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# ARC OF RECREATION 2.0 Connecting the McKnight Rail Trail From Mason Square to Union Station, Springfield MA

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UMass Amherst Design Center in Springfield

Department of Landscape Architecture & Regional Planning

In collaboration with the City of Springfield Office of Planning and Economic Development

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The Department of Landscape Architecture and Regional Planning, UMass Amherst, continues the successful collaboration with the Office of Planning and Economic Development of the City of Springfield in the fall of 2018. The studio is coordinated and sponsored through an agreement between the City of Springfield and the UMass Amherst Design Center.

This Senior Urban Design Studio produced four tangible visions for that envision the McKnight Rail Trail as a place to walk, bike, recreate, and congregate in ways that are unique to the neighborhood.

We are grateful to Mayor Dominic Sarno for his ongoing support of the UMass Amherst Design Center in Springfield.

We thank Principal Planner Scott Hanson from the Springfield Department of Planning and Economic Development for his untiring enthusiasm and great cooperation.

We thank Liz Stevens, Chair of the McKnight Rail Trail Committee and Walter Kroll, President of the McKnight Neighborhood Council for their constructive input during our meetings. We also thank the McKnight Neighborhood Council for listening to our ideas and participating at the design charrette. They are the experts in the neighborhood and shared their knowledge with us. We hope that our designs will spur even more enthusiasm in the neighborhood to make a project that has been envisioned for over twenty years real.

We thank Josh Burgel, Principal from Lemon Brooke Landscape Architects and Benjamin Peterson from The Boston Architectural College for their most valuable comments during our reviews at LARP. Their feedback strengthened our design ideas and made them more robust and tangible.

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We thank all the students of the Senior Urban Design Studio for their participation and creativity.

Finally we are most thankful to Ross Kerr and Will Taylor for compiling and creating this report. They were tireless and put substantial time and effort into this work.

Frank Slegers and Gretchen Rabinkin  
Studio Instructors

## SUMMARIZED RECOMMENDATIONS

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This Studio created design concepts that envision the McKnight Rail Trail as a place to walk, bike, recreate, and congregate in ways that are unique to the neighborhood. The McKnight neighborhood hosts a diverse demographic that would benefit to the likes of a rail trail implemented within the outer edge of the community. With health complications including obesity and diabetes, the trail can provide a free means of transportation to the metro center that encourages an active lifestyle and increased employment in the neighborhood. Children will be able to utilize a safe passage to school, such as the nearby Rebecca M. Johnson Middle School, as well as young adults working part time jobs in the neighborhood and surrounding areas.

The trail will connect from Union Station to Mason Square. Access along the trail route will enable more community members to enter the trail and utilize it. Therefore it creates a more equitable transportation network that can be shared by all residents.

The Studio created design interventions that make the street and public space experience enticing to visitors and engaging for the local residents, workers, and their families.

The designs reflect the feedback of local community members through community meetings and a design charrette. In conclusion, the envisioned trail will foster community engagement and interaction to steer the future development of the neighborhood.

- Improvement of major street crossings to enable safe use of the trail during all day and nighttime hours
- Protect existing wetlands on the trail through bypasses and boardwalks
- Raise awareness for the rich ecology on the trail through signage and education
- Create diverse playing opportunities for all ages and demographics
- Integration of on street bike lanes and the trail to create a bicycle loop around the neighborhood
- Create accessibility to public parks in the City through a network of safe streets with extensive tree plantings
- Creation of spaces on the trail where the community comes together and hold events and meetings
- Design for activities throughout the year including the winter season
- Embrace the industrial context through public art
- Envision a trail that allows for access to the Connecticut River Walk Bikeway
- Rezone the trail to Open Space to guide its future development as a functioning rail trail.

# INTRODUCTION

Downtown Springfield Massachusetts, and the surrounding communities, have undergone substantial economic, demographic, and cultural changes in the last 15 years. Amongst those changes includes the I-91 revitalization project, the construction of the MGM Casino and Resort complex in the Metro Center area, and multiple private developments in surrounding communities that contribute to a resurgent Springfield. Cultural icons such as Dr. Seuss have been brought back into the mainstream with the extension of the Quadrangle Museums, while old neighborhoods are seeing a revitalization of their historic homes through new zoning measures and community organization. The challenge with a revitalized Springfield is the question of transportation, and how does the future vision and planning include those that must use alternative methods of transportation. Additionally, how do we best tackle the future needs of citizens in a changing climate while addressing the very current public health challenges.

In 2017, Union Station in downtown Springfield was re-opened after nearly 45 years of being vacant after the site was declared a Brownfield in 1973. The site's revitalization included not only the historic Union Station building, but also the creation of a new multi-modal transit link center and the restoration of daily train service to the Springfield area. This, in combination with the recent upgrades to the Connecticut River Walk and Bikeway connecting Holyoke, Springfield, and the state line, creates an opportunity for the implementation of new transportation networks to connect the surrounding neighborhoods to Metro center and to the regional rail trail links. The City of Springfield has outlined what is known as a "Complete Streets" master plan for the city that calls for the creation of pedestrian and bicyclist protected zones along streets that enables safer alternate transit methods along with controlling on street parking and congestion around the City.

A major component of this studio's work focused on the McKnight Neighborhood, and the upcoming creation of a rail trail network that supporters hope will one day link the historic Mason Square with the new Union Station, Metro Center, and with the Connecticut River Walk and Bikeway. The neighborhood contains the largest array of Victorian homes that are listed on the National Register of Historic Places, and lays within a local historic district. The non-profit McKnight Neighborhood Council partnered with the City of Springfield and the Pioneer Valley Planning Commission to explore the benefits of converting the 18th century Connecticut Central Railroad corridor that runs alongside the neighborhood into a rail trail that would become one of a series of such trails linking the greater Springfield area. In 2014, a feasibility study was commissioned and released by the City of Springfield that outlined the opportunities and constraints of such a trail, along with the projected costs associated with the planned development.

In 2018, the Project was green lit by the City of Springfield, Mass DOT's 2021 Transportation Improvement Program, the PVPC, along with the approval of a grant from the city's Community Preservation Act program totaling \$500,000. Along with the grant and project proposals, a regional bike sharing program has been growing throughout much of the Pioneer Valley, and the city is creating a wayfinding "Park and Walk" program to encourage walking rather than automobile use. Much of the project is still in the design phase, but what the series of design explorations detailed later within this book hope to accomplish is to show the community members what a future rail trail could look like, along with the amenities that could be designed into such a project. Additionally, all of the work generated from the studio process will be shared with the developers and designers actively working on the project to contribute to the future trail network.



This Conceptual Master Plan, generated as a part of the 2014 feasibility study, shows the breadth of the McKnight Community trail project, and highlights a few of the challenging locations along the 1.5 Mile trail route. The main challenges are highlighted through the site analysis and exploration section of this book.

## STUDIO GOALS AND OBJECTIVES

### GOALS:

The central goal of this studio is to create strong design concepts that envision the McKnight Rail Trail as a place to walk, bike, recreate, and congregate in ways that are unique to the neighborhood. Central to this goal will be the connection of Union Station to Mason Square, and allowing for access along the trail route to enable more community members to enter the trail and utilize it. The Studio seeks to create design interventions that make the street and public space experience enticing to visitors and engaging for the local residents, workers, and their families.

On a more macro scale, the studio works to examine and create design visions that will link the McKnight neighborhood with the Greater Springfield area.

### OBJECTIVES:

Through clever and thoughtful design, along with coming to understand the neighborhood and its residents, the objectives of the studio include:

- The development of design interventions that reflect the feedback of local community members along with the realities of the landscape
- Engage the local community and seek their feedback through the use of community meetings and a design charrette
- Create an all encompassing series of group Master Plans that successfully link Union Station and Mason Square via St. James Street, Bay Street, Glen Road, Taylor Street, and Armory Street.
- Learn about and utilize existing land uses and activities in order to develop new use and movement patterns that foster community engagement and steer the future development of the neighborhood
- Improve the look and function of major street crossings and enable safe use of the crossings and the trail during all day and nighttime hours
- Create innovative solutions that allow for functional pedestrian and bicyclists circulation while preserving available open spaces
- Address rain water management, wetland preservation, and ecological enrichment within master plans and explain how such topics enrich the lives of residents
- Present and discuss the evolving design concepts with design experts and project stakeholders

## STUDIO PROCESS

### September:

- Conducted a walking tour of existing rail bed with Principal Planner Scott Hanson, Chair of the McKnight Rail Trail Committee Liz Stevens, and the President of the McKnight Neighborhood Council Walter Kroll.
- Photographed and analyzed existing conditions both along rail bed and at existing major street crossings
- Hosted a Design Charrette with residents and the McKnight Rail Trail Committee to gain valuable insights to help guide the group designs



### October:

- Conducted further site analysis and assessment
- Compiled a gathering of applicable case studies and analyzed their specific design elements
- Developed first drafts of design interventions
- Presented at the UMASS LARP Midterm presentations and gained feedback on possible refinements



### November:

- Conducted further visits to the various sites along trail pathway
- Gave a design presentation to the McKnight Neighborhood Council and gained further feedback from residents
- Refined design interventions to best reflect vast array of feedback and concerns of the residents



### December:

- Final UMASS LARP Department presentations



# SEPTEMBER COMMUNITY CHARRETTE



On September 25, The Studio worked with the McKnight Rail Trail Committee to organize a community Charrette at the Rebecca M. Johnson School located near the planned Mason Square entrance to the rail trail. During this gathering, the community expressed a series of design ideas, some of their concerns regarding the new rail trail, and some of the aspects they were looking most forward to. Community members expressed:

## Excitement in:

- The potential for increased Public Health
- Access to more outdoor activities both on and off the rail trail
- The new connections with Springfield and the surrounding region that the trail would allow for
- The creation of designed spaces where the community could come together and hold events and meetings
- A new era for Springfield and how a more equitable transportation network would allow for the future to be shared by all residents

## Concerns about:

- Safety, mainly the implementation of lighting along the trail, how emergency vehicles would be able to access the trail, and the potential for the trail to bring crime into the neighborhood
- Whether the rail trail would allow access to the Connecticut River Walk Bikeway and Longmeadow
- How the trail would tie into the existing network of public transportation routes around Springfield
- Being able to control the invasive plant species that have taken over the abandoned rail bed
- The community itself, and how would the locals be informed about the benefits of the trail and be encouraged to utilize it
- How does "The Dingle" fit into the proposed design and how can it be best preserved

## Ideas Regarding:

- How there can be designed elements along the trail that allow people to know where they are
- The integration of on street bike lanes and the trail to create a bicycle loop around the neighborhood
- Possible events that could be held throughout the year at various points along the trail, including winter events
- The spacing between pull outs along the trail for seating areas, group gatherings, and relaxing during a mid day walk
- How designers should use the rich history of Springfield and pull in elements such as Dr. Seuss to tie in with Metro Center
- The need for the natural elements along the trail, such as plant species and the wetlands section, to be highlighted for the sake of public education

History • Natural Systems • Open Space • Demographics • Urban

Grain • Zoning • Land Use • Destination • Access • Transportation

# HISTORY AND ANALYSIS

## History • Natural Systems • Open Space • Demographics • Urban

The McKnight Neighborhood was constructed on land that was historically farm land, located uphill from the mills that dotted the landscape along the Connecticut River. Much of the housing that was interspersed with the factories and mills were apartment blocks and store fronts, with the downtown section being home to a multitude of people and commercial activity. Around 1870, many of the more affluent residents of Springfield began to call for the construction of a more residential, and wealthier, community to be located uphill and away from the smoke and noise of the downtown area. A group of business people led by the brothers William and John McKnight planned the district as a residential community, and is known worldwide to urban planners as one of the first planned residential neighborhoods in the United States. This neighborhood consisted of 900 modernist Victorian homes, with craftsman coming from across the Northeast to lay their artisan hands upon these beautiful homes that would become the largest assortment of such homes in New England. The majority of the homes were constructed between 1870 and 1920, and in modern times, the majority of the neighborhood lays within a local Historic District that aims to restore some of the homes to their former state. This community was amongst the first suburb of Springfield, with others like it springing up in the early 1900's. One of the unique aspects of the neighborhood was the system of trolleys that linked it with the downtown core down State street, along with Bay Street and Saint James Ave. These historic street cars were taken out of commission during the 1930's as the automobile began to take center stage, but today we can see the wide street corridors that were left behind from those times. Though the Neighborhood was designed primarily for wealthier inhabitants, there were a multitude of small public squares that were designed to accommodate gatherings of people from across the spectrum.



Historic Victorian home along State Street. 1957



View north along Main Street in downtown Springfield. 1926

## Grain • Zoning • Land Use • Destination • Access • Transportation



Winchester Square, later known as Mason Square. 1894

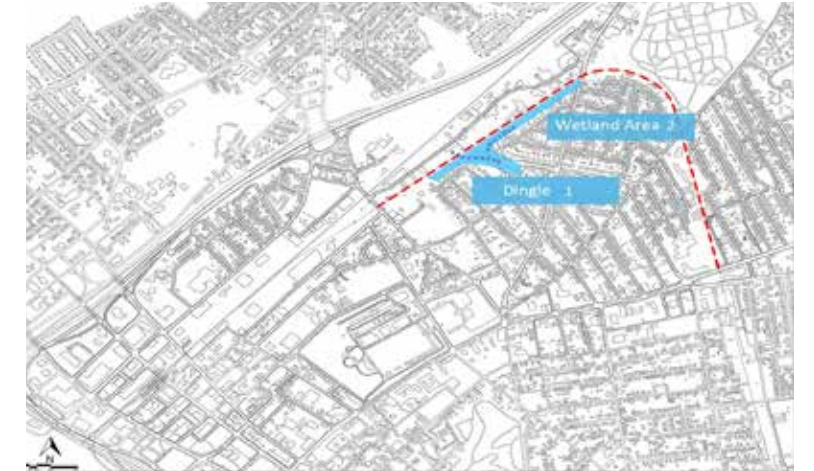


Bullard Repeating Arms Company factory building. It later housed the Indian Motorcycle Factory. 1892

In 1868, the Northeast Central Rail line finished laying track along a brand new 47 mile route that would eventually grow into the central new England rail artery, today linking NYC and New Haven, Connecticut with Burlington, VT and the Connecticut River Valley cities such as Springfield. The Line that ran along what would become the McKnight Neighborhood was designed as an intermediate connector linking the factories to the north and east of the city center with the main artery connector for goods and passenger transport north and south. The two main beneficiaries of this connector were the Westover Base located roughly 8 miles to the North East of Metro Center, along with the Indian Motorcycle Factory and Mason Square. Originally built in 1883 for the Bullard Repeating Arms Company, the building complex that would turn into the Indian Motorcycle Factory in 1911 was a central element of the burgeoning Mason Square area of Springfield. With its small shops and a multitude of apartment style homes with first floor shoppers, the Mason Square district was very popular amongst factory workers and factory owners alike. With street cars running up and down State Street, and an abundance of commercial interests setting up shop, there was a boom in population between 1880 and 1930. Beginning in the 1950's, the area began its slow decline, with the factories closing and many of the long-time residents moving to other wares of the state or the more suburban areas of Springfield. Sadly, even the Victorian homes began to see their facades come into disrepair and the streets began to fall apart. Around roughly 1952, the last of the street cars were removed from operation in downtown Springfield, with the automobile taking its place. Though the city has experienced a downturn in luck, there have been developments in the last 15 years that have spurred hope for residents, and the proposed McKnight Rail Trail could be apart of the further rejuvenation the Neighborhood.



Located directly west of Springfield is the Connecticut River, the main waterway that runs North-South along the western edge of the city, a body that is used today primarily for recreational boating with the occasional barge that is sent upstream to Holyoke. The McKnight Neighborhood, highlighted in red on the aerial map, is located higher in elevation than the river, and does not have any major waterways that could effect the homes or the residents with seasonal flooding or bank erosion. Located around the Greater Springfield area are a multitude of wetland areas, the majority of which drain into the Mill River and lead into the Connecticut. There is, however, a small, protected wetland that is located within the planned pathway of the rail trail, which drains into the Glen Brook. The image to the lower right hand corner of the page was taken from inside of an area known as "The Dingle," and is an example of the Glenn Brook during the early fall season. Given the location of the Brook amongst the urban fabric, it was observed that there were a number of contaminants and oil slicks originating from the street level, indicating that designers will have to implement best practices strategies in order to offset the effects of such materials in the water supply. The map in the upper right hand corner indicates the location of the wetland along the trail route, along with the dotted line that shows the locations of the two brooks running from south to northwest. That location will require permitting and proper caution in design and build given that its location is between a residential neighborhood on the south and a series of heavy industrial buildings to the north.



Looking down upon the Glenn Brook within "The Dingle," you can see the very underdeveloped nature of the area, and how it is considered a prized location

## History • Natural Systems • Open Space • Demographics • Urban

“The Dingle,” a critical element in the larger design of the McKnight Neighborhood, is one of the most unique places within Springfield simply due to the fact that its a small hamlet of nature right in the middle of the urban environment. Its also unique because of its topography, in that it represents the lowest and the highest elevations within the McKnight Neighborhood, and has cross slopes as steep as 12 percent and above on the southern section of area. Relative to the other portions of the Rail Trail that are challenging due to slope, “The Dingle” area is particularly sensitive to any grading proposals due not only to the existence of the Glenn Brook running down its axis, but also because of the social and cultural value of the place to local residents. Within the dingle exists a loop trail system that does cross over the brook, and allows visitors to descend into this central woodland that feels a world away from the cars and noise just over the crest of the hill.

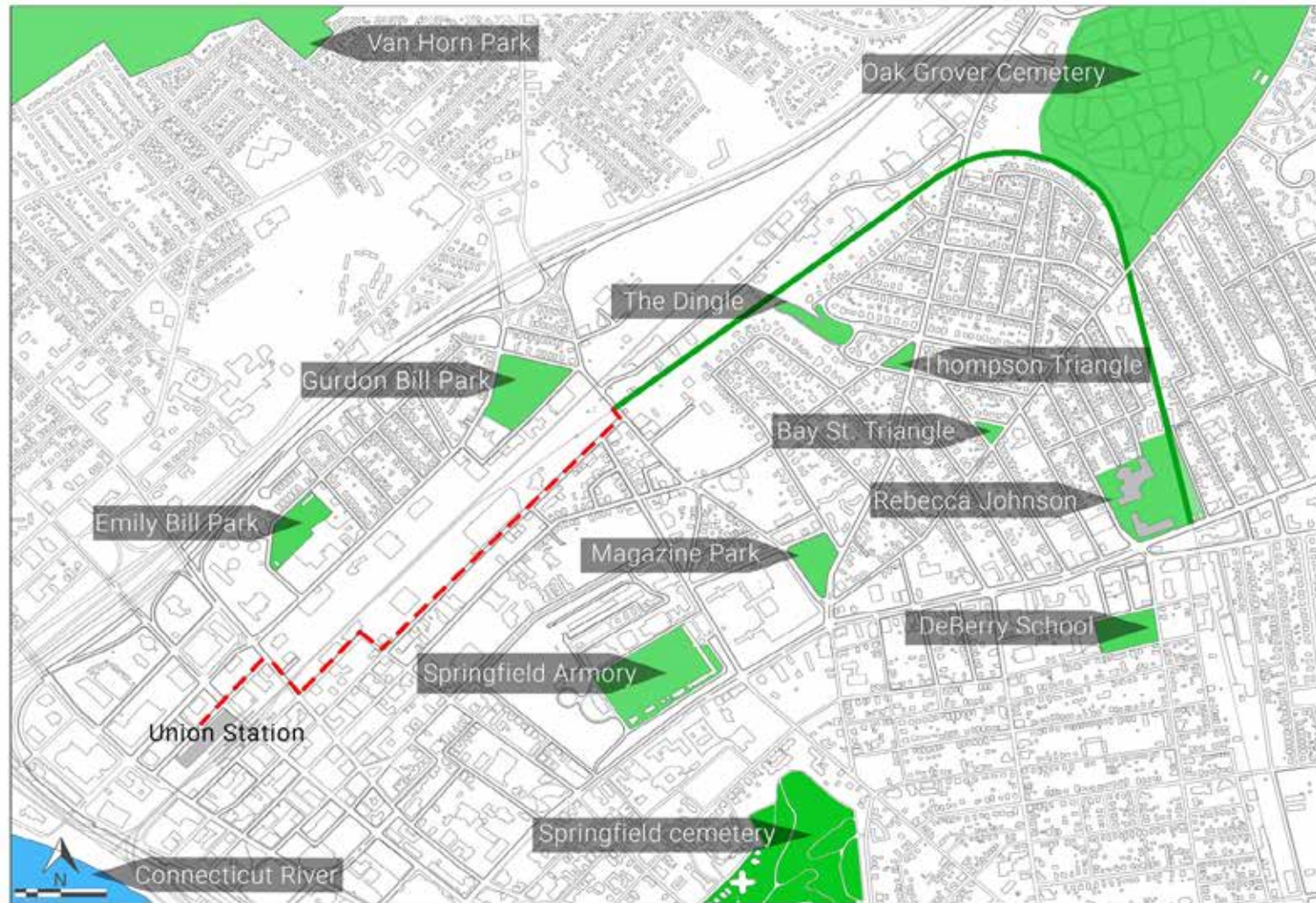


## Grain • Zoning • Land Use • Destination • Access • Transportation



The Saint James Street crossing is located at a particularly challenging position along the Trail, in that there is a roughly 20 foot difference between the finished floor elevation of the road surface and the ground level down within the trail pit. Along either side of the pit exists a flurry of overgrown invasive vegetation that actually serves the purpose of controlling the rain water runoff that would otherwise pool within the corridor. Along the upper edges of the alleyway are commercial and residential properties that all have structures built on them, making any extreme grading changes difficult in this location. Later in the book, several design possibilities were developed for the Saint James Street crossing due to the challenging nature of the grading, along with the need to control the rain water runoff while allowing for a connection to the street surface. This location would serve as a major hub for pedestrian and bicyclist access to the trail.





This View looking North along the Connecticut River shows a small portion of the Connecticut River Walk Bikeway trail.



Thompson Triangle, part of the original McKnight development, is a prime location for gatherings and summer days under the trees.

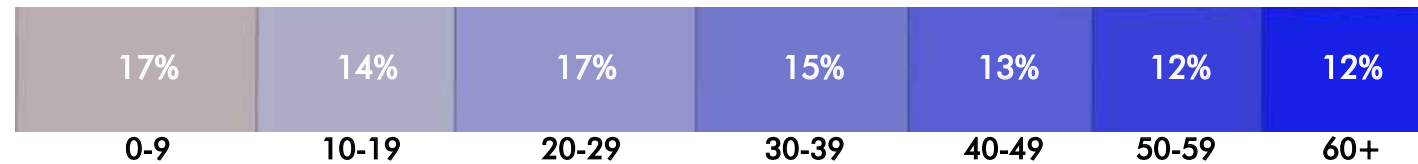
Both within the proposed trail and outside, there exists a plethora of open spaces and parks that residents love to visit for the purposes of outdoor spaces and recreation. Located along the trail route at Mason Square is the R.M. Johnson school and the very children-friendly assortment of swings and baseball fields, while the Oak Grove Cemetery is a popular place for mid afternoon strolls along the concrete walkways. "The Dingle" connects via a dirt pathway as well as an asphalt loop that runs down into the urban forest, and Thompson Triangle is a well-cared pocket park for gatherings and reading. Beyond those locations, there is Gurdon Bill Park, along with the larger Van Horn Park. This is a popular local destination with its assortment of hiking trails and various sporting fields located around the park. Currently, all of these parks and open spaces exist within their own islands; the only method of transport to them is via vehicle, as the roads do not have dedicated bike lanes and the pedestrian friendly sidewalks are often missing or in disrepair. Additionally, a number of these open spaces and parks lack any semblance of organization and programming, and lack the recreation recourses such as basketball hoops or even walking trails that locals are looking for in order to spend more time outside. This is the reason why parks such as Van Horn Park or Forest Park are more popular, due to their programming, but they are also more difficult to get to due to transportation limitations.

Going forward, the proposed rail trail opens up the opportunity for local community members to access those further away recreation destinations by opening up a new transportation method, as well as potentially integrating existing spaces along the trail route. As stated, the existing network of open spaces also tend to lack a program, and so the creation of the rail trail could also spur a series of upgrades for local parks and spaces to allow for more diverse uses. Overall, adding a more diverse and interconnected network of open spaces would go a long way in achieving public health and safety goals.

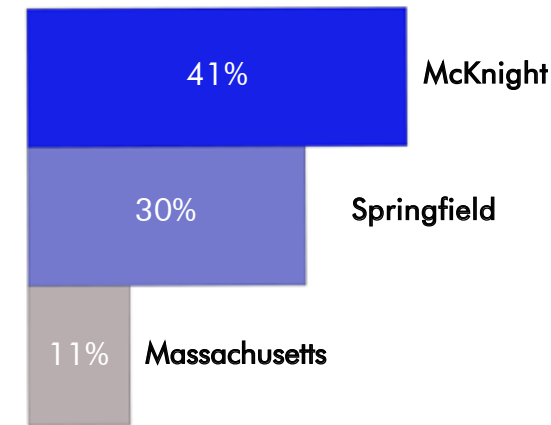
Racial Diversity



Age Diversity

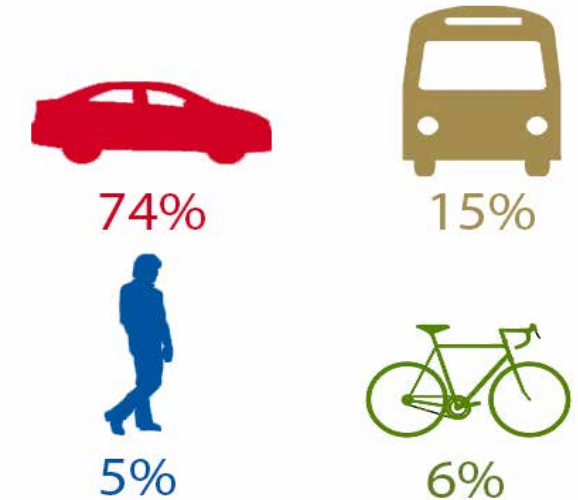
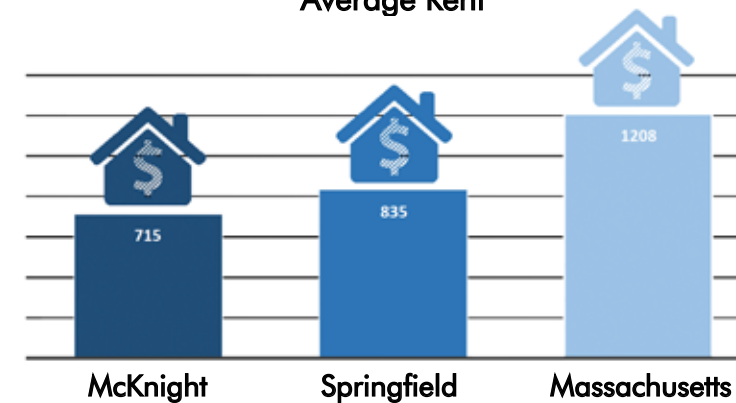


Percent Population In Poverty



The McKnight neighborhood hosts a diverse demographic that would benefit to the likes of a rail trail implemented within the outer edge of the community. With health complications including obesity and diabetes, the trail can provide a free means of transportation to metro center that encourages an active lifestyle and increased employment in the neighborhood. A new mode of transportation in the area promotes individuals to seek out possible jobs that are easily accessed via bike, with the overall hope to decrease the high poverty rate that lingers in the community. The vast age distribution is also a key factor in the function of the rail trail, as it will cater to a broader spectrum of users. Children will be able to utilize a safe passage to school, such as the nearby Rebecca M. Johnson Middle School, as well as young adults working part time jobs in the neighborhood and surrounding areas.

Average Rent





The urban grain of the McKnight neighborhood is defined by its cluster of detached wood frame homes that fall within the inner arc of the proposed rail trail. Many of these detached residences are 19th Century Victorian houses that pose elegant and unique character to this area of Springfield. Amongst these historic houses are more modern detached homes and high rise apartments. On the outskirts of the residential construct of the neighborhood lies the defunct rail bed, which abuts industrial buildings and gas tanks, the Oak Grove Cemetery and the Bay Neighborhood. Located South and South-West of McKnight, the fabric of the community takes on a more commercial and institutionally dominant figure, with one story business and retail as well as museums and schools.



The Atlas Convenience Store is one of few commercial structures in the near vicinity of the St. James Bridge.



Bergen Circle Apartments differs from many of the other structures in the neighborhood with the building's high rise and rectilinear structure.



Victorian homes are a trademark of the McKnight Neighborhood, offering a unique character to the area and overall diversity of Springfield.





Zoning is a land use regulation system that is implemented in municipalities for future development. The interior of the arc of our proposed rail trail is primarily zoned as residential; as seen in the green, yellow and orange areas on the map; which correlates to the McKnight neighborhood. The exterior of said arc is zoned primary industrial and business; as shown in purple, red and brown. Another important feature to note in the zoning is the preservation of McKnight with National and Local Historic Districts. These districts apply particular building codes that respond to the historic architecture in order to preserve the neighborhood's character. Lastly, the rail-bed where the trail is proposed is owned by the city at surface level, however subterranean rights belong to Buckeye Pipeline Company. It is recommended that the trail location is rezoned to Open Space in order to appropriately guide its future development as a functioning rail trail.

**Industrial**

“Gasoline Alley” hosts the majority of industrial land use currently surrounding the McKnight Neighborhood. Located North-West of the proposed trail, a series of gas tanks accompanied with Buckeye Gas Company owned buildings line the defunct rail bed. This stretch of industrial structures and business practices are a barrier between the proposed trail and Albany street, which runs parallel with the former. Gas tanks and industrial business are a strong opposition to the vibrant residential architecture within the McKnight Neighborhood.



Gas tanks along the old rail bed.

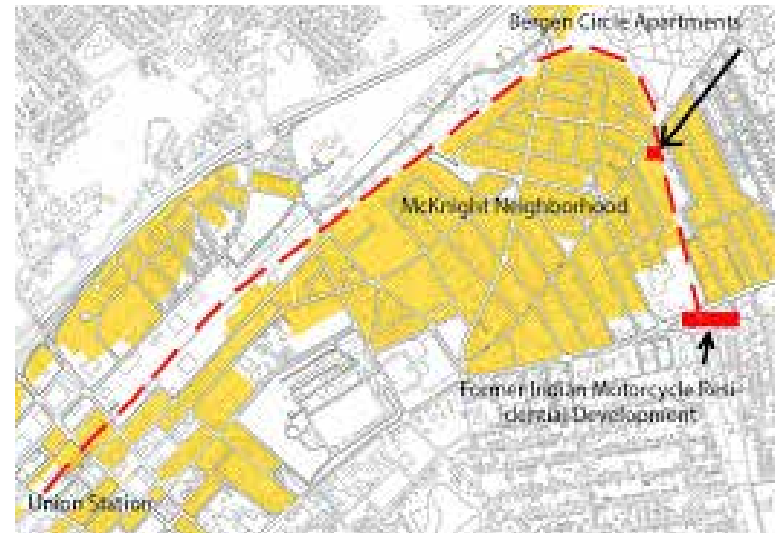


**Residential**

Residential land use in the area encompasses a variety of architectural dwellings, ranging from elaborate Victorian homes to high-rise apartment buildings. The core of the neighborhood and its common infamous features are the existence of these historic homes, which are preserved through both local and national historic districts. Majority of the housing resides within the proposed trail, as opposed to the outside of the arc which hosts more commercial and institutional structures. With the McKnight Neighborhood boasting a vast variety of residential properties, residents in the community have the opportunity to use the trail with ease of access.



19th Century Victorian homes stand out with their unique designs.

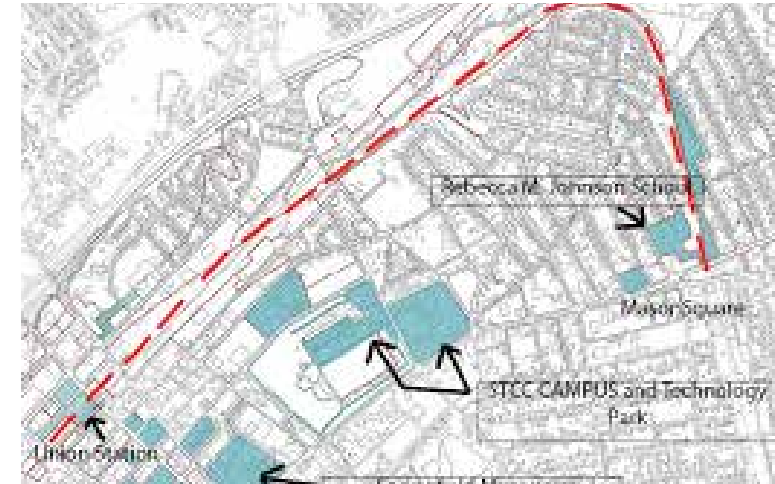


**Institutional**

The institutional land use surrounding the proposed trail are important landmarks for the fruition of this new mode of transportation. Both Rebecca M. Johnson School and Union Station are focal points that act as gateways for the beginning and end of the route of passage. Some other points of interest that fall under the institutional land use are the Springfield Technical Community College, the Springfield Armory and the variety of museums. The location of these places of interest are important in attracting their coinciding demographics to use the rail trail, and ultimately allow it to become a way of moving to and from these places.



STCC is one of the many local academic facilities.



**Commercial**

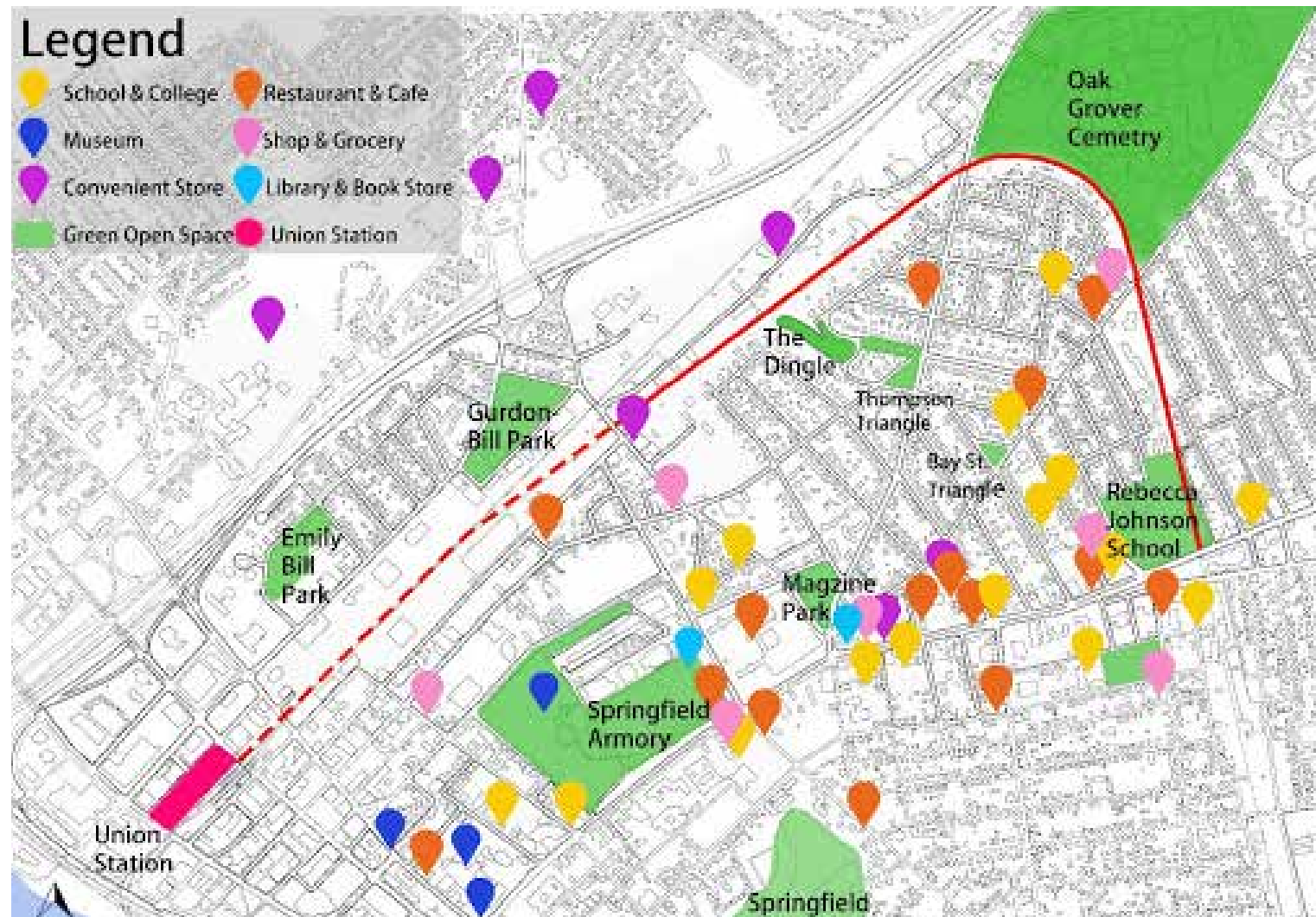
Commercial properties in the area are mainly evident in the south-west portion of the trail, as well as some scattered businesses along State Street in the east. The location of the commercial properties are reflective of the neighborhoods of Springfield. The mass of commercial land use in the south-west is located in the Metro Center of the city, which hosts restaurants and other business ventures. This commercial hub also resides at the conclusion of the McKnight Rail Trail. Massing of commercial land use at the conclusion of the trail will entice users to move back and forth using their bicycles.



Gas Stations such as this Racing Mart on St. James Ave. contribute to commercial business in the area.



History • Natural Systems • Open Space • Demographics • Urban



Grain • Zoning • Land Use • Destination • Access • Transportation

One of the primary goals of this project is to promote the idea of multi-modal transportation to residents in the McKnight Neighborhood while giving an easy passage to places of interest such as Union Station. Ultimately, the users of the trail will be traveling with the motive of arriving at a destination. The outskirts of the community are surrounded by a multitude of shops, grocery stores, museums, schools and other institutions that would be accessible via bike and the McKnight Rail Trail. Creating a connection to open spaces and parks is also an important feature when looking at the trail, as users will have easier access to do so without dealing with vehicular traffic. The Connecticut River Walk and Bikeway is an established trail that individuals of the community promoted as a wishful connection to the McKnight Trail, leaving it as one of the prominent end locations. Union Station also joins the Walk and Bikeway as an important destination point for users, as many people will be able to travel along the trail and end with easy access to out-of-town travel.



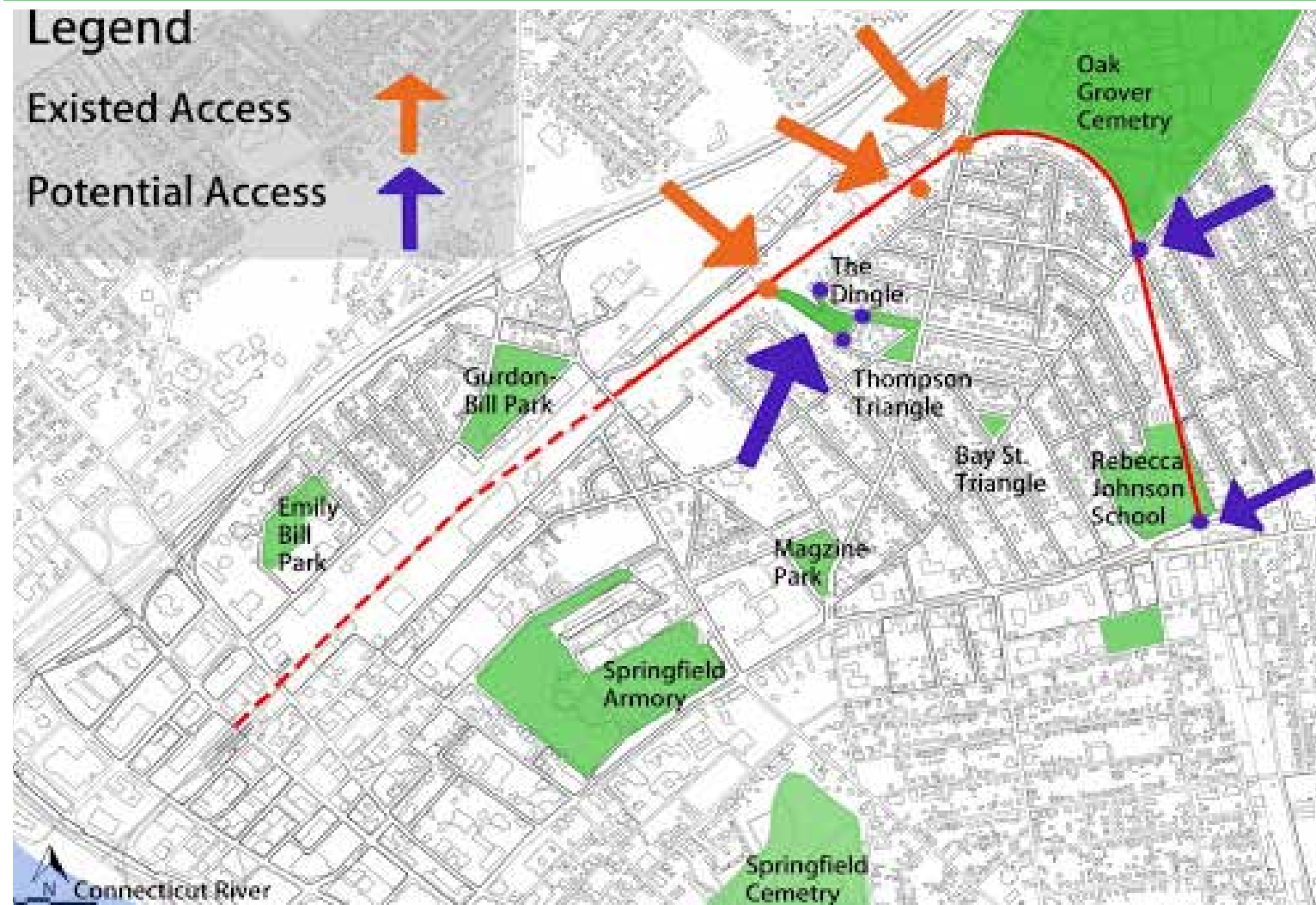
The Connecticut River Walk and Bikeway is a premier destination in Springfield for physical activity.



As the major transportation hub around the Springfield area, residents will benefit from having easy access along the rail trail.



Rebecca M. Johnson School is located at one of the starting points of the trail along State Street, becoming a marker as a point of interest.



Creating and utilizing current openings into the trail from the McKnight Neighborhood and beyond is a crucial way of promoting usage and safety for its users. Two of the major access points reside at both ends of the trail - Union Station and State Street. Both of these points mark the furthest limits of where the path of travel begins and ends, hence creating prominent modes of entry. Within the neighborhood there are multiple existing openings to the now overgrown rail bed as well as spots that could serve as potential access into and from the trail. Some of these entry points include Hayden Avenue, Bay Street, Oak Grove Cemetery, Saint James Avenue and multiple spots along The Dingle. From the The Dingle moving South-West, there are limited opportunities for access due to the immense grade change and industrial properties on either side of the trail. The Armory and Taylor Street intersection therefore becomes the next stop along the route that allows for a point of entry.



State Street and Mason Square are one of the major access points to the proposed trail.

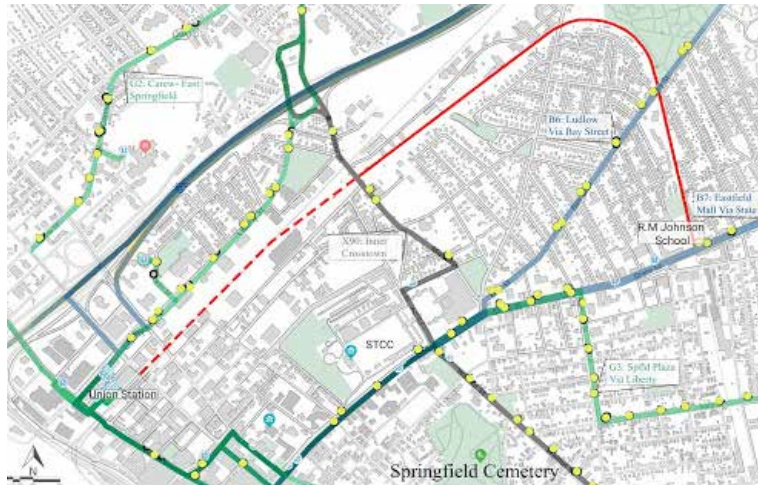


The Dingle, a prized wooded area of the McKnight Neighborhood, has multiple points of entry that could connect into the new rail trail.



This corner on Bay Street is located next to Oak Grove Cemetery and could serve as a distinct entrance into the defunct rail trail.

## History • Natural Systems • Open Space • Demographics • Urban



Springfield has the advantage of being the epicenter for the PVTa, or the Pioneer Valley Transit Authority, service that services communities as diverse as the Northeast itself. Servicing Springfield and the other 24 towns and cities that call the Pioneer Valley of western Massachusetts home, there are a number of major routes that service the Metro Center area along with the McKnight Neighborhood. The major streets in and out of Springfield include State Street and Bay Street, both of which are linked via the routes B7 and B6 that loop from metro center on out to the surrounding communities. These two routes are important in particular because they run through the McKnight Rail Trail pathway, and could be vital assets to the planning of the trail, allowing for more regional travel beyond having to travel to Union Station and taking a train. Additionally, users of the trail would be able to link in with other PVTa routes and travel the entire system, negating the need for a vehicle.



Understanding the hierarchy of a neighborhood's road system is critical when designing a rail trail as it will help you understand how people travel currently and what connections can be made in the future. Looking at the major corridors displayed on the map, one can see that Interstate 291 in dark red is a major linkage to Metro Center, and can be a major choking point during rush hour times. Other corridors, such as Saint James Street and State Street are utilized for more local travel, linking with neighboring communities Ludlow and Wilbraham. It is important to point out that the streets highlighted in orange are all streets that the city hopes to implement a complete streets program upon in order to diversify travel and provide a safer means of right-of-way to bicyclists and pedestrians. The streets colored in green are cross streets that do not have a heavy traffic volume during much of the day, but provide essential cross neighborhood linkage between the minor corridors.

## Grain • Zoning • Land Use • Destination • Access • Transportation



This cross section is representative of the typical neighborhood scale street corridor within the McKnight neighborhood, consisting of wide streets that have little to no delineation between on street parking spaces and the designated driving zone, along with sidewalks on either side. In the future, there is the opportunity for designed parking cutouts for on street parking along with the inclusion of a bike lane to separate the traffic.



State Street is one of the major corridors in and out of Metro Springfield, and a major linkage to the surrounding communities. Currently, the street is sandwiched in many locations between historic buildings and existing structures that would make expansion of the roadway difficult. One of the major plans, however, is to rework the current street structure in order to accommodate a complete streets program that would allow for mixed use lanes and more pedestrian friendly traffic flow levels along the street.



Dartmouth Terrace, located at the surface level alongside The Dingle, is a unique roadway within the neighborhood, consisting of a central park element with historic fountains and an alley of oak trees. Along either side of the park element are one way driving corridors with on street parking and sidewalks further outbound. There are no current bike lanes, but the driving ways are wide enough to accommodate parking and mixed travel.



Taylor Street is an essential element to the McKnight Trail design, as multiple design concepts that will be shown in the following pages utilize Taylor Street to travel from the end of the old rail bed and down to Union Station and Metro Center. Each of the lanes of travel are 22 feet across, allowing for adequate enough room to siphon off space and create a separated and generously sized mixed use lane alongside the current vehicle travel.



Lauren Fiedler • Jiaqi Guo • William Taylor



Micah Franzman • Ross Kerr • Joseph Wynne



Ben Boschetto • Sicheng Cui • Joseph Herman



Kevin Atkinson • Thomas Leary • Lucia Li



# GROUP DESIGN PROPOSALS

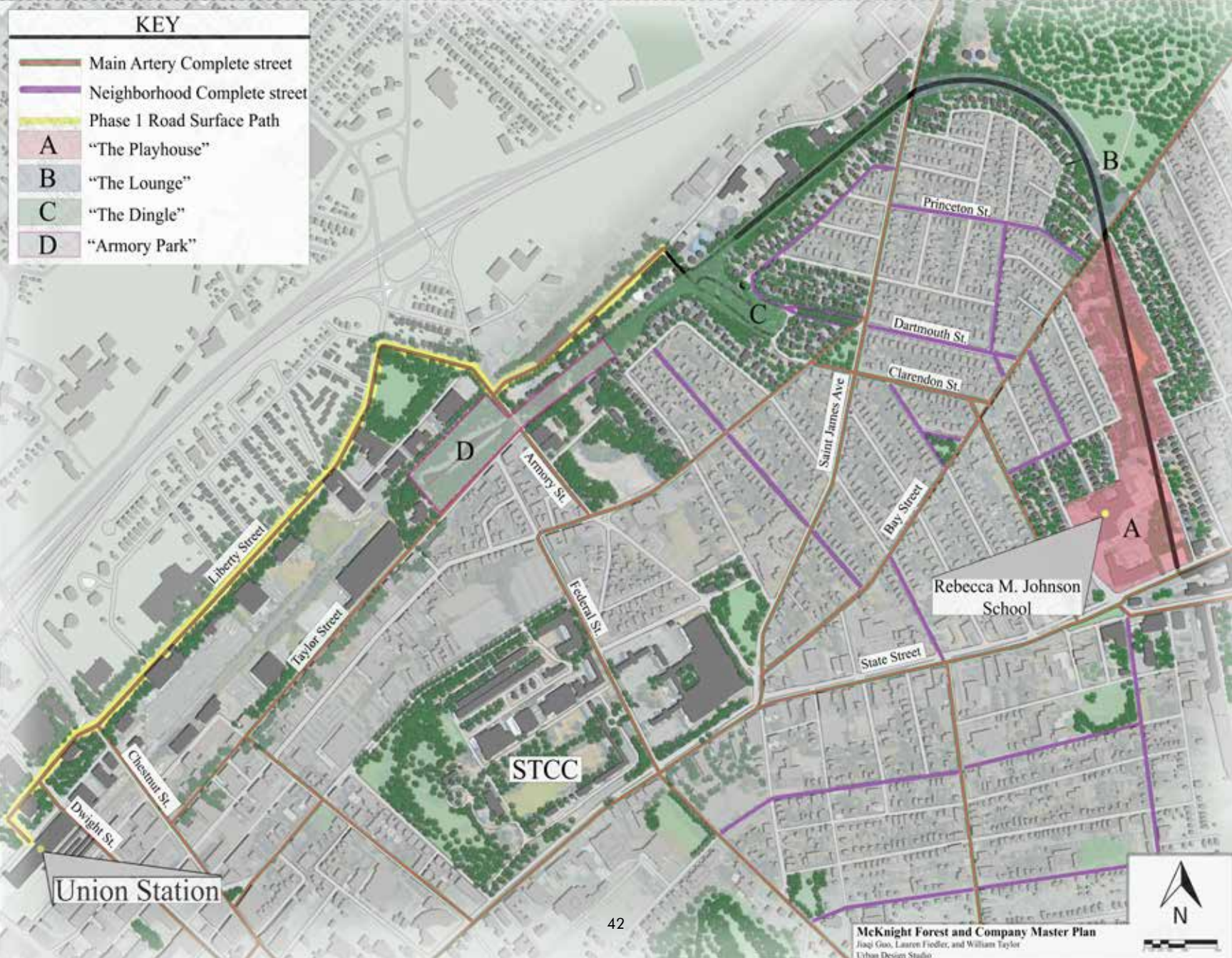
# SPRINGFIELD'S ARC OF RECREATION:



# MCKNIGHT FOREST

Lauren Fiedler • Jiaqi Guo • William Taylor





The footprint and vegetation map shows the relationship between the neighborhood and its lack of planned vegetation and the rail trail and the planned revitalization of green spaces.

Diagram of the super-blocks created by the streets layout, with the three distinct zones highlighted in various colors. The grey zone highlighted in purple is a proposed future site that is privately owned at this time.

The McKnight Forest trail and adjoining spaces were designed with an eye to the historical context of Springfield and the McKnight neighborhood, along with the modern challenges that are facing the neighborhood and Springfield in general. Across the trail, work has been done to integrate with local and regional changes designed to ensure the future resiliency of Springfield while also allowing more access to green spaces designed for a wide array of activities. The three central points this team focused upon were: safety of the trails users at all times of day, the health of the community members, and the experience of a walk in the forest. This design proposal includes the creation of three unique zones of experience along the route from Mason Square to Union Station, each with their own sets of designed experiences and unique opportunities for engagement with people from all ages and walks of life.

**"The Playhouse"**: An infusion of color, a dash of monkey bars with skateboards, with an emphasis on the youth, providing safe and engaging spaces for local children.

**"The Lounge"**: An experience with more subdued colors and elevated seating areas meant for relaxation and gathering while allowing for brisk walks and conversations under the evergreen trees.

**"The Dingle"**: A Forest within the urban fabric, where locals can escape the traffic and bright lights to enjoy the sound of a stream and an afternoon snack.





State Street, the start of the McKnight Trail and the location of Mason Square, introduces the user to the first of the designed spaces known as “The Playhouse.” Colorful, Filled with youth, and more child friendly given the location near the school and proximity to the neighborhood, the State Street entrance to the rail trail offers something for everyone. High up in the trees is an adventure park, an exciting array of slides, platforms, and pulleys designed for children and adults alike. Down below, plentiful seating, sand pits, and easy access to the Rebecca M. Johnson school play yard allows for a multitude of activities and the potential for community gatherings. As with all areas of the trail, extensive use of lighting, paired with the bike share locations and clear sight lines makes the entry to the McKnight Forest easy and safe.



**STATE STREET  
PLAYHOUSE**

# BAY STREET LOUNGE

Bay Street North is by design open to the air and less regimented in its management of people and their movements. The central stone dust space is ideal for small gatherings of neighbors and friends, or a spot for children to come and listen to music while enjoying their outdoor time. Adjacent to the pathway is a bike share kiosk, with a PVTA bus stop along Bay Road and on street parking along Clifford Street to allow those that live farther away to come and enjoy the spaces.



Bay Street South is the first space that begins with the “The Lounge,” a series of designed and curated spaces meant for an afternoon stroll that leads to a bench under the trees. The south space on Bay Street features a classic alley of trees with carefully placed benches and turfed spaces for recreation and reading. Underneath the central pergola, bikers can check their bikes for any issues before they head out on the trail, or locals can sit on a bench and play a card game. The low vegetation and clear sight lines are ideal for an open and safe feeling environment, while the adaptive lighting and street located push-to-cross stop light ensure all day and night usability.



# MONMOUTH GARDEN

Monmouth Garden, located alongside Monmouth Street in the McKnight Neighborhood, is designed to function not only as a beautiful entryway to the rail trail for local community members, but also as a community wide garden space where residents can come and grow their favorite veggies and flowers and enjoy a quiet afternoon reading a book or drawing. Easy to access rows allow for plentiful planting, and the mixture of sunlight exposures enables a multitude of plants with differing sunlight demands. During the winter periods, the garden can function as a local holiday destination, with decorations and gatherings. Along the trail, great care was taken to ensure not only the safety of those that want to use the trail during the night and day time periods, but also to ensure that the trail can be utilized and easily maintained throughout the year. The-12 foot wide trail is to be built using green dyed asphalt, for ease of plowing and low cost of construction. Along the trail are raised seating spaces to allow locals the chance to walk to the destinations and be in the forest while separated from the bicycle and pedestrian traffic. Overhead lighting spaced every 30 feet, with informational boards placed for easy way finding.



# SAINT JAMES CROSSING

The proposal for Saint James Street is unlike any other element along the rail trail, with its mix of terraced seating and gathering spaces, beautiful views, and phased design meant to present a current and future vision for McKnight Forest. It all starts with the initial phase of constructing, involving a 400 foot bridge ramp connecting the rail trail to Saint James Street. The second phase brings in the terraced surfaces and their views both up and down the trail. Commuters can stop and rest, fit-minded locals can enhance their workouts with the varying elevations and stairs, and kids can grab a bike from the adjacent bike share station and commute to school or head downtown for a movie.



# THE DINGLE REVITALIZED



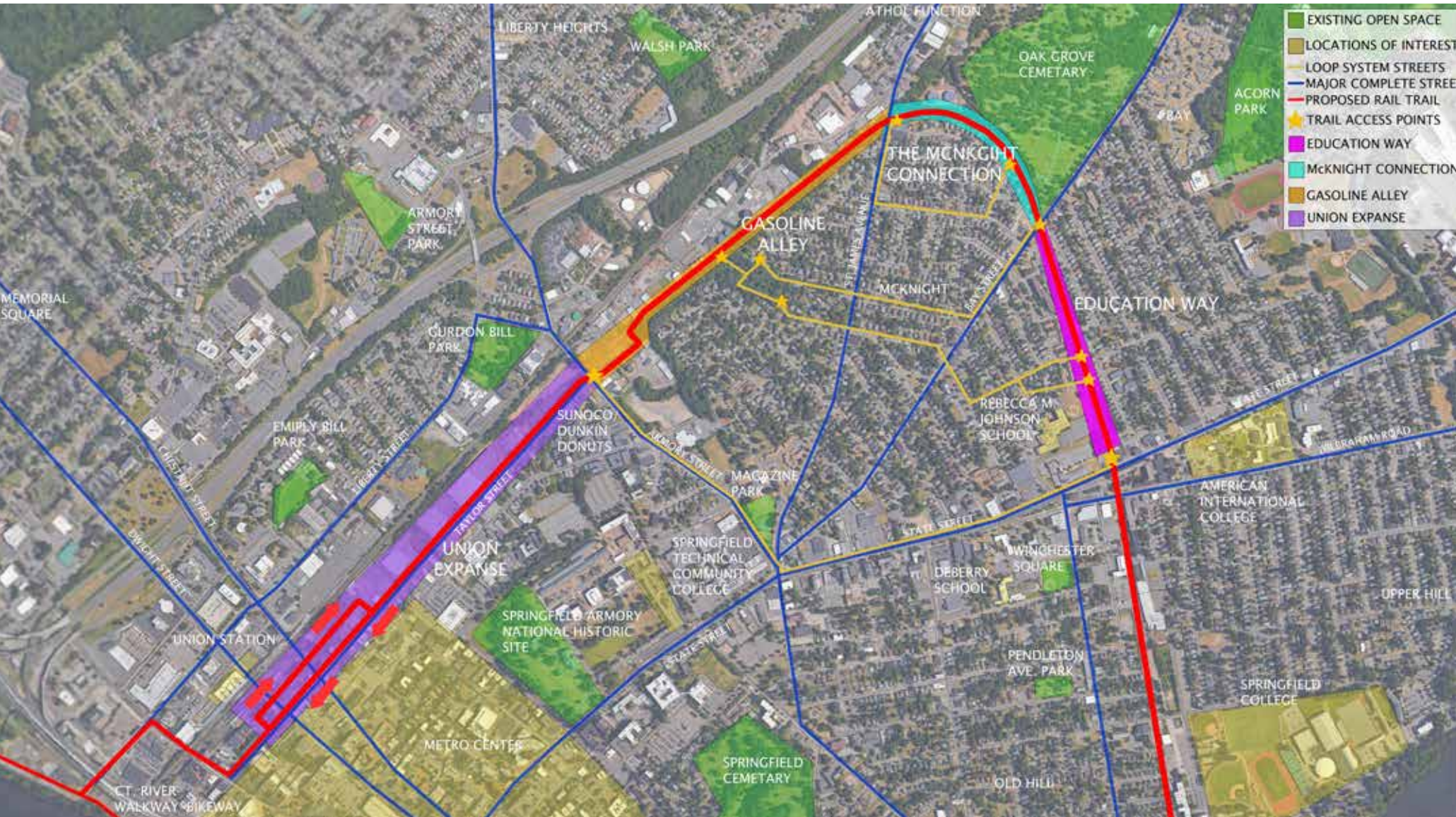
The Dingle is one of those rare escapes set within the urban fabric of the greater Springfield area. Like Central Park and the Emerald Necklace, The Dingle holds a special place in the hearts of those that live close enough to it and enjoy the little bit of nature right in their back yards. Given that it is so loved and cherished by the local community, we felt that the best design was of little design - preserve the elements that people love about it now while strengthening access and the ability to enjoy the greater outdoors. To those ends, we have implemented a design that cuts out the tangle of invasive plants that have taken over, worked to better control the large volumes of water that currently flow freely through the Dingle, and implemented features that allow for access not only by those on bikes, but with any number of mobility statuses. Looking back to the history of McKnight, we have re-envisioned the historic Glenn Road as a modern rail trail connector to Albany street, taking residents all the way to Union Station in Springfield.



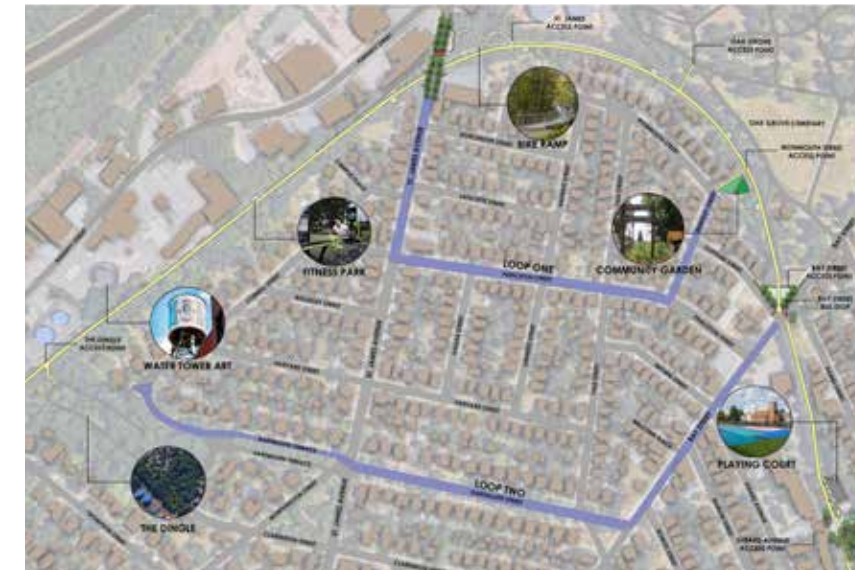
# SPRINGFIELD'S ARC OF RECREATION:

## THE MCKNIGHT RAILTRAIL

Micah Franzman • Ross Kerr • Joseph Wynne



The goals and objectives for the design centralize around the connectivity from McKnight into the proposed rail trail, while also having an emphasis on the desire and need for more directly available modes of promoting public health, done so with the reconquering theme of movement, rest and destination. These connections are created through access points, concentric loop systems and reconstruction of the streets of Springfield to which satisfy complete street requirements, effectively creating a larger system into the new trail. Another focal point of the design is creating a direct access point from the McKnight neighborhood to Union Station and Metro Center, consequently creating more opportunity for greater connection outside of Springfield. With a notable issue with public health in the area, as well as a lack of vehicle transportation, the proposed trail will provide an effective way for people to utilize this positive feature added to the neighborhood and alleviate some burdens associated with these issues. To compliment these designed aspects of the trail are multiple ways to create opportunities for community engagement, through events such as road races, display of public art and spaces in which people can gather with one another. The McKnight Rail Trail will create a new dimension in the neighborhood that has not be seen before, and ultimately will provide a systematic approach to avoid issues that currently reside in the area.



Master Plan Series of Design Programs



Education Way Master Plan

The Union Expanse is the crucial end piece of the McKnight Rail Trail, ultimately supplying the finishing touch to the transportation system as a whole. This Part of the Trail introduces users to the lively Springfield street scape, beginning at the Armory and Taylor Street intersection and ending at Kaynor Street and the newly designed Union Station. Union Expanse delivers a multitude of experiences, such as the dense alley of trees on Taylor Street and the community art implementations that offer unique visuals as travelers progress past Lyman Street. Conclusively, the application of the Union Expanse creates a conglomerate of features that finalize the McKnight Rail Trail as a wholesome project for Springfield and the McKnight neighborhood. Users will be able to familiarize themselves with the bike and walkways as they guide them to and from Union Station, as well as the Metro Center.

Along with the newly established street scape design features, a comprehensive circulation system has to be acknowledged to show the flow of vehicular and pedestrian traffic. This bike loop system traveling from Lyman to Kaynor Street accommodates current traffic patterns as well as new ones in order to create an efficient and orderly travel experience.



The Taylor Armory Street intersection marks the arrival to the Union Expanse. Users have access from the trail from Agnew Street into a newly structured intersection of multi-modal traffic. From this point of the trail, there are options of continuing travel down Taylor Street to Union Station, or hopping on Armory Street with complete street amenities.



The Taylor-Lyman intersection delivers a different experience from other parts of the trail: extensive art mural installations entice users to stop and admire the works of both local and non-local artists. Inspiration for this design feature emulates from the "Pow! Wow! Worcester" program that has garnered acclaim there.

# UNION EXPANSE







**PHASE 1:**  
-COMMUNITY ART/MURALS  
-PAINTED BIKE LANES  
-COMPLETE STREET CONVERSION

**PHASE 2:**  
-STREET TREES  
-IMPROVED INFRASTRUCTURE  
-STORMWATER MANAGEMENT

The realization of Union Expanse is conducted in two phases, which finalizes with complete street conversions, street tree implementation and improved infrastructure and lighting. Existing roads are constituted by vehicular oriented traffic, with extremely large travel lanes, offering a minimalist approach to pedestrian safety and enjoyment. The Taylor-Lyman intersection is a prime example of how these changes to the streetscape will attract new demographics for the area due to attractive amenities. It is crucial that all travelers of the street - pedestrians or people on their bike, car drivers, feel safe, comfortable and pleased with their surrounding environment.

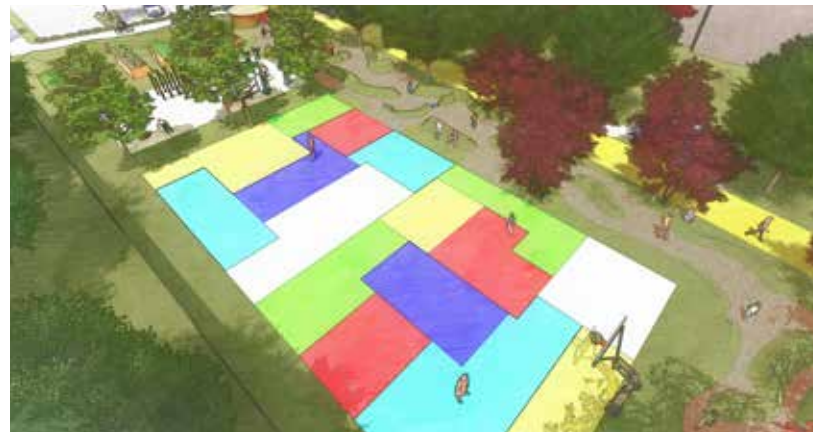
Arriving and departing from the Kaynor-Lyman intersection at Union Station is a significant landmark for the Union Expanse and the entire bike trail. People leaving from Union Station are presented with unique wayfinding sign-age as well as a multitude of bike racks, part of the city bike share program. This area is truly both a start and end point for anyone using the rail trail, and the aesthetics respond to its importance.

# SAINT JAMES BRIDGE CONNECTION



St. James Avenue runs through the heart of the McKnight Neighborhood and spans the route of the trail at an important but challenging juncture. The implementation of elegant ramps to convey pedestrians and cyclists from the trail to the street provides a pleasant experience that takes advantage of the woodland character and engaging landform that the site presents. The Rail Trail is connected to St. James Avenue by a curving ramp that echoes the shape of the existing landform. By alternating between on grade and elevated sections, the ramp provides a gentle and easily traversed slope that minimally disturbs the site and preserves its qualities. Selective clearing of underbrush also allows for better visual sight lines that draw people to the trail.

# DAWES PARK



Play field with a puzzle shape floor painting engages children from the local Rebecca M. Johnson School.



A grassy landform berm defines the playground from the trail while allowing visual connectivity.

Dawes Park, situated along the McKnight Rail-trail, is a unique designed space with the intention of being not only kid friendly, but also a space where families can enjoy a mid summers day in the sun or under a tree. Elements such as the berm landscape and the use of colors and textures in the varying asphalt elements bring a playful air to the park. On-site parking and the connection to the Bergen Circle Apartments brings the community closer to the space. True Vine Church, located to the southeast of the main parking lot, presents the opportunity for the park to be used for large gatherings and community events. Little more than a quarter mile up the rail-trail from the park is the Rebecca M. Johnson School, and so the designers took extra caution to ensure that there were designed elements to engage the local school children, such as the unique puzzle scape and its colors and the planting elements that are used to create clear sight lines. Making sure that the Rail Trail remains clear and safe for bicyclists in an area for children is important, and the location of vegetation and designed berms help to ensure that little kids wont wander onto the trail into the pathway of a bicycle.



Plan view Dawes Park



Right: Entrance from the Bergen Circle Apartments to the Trail



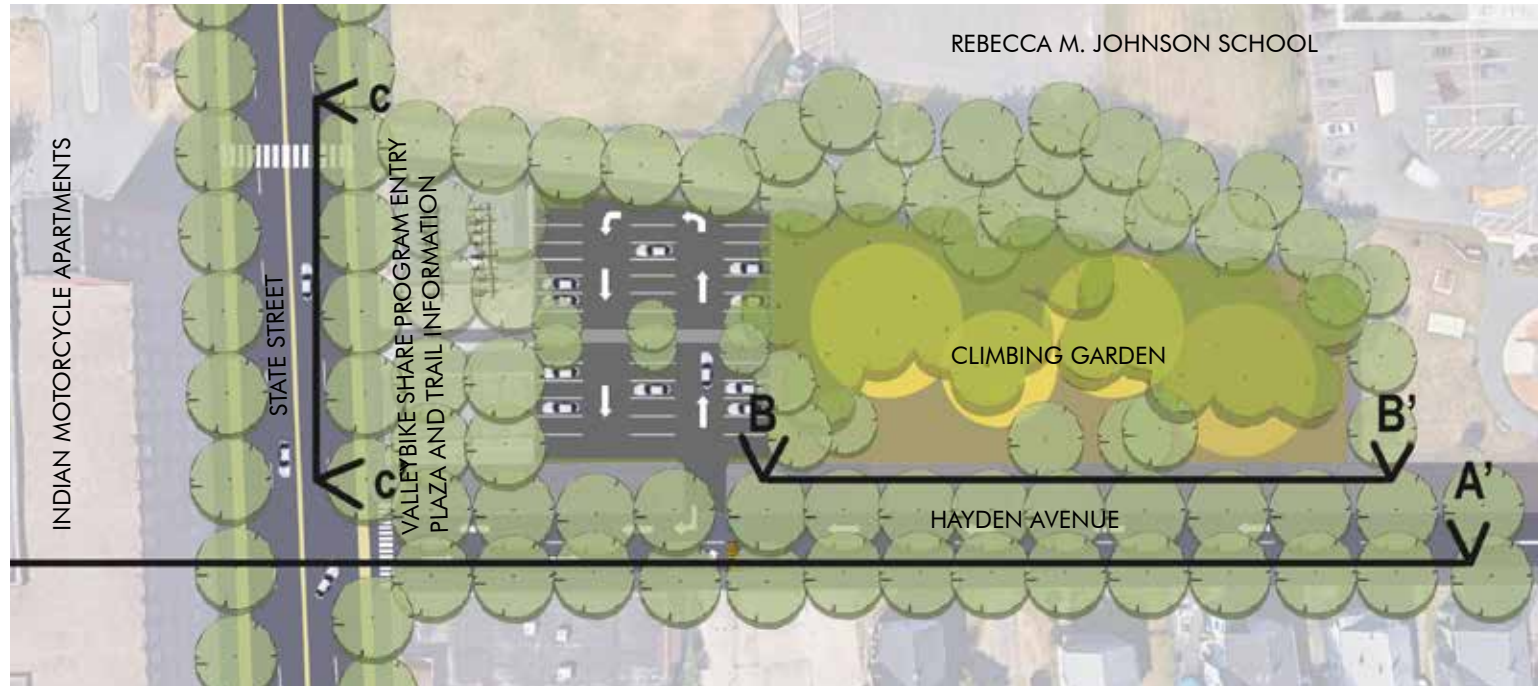
# SPRINGFIELD'S ARC OF RECREATION:



McKnight Community Trail

NEW WAYS  
DESIGN  
GROUP

Ben Boschetto • Sicheng Cui • Joseph Herman



Plan view State Street entrance.

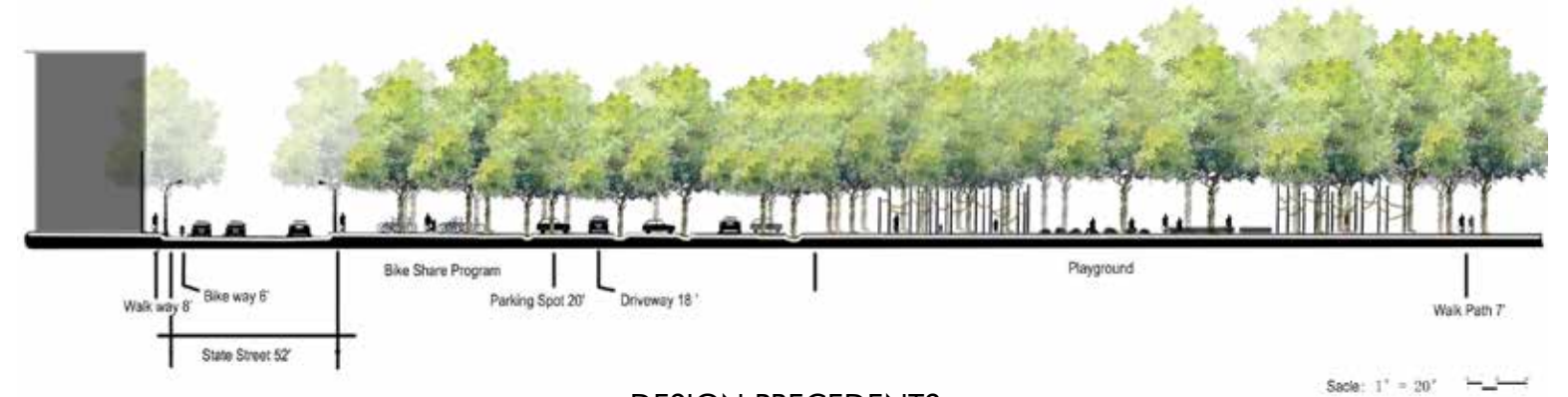


The gateway of the McKnight community trail is located at the intersection of State Street and Hayden Avenue. The Indian Motorcycle building is just across this gateway and will house 60 new rental apartments. Therefore, the design program of the gateway to the trail includes a parking lot for the residents. Complimentary uses for the public are a place for the ValleyBike Share program, a small entry plaza to accommodate small gatherings or markets and an adventure playground. The playground features climbing poles that are interspersed with sculptural mounds and circles out of glacial boulders to sit on. All existing trees were saved and provide spaces for the community, including students, parents and teachers from the adjacent Rebecca M. Johnson School to play and rest.

# HAYDEN AVENUE



Circle patterns fit the meadow space easily and it can avoid to remove existing trees. Tree trunks and poles create a climbing playground. Different stone patterns provide seating in the middle.



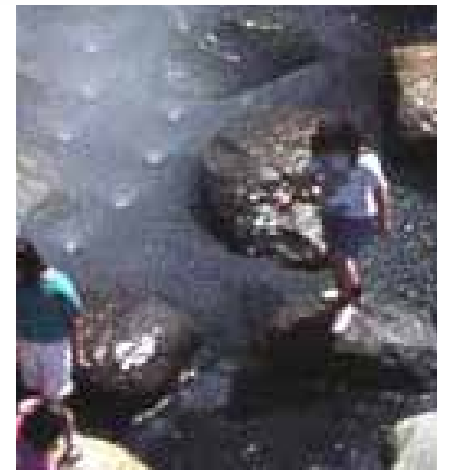
## DESIGN PRECEDENTS



Navy Yard Park, Pennsylvania



Adventure Climbing Park



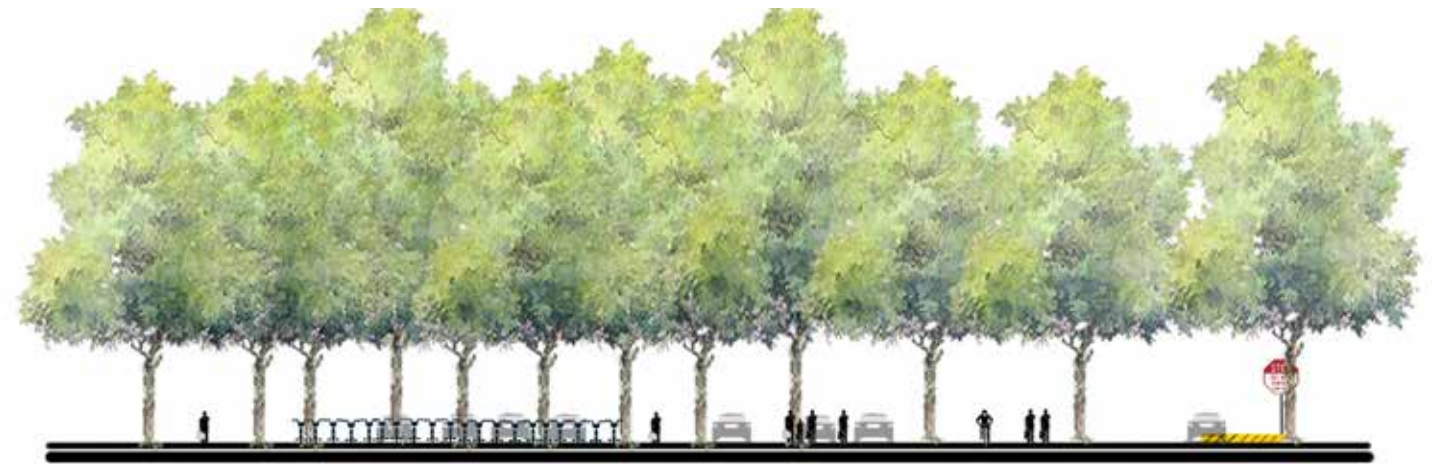
Tanner Fountain, Cambridge (MA)



Because curb cuts on State Street interrupt pedestrian and bicycle traffic, the entrance for the parking lot is located on Hayden Avenue. Today, Hayden Avenue is a one-way street. Therefore it is proposed to transform the first portion of Hayden Avenue into a two-way street. Beyond the entrance of the parking lot, a speed bump and a sign prevent drivers to continue further. Street trees are added on both sides to provide a more inviting and walkable streetscape.



Scale: 1' = 20'





# BAY STREET



Sectional Elevation Bay Street entrance facing north across Clifford Street.





Bay Street is an important gateway to the trail. Today the entrance is compromised by rushing traffic. It is proposed to change the surface on Bay Street to indicate the gateway area to the trail and slow traffic down. To the north we find a new entry area that also serves as a secondary entrance to Oak Grove Cemetery. To the south a proposed community garden responds to the recommendations that we took from our meetings with the McKnight Neighborhood Council. A diversity of distinct places and uses at the trail bring the people of the neighborhood together.



Sectional Elevations: Top - Gateway Park on Bay Street facing east.  
 Bottom - Community garden inbetween to Dawes Street facing east.



The revitalized Armory Street Junction includes the renovation of the existing brick building by creating a café/networking hub and a bikeshop maker space inside the new building. The new Armory Street Café/Bikeshop will also include a sky deck which overlooks the new Armory Street Park and will expand the café from the building into the outdoors.

The park itself will utilize the existing open space in order to create a field surrounded by a system of terraces and connected pathways for both joggers and bikers alike. Additionally, the field and terraced amphitheater can be used for farmers markets, concerts, and sporting events throughout the year. The Armory Street Plaza pays homage to the industrial nature of the surrounding area by using materials such as brick, iron, and granite in the patio and café design. Newly planted trees will help to mitigate noise from the adjacent scrapyards as well as blocking out potentially unsightly views. A mini patio will be placed in the northeast of the park, adjacent to the control center. It will be surrounded by plantings so that only scrapyards employees may access it.



The new Armory Street Junction will revitalize the intersection at Armory Street and Taylor Street in order to create a thriving community hub which will act as a major node at the connection from the rail trail to the metro center.



The tree lined park is a prime location for recreational communal events and festivities while the Café Sky Deck provides a place for people to meet up and relax



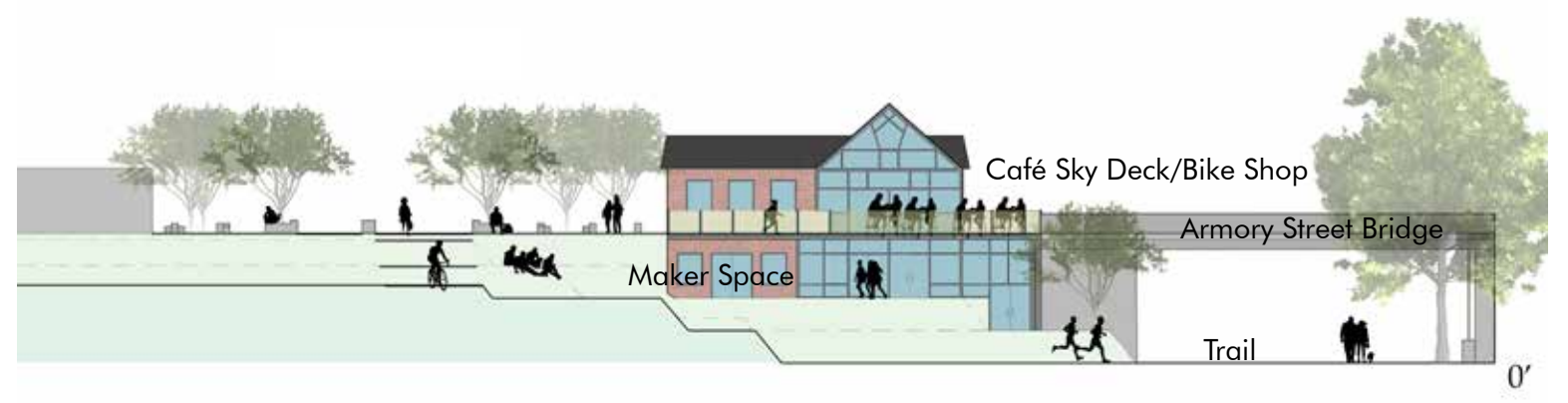
The entrance of trail is divided into two lanes: one for bikers and pedestrians, the other one for parking and delivery access to the adjacent buildings.



The terraced landform allows for people to experience the park in a multitude of ways and allows for separation of large groups.



The Armory Street Junction provides limited additional parking for visitors of the trail and events.



Sectional elevation facing west

# SPRINGFIELD'S ARC OF RECREATION:

## SPRINGFIELD LOOP

Kevin Atkinson • Tom Leary • Lucia Li





History-telling murals together with new lighting is proposed under the railroad bridge on Dwight Street.

- Create a coherent rail trail with elements of art that encourage an active lifestyle for the residents of Springfield.
- Transform locations underneath bridges with lighting and art to make them feel like comfortable and enticing.
- Allow spaces on the trail for the community to gather, be social and active.
- Create a direct, safe path to Metro Center and Union Station.
- Protect existing wetlands between St James Street and the Dingle with raised paths.
- Allow passage underneath the Armory Street bridge and back down Agnew Street.
- Connecting to the new Cumberland Farms gas station on the corner of Taylor Street and Armory Street.

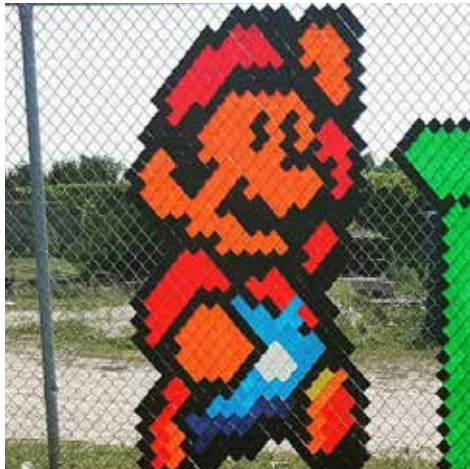
Learning from Case Studies:



Colorful crosswalk, Kitchner, ON



Eastside Gallery - Berlin Wall (GER)



Pixel Art - Low-cost art intervention for fences



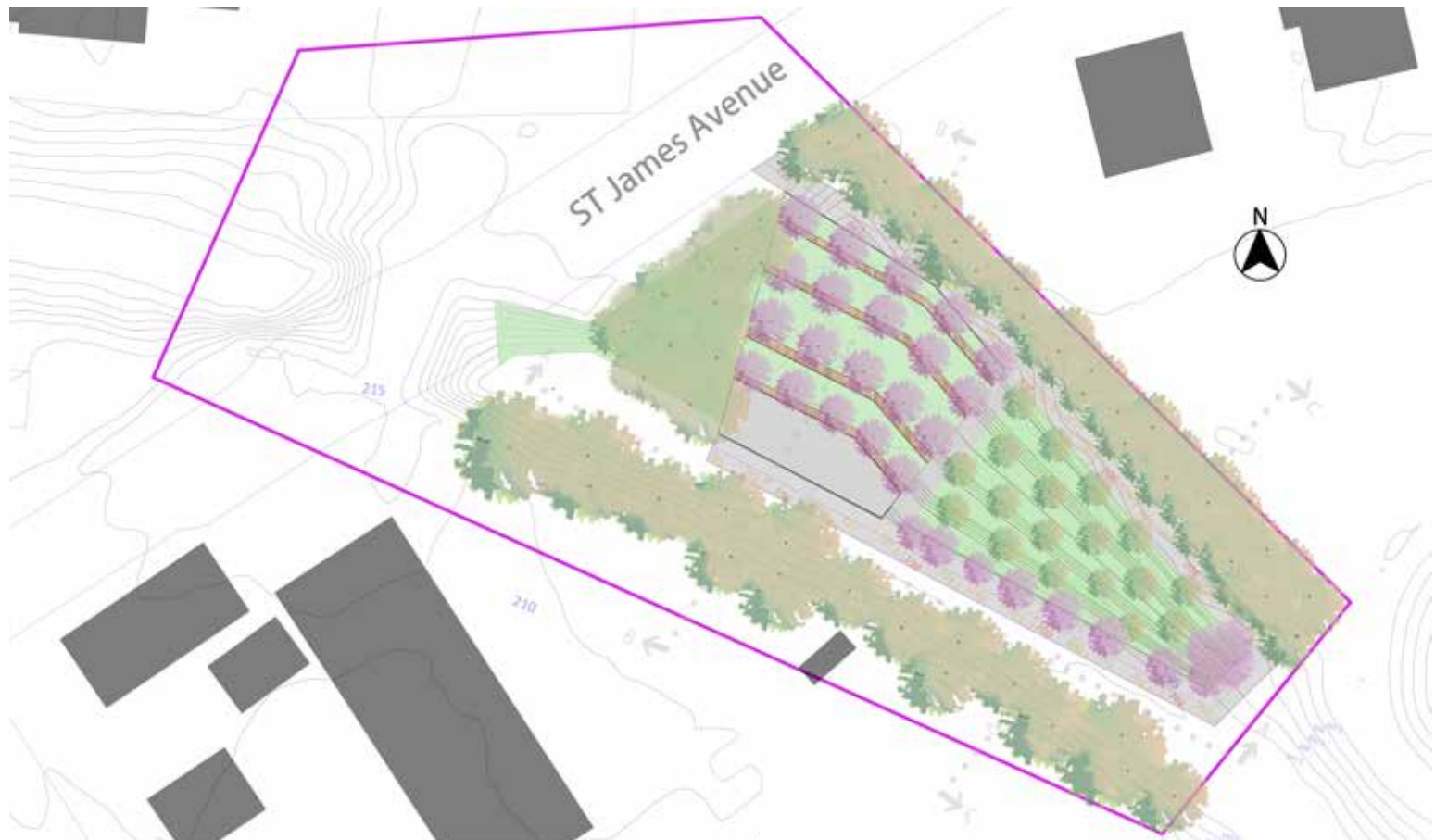
Turescape Haeberlin, China. Inspiration for bridging protected wetlands.



Separate Bike Lane Montreal, Canada. A model for Taylor Street.



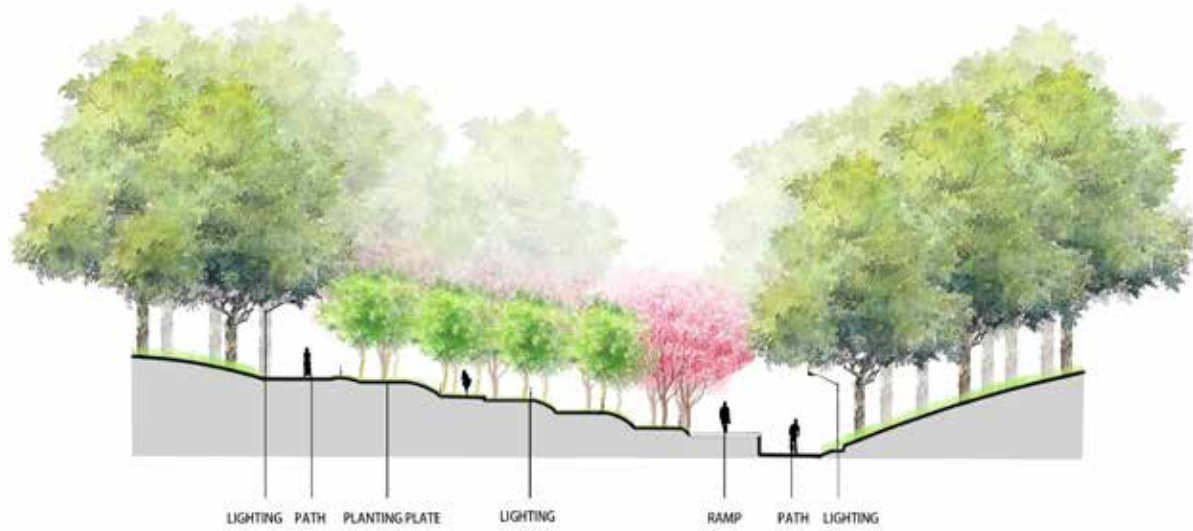
Beyond Walls Boston, USA



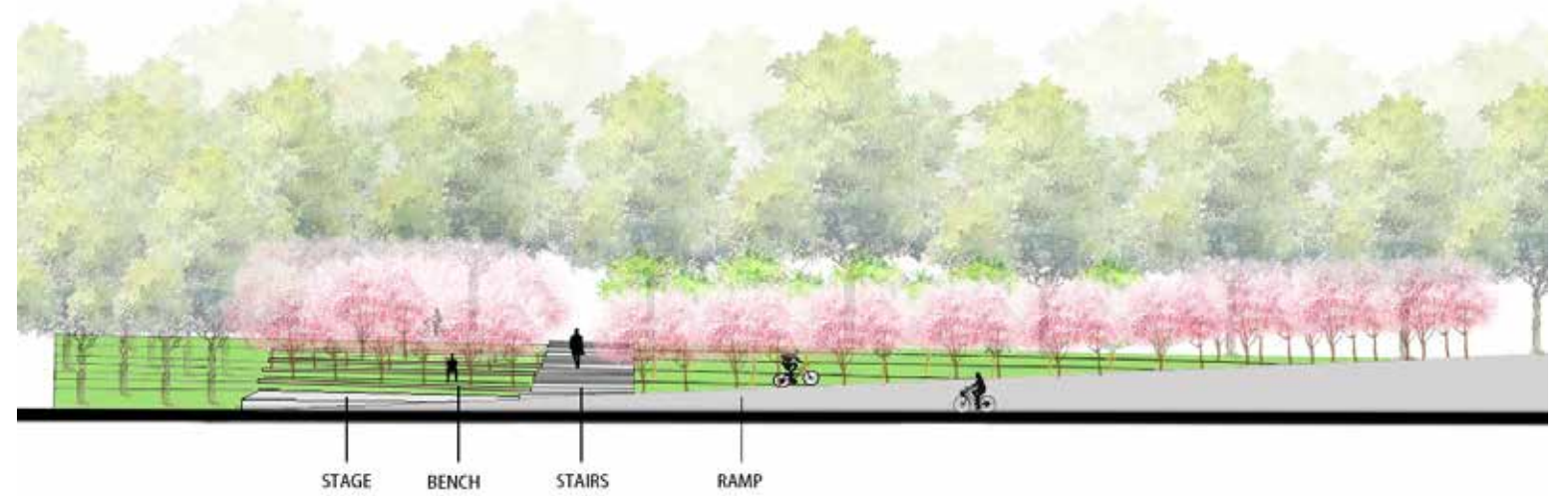
Where St. James Avenue crosses the trail the terrain has about 20 feet of grade change. It is proposed to connect both levels through a combination of a gentle ramp and a series of terraces and stairs. People can take a rest underneath blooming cherry trees. There the terraces are covered with wooden benches and a little platform underneath for small performances or gatherings. On the other side we find more naturally designed terraces with a grass cover and fruit-bearing apple trees. Other trees are Red Maple and Eastern Redbud to provide different colors and experience the change of seasons on the trail.



# SAINT JAMES UNDERPASS



Section facing east.



Sectional elevation facing north. The gently sloped ramp in the background provides easy access to the trail.



Section facing west.





# SAINT JAMES WETLANDS

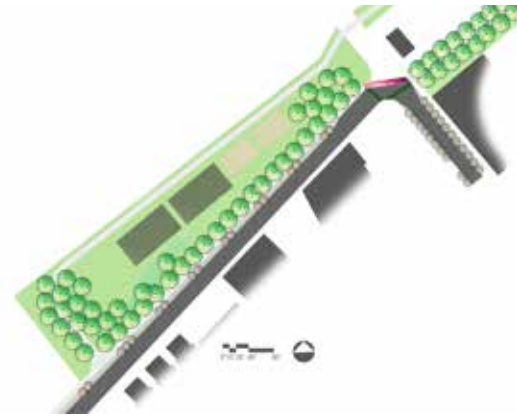
The other side of the St. James Bridge connection offers scenic views of nature in an urban setting. Users experience intermittent peace and quiet between the hustle and bustle of the busy streets of Springfield and the urban, industrial landscape. A ramp connects the hillside trail with the top of the St. James Bridge.



Section Elevation Diagram of the raised bike trail connecting to St. James Avenue.



Moving past the St. James Bridge, the transition to a more quiet, naturalistic landscape is apparent. The existing wetland has been reinforced with additional aquatic plantings. Wetland regulatory-compliant walkways stretch out over sections of the wetland to provide an immersive experience. The elevated trail with varying gentle slopes brings the focus of the user experience away from the built environment toward something more peaceful.



Moving down Taylor Street from Agnew Street it is proposed to separate the street and trail traffic with on-street parking and sunken vegetated beds for stormwater infiltration. The parking allows people visiting the trail. The beds will capture stormwater and return it to the water table before it has a chance to enter storm drains. This whole system creates a coherent trail down Taylor Street for a safe connection to Metro Center.



Two basketball courts and two volleyball courts were added to encourage an active lifestyle in the community.



# TAYLOR STREET GREENWAY