

Hodiamont Greenway Extension and “Schoemehl Pot” Bicycle Boulevards in St. Louis, Missouri

Extending the proposed Hodiamont Greenway and using St. Louis’
controversial street barriers to create safe and comfortable active
transportation connections

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Introduction and Background

The City of St. Louis, MO, is known at least among locals for its strange network of closed streets. Anyone who has driven a car in certain city neighborhoods knows how confusing and frustrating the seemingly arbitrary street closures can be. One minute you might be driving down a calm residential street and the next minute you find yourself at a dead-end, with the road blocked using anything from gates and small cul-de-sacs to more tactical items such as concrete balls and, of course, the infamous “Schoemehl Pots,” which are the main inspiration for this project.

Saint Louis University sociology professor Chris Prener has documented closures of the urban street network in St. Louis in his project “*Street Not Thru: St. Louis Barriers Project*,” determining that a total of 325 barriers completely block motor vehicle traffic at various locations around the city. Street barriers are not equally distributed throughout the St. Louis but are spatially concentrated in certain areas (see Figure 1). The placement of these barriers are highly intentional and they have been installed for various purposes including traffic calming, crime prevention, fostering a sense of neighborhood ownership, etc. Many of St. Louis’ street closures are also viewed to be racially motivated, particularly barriers along or near Delmar Boulevard, a thoroughfare that marks a stark contrast between the overwhelmingly black and low-income neighborhoods of north St. Louis and the whiter, wealthier neighborhoods of the city’s central corridor. The history of segregation and the intersection of demographics and street closures in St. Louis is beyond the scope of this report, although information regarding these topics is available elsewhere.

Street barriers in St. Louis, particularly Schoemehl pots (Figure 2), started showing up on city streets in the late 1970s under mayor Vince Schoemehl, the pots’ namesake (Thorsen 2015). Schoemehl’s administration pushed the idea that street closures (using pots or other objects)



Figure 1. Map of 325 currently existing street barriers and barrier densities in St. Louis, MO. Many of these are Schoemehl pots, concrete balls, or other tactical barriers (Map author: Brandon Siracuse; Data: City of St. Louis 2013, Prener et al. 2019).

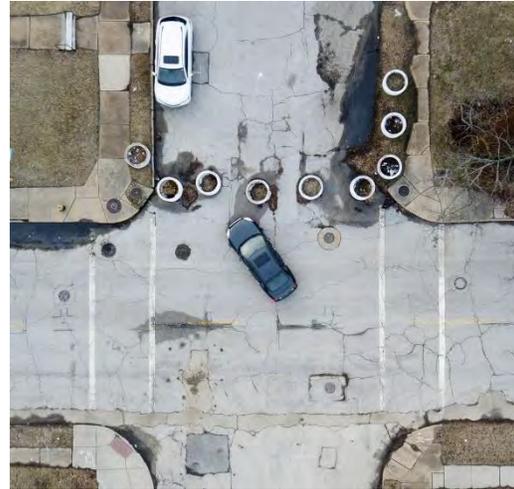


Figure 2. Four examples of Schoemehl pots blocking streets in St. Louis, MO. Some pots are maintained well while others have fallen into poor condition (Thorsen 2015; Thorsen 2019; Hannah-Jones 2014)

could improve the city by giving the residents of a street a greater sense of neighborhood ownership. Many leaders also believed that closing streets could help reduce crime, a major concern along with white flight at the time. Mayor Schoemehl discovered that sections of concrete sewer pipes could be turned into large planters for very little cost, and his administration alone became responsible for over 100 installations of these now-ubiquitous pots during his twelve years in office (Grone 2019). Street closures have continued since the Schoemehl administration, earning St. Louis recognition as a city “where public officials have authorized the closure of public streets to vehicle traffic to a degree unmatched in any other American city” (Grone 2019).

Schoemehl pots have not appeared on city streets without controversy. Many people remain opposed to Schoemehl pots and other street barriers because they undermine the urban street grid. Some, including Prener, argue that street closures may actually decrease public safety. Opponents often argue that street closures can increase police, fire, and EMS response times, especially because the city does not have an official list of street closures that can be used to help first responders navigate. Closing streets to cars also does not stop criminals who may

be on foot. A study by Prener, Braswell, Miller, and Jennings (2019) suggests that “street closures are at best ineffective and at worst associated with higher rates of crime in neighborhoods.”

Another common criticism of St. Louis’s street closures is that they are often unsightly eyesores. With the exception of more permanent street closures such as ornate metal gates, the vast majority of street closures are done with Schoemehl pots or other pieces of concrete that may be neglected over time. While some neighborhoods find ways to maintain plants and decorate barriers with paint, many barriers have weathered over time and plants have died, leaving nothing but empty dirt in many Schoemehl pots. Despite concerns that street closures are not good for neighborhoods, barriers continue to go up. Earlier this year, a barrier was put in at the intersection of Manchester Avenue and Chouteau Avenue in front of a new luxury apartment building in the rapidly gentrifying Grove district (Figure 3, Grone 2019).



Figure 3. One of the most recent street barrier installations in St. Louis on Chouteau Avenue in front of the Chroma apartment building. Instead of Schoemehl pots, this barrier consists of large geometric pieces of painted concrete (Grone 2019).

Regardless of personal opinions on Schoemehl pots, these and other street barriers may present an opportunity to vastly improve the bicycle network in St. Louis in a meaningful (and affordable) way. Many pots, balls, and other tactical barriers are spaced in such a way that bicyclists may easily pass through even though cars may not. The traffic calming effect this has had on many residential streets has created conditions very similar to those of intentionally designed bicycle boulevards. Because there was no city-wide plan to coordinate the placement of barriers (especially for the purposes of a bicycle network) it is unlikely that the existing barriers could entirely support a bicycle boulevard system. However, existing barriers provide a good starting point for the creation of a high-quality bicycle boulevard network.

The city also has a partially completed system of greenways (a type of mixed-use trail). Great Rivers Greenway (GRG) oversees the construction and maintenance of these regional trails, and GRG has plans to construct a new greenway along the Hodiament Streetcar Right-of-Way, an abandoned streetcar line that has been paved over and functionally exists somewhere between an alley and a street. The proposed Hodiament Greenway (figure 4) promises to revitalize this old right-of-way and greatly improve active transportation accessibility in key north

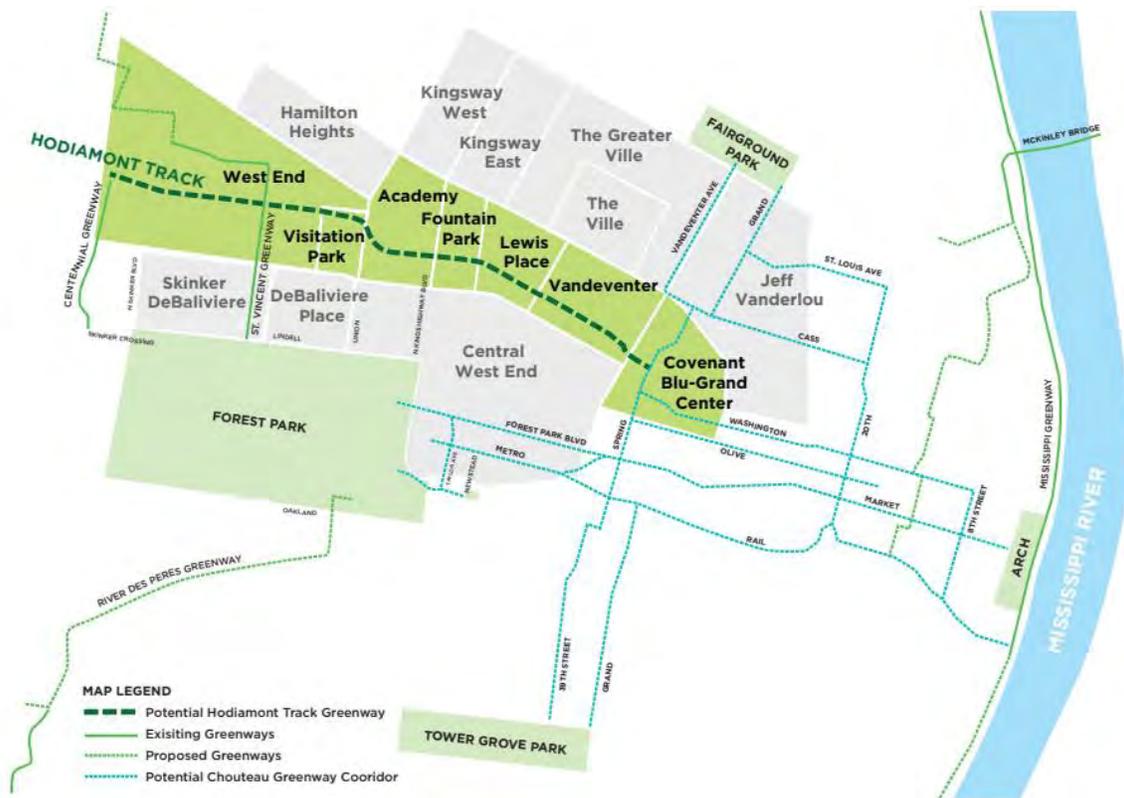


Figure 4. Current Hodiament Greenway proposal. As planned, the greenway would end at the eastern end point of the existing Hodiament streetcar right of way (Map credit: Great Rivers Greenway 2018).

St. Louis neighborhoods. One way in which the Hodiament Greenway plans fall short, however, is that it would end in the Covenant Blu-Grand Center neighborhood instead of continuing downtown. An extension to downtown could make the Hodiament Greenway useful for more commuters in addition to recreational users.

This project will present an ambitious idea for the City of St. Louis. The centerpiece will be Hodiament Greenway. This report will suggest an extension of the Hodiament Greenway beyond the existing right-of-way to connect the riverfront to the western city limits using a combination of varied yet continuous bicycle infrastructure. In order to connect residents safely and comfortably to the greenway, this report will also suggest a network of bicycle boulevards in the neighborhoods intersected by the greenway as well as those immediately adjacent. The bicycle boulevard system will utilize existing street closures wherever possible along with design improvements to complete the network. This bicycle boulevard network will ideally act as a feeder system for the Hodiament Greenway, ensuring that all residents near the greenway have a safe way to access it. A complete city-wide bicycle boulevard network is not considered here, although this plan could become a launch point for an extension of bicycle boulevards throughout the city, potentially in a way that complements other existing or future greenways.

Bicycle Boulevards

A bicycle boulevard design guide published by Portland State University defines bicycle boulevards as “low-volume and low-speed streets that have been optimized for bicycle travel through treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments” (Walker, Tresidder, and Birk 2009). To be clear, bicycle boulevards are not simply streets with shared lane markings painted on them, although bicycle boulevards often do make use of these pavement markings. Bicycle boulevards tend to make streets very comfortable and safe for bicyclists because car traffic has been largely removed by design. This type of bicycle infrastructure is also very cost effective and easy to implement compared to other forms of infrastructure such as protected bike lanes.

Berkeley, CA, is an example of an American city that has embraced bicycle boulevards. The city first adopted a plan for bicycle boulevards in 1999 and began installing the first signs and pavement markings in early 2001 (City of Berkeley). Today, Berkeley is served by seven bicycle boulevards that are easily accessible from most areas of the city (See Figure 5). The total cost to implement their bicycle boulevard system to date has only been \$330,000, of which \$300,000 came from state and federal grants (City of Berkeley). Currently, the city is working on two projects to expand the bicycle boulevard network as well, an indication that this type of infrastructure can work well and remain popular.

A city-wide bicycle boulevard system in St. Louis would likely cost more than it has in Berkeley, simply because cost of materials and labor is higher today and the city has several times more land area than Berkeley. However, bicycle boulevards remain a very cost effective method to provide safe and comfortable bicycling access to people of all ages and abilities. Given the budget constraints in St. Louis related to a declining tax base, bicycle boulevards may be one of the best options for increasing bicycle infrastructure in the city in the short term.

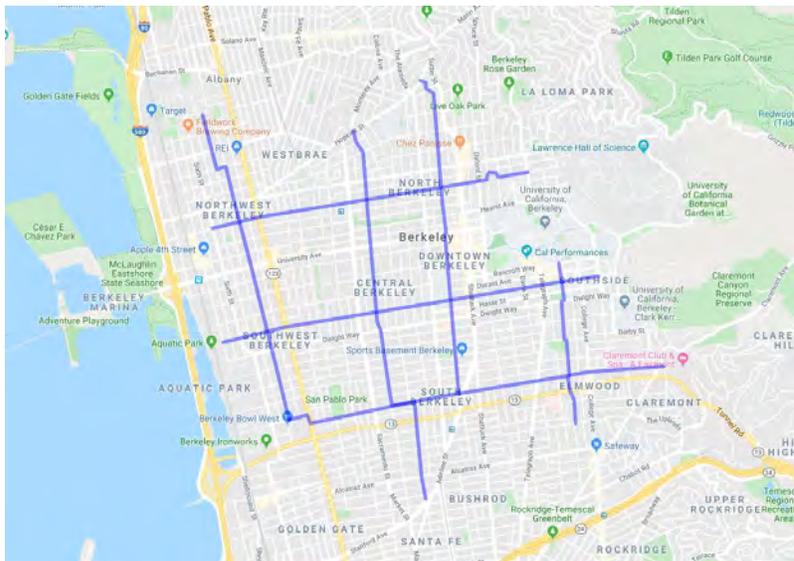


Figure 5. Bicycle boulevard network in Berkeley, CA (Google Maps).

Hodiamont Greenway Extension

As seen above, current plans for the Hodiamont Greenway show the trail's eastern terminus in the Covenant Blu-Grand Center ("Grand Center") neighborhood. This is likely because the actual Hodiamont streetcar right-of-way's eastern endpoint is in the Vandeventer neighborhood (just west of Grand Center). As planned, the greenway would continue briefly along Enright Avenue into Grand Center, ending at the southwest corner of the VA Medical Center campus. Extending the greenway further would likely be more difficult, as the route would need to continue along existing roadways to reach downtown. However, such an extension is feasible. This section will outline a way to create this extension. Figure 6 shows the ideal way to extend the Hodiamont Greenway to create a continuous route for people walking and biking across the city.

Due to infrastructure constraints, the extension of the planned Hodiamont Greenway cannot be a greenway itself. Descriptions of each section of the route can be found below.



Figure 6. Current plans for a greenway on the existing Hodiamont streetcar right of way and a proposed extension that would provide a connection from the Gateway Arch National Park (downtown) to the western edge of the city. City neighborhoods containing greenway sections shown for reference (Map author: Brandon Siracuse; Data: City of St. Louis, Great Rivers Greenway).

Original Hodiament Plans – Hodiament Avenue to N Spring Street (3.75 mi.)



Figure 7. Map of the originally proposed Hodiament Greenway, extending from Hodiament Ave (on the western end) to N Spring Ave. This section makes use of an abandoned streetcar right-of-way (Map author: Brandon Siracuse; Data: City of St. Louis 2013, City of St. Louis 2017, Great Rivers Greenway).

- The original Hodiament Greenway study calls for a greenway between Hodiament Avenue and N Spring Avenue (as shown in Figure 6).
- The study of this route does not indicate design specifications such as measurements
- Other nearby greenways are 12 feet wide.
- For continuity, the Hodiament greenway could also be 12 feet wide.
- Existing Hodiament right-of-way is 22 feet wide.
 - Use additional space for amenities such as landscaping, benches, water fountains, and artwork

Extension - N Spring Avenue to Grand Boulevard (0.25 mi.)

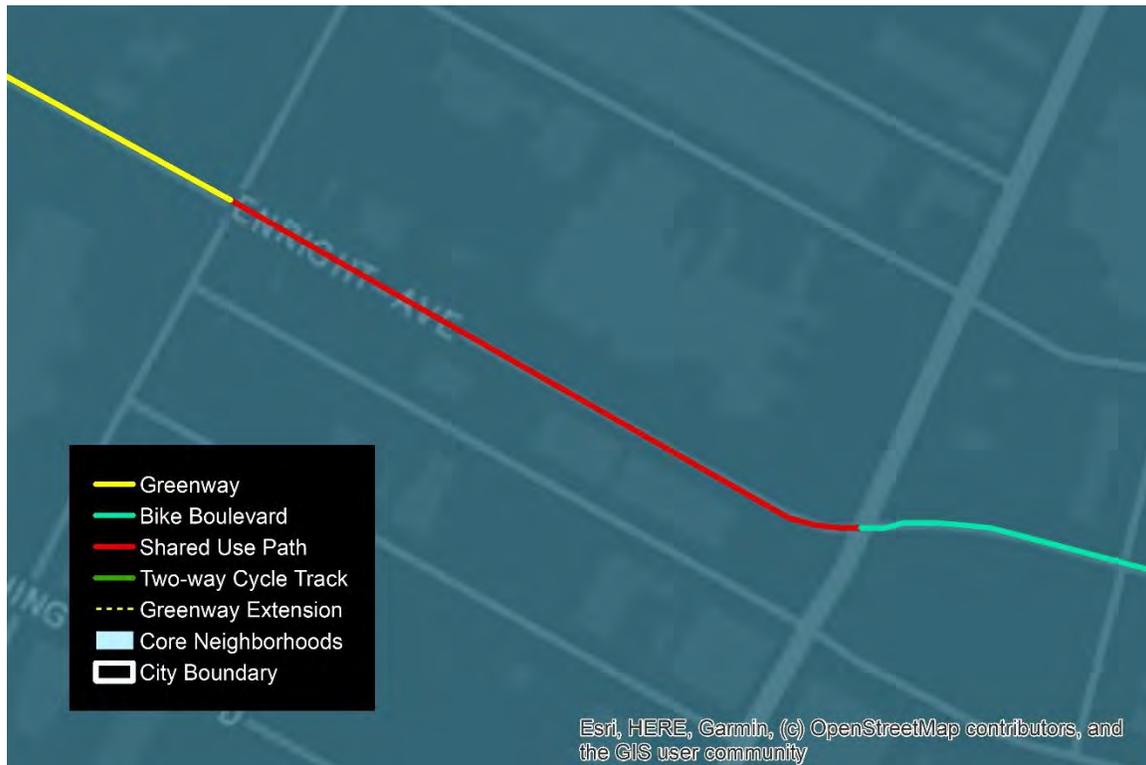


Figure 8. Section of the Hodiamont Greenway extension from N Spring Ave to Grand Blvd, shown in red (Map author: Brandon Siracuse; Data: City of St. Louis 2017, Great Rivers Greenway).

- Shared use path on north side of Enright Avenue
- Current street width is 43 feet (two travel lanes with on-street parking)
- New plans:
 - Maintain bidirectional motor vehicle lanes (each 8 feet wide)
 - Maintain street parking on either side of vehicle lanes (each 7 feet wide)
 - Construct shared use path on north side of street (12 feet wide)
 - Buffer between north side parking and shared use path (1 foot wide)
- This section will maintain visual continuity with the greenway to the west, as path width will remain the same.
- Use green paint on roadway and signage to indicate where path crosses N Spring Avenue.
- Use a fully protected intersection at Grand Blvd (high traffic volume street).

Extension - Grand Boulevard to N Leffingwell Avenue (0.75 mi.)

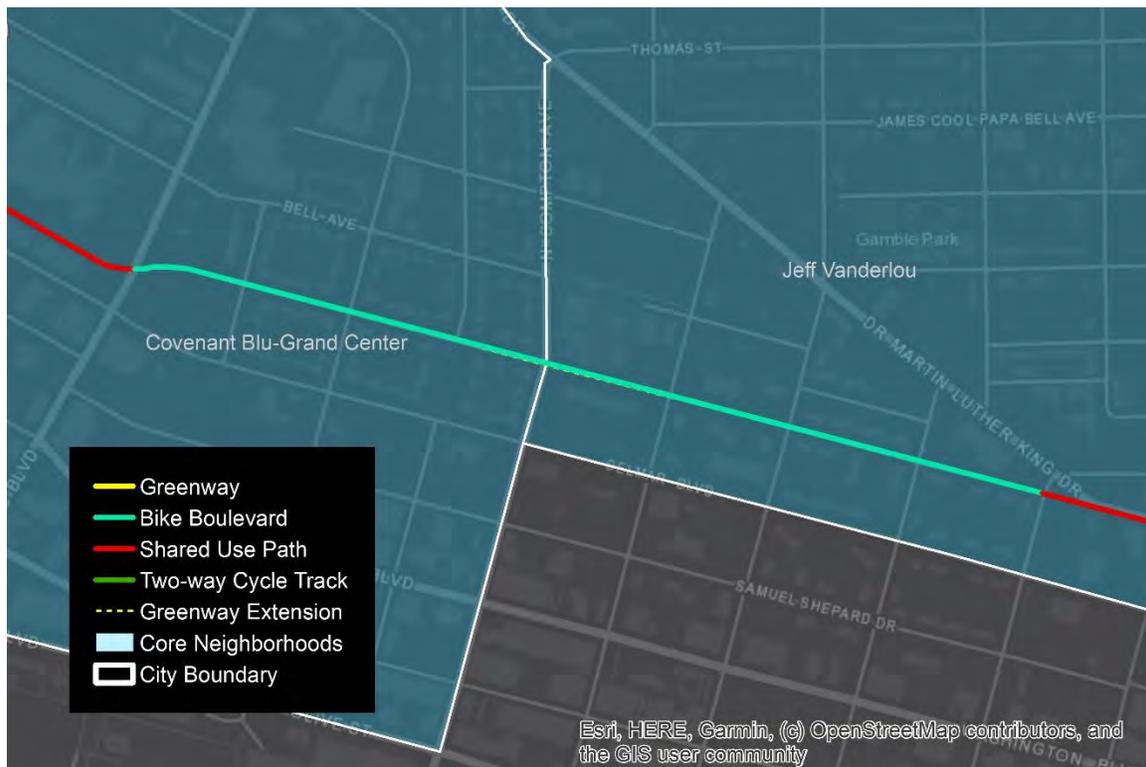


Figure 9. Section of the Hodiamont Greenway extension from Grand Blvd to N Leffingwell Ave, shown in teal (Map author: Brandon Siracuse; Data: City of St. Louis 2017).

- East of Grand Blvd, Enright Ave becomes Franklin Ave.
- This section is highly residential with low traffic volumes.
- Use bicycle boulevard treatments on this section
 - Signage
 - Shared lane markings
 - Use Schoemehl pots or other barriers to eliminate ability to drive straight through while allowing bicycles through
 - Alternatively, place Schoemehl pots in the center of select intersections and use signage to indicate that drivers should treat the intersection as a mini roundabout
- Construct raised crosswalks for crossing N Compton Ave
 - Compton carries relatively high traffic volumes (4-lane road)
 - Intersection is currently a four-way stop
 - Alternatively, construct a raised intersection

Extension - N Leffingwell Avenue to N 9th Street (1.4 mi.)

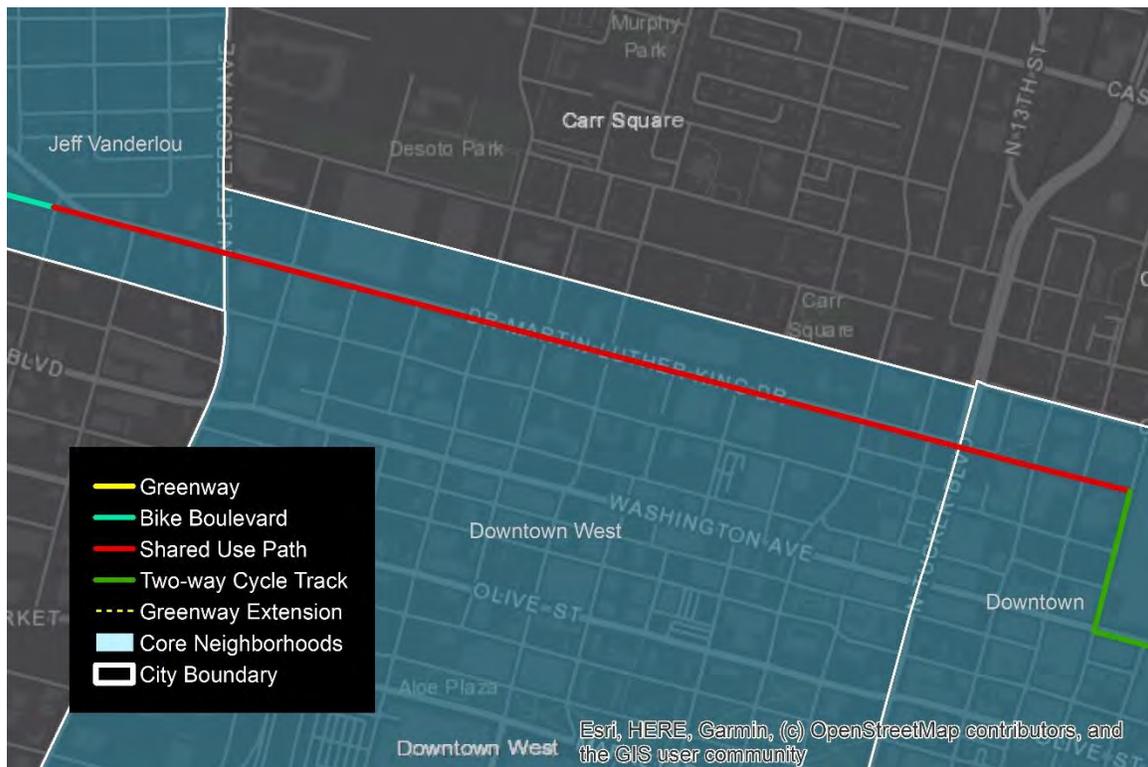


Figure 10. Section of the Hodiamont Greenway extension from N Leffingwell Ave to N 9th Street, shown in red (Map author: Brandon Syracuse; Data: City of St. Louis 2017).

- Franklin Ave merges into Dr. Martin Luther King Drive.
- MLK Drive is also Missouri Supplemental Route D, a secondary state road that carries more traffic than surrounding local streets but not quite as much as a state highway.
 - Higher speeds than surrounding streets
 - 47-50 feet wide along this section
- Construct a shared use path (12 feet wide) within the existing right of way, on the south side of the road
 - West of Jefferson, remove parking from south side of street
 - East of Jefferson institute a road diet (remove one of the travel lanes)
 - Two 10-foot-wide travel lanes
 - One 12-foot-wide center turn lane
 - Also include a 3-foot buffer between shared use path and roadway
- Some small portions of this section will need to be built through existing grassy space (city-owned property)
 - Maintain 12-foot-wide shared use path in these sections

Extension - N 9th Street to Gateway Arch National Park (0.6 mi.)

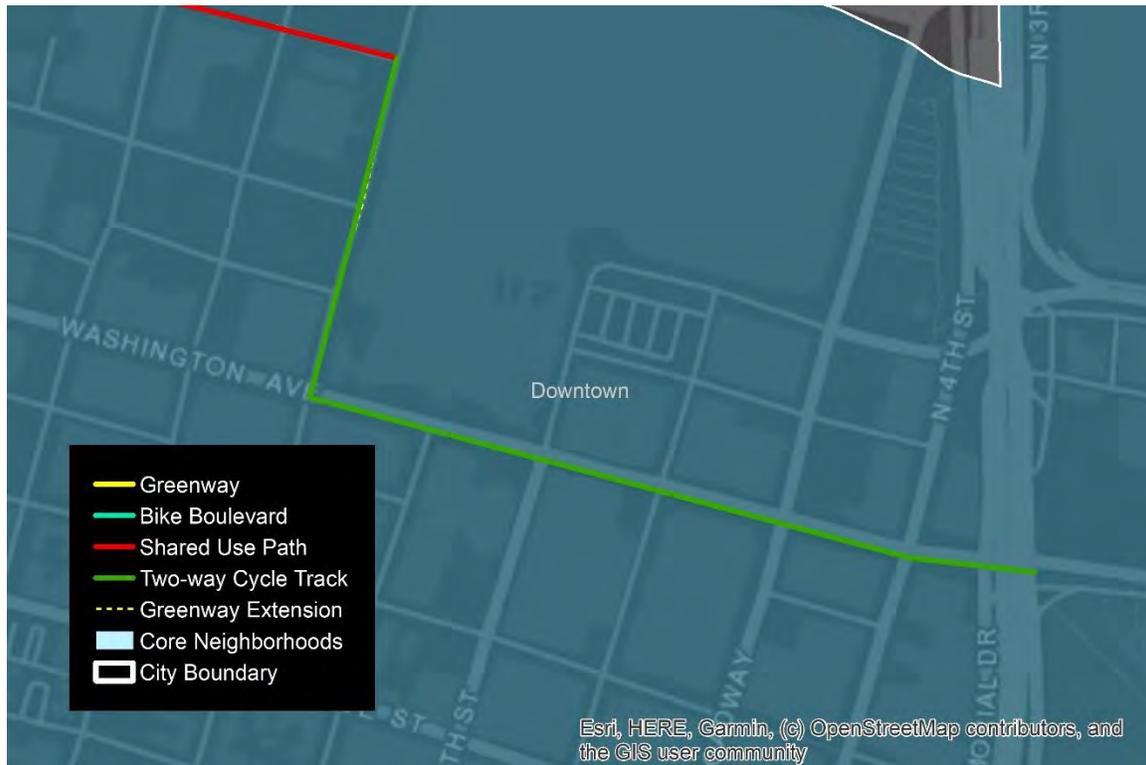


Figure 11. Section of the Hodiament Greenway extension from N 9th Street to Washington Ave, then continuing to Gateway Arch National Park. Route shown in green (Map author: Brandon Siracuse; Data: City of St. Louis 2017).

- MLK Drive ends at N 9th Street downtown (convention center is to the east).
- Hodiament extension will turn south and become a two-way cycle track
 - Along west side of N 9th Street for three blocks
 - People walking should transition to existing sidewalks
- At Washington Avenue, the two-way cycle track will turn eastward and follow Washington Ave until reaching the northwest corner of Gateway Arch National Park.
 - Use protected intersection elements at 9th & Washington, Broadway & Washington, and 4th & Washington
 - Cycle track will run on south side of Washington Ave (create from existing motor vehicle lane)
 - Use flex posts or bollards to protect the cycle track and prevent vehicles from blocking it
- Cycle track will guide people biking into existing paved trails on the Arch Grounds

Complete Hodiamont Extension by Infrastructure Type

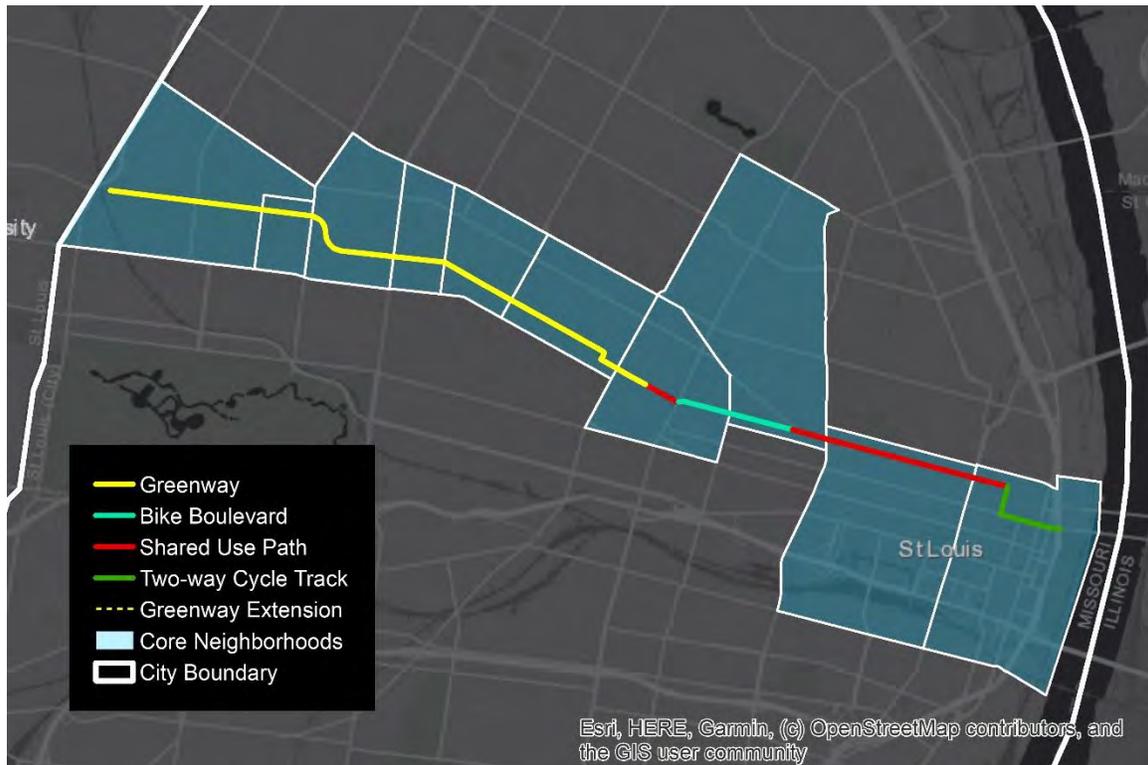


Figure 12. Map of the complete Hodiamont Greenway with proposed extension, symbolized by infrastructure type (Map author: Brandon Siracuse; Data: City of St. Louis 2013, City of St. Louis 2017, Great Rivers Greenway).

Shown above (Figure 12) is a map of the entire Hodiamont Greenway and extension symbolized by infrastructure type. The total route length as shown is 6.75 miles. Ideally, this entire route will be designed in such a way that creates a clear and continuous active transportation route spanning the width of the city. The route will connect key destinations in the West End, Downtown, and every neighborhood in between.

Hodiamont Greenway Bike Boulevard Connections

In order for the Hodiamont Greenway to be as accessible as possible, safe and comfortable connections to the trail must be provided. Some connections already exist, such as the bike lanes on Union Boulevard and Euclid Avenue and the existing St. Vincent Greenway (intersects the Hodiamont right of way at a 90-degree angle in the West End neighborhood. Other connections would be helpful, however. This is where Schoemehl pots and other existing street barriers may be utilized. Streets that already have low traffic volume due to these barriers can be easily

improved to become official bike boulevard routes that offer good connections not only to the greenway but to neighborhood destinations.



Figure 13. Possible bicycle boulevard routes to connect bicyclists to the Hodiament Greenway. Routes shown use existing Schoemehl pots and other street barriers whenever possible (Map author: Brandon Siracuse; Data: City of St. Louis 2013, City of St. Louis 2017, Great Rivers Greenway, and Prener 2019).

The network of bicycle boulevards shown above may seem overly extensive, but the network was designed based on routes with existing street barriers. Some routes are also suggested in areas without many street barriers but also in need of connections to the greenway; these routes could make use of new Schoemehl pots or other types of traffic calming devices. Many of these routes could be extended further into city neighborhoods not considered in this map. Additionally, routes shown in this map would not necessarily need to all be built. A high density of bicycle boulevards is shown in the West End, largely because a high concentration of Schoemehl pots exist there currently. Not all routes would necessarily be needed to create safe and comfortable connections to the Hodiament Greenway.

Potential difficulties exist in constructing a bicycle boulevard system in the neighborhoods directly to the north of Forest Park. Several streets here are privatized and gated off from surrounding streets, meaning only people who live on the street have access to it. Bicycle boulevards could not be built on these streets, even though existing barriers might suggest they

would be good candidates for this type of infrastructure. Other difficulties can be found in industrial areas along the riverfront and in the Midtown neighborhood.

This report will not describe individual treatments for specific bicycle boulevard routes, but the goal in implementing this bicycle boulevard network would be to make use of existing Schoemehl pots and street barriers and use new pots or barriers where needed to maintain visual continuity and reduce risk of confusion among users. NACTO's design guide for bicycle boulevards lists the following design elements:

1. Route Planning: Direct Access to Destinations
2. Signs and Pavement Markings: Easy to find and to follow
3. Speed Management: Slow motor vehicle speeds
4. Volume Management: Low or reduced motor vehicle volumes
5. Minor Street Crossings: Minimal bicyclist delay
6. Major Street Crossings: Safe and convenient crossings
7. Offset Crossings: clear and safe navigation
8. Green Infrastructure: enhancing environments

This network of bicycle boulevards is designed to provide access to the Hodiament Greenway and its extensions (the primary destination). Along the way, homes, businesses, and jobs can also be accessed. Signs and pavement markings will be used to indicate which routes are designated as bicycle boulevards, and speed management will come from the use of speed bumps, raised crosswalks, bulb outs, narrowed roadways, and planters on the edges of roadways (for visual friction), depending on the needs of an individual route. Existing street barriers provide volume management, and additional Schoemehl pots can be added to direct car traffic away from the route in areas where more volume management would be necessary to create comfortable biking conditions. For example, some existing Schoemehl pots have been placed in diagonal lines across four-way intersections (Figure 14). As currently placed, they do not allow enough space for bicyclists to pass through. If pots were moved to create linear spacing of five feet, bicyclists would be able to pass through the barrier while keeping car traffic restricted.



Figure 14. Schoemehl pots places in a diagonal line across the intersection of McPherson Ave and Whittier St in the Central West End neighborhood (Photo: Google Street View).

Schoemehl pots can also help to create safe street crossings at minor intersections. In areas where four-way traffic is preferred, groups of the pots can be placed in the middle of the intersection along with signage indicating that drivers should treat them as a mini roundabout (Figure 15). Other larger and more difficult crossings may require signals or other infrastructure to offer protected crossing opportunities for people biking. In terms of green infrastructure, a nice benefit of using Schoemehl pots is that they are designed to have plants in them. As long as plants are maintained well, the pots can add greenery to the routes, thus improving the walking and bicycling environment along the bicycle boulevards.



Figure 15. A cluster of Schoemehl pots placed at the intersection of Utah St and Arkansas Ave in the Tower Grove East neighborhood. The pots plus minimal signage create a miniature roundabout that calms traffic (Photo: Google Street View).

Potential Benefits of this Proposal

One of the most important considerations for bicycle infrastructure in St. Louis is to determine who benefits from it. In a city that is highly segregated by both race and income level, the location of amenities can matter greatly in terms of social justice and equity. Historically, Delmar Boulevard has been the dividing line between the mostly black and low income populations of north St. Louis neighborhoods and the whiter and wealthier neighborhoods to the south. The proposed Hodiamont Greenway and its extension will run through the majority black and high poverty West End, Visitation Park, Academy, Fountain Park, Lewis Place, Vandeventer, Grand Center, and Jeff-Vander-Lou neighborhoods, providing direct high quality walking and bicycling access to city residents more likely to be cost-burdened by automobile ownership.

Additionally, the Hodiamont Greenway runs very close to Delmar Boulevard (about 1,900 feet to the north). Because of this, the bicycle boulevard system that connects surrounding neighborhoods to the greenway will serve residents in neighborhoods both north and south of Delmar. This may help contribute to efforts to bridge the “Delmar Divide” by creating a network of bicycle infrastructure that encourages bicycle users to cross the divide. Given that street closures are common on streets that cross Delmar Boulevard (a product of racially influenced

fear of crime among residents living south of Delmar) the bicycle boulevard system can help to reduce the isolationist effect that these barriers have had in this area of the city.

Expanding walking and bicycling infrastructure, particularly on St. Louis' north side, may also facilitate substantial public health benefits. Poor health outcomes including higher rates of chronic health disorders correlate with poverty and race, and the disparities tend to be stark in St. Louis (aligning closely with the Delmar Divide). Active lifestyles are known to contribute to better health outcomes, and high quality walking and bicycling infrastructure can encourage neighborhood residents to engage in more physical activity in their daily lives.

Another key benefit of this proposal is the expansion of walking and bicycling access to key destinations including downtown employment and entertainment, Forest Park, the VA Hospital, schools, public transportation (rail and bus), and neighborhood businesses. The extended Hodiament Greenway alone would facilitate connections to many of these destinations while providing a continuous walking and bicycling route that spans the width of the city. The bicycle boulevard network further expands access to destinations and homes, increasing the usefulness of the greenway for many people. Residents from neighborhoods near the greenway would have a new way to access jobs, retail, entertainment, medical care, education, and transit without relying on a car or risking life-threatening collisions with motor vehicles.

If this proposal proves to be successful, it could become a model for future expansions of active transportation infrastructure in the St. Louis, especially around other planned greenways such as the Chouteau Greenway. If implemented successfully, bicycle boulevards could create a comprehensive system of safe and comfortable bicycling routes that connect people of all ages and abilities to all parts of the city. The decades-long use of Schoemehl pots and other traffic control tools in St. Louis provides the basis to construct bicycle boulevards in many areas of the city, and new pots or other barriers can be added as needed for a very affordable price. While bicycle boulevards do not necessarily directly address walking, they do tend to calm auto traffic by diverting it and/or controlling speeds, which benefits people walking in addition to those on bike.

Making it all Happen

This plan presents perhaps one of the most ambitious active transportation proposals in the recent history of St. Louis, and as such its implementation will require a very large amount of engagement with the public and other stakeholders. First and foremost, neighborhood residents in areas that would be affected by bicycle boulevards and the extended greenway must have plenty of opportunities to provide input on the proposed routes. The details presented in this plan are only a suggestion of what could work, but anything could be changed based on public input. Methods for engaging the public could include community meetings, surveys, focus

groups, and even some tactical urbanism to demonstrate how a particular section of the system could look and function.

Another way to engage with the community is through neighborhood stakeholders that are respected by the community. Residents may often be skeptical of planners from outside their neighborhood coming in and “imposing” something on them. Neighborhood leaders can often convey information in a more palatable way. Some potential stakeholders to involve include community development corporations that operate in the affected neighborhoods, such as the Washington University Medical Center Redevelopment Corporation and Kingsway Development. Neighborhood groups such as the Downtown Neighborhood Association and Hamilton Heights Neighborhood Association can also be beneficial partners along with aldermen for city wards affected by this plan (ward aldermen tend to build large amounts of trust among their constituents in the city). Neighborhood level stakeholders should be involved as well, including places of worship and local businesses.

A project of this scale will undoubtedly cost a significant amount of money. For construction of the greenway, probably the costliest portion of this plan, Great Rivers Greenway can seek federal funding from programs such as the Transportation Alternatives Program (TAP), Congestion Mitigation and Air Quality (CMAQ) program, and others. City and state transportation funding can be sought as well, depending on availability. Private funding should be considered as well. Great Rivers Greenway has successfully used public-private partnerships in the past to build sections of greenway, and private donations could also be accepted for Hodiadmont Greenway construction.

Funding for the bicycle boulevard network could come from some of the same sources listed previously, although another source of funding may also work well for this: ward capital funds. In St. Louis, each ward is allocated an equal amount of money (\$328,000 in the most recent budget) to be spent on capital projects, including transportation. Aldermen have direct control over how their ward’s funds are spent, and working with them to use a portion of these funds for low cost bicycle boulevard elements could work well. Engaging residents in the planning and implementation of bicycle boulevards is especially important in order to secure ward capital funds, as aldermen tend to be very responsive to constituent requests when ward capital is involved.

Maintenance is one final key concern with this proposal. Because St. Louis can experience extreme weather, maintenance will determine the year-round usability of any new bicycle infrastructure. Greenway maintenance should be provided by Great Rivers Greenway, potentially through a partnership with the city parks department. GRG could also seek volunteers to help keep pathways clear. Organizations such as Boy Scouts, Girl Scouts, neighborhood groups, and church groups may be able to provide volunteers at times. In order to solidify ongoing maintenance support from volunteers, GRG could consider a program that allows different organizations to “sponsor” sections of the greenway. Sponsorships could involve snow

clearance, leaf clearance, landscaping maintenance, trash cleanup, and other activities that make the greenway a more pleasant space. Maintenance of the paved surface will likely require professionals to be hired.

Maintenance of the bicycle boulevard system can be integrated into the city's regular street maintenance activities. Snowplow drivers will need to be educated and trained on how to properly clear bicycle routes during the winter. For pavement maintenance, ward capital funds can be used on an as-needed basis along with other city-level road maintenance funds. In order to determine what areas need maintenance, the Citizens' Service Bureau (CSB) should be utilized. The CSB allows anyone to submit a maintenance request through an online form, over the phone, or by Tweeting @stlcsb with a request.

Conclusion

The existing street closures in St. Louis present a unique opportunity for the city to make use of its controversial infrastructure to promote walking and biking. In conjunction with a more fully built-out greenway system, bicycle boulevards created using existing street closures could completely transform active transportation throughout the city. Not only do bicycle boulevards have the potential to expand transportation options for city residents, they also have major social justice implications. In a city that continues to be plagued by socioeconomic division and economic decline, perhaps few other things could help achieve equity goals in the near term than a robust active transportation network. Setting a goal to become one of the nation's most walkable and bike-friendly cities could help the city stand out in a positive way among its peers. With so much untapped potential in Schoemehl pots, St. Louis is certainly in a good position to achieve this.

References

- City of Berkeley (n.d.). Bicycle boulevards in Berkeley. Retrieved from <https://www.cityofberkeley.info/bicycleboulevards/>.
- City of Berkeley (n.d.). Bicycle boulevard planning and implementation history. Retrieved from https://www.cityofberkeley.info/Public_Works/Transportation/Bicycle_Boulevard_History.aspx.
- City of St. Louis (2013). City Boundary [shapefile]. Retrieved from <https://www.stlouis-mo.gov/data/datasets/distribution.cfm?id=40>.
- City of St. Louis (2017). Neighborhoods and Wards [shapefile]. Retrieved from <https://www.stlouis-mo.gov/data/datasets/distribution.cfm?id=73>.
- Great Rivers Greenway (2015). Bike St. Louis as of 3.5.15 [shapefile]. Retrieved from <https://greatriversgreenway.org/gis-data/>.
- Great Rivers Greenway (2016). Master Plans as of 12-28-16 [shapefile]. Retrieved from <https://greatriversgreenway.org/gis-data/>.
- Great Rivers Greenway (2018). Hodiament tracks greenway study: community engagement report. Retrieved from http://greatriversgreenway.org/wp-content/uploads/2019/01/HodiamentTracksReport_122118_Final.pdf.
- Grone, J. (2019, April 25). The curious tale of St. Louis street barriers. *CityLab*. Retrieved from <https://www.citylab.com/transportation/2019/04/car-free-safe-streets-st-louis-map-vehicle-barriers-traffic/586501/>.
- Hannah-Jones, N (2014, December 22). School segregation, the continuing tragedy of Ferguson. *St. Louis Public Radio*. Retrieved from <https://news.stlpublicradio.org/post/school-segregation-continuing-tragedy-ferguson-0#stream/0>.
- NACTO (n.d.). Urban bikeway design guide: Bicycle boulevards. Retrieved from <https://nacto.org/publication/urban-bikeway-design-guide/bicycle-boulevards/>.
- Prener, C. (2019). STL_BARRIERS_All [shapefile]. Retrieved from <https://github.com/chris-prener/barriers-data/tree/master/location-data/shapefile>.
- Prener, C., Jennings, J., Block, A., Curran, A., Smith, A., Foeller, C., Meyer, J., Miller, K., Baumgart, M., Fortune, S., and Braswell, T. (2019). *Street Not Thru: St. Louis Barriers Project*. Retrieved from <https://chris-prener.github.io/barriers/>.
- Prener, C., Braswell, T. H., Miller, K., and Jennings, J. P. (2019). Closing the gateway: Street closures, bisected geography, and crime in St. Louis, MO. <https://doi.org/10.31235/osf.io/2wext>.
- Thorsen, L. (2019, February 25). To make St. Louis safer, hundreds of streets were closed. What if that was a mistake? *St. Louis Post-Dispatch*. Retrieved from https://www.stltoday.com/news/local/crime-and-courts/to-make-st-louis-safer-hundreds-of-streets-were-closed/article_8b3b3042-db3c-59e5-919f-515aa6a0fe7e.html.

Thorsen, L. (2015, July 11). In a city where street closings are common, 'Choemehl pots' never seem to go away. *St. Louis Post-Dispatch*. Retrieved from https://www.stltoday.com/news/local/metro/in-a-city-where-street-closings-are-common-schoemehl-pots/article_c191cf1a-4967-5f58-80f4-3d8e3189790f.html.

Walker, L., Tresidder, M., and Birk, M. (2009). Fundamentals of bicycle boulevard planning and design. *Portland State University*. Retrieved from <https://www.pdx.edu/sites/www.pdx.edu/syndication/files/BicycleBoulevardGuidebook.pdf>.