August 3, 2020

Domenic A. D’Andrea, P.E., PTOE
Southwestern Pennsylvania Commission
Two Chatham Center, Suite 500
112 Washington Place
Pittsburgh, PA 15219-3451

Subject: Shady Avenue Road Safety Audit
Response Letter

Dear Mr. D’Andrea:

The City of Pittsburgh, Department of Mobility and Infrastructure, has reviewed the final report for the Road Safety Audit (RSA) that was completed along Shady Avenue from Penn Avenue to Monitor Street in the Squirrel Hill and Shadyside neighborhoods. The attached is the City’s formal response to issues identified in the report submitted by the Southwestern Pennsylvania Commission (SPC).

If you have any questions regarding our response letter, please contact Mike Maloch, P.E., Acting Municipal Traffic Engineer at michael.maloch@pittsburghpa.gov.

Sincerely,

Karina Ricks
Director

KR/ks/ss/mm
Attachments
cc: Katy Sawyer/Sean Stephens/Mike Maloch/File
SHADY AVENUE ROAD SAFETY AUDIT
FORMAL RESPONSES

Each short-, mid-, and long-range improvement that identified the City of Pittsburgh as a responsible party are listed below. Responses to these improvement suggestions are in *bold italic.*

Short-Range Improvements:

1. Replace damaged, defaced and faded signs with new retroreflective signs throughout the corridor.
   *Concur.*

2. Replace undersized 24” by 24” STOP signs with 30” by 30” signs throughout the corridor.
   *Concur.*

3. Trim vegetation near signs throughout the corridor.
   *Concur.*

4. Utilize a separate support for each sign, ensure that nothing is blocking line of sight to signs throughout the corridor.
   *Concur.*

5. Consider striping parking spaces to help define parking to calm traffic throughout the corridor.
   *The City does not stripe individual parking spaces in residential non-permit or permit areas due to resources required for annual maintenance of pavement markings. The City will consider adding longitudinal lines to differentiate the parking lane from the travel lane.*

6. Review corridor to identify potential hazards and have them removed or vegetation trimmed.
   *Concur.*

7. Remove unnecessary roadside fixed objects throughout the corridor.
   *Concur.*

8. Use a 4” yellow flexible, high-intensity grade tape to wrap poles and trees throughout the corridor.
   *Do not concur. This method is not used to mark poles or trees located outside of the roadway.*

9. Use tubular delineators for other fixed objects throughout the corridor.
   *Do not concur. The City does not install tubular delineators to mark fixed objects outside of the roadway.*

10. Clean the debris from the inlets throughout the corridor.
    *Pittsburgh Water and Sewer Authority (PWSA) will be notified.*

11. Add bicycle safe inlets where needed throughout the corridor.
    *The City replaces non-bicycle-safe inlet grades in curb-adjacent bike lanes. On streets with no bike facilities and shared lane conditions, bicyclists travel towards the center of the lane, and not adjacent to the curb line where inlets exist. If curb side bike lanes are installed, the City will request PWSA upgrade inlet grades to be bicycle-safe.*

12. Perform driver education campaigns regarding school bus compliance.
    *The city has a campaign in place called the Safe Driving Pledge, which encourages drivers to yield for pedestrians including children at school bus stops.*

13. Work with school bus drivers to drop students off in more visible non intersection locations.
    *Will refer to Pittsburgh Public Schools.*
14. Trim vegetation around regulatory signs throughout the corridor.  
   \textit{Concur.}

15. Relocate speed limit signs if trimming vegetation is not an option in the corridor.  
   \textit{Concur.}

16. Add speed limit pavement markings where needed within the corridor.  
   \textit{The City will consider adding speed limit pavement markings, and evaluate before and after data to determine efficacy of treatments.}

17. Increase speed enforcement throughout the corridor.  
   \textit{The City will request increased enforcement by the Bureau of Police}

18. Remove or relocate trees, landscaping, and signs out of the driver’s sight cone at intersections in the corridor.  
   \textit{Concur.}

19. Restrict parking inside the driver’s sight cone and enforce parking restrictions along the corridor.  
   \textit{The City will investigate restricting parking at intersection and will request increased enforcement by the Bureau of Police.}

20. Consider consistent signage for the marked crosswalks along the corridor that includes advance signage prior to the crosswalk.  
   \textit{Concur. The City will investigate uncontrolled intersections along the corridor and determine if additional treatments (advanced signage, painted curb extensions, pedestrian refuge islands) could be utilized, depending upon available budget.}

21. Consider solar powered LED pedestrian signs for crosswalks in the corridor.  
   \textit{The City will investigate uncontrolled intersections along the corridor and determine if additional treatments (advanced signage, painted curb extensions, pedestrian refuge islands, Rectangular Rapid Flashing Beacons) could be utilized, depending upon available budget.}

22. Verify that the pedestrian pushbuttons for crossing Shady Avenue at the intersection with Penn Avenue are functioning correctly.  
   \textit{All City of Pittsburgh traffic signals undergo annual preventative maintenance inspections and functionality of the pedestrian pushbuttons are included with this inspection.}

23. Optimize intersection timings, implement a LPI interval at Shady Avenue and Penn Avenue.  
   \textit{Concur. The City to investigate implementing an LPI at this intersection.}

24. Provide a consistent NTOR restriction for the corridor (7:00 am to 10:00 pm).  
   \textit{Concur. The City to implement full time No Turn on Red restrictions at signalized intersections along the corridor.}

25. Between Penn Avenue and Ellsworth Avenue, install signing to encourage pedestrians to cross at established crosswalks.  
   \textit{The sidewalk on Port Authority property from the East Busway + East Liberty Station A to Shady Avenue directs transit riders to the midblock location. The City has requested that the Port Authority provide wayfinding signage and landscaping improvements to direct transit riders to the signalized intersections at Penn Avenue and Ellsworth}
Avenue before they arrive at the midblock location. Exclusionary signs such as R9-3 No Pedestrians, R9-2 Cross Only at Crosswalks, and R9-3b-P Use Crosswalk will have little efficacy once pedestrians are already at the midblock location.

26. Install pedestrian countdown signals and high visibility crosswalks at Shady Avenue and Ellsworth Avenue. Traffic signal will be replaced as part of adjacent development project. Pedestrian countdown signals and high visibility crosswalks will be installed with the new traffic signal.

27. For the northbound approach at Shady Avenue and Ellsworth Avenue, install a SIGNAL AHEAD sign, install 12 inch supplemental signal head and backplates on all signals. 12 inch supplemental signal already in place on far signal pole. Backplates will be installed with new traffic signal. The City will evaluate adding additional advance warning signage.

28. Consider NO TURN ON RED restriction for all approaches at Shady Avenue and Ellsworth Avenue. Concur. The City to implement full time No Turn on Red restrictions at signalized intersections along the corridor.

29. Install advance warning signing for crosswalk at the intersection with Adler Street. The City will investigate uncontrolled intersections along the corridor and determine if additional treatments (advanced signage, painted curb extensions, pedestrian refuge islands, Rectangular Rapid Flashing Beacons) could be utilized, depending upon available budget.

30. Replace NO TURN ON RED signing at Shady Avenue and Walnut Street, and consider using a consistent message corridor wide. Concur. The City to implement full time No Turn on Red restrictions at signalized intersections along the corridor.

31. Consider installing high visibility crosswalks and broken yellow extension markings at Shady Avenue and Walnut Street. High visibility crosswalks and other pavement markings will be installed in durable pavement markings when the street is resurfaced.

32. Remove the “Y” symbol sign (W2-5) approaching Shady Avenue and Walnut Street. The City will perform a sign audit along the corridor and replace or remove faded or unnecessary signage.

33. Move the chevrons to their own sign posts near Shady Avenue and Walnut Street. Signage will be moved to separate sign posts.

34. Add high visibility crosswalks for pedestrians at the intersection with Shady Avenue and Howe Street. It will also mark the intersection. The City will investigate uncontrolled intersections along the corridor and determine if additional treatments (advanced signage, painted curb extensions, pedestrian refuge islands, Rectangular Rapid Flashing Beacons) may be utilized, depending upon available budget.

35. Use a pole mounted speed minder to assist with the speed near Shady Avenue and Howe Street. The City does not install permanent pole mounted speed minders. The Bureau of Police can install temporary speed minders.
36. Provide sharrow pavement markings and BICYCLES MAY USE FULL LANE signage in other areas without bike lanes on Shady Avenue near Kentucky Avenue.

_**Shady Avenue has been identified as a Proposed Vision Network element in the City of Pittsburgh Bike(+) Plan.**_ The type of bike facility has not been identified. Marking as a shared roadway condition will be evaluated in the interim. Depending upon funding, installation of durable pavement markings may need to wait for street resurfacing.

37. Upgrade signal at the intersection with Shady Avenue and 5th Avenue. Add detection, use 12” indications with retroreflective backplates.

_Vehicular detection is not necessary at this location. Additional signal upgrades will be investigated when funding becomes available._

38. Evaluate the need for left-turn phasing for all directions at Shady Avenue and 5th Avenue, and extend LPI. _**Left turn phasing changes will be evaluated when this traffic signal is scheduled for replacement**_ however due to the Fifth Avenue lane configuration a left turn signal can only be provided in one direction on this roadway. A ‘leading pedestrian interval’ in the City of Pittsburgh is typically 3 seconds in duration. _This interval is extended only at intersections with unusual geometric configurations or intersections where a parking lane is in place and pedestrians have to travel a longer distance to establish right-of-way within the crosswalk. This intersection does not feature either of these situations._

39. Eliminate unneeded signing, add overhead street name signs for all directions at Shady Avenue and 5th Avenue.

_The City will perform a sign audit along the corridor and replace or remove faded or unnecessary signage._

40. Add lane-use control signing for 5th Avenue at Shady Avenue.

_Overhead lane-use control signage is in place. Side-mounted signage will be added. Supplemental left only pavement marking legends will be added, dependent upon pavement condition and street resurfacing schedule._

41. At Shady Avenue and 5th Avenue, verify stop line placement with turning path simulation software.

_Stop bar on Shady Avenue at northbound approach is backset to allow Port Authority buses to turn from 5th Avenue onto Shady Avenue outbound. Stop bar on southbound approach will be evaluated._

42. Remove two or three parking spots at Shady Avenue and Mellon Park Road, to allow for adequate sight lines.

_Parking is restricted near this intersection in both directions. Parking restriction will be extended on north side of intersection._

43. Restrict left turns from Mellon Park Road at Shady Avenue.

_Parking restrictions will be extended, to allow for adequate site lines._

44. Increase street sweeping on Shady Avenue near Devereaux Lane.

_To be referred Department of Public Works._

45. Discourage residents from blowing leaves and grass onto road.

_To be referred Department of Public Works._
46. Install large arrow signs for both directions in place of the chevrons through the curve near Devereaux Lane.  
   Signage will be evaluated per MUTCD Section 2C.06 Horizontal Alignment Warning Signs.

47. Consider repairing the pavement and sidewalk in the area of Shady Avenue and Wilkins Avenue.  
   Shady Avenue from Wilkins to Northumberland is scheduled for resurfacing in 2020. Sidewalk repairs  
   are responsibility of adjacent property owner. Recommendation will be forwarded to Department of  
   Permits, Licenses, and Inspections.

48. Due to the high pedestrian activity, consider an exclusive pedestrian phase as part of the new signal plan at  
   Shady Avenue and Wilkins Avenue.  
   Construction for Shady and Wilkins traffic signal will be completed summer of 2020. The new signal  
   will include LPI’s for all crossings. An exclusive pedestrian phase is not recommended for intersections  
   that have low to moderate levels of pedestrian crossings because it will lengthen cycle time, increase  
   delays for motorists and pedestrians, and increase the likelihood of pedestrians crossing against the  
   pedestrian signal.

49. Incorporate new pedestrian phase as part of cycle length (recalled every cycle) at Shady Avenue and  
   Wilkins Avenue.  
   The new traffic signal phasing will automatically recall pedestrian phase each cycle.

50. New signal at Shady Avenue and Wilkins Avenue should be ADA compliant and have new pedestrian  
    signal heads.  
    The signal replacement design includes new pedestrian signal heads and audible push buttons.  
    Luminaires will be added to every corner of intersection, to increase visibility at night time.

51. Verify marked signal pole locations versus new permit drawing at Shady Avenue and Wilkins Avenue.  
    Concur.

52. Relocate school zone flashers to an overhead mast arm at Shady Avenue near the Children's Institute.  
    The design and procurement of school zone flashers are paid for by the requesting school, and overhead  
    mast arms can be cost prohibitive. The City maintains the equipment after it is installed. The City does  
    not reinstall or relocated the equipment. The City will remove any overgrown vegetation obstructing the  
    signage.

53. Hatch out the bus parking in front of The Children's Institute on Shady Avenue between Wilkins Avenue  
    and Northumberland Street.  
    This area is restricted parking during school bus pick and drop off times, only. Parking is allowed all  
    other times. The City does not hatch parking lanes.

54. Add street art to the Northumberland intersection to further call attention to drivers that they are entering a  
    school zone at Shady Avenue and Northumberland Street.  
    DOMI is developing Guidelines for Artistic Elements in the Right-of-Way. While artistic elements in the  
    public right-of-way can strengthen the connection between people and the neighborhoods in which they  
    live, and may add visual interest, they have not be shown to be effective traffic control devices, or traffic  
    calming devices. As such, DOMI does not install or maintain these elements. However, we will review  
    and approve the installation of artistic elements by others, as requested.

55. Consider an exclusive pedestrian phase as part of the new signal plan at Shady Avenue and Northumberland  
    Street.
The new signal plan calls for a leading pedestrian interval (LPI) at this intersection. Pedestrian volumes are too low to warrant an exclusive pedestrian phase at this time. An exclusive pedestrian phase is not recommended for intersections that have low to moderate levels of pedestrian crossings because it lengthens cycle time, increase delays for motorists and pedestrians, and increase the likelihood of pedestrians crossing against the pedestrian signal.

56. New signal at Shady Avenue and Northumberland Street should be ADA compliant and have new pedestrian signal heads.
   The new signal plan calls for upgraded ADA ramps and audible countdown pedestrian signal heads.

57. Study converting Aylesboro Avenue to One-Way Street away from Shady Avenue for one block.
   DOMI will investigate crash data to determine whether operational changes are warranted on Aylesboro Avenue at Shady Avenue.

58. Evaluate changing the exclusive pedestrian phase to a recall setting, to come up all cycles to better accommodate the significant pedestrian volumes at Shady Avenue and Forbes Avenue.
   The City has considered an exclusive pedestrian phase at Shady Avenue and Forbes Avenue in the past. Significant delay to motorists on Forbes Avenue and Shady Avenue is expected, especially with automatic recall, 24 hours per day. Outdated controller equipment makes it difficult to consider a trial period. The City’s traffic signal engineer will investigate further.

59. Consider making the NTOR restriction permanent, replace the blank out signs at Shady Avenue and Forbes Avenue.
   No Turn on Red restriction will be made full-time. DOMI will program work to revise fiber optic signage.

60. Work with property owners to prohibit left-turn access to and from the driveways close to the signal at Shady Avenue and Forbes Avenue.
   The City will consider working with property owners to prohibit left turns to and from driveways.

61. Restrict lefts coming out of the Beth Shalom Parking Lot, either permanently, or for peak periods only.
   The City will consider working with property owner to prohibit left turns onto Shady Avenue.

62. Install high visibility piano key style crosswalk at the intersection on Shady Avenue and Beacon Street.
   Traffic signal should be replaced. Any further intersection improvement should be considered with new traffic signal project. Intersection crosswalks will be updated to high visibility piano key style crosswalks when street is resurfaced as part of the City’s annual paving program, if resurfacing occurs prior to signal replacement.

63. Consider the use of a crossing guard when school children crossings are prevalent at Shady Avenue and Beacon Street.
   Traffic signal should be replaced. Any further intersection improvement should be considered with new traffic signal project. Request for a school crossing guard at this location will be referred to the Pittsburgh Bureau of Police.

64. Add dotted extension line through intersection to show path for Shady Ave through the intersection with Tilbury Street.
   The City will consider pavement marking revisions at the intersection.

65. Replace southbound signal heads at Tilbury Street with optically programmed signals at Shady Avenue and Tilbury Street.
   Concur. Existing signals cannot be replaced with optically programmed signals until traffic signal is replaced, due to weight of new units.
66. Mount school zone signs overhead at Shady Avenue and Pittock Street.  
_The design and procurement of school zone flashers are paid for by the requesting school, and overhead mast arms can be cost prohibitive. The City maintains the equipment after it is installed. The City does not reinstall or relocate the equipment._

67. Add a crossing guard at the intersection at Shady Avenue and Pittock Street.  
_Request for a school crossing guard at this location will be referred to the Pittsburgh Bureau of Police._

68. Develop a school circulation plan for student pickups at Shady Avenue and Pittock Street.  
_DOMI will refer to PPS._

69. Study the need for RRFB at Shady Avenue and Pittock Street.  
_To be evaluated by DOMI’s signal engineer and PPS._

70. Add artwork to intersection between crosswalks to alert drivers to the proximity of the school/pedestrian traffic at Shady Avenue and Forward Avenue.  
_DOMI is developing Guidelines for Artistic Elements in the Right-of-Way. While artistic elements in the public right-of-way can strengthen the connection between people and the neighborhoods in which they live, and may add visual interest, they have not be shown to be effective traffic control devices, or traffic calming devices. As such, DOMI does not install or maintain these elements. However, we will review and approve the installation of artistic elements by others, as requested._

71. Remove/enforce parking restrictions and trim landscaping to allow for adequate sight cone at Shady Avenue and Morrowfield Avenue.  
_The City will investigate parking restrictions at the intersection. DOMI will request additional parking enforcement from the Bureau of Police. DOMI will request DPW remove overgrown vegetation._

72. Replace THREE WAY with ALL WAY supplemental placards at Shady Avenue and Morrowfield Avenue.  
_Signage will be revised._

73. Relocate supplemental stop sign for Morrowfield Avenue at Shady Avenue.  
_Signage will be investigated._

74. Upgrade crosswalks with piano-key style markings at Shady Avenue and Monitor Street.  
_Crosswalks will be upgraded to high visibility piano-key style markings when street is resurfaced as part of the City’s annual paving program._

75. Study the need for a speed hump or raised crosswalk near Shady Avenue and Howe Street.  
_The City will investigate the need for a speed hump or raised crosswalk near Howe Street. Note that a raised crosswalk will likely require inlet relocation to ensure adequate drainage while maintaining ADA accessibility._

76. Redesign development driveway for a more traditional pedestrian crossing at Shady Avenue and Ellsworth Avenue.  
_Concur. This parcel is to be redeveloped. DOMI to work with developers on improving pedestrian access and safety._

_Mid- and Long-Range Improvements:_

1. Repair or replace damaged sections of sidewalks and bring sidewalks up to ADA compliance.
Sidewalk repairs are the responsibility of the adjacent property owners. DOMI upgrades older ADA ramps with the annual paving program; when a street is resurfaced, adjacent ADA ramps are upgraded with one year.

2. Reduce the skew for the crosswalk spanning Penn Avenue at the intersection with Shady Avenue, closer to the intersection by moving the ramp in the southeast quadrant, and upgrade to piano key style crosswalk (per the signal permit).
   Concur. Penn Avenue at this location is a State Route (SR 0400) and these improvements will be investigated prior to the next PennDOT Betterment project of this route.

3. Install railing along the section of Shady Avenue between Penn Avenue and Ellsworth Avenue to channelize pedestrians to established crossings.
   The sidewalk on Port Authority property from the East Busway + East Liberty Station A to Shady Avenue direct transit riders to the midblock location. The City has requested that the Port Authority provide wayfinding signage and landscaping improvements to direct transit riders to the signalized intersections at Penn Avenue and Ellsworth Avenue before they arrive at the midblock location.

4. Construct curb extension on Calvary Episcopal Church side of Shady Avenue at Adler Street.
   The City will investigate installation of a curb extension on Shady Avenue at Adler Street, dependent upon funding and allocation of resources.

5. Evaluate potential installation of a raised crosswalk at Shady Avenue and Adler Street.
   The City will investigate installation of a raised crosswalk on Shady Avenue at Adler Street, dependent upon funding and allocation of resources.

6. Install traffic signal equipment upgrades at Shady Avenue and Walnut Street, to include audible traffic signals.
   Shady Avenue and Walnut Street currently has countdown pedestrian signal heads and audible push buttons. Additional upgrades will occur when traffic signal is replaced.

7. Provide a southbound bike lane in the area between Kentucky Avenue and Frick Driveway where parking is not present.
   DOMI will investigate a climbing lane in this area. When providing bicycle facilities, risks to cyclists merging out of the facility must be considered, especially when the facility is short in duration.

8. Upgrade detectable warning surfaces, provide ADA compliance at Shady Avenue and 5th Avenue.
   ADA ramps will be upgraded with the City's annual repaving program, or when traffic signals are upgraded or replaced.

9. Consider high friction surface treatment in the curve near Devereaux Lane, and add centerline raised pavement markers.
   The City does not install raised pavement markers. The City will consider feasibility a high friction surface treatment.

10. Reevaluate the need for guiderail through the curve near Devereaux Lane. If the guiderail is to remain, add delineation on guiderail.
    To be investigated further within DOMI.

11. Consider repairing the pavement on Shady Avenue in the area of Northumberland Street.
    Shady Avenue from Wilkins to Northumberland is scheduled for resurfacing in 2020.
12. Consider bulbouts at Shady Avenue and Northumberland Street to shorten crosswalks and as a traffic calming measure. 
   Due to budgetary constraints concrete bump-outs were not incorporated into this project. The signal upgrade will significantly improve safety at this intersection.

13. Upgrade signal, add detection, and consider adding left-turn phasing at Shady Avenue and Forbes Avenue. 
   Concur. Signal upgrades will be investigated when this traffic signal is scheduled for replacement.

14. Study the possibility of eliminating parking on one side and add a bike lane on the uphill side on Shady Avenue between Darlington Road and Phillips Avenue. 
   Concur.

15. Completely upgraded signal at Shady Avenue and Beacon Street should be ADA compliant and have new pedestrian signal heads. 
   Concur. When traffic signal is replaced, the project will include new audible push buttons, countdown pedestrian signal heads and new ADA ramps.

16. Consider exclusive pedestrian phase or lead pedestrian interval as part of new signal design at Shady Avenue and Beacon Street. 
   New signal design will consider lead pedestrian intervals (LPI) at this intersection. Pedestrian volumes are too low to warrant an exclusive pedestrian phase. An exclusive pedestrian phase is not recommended for intersections that have low to moderate levels of pedestrian crossings because it lengthens cycle time, increase delays for motorists and pedestrians, and increase the likelihood of pedestrians crossing against the pedestrian signal.

17. Upgrade the signal at Shady Avenue and Phillips Avenue/Tilbury Street, and add detection. Use 12” indications with retroreflective backplates. 
   Concur. Signal upgrades will be investigated when this traffic signal is scheduled for replacement.

18. Upgrade ADA for all crosswalk ramps at the intersection of Shady Avenue with Phillips Avenue and Tilbury Street. 
   Concur. ADA ramps will be upgraded with the City’s annual paving program, or when the traffic signal is replaced.

19. Realign the southern intersection to a traditional T-intersection. Eliminate southbound right-turn lanes at Shady Avenue and Tilbury Street. 
   Concur. DOMI may investigate further dependent upon funding and allocation of resources.

20. Implement a raised crosswalk with a bulbout to shorten the crossing distance at Shady Avenue and Pittock Street. 
   The City will investigate installation of a raised crosswalk and/or bulbouts on Shady Avenue at Pittock Street, dependent upon funding and allocation of resources.

21. Completely upgrade the traffic signal at Shady Avenue and Forward Avenue, to include ADA compliance, LED pedestrian countdown signals with LPI. 
   Concur. Signal upgrades will be investigated when this traffic signal is scheduled for replacement.
22. Shady Avenue and Forward Avenue is a potential intersection for pilot ARLE, automated red light enforcement.  
   *Concur.*

23. Reconfigure intersection of Shady Avenue and Morrowfield Avenue, to allow for two distinct intersections and remove parking inside the intersection.  
   *Concur. DOMI may investigate further dependent upon funding and allocation of resources.*

24. Shorten the crosswalk on the western side of the intersection of Shady Avenue and Morrowfield Avenue.  
   *Concur. DOMI may investigate further dependent upon funding and allocation of resources.*

25. Upgrade signal, add detection and pedestrian accommodations at Shady Avenue and Monitor Street.  
   *Concur. Signal upgrades will be investigated when this traffic signal is scheduled for replacement.*

26. Upgrade curb ramps with detectable warning surfaces at Shady Avenue and Monitor Street.  
   *Concur. ADA ramps are upgraded with the City’s annual repaving program.*