Washington Avenue Improvement Project Case Study

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Executive Summary

The Washington Avenue Improvement Project epitomizes Philadelphia's dedication to enhancing road safety and efficiency. Managed by the city's Office of Transportation, Infrastructure, and Sustainability (OTIS), this project addressed critical issues such as vehicular speeding, pedestrian and cyclist safety, and illegal parking on one of Philadelphia's most dangerous roads. This report offers a detailed examination of the project's inception, development, outcomes, and lessons learned.

Initiated in 2013 and completed in 2023, this extensive project transformed Washington Avenue, a major South Philadelphia artery, from Grays Ferry Avenue to S 4th Street. The project included traffic calming measures, enhanced pedestrian and cyclist safety, and optimized parking and loading zones. The redesigned avenue now varies between three, four, and five lanes, incorporating separate bike lanes and diverse traffic calming elements. Despite limited data, early indicators suggest a decrease in traffic volume by 20% and improvements in safety and accessibility.

The project area passes through diverse neighborhoods with significant income disparities and varied demographic profiles. Understanding these dynamics was crucial for addressing the community's needs and ensuring equitable improvements across the avenue. Spanning nearly a decade, the project timeline was marked by extensive community engagement, adaptive planning during the COVID-19 pandemic, and a phased implementation that concluded in 2023. Future enhancements, including the installation of concrete bus boarding islands and traffic safety measures, are planned through 2024.

Key to the project's success were the strategic design changes that reduced the number of driving lanes and implemented comprehensive safety measures, including protected bike lanes and advanced signal timings for pedestrians. These modifications have led to significant reductions in illegal parking and enhanced overall roadway safety.

The project has achieved most of its objectives, with notable improvements in parking management, increased bus and bicycle usage, and a significant reduction in speeding. However, challenges such as illegal sidewalk parking persist, particularly in high-density commercial areas, highlighting the need for ongoing enforcement and adaptation.

While initial digital engagement methods were met with criticism, subsequent efforts included more traditional, in-person outreach, which helped refine the project's approach based on community feedback. The final design represents a compromise that balances improved safety and accessibility with the needs of local businesses and residents.

The project underscores the importance of continuous community engagement, data-driven decision-making, and adaptability in urban planning. Regular feedback and comprehensive evaluations have been pivotal in shaping the project and planning for future enhancements.

Introduction

Washington Avenue Improvement Project scope. Source: Google Earth

The Washington Avenue Improvement Project is a good example of Philadelphia's commitment to promote safety and efficiency on its roads. Led by Philadelphia's Office of Transportation, Infrastructure, and Sustainability (OTIS), this initiative sought to address longstanding concerns regarding vehicular speeding, pedestrian and cyclists safety, and illegal parking along this hazardous stretch of road. Spanning from Grays Ferry Avenue in the west to Christopher Columbus Boulevard in the east, it is an arterial thoroughfare in South Philadelphia. Washington Avenue holds the name of being among the city's most hazardous roads, falling within the High Injury Network where "80% of all traffic deaths and serious injuries" on 12% of Philadelphia's streets.[1] Over the period from 2016 to 2020, the avenue witnessed 169 collisions, with pedestrians involved in 26% and cyclists in 16% of these incidents. Notably, the proportion of accidents involving vulnerable road users on Washington Avenue surpasses that of

[1]"Action Plan 2025," Vision Zero Philadelphia, accessed May 8, 2024, https://visionzerophl.com/plans-and-reports/action-plan-2025/

Philadelphia overall, with figures at 13% compared to the city's 3%.[2] Moreover, the road has not undergone repaving since 2003, which provided the opportunity to enhance the street design. This report provides a comprehensive overview of the inception, implementation, outcomes, and lessons of the Washington Avenue Improvement Project.

Overview

Separate bike lanes with buffer and bollards after the improvement. Source: Philadelphia Inquirer

The Washington Avenue Repaving and Safety Improvement Project was initiated to enhance a critical traffic and commercial corridor in South Philadelphia. Spanning approximately 2 miles, the project commenced in 2013 and concluded in 2023, covering the stretch from Grays Ferry Avenue in the west to S 4th Street in the east. Notably, the remaining section of Washington Avenue falls under the Delaware River Waterfront Development as part of the "Delaware Waterfront Connector," set to commence installation in 2024.[3]

The primary objectives of the Washington Avenue Improvement Project were to implement traffic calming measures, improve safety for pedestrians and cyclists, and optimize parking and loading zones. Collaboration with community stakeholders was

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[2]City of Philadelphia, "Public Request: Washington Avenue (Grays Ferry to 4th Street)," April 4, 2022, https://www.phila.gov/media/20220404131815/Public-Request-Washington-Avenue-Grays-Ferry-to-4th-Street-1-1.pdf.

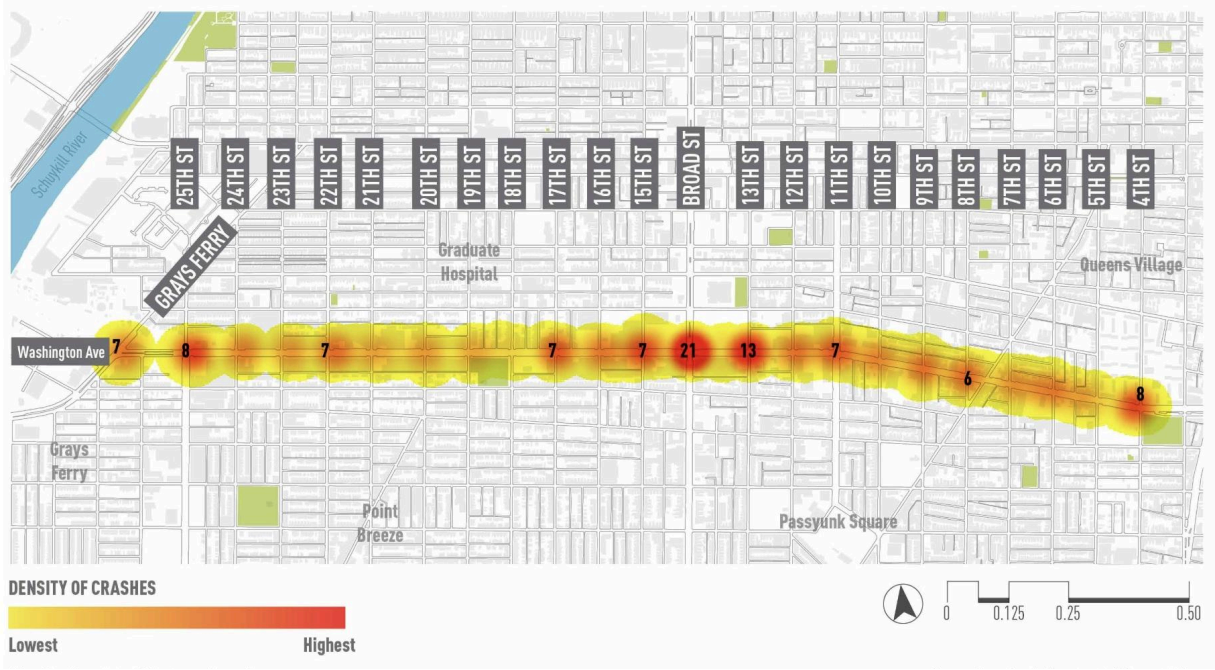
[3]"Washington Avenue Connector," Delaware River Waterfront, accessed May 8, 2024, https://www.delawareriverwaterfront.com/planning/projects3/connector-streets/washington-avenue-connector.

central throughout the project's lifecycle, with extensive outreach initiatives conducted over several years.

The transformation of the original five-lane roadway, lacking protected bike lanes, into a mixed roadway featuring three, four, and five lanes with separate bike lanes and various traffic calming designs represents a significant achievement. According to the City of Philadelphia, the project has resulted in a 20% reduction in traffic volume.[4] Additionally, several metrics have shown improvement, including shorter bus travel times, increased bike ridership, reduced speeding, and decreased illegal parking, as reported by The Philadelphia Inquirer.

While it is not possible to definitively assess its impact on the accident rate on Washington Ave due to limited data collection time, initial outcomes suggest significant positive changes. The project stands as a testament to effective collaboration and proactive urban planning, offering tangible benefits to the community and enhancing safety and accessibility along this vital thoroughfare.

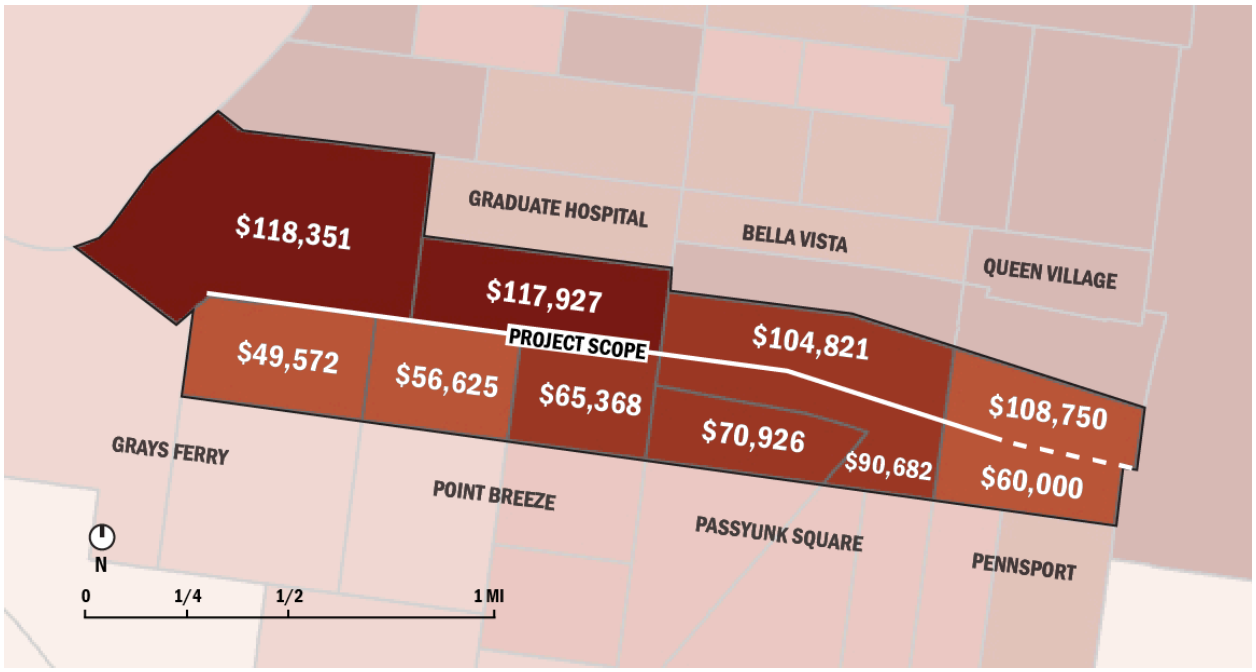
Context



Counts of severe crashes on Washington Avenue. Source: PennDOT

[4]Editorial Board, "Washington Avenue Road Diet Street Safety Traffic Congestion," The Philadelphia Inquirer, March 14, 2024, https://www.inquirer.com/opinion/editorials/washington-avenue-road-diet-street-safety-traffic-congestion-20240314.html.

The Washington Avenue traverses several vibrant neighborhoods, including Graduate Hospital, Grays Ferry, Point Breeze, Bella Vista, Passyunk Square, Queen Village, and Pennsport. These neighborhoods exhibit notable diversity, with distinct pockets characterized by the concentration of specific racial and ethnic groups. For instance, Grays Ferry and Point Breeze are predominantly home to black residents, while Hispanic communities are prominent in Bella Vista and Passyunk Square. Furthermore, significant income disparities are evident along Washington Avenue, particularly between its north and south sides west of Broad St. In Grays Ferry, for example, the median income south of Washington Avenue is $50,000, contrasting sharply with $119,000 in the north. Similar discrepancies exist in Graduate Hospital, with a median income of $57,000 in the south and $118,000 in the north.[5] Recognizing these variations is crucial for understanding the complexities surrounding the Washington Avenue Repaving and Improvements Project and the diverse community feedback it has elicited.



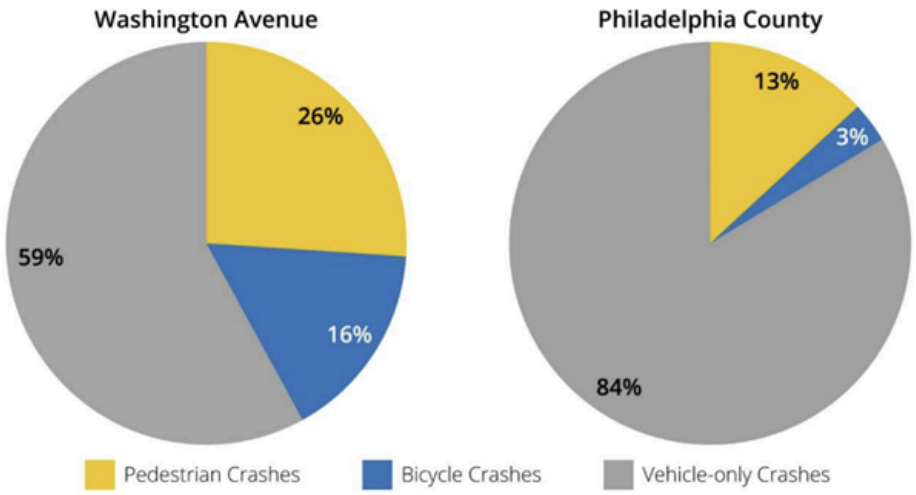
Median Household income shows contrast between the north and south side of Washington Avenue. Source: ACS 2019 5-year estimate.

Initiated by the Office of Transportation, Infrastructure, and Sustainability (OTIS) in 2013, the project aimed not only to repave the roadway but also to enhance street design, strategically allocating city funds to address safety concerns voiced by local residents. The project's scope encompasses the section of Washington Avenue from

[5] U.S. Census Bureau. (2019). American Community Survey (ACS)

Grays Ferry Avenue to 4th Street, while the remaining portion falls under the jurisdiction of the Delaware River Waterfront Corporation. Although the repaving was scheduled for the summer of 2022, various challenges arose over the nearly decade-long process, including issues surrounding OTIS's proposed redesigns, the impact of the COVID-19 pandemic, and the public engagement process.

Washington Avenue's reputation for high accident rates is well-known, attributed in part to its former five-lane configuration spanning up to 78 feet in width, encouraging speeding. Notably, the avenue experiences 13% more pedestrian crashes and 13% more bicycle crashes than Philadelphia as a whole.[6] Falling within the High Injury Network, where "80% of all traffic deaths and serious injuries" occur on just 12% of Philadelphia's streets, Washington Avenue witnessed 169 collisions between 2016 and 2020.[7] Pedestrians were involved in 26% and cyclists in 16% of these incidents, with the proportion of accidents involving vulnerable road users significantly higher than the city's average.[8] Double parking, particularly in front of commercial storefronts, exacerbated congestion and posed additional hazards to cyclists, underscoring the urgent need for change along Washington Avenue.



Charts showing the comparison between crashes involved vulnerable users on Washington Avenue and the whole Philadelphia County. Source: PennDOT

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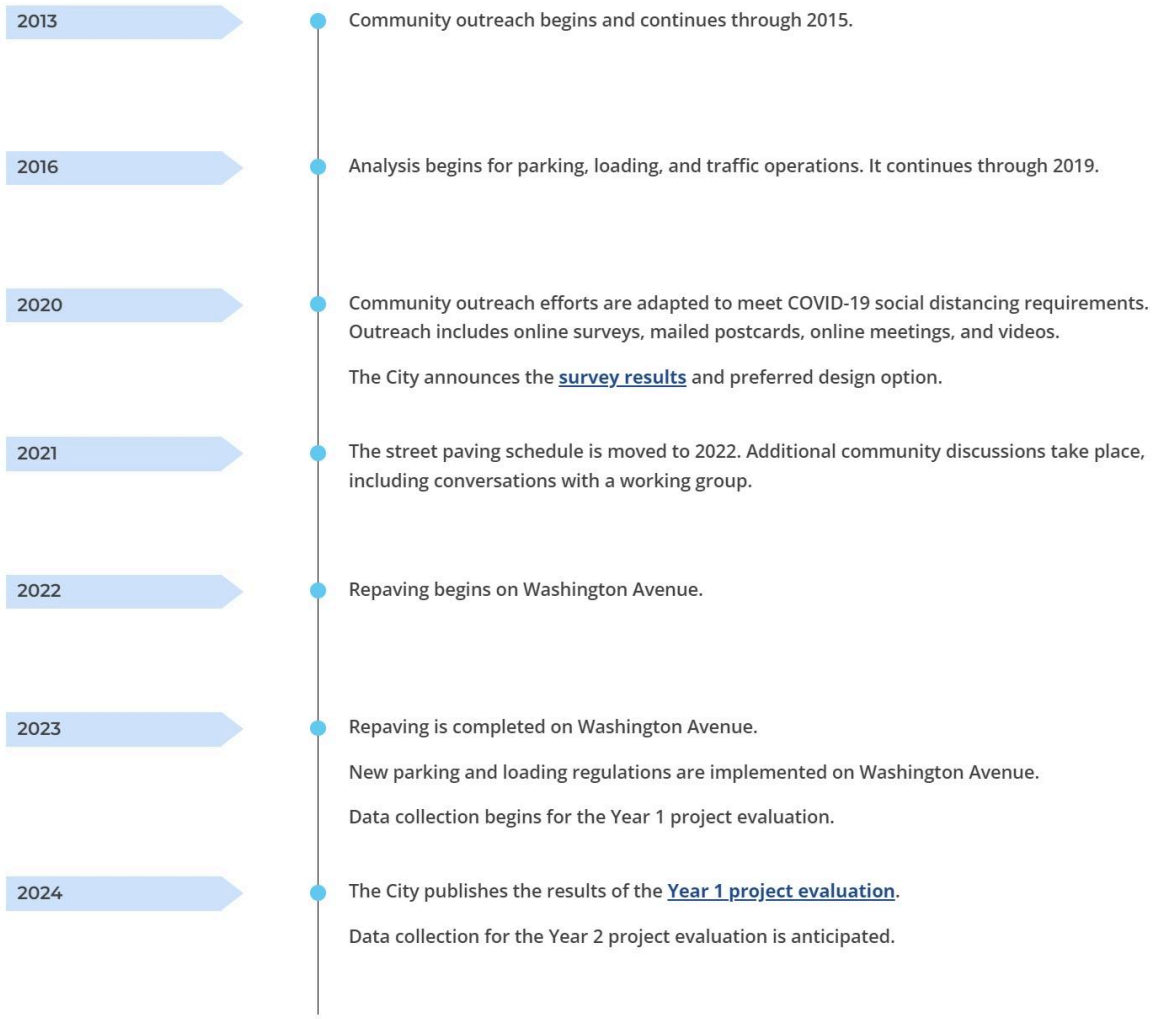
[6]City of Philadelphia, "OTIS Washington Ave Crash Analysis 2016-2020," February 5, 2022, https://www.phila.gov/media/20220205155040/OTIS-Washington-Ave-crash-analysis-2016-2020.pdf.
[7] City of Philadelphia, Vision Zero Action Plan 2025, https://visionzerophl.com/plans-and-reports/action-plan-2025/
[8] City of Philadelphia, "Public Request: Washington Avenue (Grays Ferry to 4th Street)," April 4, 2022, https://www.phila.gov/media/20220404131815/Public-Request-Washington-Avenue-Grays-Ferry-to-4th-Street-1-1.pdf

Timeline



Timeline of the ten-year Washington Improvement Project. Source: Philadelphia OTIS

The Washington Avenue Improvement Project unfolded over a meticulously planned timeline, marked by community engagement efforts and responsive action to unforeseen challenges. From 2013 to 2015, the project embarked on a series of community outreach initiatives, laying the foundation for collaborative decision-making and stakeholder involvement. This period set the stage for subsequent phases, including comprehensive traffic analysis conducted from 2016 to 2019, aimed at identifying key areas for improvement and informing the project's design.

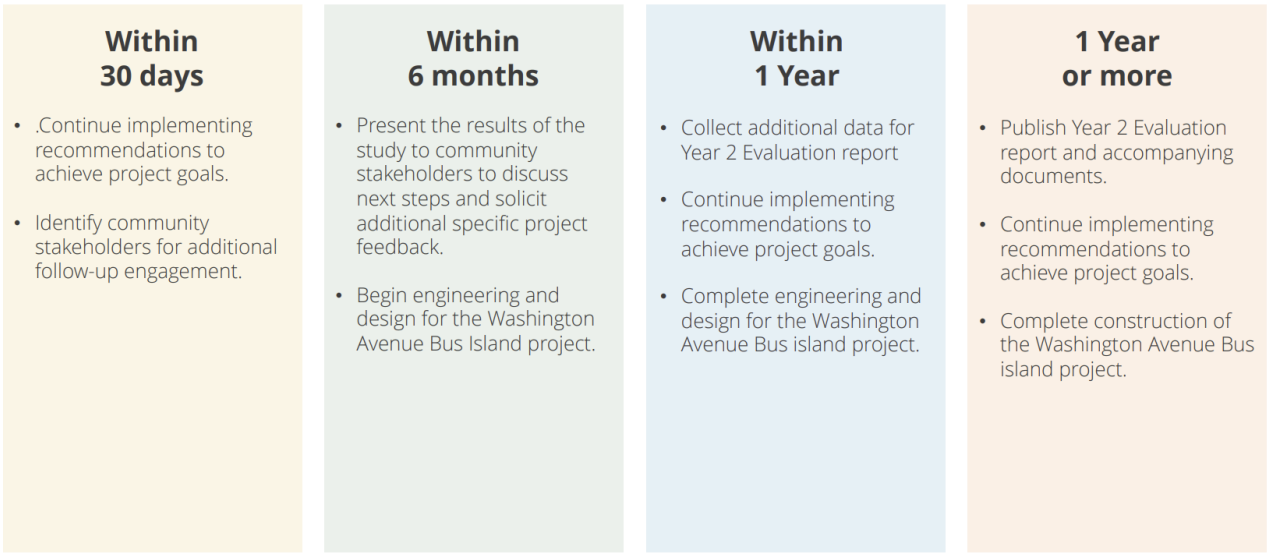
The onset of the COVID-19 pandemic in 2020 necessitated a pivot to virtual engagement methods, underscoring the project's adaptability in the face of adversity.

Despite the challenges posed by the pandemic, online outreach efforts continued, ensuring ongoing dialogue with the community.

In 2021, construction faced delays due to the pandemic's lingering impact, prompting additional outreach efforts to keep stakeholders informed and engaged. However, these delays provided an opportunity for further refinement of the project's design, incorporating valuable feedback from the community.

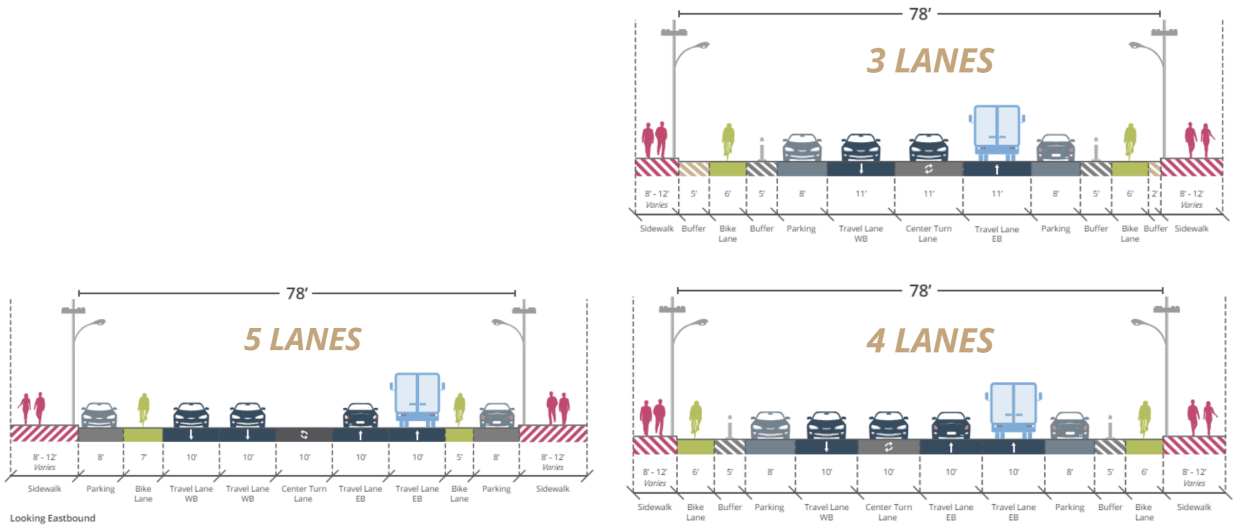
In March 2022, a pivotal moment arrived with the hosting of an open house event, signaling the commencement of installation activities. Throughout the year, construction progressed steadily, culminating in the completion of the project in 2023, marking a significant milestone in the revitalization of Washington Avenue.

Looking ahead to future plans, enhancements such as concrete bus boarding islands and Emergency Vehicle Preemption (EVP) are slated for implementation by approximately 2024, further enhancing the avenue's functionality and safety features. Subsequent to these additions, a comprehensive two-year assessment is scheduled for 2025, providing valuable insights into the project's impact and effectiveness. Additionally, a three-year crash analysis is planned for 2027, further ensuring the ongoing safety and optimization of Washington Avenue.



Timeline diagram indicating the future steps. Source: Philadelphia OTIS

Design

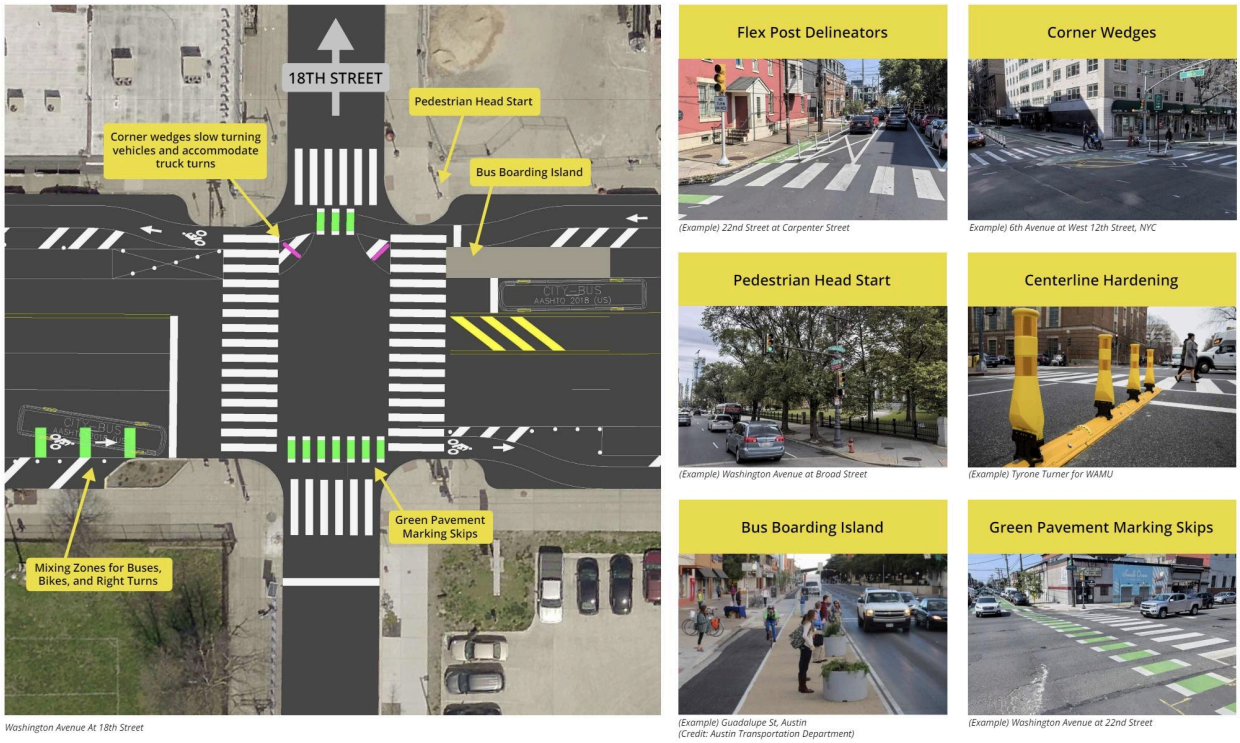


Street Sections of before and after the design improvement. Source: Philadelphia OTIS

Central to the project's success were several key components aimed at enhancing safety and functionality. The renovation plan encompassed reducing driving lanes, implementing traffic calming measures, and establishing new parking and loading zones to prioritize safety for pedestrians and cyclists. These measures included the introduction of separate bike lanes, shortened pedestrian crossings, speed slots to deter reckless driving, and center hardening measures. The transition from a five-lane avenue to a mixed roadway featuring three to five lanes, coupled with the introduction of protected bike lanes, marked a significant shift in urban mobility. Illustrative cross-sections vividly demonstrate the transformative impact of these installations, showcasing substantial reductions in double parking and illegal parking incidents.

Specific improvements include pedestrian head start signal timing (leading pedestrian interval), speed cushions, soft rumble strips, corner wedges, hardened centerlines at select locations, and the installation of automated red light cameras. The installation of automated red light enforcement cameras is scheduled for next year in partnership with the Philadelphia Parking Authority (PPA).

Additionally, bus boarding islands, initially installed at street level with the paving project, will be upgraded to concrete islands next year in partnership with SEPTA, further enhancing accessibility and safety for public transit users.



Some design components to reach the goals of Washington Avenue improvement. Source: Philadelphia OTIS

Impact

GOAL	OUTCOME
Increase daytime parking capacity between 4th Street and Broad Street.	POSITIVE
Facilitate loading between Broad Street and 4th Street.	POSITIVE / MIXED
Reduce instances of illegal parking between 4th Street and Broad Street.	POSITIVE / MIXED
Reduce speeding between Grays Ferry Avenue and 4th Street using traffic calming measures.	MIXED
Avoid operational impacts to traffic and transit between 4th Street and Broad Street.	POSITIVE
Increase safety for people walking, driving, and riding bikes on Washington Avenue.*	POSITIVE

A chart revealing the outcomes from the 1-year post installation evaluation. Source: Philadelphia OTIS.

After nearly a decade of work, the improvements to Washington Avenue have largely achieved their intended goals, according to a recent city report. Christopher Puchalsky, director of policy and strategic initiatives for OTIS, highlighted the complexity of the urban environment along Washington Avenue, which contributed to the lengthy process.

The city conducted a one-year post-evaluation on the project's impact, analyzing traffic, parking, and transportation data before and after implementation.[9] This included installing cameras at every intersection on Washington Avenue for additional insight. Another report is scheduled for release in 2025 for the two-year post-evaluation.

Efficiency has improved, particularly in areas where new timed parking regulations and loading zones were introduced, resulting in a significant increase in parking and loading capacity, as noted by OTIS's Complete Streets district manager, Casey Ross. Illegal parking incidents decreased by over 50%, with double parking down by 88% and median parking by 75%.

Travel times for both cars and public transit remained largely unchanged despite reducing the road from five lanes to three or four lanes, according to Puchalsky. Speeding on Washington Avenue has notably decreased, with up to 83% of drivers slowing down as intended.

Additionally, Washington Avenue has become greener, with a notable increase in bus ridership and bicycle traffic. SEPTA Bus Route 64 experienced a 17% surge in the past year, surpassing the citywide bus system's 10.5% rise. Enhancements to the avenue's bike lanes have led to a significant increase in bicycle traffic, contributing to a reduction in pollution on the roadway and enhancing overall traffic safety.

Discussion

The Washington Avenue Improvement Project in Philadelphia has sparked significant community and public response, reflecting the complexities of urban redesign in a gentrifying area[10]. This plan met with resistance from long-term residents and businesses who feared the changes might exacerbate gentrification and disrupt local commerce.

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[9] "Washington Avenue Year 1 Evaluation Fact Sheet," last modified March 1, 2023, accessed May 8, 2024, https://www.phila.gov/media/20240304141309/Washington-Avenue-Year-1-Evaluation-Fact-Sheet-20240301.pdf

[10] City of Philadelphia, "Update on Washington Avenue Repaving and Improvement Project," February 5, 2022, https://www.phila.gov/2022-02-05-update-on-washington-avenue-repaving-and-improvement-project/

Issues and Controversies

Community Engagement and Diverse Opinions

Despite the efforts that have been put into adopting the improvement plan, this project has faced issues and controversies from community engagement, change of project plans as well as the parking and traffic management.

- Initial Engagement and Criticism

Initially, the city conducted online surveys and digital forums due to COVID-19 restrictions[11]. This method was criticized for insufficiently engaging all community members, particularly older residents and those without reliable internet access. Critics argued that the digital-first approach failed to reach a significant portion of the community, leading to a skewed representation of support for the road diet plan which aims to reduce lanes and add bike lanes.

- Adjustments in Community Engagement

In response to the criticism, the city adjusted its approach by including more traditional, in-person engagement methods as pandemic restrictions eased[12]. This included meetings with Registered Community Organizations (RCOs), local businesses, and advocacy groups. These meetings revealed deep-seated concerns among long-term residents about gentrification and the impact on local traffic and businesses.

- Leadership's Role and Revised Plans

City leadership, especially the Office of Transportation, Infrastructure, and Sustainability (OTIS), played a central role throughout the engagement process[13]. After recognizing the initial shortcomings in outreach, OTIS expanded its consultation efforts. These additional discussions influenced the city's decision to revise the initial three-lane design to a more flexible, mixed-lane approach that considered both three and four-lane sections depending on the specific area needs.

- Outcomes and Final Design

The outcomes of these engagements led to significant modifications in the project's design. The city decided against a uniform three-lane configuration across the entire avenue, opting instead for a hybrid design. This design aimed to balance safety improvements (like protected bike

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[11] Taylor Allen, "'It's Called Respect': Washington Avenue Drama Plays Out Amid the Tensions of a Changing Neighborhood," WHYY, accessed May 8, 2024, https://whyy.org/articles/its-called-respect-washington-avenue-drama-plays-out-amid-the-tensions-of-a-changing-neighborhood/

[12]Michael Tanenbaum, "Philadelphia's Washington Avenue Resdesign: Project to Use 'Mixed-Layout' Traffic Plan," PhillyVoice, July 8, 2022, https://www.phillyvoice.com/philadelphia-washington-avenue-resdesign-project-mixed-layout-traffic/

[13] Danya Henninger, "Washington Avenue Redesign Aims for Greater Pedestrian Safety," Billy Penn, July 8, 2022, https://billypenn.com/2022/07/08/washington-avenue-redesign-philadelphia-pedestrian-safety-kenyatta-johnson-mark-squilla/

lanes and pedestrian-friendly features) with the needs for commercial access and traffic flow, particularly in areas with higher vehicle volumes.[14]

- Impact on the Final Design

The city's leadership, particularly through actions and revisions by OTIS, demonstrated a responsive approach to community feedback. While the final design incorporated elements favored by newer residents and safety advocates, it also addressed concerns from long-standing community members about traffic and commercial activity. This balanced approach aimed to mitigate potential gentrification impacts while enhancing safety and accessibility along Washington Avenue.

Parking and Traffic Management:

The Year 1 Evaluation highlighted the implementation of updated parking and loading regulations aimed at increasing daytime parking capacity and facilitating better loading operations[15]. This included adding more loading zones and optimizing parking duration to improve turnover. The average parking occupancy decreased from over 90% in 2017 to between 55% and 70% in 2023, demonstrating successful management of parking demand.

Despite the overall success in managing parking and loading, challenges with sidewalk parking persisted. Sidewalk parking incidents increased, particularly in blocks associated with construction and auto repair shops.[16] This ongoing issue indicates a need for targeted enforcement and possibly reevaluation of current strategies to better address the specific needs of these areas.

The issue of illegal sidewalk parking remains a significant challenge, particularly in segments of the corridor characterized by high-density commercial activities. The 700-900 blocks of Washington Avenue, areas heavily populated by auto repair shops and active construction sites, have been particularly problematic. These blocks have experienced frequent violations of parking regulations, with vehicles often parked on sidewalks. This practice not only poses hazards to pedestrian safety but also disrupts the flow of traffic, complicating enforcement efforts and undermining the broader objectives of the street redesign.

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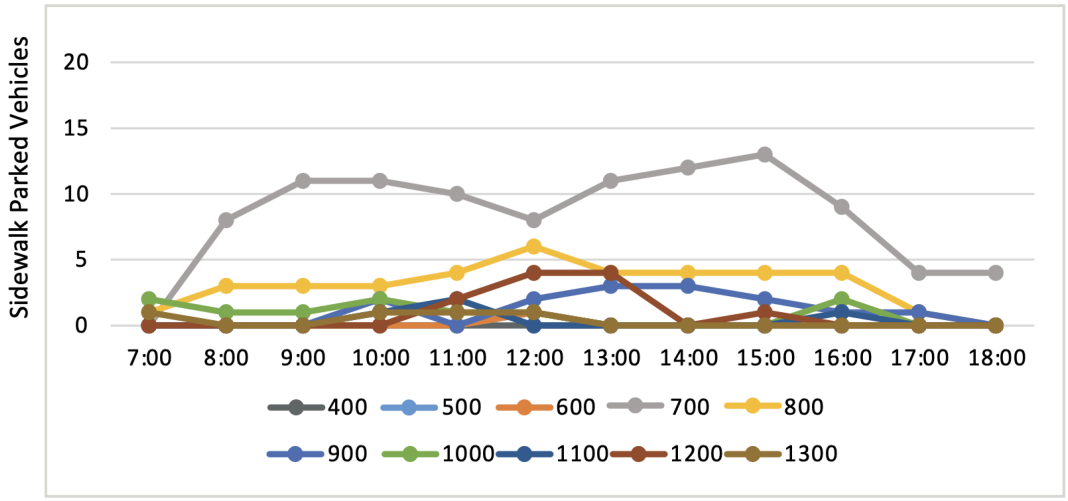
[14] Danya Henninger, "Washington Avenue Redesign Aims for Greater Pedestrian Safety," Billy Penn, July 8, 2022, https://billypenn.com/2022/07/08/washington-avenue-redesign-philadelphia-pedestrian-safety-kenyatta-johnson-mark-squilla/

[15] City of Philadelphia, "Washington Avenue Year 1 Evaluation Full Report," March 4, 2024, https://www.phila.gov/media/20240304141307/Washington-Avenue-Year-1-Evaluation-Full-Report-20240301.pdf

[16] City of Philadelphia, "Washington Avenue Year 1 Evaluation Full Report," March 4, 2024, https://www.phila.gov/media/20240304141307/Washington-Avenue-Year-1-Evaluation-Full-Report-20240301.pdf



Number of sidewalk parked vehicles by block (2023) Source: City of Philadelphia

The persistent sidewalk parking in these areas indicates a need for targeted enforcement strategies that address the unique challenges posed by the local business operations and ongoing construction activities. Enhanced enforcement, possibly coupled with community engagement initiatives, could help mitigate this issue, ensuring safer and more accessible pathways for pedestrians and smoother traffic flow.

Efforts to mitigate this issue included targeted enforcement and outreach to businesses to address their specific needs and concerns. However, the effectiveness of these measures was mixed, and sidewalk parking remained a contentious issue, reflecting broader enforcement challenges.

Lessons Learnt from the Project

Community Engagement as a Continuous Process:

Ongoing Dialogue and Flexibility: The Washington Avenue project reinforced the importance of sustained and active engagement with community members, local businesses, and other stakeholders. It highlighted that continuous dialogue is essential not only during the planning and implementation phases but also throughout the lifecycle of the project. As plans evolved based on ongoing feedback and emerging challenges, maintaining this engagement helped to manage community expectations and adapt strategies accordingly. This dynamic interaction ensured that the project remained responsive to the community's needs and preferences, fostering a sense of ownership and cooperation among the stakeholders.

Impact of Community Feedback on Project Adaptation: Regular feedback loops allowed the project team to identify areas of concern and success, facilitating timely adjustments to the

project's approach. For example, community input led to modifications in traffic management strategies and the design of pedestrian zones, which were crucial in addressing specific local concerns such as pedestrian safety and traffic flow.

Enhanced Safety and Efficiency:

Targeted Safety Improvements Through Traffic Calming Measures: Implementing speed cushions on Washington Avenue significantly reduced vehicle speeds, especially among the fastest drivers, thereby enhancing road safety for all users including pedestrians and cyclists. This measure proved particularly effective in areas with high pedestrian traffic, reducing the risk of accidents and improving the overall safety of the roadway environment.

Operational Efficiency Through Reconfiguration of Parking and Loading Zones: The redesign of parking and loading zones on Washington Avenue led to more efficient use of space, which in turn decreased instances of illegal parking significantly. This reconfiguration improved the accessibility for delivery vehicles and emergency services, and facilitated smoother traffic flow, reducing congestion and improving the efficiency of the urban transport network.

Importance of Data-Driven Decisions:

Comprehensive Evaluations to Inform Continuous Improvement: In the aftermath of the project's initial implementations, the city conducted extensive evaluations to analyze the effects on traffic patterns, parking behavior, and transit usage. These evaluations were crucial in understanding the impact of the changes and provided a robust data set that informed further decision making. By employing a systematic, data-driven approach, the project team was able to identify effective strategies and areas needing additional focus.

Data Utilization in Planning Future Enhancements: The insights gained from the data analysis were instrumental in planning future phases of the project. They allowed the project team to prioritize interventions that would deliver the greatest benefits, such as expanding successful traffic calming measures to additional sections of the avenue or further tweaking parking regulations to enhance compliance. The reliance on empirical data ensured that the project's strategies were grounded in real-world effectiveness rather than theoretical assumptions.

Conclusion

In conclusion, the Washington Avenue Improvement Project serves as an important model for urban transformation, demonstrating how thoughtful design and community engagement can significantly enhance road safety, functionality, and community well-being. Over the course of a decade, this project has reshaped a key corridor in South Philadelphia into a safer, more

efficient, and more inclusive thoroughfare, balancing the needs of pedestrians, cyclists, and motorists alike.

The extensive planning and implementation efforts, coupled with the strategic use of feedback and data, have led to notable improvements in traffic dynamics and safety measures on Washington Avenue. These changes reflect a commitment to reducing traffic fatalities and injuries, particularly among vulnerable road users, and underscore the effectiveness of a comprehensive, community-focused approach to urban infrastructure projects.

Furthermore, the project underscores the importance of adaptive urban planning that responds to the evolving needs of diverse communities. As Washington Avenue continues to serve as a lifeline through South Philadelphia, the lessons learned from this initiative will undoubtedly influence future urban development projects in Philadelphia and beyond. The city's ability to integrate community input into practical outcomes demonstrates a replicable framework for achieving safer, more accessible, and sustainable urban environments.

As Philadelphia looks forward to future enhancements and evaluations, the ongoing commitment to monitoring and adjusting the improvements on Washington Avenue will continue to serve as a vital component of the city's broader vision for safer, more livable streets. This project not only represents a significant step towards achieving Vision Zero's goal of eliminating traffic deaths but also enhances the quality of life for all who traverse one of the city's busiest and most critical corridors.

11th St after the improvement project: separate bike lanes, green marks at intersections, curb extension, bus waiting islands, and bollards. Source: City of Philadelphia.