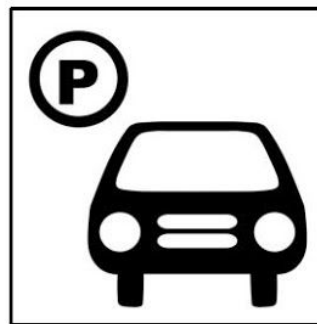




Essex Village Downtown Quick Build



Prepared by:
University of Connecticut, Civil Engineering
Makyle Hawk
Brigette Burke
Sean Driscoll
Samantha Lee

6 December 2019

Proposal Submitted to:

Essex Economic Development Commission

Essex Town Hall

29 West Avenue

Essex, CT 06426

Attention: Janet Peckinpaugh

Project Information

Project Name: Essex Village Downtown QuickBuild

Location: Essex Village

Dear Essex Economic and Development Commission,

As discussed, there is a desire and apparent need to update the parking, pedestrian, and cycling facilities of Essex Village to help better manage tourism. Potential plans for permanent updates to the village were submitted to the EDC last year, and it has been agreed upon that a temporary demonstration of the plans shall be coordinated in order to gauge the public's responses to the proposed changes. This approach is today referred to as "Tactical Urbanism," also known as, "Quick Build."

In this proposal, we address implementation alternatives, alongside scheduling and costs of a demonstration employing tactical urbanism. We have developed two potential project rollout schedules. One of which involves completing the tactical urbanism phase in stages, while the other option requires that the entire QuickBuild be performed at once. In addition, the EDC will have options regarding costs, depending on which materials they believe will best suit both their financial and aesthetic goals for this project. We are also looking into potential state funding for projects involving QuickBuild principles.

Throughout the course of the demonstration, and after its conclusion, the Essex EDC can survey the public for any feedback they can offer. That data will be incredibly useful going forward, as the Commission finds a more permanent update for their downtown area.

Sincerely,

Senior Projects, Inc.

Table of Contents:

Cover Letter..... 2

Table of Contents..... 3

Executive Summary..... 4

Site Description and Background..... 5

Design Approach..... 6

Project Schedule..... 9

Design Alternatives..... 11

Preferred Alternative 13

Cost Estimate..... 15

Tentative Scope of Work for Spring 2020..... 15

Conclusion..... 16

Appendices..... 17

Appendix A: Team Qualifications..... 17

Appendix B: Cost Estimate Table..... 18

Appendix C: Bump-out Design.....19

Appendix D: References.....20

Executive Summary:

Essex Village is part of a small Connecticut town, Essex, and is known for its seaside as well as historic charm. Its main street area is home to a mixture of historic and new developments, and a deep sense of community. Notably, in recent years there have been considerable pushes to revitalize the downtown area, which has had issues with parking availability, signage, pedestrian mobility and bikeability, all of which limit the potential success and growth of the area. Members of the local government have expressed a desire to revitalize this downtown area by increasing walkability, bicyclist mobility, parking availability and signage, enhancing green spaces, and increasing beautification efforts throughout the downtown area. The local government has tentative design plans on how to improve these conditions including the implementation of additional crosswalks, new bike lanes, alternative surface materials, and rearranged parking. Before implementing the design, however, the town is looking for a method to pilot these plans to gauge the public's response before permanent and large-scale changes to the area are made. This proposal aims to encourage the public urban planning approach of "tactical urbanism" (also known as Quick Build) in order to execute the downtown design initiatives. Tactical urbanism relies on quickly building temporary infrastructure modifications that are safe and accessible for all users. The objective of a tactical urbanism project is to put a new design to the test in real life, at a low cost, and at a realistic scope that could be upscaled and made permanent in the future pending its success, while meeting the goals its planners have set in place. This approach will allow the town to reflect on how well the tentative plans fare with the community and allow for feedback from the residents to determine if the new plans will prove to be successful in a full scale redevelopment process at a later date.

Site Description/Background:

The project site covers three streets within Essex Village: Main Street, Pratt Street, and Ferry Street. All three streets are one way with some specific exceptions regarding Main Street. Most of Main St. is a one-way except between Ferry St. and the cul-de-sac by the river. The entirety of Main St. allows two-way traffic when flooding hinders driveability on Pratt and Ferry St. Parallel parking is available on both sides of all three streets, except on the part of Main St. past Ferry, which only has parallel parking available on one side.

The configuration of these three focus streets is shown in Figure 1, which is oriented with the top of the photo being north. Main Street is towards the south, and Pratt to the north. These two connect at the traffic circle on the west end of Pratt, and Ferry connects them at Pratt's eastern-most end.



Figure 1. Aerial graphic of site, and streets of interest.

Design Approach:

The 2018-2019 UConn Civil Design Team developed a design concept to address the concerns of parking, biking, and pedestrian networks within the Village of Essex. The design proposed the addition of pedestrian refuges and bump-outs in an effort to make the traffic circle at the intersection of West Avenue, Methodist Hill, North Main Street, Pratt Street, and Main Street more pedestrian friendly and to give more shape to the circle. The design in Figure 2, would reduce crossing distances for crosswalks on Main Street and Pratt Street, narrow the road to reduce vehicle speeds, and increase foot traffic. These modifications will provide a safer and more attractive environment for pedestrians and bikers. The design also proposed the replacement of the majority of the existing parallel parking along Main Street, excluding the portion beyond the Ferry Street intersection, with head in angled parking (Figure 3). The parking spots are designed to be at a 45 degree angle to the road with a combination of both standard and compact spots. The parking spots shown in Figure 3 display parking locations on alternating sides of the street which is commonly referred to as chicane parking. This method of switching sides is used as a traffic calming technique that lowers vehicle speeds, therefore increasing pedestrian safety. The standard spots are 10 feet wide and 19 feet deep, and compact spots are 10 feet wide and 16 feet deep. The dimensions were determined with consideration that the road width has to be maintained at 20 feet to accommodate two-way traffic in the case of flooding on Pratt Street and Ferry Street.

The existing crosswalks would be reconstructed using brick, consistent with the design in the traffic circle, and materials used for parking areas may vary from pavers to cobblestone. The plan also suggested the reconstruction of the cul-de-sac at the end of Main Street with different street materials, along with the inclusion of a truck apron (Figure 4). A delineated pedestrian walking area was proposed for the western side of Ferry Street, and continues onto Pratt Street until it hits the sidewalk (Figure 5). The material of the area would contrast the standard pavement used for the remainder of the road, but remain on the same grade to accommodate wide vehicles. Alternate materials such as pavers, brick or cobblestone are suggested as edging on the opposite side of the road. Only the parking on the northern end would be replaced by head in angled parking and delineated using varied materials. Head in angled parking in front of the Marina was also proposed to replace existing parallel parking. Lastly, to calm traffic at the intersection of Pratt Street and Cross

Street, a raised speed table was suggested to encourage drivers to slow down and come to a complete stop.

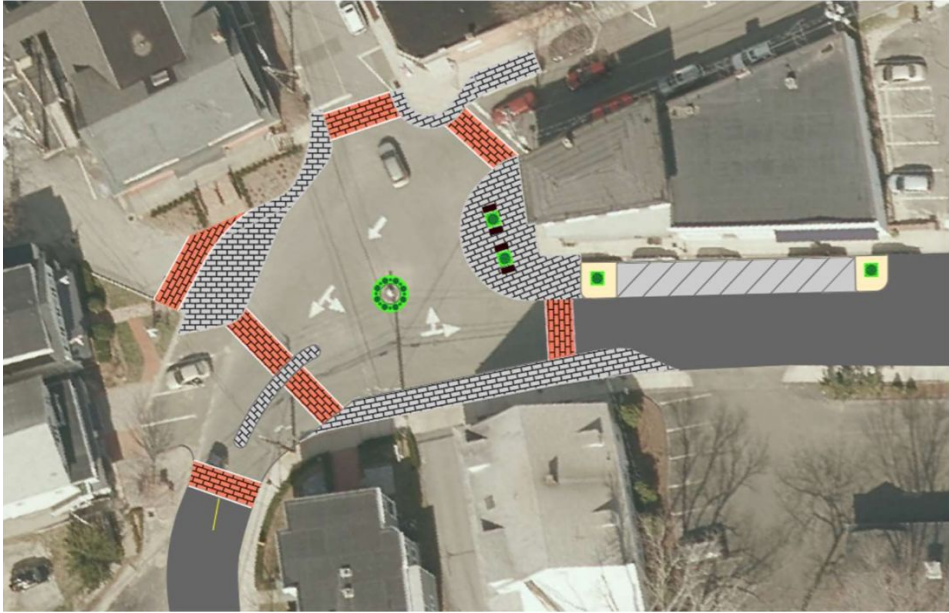


Figure 2: Traffic circle design proposed by 2018-2019 Civil Design Team



Figure 3: Portion of Main Street design proposed by 2018-2019 Civil Design Team



Figure 4: Cul-de-sac design proposed by 2018-2019 Civil Design Team



Figure 5: Ferry Street and Pratt Street design proposed by 2018-2019 Civil Design Team

The proposed design will be reviewed before submitting it to the town engineer for approval. After communication with Mr Parker Sorenson, a senior transportation planner/engineer at Fitzgerald and Halliday, Inc, our team has gained a number of resources in order to verify the validity of the design presented above. The parking geometrics, specifically the angles and dimensions of the proposed head in parking, will be verified according to the ITE Traffic Engineering Handbook 7th Ed. The design's compliance with MUTCD regulations will also be reviewed. A review of the configuration of the parking and the shift required by the proposed chicane is necessary. The

roundabout will also be reviewed for compliance with the NACTO Urban Street Design Guide for permissible turning radius specifications for a “neighborhood traffic circle.”

Once the proposed design has been reviewed and approved, the tactical urbanism, also referred to in the industry as “QuickBuild,” approach will be utilized to test gauge the communal response to the proposed design. The steps of the Tactical Urbanism Implementation plan are as follows. The goal of the project is to be clearly defined, and there must be a specific team with assigned tasks. The materials used for implementation are to be used creatively and flexibly, and will be determined in order to reflect the materials suggested by the proposed design. The community must be well-informed and fully aware of the project in advance, and should be involved in the implementation, as well as an integral part of the evaluation process after the demonstration. Informational flyers can be used to inform the public about the tactical urbanism plan, and pop-up events before, during and after the testing period can be organized for people to ask questions. Throughout the process, it is essential to measure and evaluate the community response, which will likely be done through surveys. While these steps are crucial to ensure a successful project, there is lots of space for creativity when implementing tactical urbanism. We have designed two methods in which the project can be carried out. The first one is a plan that implements the design in phases and is a mitigated approach to the installation of the complete downtown design. The second plan is a more complete staging of the design that proposes an outright installation of the design. The plans both allow for creativity with materials, community engagement and response, the main difference is the timeline in which the changes to the downtown area are implemented.

Project Schedule:

The design approach for installing a Quick Build project can be examined in the info sheet below, with approximations of scheduling as well.



Figure 6: Tentative Project Schedule

Design Alternatives:

Staging:

Phases:

In looking into alternative options for the project, one can see that the staging of the quick build can be of major interest. For this first alternative, the proposed course of action would be phasing of the full design over the course of 3 weeks, with the full design being broken into three different phases, one to be implemented each week until total completion.

- Phase One would entail completion of work proposed in figure 2 in week one.
- Phase Two would entail completion of work proposed in figure 3 in week two.
- Phase Three would entail completion of work proposed in figures 4 and 5 in week three.

The perceived benefits of this tactic are allowing for a more manageable, incremental progression of changes to the area. Some may feel concerned that implementing the full design build in stages allows for easing the community into change, while also allowing for a breaking down of the work into more manageable tasks. However, these perceived benefits may not align with actual outcomes, as described further in our preferred alternative analysis.

Full Implementation:

In contrast, the second alternative proposed would entail completion of implementing the design plans within one time period (i.e. 1-3 consecutive days of implementation of the design plans in their entirety, all within the course of one week.)

This alternative can be perceived as daunting, or even as overwhelming to the public, however, our analysis of alternatives illustrates why here at Senior Projects, Inc. we feel it would be best for the Essex Village Downtown Quick Build to implement the complete design in a more rapid time frame.

Material Costs:

Low Cost:

In analyzing the materials of the project, our low cost analysis will assume usage of the cheapest feasible materials. For our estimate we focused on materials belonging to the following subcategories: barriers, surface treatment, street furniture, landscaping and signage. For barriers, the

cheapest option would be utilizing reclaimed tire planters which are typically free/easily available. For surface treatment, the cheapest method would be use of duct tape, at four rolls at \$5/roll this would cost \$20. For street furniture, shipping pallets could be used for \$17 (\$1.70 ea/*10 total). For landscaping, usage of small trees would cost around \$300, assuming 3 trees at \$100/each were purchased. For signage, homemade signs can be estimated to cost anywhere from a few dollars to \$10, with creating 10 costing about \$100 maximum. The total for this low cost projection would be \$537. This assumption assumes only one item per material category, and an inability to obtain the items free of charge.

High Cost:

In analyzing the cost of the project, our high cost analysis will assume usage of the most expensive feasible materials. For our estimate, we focused on materials as pertaining to barriers, surface treatment, street furniture, landscaping and signage. For barriers, the most expensive option would be utilizing galvanized steel planters, costing \$2250, at \$90/each * twenty five planters. For surface material, the most expensive options would be floor mats, costing \$5/ft² at 1200 sq ft needed for roughly \$6000 total. For street furniture, hay bales could be used for \$500, at twenty for \$25 each. For landscaping, incorporating roughly twenty five small/medium sized plants at \$20 each would cost \$500. For signage, signs from Walk [Your City] would cost \$200, at ten signs at \$20 each. The total for this high cost projection would be \$9450, assuming only the highest costing item from each category of materials were selected. The benefit of using high cost materials is that in most cases they are more durable and have better aesthetic appeal.

Mixed Cost:

In analyzing mixed cost, it is important to note that this option is the most likely of the options, and also the least certain of the pricing options. In general, the usage of a mixed cost option would most likely cost between \$537 or \$9450, assuming all items need to be purchased, and are not already in stock or able to be donated by community partners. With that being noted, there is potential for a mixed budget option to be cheaper should the community be able to donate materials, or should the town already have some of the listed materials. The range provided also assumes that one item per material type is purchased, however, if the town wanted both traffic cones and wooden crates, for example, this would potentially increase costs, which could either cause for cost to fall within the aforementioned range, or even surpass.

Engagement:

All public works:

In discussing approaches to implementation of this project one must look into who is going to be engaged in the creation of the demonstration as well. In discussing this, one option would be to make the whole project a public works project. This would require paying public works to produce the project, and would involve no community involvement.

All community:

Another option for consideration would be utilizing the community for every portion of the demonstration. This option would be cost effective as it would cost nothing to have volunteer groups orchestrate the demonstration. This option would however, rely on individuals to make things such as parking stalls and any other modifications, which would need to meet state and federal design standards.

Mix (Public works first, Community does circle):

A mixed approach would involve the usage of public works and the community. For this type of work, our group would propose having public works creating any major line work (parking stalls, outlines of bumpouts, etc) and allowing the community to add interior designs to these aspects (such as drawings within proposed roundabouts, bumpouts, and crosswalks). This option would allow for assurance of technical specifications while also allowing for community engagement in the project.

Preferred Alternative:

Senior Projects Inc. has taken the alternative options for staging, materials cost, and engagement into extensive consideration. In gauging which options would be most effective for the proposed project, it has been agreed upon unanimously that full implementation staging with a mixed approach to both cost of materials and engagement would be most ideal.

Our research has indicated that when the project is presented in stages it can lead to issues with the success of the design as a whole. A major critique of tactical urbanism demonstrations is that they occasionally lack strategic focus and can be perceived as more of a social experiment than a means to meet a public goal (Lee, 2017). If the project is implemented in stages it leaves space for the public to respond to just parts of the design and not the flow and functionality of the design as a whole. For example, residents who are used to the status quo of parallel parking may be more

inclined to drive past the new slanted spots to get to an area they are more familiar with, therefore reducing the activity in the area being tested. This could lead to unanticipated congestion in other areas that would not occur if the complete design was implemented. If the entirety of the design is enforced at once it leaves the residents with no choice but to be active participants in the demonstration. This cooperation will lead to a much more accurate understanding of how the road users respond to the changes and if it is truly successful. In order to prove the success of a tactical urbanism demonstration there must be measurable data to support the claim that it met the goals originally intended to accomplish (Street Plans Collaborative, 2016). If the project is implemented in stages it will be hard to properly evaluate if the goals have been met, because public behavior will change with each additional stage.

The preferred approach for financing the project would be a mixed to low costing material option. This is preferable because the intention of a tactical urbanism demonstration is to be inherently simple and inexpensive, and the Tactical Urbanists Guide states that a project with the duration of a month or less is a project of the lowest budget in comparison to higher scale, more permanent projects.

The preferred engagement technique is to utilize both the community members and public works in the installation of the design. This would prove to be the most effective technique because Public Works has experience with the spacing and technical specifications of painting parking spaces, sidewalks and other street features so these components would be highly regulated and accurate. The community would then be given the artistic freedom to take part in the rest of the installation including barrier materials, decorative surface materials, landscaping and creating the public space. This element of community engagement in a tactical urbanism project is critical because “such partnerships then support long-term stewardship - people will feel more ownership of and excitement about a public space if they helped shape and design it” (Tactical Urbanists Guide, 2019). This engagement will also encourage community partners to participate in funding project costs as this participation in the process forms an excitement and attachment to the project by community members.

Cost Estimate:

The highest cost for this project will be material costs. We have built a table (see Appendix B) to aid in those estimations. It is important to note, however, that not every material in the table will be necessary for this project. The quantities requested will be determined from the Economic Development Committee's budget aesthetic goals. Many of these materials may be provided by the town, opening up funds for more expensive, but better looking materials. This project can be used as an opportunity for community engagement so, labor for this project can be offered by volunteer citizens, as well as existing public works employees. These employees will be vital in maintaining the changes to the roads for the duration of the project.

The table in Appendix B makes use of two colors to aid in its reading. The lighter green are cheaper options when taking into account the quantity, and the darker green are more expensive. Each section lists the materials in order of increasing total cost. This will be most useful as a reference tool to determine budget than a precise predictor of final costs. If the EDC decides to purchase every item listed in the table, in the estimated quantities, the total cost would be just under \$15,000. This project will likely be far cheaper to implement than that.

Rough estimates were determined from Figures 2, 3, and 5. These drawings were used to count the number of parking spaces, determine a rough area of bumpouts, determine the area of crosswalks, and find spaces for planters, barriers, and other street furniture. Some factors not considered in the cost estimates include the fact that some paints are liable to quickly wash away after the first rain.

Tentative Scope of Work for Spring 2020:

We will collaborate with the Economic Development Commission to establish a time frame for implementation in Spring 2020. An in-depth timeline outlining the preparation required for the demonstration month will be constructed once the EDC determines the desired materials, level of community engagement, and the duration of the demonstration period.

Community engagement is imperative to the success of tactical urbanism, thus we will proceed with a number of steps to both inform the public and evaluate the community response. An informational flyer will be created to explain tactical urbanism, to notify the public when and where the changes will occur, and how they can contribute. The flyers can be distributed and posted in the

weeks leading up to the demonstration period to notify the community and business owners. Awareness about the project can also be enforced through the potential scheduling of a pop-up event leading up to the demonstration period to provide the community with an opportunity to ask questions, which will be discussed further with the EDC.

We will also establish metrics to evaluate the “before” and “after” traffic, biking and pedestrian conditions, though the true changes in travel behavior may be difficult to assess due to colder weather. The dates for the data collection will be confirmed with the EDC. Similarly, before and after questionnaires will be created to evaluate the public opinion, which will be distributed by the EDC.

Conclusion:

Main Street Essex Village is a densely populated area and draws thousands of tourists every year. Thus, it is crucial to address the problems associated with the current parking design on Main Street, Ferry Street, and Pratt Street. The proposed design alternative is intended to enhance the roadway networks and preserve the historic culture of Essex Village. Upon testing the design through the “QuickBuild” or “Tactical Urbanism” methodology outlined in this report, the Essex Economic Development Commission will be able to evaluate the community response and make an informed decision regarding a permanent update to the design of the downtown area.

We are confident that the proposed options for the implementation of tactical urbanism set forth by our design team will adequately meet the needs of this project. The Essex Economic Development Commission will be able to select from the four proposed schedules and cost combinations for the implementation of the design and proceed with the demonstration accordingly. Senior Projects, Inc. is looking forward to the successful completion of this project.

Appendices

Appendix A. Team Qualifications

- Bridget Burke is a senior in the Civil and Environmental Engineering Department at the University of Connecticut. Bridget has a strong academic foundation in engineering design, and has gained both traffic engineering and environmental planning internship experience at Sam Schwartz Engineering. Bridget's background in transportation engineering and interest in urban planning will be applied in the development of a plan for the Essex Village Downtown QuickBuild project.
- Samantha Lee is a Civil Engineering senior with a previous background in environmental engineering. She has worked as both an environmental engineering intern and sustainability intern at Pfizer. She has experience including compliance of federal, state, and public municipal regulations and permits for site specifications, as well as promoting environmentally conscious choices. Sam also works for the Connecticut Advanced Pavement Lab, a branch of the Connecticut Transportation Institute, and has on-site experience installing roads and thorough knowledge about pavement types. This knowledge will be useful in determining strategies for implementing the interim design as well as abiding by regulations.
- Sean Driscoll is a senior Civil Engineering major at UConn. He has studied transportation and urban planning, including a three-week case study of walking and biking systems with regard to sustainability in Amsterdam, Netherlands. His internship with Dislocation Capital Management in 2018 offers him unique experience in the finance field. The financial analysis skills he learned there will prove beneficial during the cost analysis portion of this project.
- Makyle Hawk is a senior Civil Engineering major at UConn with a passionate interest in transportation engineering. He has been interning at HNTB in Rocky Hill since May of 2019 on their transportation team, and has handled project management tasks such as project fund acquisitions, adherence to CT Form 817, and has experience with Microstation (standard for CTDOT CAD), working on projects such as Downtown Crossing New Haven and Waterbury's Mixmaster Rehab project.

Appendix B. Cost Estimate Table

Type	Materials (unit)	Estimated Cost per unit	Estimated Quantity	Cost of Materials
Barriers				
	Tire planter (reclaimed)	\$0.00	25	\$0.00
	Cardboard cylinder	\$1.50	25	\$37.50
	Wooden crate	\$15.00	25	\$375.00
	Straw wattle (per linear foot)	\$4.00	100	\$400.00
	Traffic cones	\$22.00	25	\$550.00
	Free-standing delineator	\$30.00	25	\$750.00
	Custom wood planter	\$40.00	25	\$1,000.00
	Galvanized steel planter	\$90.00	25	\$2,250.00
Surface Treatments				
	Duct Tape (per roll)	\$5.00	4	\$20.00
	Tempera paint (per gallon)	\$12.00	5	\$60.00
	Sidewalk chalk (72 pk)	\$20.00	4	\$80.00
	Spray chalk/paint (per 15 oz can)	\$10.00	10	\$100.00
	Corn Starch paint (24 pk)	\$18.00	10	\$180.00
	Striper	\$100.00	2	\$200.00
	Tempera paint (per pint)	\$10.00	40	\$400.00
	Traffic tape (per 150 linear feet)	\$100.00	5	\$500.00
	Floor mats (per square foot)	\$5.00	1200	\$6,000.00
Street Furniture				
	Shipping pallets	\$1.70	10	\$17.00
	Table and two chairs (set)	\$50.00	1	\$50.00
	Milk crate	\$4.75	30	\$142.50
	Bench - cinder block and wood	\$57.50	3	\$172.50
	Hay bale	\$25.00	20	\$500.00
Landscaping				
	Small tree	\$100.00	3	\$300.00
	Small/medium plants	\$20.00	25	\$500.00
Signage				
	Homemade signs	\$10.00	10	\$100.00
	Walk [Your City] (per sign)	\$20.00	10	\$200.00

Figure 7: A table of material cost estimations, unit estimations from the *Tactical Urbanist's Guide to Materials and Design*

Appendix C: Bump-out Design Examples



Figure 8: Low cost Bump Out design

<http://tacticalurbanismguide.com/materials/traffic-cones/>



Figure 9: High Cost Bump Out Design

<https://www.strongtowns.org/journal/2017/4/7/from-tactical-to-permanent-a-memphis-story.>

Appendix D: References

Bogue, S., Clark, A., Khayami, S., Yagnik, Y. (2019). *Parking, Biking, and Walking Network in the Town of Essex*.

The Street Plans Collaborative. (2016). *Tactical Urbanist's Guide to Materials and Design*.

Retrieved

from: <http://tacticalurbanismguide.com/>

Lee, J., & Milstead, T. (2017, January 20). Unlocking the Potential of Tactical

Urbanism (SSIR). Retrieved October 23, 2019, from

https://ssir.org/articles/entry/unlocking_the_potential_of_tactical_urbanism

Lyndon, M., Garcia, T., Flynn, J., Murriente, S., Wall, D., & Simpson, C. (2019). Tactical

Urbanism Materials and Design Guide. Retrieved from <http://tacticalurbanismguide.com/>.