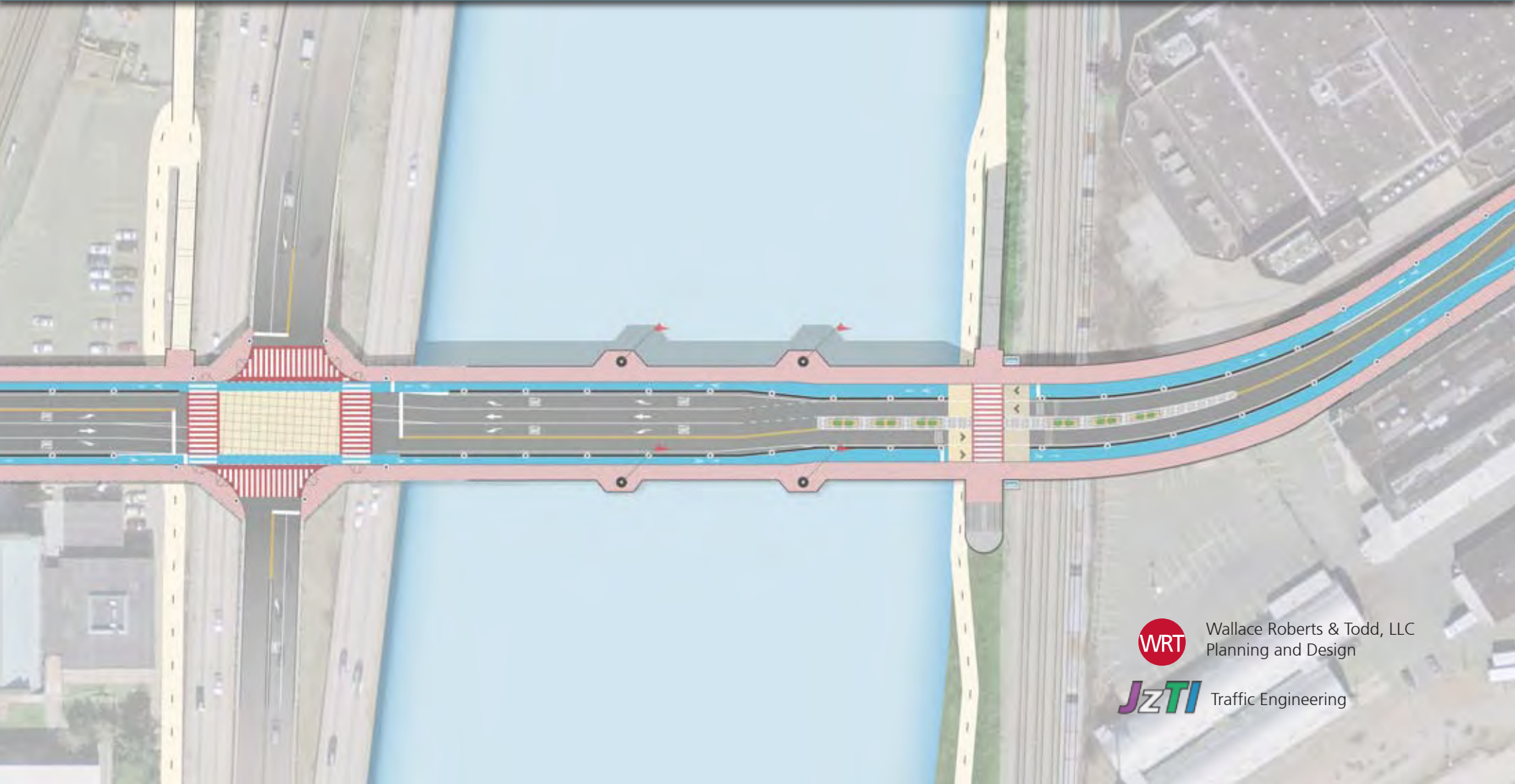


# Design Recommendations for the South Street Bridge

April 2008



Wallace Roberts & Todd, LLC  
Planning and Design



Traffic Engineering

## ACKNOWLEDGEMENTS

This report would not have been possible without the support of many people including and in particular Senator Vince Fumo. In addition, the South Street Bridge Coalition is grateful for the support of Governor Ed Rendell, Mayor Michael Nutter, Council President Anna Verna, Representative Babette Josephs, Councilwoman Jannie Blackwell, and Councilman Frank Rizzo. Particular thanks must also be given to the Coalition partners like Center City Residents Association (CCRA), South of South Neighborhood Association (SOSNA), the South Street West Business Association (SSWBA), the South Street West Civic Association, The Bicycle Coalition of Greater Philadelphia, The Schuylkill River Park Alliance, and many others. Additional thanks go to Sarah Clark Stuart for her photographs from the community charrette.

South Street Bridge Coalition

James Campbell, Chair

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# EXECUTIVE SUMMARY

# A paradigm shift has occurred...

## IN THE PAST

FHWA focused on **highway standards**.

PennDOT was concerned primarily with moving **vehicles**.

The Schuylkill River was **underdeveloped**.

The river was **inaccessible** to the public.

# in transportation and planning.

## TODAY

- — — — — ➤ FHWA policy is to provide a balanced solution for all travel modes.
- — — — — ➤ PennDOT requires planning for bicycles and pedestrians for all bridge projects.
- — — — — ➤ Hundreds of thousands of square feet of development is occurring around the bridge.
- — — — — ➤ The Schuylkill River Trail draws thousands of users every day.

# The community embraces this paradigm...





## and wants:

1. Safety for all modes of travel.
2. A strong and safe pedestrian and bicycle connection between University City and Center City.
3. A context sensitive design.

The community believes the current bridge design does not meet these standards

# The community-driven design ...

## CURRENT DESIGN

moves cars well

narrow (8-9 feet wide) sidewalks

no barriers between cars and pedestrians

standard bike lane

standard bus stops

no crosswalk at Schuylkill River Trail

public security risk from enclosed overlooks

no landscaping, just concrete

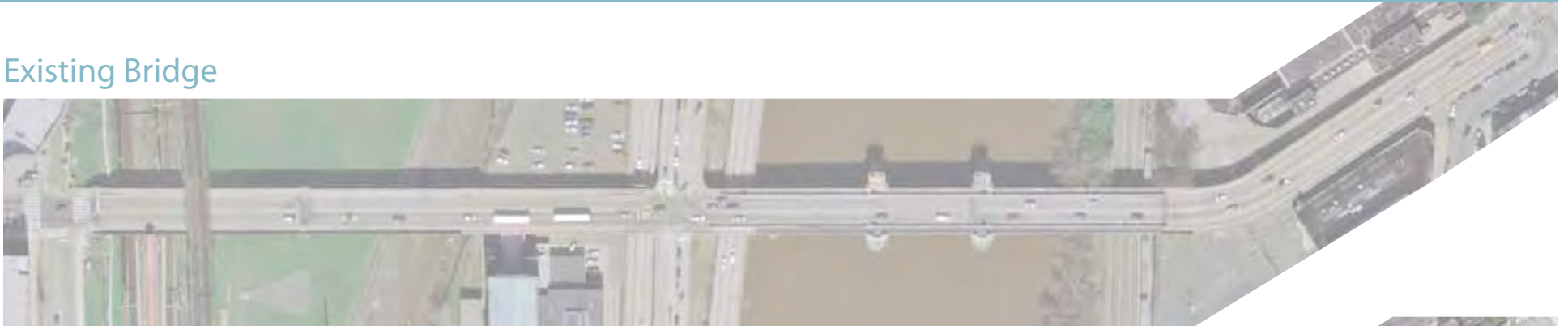
# for the South Street Bridge recommends:

## COMMUNITY DESIGN

- moves people and cars well
- wide urban sidewalks (10-13 feet wide)
- provides a **barrier** between cars and pedestrians and bikes
- protected bike lane with **passing zones**
- bus stop **safety islands**
- **crosswalk** at Schuylkill River Trail
- open overlooks with seating
- landscaped **safety medians**

# Design Comparisons

Existing Bridge



Current Design



Community Design



# Modifications will improve pedestrian and bicycle safety to provide parity with vehicular traffic.

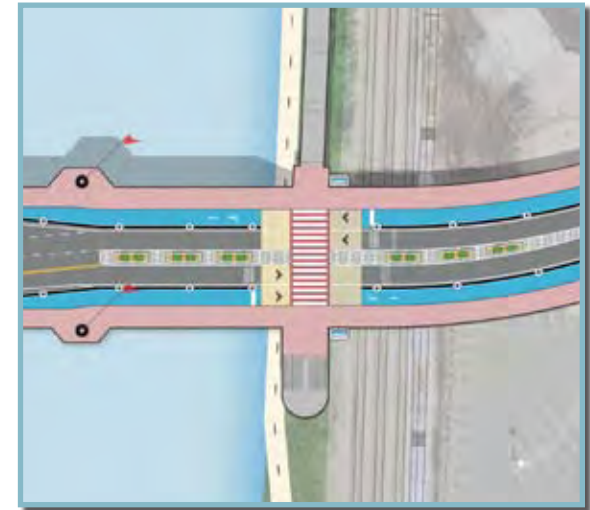
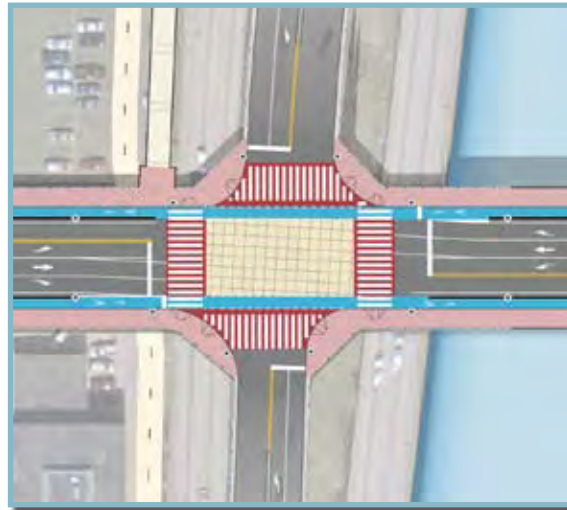
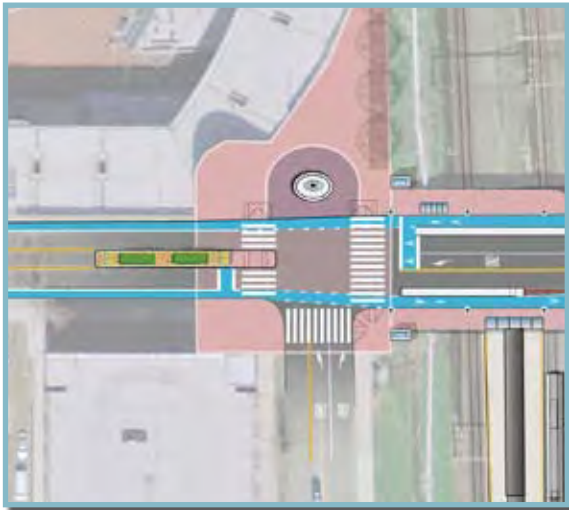
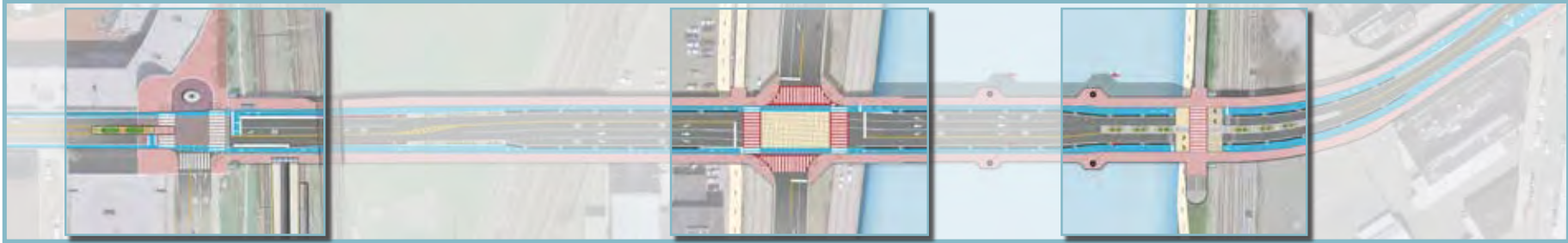
1. Protect bicyclists and pedestrians with physical and visual barriers.
  - a. Barriers like railings, medians, bus stop safety islands, relocation of street lights to the curb.
  - b. Paint and pavement color.
  - c. Lane markings and turn radii that allow for visibility of pedestrians and bicyclists.
2. Reduce the lane counts to match the number of lanes on the existing bridge to slow traffic and match connections with existing streetscape on both sides of the river.
3. Provide crosswalks at the Schuylkill River Trail (east side) and regional rail station (west side) which will also permit extension of the Schuylkill River Trail on the west.
4. Wider sidewalks, landscaping, and medians.
5. Enhance safety and improve design context by removing towers that block the view of the city and the skyline by creating open lookouts.

# Key safety improvements

Access to SEPTA station and Penn Gateway

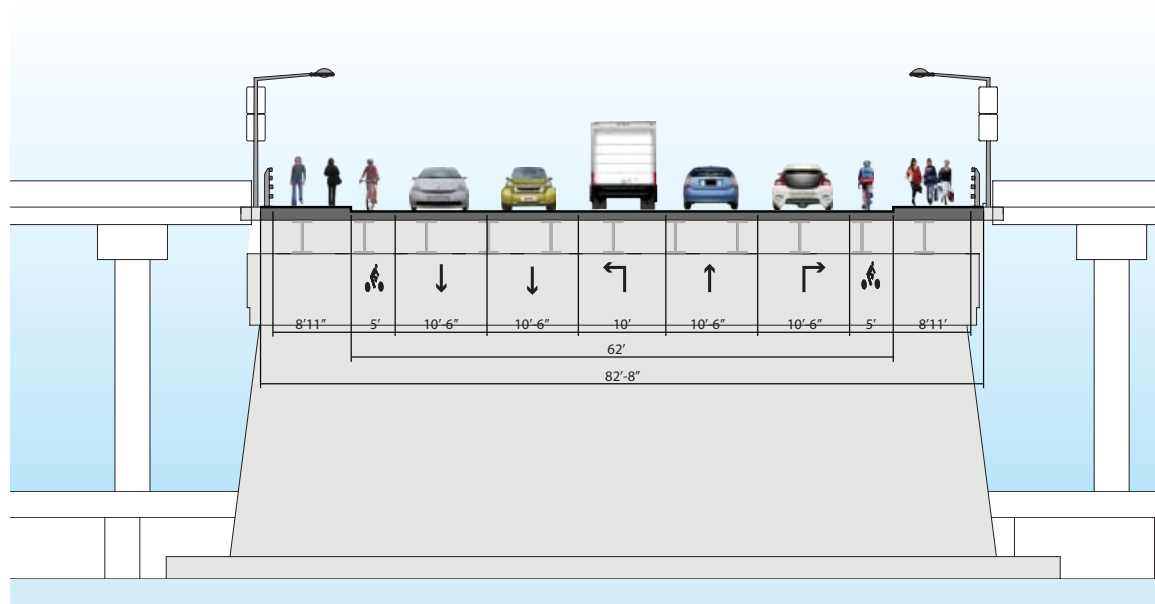
I-76 ramps

Schuylkill River Access



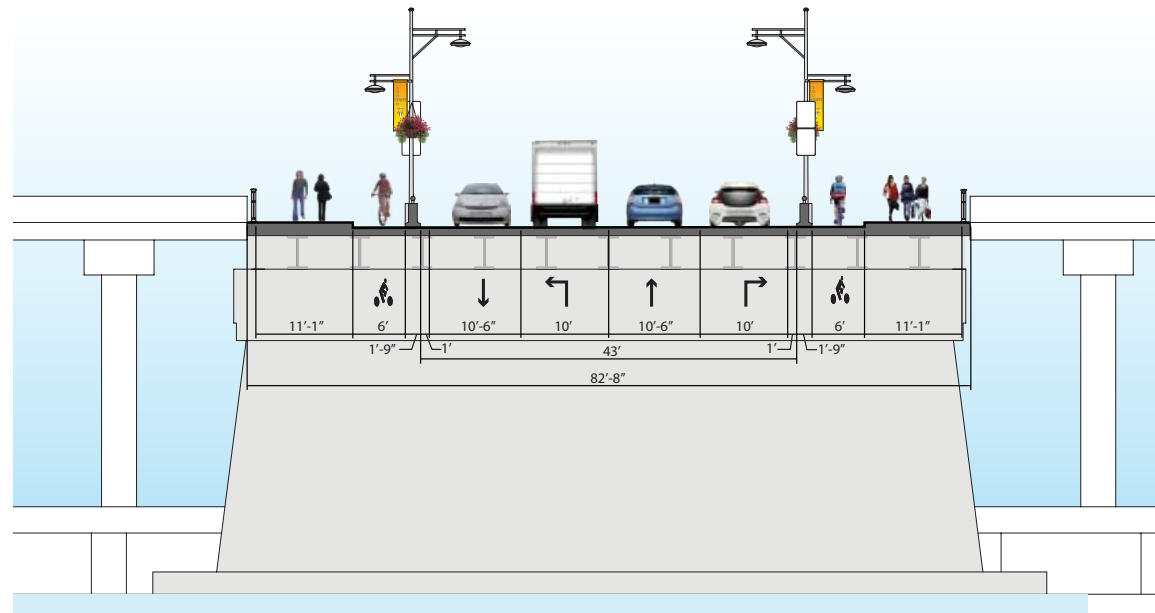
### Current Design

Narrow sidewalks and no barrier between motorized and non-motorized traffic



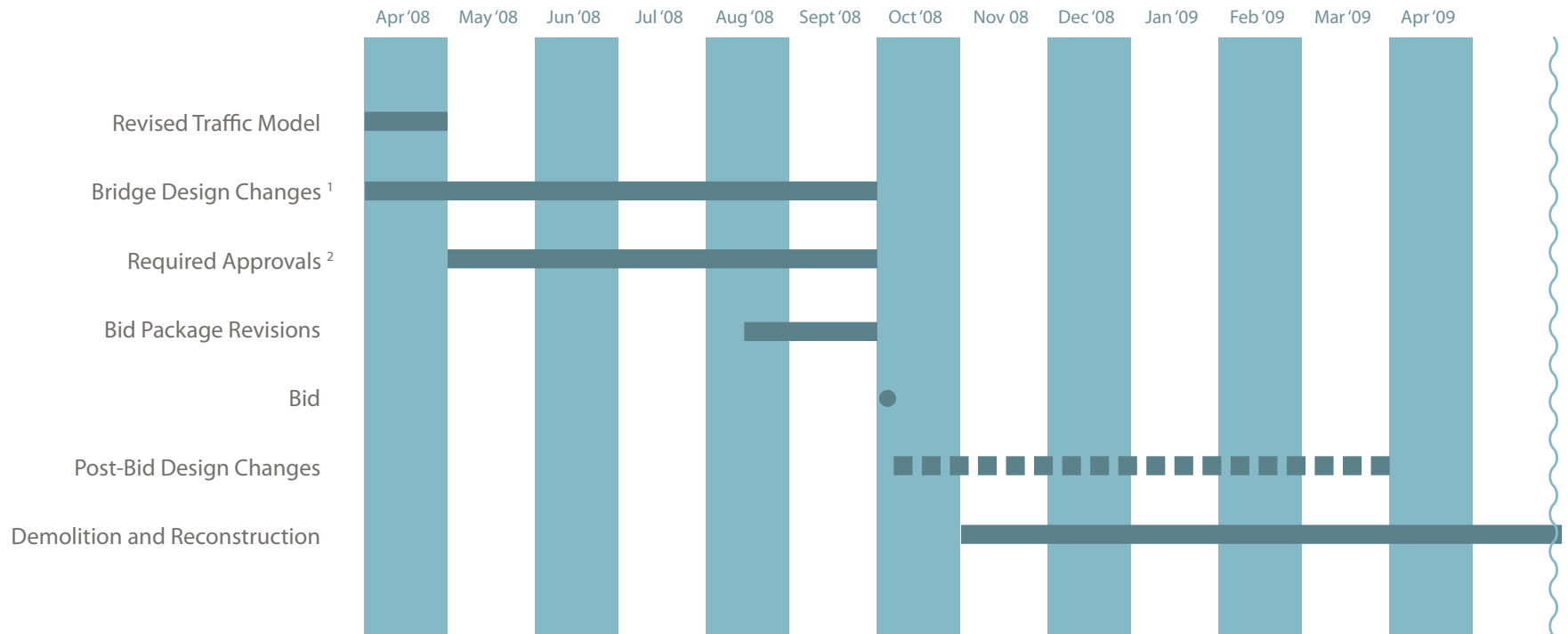
### Community Design

Sidewalk and bike lane protected by a barrier. Wider sidewalks and pedestrian oriented lighting.



# It can be done with minimum cost, minimum delay...

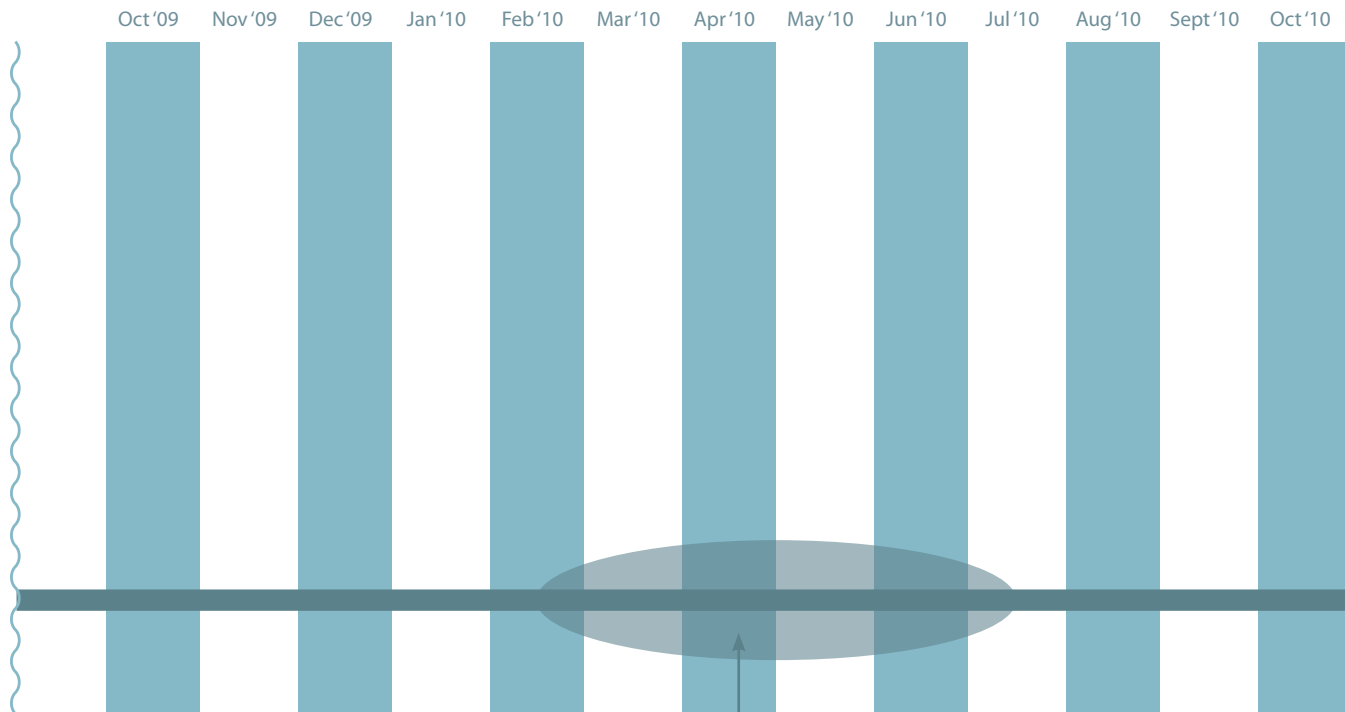
## Conceptual Fast-Track Schedule for Design Modifications



- Notes:
- 1 This includes any necessary changes to bridge structural design and engineering (e.g. drainage plan, structural members) required for the bid process to commence.
  - 2 A new lane configuration, striping plan, and traffic model report must be submitted to PennDOT/FHWA for approval and a new architectural treatment must be submitted to the Art Commission and Historical Commission for approval.



# and maximum public benefit!



## Schedule Objectives

Close the bridge by winter.

Reopen within two years.

It may be possible to reopen the bridge in stages, with the western viaduct between the I-76 ramps and the University of Pennsylvania opening before the span over the river. This could potentially provide access to the university more quickly and possibly save money during construction by allowing for a less aggressive construction schedule.



# PROJECT BACKGROUND

The Existing South Street Bridge

The South Street Bridge Replacement Project

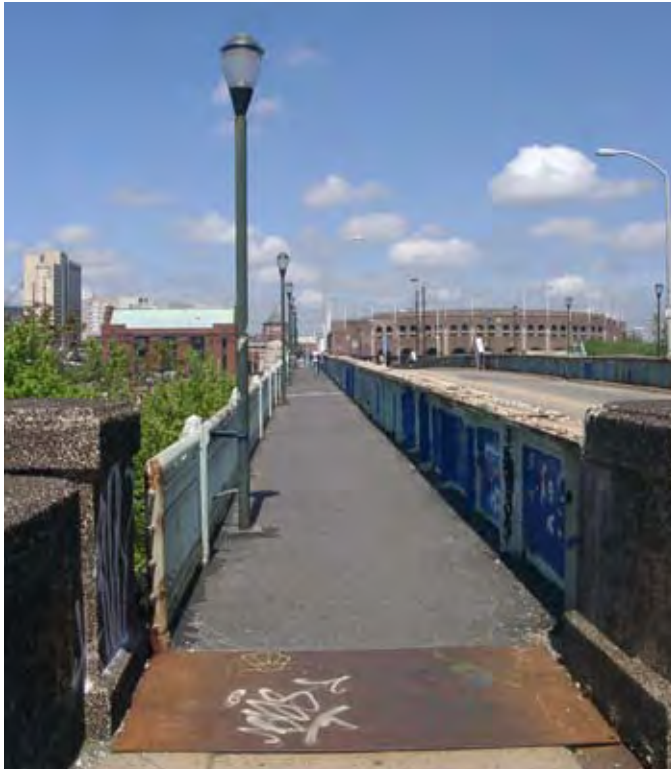
What is at Stake?

Leaving a Legacy



**Bird's Eye View:**

The existing bridge has two travel lanes for most of its length, with multiple but narrow lanes at intersections. A sharp "kink" that slows traffic is left over from an even older version of the bridge. The proposed new bridge increases the number of lanes and smooths the curve, leading to potentially higher travel speeds.



Protected Sidewalks

The sidewalks on the main span of the existing bridge are protected from traffic by the bridge girders. Even though the sidewalks are relatively narrow in this location, the buffer helps to create a perception of safety.

## The Existing South Street Bridge

**The existing bridge has buffered sidewalks, slow design speeds, and a limited number of travel lanes.**

The existing bridge was opened in the early 1920s at a cost of approximately \$644,000 . It operated as a bascule draw bridge, permitting vessels to access wharfs in Center City. Streetcars also operated over the bridge.

The portion of the bridge over the river was designed as a through-girder bridge, with the pedestrian walks located outboard of the bridge girders, creating a separation from traffic. The bridge-tender offices were designed as architectural towers on the north side of both ends of the draw span, with pedestrian overlook points on the central bridge piers.

The concrete piers of the bridge were scored to resemble traditional stone masonry, and the pedestrian railing is of ornamental wrought iron.

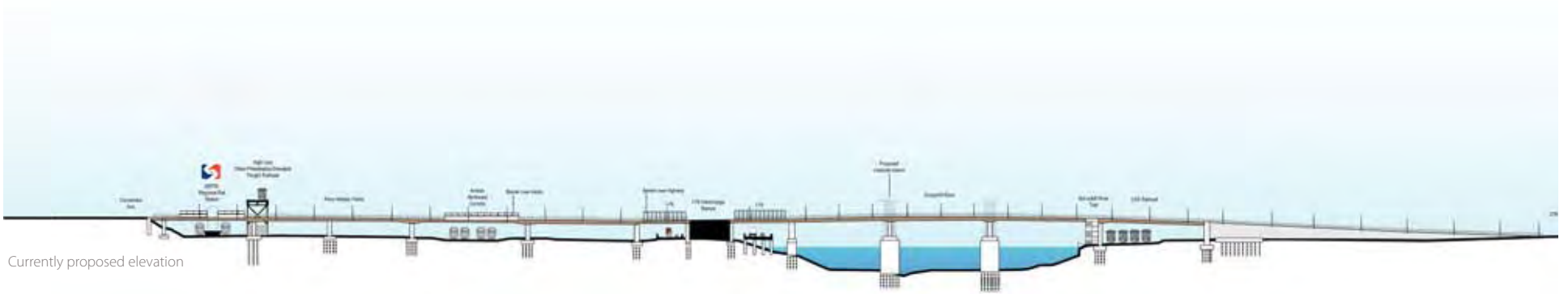
On the Center City side, a curving heavy masonry approach ramp may have been reused from the previous nineteenth century bridge and may be close to 150 years old.

In the 1950s, the extension of the Schuylkill Expressway passed under the bridge, and a new interchange was built on top of the masonry abutment on the west bank of the river. The

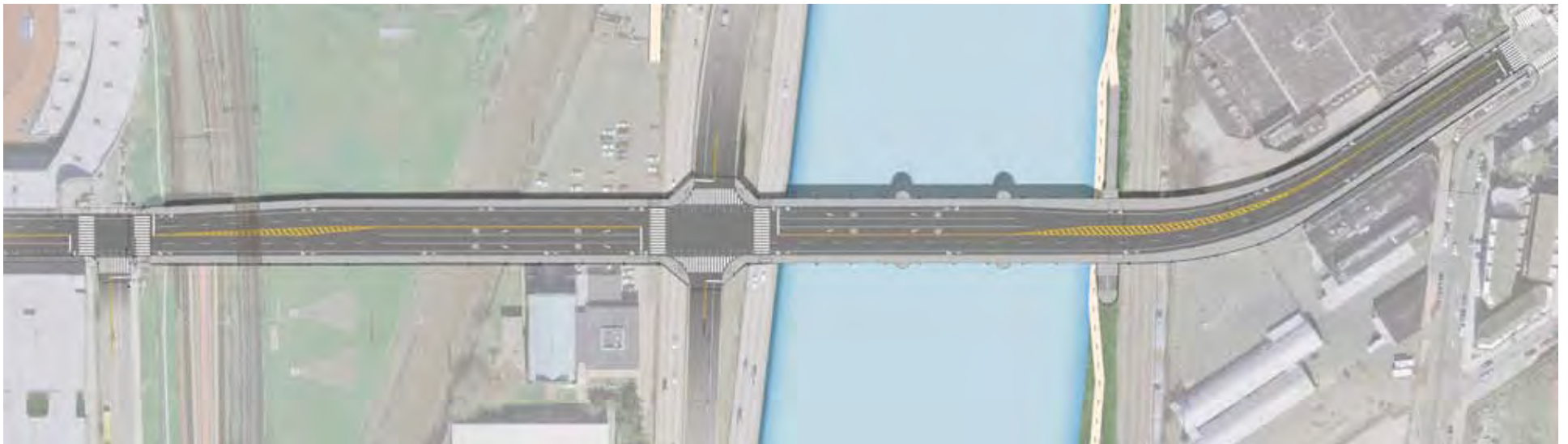
left-hand interchange ramps have very little merging space and enter into the high-speed lanes of the highway, resulting in a high rate of collisions . The expressway interchange also made crossing the bridge more difficult for pedestrians, and introduced truck traffic, which the narrow streets in Center City and West Philadelphia were not designed to receive. This truck traffic has been exacerbated in recent years by the introduction of dashboard GPS navigation which unadvisedly guides large trucks onto the bridge.

The South Street Bridge was originally designed when road vehicles were considerably smaller. As a result, the cartway today only really accommodates two travel lanes, except at the interchange with I-76, where vehicles squeeze into four very narrow (9 foot) travel lanes. This narrow width, however, is in keeping with the capacity and laneage of streets which feed the bridge, and is considered adequate for today's travel volumes.

When the Schuylkill Expressway was constructed, it was originally planned to connect to an expressway running east along South Street to the Delaware Expressway. This would have required widespread demolition. This planned expressway loop around Center City was blocked by city residents after years of struggle. It is highly likely, given the expressway plans of the 1950s, that engineers never intended the present ramps to be a long-term design solution.



Currently proposed elevation



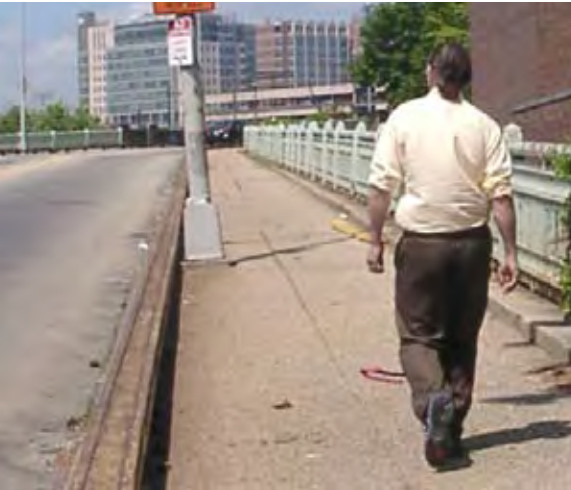
Currently proposed plan

## The South Street Bridge Replacement Project

**The Coalition is aware that delaying the project is costly and understands the need to make recommendations that would not significantly alter the construction schedule or cost.**

The South Street Bridge has been slated for replacement for many years. For various reasons, the project has been delayed until now. Streets Department engineers have stated that they are concerned the bridge cannot survive another winter, because ice continues to cause the concrete to spall (flake apart), potentially falling onto roadways, railroad tracks, Penn athletic fields and boats. The Coalition has been told that it is unlikely that the bridge will collapse, but falling debris is a major safety hazard.

The bridge construction is currently scheduled to last for a period of at least 18 months, which is the tightest schedule that is considered feasible. Major constraints include the fact that the concrete cannot generally be poured during the coldest months, creating set “windows” for certain construction activities. The accelerated schedule will carry a higher construction cost - perhaps up to 30% more compared to a longer schedule. The cost premium is due in part to the need to have multiple crews and sets of equipment working at the same time. It is important to point out that construction prices continue to inflate rapidly due to the rising price of materials, so delays in the project are also likely to increase the overall cost. The Coalition is aware that delaying the project is costly and understands the need to make recommendations that would not significantly alter the construction schedule or cost.



We should be careful to avoid repeating past mistakes.

### Chestnut Street



A graceful span was replaced with a utilitarian overpass in the 1950s as part of the Schuylkill Expressway project.



### Callowhill Street



Wide buffered sidewalks replaced by a narrow sidewalk on one side



### South Street



The new bridge is designed to accommodate faster traffic and is less safe for pedestrians





## What is at Stake?

### **We can't afford to live with a mistake for 75 years**

When the existing South Street Bridge was constructed eighty years ago, horses still pulled carts through Philadelphia's streets and sailing schooners still called at wharves on the Schuylkill River.

The citizens of Philadelphia will have to live with the replacement for the South Street Bridge for generations, so it is imperative that the new bridge anticipate the way that the city is changing. Once again the city is returning to its rivers by constructing new parks, trails, housing, and commercial buildings on the river. The city is becoming one of the most walkable cities in the country, and the rate of bicycling is increasing dramatically. City neighborhoods are expanding across old boundaries to create a more dynamic place to live and work.

We believe that this report will show that the South Street Bridge must serve as a primary pedestrian and bicycle route as well as a vehicular route between Center City and University City. The connection between these two economic centers is critical for the future of the city's development and quality of life. The Bridge will serve as a physical manifestation of the town-gown relationship between Center City and the University of Pennsylvania.

The South Street Bridge Coalition is an organization of local community leaders, business owners, and civic groups committed to improving the design of the South Street Bridge. The coalition is pushing for a design for the new South Street Bridge that reflects the increased importance of walking, bicycling, balanced traffic planning and contextual civic infrastructure in the City of Philadelphia. The Coalition wants the architecture of the bridge to reflect its importance as a major gateway to the city and a foreground for some of the most prominent views from the Schuylkill Expressway and the banks of the river.



Our past



Our future?

## Leaving a Legacy

**The new South Street Bridge will be a gateway to Philadelphia for the next century. This is the chance to build for the future of our city.**

Over the years, the City has built and rebuilt dozens of bridges over the Schuylkill River. Some of these bridges are works of singular beauty. But the City has also made missteps in the past, downgrading both aesthetics and pedestrian /bicycle function. For instance, the old Callowhill Street Bridge had wide sidewalks on both sides that were buffered from traffic. The 1950s-era replacement had a single five foot-wide sidewalk and no bike lanes on a popular recreation route.

Building a bridge is an opportunity to extend the City across geographic barriers, and to create a special experience in the urban fabric.

Some of the newer bridges over the river have missed the potential to expand the walkable neighborhoods over the Schuylkill. For example, when the Chestnut Street Bridge was rebuilt in the 1950s in order to construct the Schuylkill Expressway, the city replaced a delicate and graceful Gothic iron span with a relatively utilitarian structure with minimal amenities for pedestrians and bicyclists.



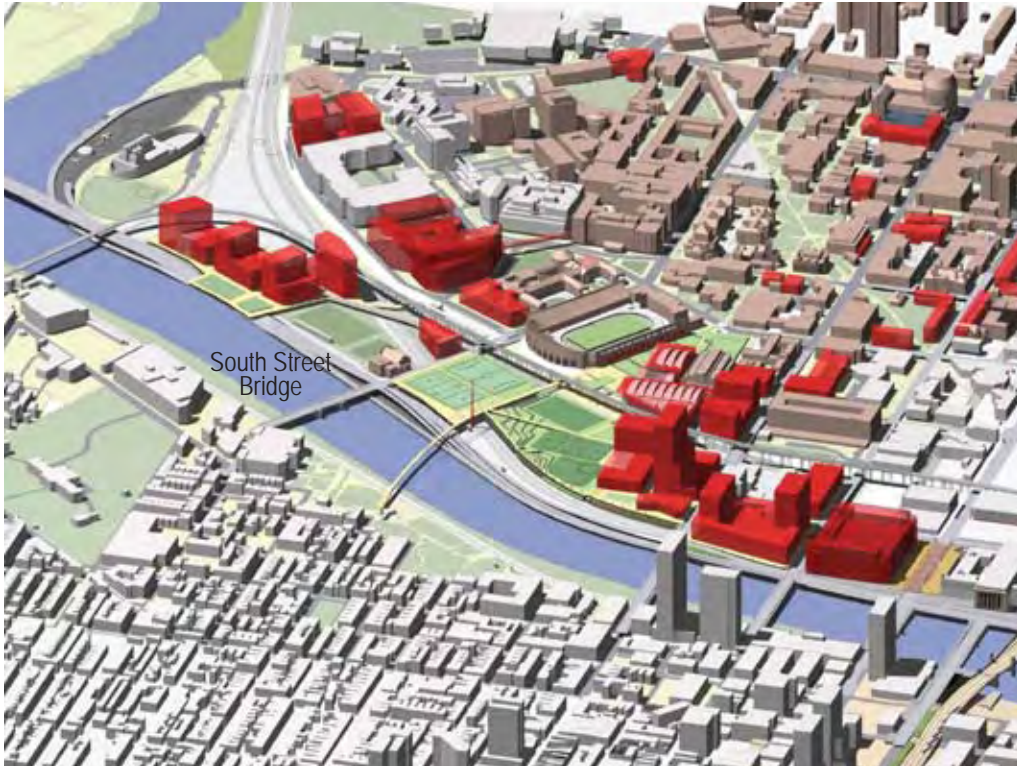
# THE PARADIGM SHIFT

Pedestrian-Oriented Development Around the Bridge

The Schuylkill River is Becoming a Destination

Bicycle Volumes are Increasing Rapidly

Transportation Policy has Changed



#### Penn Connects

The University of Pennsylvania has a plan for massive development adjacent to the South Street bridge, called "Penn Connects." This plan envisions a pedestrian oriented environment that connects the University to Center City.



#### Graduate Hospital Development Boom

New housing development is occurring at the foot of the South Street Bridge, such as the redevelopment of the Naval Home site. Infill development is transforming vacant lots into new homes occupied by families attracted to the walking lifestyle of the area. In the future, additional parcels will yield many new residents who will be walking and bicycling across the bridge.

## Pedestrian-Oriented Development Around the Bridge

In recent years, an unprecedented amount of housing development has taken place in Southwest Center City, including large projects such as the redevelopment of the Naval Home, medium scale projects such as the new housing around Schuylkill River Park, as well as infill development throughout Southwest Center City.

At the same time, Penn has acquired the Post Office lands along the Schuylkill River, and announced plans for massive new institutional and mixed-use development. This will transform a forgotten area that was once used only for parking into a high-density district with thousands of new pedestrians and bicyclists.

Thousands of university students, faculty, staff, and hospital employees have settled in Southwest Center City, in part because of good access across the South Street Bridge. Many of these new residents commute by bicycle and on foot, creating a much greater need to support these travel modes in the bridge design.

Many Penn students who live in Center City walk home at night. Because of safety concerns, they tend to walk in groups of two or more, further necessitating a wider sidewalk. Additionally, Penn athletic teams increasingly use the Schuylkill River Trail for cross-training. At times, these teams travel in groups of almost 30 students, requiring a wider sidewalk.

## The Schuylkill River is Becoming a Destination

The Schuylkill River Trail has created an entirely new transportation system along the Schuylkill River for bicyclists and pedestrians. This trail attracts bicyclists, strollers, and runners from across the area, and the South Street Bridge will be a primary access point for the Penn community and Southwest Center City residents. While a proposed ramp from the bridge will provide future access to the trail, the current design does not anticipate the large number of people who will be traveling on foot or on bicycle to this location.

## Bicycle Volumes are Increasing Rapidly

Recent data shows that the number of bicyclists in Center City has grown at a rate of twelve percent per year since 1990 and twenty-four percent from 2005 to 2006 alone. This enormous increase in bicycling activity represents an acceleration of the trend of increased bicycle use. With the extension of the Schuylkill River Trail, the possible introduction of bike sharing, and continued improvements to bicycle infrastructure, the number of bicycle users can be expected to continue to grow dramatically. The current bridge design may be deemed adequate for past levels of bicycle activity, but is not prepared for future increases.



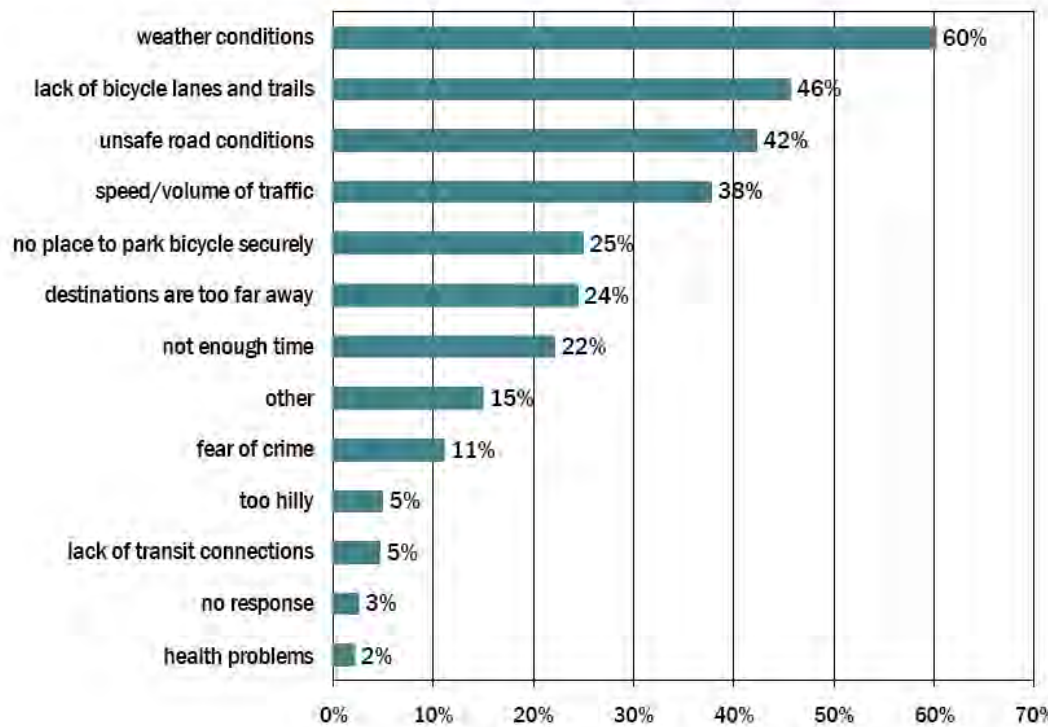
Schuylkill River Trail

The new trail attracts bicyclists, many of whom reach the trail from bridges over the Schuylkill River.

**Between 2005 and 2006, the number of bicyclists in Center City increased 24 percent.**

**The proposed bridge design may be deemed adequate for past levels of bicycle and pedestrian activity, but is not prepared for future increases.**

## Discouragements to more frequent bicycling



Source: DVRPC, 2007

The community vision for the South Street Bridge addresses the key concerns of Delaware Valley cyclists:

- Unsafe road conditions
- High speed and volume of traffic
- Lack of bicycle lanes and trails



## Transportation Policy has Changed

A number of important factors have changed since the South Street Bridge was originally designed. These factors collectively make the case that the Bridge has a much more important role to play in connecting the communities of University City and Center City than was the case in years past.

### Fully Accommodating Bicycles and Pedestrians is now a Policy Directive

USDOT and PennDOT now more strongly emphasize accommodating bicycle and pedestrian travel in bridge projects.

The South Street Bridge replacement project was launched in 1995. Since that time, federal and state policy has shifted to place a much greater emphasis on accommodating and encouraging all travel modes within bridge projects. USDOT provides the following guidance for transportation infrastructure:

**“The challenge for transportation planners, highway engineers and bicycle and pedestrian user groups therefore, is to balance their competing interests in a limited amount of right-of-way, and to develop a transportation infrastructure that provides access for all, a real choice of modes, and safety in equal measure for each mode of travel.”**

From: USDOT. Design Guidance: Accommodating Bicycle and Pedestrian Travel: A Recommended Approach - a US DOT Policy Statement Integrating Bicycling and Walking into Transportation Infrastructure. <http://www.fhwa.dot.gov/environment/bikeped/design.htm>

PennDOT has recently revised its policies to emphasize planning for bicycles and pedestrians in project planning and design:

**“This revised policy mandates that highway and bridge projects must evaluate the existing, latent, and projected needs of pedestrians and bicycle users. It requires the integration of the identified needs into project planning and design processes...The intent of this policy is to bolster the importance of pedestrians and bicycle travel as viable and connective modes of transportation.”**

From: PennDOT. Strike-Off-Letter SOL 432-07-02. Integration of Pedestrian and Bicycle Modes of Transportation into Planning and Design Processes.

What better place to implement these new guidelines than at a key connecting point between Center City and University City?

### Bridges are Critical Connections for Bicycle and Pedestrian Networks

Between 1991 and 2004, bicycle use in Portland, Oregon grew by 210 percent. In that time, the city spent over \$12 million improving bicycle routes to, from, and on the city's five downtown Willamette River Bridges. Portland planners believe that investment in these bridges, as well as to key access routes and connections, have been the primary impetus behind increasing bicycle use.

### In Summary

In summary, the existing bridge design, while responsive to conditions of the recent past, should be revisited in light of dramatic recent changes. This urban neighborhood is exceptional in terms of pedestrian and bicycle conditions. All efforts should be made to encourage the continued use of these modes.

Massive pedestrian-oriented redevelopment, the new Schuykill River Trail, and dramatic increases in pedestrian and bicycle activity will lead to a much greater need for bicycle and pedestrian capacity.

The increased emphasis by the national and state departments of transportation on pedestrian and bicycle planning as mentioned above would tend to support a more balanced design for the bridge.



# COMMUNITY GOALS & VISION

The Needs of South Street Bridge Users

Community Concerns with the Current Design

The Charrette: Creating a Community-Centered Bridge Design

General Conclusions



## The Needs of South Street Bridge Users

The South Street Bridge serves two main functions: access across the Schuylkill River to connect Center City to University City, and access to the Schuylkill Expressway. The Coalition understands the following:

### Motorists

During peak hours, roughly 60% of motorists on the bridge are entering and leaving the Schuylkill Expressway. Motorists expect a safe facility with an acceptable level of congestion for an urban environment. Motorists are also interested in the view of the city and the river, although generally to a lesser extent than pedestrians because of the greater attention that driving requires. Motorists are not on the bridge for a very long time, except possibly during the afternoon peak period.

### Pedestrians

It takes approximately eight minutes to walk across the South Street Bridge — a relatively long time. If conditions are pleasant and safe, this walk can be an enjoyable experience offering stunning views. At walking speed small details are very noticeable.

Pedestrians are trying to reach major destinations on either side of the river, and in the future they will be accessing the Schuylkill River Trail. Pedestrians can be seen crossing at all hours of the day, even into the late night.

Pedestrians want a safe and pleasant experience, which means an environment where they are not threatened by vehicular traffic, where personal security is maximized, and where the visual environment is pleasing and welcoming. Pedestrians are concerned about fast traffic which might leave the roadway and strike them. Noise is a concern to them. Pedestrians are also concerned about being able to cross intersections without being hit by vehicles. They worry about being assaulted, especially by someone concealed or loitering on the bridge. Pedestrians - especially Penn students - often walk in groups (even more so at night), but solo walkers prefer a buffer of personal space.

### Bicyclists

Different bicyclists have different abilities. Recreational and occasional riders may have fewer skills and less confidence than experienced commuter cyclists. Bicyclists are generally looking for a safe place to ride without concern for interference from pedestrians and vehicles, although some bicyclists are most comfortable operating in the general vehicular traffic stream. When the Schuylkill River Trail is connected to the bridge, many more families and recreational riders will be using the bridge — and this is the group that feels the most vulnerable in traffic. Bicyclists are concerned about being sideswiped by traffic turning or changing lanes, and about pedestrians who might step into their path. Bicyclists also fear being rear ended in traffic, even though statistically this is not a common crash. To reach the Schuylkill River trail, bicyclists will prefer to use the ramp on the north, rather than the stairs on the south; therefore the ramp should be accessible to bicyclists traveling from either end of the bridge.

## Community Comments

- |     |   |    |  |          |  |
|-----|---|----|--|----------|--|
| 1+2 | I would like to see the bridge wider to include bicycles and to plant trees   | 25 | Cars turning onto bridge. Don't make small street lose neighborhood feeling + safety.  | 43       | Towers – design so that rains can wash sitting / viewing areas. No roofs.  |
| 3   | The bridge should be designed as a neighborhood bridge (for pedestrian and bikes) not as a highway bridge. After all it joins two neighborhoods and has heavy pedestrian and bicycle use.   | 26 | Bicycle stop bar should be set ahead of vehicular stop bar, as indicated, however should be at least for 1 bicycle length ahead, preferably more! Will help reduce vehicular right turn conflict with bicycle through movements. | 44       | Where are representative form Penn?  |
| 4+5 | Keep the existing viaduct + piers – to shorten construction time; save millions, keep narrow lanes (for traffic calming.)   | 27 | Close on ramps to allow pedestrians to cross off ramp traffic with over or under pass.   | 45       | Nicer entry to Septa Regional Rail Station/ Bus Stop here.   |
| 6   | “Bridge” Road width too wide and does not release to street widths on either sides of it.   | 28 | Kill the towers. They are butt ugly  | 46       | Bus stop at Stair/ramp.  |
| 7   | Bridge should look like a bridge, instead of like a highway overpass. The South Street Bridge has the potential to become a beautiful gateway + civic monument for Philadelphia.  | 29 | I agree that the towers as should don't enhance the project. Use the money others wise.  | 47       | Bus stop at Hollenback (Building).   |
| 8   | Intersection is never safe for pedestrians and bicycles to cross. This design doesn't help – its worse than old one. Need long enough light for those going straight to get across. It would be best to close the on ramps and fit two. | 30 | If at all feasible close the on ramps to I-76.   | 48       | Bus stop at Penn garage Convention Ave.  |
| 9   | Can we build the Penn/RR span in 18 months and delay the river span to allow Center City concerns to be addressed?  | 31 | Adjust Towers so they don't become urinals. The bridge is not just for non- auto people. Work on ramp setup.   | 49+50+54 | Traffic lights or stop signs needed because of increased violence of cars and trucks – 5 lanes.                      |
| 10  | Close the ramps completely.   | 32 | Pedestrian refuges in pedestrian crosswalks over on ramps.   | 51       | Can we limit size of vehicles crossing river span – weight + height?   |
| 11  | Consider closing the ramps completely, HUP does not need access here!   | 33 | Need signaled cross walk At ramp/stair for bikes, pedestrians, traffic calming.  | 73       | Add kayak / canoe landing! (With drinking fountain). Thank you!  |
| 12  | Provide clear directions and access by bicycles coming off and on the ramp to the Schuylkill River Trail.   | 34 | 4 not 5 lanes at ramps (more cars get dumped on the on ramps). Wider sidewalk.   | 74       | Close the ramps of death!  |
| 13  | Too many intellectual, earth watch opinions. Just build the bridge 1) traffic 2) pedestrians 3) bikes forget it.  | 35 | Why Penn isn't ate the table if it's their timeline driving this process?  | 75       | Gateway to two neighborhoods emphasis needs to be on the safest and best LOS intersection treatment (for all modes). |
| 14  | Provide cones other separator on W. bound Bike lane to protect cyclists.  | 36 | They are very dangerous. The on ramps should be closed.  | 76       | Close the I-76 ramps (on-ramps /off are okay). They are dangerous + redundant.                                       |
| 15  | Eliminate 40' and 45' truck traffic over bridge.  | 37 | Protection – low rail / curb to protect pedestrians from cars.   | 77       | The ramps are dangerous.   |
| 17  | The curb ramp and tactile texture at the interchange that cross the on/of ramp: should be aligned so that the ramp are parallel to the crosswalk, currently confusing/misleading, for visually impaired pedestrians.                    | 38 | Better looking railing avoid “HIGHWAY DETAILING”.  | 78       | The towers are hideous.  |
|     |   | 40 | Enforce light at 27th and South with police. Drivers do not read/obey “NO TURN ON RED” let alone red turn arrow.   | 80       | “Connectivity” between two small neighborhoods   |
|     |   | 41 | It is unclear why or how the large volume funnels into South Street.   | 97       | Close the ramps  |
|     |   |    |  | 100      | Ramps are unsafe.  |

## Community Concerns with the Current Design

### The Community wants:

- **Safety for all modes of travel.**
- **A strong and safe pedestrian and bicycle connection between University City and Center City.**
- **A context-sensitive bridge design.**

Over many years, the community has raised its concerns with many issues related to the design of the new bridge. The South Street Bridge Coalition convened a public meeting on March 6th, 2008, to record the specific concerns that should be addressed. Participants wrote down numbered comments that were linked to specific locations on a map of the bridge project.

Comments focused on safety aspects of the bridge, such as preventing high speeds, creating a barrier to protect bicyclists and pedestrians, and removing the dangerous “death ramps” on I-76. Members of the public compared the design to a highway overpass that was out of character with walkable central Philadelphia. Residents were concerned about truck traffic coming from the highway and becoming stuck on narrow South Street. Members of the public were interested in creating a bridge that strongly linked two walkable neighborhoods and provided good access to the river and recreation, such as biking, running, boating, fishing, etc.

The look of the bridge was also a major concern. Residents expressed desire for a railing that was similar to the existing bridge and pedestrian-oriented lighting. There was overwhelming, though not unanimous, support for removing the towers of the current design.

Community Issues Map





A community charrette with a diverse attendance was held to gather concerns, ideas, and perspective on how to create the best bridge possible.

Photos: Sarah Clark Stuart



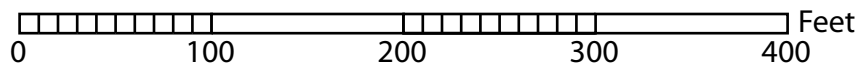
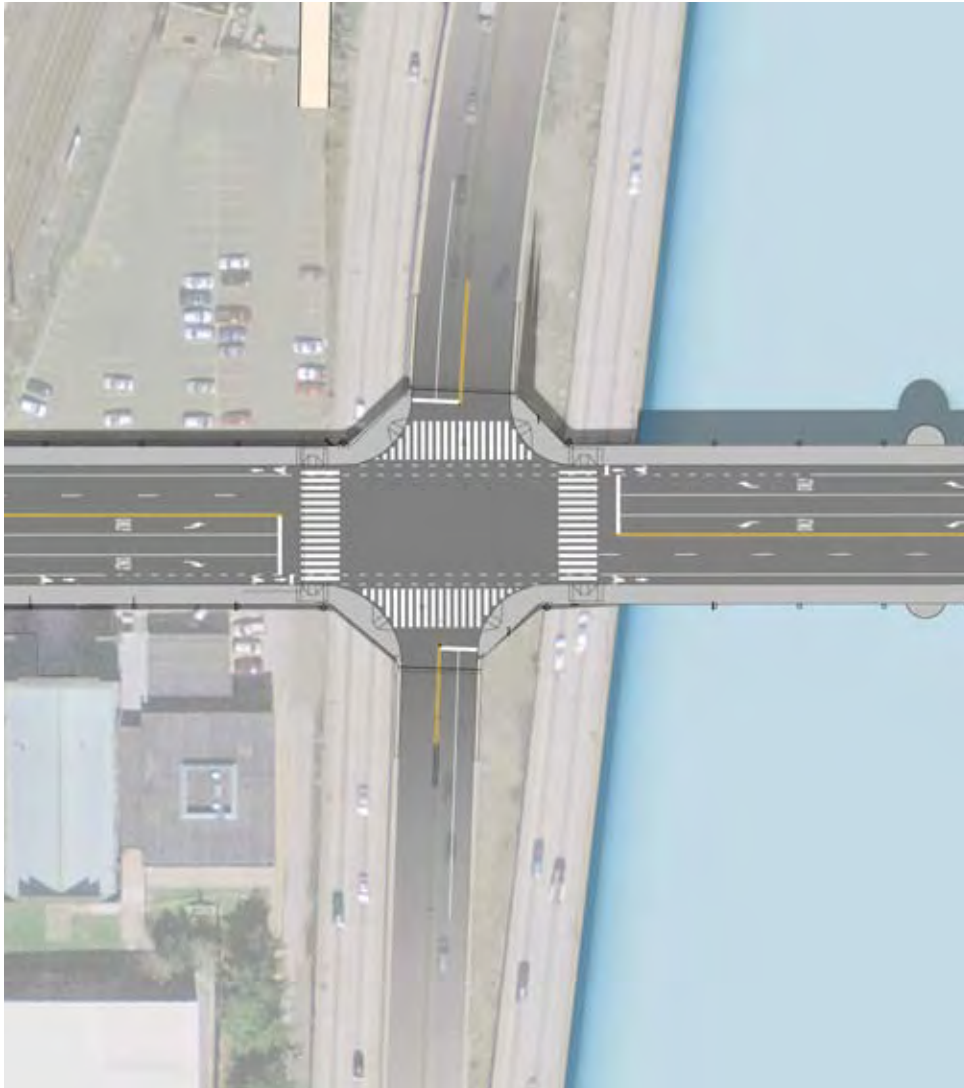
## The Charrette: Creating a Community-Centered Bridge Design

**The intent of this process was to document the major community concerns and suggest possible solutions.**

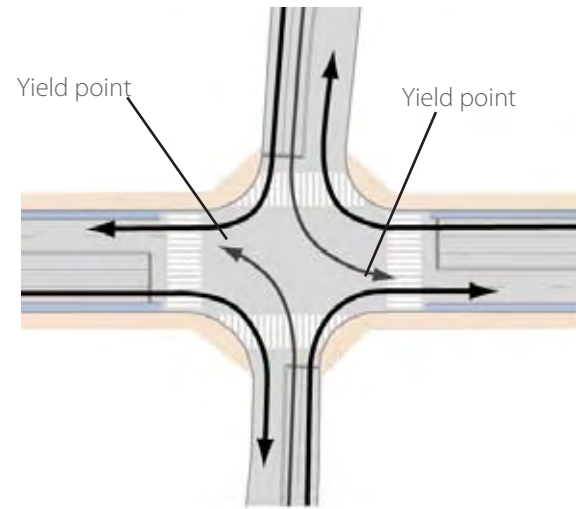
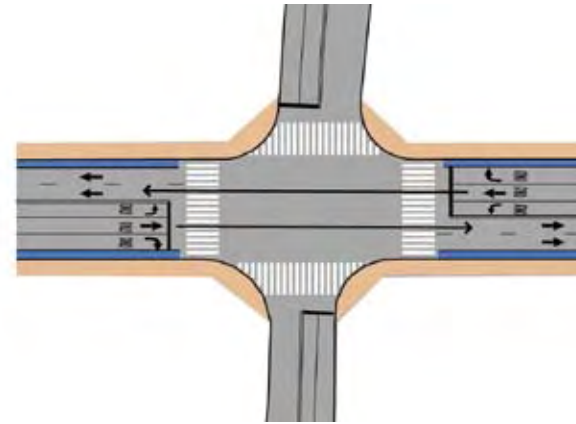
Using grant money secured by State Senator Fumo, the Coalition retained the planning firm of Wallace Roberts & Todd, LLC, and the traffic engineering firm JzTI to help review the current bridge design and facilitate a public process to recommend changes based on community concerns.

A “charrette” is a team process to help solve perceived problems. The Coalition convened a charrette in early March to help develop the community vision for the South Street Bridge. An organizing community meeting was held on March 6th and the charrette followed on Saturday, March 8th. Both events were held at The Philadelphia School, at 25th and Lombard Streets, and attendance at both events was between 70 and 100 people.

The intent of this process was to document the major community concerns and suggest possible solutions that could be implemented within the parameters of the existing general structural design. The charrette was not intended to revisit the overall structural design of the bridge, because the Streets Department has indicated that there is not sufficient time nor money to address such design elements. However, the Coalition favors revisions to the deck of the bridge that will fulfill the objectives described in this report.



Current Design



The fifth lane on the bridge is not necessary:

As currently designed, only one through lane continues through the intersection, as shown in the top diagram, but there are two receiving lanes. The stated reason for this is that it will allow for simultaneous turns from the I-76 ramps. However, left turning vehicles, following convention and encouraged by state law, tend to yield to right turning vehicles as shown in the lower diagram. Thus, the extra receiving lane offers less benefit than anticipated.

## General Conclusions

### Pedestrian Conditions are Not Optimal

The Streets Department argues—undoubtedly with sincerity—that it has optimized the pedestrian conditions by achieving the (theoretical) separation of pedestrian crossings from all turning movements. However, this definition is a simplified, traffic-model-based interpretation of what constitutes a comfortable pedestrian environment, and does not consider numerous other factors cited by many charrette participants as important to their perceptions of safety, such as slower traffic speeds, a buffer from traffic, shorter crossing distances, etc.

The current design will be posted for 30 miles per hour (mph), but traffic will probably exceed that limit, especially at night when traffic is sparse but visibility is poor. According to the USDOT and the FHWA, “A pedestrian hit at 40 mph has an 85 percent chance of being killed; at 30 mph the likelihood goes down to 45 percent, while at 20 mph the fatality rate is only 5 percent.” At the present time, speeds in Center City and University City are generally well under 30 mph. Reducing speeds on the bridge will make the bridge safer for all users.

The experience of walking across the bridge is a critical aspect of the bridge design. While the proposed 9 foot wide sidewalk is slightly wider in places than the existing walkway, it is no longer buffered from traffic by the bridge girders. Most sidewalks in Center City are at least 12 feet wide.

### The Current Design Does Not Replicate an “Urban Street”

Most sections of the Bridge are overdesigned. For example, although ample curb radii for turns from the Bridge onto the I-76 ramps are necessitated by the signalization scheme (which precludes lane-sharing), this is not the case for turns FROM the ramps onto the Bridge, which is in fact the more critical movement because this is where driver behavior must transition from high-speed expressway “free-flow” to low-speed urban streets. It is reasonable to expect trucks here to perform the tight maneuvers they employ throughout the city, i.e. encroachment into the second approach lane and utilization of the full width of the receiving roadway area.

Similarly, the smoothing of the “bend” on the east bank is further evidence that this design in no way attempts to emulate the characteristics of the surrounding urban street grid.

### The Fifth Lane is Not Necessary

The second receiving lane on the Bridge is likely to underperform and should be targeted for elimination. This lane is intended to allow left-turning traffic from one ramp to enter the Bridge at the same time as right-turning traffic from the other ramp. In reality (and as encouraged by State driving law), left-turning traffic will often yield to right-turning traffic to ensure safe entry to the traffic stream, due to the propensity of right-turning traffic to often encroach on all receiving traffic lanes.

### The Model Does Not Tell the Whole Story

There are many elements of the model that likely paint a better picture of the proposed plan than will eventually be realized. The simultaneous turn condition described in the previous point is one example. Additionally, the model assumes that motorists and pedestrians will, for the most part, follow the rules. However, rules violations—in part due to the long 100-second signal cycle—will be common (e.g. jaywalking, wrong turns from wrong lanes, signal-running, blocking-the-box, etc.) and will diminish the supposed advantages of the current design.

### The Image of the Bridge Could Be Improved

The bridge forms a gateway to University City and Center City, and strikes a silhouette on the skyline for motorists on the Schuylkill Expressway. The public participants stated that the bridge design does not go far enough at creating the gateway effect to the city on each side of the river, and that the profile of the bridge was somewhat harsh, primarily because of the metallic towers on the piers.

