end of the year.

\(^5\) City of Dallas Economic Development, “DallasDowntown360Plan”
It is important that stakeholders fully understand and embrace the notion that pop-up retail and events present an *immediate* opportunity for the development of revenue sources for the County, business and property owners all of which could be seen and felt by the public as well. When private citizens realize feel these values, they too will welcome and enjoy pop-up development in their communities.
Graphical Depiction of Recommendations
The figures below offer examples for which some of the pop-up ideas could be developed along the new Silver Line Metro stations.

![Figure 19: Proposed site layout for Greensboro Station recommendations](image)

![Figure 20: Proposed site layout for Tysons Station recommendations](image)
Figure 21: Potential Site Layout for Proposed Ideas at McLean Station.

Figure 22: Potential Site Layout for Proposed Ideas at Spring Hill Station.
Appendix A – Spring 2013 PUBP 722 Practicum Class Roster

Paolo Belita holds a degree in Urban & Regional Planning and is currently a traffic engineer for the Prince William County Department of Transportation. His portfolio includes traffic management program implementing traffic calming in secondary roads. In addition, he conducts traffic studies and analyzes traffic data to support safety projects in Prince William County.

Steven Bert received his undergraduate education at the University of Illinois, where he obtained his B.A. in economics while taking part in the university’s Environmental Fellows Program. While on campus he helped establish the University’s Sustainability Fee, which generates over $420,000 each year to finance sustainable projects. After graduation, Steve worked as an environmental educator, a campaign organizer, editor-in-chief at the College of DuPage, and served two years with AmeriCorps. He is earning his master’s degree in transportation policy, operations and logistics at George Mason University.

Joanna Biernacka-Lievestro is a fourth year Ph.D. student in the School of Public Policy at GMU. Her doctoral dissertation is focused on the associations between walkability and economic vitality of neighborhoods in the Washington D.C. Metropolitan Area and of cities in the United States. Joanna is also a Graduate Research Assistant at the GMU’s Center for Regional Analysis where she has primarily researched the economic condition of the Washington D.C. Metro Area in relation to transportation policy and the job market.

Krystian Boreyko is a Training and Technical Assistance Specialist with Easter Seals Project ACTION, a national technical assistance provider to transit agencies on accessibility issues. He works on increasing access to transportation services for people with disabilities through supporting community coalition initiatives, conducting webinars on pertinent topics, and providing technical assistance on transportation regulations in the Americans with Disabilities Act.

Ranee Carr is currently a program analyst with the Office of Aviation Safety for the Federal Aviation Administration, providing communication and outreach on FAA safety programs and international activities. Her aviation career includes experience in airport operations and passenger service, marketing communications, public relations, government affairs and policy issues for airlines, manufacturers and other air-service providers.

Julie Evans is a Junior Transportation Engineer at SAIC, and has been supporting the Federal Highway Administration’s Office of Operations, Research & Development for more than 3 years. Her work focuses on Exploratory Advanced Research of Vehicle-to-Infrastructure (V2I) Communication and the development of roadside and vehicle-based infrastructure to support Connected Vehicles Program. Ms. Evans will graduate this Spring and plans to continue working on applied transportation operations research.
Christopher Gomes supports the Federal Aviation Administration at Booz | Allen | Hamilton. Chris has over 5 years of experience with aviation safety and operations. He is an active recreational pilot and, through his work as a consultant to the FAA, he is working to facilitate the implementation of the Next Generation Air Transportation System (NextGen).

Scott Hagen is currently a Creative Communications consultant for the Federal Aviation Administration’s Office of Communication, supporting the communication and messaging goals of the NextGen air traffic initiative. He graduated from Hillsdale College (Michigan) in 2003 with a degree in history and has built his career in writing, journalism, program management.

Joshua Kolleda holds an undergraduate degree in Geographic Science from James Madison University. After graduating in 2007, he was commissioned as a Transportation Officer in the U.S. Army and spent four years managing transportation and logistics operations. Josh finished his commitment to the Army in 2011 and joined Booz|Allen|Hamilton. He currently supports the U.S. Air Force with process improvement and change management projects related to transportation and logistics.

Bud McDonald holds a degree in Business Administration and is the Federal Programs Financial Analyst at the American Association of State Highway and Transportation Officials (AASHTO). He joined AASHTO after graduating from college in 2009, and interned there the previous two summers. He works on national transportation finance issues and assists with AASHTO’s budget preparation.

Keith Platte is a licensed professional engineer currently with the Association of State Highway and Transportation Officials (AASHTO). He received a Bachelor of Science in Civil Engineering from Arizona State University in 2001 and has since worked for both private and public sectors. Keith is in his final year at George Mason University in pursuit of a Masters in Transportation Policy, Operations and Logistics. He was selected to participate in the German Chancellor Fellowship to research the implementation cycle for innovation and new technologies and will soon be working in Cologne.

Corbin Skerrit has an undergraduate degree in Civil & Environmental Engineering and in addition to entering the TPOL program at GMU he’s also been involved doing research at Turner-Fairbank Highway Research Center using microscopic traffic simulations. In addition, he’s spent time at the Federal Highway Administration’s Program Management Improvement Team.

Aaron Zimmerman is as a Senior Transportation Planner for the Loudoun County Department of Transportation and Capital Infrastructure. He holds a Bachelor’s degree in Urban Planning from the State University of New York at Albany. He has worked as a transportation consultant in Southern California, New York State, and Northern Virginia. In 2008, he earned Professional Transportation Planner (PTP) certification and he co-founded the organization Young Professionals in Transportation (YPT). He is in his final semester of the GMU TPOL Master’s Program and in January 2013 was recognized by USDOT’s University Transportation Center (UTC) program, Outstanding Student of the Year.
Appendix B – Pop-Up around the World, Case Studies

Temporary shopping mall, Christchurch, New Zealand

A prominent example of successful usage of shipping containers as temporary retail space is the pop-up shopping mall in Christchurch, New Zealand. After a series of earthquakes in 2010 and 2011, a temporary shopping mall was constructed out of dozens of shipping containers to attract people back to the damaged city center while it was being rebuilt. The innovative design of the mall and the mix of retailers, a food court and markets on the weekends, drew attention of the residents and tourists, and contributed to the city center’s revitalization.

The pop-up shopping mall was a part of the Re:START initiative set to stimulate regional economic recovery and tourism. The project initiators claim that the success of the mall is partially due to the unique characteristics of the shipping containers. This form of temporary infrastructure was chosen because shipping containers are strong, durable, easy to transport, and relatively cheap. Because they could be easily set up, the mall was assembled within months. The flexibility of design and the ease of dismantling of the shipping container shopping mall simplified the planning process - the mall could stay for years, expand in size, shrink, or be quickly taken down once the landowners decided on a permanent use of the space.

Initially, the mall consisted of 27 retailers with six-moth leases, and it was expected that people would visit the site mostly on weekends. Within a few months, the uniqueness of the project attracted shoppers all week through, and the number of retailers grew to forty. The so-called “city-within-a-city” has become a trendy and lively area offering merchandise, services, live music performances and alluring dining spots.

The success of the shipping container shopping mall in Christchurch spilled over the temporary recovery of the city center to the international promotion of the city. The international acknowledgement is reflected in the referral in the Lonely Planet travel guide book, and in the National Geographic Traveler magazine, as well as many travel and architecture websites.
**Temporiums - Washington, D.C.**

The District of Columbia Office of Planning, Temporary Urbanism Initiative aims to make use of unused spaces in the city through temporary infrastructure and events. The initiative supports the objectives of promoting innovative entrepreneurs, revitalizing commercial centers, exhibiting retail potential, offering residents inventive services and events, and stimulating neighborhood development. The Temporary Urbanism Initiative sponsors temporary infrastructure and events within the district such as “temporiums”, projects that convert empty stores or spaces into a pop-up commercial space for local entrepreneurs, and arts events. The temporary stores and events seek to attract people to neglected retail corridors or neighborhoods to exhibit land use potential and trigger area revitalization.

The initiative sponsored a temporium at the vacant R.L. Christian Library Kiosk at 1300 H St NE from July through August of 2010 and selected local artists to transform the site into a clothing store and event space. The temporium featured live entertainment and 20 DC-based business owners and artists to create an interest in the neighborhood. In four weekends, the temporium attracted over 1,600 visitors from the DC metro area and generated over $11,000 in sales from almost 200 paying customers. For more information, read the entire report released by the Temporary Urbanism Initiative. The DC Office of Planning continues to request applications for funding to create temporiums within other areas in DC.

The DC Office of Planning also supports arts events within the city as centers of economic development. The idea is to transform underutilized areas within developing neighborhoods into creative hubs for three to six month periods. The Office of Planning targeted four neighborhoods within DC for these events: Brookland, Anacostia, Deanwood, and 14th Street Corridor from Spring Street to Longfellow Street, NW. Lumen8Anacostia, an art and music festival, was conducted on April 14, 2012 continuing through June and another planned for Summer 2013. Read more about the Anacostia art events. Another temporary art initiative is the SW ArtsFest being held for the third consecutive year in southwest DC on September 28, 2013. The goal of SW ArtsFest is to publicize the southwest area of DC as a welcoming and culturally vibrant area by hosting arts-related events throughout the quarter. Learn more about the SW ArtsFest.

There are many other temporary infrastructure and events in DC outside of the Office of Planning, Temporary Urbanism Initiative. One other example is the Fairgrounds across from the Nationals baseball stadium and Navy Yard Metro station in southwest DC. The Fairgrounds is a shipping container enclosure used for live music events, art fairs, “Truckeroo” food truck festivals, ESPN broadcasting, and family carnivals. Entrepreneurs can also rent shipping containers to use as permanent retail space. Find out more about the Fairgrounds.

DC neighborhoods and residents have attracted attention to areas and corridors without the effort and money required to sponsor large scale events or temporary infrastructure. Artists painted the abandoned Friendship Baptist Church in southwest DC providing a burst of color in the southwest area of DC as a welcoming and culturally vibrant area by hosting arts-related events throughout the quarter.

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51 D.C Office of Planning, “Temporary Urbanism Initiative.”
the community and making use of the vacant building. The goal is to make the area more appealing to artists and bring in new residents to help revitalize the neighborhood\textsuperscript{52}.

**Project Pop-up - Pittsburgh, PA**
The mayor of Pittsburgh initiated a pop-up infrastructure initiative called, “Project Pop Up: Downtown”, together with the Urban Redevelopment Authority, Department of City Planning, and Pittsburgh Downtown Partnership. The purpose of Project Pop Up is to promote and revitalize the downtown business district of Pittsburgh by using artists and entrepreneurs to energize vacant spaces and attract office and residential tenants. The project periodically invites local artists, businesses, and non-profit organizations to submit applications to temporarily take over and galvanize empty storefront property. These temporary take overs are triggered with “Night Markets” to publicize the beginning of a new pop-up effort in downtown Pittsburgh.

Since the summer of 2012, there have been three separate Night Market events, with a fourth planned next month, to activate temporary takeovers of various vacant properties. The first pop-up venture was the “Urban Forest” created through coordination among a downtown comic shop, landscaping company, and the Pittsburgh Downtown Partnership. The landscaping company loaned unique trees and scrubs to create an urban oasis in front of the comic shop providing people the chance to relax within the urban forest and imagine the possibility of a greener city. The second event consisted of over 25 entrepreneurs which attracted 3,000 visitors. In addition to the vendors and live music, an “I want ______ to pop up downtown” sidewalk chalk wall encouraged patrons to suggest creative ideas for pop-up events and infrastructure. The third event incorporated outdoor curling in the Pittsburgh winter weather along with food, clothing, and crafts vendors. Yelp Pittsburgh helped to promote the event\textsuperscript{53}. Learn more about the efforts of the Pittsburgh Downtown Partnership at \url{www.projectpopuppittsburgh.com}. Three of the pop-up stores created through Project Pop Up were so successful that they plan to extend leases to become permanent fixtures in the downtown area\textsuperscript{54}. Pittsburgh Downtown Partnership provides free WiFi downtown for up to two hours a day, public art events, and a clean & safe program to beautify the downtown area and supplement the police force\textsuperscript{55}.

Another initiative to revitalize downtown Pittsburgh is PopUp! Pittsburgh created by the Leadership Development Initiative program of Leadership Pittsburgh, Inc. Leadership Pittsburgh, Inc. is a nonprofit organization committed to improving the leadership skills of potential civic leaders within the Pittsburgh area. These young leaders sponsor pop up events throughout the city, gaining real world experiences and building leadership skills in coordinating the efforts of multiple organizations to carry out community festivals, film showings, mass vow renewals and race events\textsuperscript{56}.

\textsuperscript{52} Ted Pouls, “Abandoned Church Transforms into a Color Explosion.”
\textsuperscript{53} “Project Pop-Up.”
\textsuperscript{54} Mark Belko, “3 Downtown Pop-Up Stores Plan to Stay.”
\textsuperscript{55} “Pittsburgh Downtown Partnership | About | PDP Initiatives.”
\textsuperscript{56} “PopUp! Pittsburgh 2013.”
Appendix C – Capital Bikeshare Logistics and Fees

There are currently no Capital Bikeshare stations in Fairfax County. However, the arrival of Metrorail coupled with the level of development and intermodal connections projected to be constructed in Tysons provides a unique opportunity to expand this program outside of the current Washington, DC, Arlington, and Alexandria markets. The first step is to contact Capital Bikeshare and express interest in installing stations and bicycles. Their operator, Alta Bicycle Share, will conduct a sophisticated GIS-based demand and location study that will take into account a number of factors such as transit usage, demographics, existing/planned bicycle facilities, tourist locations, lighting, and available space for kiosk installation and bicycle maintenance.

Once the locations of bicycle stations have been determined, Alta will work with property owners and government agencies to obtain all necessary permits and property access for stations. Alta will then coordinate the station design, installation, and launch. This includes preparation of the station sites, purchase and delivery of equipment, assembly of station and bicycles, station start-up, and branding. After the bicycle sharing station has opened, Alta will provide on-going maintenance and management of the stations and bicycles, including marketing, membership services, software and web design maintenance, revenue collection & distribution, insurance coverage, and contract management57.

According to figures provided by Alta, it is estimated that the cost to install a bikeshare station is $4,500 with approximately $900 per bicycle in launch costs. For on-going maintenance and operations, Alta estimates the cost at approximately $120 per bicycle dock per month. Therefore, a 15 dock station would cost approximately $1,800 per month to maintain. Alta cautions that these are only estimates that are subject to change and that there are a number of factors that could cause these figures to increase.

Alta recommends that the site location for a bikeshare station should be a hard surface (asphalt or concrete) with at least four hours of daily solar exposure. This site should provide for easy access by a sprinter van to load/unload bicycles and for rebalancing and maintenance activities. The station should also provide at least five-feet of clearance for pedestrians. The minimum size of a station is 8 bicycle docks, however, 15 dock stations are more typical. A 15 dock station would require an area of 42’ x 12’. Stations can be increased in four dock increments, which would require an additional 10 feet (2 ½ feet per bicycle dock) of station length. For example, a 15 dock station expanded to 19 docks would then require an area of 52’ x 12’.

The following tables provide Capital Bikeshare Membership and Usage Fees as of March 2013, obtained from the Capital Bikeshare website.

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57 “Alta Bicycle Share : Home.”
### Table 2. Capital Bikeshare Membership Fees

<table>
<thead>
<tr>
<th>Membership Plan</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-hour pass</td>
<td>$7</td>
</tr>
<tr>
<td>3-day pass</td>
<td>$15</td>
</tr>
<tr>
<td>30-day membership</td>
<td>$25</td>
</tr>
<tr>
<td>Annual membership</td>
<td>$75</td>
</tr>
<tr>
<td>Annual membership (monthly installments)</td>
<td>$84</td>
</tr>
</tbody>
</table>

### Table 3. Capital Bikeshare Usage Fees

<table>
<thead>
<tr>
<th>Ride Time</th>
<th>Usage Fee (one and three day passes)</th>
<th>Usage Fee (one month and one year plans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to 0.5 hr</td>
<td>FREE</td>
<td>FREE</td>
</tr>
<tr>
<td>0.5 to 1.0 hr</td>
<td>$2.00</td>
<td>$1.50</td>
</tr>
<tr>
<td>1.0 hr to 1.5 hrs</td>
<td>$6.00</td>
<td>$4.50</td>
</tr>
<tr>
<td>1.5 hrs to 2.0 hrs</td>
<td>$14.00</td>
<td>$10.50</td>
</tr>
<tr>
<td>2.0 hrs to 2.5 hrs</td>
<td>$22.00</td>
<td>$16.50</td>
</tr>
<tr>
<td>2.5 hrs to 3.0 hrs</td>
<td>$30.00</td>
<td>$22.50</td>
</tr>
<tr>
<td>3.0 hrs to 3.5 hrs</td>
<td>$38.00</td>
<td>$28.50</td>
</tr>
<tr>
<td>3.5 hrs to 4.0 hrs</td>
<td>$46.00</td>
<td>$34.50</td>
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<tr>
<td>4.0 hrs to 4.5 hrs</td>
<td>$54.00</td>
<td>$40.50</td>
</tr>
<tr>
<td>4.5 hrs to 5.0 hrs</td>
<td>$62.00</td>
<td>$46.50</td>
</tr>
<tr>
<td>5.0 hrs to 5.5 hrs</td>
<td>$70.00</td>
<td>$52.50</td>
</tr>
<tr>
<td>5.5 hrs to 6.0 hrs</td>
<td>$78.00</td>
<td>$58.50</td>
</tr>
<tr>
<td>6.0 hrs to 6.5 hrs</td>
<td>$86.00</td>
<td>$64.50</td>
</tr>
<tr>
<td>6.5 hrs to 24 hrs</td>
<td>$94.00</td>
<td>$70.50</td>
</tr>
</tbody>
</table>
**Appendix D – Organizations for Art Competition**

Below is a list of organizations that were contacted and can help to host an art competition to aid in the pop-infrastructure and Metro stations’ aesthetics.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Contact Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DCist</strong></td>
<td>Julia Tuohy</td>
<td>Online newspaper that’s interested in hosting an art competition and could advertise at a discount on their web pages for public entities. Media kit <a href="#">link</a>.</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:Julia@gothamist.com">Julia@gothamist.com</a> (646) 843-0401</td>
<td></td>
</tr>
<tr>
<td><strong>Colossal</strong></td>
<td>Vekend Gueyikian <a href="mailto:veken@goingoffscript.com">veken@goingoffscript.com</a>,  Christopher Jobson <a href="mailto:chris@thisiscolossal.com">chris@thisiscolossal.com</a></td>
<td>An art blog that’s interested in the project and could offer advertisement space. They could also implement geo-targeting for an art competition.</td>
</tr>
<tr>
<td><strong>Artisphere</strong></td>
<td>(703) 875-1100</td>
<td>Art-centric organization located in Rosslyn, Virginia.</td>
</tr>
<tr>
<td><strong>The Washington Post:</strong></td>
<td>Ron Ulrich <a href="mailto:ulrichr@washpost.com">ulrichr@washpost.com</a> (202) 334-5289</td>
<td>Local DC newspaper that releases Washington Express, a free and condensed daily publication every weekday.</td>
</tr>
<tr>
<td><strong>Washington Express</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E – Pop-up Children’s Science Museum Logistics

Logistically there would need to be a tent (or several) provided for housing the museum. As the event is proposed to last several weeks, a durable tent that would work in varying weather conditions is optimal. After doing a preliminary search of pricing and tent styles, a high-peak tent is suggested. Depending on the size and quality, high-peak tents can range from $3,000 - $40,000+ (20’x20’ – 60’x180’); although, there may be alternate resources the County could use to obtain a tent for this event or reduced prices from select vendors.

There are local organizations that are interested in a partnership to host this event; three such organizations from our preliminary search are listed below.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Contact Information</th>
<th>Previous Activities/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MadScience DC</td>
<td>Pablo Musalem (<a href="mailto:pablo@madscienceofdc.com">pablo@madscienceofdc.com</a>) (301) 593-4777</td>
<td>After-school and summer camp programs, and larger, individual events</td>
</tr>
<tr>
<td>The Living Classrooms Foundation</td>
<td>515 M Street, SE Suite 222 Washington, DC 20003</td>
<td>Science+You exhibit at Navy Yard</td>
</tr>
<tr>
<td>Children’s Science Center</td>
<td>Gary Crum <a href="mailto:garycrum@verizon.net">garycrum@verizon.net</a> (703) 648-3130</td>
<td>Herndon based non-profit organization that seems to be looking for an outlet to create a museum. Could be a candidate to host one or two weekends.</td>
</tr>
</tbody>
</table>

A preliminary interview with the president of MadScience DC, Pablo Musalem, indicated they are very flexible as far as contractual agreements citing a one-time event or series of events at a discounted price. They have the ability to display 45 minute to 1-hour presentations and a series of hands-on workshops for children. They are also open to co-hosting with other organizations but have the capabilities to host alone as well. Their minimum rate for a one-time event is around $400.
Appendix F – Image Gallery
Shipper Container Fairgrounds, at Nationals Stadium, Washington, D.C.

Source: http://www.fairgroundsdc.com

Shipping Container Community Spot, Creative Lounge

Source: http://www.inhabitat.com

Giant Lego Structure

Source: http://www.controlgroup.com/mta.html
References


Fairfax County - Tysons Corner Planning Commission. Report to Board of Supervisors on Tysons Corner, October 2012.


Steven W. Peck, Chris Callaghan, Monica E. Kuhn, and Brad Bass, PhD. Greenbacks from Green Roofs: Forging a New Industry in Canada, March 1999.


