Presentation to Bethlehem, PA

The City Livable: Modest Proposals for a More Walkable Downtown

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Streets like this one in Chicago embody a key aspect of what makes cities successful: all the necessary ingredients of active pedestrian life.

Most of this presentation deals with bringing these ingredients to your city in full force.

This presentation, and all of my work, is based on the conviction that a successful city is one in which people choose to walk.

They will also drive, and take transit (which supports walking). But if people are not fully comfortable using your city as pedestrians, then it will never provide the high quality of life that is now demanded of our communities, and those with a choice will be more likely to choose to locate elsewhere.

This report is organized in four sections:

1. **Principles**

   This section lays out the principles of walkability that underline the remainder of the Report.

2. **Mapping Analysis and Street Assignment**

   This section uses existing conditions to determine the location of specific interventions.

3. **Specific Interventions**

   This section proposes site-specific improvements that are worthy of prioritization.

4. **General Recommendations**

   This section lists seven non-site-specific ways to improve the walkability of downtown.

PART 1:

PRINCIPLES

If a Successful city = people walking, how do you get people to walk?

There must be:

- A reason to walk (balance of uses)
- A safe walk (reality and perception)
- A comfortable walk (space and orientation)
- An interesting walk (signs of humanity)

All four conditions must be met. We will address each in turn.

If a Successful city = people walking, how do you get people to walk?

- A reason to walk (balance of uses)

As Jane Jacobs said, “almost nobody travels willingly from sameness to sameness. . . even if the physical effort required is trivial.” The first precondition to pedestrian life is a healthy and balanced mix of uses within walking distance.

The story of our cities losing their mix of uses in the 20th century is the story of how suburban thinking replaced urban thinking in the planning profession.

Historically, there are only two established ways of building communities: the traditional neighborhood, and suburban sprawl. The traditional neighborhood evolved naturally in response to man's needs. Suburban sprawl was invented in response to the automobile, and now covers the majority of developed land in the U.S. Its principles and techniques have also profoundly impacted the design of our cities, which often accommodate automobiles at the expense of pedestrian life.

The traditional neighborhood is compact, walkable, and diverse, that is, fully mixed in use. Almost every aspect of daily life is within a close, comfortable walk. It is an extremely evolved and complex organism.

In contrast, suburban sprawl is not compact, walkable or diverse, and is extremely simple. It is composed of large areas of single use, each of which can be easily classified.

There are places to live.

There are places to work.

There are places to shop.

There are single-use institutional sites, usually consolidated and oversized, such as this high school to which no student will ever walk.

And the consolidated ball-field, the reason we need soccer moms (chauffeurs).

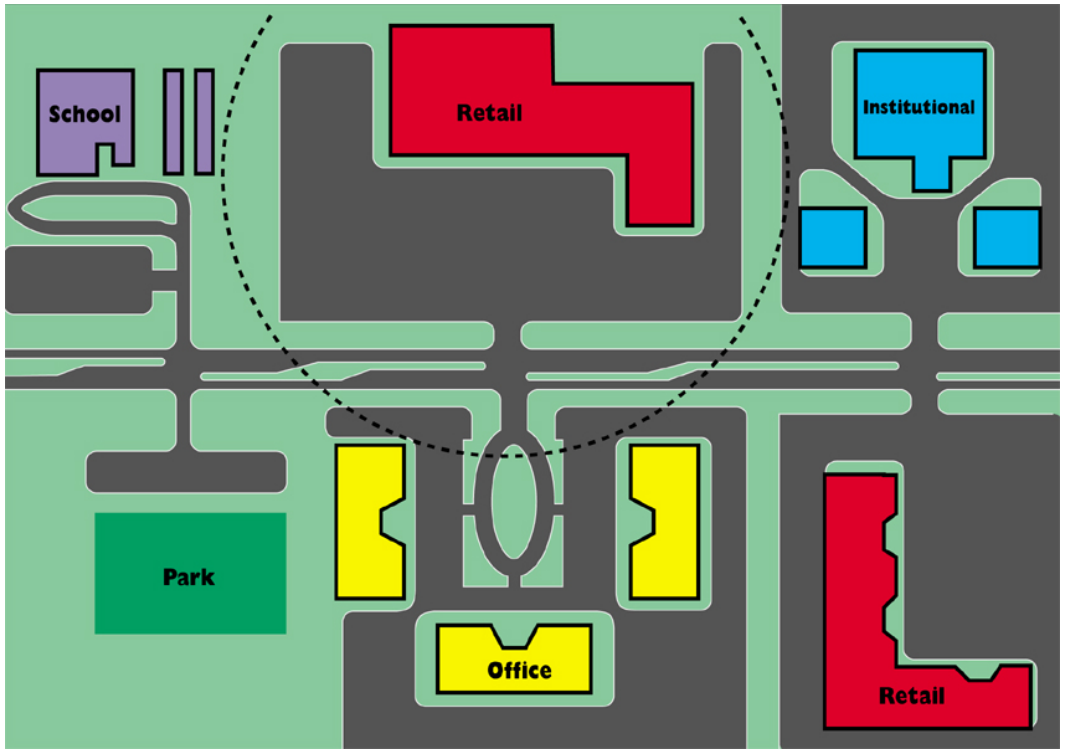
And finally, the massive automotive infrastructure necessary to reconnect all the areas we have oversized and separated.

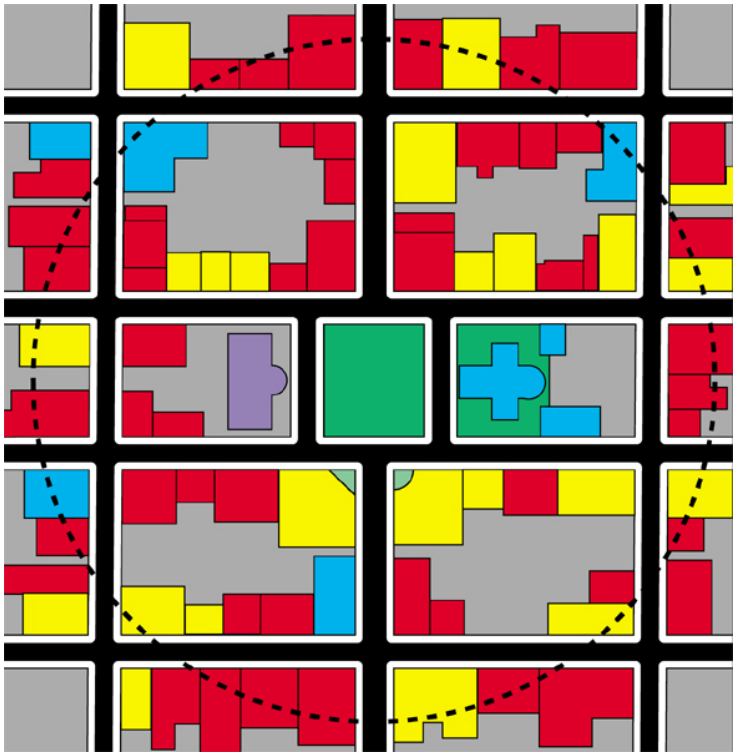
With this,

must come this

Sometimes to the point of silliness.

And a fair amount of frustration.





This comparison contrasts the two models, with sprawl on the left and the traditional neighborhood on the right. Both models contain the same land uses but, in the traditional neighborhood, those uses are proximate and of limited size, so that most of the aspects of daily life can be reached in a five-minute walk. This makes walking useful.

Unlike many American cities, Bethlehem is blessed with a wide range of uses in its downtown. It contains a large number and variety of housing units within walking distance of retail and entertainment, such as these houses on 4th Street.

The presence of this housing downtown means that Bethlehem has an advantage over many places in terms of giving people a Reason to Walk. That said, additional housing downtown, particularly of the mid- to high-density variety, will only help the city to develop an even stronger walking culture. For this reason, any major investments in buildings downtown should be encouraged to include a significant housing component.

(Note: for the purposes of this report, "Downtown" refers not just to the historic North Side, but also to the heart of the South Side.)

If a successful city = people walking, how do you get people to walk?

- A reason to walk (balance of uses)
- A safe walk (reality and perception)

Once pedestrians have a reason to walk, they must also be safe, and feel safe, walking. This is not about crime – if you design a place to attract pedestrians, it will usually be too lively to attract crime. Rather, every aspect of the streetscape must help the pedestrian to feel unthreatened by automobiles. Each detail of the street must cause cars to drive slowly, and limit the pedestrians actual and perceived exposure to being hit.

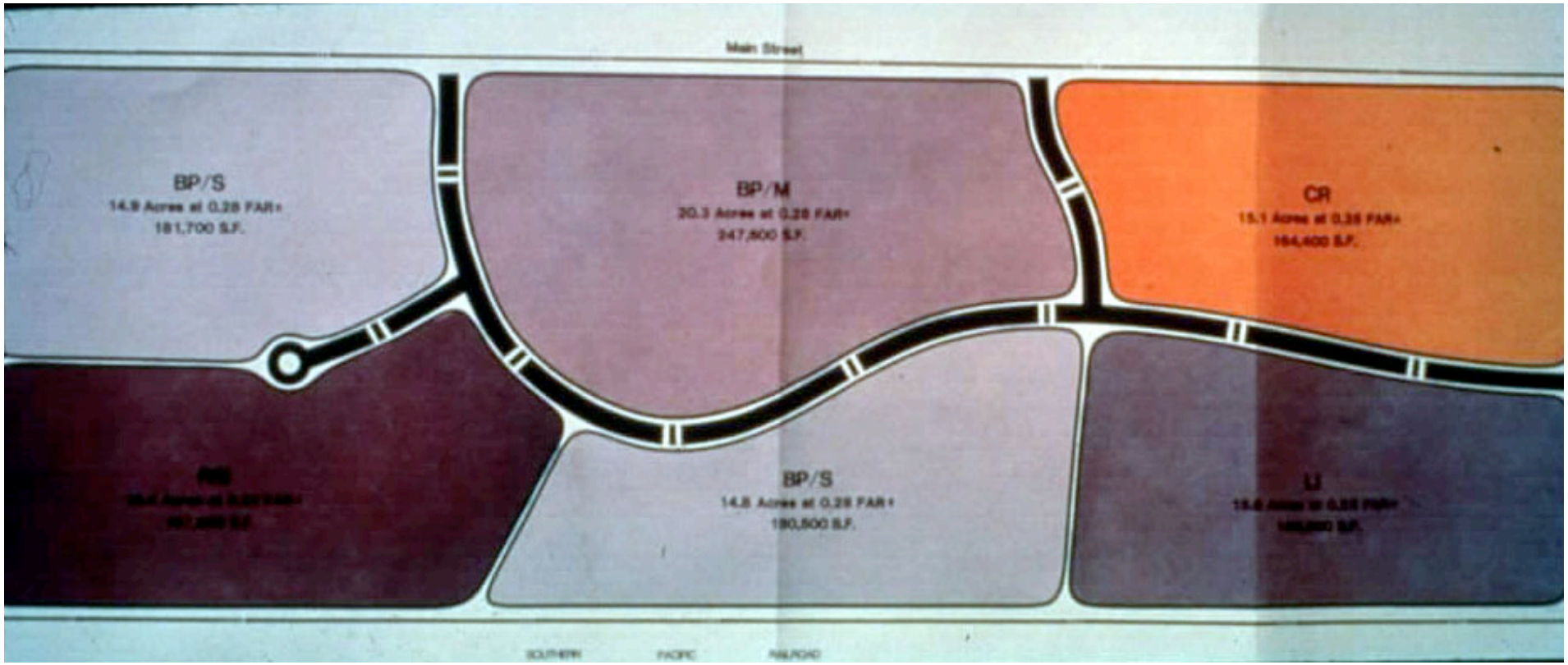
Cars are not the problem. Cars moving quickly near pedestrians are the problem.

The principal criteria of a safe and safe-feeling streetscape are:

- Small blocks and many streets,
- Few, narrow driving lanes on each street,
- Two-way traffic,
- On-street parking, and
- Street trees

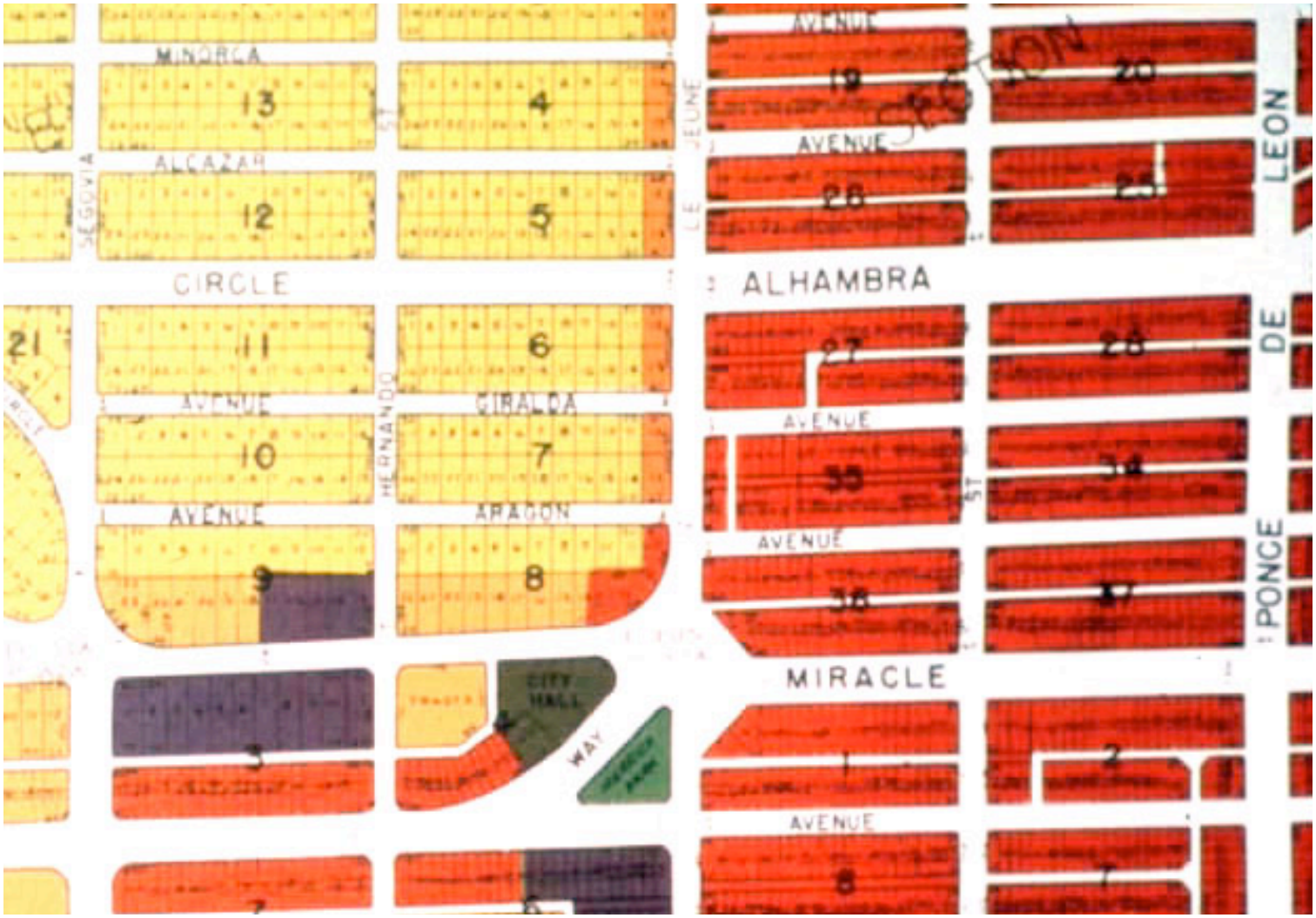
Every street in your community that you wish to attract pedestrians should satisfy all five criteria. We will cover each in turn.

There are two models of street network design. The suburban model has few streets of great capacity, and does not support pedestrian life. It looks like this.

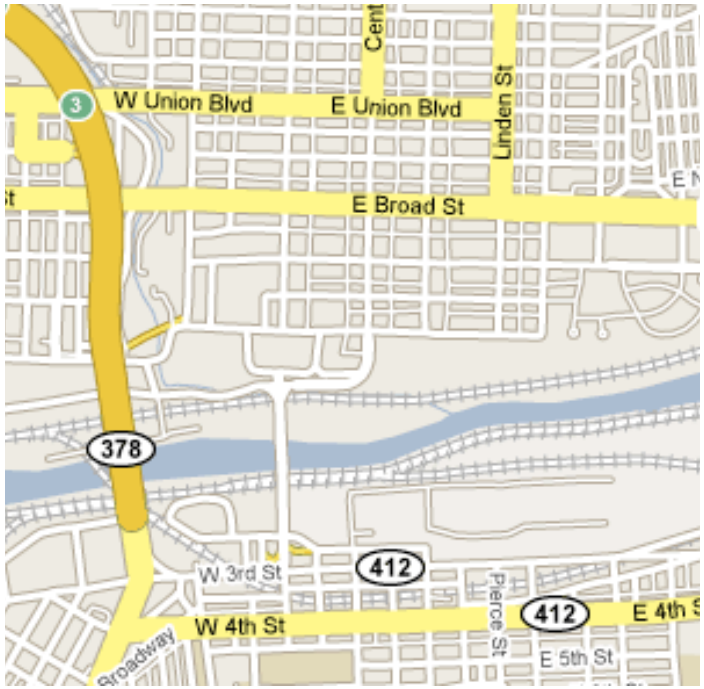


In plan, it looks like this. The same traffic engineers who create these systems every day in the suburbs are also creating street designs in your city, using the same manuals and templates. They are charged with moving as many cars through your city as quickly as possible. That is their job, and they do it well.

The other model of street network design looks like this. It is the traditional neighborhood model, in which many small streets disperse traffic over a large area. In all of Alexandria, Virginia, only a few streets contain more than one lane in each direction.

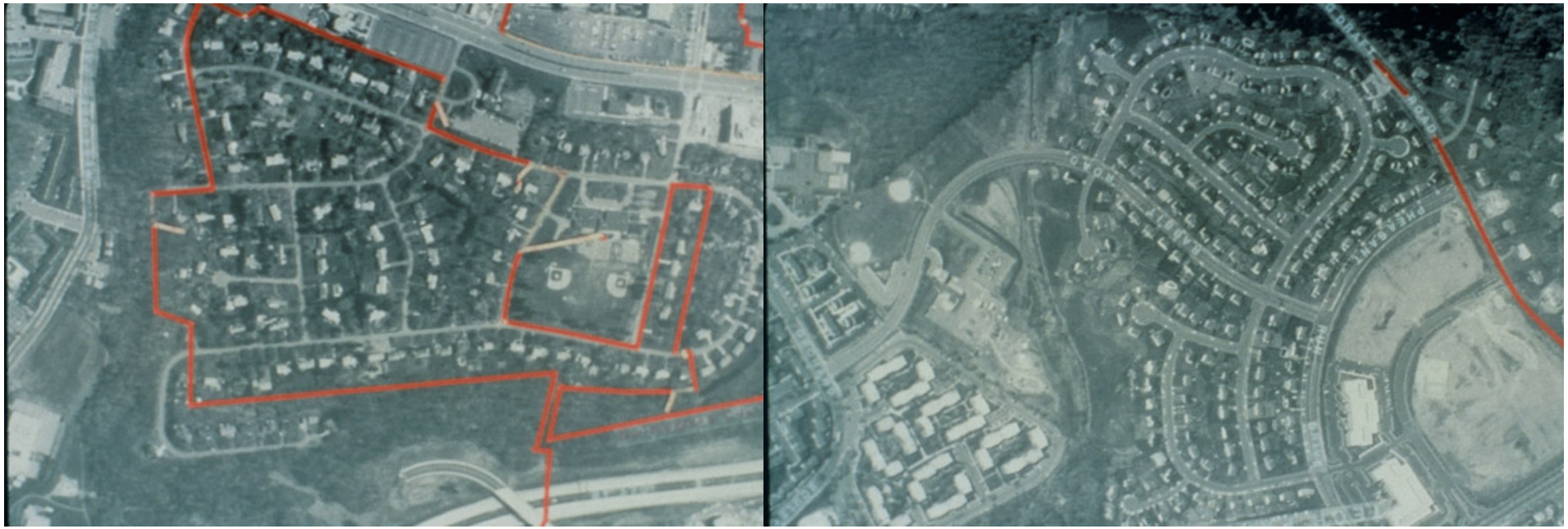


This model dominated planning through the 1930s. This map of Coral Gables, Florida, shows how providing many streets allows each street to be small.



Downtown Bethlehem is also blessed with a tight network of many streets, which means that each street can be small. Since there are multiple paths between each destination, no one street should be expected to carry more than a limited share of traffic, with the exception of the few bridges across the Lehigh River. Once traffic crosses these bridges, however, it is able to disperse in the city's porous grid.

In addition to the number of lanes, the width of each lane also has a profound effect on driver speed and pedestrian safety. The past half-century has witnessed a dramatic inflation in lane widths. Residential streets that used to be 20’ wide are now often 40’ wide or wider. These wider lanes correspond to higher design speeds that endanger pedestrians and drivers alike.



These two photographs, taken from the same height, show how many subdivision street widths effectively doubled between 1960 and 1990. The same standards have been applied to the downtowns of our cities.

As in this Miami Beach neighborhood, new standards result in sidewalks being cut in half during routine curb maintenance. Cars now drive faster while pedestrians get the squeeze.

O&E Monday, January 27, 1997 (B)A3

Width of streets is narrowed by popular demand

BY HELEN NIEMIEC
STAFF WRITER

■ BIRMINGHAM

Complaints from residents about mandated street widths has resulted in an emerging street-width policy for improved roads in Birmingham.

The City Commission has narrowed the standard width for non-fire route streets and is expected to set a width for fire routes within a month.

"We need information and then we need to officially designate fire routes," said city commissioner Archie Damman III.

The city's engineering and public services department will present a report on street widths concerning fire routes at today's city commission meeting.

The new policy is that non-fire route streets can be 20-feet wide with parking on one side of the street or 26-feet wide with parking on both sides of the street.

Nine residents attended the Jan. 18 long-range planning session where the street width policy changed. Susan Gienapp, who has endorsed narrower streets, had given the commission a report from Portland, Oregon that showed how it had narrowed streets.

The idea of "traffic calming" and residential streets that had more of a small town flavor came up a number of times during the Downtown Master Plan study.

The policy affects the approximately half of Birmingham's roadways that still don't have curbs, gutters and storm sewers and currently are classified as unimproved roads. The city has 45 miles of improved streets; 25 miles of unimproved streets without curbs or gutters; and 20 miles of unimproved streets with curbs.

The petition of three streets in the neighborhood immediately south of the downtown prompted the commission to rethink its policy which was reaffirmed last year as 29-feet wide. On citizen petitions to pave and improve the streets, the city engineering department had specified that improved streets would be done at 29-foot widths.

"I support this concept," said city commissioner Eleanor Siewert of the new widths. "We could handle something with options. I was very influenced by reading the Portland report. After the master plan, I've become more aware of what our streets look like."

City Manager Thomas Markus still has reservations about narrower streets. Portland, he noted, has a public transit system where Birmingham residents are reliant upon their cars and need more parking space.

Additionally, Markus expects that the narrower streets will become less used for cut-through traffic.

"When we downsize one neighborhood street, that will force traffic on the wider streets," Markus said.

Birmingham went with a 29-foot street width to allow safety vehicles, such as fire trucks and ambulances, to pass if cars are parked on both sides of a street. The large fire trucks are 9-feet, 10-inches wide. The street width policy last year was reaffirmed by a 4-3 city commission vote, though the topic of street width surfaced at every commission meeting where road improvements were discussed.

In some places, citizens are fighting back. Birmingham, Michigan is one of many cities where traffic specialists are not allowed to design roads according to the sole criterion of maximum flow. Pedestrian safety is taken in to account, and it is understood that lanes should be no wider than the measurement that corresponds to the desired automobile speed.

Many Bethlehem streets, like Broadway, have travel lanes that are 13’ wide or more. These are as wide as highway lanes, and correspond to speeds of 70 MPH and higher. Ideally, these streets would be reconfigured to contain travel lanes of the standard 10’ width.

One-way streets like Center and Linden diminish walkability for several reasons. The lack of opposing traffic causes drivers to speed, and the availability of alternative lanes puts drivers in a “road racer” mentality. One-ways also distribute retail vitality in unpredictable and often damaging ways, such as when shops end up located on the path to work rather than the path home.

On-street parking provides a barrier of steel that protects the sidewalk from speeding cars. A sidewalk unprotected by parking is not truly attractive.

Downtown Bethlehem has more than a few streets, like Elizabeth, that have lost one side of their on-street parking in favor of faster traffic flow. This lack of parking is one of many reasons that these streets fail to attract pedestrians.

Streets trees are also a key component of pedestrian safety, protecting the pedestrian from traffic as parked cars do. They are especially necessary if on-street parking cannot be provided.

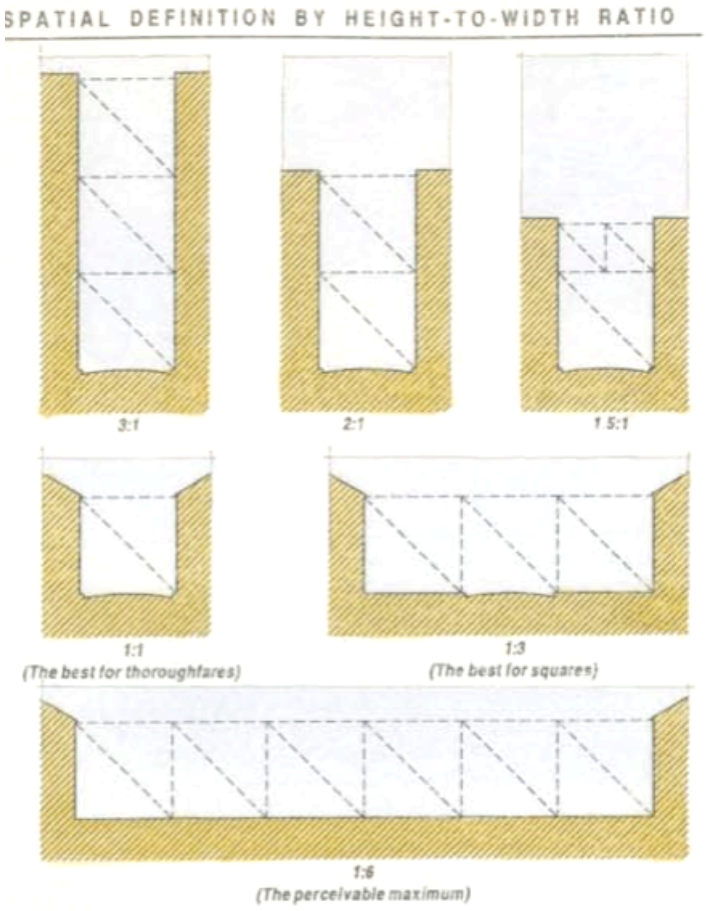
Bethlehem is home to some of the most beautiful tree-lined streets in America. But other streets contain excess roadway where there should be more ample boulevard strips for planting. As expected, walkability, as well as real estate value, is much higher in the former than the latter.

If a Successful city = people walking, how do you get people to walk?

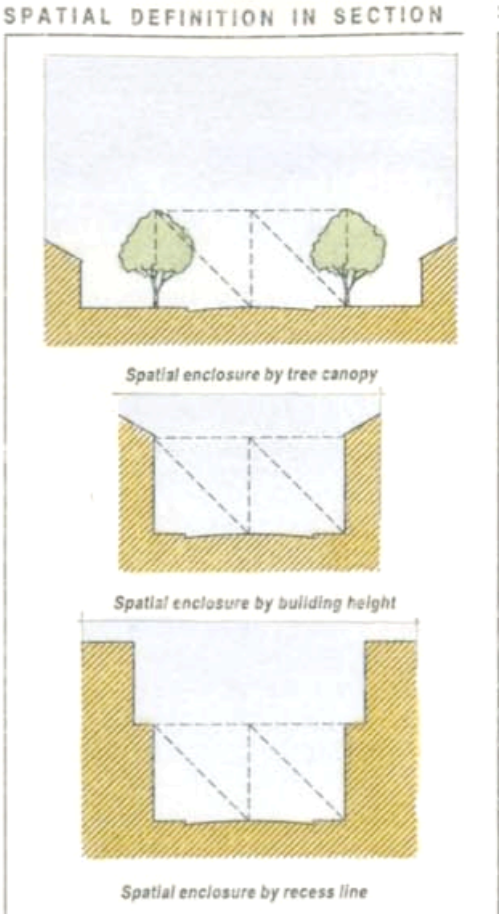
- A reason to walk (balance of uses)
- A safe walk (reality and perception)
- A comfortable walk (space and orientation)

For pedestrians to feel most comfortable, they must feel enclosed. This is counterintuitive – we do like open space – but all animals demand both prospect and *refuge.* We have developed this need over millennia and it cannot be unlearned quickly. That is why we prefer places that have strong edges, with street walls that provide spatial definition to the public realm. Many streets fail to attract pedestrians because they lack edges that are tall enough and close enough to provide that sense of refuge.

We choose to vacation in places like Paris and Split (Croatia, shown here) because they provide places like this. Planners call these “outdoor living rooms.”

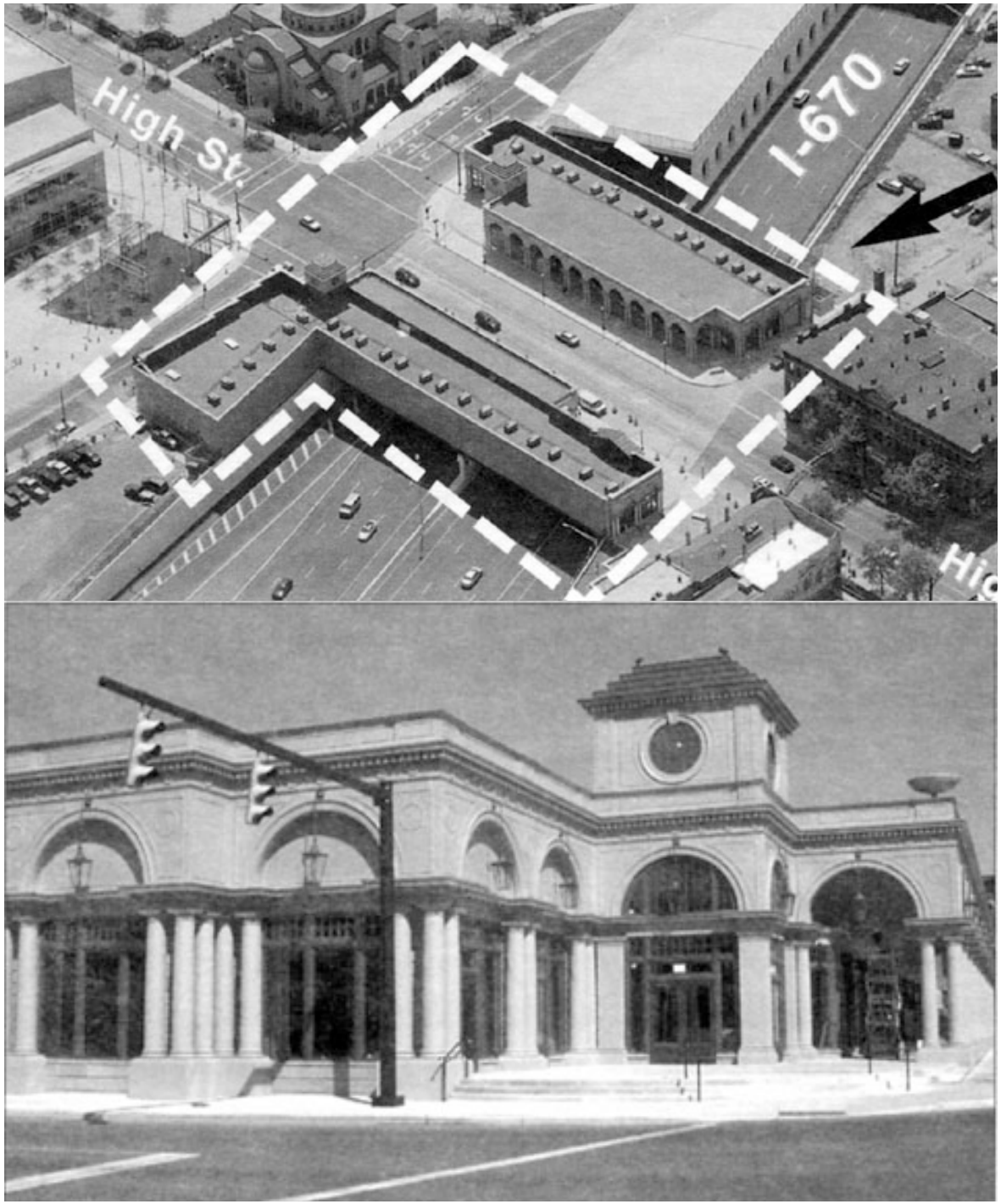


- **Spatial Definition:** the fabric achieved when enfronting facades are aligned in a coherent manner, and the defined space does not exceed a certain height-to-width ratio.
- **Height-to-Width Ratio:** the proportion of spatial enclosure related to the physiology of the human eye. If the width of space is such that the cone of vision encompasses less street wall than open sky, the degree of spatial enclosure is slight. As a general rule, the tighter the ratio, the stronger the sense of place and, often, the higher the real estate value. *See:* **Sense of Place**



- **Spatial Enclosure:** the defining elements of a public space provided by facades with disciplined tree planting as an alternative. Trees aligned for spatial enclosure are necessary on thoroughfares that exceed the maximum height-to-width ratios.
- **Enclosure:** a physical attribute of thoroughfares and open spaces, contributing to a sense of place. Enclosure of the public realm involves the definition of the public space by frontages as a room is defined by its walls. Controlling the degree of enclosure is one of the principal variables in the creation of an urban-to-rural transect. Enclosure is adjusted through the selection of frontage types or by a build-to line specifying the minimum building frontage and the minimum building height.

Street height to width ratios have been studied since the Renaissance. If a space gets too wide for its height, spatial definition is lost, along with the feeling of containment and comfort.



The Cap at Union Station in Columbus, Ohio, is a recent project that shows how spatial definition across a previously inhospitable seam can dramatically improve pedestrian activity in both of the neighborhoods that it connects.

In Bethlehem, the major contributors to a lack of spatial definition are surface parking lots, each of which creates a tear in the traditional urban fabric. Along important pedestrian routes, these street edges should be incentivized for development, with parking restricted to the middle of the block.

Street trees are important for comfort as well as safety. They help to enclose space, make climates more mild, and improve air quality. We have already mentioned the lack of trees on some streets in downtown Bethlehem.

If a Successful city = people walking, how do you get people to walk?

- A reason to walk (balance of uses)
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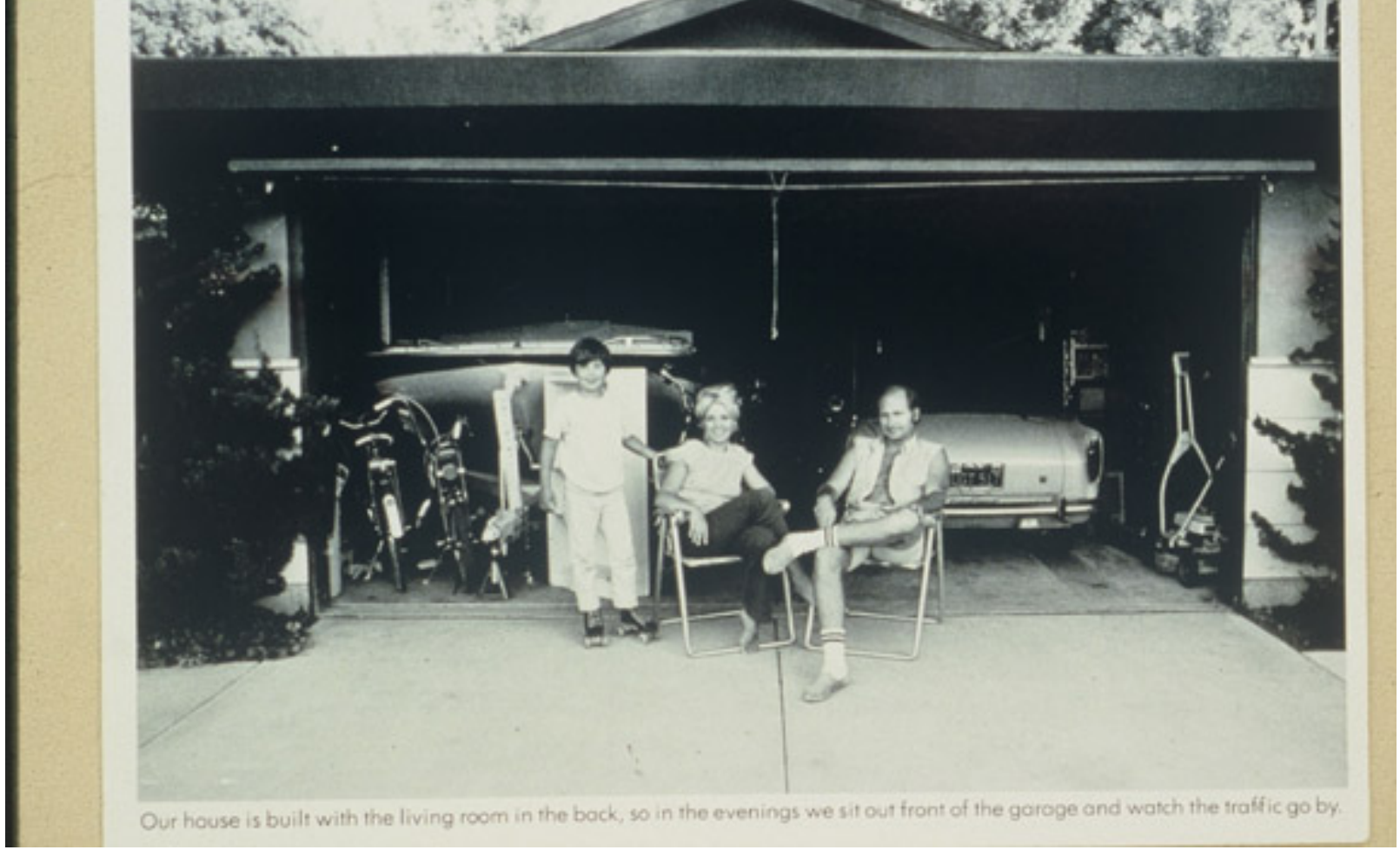
- A comfortable walk (space and orientation)
- An interesting walk (signs of humanity)



Our house is built with the living room in the back, so in the evenings we sit out front of the garage and watch the traffic go by.

Humans are among the social primates. Nothing interest us more than other humans. To attract pedestrian life, the fronts of buildings must expose -- or at least suggest -- human activity. Blank walls, parking structures, surface parking lots and even plant life are a poor substitute for windows and doors.

In Bethlehem, one can find blank walls along key pedestrian routes. These past errors are thankfully few.

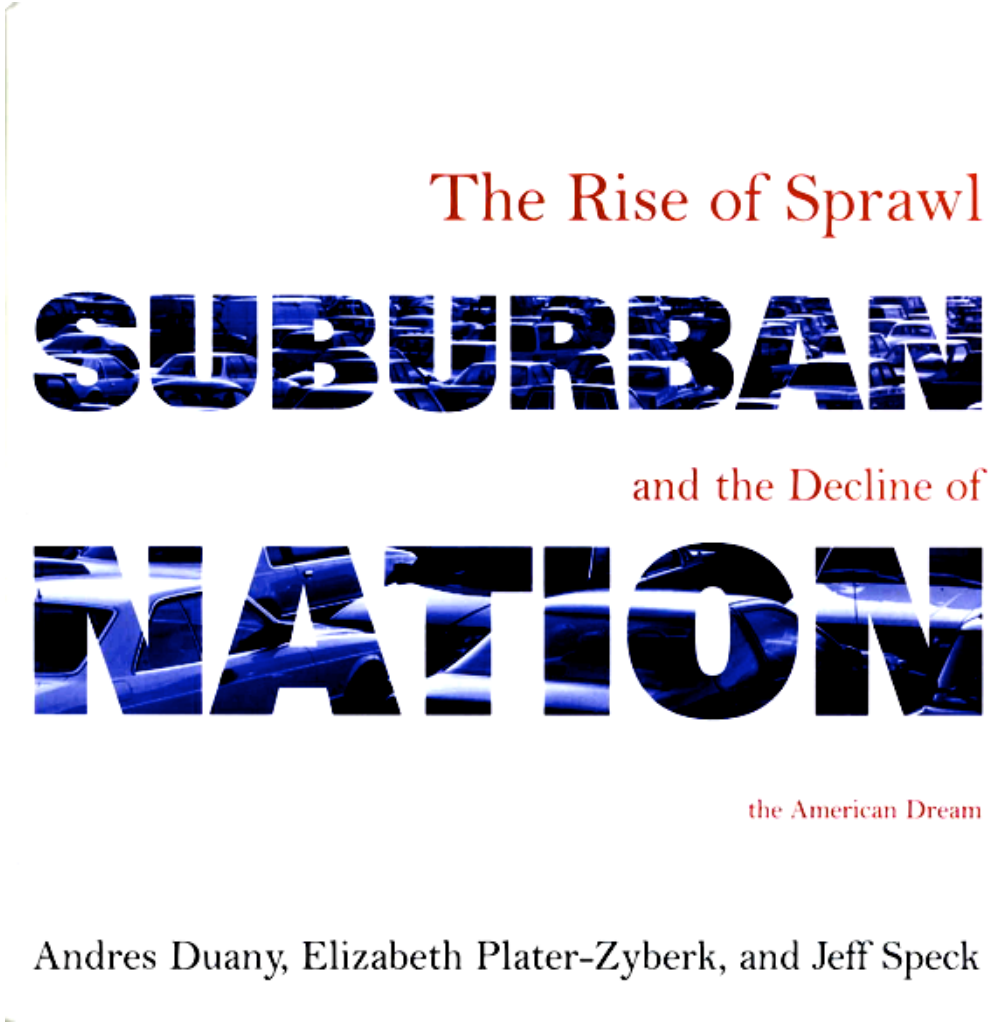
In a few locations, streets are lined by parking structures. The message: people don’t live here, cars do.

What many cities now demand: It takes only 20’ of building to make the edge of a parking structure delightful. This street is in Charleston, South Carolina.

In conclusion: we know what types of places attract pedestrian life, and they can be easily emulated.

In many cases they are beautiful, but often they are not.

But like this street in San Francisco, which attracts people despite its messiness, they all share four qualities: they are mixed-use, safe, comfortable, and interesting.



For further information, please refer to Suburban Nation, which I wrote with my former colleagues Andres Duany and Elizabeth Plater-Zyberk. They deserve credit for most of the ideas discussed here.

PART 2:

MAPPING ANALYSIS AND STREET ASSIGNMENT

Before beginning, it is important to note that Bethlehem is already, by American standards, a highly walkable city. It has many streets, both commercial and residential, that are as good as any in the country, and most of the downtown area could be considered welcoming to pedestrians. But there is always room for improvement, and the excellence of much of the city only calls our attention to those places where less than ideal conditions impede the further development of a pedestrian culture.

It is also important to note that this effort focuses, by choice, on the city's center.

There are many areas of Bethlehem that would benefit from concerted planning efforts, and all such efforts are worthwhile. However, in these days of strained public resources, one has to set priorities about where municipal dollars should be invested and where private development should be encouraged.

This study argues that the place to spend money first is in the downtown core.

Other neighborhoods may be in greater need of assistance. But it is important to remember that a city's downtown is its one neighborhood that really belongs to every resident, wherever they may live.

In addition, the condition of a city's downtown plays a disproportionate role in the city's reputation and thus its future success.

Make a residential neighborhood better, and its residents benefit. Make the downtown better, and the entire city benefits.

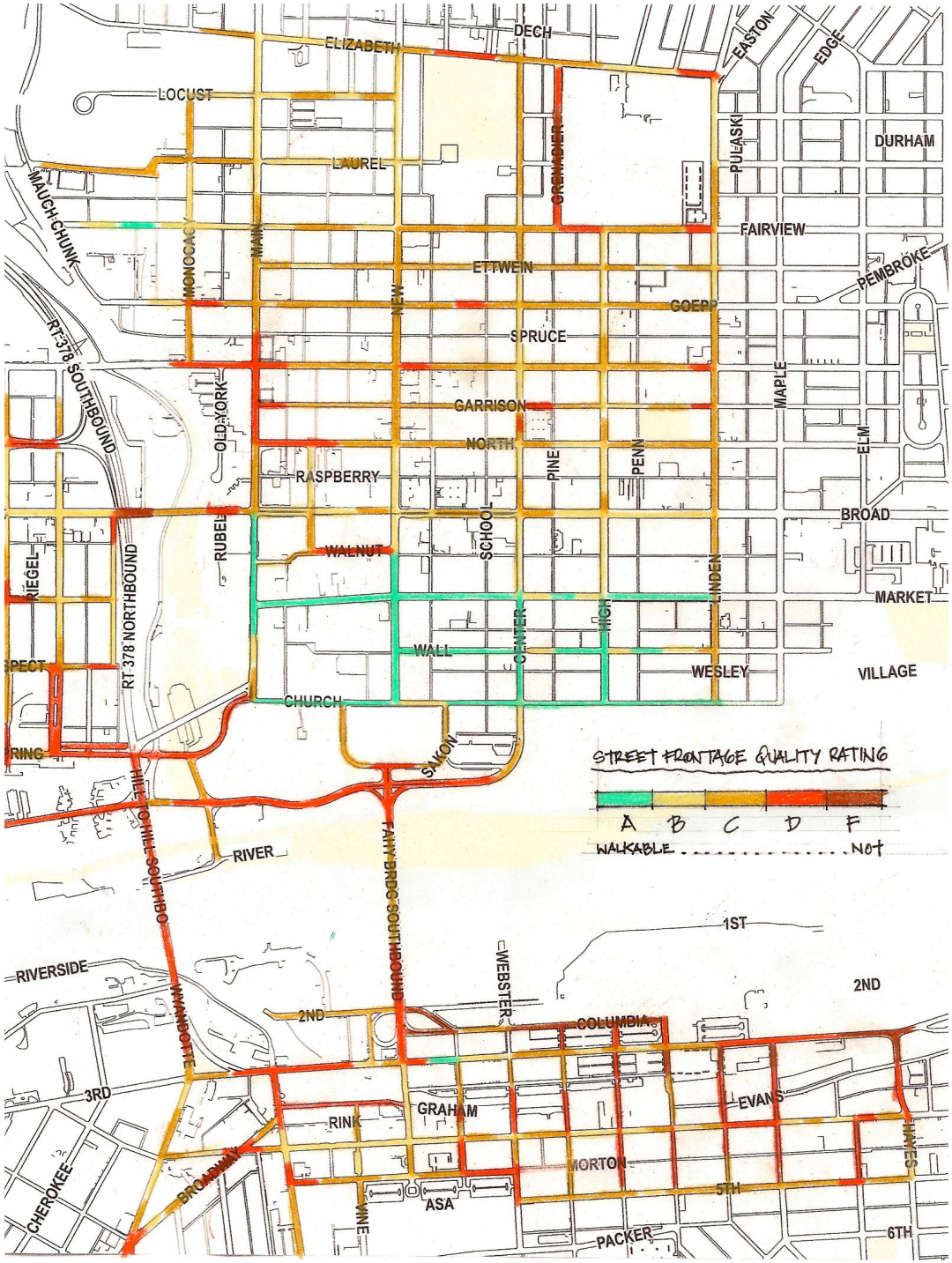
Furthermore, there are some areas within the downtown core where investments will have a greater impact on walkability than in others.

By trying to be universally good, most downtowns end up universally mediocre. This is particularly the case when it comes to pedestrian activity.

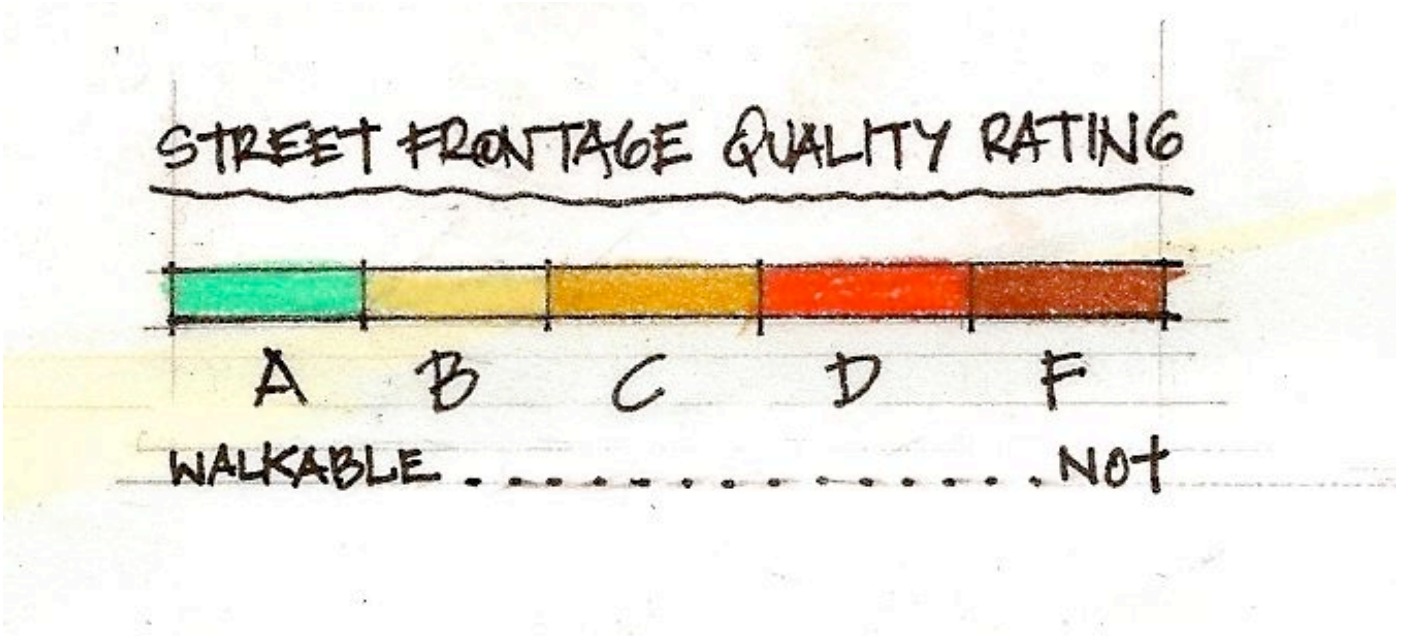
Only certain areas of your city have the potential to attract and sustain significant amounts of pedestrian life. Improvements intended to attract pedestrians to less promising areas will only succeed at great expense.

By studying existing conditions, we can see where limited investment can quickly produce significant improvement in pedestrian activity, and focus there.

This technique is called Urban Triage. It may seem mercenary and unfair, but it results in money being spent wisely.



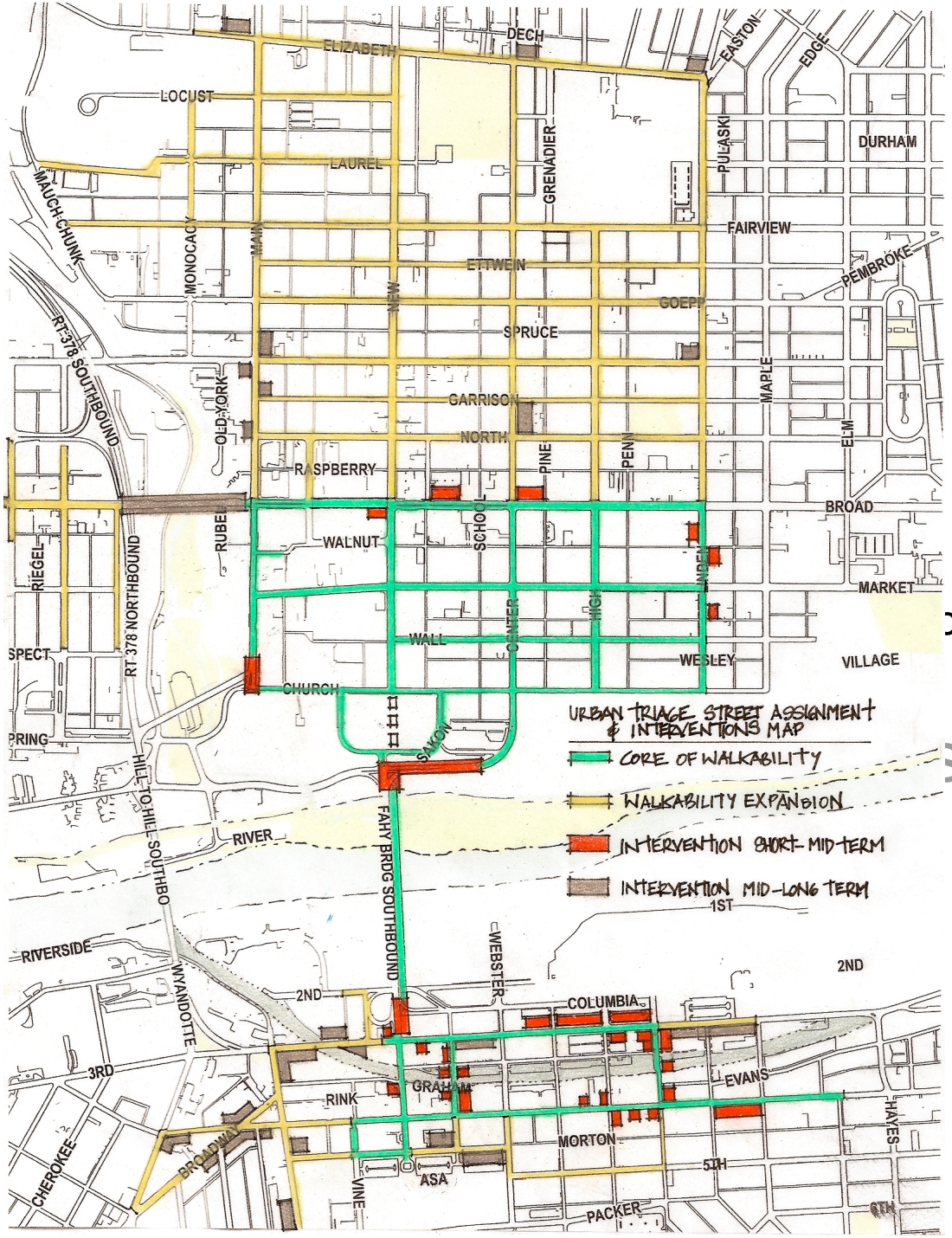
This drawing shows the A - F Walkability Map for your downtown. This map rates each block subjectively in terms of its pedestrian quality, based on the criteria of safety, comfort, and interest.



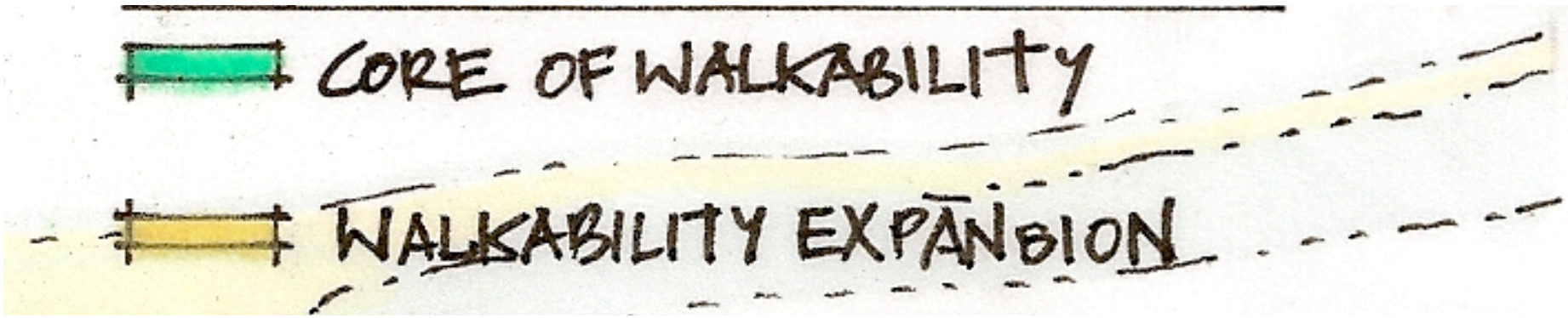
Areas in green are, generally, safe, comfortable, and interesting, and therefore attract pedestrians.

Areas in red are principally automotive, and it is hard to imagine how limited interventions could turn them into places where pedestrians would feel comfortable.

And areas in orange could go either way with continued improvement or neglect.



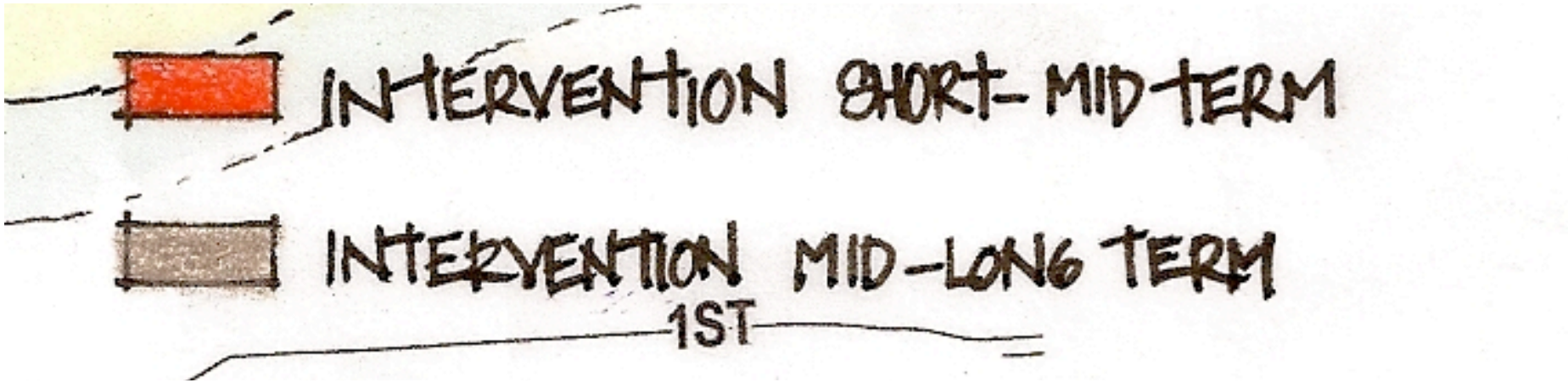
This A-F Analysis leads to a second drawing, the Urban Triage Street Assignment, in which streets are given an Assignment in terms of their walkability status.



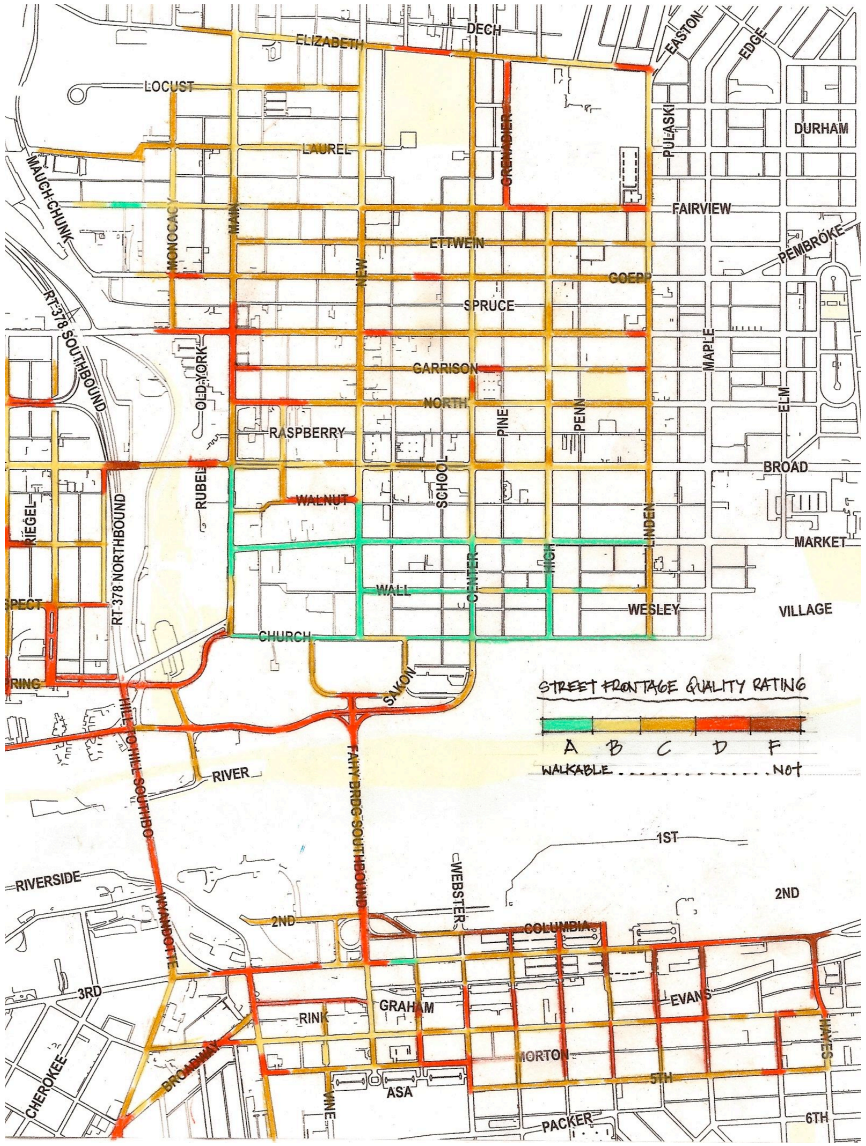
Areas in green constitute the Core of Walkability. They are already quite walkable or are capable of becoming so with limited short-term intervention. They have also been selected because of their importance to the downtown.

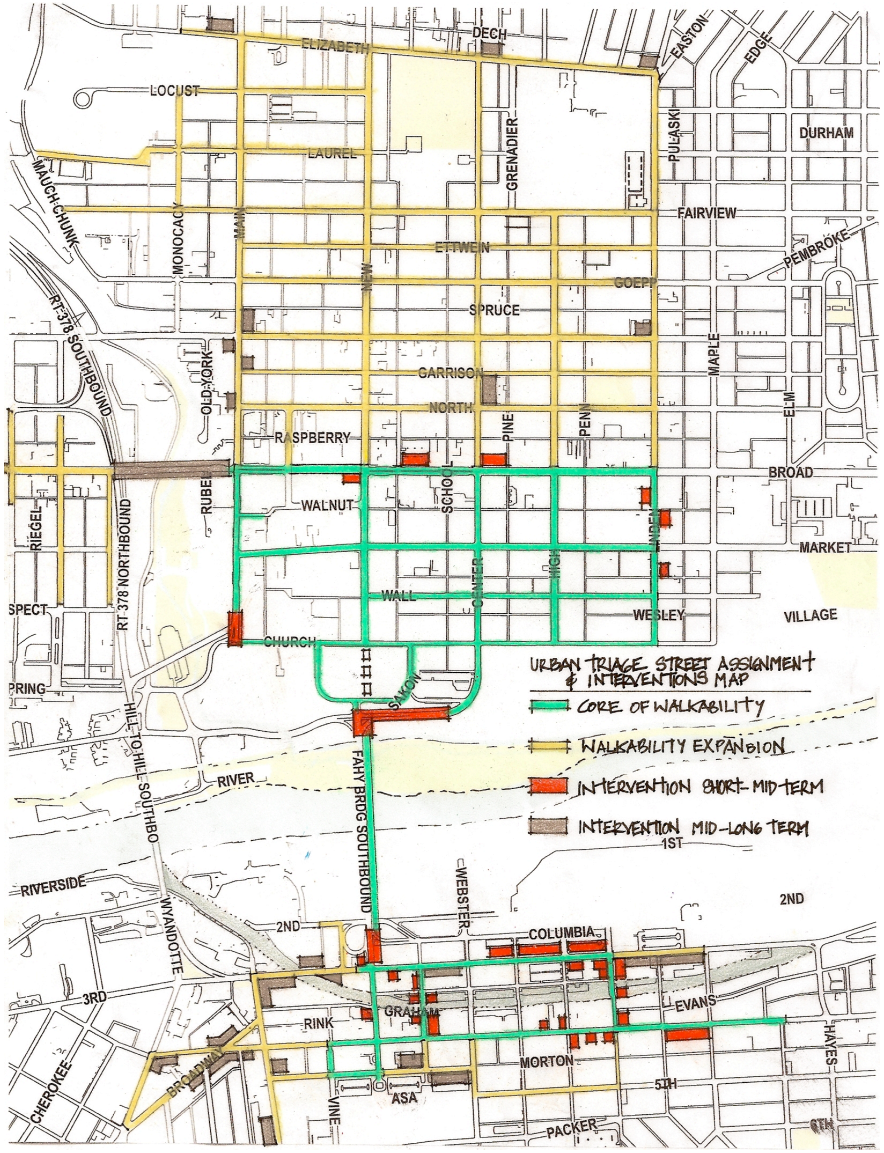
Areas in yellow have the potential to become more walkable over a longer period of time, and are strategically located to expand the Core.

And areas in white (within the study area) are dominated by traffic flow and are not likely to become walkable anytime soon.



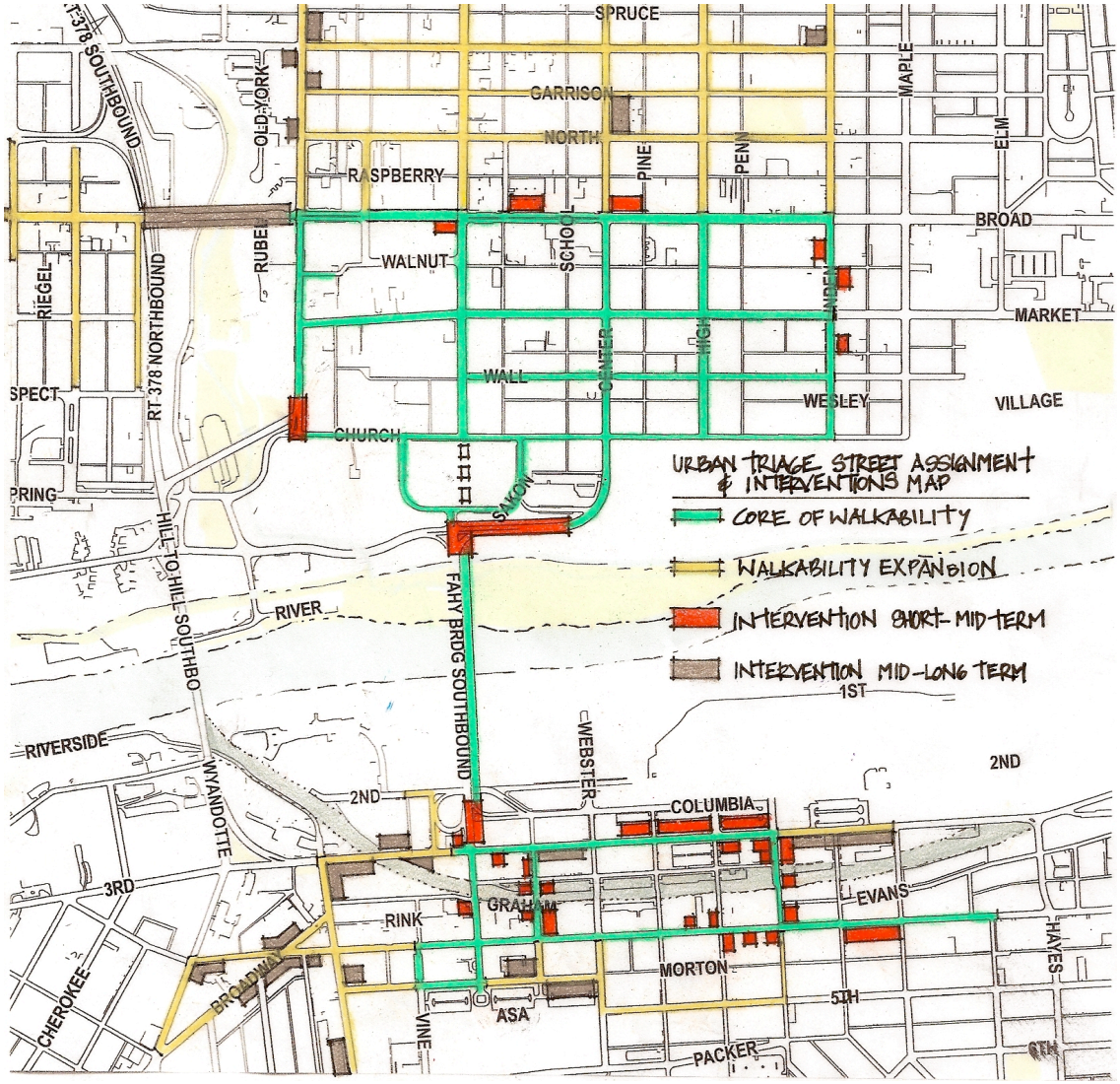
Also visible on the Street Assignment are areas in red and gray. These are the sites in the downtown where interventions are necessary to bridge the gap between the current conditions and the proposed outcome. Improving conditions on these sites will bring the A-F Street Frontage Quality Ranking in line with the proposed Street Assignments. Sites marked in red correspond with the Core of Walkability, and are therefore higher priority. Sites marked in gray correspond with the Walkability Expansion, and are of secondary priority.





Comparing the two drawings, one sees how strengths have been reinforced in order to create a limited but continuous area of high quality.

The Urban Triage Street Assignment is an essential tool in the planning of the downtown. The City has a limited amount of funds for making public investments, and a limited number of tools for encouraging private investments. If these funds and tools are to be used wisely, they will be concentrated on those specific areas that will improve, reinforce, and make continuous the part of downtown that is most walkable. The Specific Interventions that make up the next section of this report attempt to do just that.



These proposed interventions are located and designed with the goal of reinforcing and, in a sense completing, the pedestrian-friendly downtown core.

In discussing this plan, it is important to understand the nature of planning. It is not possible to simply put lines on a map and say “put buildings here.” One cannot presume economic energy where little exists. Rather, a plan is a *mold* designed to *shape* future economic energy into the most efficacious form. This plan, and others like it, allow a city to use the resources and tools at its disposal to fund and incentivize development in the right places, in the right shape. With a plan, resources and tools are no longer distributed randomly, and synergies between efforts are more likely to occur.

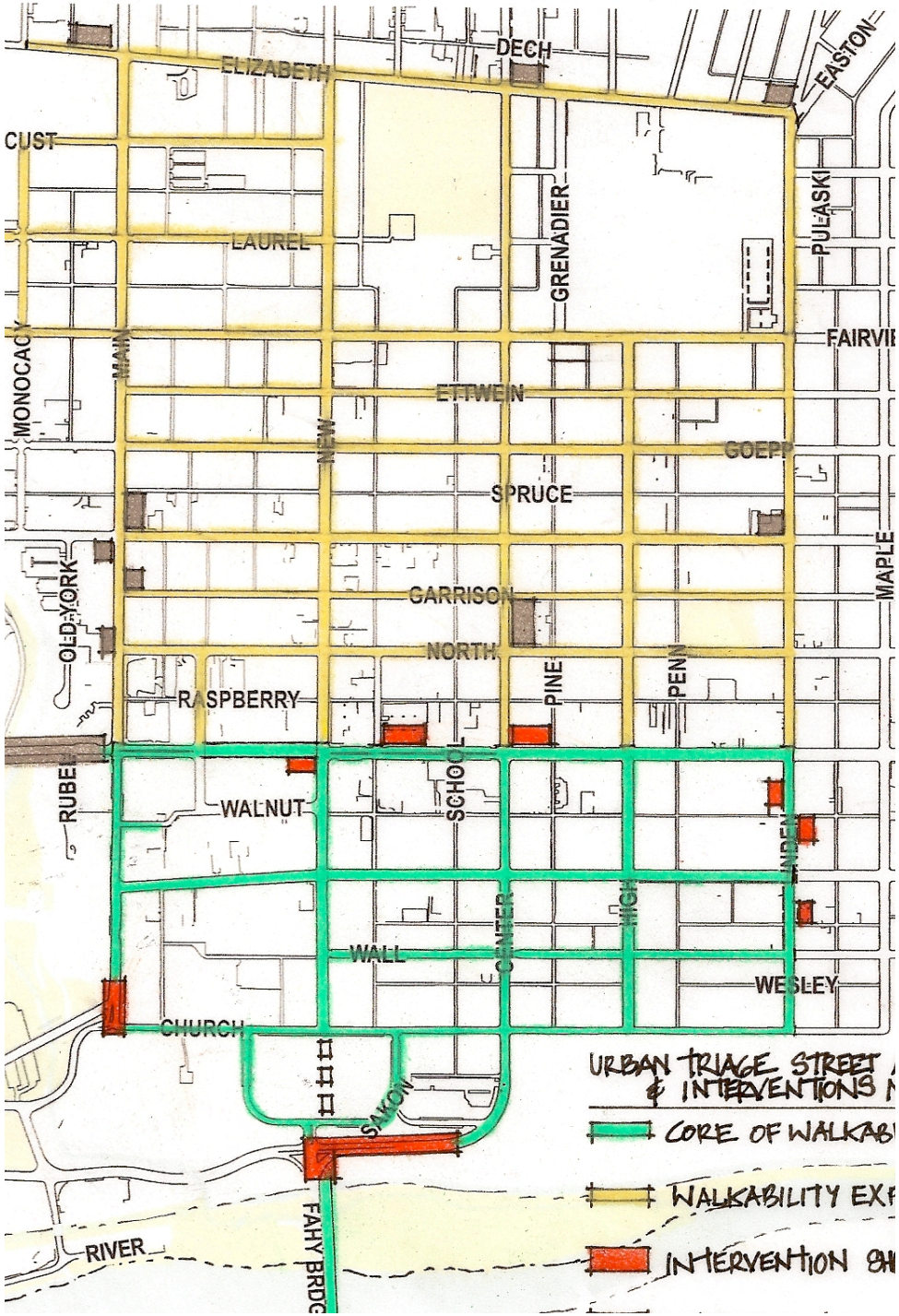
PART 3:

PROPOSED INTERVENTIONS

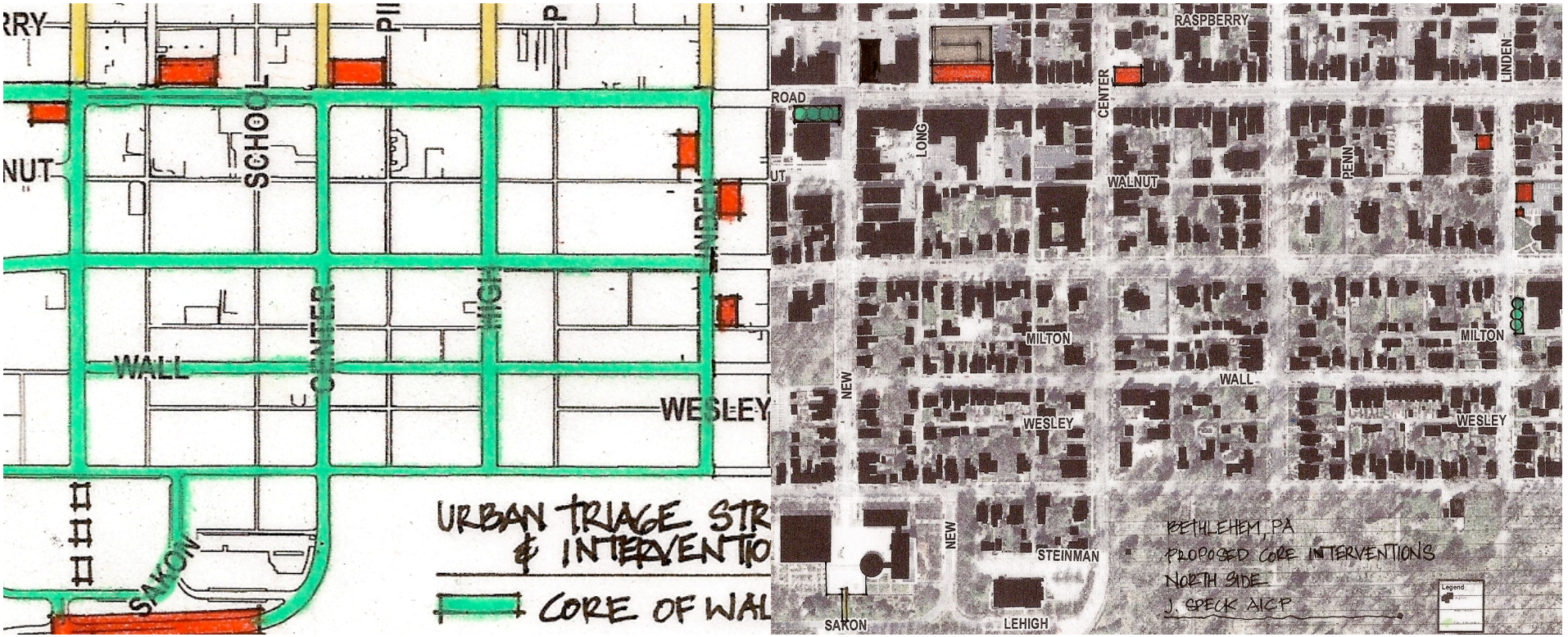
We shall now zoom into the sites selected as Interventions within the Urban Triage map. In the pages that follow, these Interventions have been broken down into the following categories:

- The North Side;
- The South Side;
- The West Side; and
- Connections

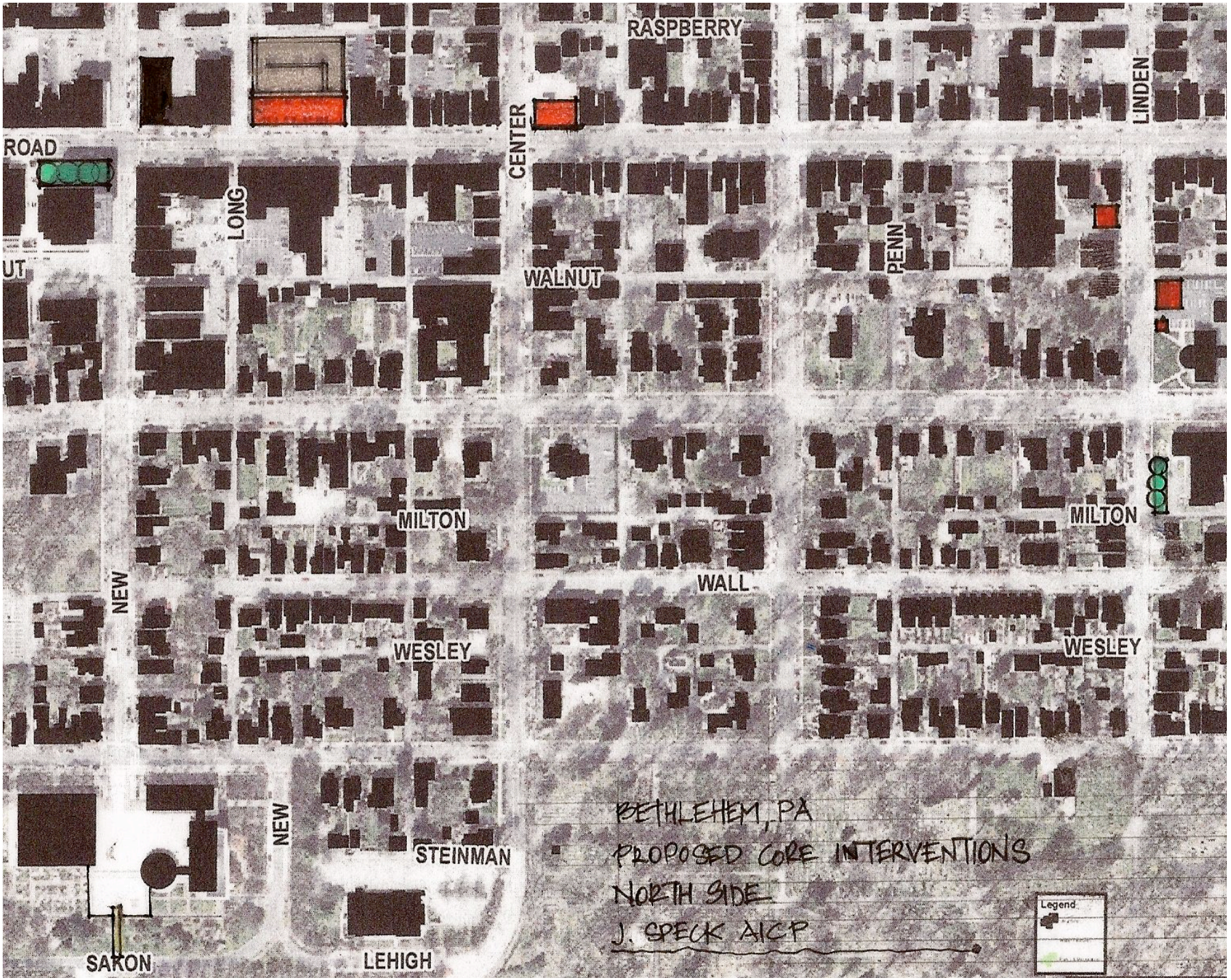
The North Side



In terms of walkability, the North Side is much healthier than the South side, and thus requires fewer interventions to achieve excellence. These interventions principally take two forms: private properties for which new development should be incentivized, and public rights-of-way that should be reconfigured.



For the Core of Walkability, we have provided a final drawing with a bit greater detail, which outlines the desired changes to private properties. Shown in detail on the next page, this drawing focuses on Broad, Center and Linden Streets. Other streets outside of this drawing will also be discussed, for which the Urban Triage plan will remain the reference document.


RASPBERRY
LINDEN
ROAD
CENTER
LONG
WALNUT
PENN
MILTON
MILTON
WALL
NEW
WESLEY
WESLEY
NEW
STEINMAN
SAXON
LEHIGH
BETHLEHEM, PA
PROPOSED CORE INTERVENTIONS
NORTH SIDE
J. SPECK AICP
Legend

THE NORTH SIDE

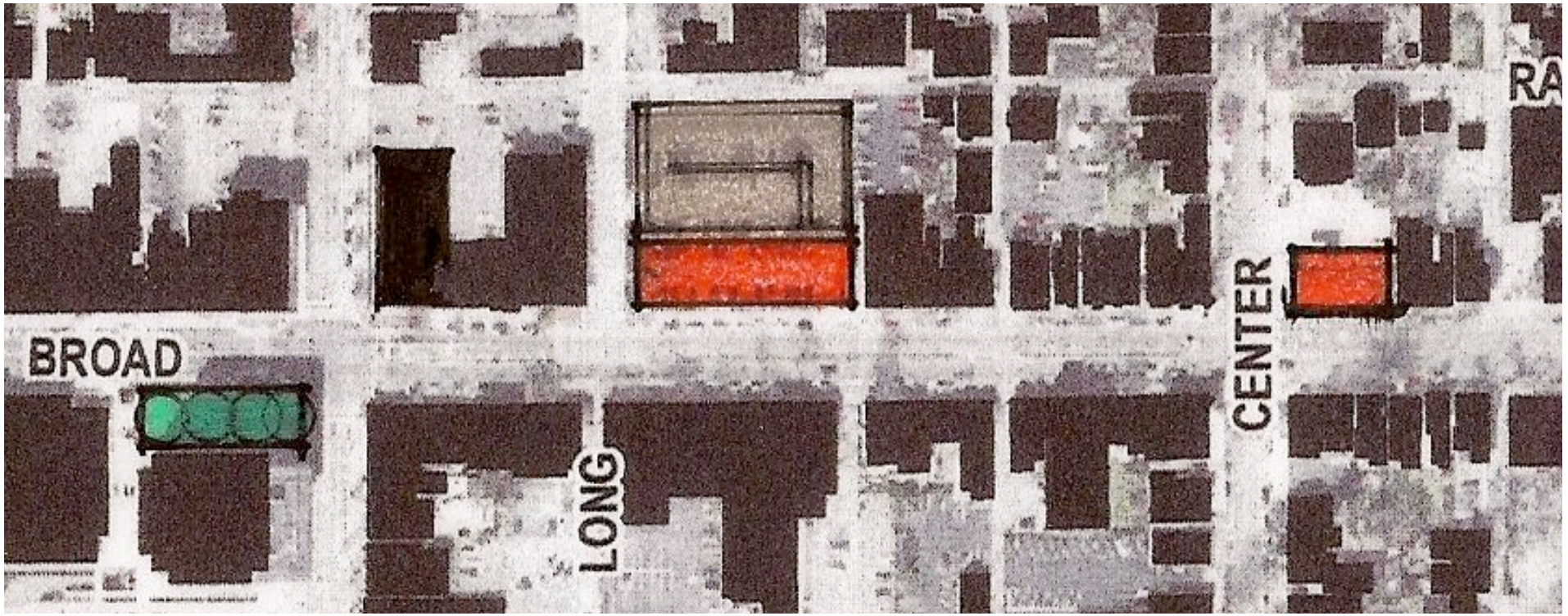
This section will discuss the following locations:

- Broad Street;
- Center and Linden;
- Main Street;
- Elizabeth Street; and
- City Hall Plaza

THE NORTH SIDE

This section will discuss the following locations:

- Broad Street



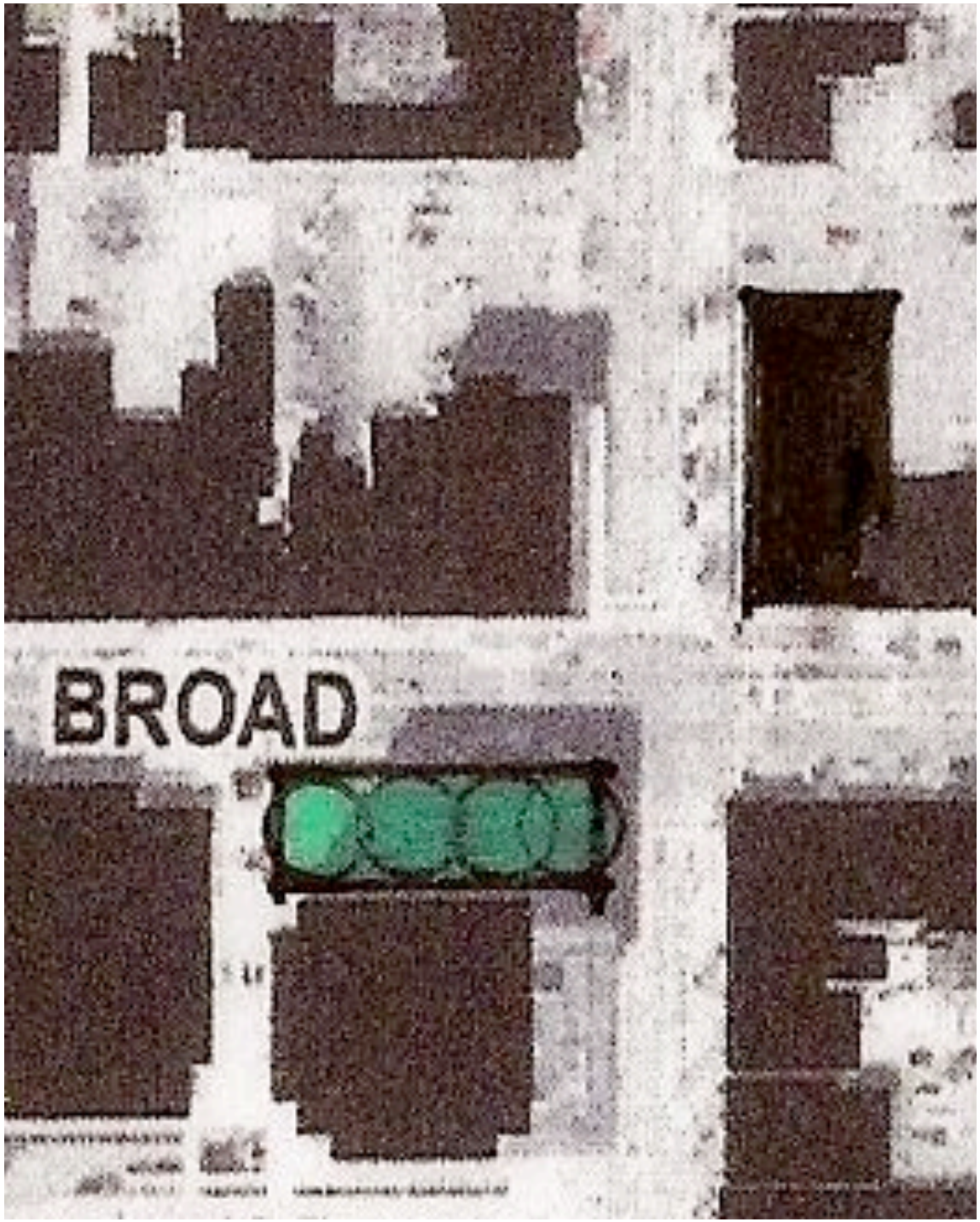
Broad Street presents three opportunities for intervention, at the intersections of New, Long, and Center.

These are:

A. The Bank of America Plaza at New Street;
B. The surface parking lot at Long Street; and
C. The gas station at Center Street.

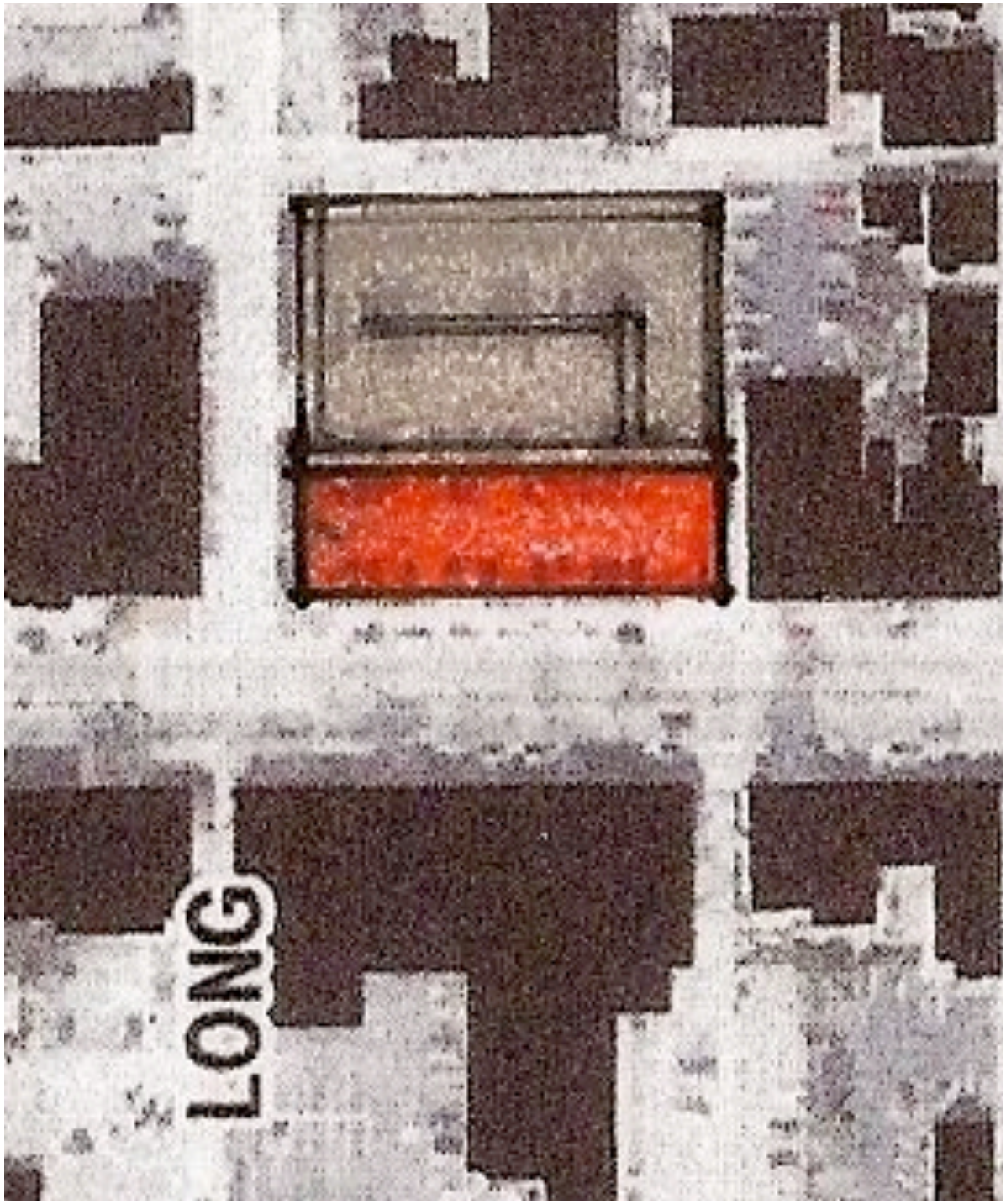
Note that the parking lot at New Street has already been wisely repurposed.

New and Broad is one of the North Side's most important intersections. It is the in the very heart of the city, and cannot be left in its current derelict state.

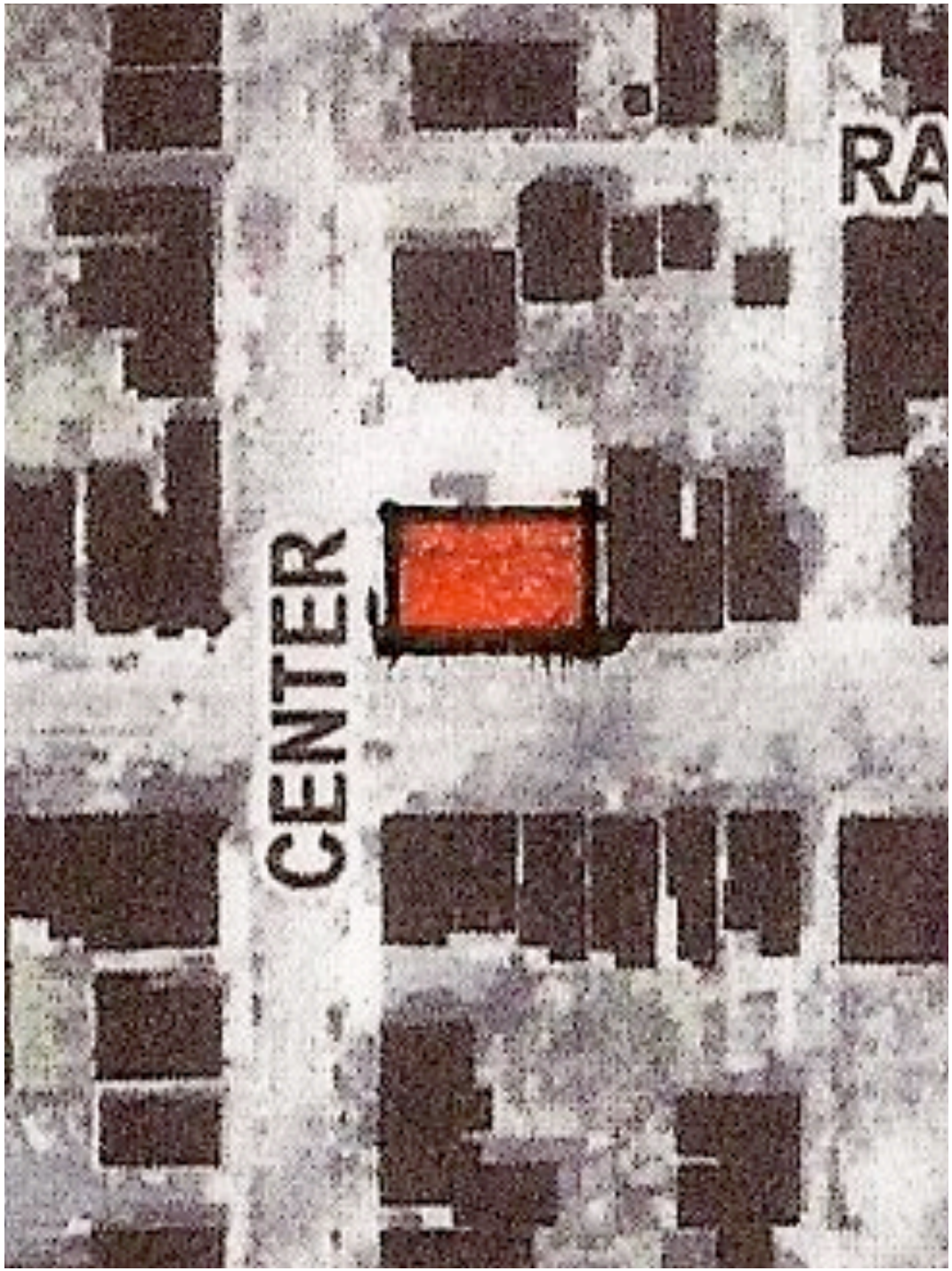


It is a worthy use of public investment to turn this plaza into something more attractive.
Unfortunately, its use as a public space is hindered by the fact that it is in shadow for most of the day.
This suggests a more passive, green use, with significant groundcover and trees.

The surface parking lot at New and Long (at left) is the biggest gap in the otherwise continuously healthy streetwall along Broad Street.



The City is already advocating for the proper development of this site, in which a new mixed-use building hides a new structured parking lot that replaces and supplements the current on-surface parking.

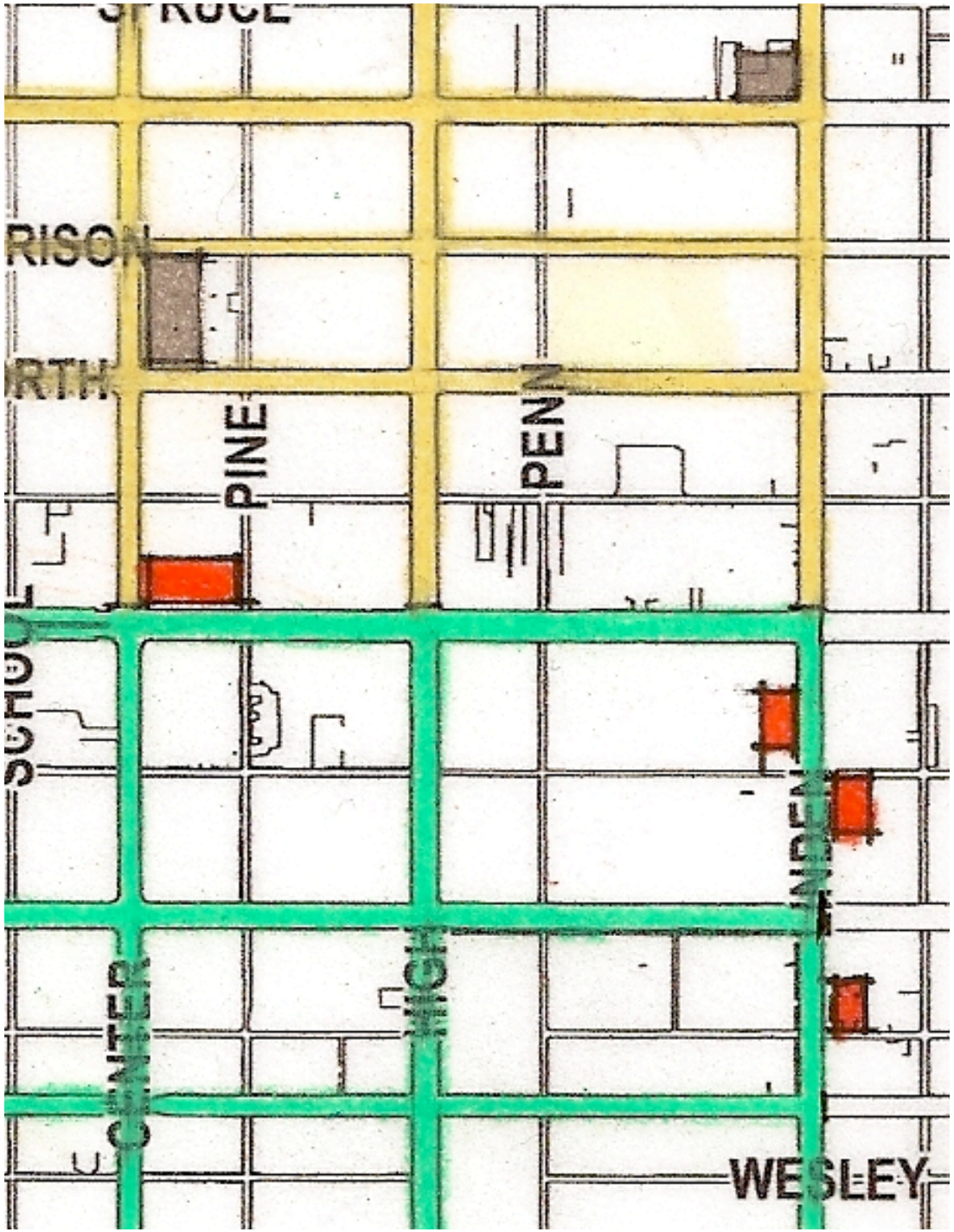


Finally, the gas station at Broad and Center Streets should ideally be relocated in a part of town where pedestrian life is less viable. That is, admittedly, a dream for the future, but one that should remain in our consciousness lest we forget to take advantage of a future opportunity to move it.

THE NORTH SIDE

This section will discuss the following locations:

- Broad Street;
- Center and Linden

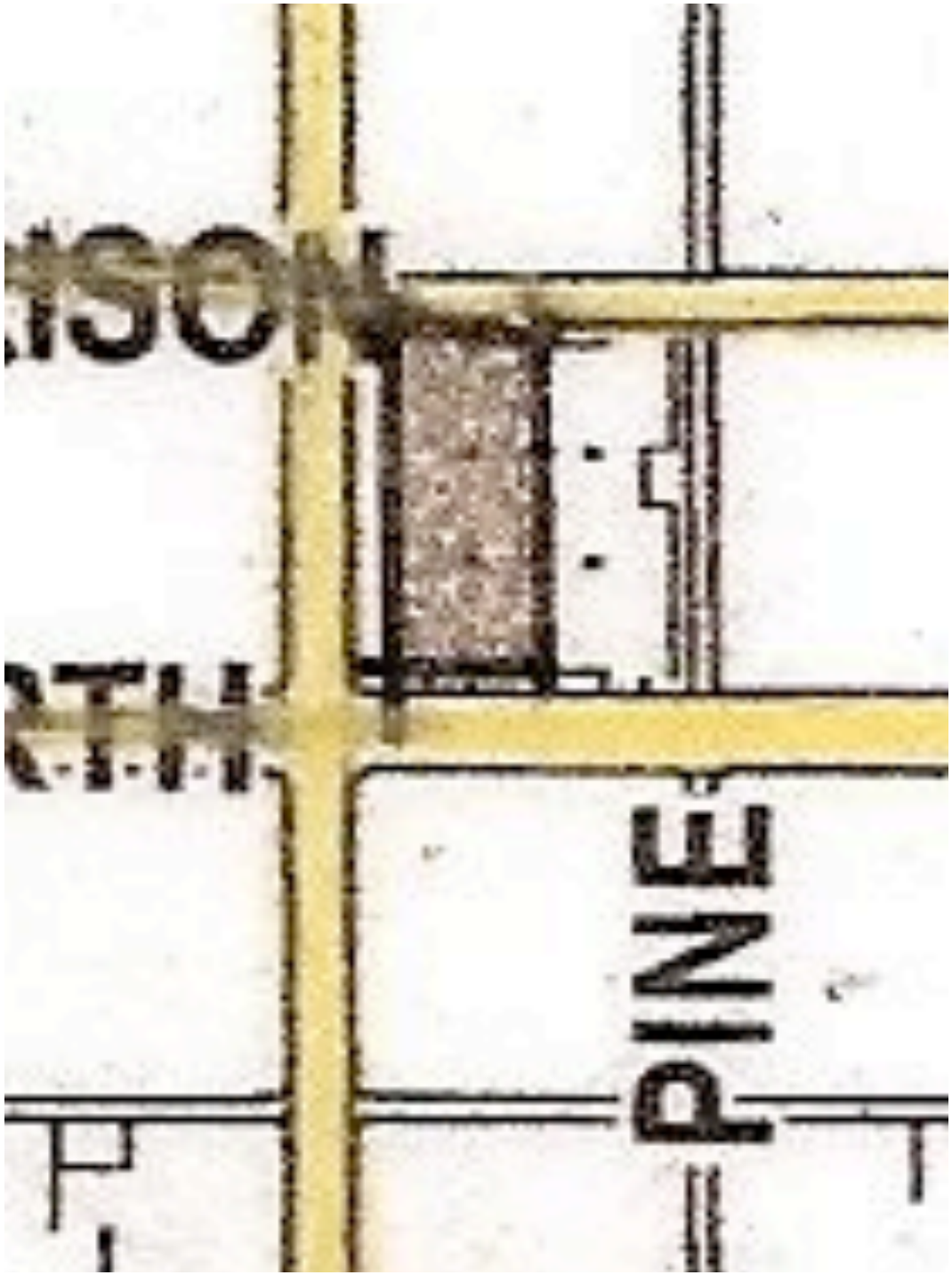


Center and Linden Streets are addressed in tandem because they together constitute the downtown's principal one-way pair. We shall first discuss infill opportunities, and then turn to the bigger issue of traffic engineering.

The biggest missing tooth on Center Street is the massive church parking lot at North and Garrison. As we will see elsewhere in town, these lots are much larger than they need to be, and only one third of their capacity need to be used up in order to place buildings against the sidewalk. The street could also be provided with one side of angle parking to help compensate for this change.

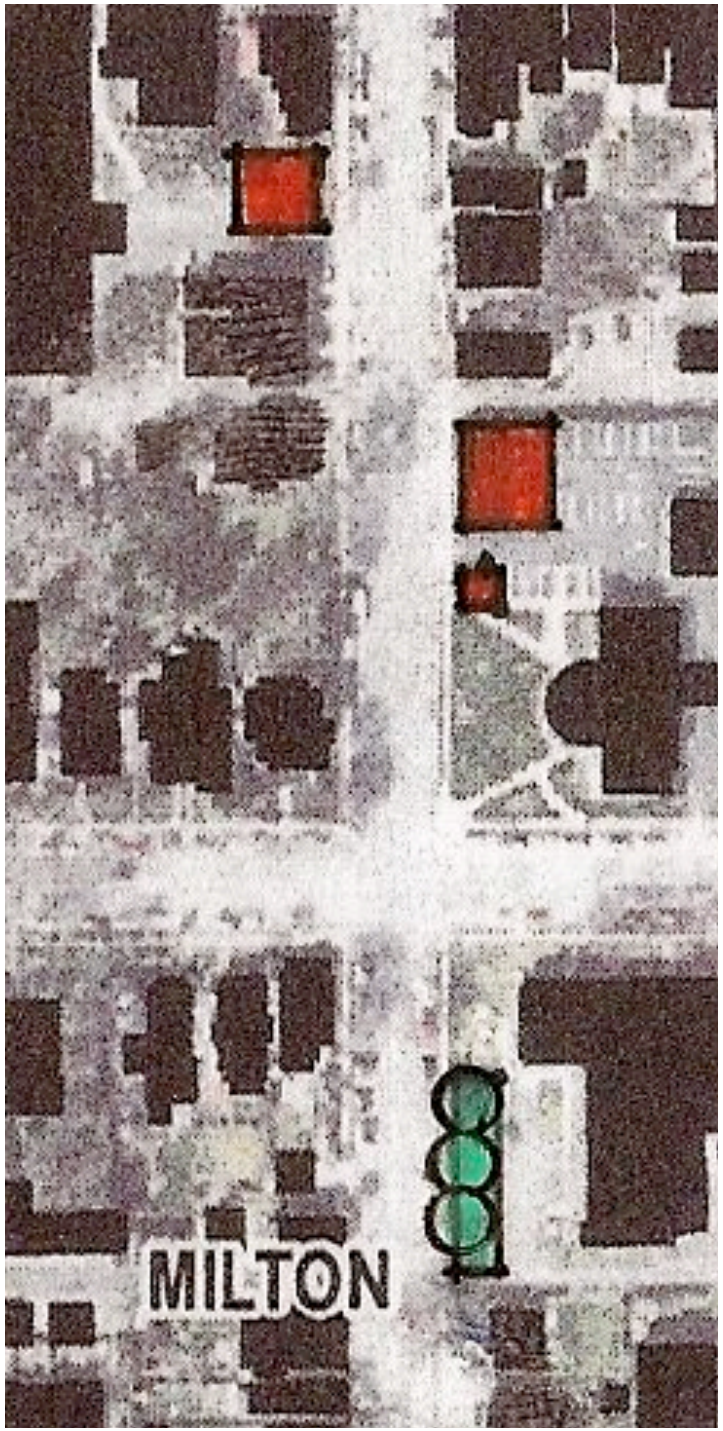
In its current form, this gigantic lot is a true impediment to walkability, as it fails to provide firm spatial definition along the sidewalk.

The city should lead negotiations with the church to subdivide its parking lot into two parcels, so that the edge against the street could be developed.



One hopes that the church will understand that good citizenship means not standing in the way of making its neighborhood better, even if this means that some parishioners have to walk an extra 100 feet on Sunday. For the record, a 100-foot walk takes 22 seconds.

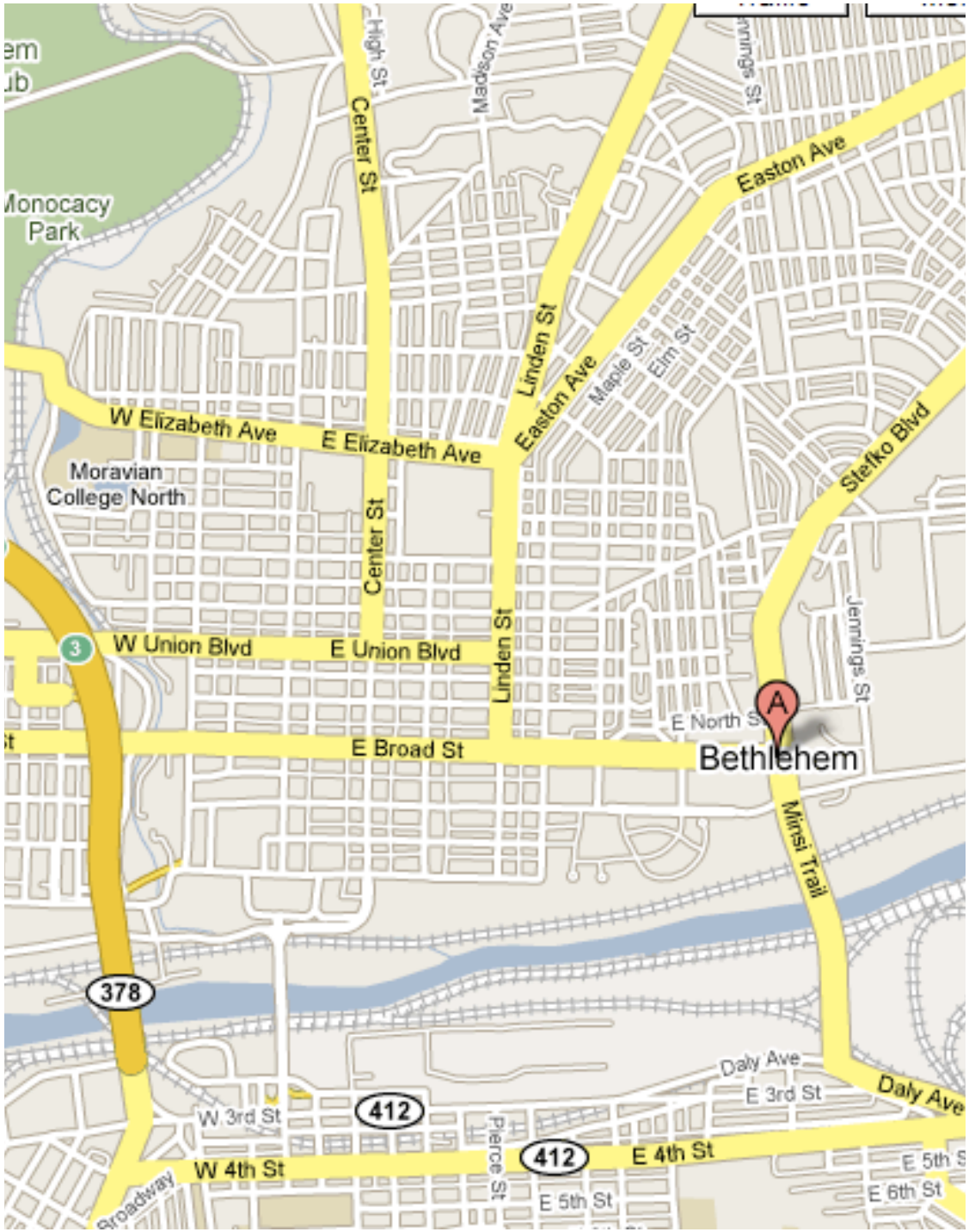
Linden street has a number of smaller missing teeth that are also worthy of infill. Again, the strategy should be simply to improve the edge against the street, rather than the entire depth of the lot. In some cases new buildings will be possible; in others there may only be room for a garden or an attractive low wall with plantings.



As before, additional on-street parking could be provided to compensate for off-street spaces lost. This would be accomplished by converting one side of parallel parking to angle parking, which is possible due to the extra width of the roadway. It is important to note that these changes are often only possible if the current on-site parking requirement is replaced by a holistic neighborhood parking strategy, a technique already in place further west.

We have already discussed how one-way pairs encourage speeding and distribute vitality unevenly. Many cities are currently converting their one-way pair systems back to two way. While the cost of doing so must be weighed against other competing objectives, it can be said with confidence that such a conversion would benefit Bethlehem as well.

The one-way pair system was introduced to speed steelworkers in and out of the South Side, and addressed the challenges poised by massive commuting peaks during shift changes. The flows in and out of the city now present fewer sharp spikes in traffic. Furthermore, for those drivers who wish to leave the city quickly, a number of more plainly automotive corridors are now available, including highways 378, 412, and Stefko Boulevard. Drivers who wish to travel through town in order to leave town should be ask to drive at speeds that are more conducive to urban vitality.



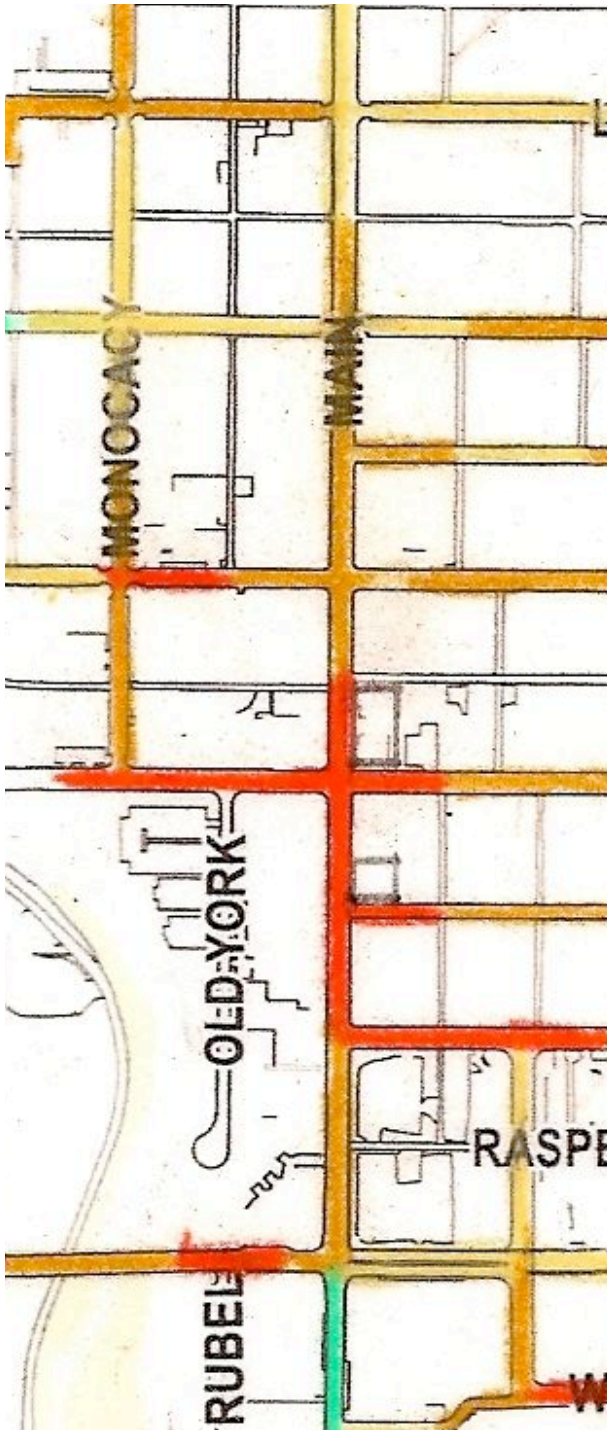
We are again reminded of the tremendous network provided by Bethlehem's grid, and how the large number of streets in each direction allows each downtown street to be small. Traffic should be encouraged to disperse, not to concentrate. Returning Center and Linden to two-way will assist in this process.

THE NORTH SIDE

This section will discuss the following locations:

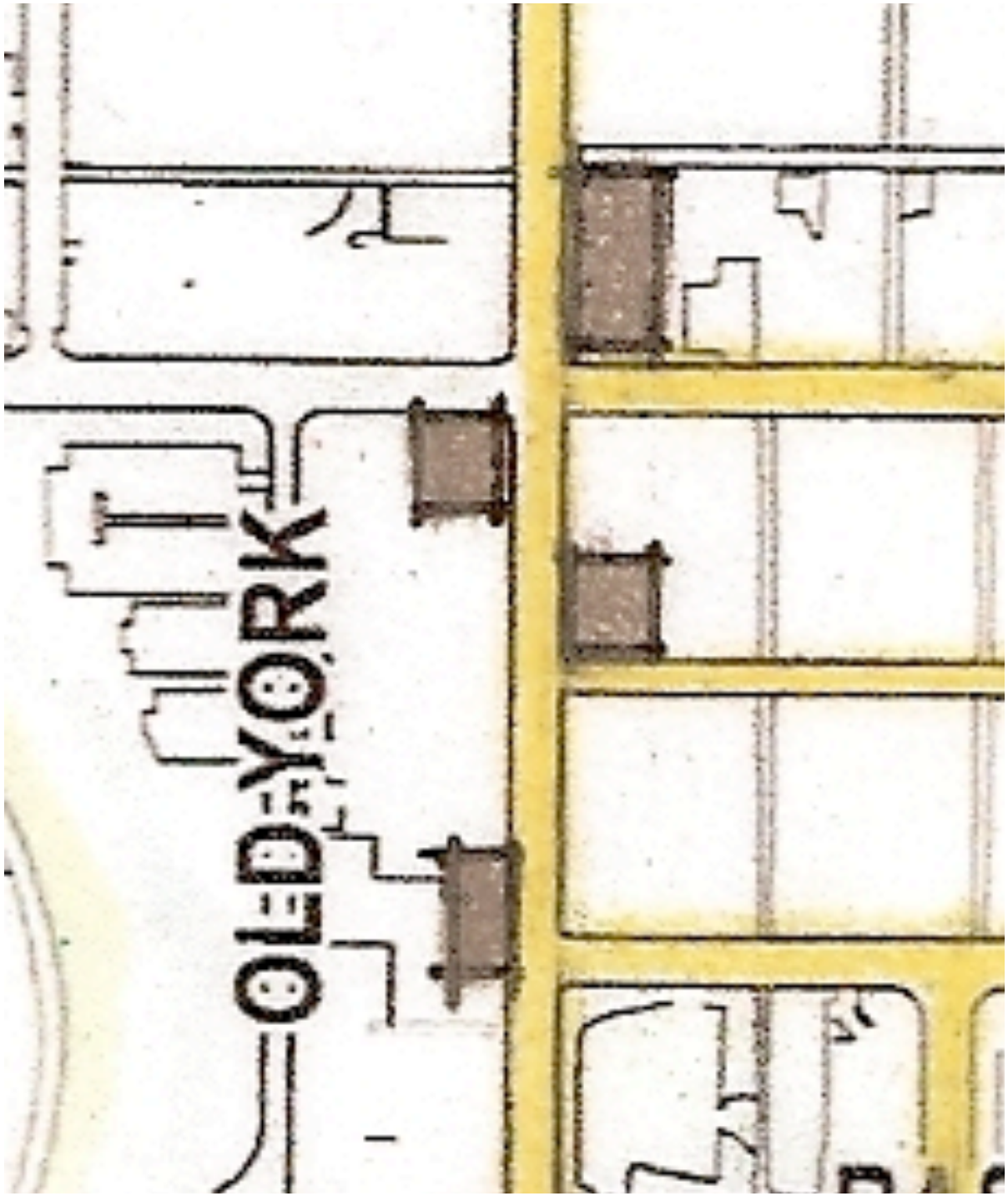
- Broad Street;
- Center and Linden;
- Main Street

Main Street, in the heart of downtown, is arguably one of the best of its kind in America. It is also an important axis connecting the two Moravian College campuses.



While most Moravian students will take the shuttle bus or bike, it is worth improving the weak middle of this axis—between North and Spruce Streets—as it connects two walkable areas to each other.

Because they are outside of the Core of Walkability, these weak spots are not of the highest priority, but their infill should remain a long-term objective. Interestingly, the grade change along the west side of Main Street would allow a building to line that sidewalk without reducing the amount of parking provided in the lot marked B, since the building would sit above the parking.



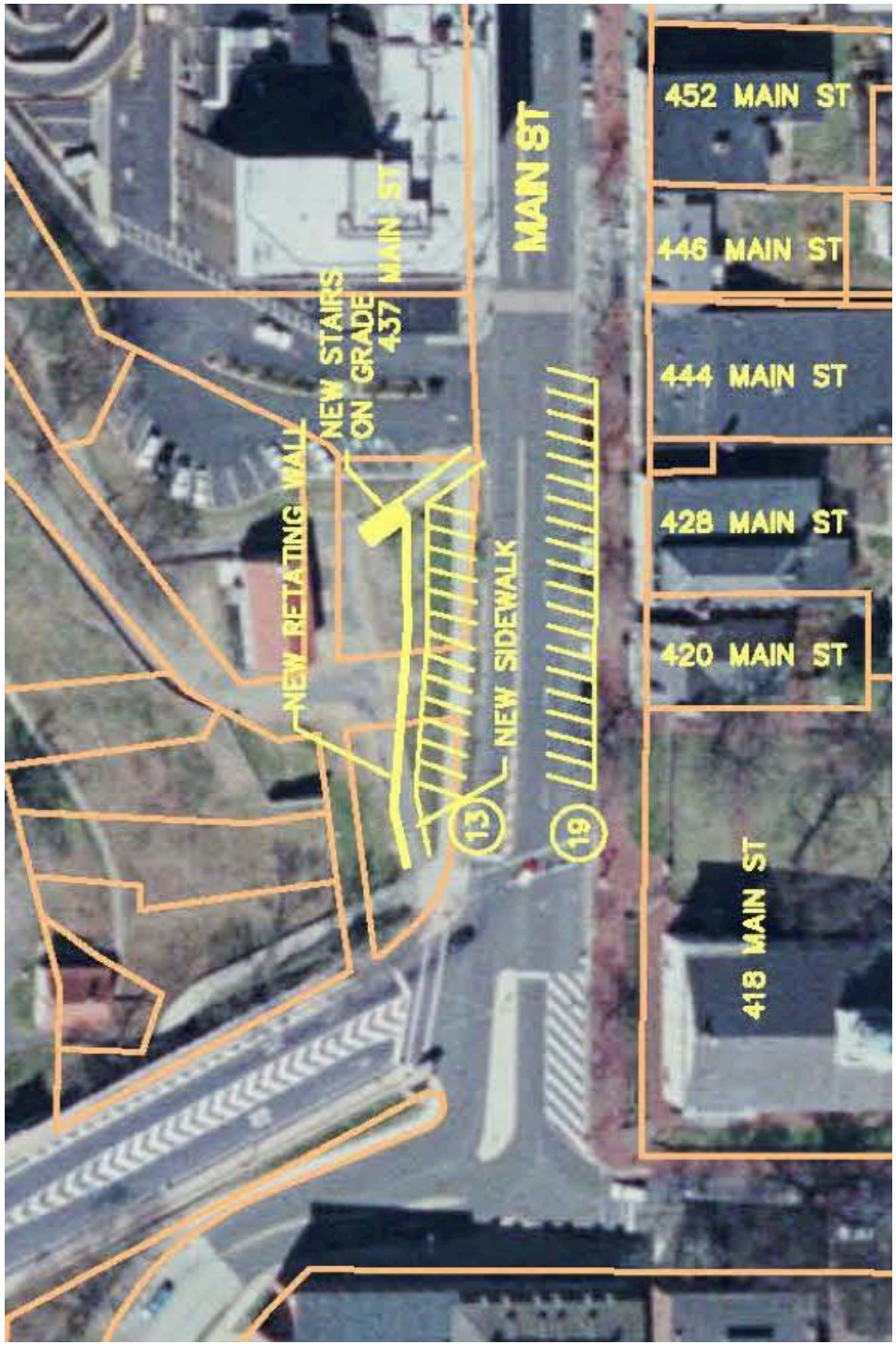
Improving this stretch of Main Street would encourage more people to walk and bike from downtown to the main Moravian campus.

The south end of Main Street presents a different kind of challenge: some of America's most beautiful buildings frame a space that feels unsafe due to the quality of its automotive infrastructure.

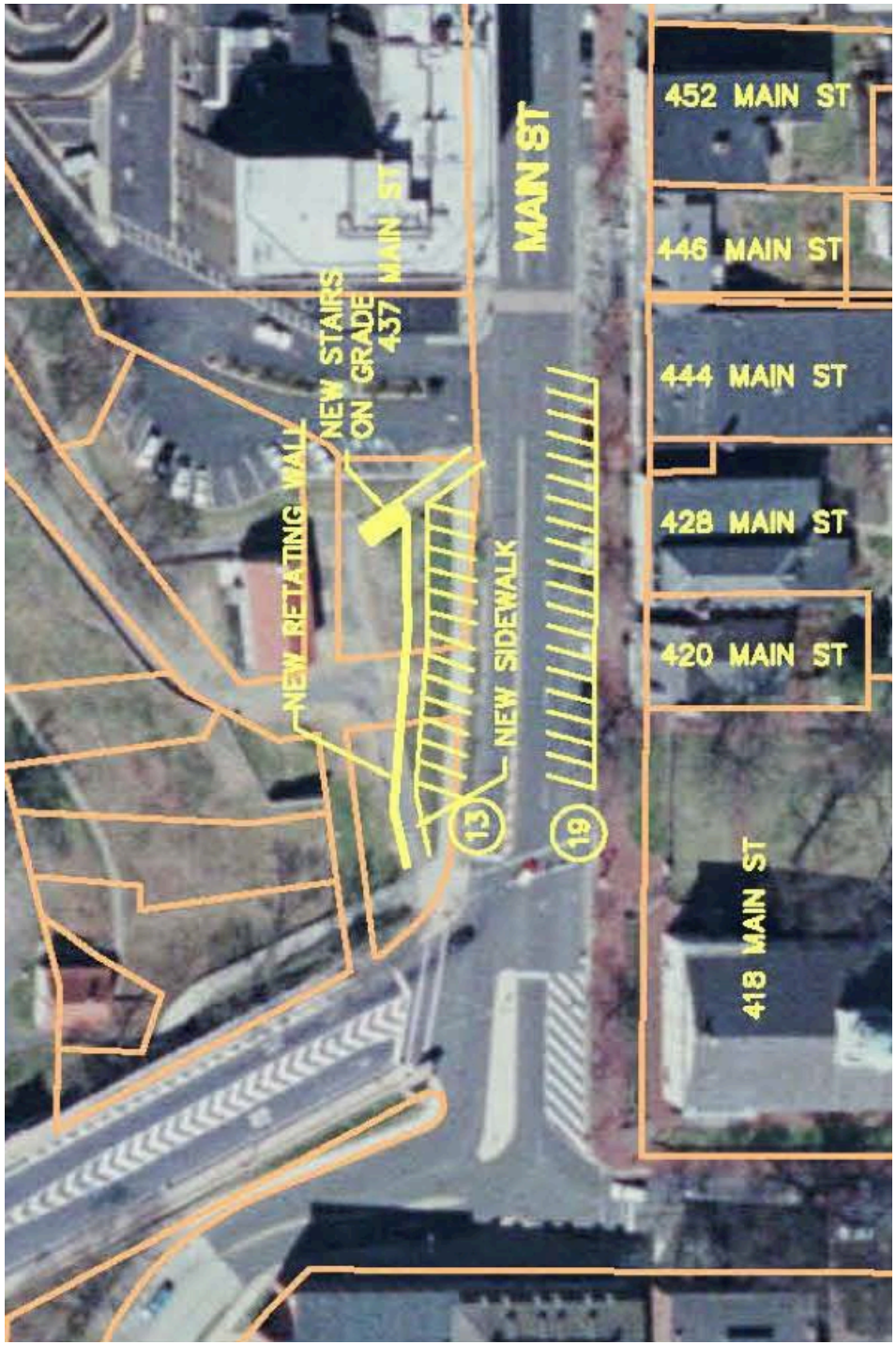
The problem here is not the odd geometry of four roads —two of them bridges—coming together. Odd intersections can often be quite walkable. The problem is that the road surfaces have been widened and striped as if they are highways.

Seen alternately from the north and south, Main street becomes much larger than necessary, with more lanes and wider lanes than is appropriate to its limited traffic volume.

Excess roadway on several streets is striped in ways that harm the feeling of a walkable environment, and parking is eliminated in areas where its presence would calm traffic down to appropriate speeds. Many people interviewed complained of this area as particularly unsafe.



The City is currently considering a scheme in which double-angle parking is added to Main Street in this area. While well intentioned, this design places additional parking on the west side of Main Street that would be of more use at points slightly south, where it is needed to slow traffic. It also requires expensively moving a curb and building a retaining wall.



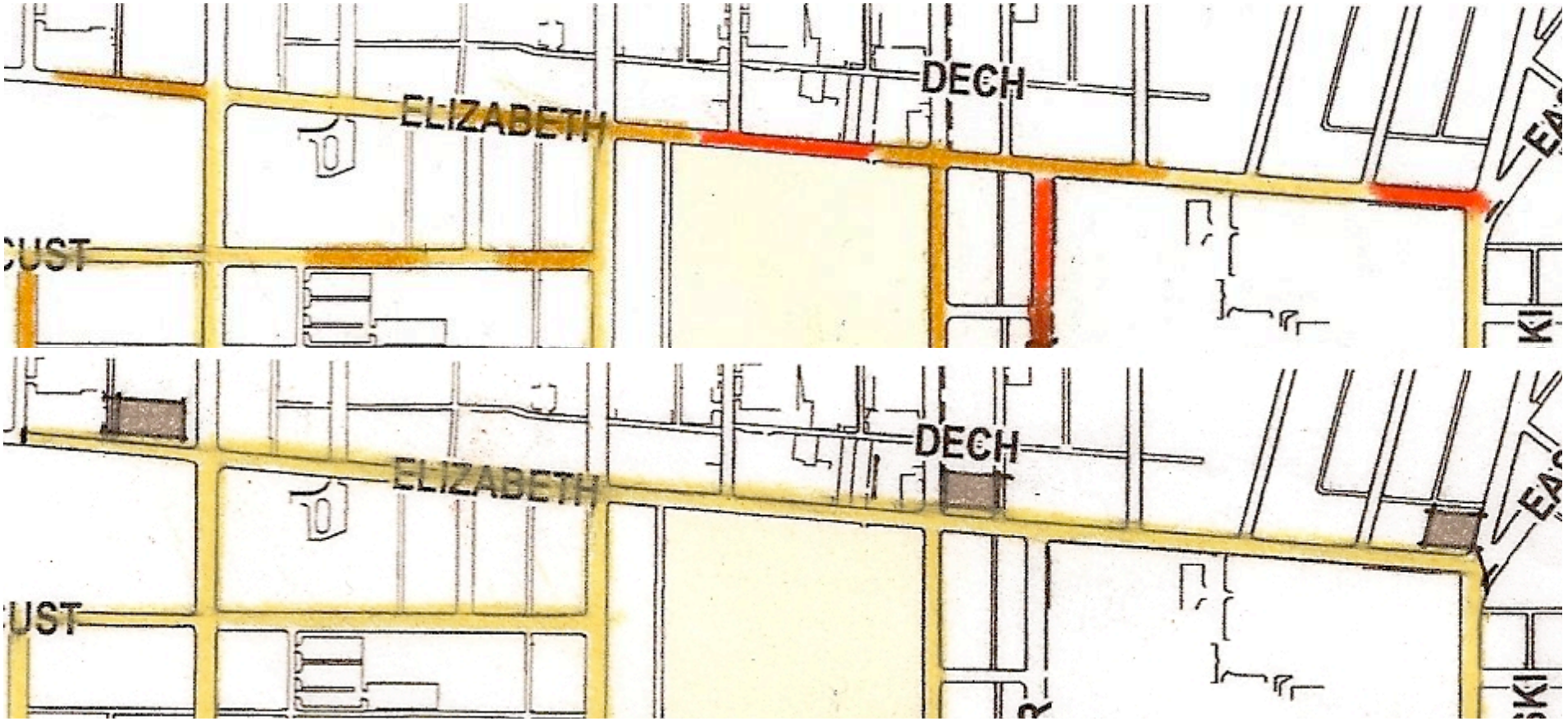
A better solution (not yet drawn) would be to keep the curbs where they are, return parallel parking to the left side, and then distribute parking closer to the complex intersection. Far from creating a hazard, this new parking would create the sort of *potential for conflict* that causes drivers to slow down.

This mid-century image shows parking very close to the corner on both Main and Church, and two-way configurations on the other streets. As a next step, this area needs a thorough redesign to approach the level of safety it once had.

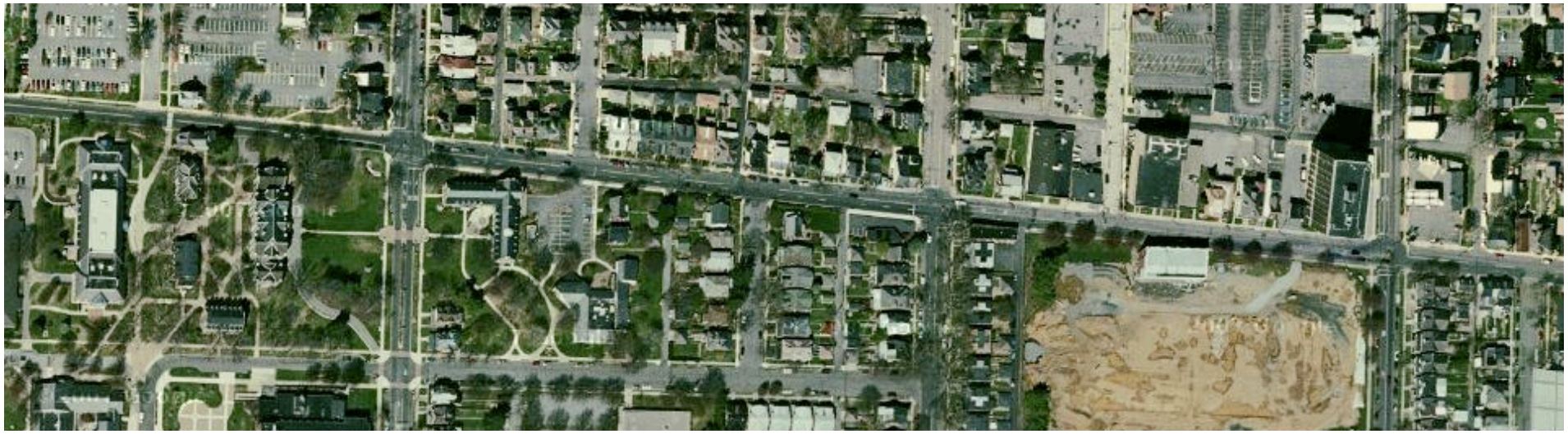
THE NORTH SIDE

This section will discuss the following locations:

- Broad Street;
- Center and Linden;
- Main Street;
- Elizabeth Street



Elizabeth Street is a key connection from Moravian College to its playing fields. It was interesting to learn that athletes will drive to practice rather than walk along this marginally hospitable corridor.



Certain private lots could be improved along this path, as noted on the previous plan. It also needs trees, and there is little room for them. But those are not the principal challenges. Rather, the problem is that the south edge of parallel parking has been removed so that an additional travel lane speeds travel through this corridor.

Notice how it feels to be on the sidewalk as a bus approaches. The Moravian athletes are correct in judging this as an environment in which driving is privileged over walking. Traffic volumes suggest that this lane is not necessary and should be replaced by parking.

THE NORTH SIDE

This section will discuss the following locations:

- Broad Street;
- Center and Linden;
- Main Street;
- Elizabeth Street; and
- City Hall Plaza

Love it or hate it, City Hall Plaza is an exemplary representative of its type, the mid-century modernist government center on a raised plinth. Thanks to its smaller size, it is considerably more humane than the best known examples, Boston City Hall and Albany's Empire State Plaza. In its current state, the Plaza presents two challenges, one minor and one major. The minor challenge surrounds the entry sequence to the City Hall, which, once well-orchestrated, has fallen prey to security concerns. The approach to the building from the street is shown on the next page.


1


PUBLIC SAFETY BUILDING
CITY HALL
TOWN HALL
LIBRARY
POLICE DEPT.
2


3


4

Unfortunately, this effective sequence terminates on a locked door, from which one has to find ones way to a much less dignified entrance around the corner. This is an experience of inconvenience and frustration for first time visitors, and causes regular visitors to avoid the Plaza, robbing it of activity. Security concerns should not be allowed to trump civic goals in this way. It is recommended that the main entrance be returned to its original location.

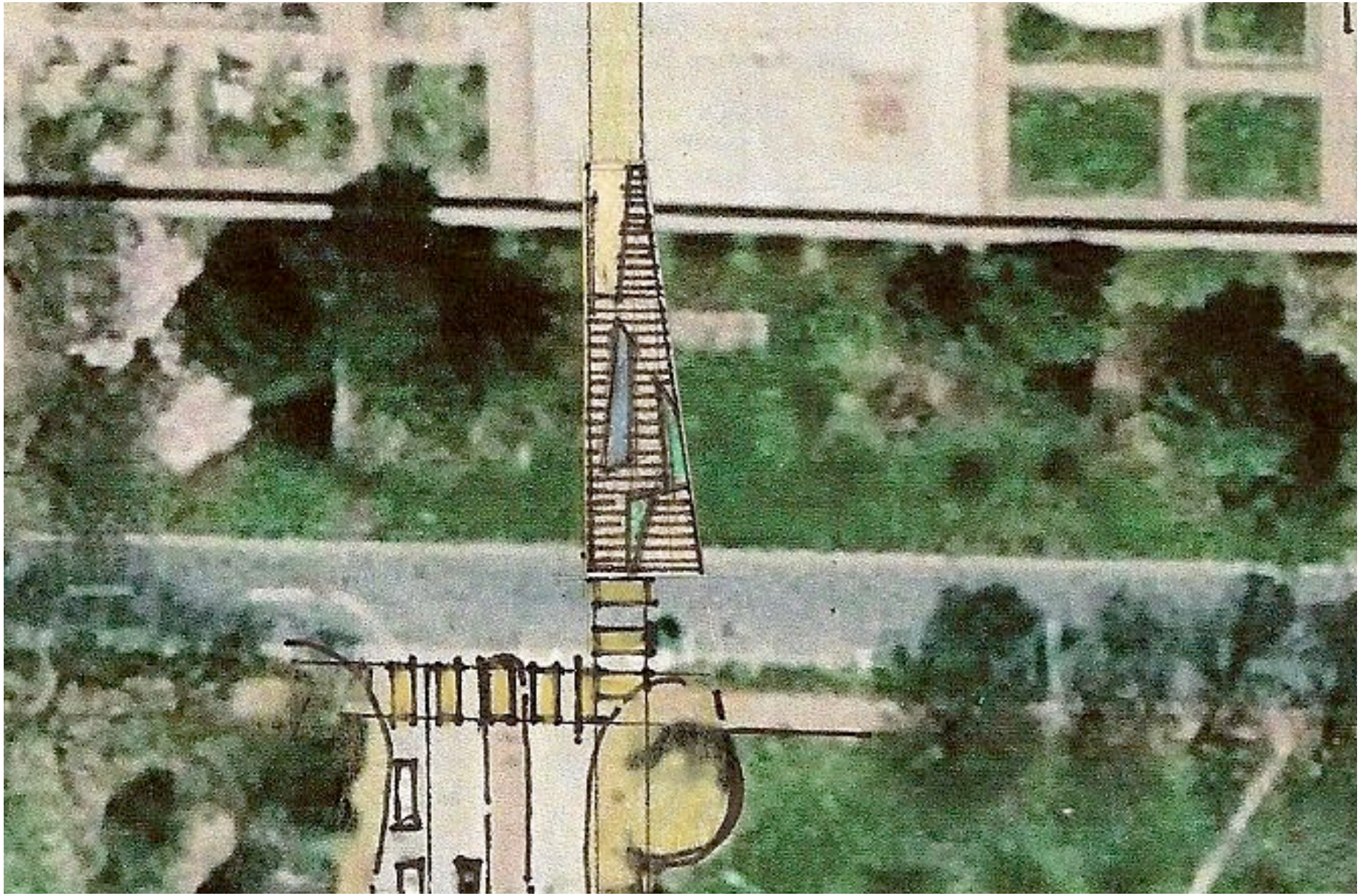
The larger challenge presented by City Hall Plaza is the way in which it was designed to cut off the North Side of the city from the South Side. Now pedestrians walking down New—a major axis—must walk well out of their way and back again to rejoin that axis and cross the river. Nothing frustrates pedestrians more than being taken out of their way.

As seen from above and below, the City Hall Plaza replaced access to the Fahy Bridge with a view of the Fahy Bridge. While this trajectory cannot be recreated as a street, it is likely that the setback of the parking plinth provides enough room for a stairway.

This stairway could continue the axis established by the west sidewalk of New Street, which passes between the sculpture and the Library.

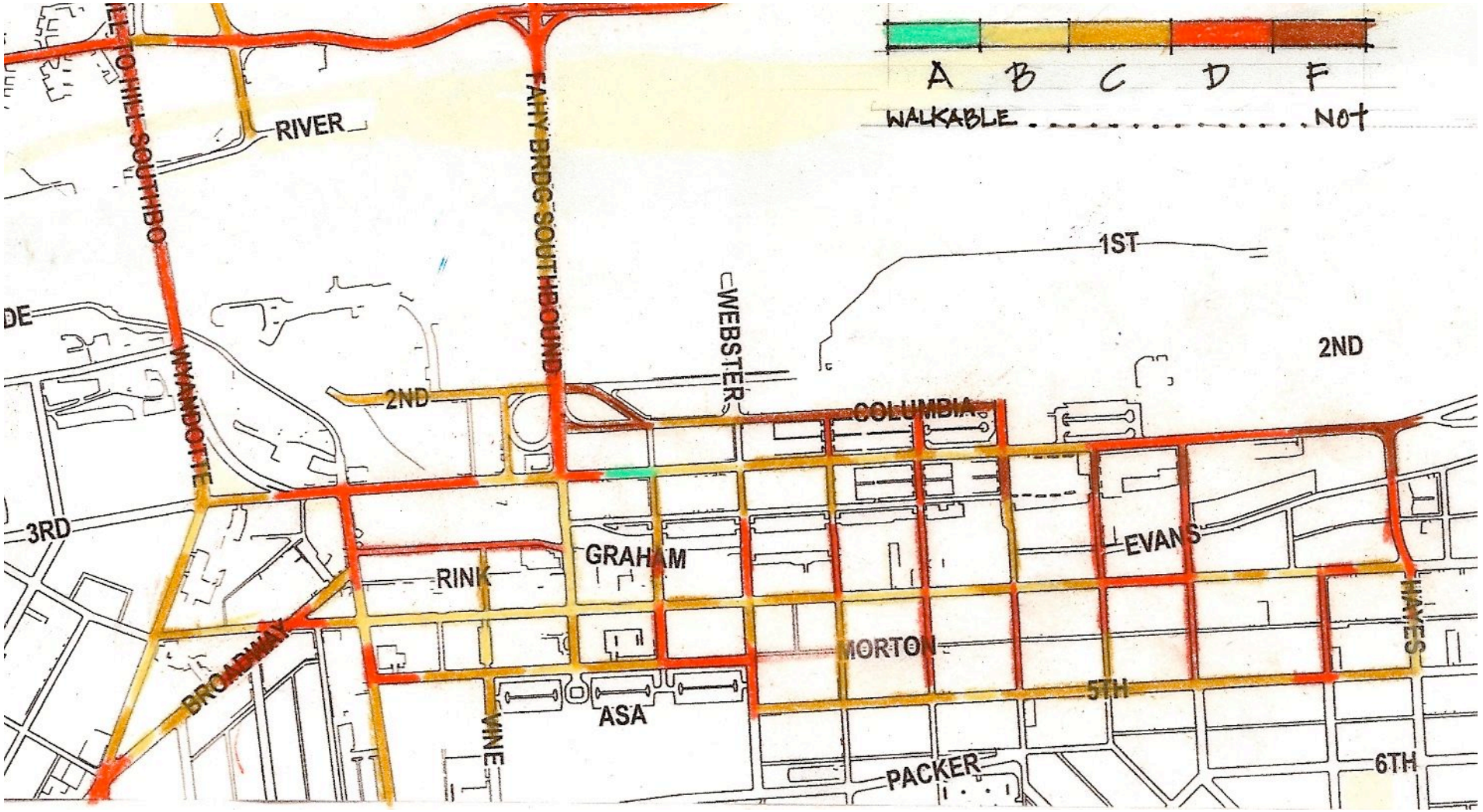
As drawn here, the stair cuts slightly into the parking plinth. If necessary, a few parking spaces may need to be removed. The stair is imagined as its own piece of dramatic sculpture, and could include a fountain.

Rome's Spanish Steps are an inspirational example of how a piece of civic art can activate a steep space.

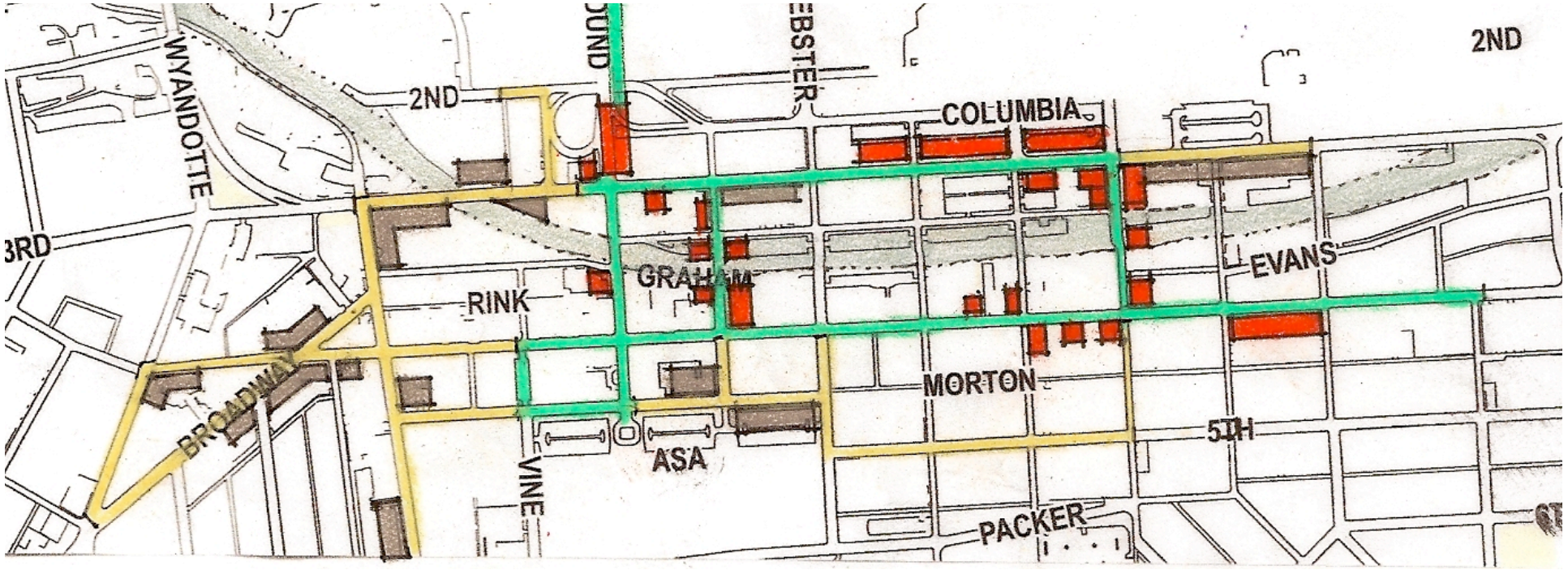


A public design competition would be an excellent start to reinstituting what may be the the most important pedestrian axis in Bethlehem.

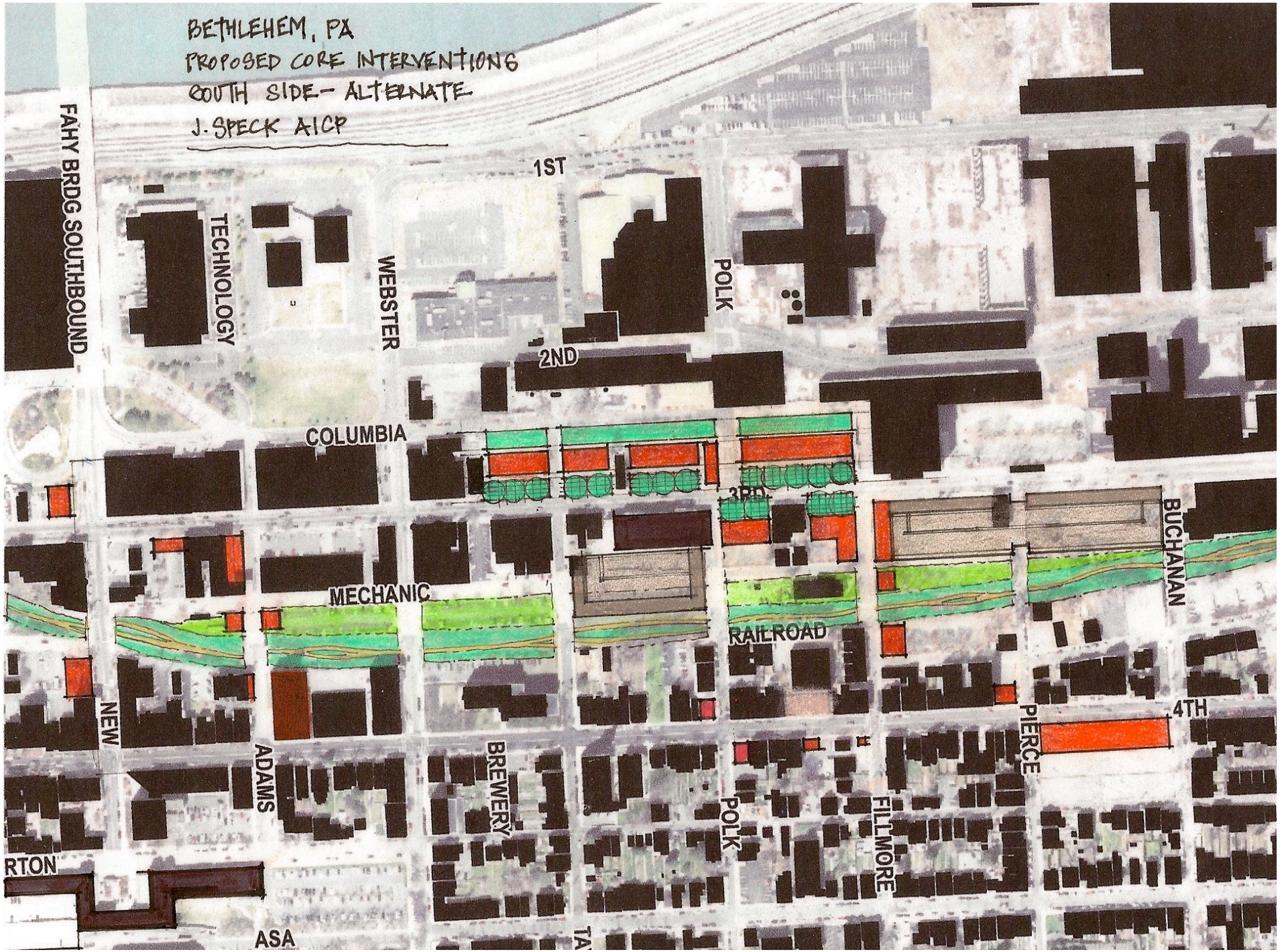
The South Side



The Frontage Quality Rating for the South Side shows greater challenges than the North. While good stretches of 3rd, 4th, and New Streets are fairly walkable, most other places are less so.



Connecting existing strengths together creates a Core of Walkability consisting of 3rd, 4th, and New Streets supplemented by additional segments at Adams and Fillmore. The expansion of this Core reaches west to Five Points and south to Morton and 5th Streets. For the Core area, we have provided a more detailed drawing on the next page. The discussion that follows will discuss the specific sites highlighted on this plan.


BETHLEHEM, PA
PROPOSED CORE INTERVENTIONS
SOUTH SIDE - ALTERNATE
J. SPECK AICP
FAHY BRDG SOUTHBOUND
TECHNOLOGY
WEBSTER
1ST
POLK
2ND
COLUMBIA
3RD
BUCHANAN
MECHANIC
RAILROAD
NEW
ADAMS
BREWERY
PIERCE
4TH
POLK
FILLMORE
RTON
ASA

THE SOUTH SIDE

This section will discuss the following locations:

- 3rd Street West;
- 3rd Street East;
- 4th Street East;
- Five Points;
- The 3rd/4th Knuckles
  - New Street
  - Adams Street
  - Fillmore Street;
- The Greenway; and
- The Lehigh Interface

THE SOUTH SIDE

This section will discuss the following locations:

- 3rd Street West

The western end of 3rd Street is a fairly walkable zone that suffers from a few key missing teeth. Most of these are near the critical intersection with New Street, where people arrive from across the river.

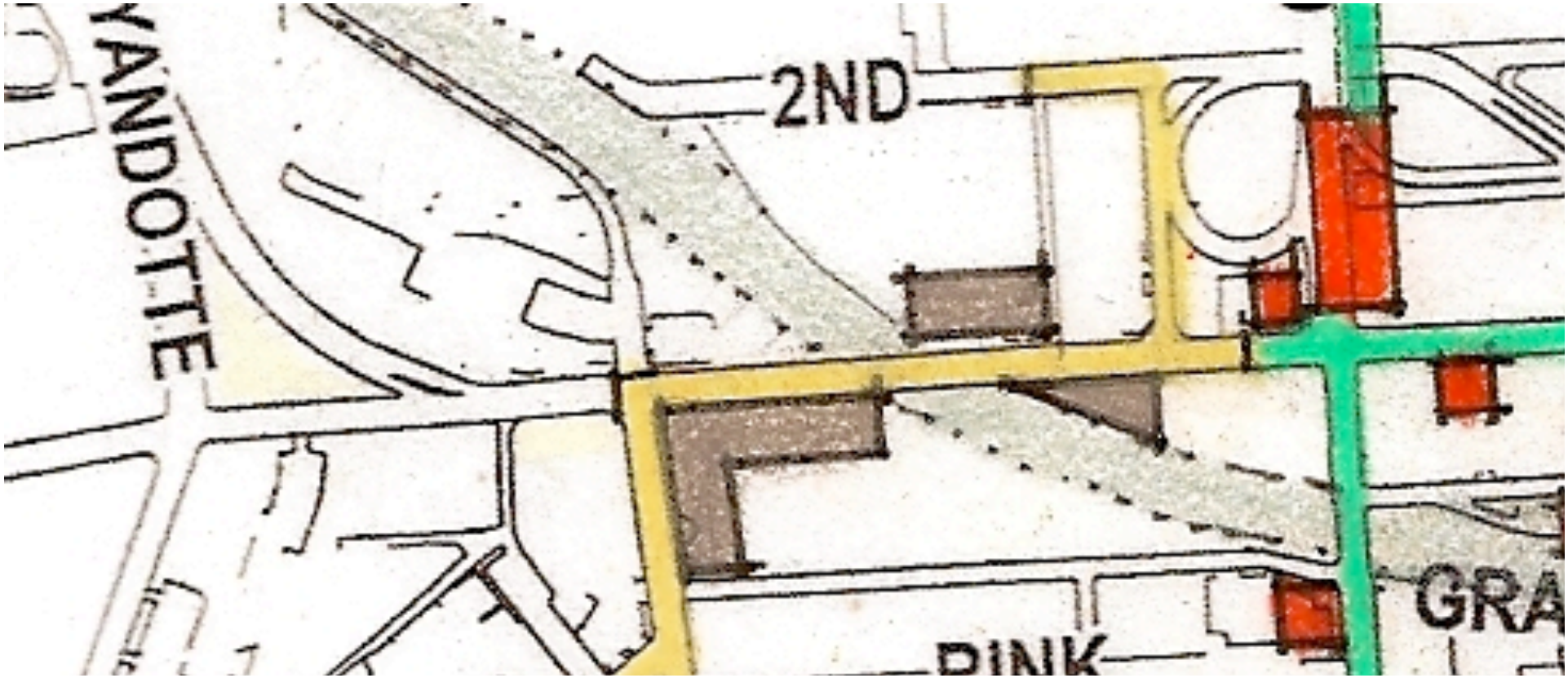
This aerial shows four key locations where building are needed against the sidewalk to improve this area's attractiveness to walkers.

The restaurant parking lot at the corner presents an urban automotive landscape where a more urban solution is demanded.

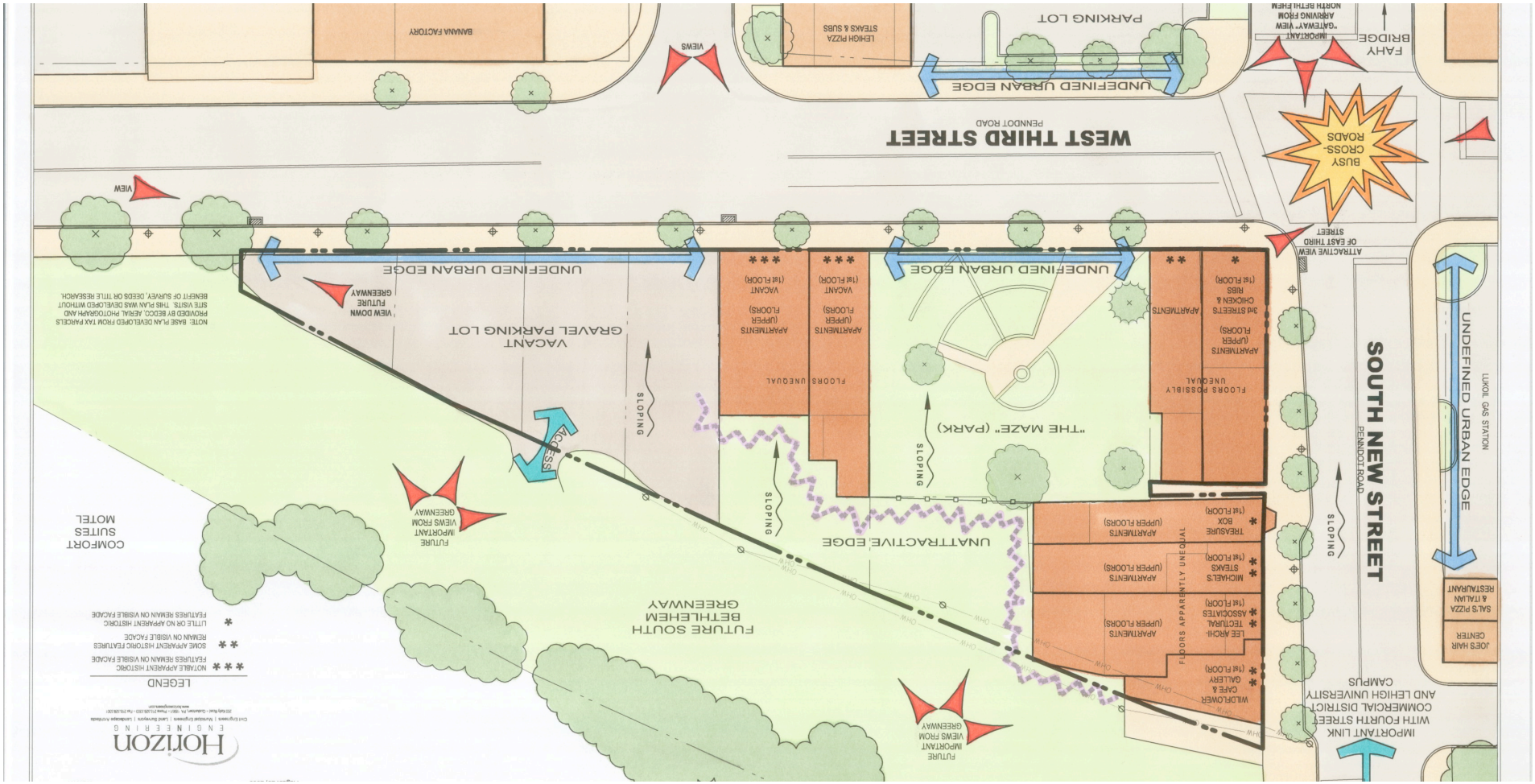
At catty-corner, a gas station blights the intersection. It will be difficult to move. But its impact can be limited by replacing the building next to it, currently a parking lot. A thin structure against the sidewalk would hide the rest of this lot from view. These interventions are shown in the drawing that follows, along with another infill opportunity at the corner of 3rd and Adams.

Notice how it only takes a thin building to hide a parking lot. Also notice the unfortunate circumstance of the strip center east of Adams. Local shop-owners fought to have it placed against the sidewalk, but they lost that battle. Now, few cities would allow that mistake to be repeated. The strip center is currently healthy, but it should eventually be replaced by an urban building, with parking to the rear or off-site.

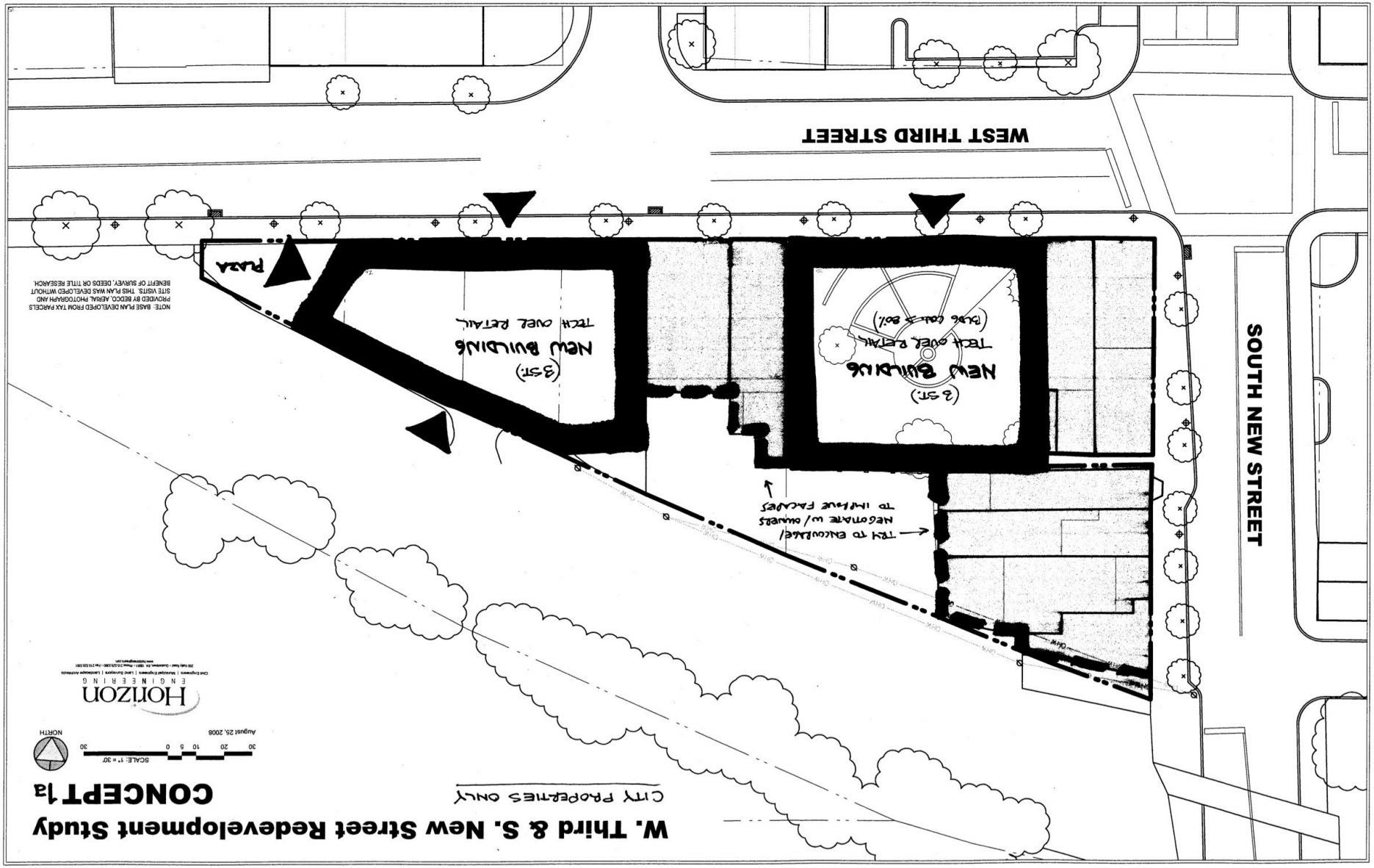
As one heads west on 3rd, thinks get worse. Empty lots (E), an industrial site (F), and the Comfort Suites hotel (G) all create inhospitable edges against the sidewalk, on the way to the highway-rest-stop architecture of the Perkins restaurant (H). Because this area will require complete reconstruction to be walkable, it should be "triaged out" for the short term.



Only the eventual construction of an important anchor in place of the Comfort Suites would cause many people to walk in this direction, and that would also require conversion of the industrial site to the north. Because they surround the pending greenway, these sites deserve more attention than points further west.



But, in the shorter term, the question is where the truly walkable precinct ends. In order to connect the greenway to third street, it makes sense to focus some energy on the triangular lot between the two (shown with North up).



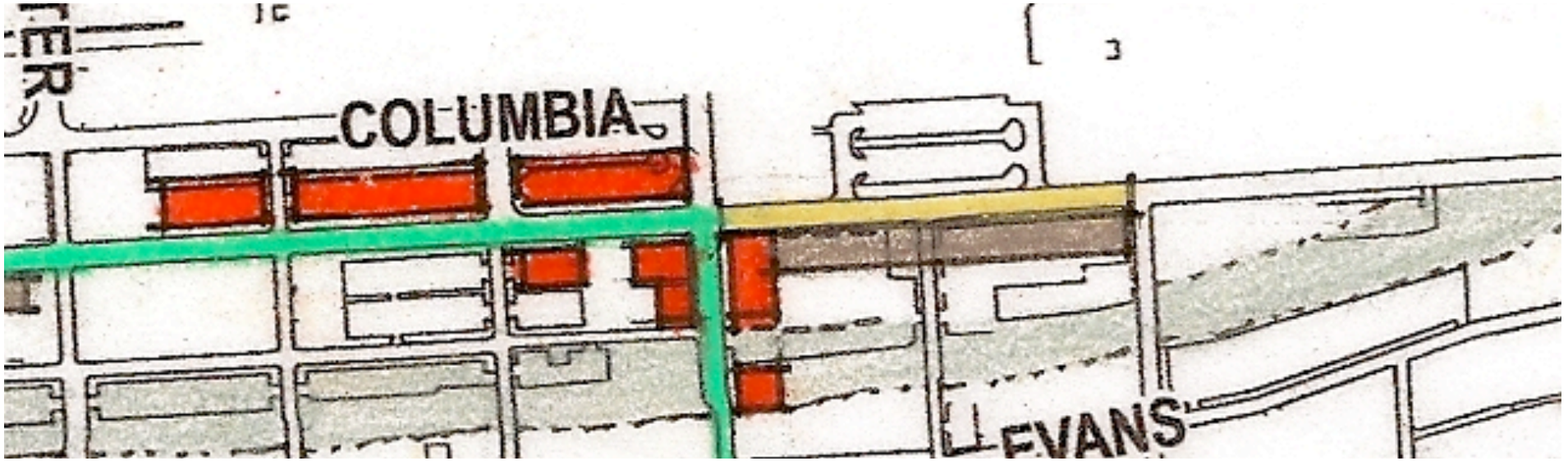
The City is currently investigating the completion of this block with two new buildings.

While the Maze Park is not an impediment to walkability and could be retained, the corner flatiron site presents a great opportunity for a dramatic building to mark the intersection with the greenway.

THE SOUTH SIDE

This section will discuss the following locations:

- 3rd Street West;
- 3rd Street East



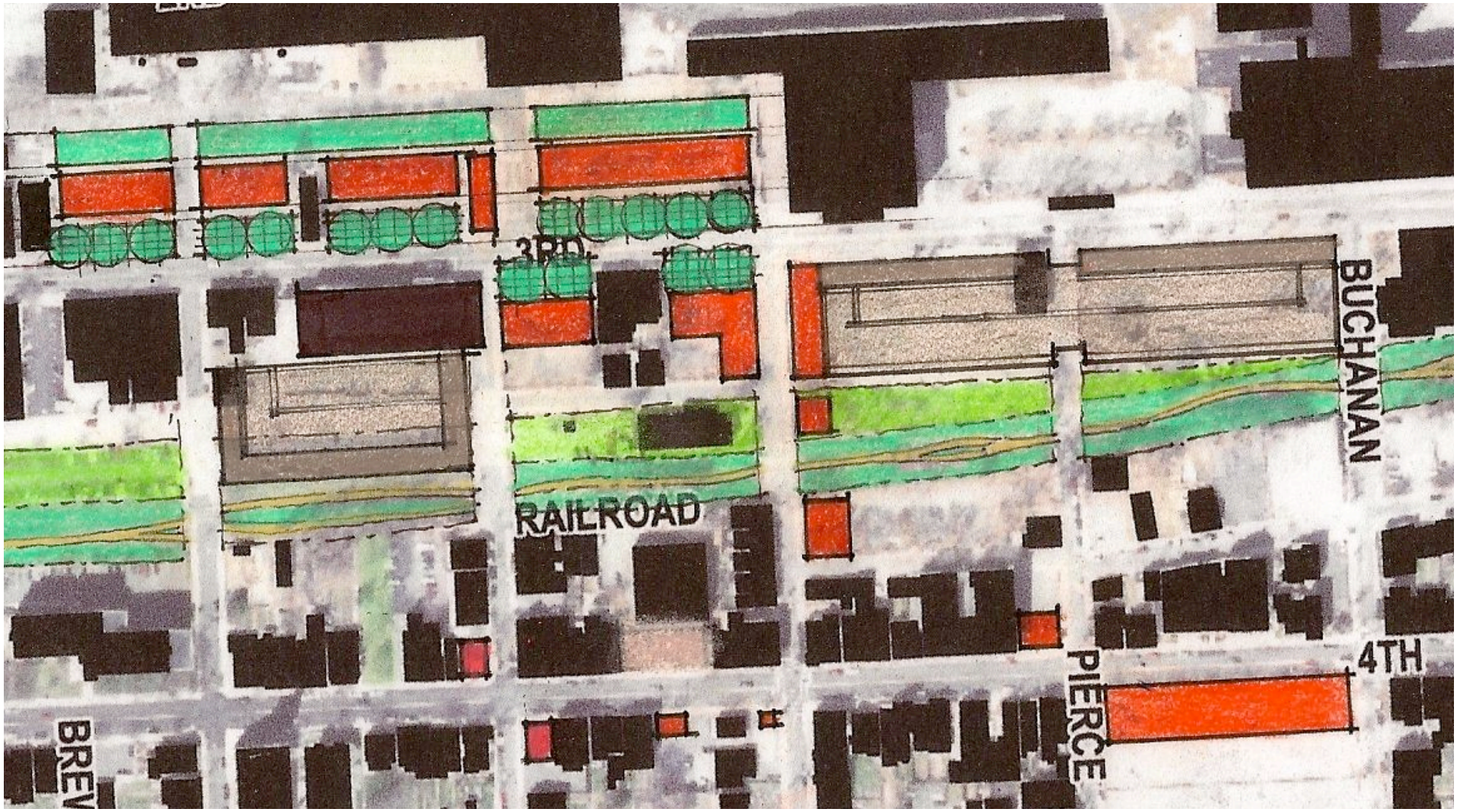
The eastern end of 3rd Street is perhaps the place in Bethlehem where a collection of significant interventions can have the greatest positive impact. This is because the streetscape is generally walkable, but for its collection of underutilized surface parking lots, left over from the Bethlehem Steel days.

A new building on the south side of the street contributes to this axis. The old parking lots are remarkable for their tremendous tree cover, regularly-spaced sycamores that are 50 feet tall and more.

The new building, shown at left, is a good neighbor to the street and does everything that urban buildings should do. The parking lots are shown at right, with their consistent rows of sycamore trees.

New buildings are also planned for two of the large parking lots, but these have been put on hold by the market downturn. Like their cousin across the street, these buildings demonstrate the best urban instincts. However, the uniquely beautiful rows of trees against the sidewalk would be killed by these buildings. It is hoped that there is a solution that would allow both buildings and trees on these sites.

The sidewalk could be doubled into a shallow plaza on both sides of the front tree row, and the building placed about 10 feet behind where the planter is now. The planter itself should be broken up into square boxes to allow for easy passage around the trees.



That is the solution proposed in this drawing, wherever the rows of sycamores exist. It would make for a beautiful city street, its value enhanced tremendously by the urban forest that lined it.

The plan just shown also accepts the proposal for a major parking garage between Fillmore and Buchanan Streets. However, the purpose of this garage is to serve the renovation of the large Bethlehem Steel buildings to its northeast, and should only occur in tandem with this renovation. Notice how this parking structure properly places an inhabited edge against the sidewalk.

If the renovation of these buildings is not immanent, a structured parking lot would be better placed further west, as shown in the plan.

That parking structure, shown here, is designed to serve all of the new buildings proposed along third street. This will help them to preserve more of their trees on site. As always, a neighborhood parking strategy should supplant the on-site parking requirement, which is a walkability killer.

THE SOUTH SIDE

This section will discuss the following locations:

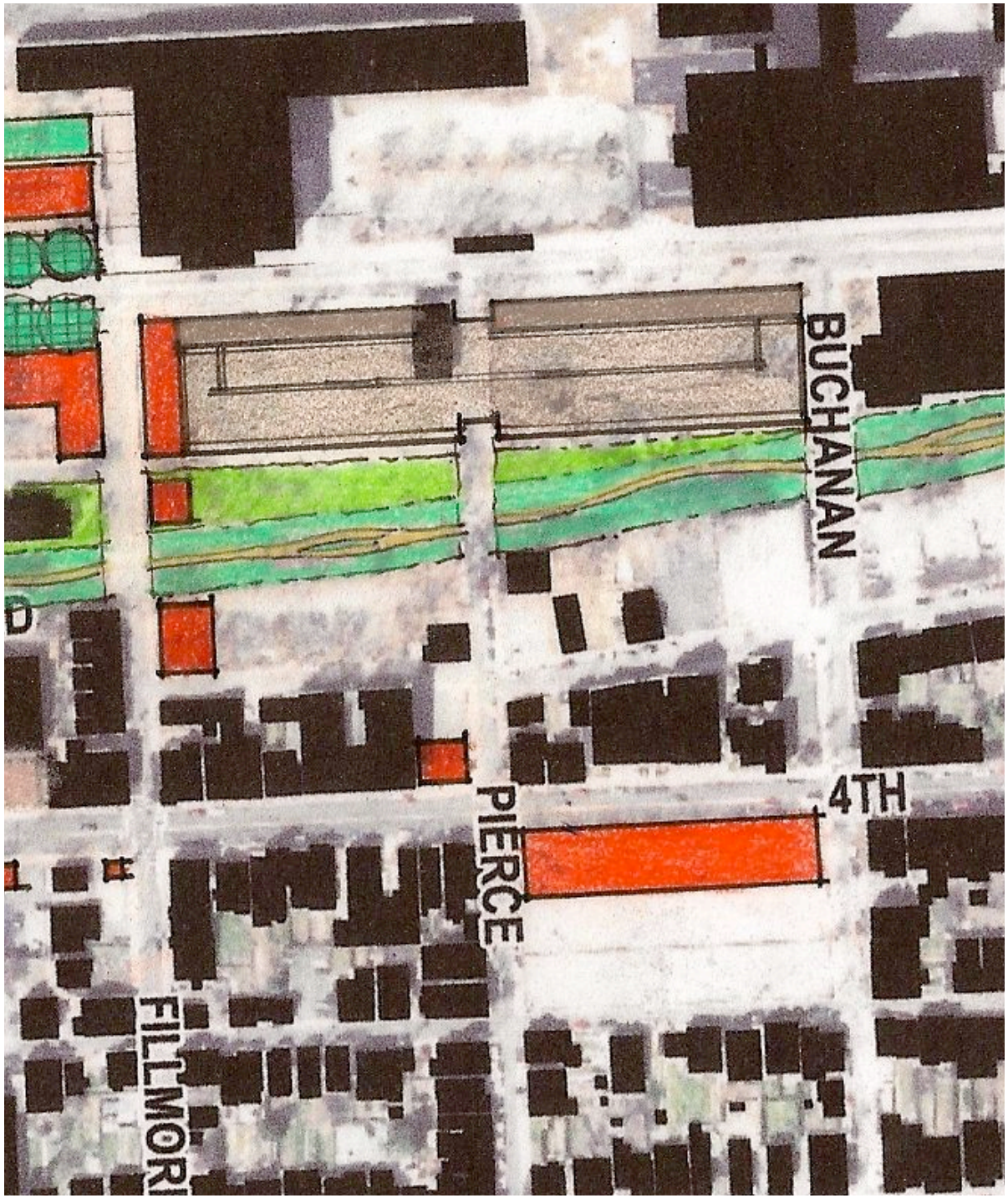
- 3rd Street West;
- 3rd Street East;
- 4th Street East

The east end of 4th street is generally healthy but for a few empty lots, and one key piece of blight that disconnects Four Blocks International from the rest of the neighborhood.

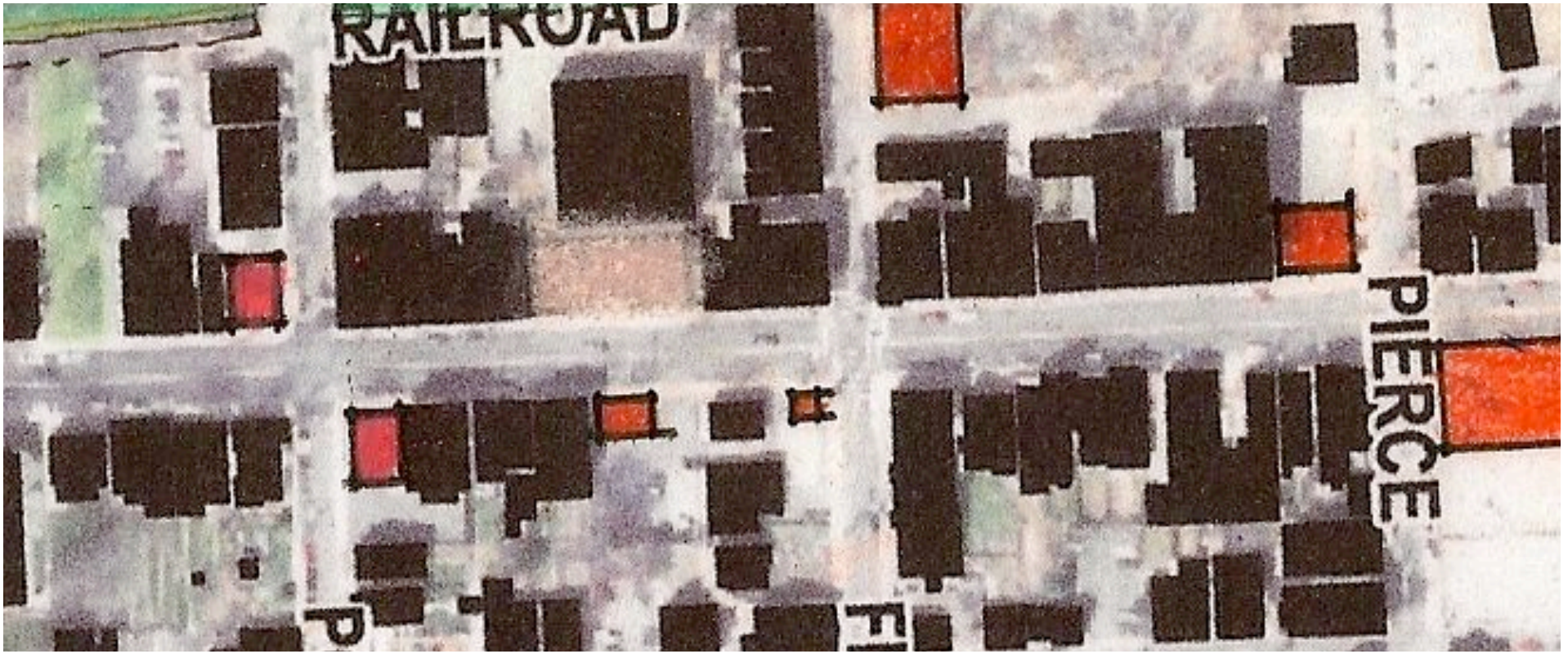
Once again, it is a parking lot across the street from a church, this time of gargantuan proportions. This entire block of pavement destroys the spatial definition and comfort of 4th Street.

It is ironic, but also unfortunate, that preparing for the next world can sometimes wreak havoc on this one. The solution is simple, but requires a new spirit of community concern from the church, which up to this point has not allowed the partial development of its oversized parking lot.

As before, only the front portion of the lot need be built upon to create a strong edge against 4th Street. The remainder would remain available for church parking.



And, of course, the eventual construction of structured parking just down the street would entirely eliminate the need for this surface parking lot. The distance between the new lot and the church represents a one-minute walk.



The other missing teeth on 4th Street are minor challenges in comparison, and should simply be designated as high-priority development sites so that this important corridor can be made as excellent as possible. These are shown on the following page. To be developed, corner parking lots must again be replaced by a neighborhood parking strategy.


CANTELMI'S
ACE
Hardware
ACE
RENTAL PLACE
HAPPY
TAP


GIVE. ADVOCATE. VOLUNTEER.
LIVE UNITED


MAYTAG
Laundry
CRISP AND CLEAN LAUNDRY
GENESIS
ONE WAY

THE SOUTH SIDE

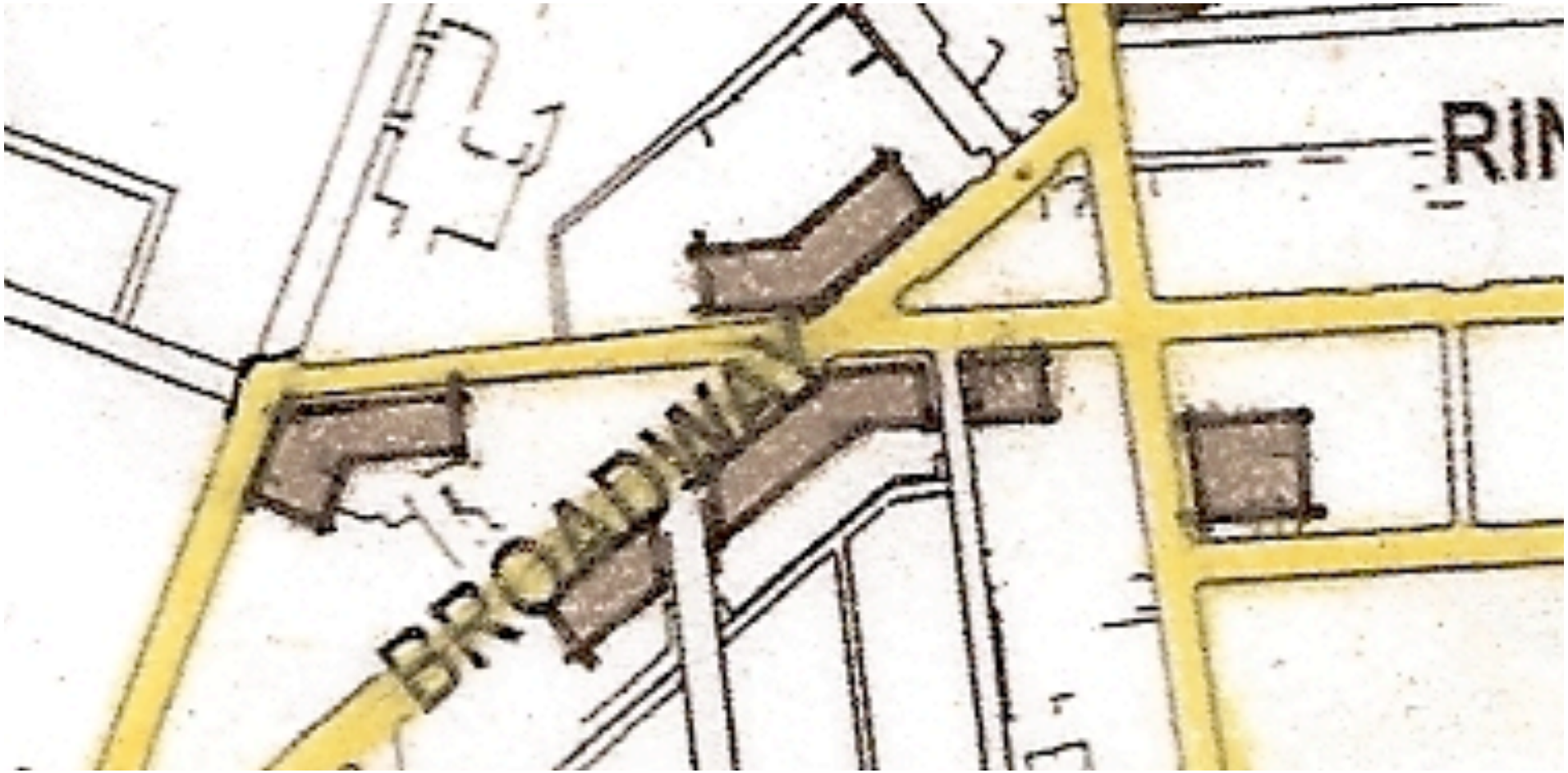
This section will discuss the following locations:

- 3rd Street West;
- 3rd Street East;
- 4th Street East;
- Five Points

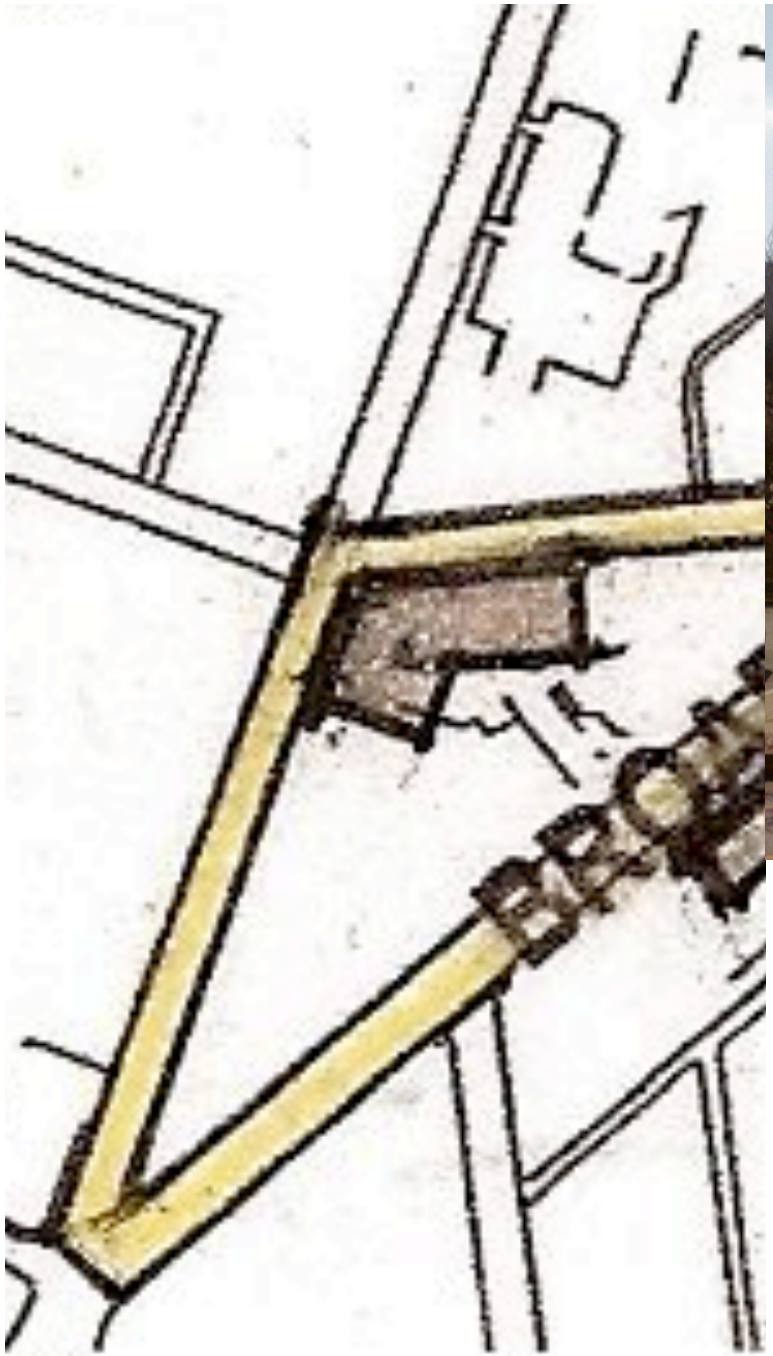
Five points presents challenges on its own, but also in terms of access. The best path there is on 4th Street, but this path is blighted by suburban style buildings floating in surface parking lots. This procession is shown on the next page.


Wendy's

And across the street is the CVS, behind its parking lot.



As with the western end of third street, repairing this seam will require a tremendous amount of investment, so it is shown as an expansion of walkability beyond the core, and given secondary status.



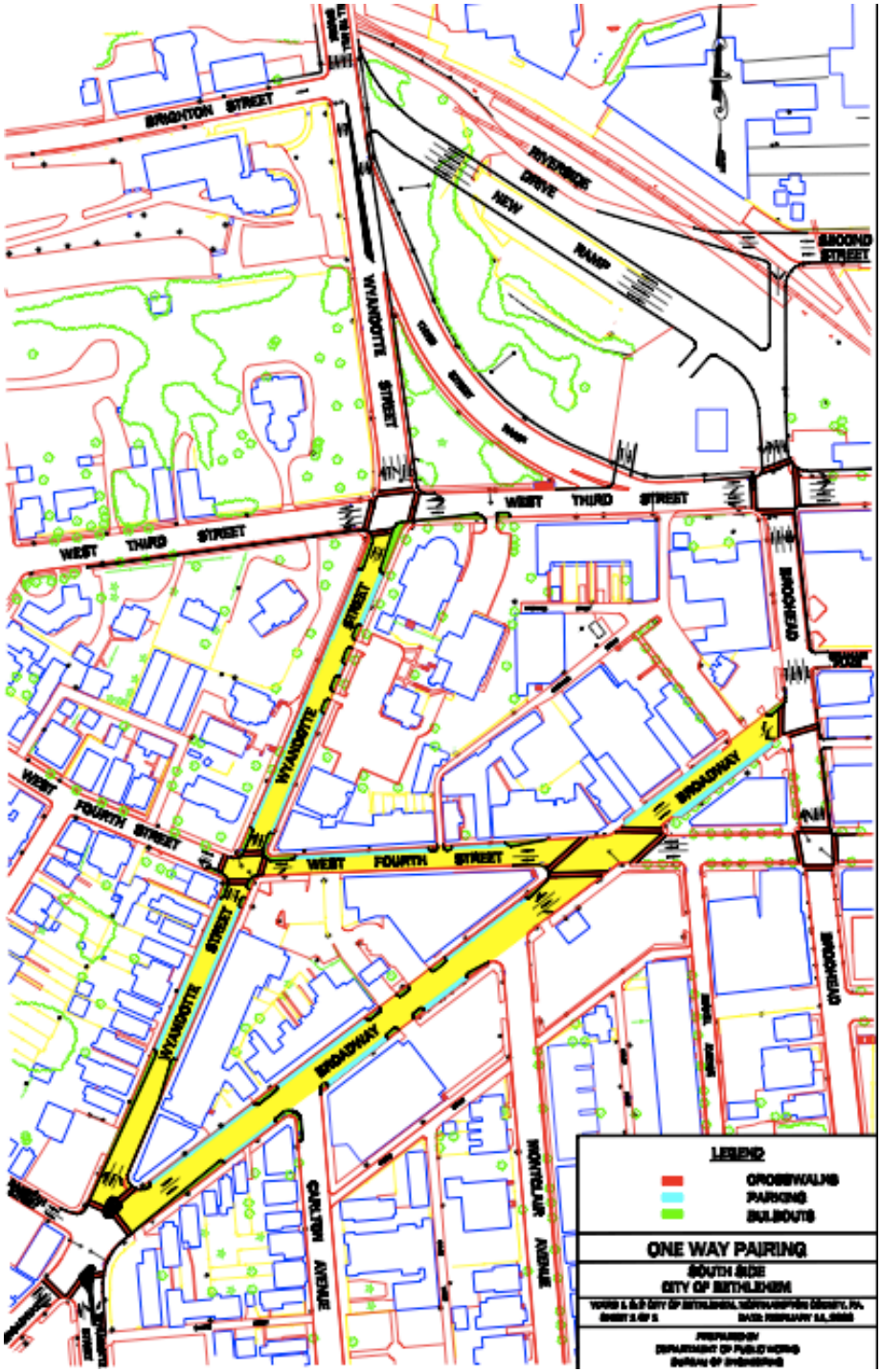
Five points is also missing a key building at its northwest corner, which should be considered another eventual infill opportunity. But the biggest current challenge is not buildings, but roadways.

Shops in Five Points are dying because widened roadways have eliminated parallel parking against the curb. Sidewalks need on-street parking to feel protected, and shops need “teaser” parking out front to attract patrons. Unfortunately, because Broadway and Wyandotte are state-owned, PennDOT has transformed them into surface highways that speed traffic in and out of town.

Negotiations between cities and state DOTs are always a challenge. Highway departments are charged with moving as much traffic as possible, and they have historically displayed little concern for walkability. Current leadership often means well, but entrenched practices and practitioners tend to impede any real advancement. In negotiating DOT efforts to increase capacity, cities must remember that increased capacity can not be trusted to reduce congestion. On the contrary, even *Newsweek* magazine is reporting that "today's engineers acknowledge that building new roads makes traffic worse." Unfortunately, most DOTs employ yesterday's engineers. So lanes are added, new ramps are built, and the city becomes even less walkable, which of course increases demand for driving.

Given this scenario, it becomes the role of the city to question the DOTs claims, and to challenge DOT decisions that seem unwise. Case in point is Wyandotte Street, on which parallel parking has been eliminated in order to add a left hand turn lane.

This turn lane serves West 4th Street, which in this location is 3 blocks long and serves a dozen houses. Almost nobody takes this left turn. Why, then, is the turn lane as long as a football field?



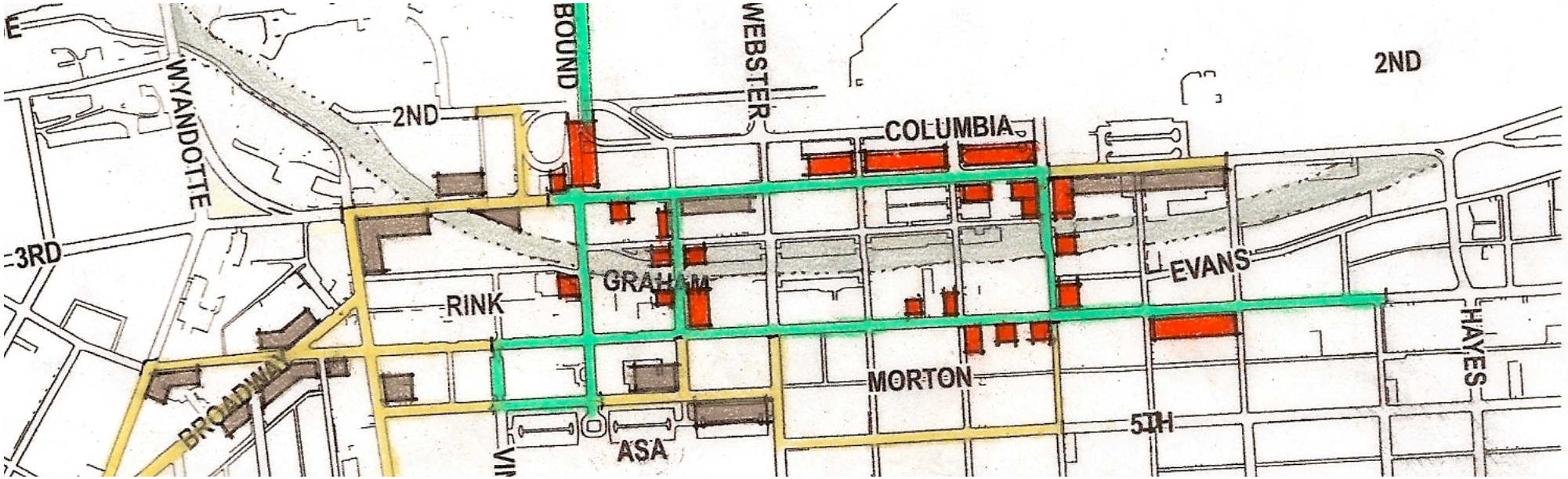
To remedy this problem, the City is considering instituting a system of one-way streets, that would meet the DOTs demands for through-put while also providing some on-street parking. Given the challenges presented by one ways, this is a tactic that could create as many problems as it solves. The proper strategy would be to reinstitute parallel parking wherever possible by shortening turn lanes.

THE SOUTH SIDE

This section will discuss the following locations:

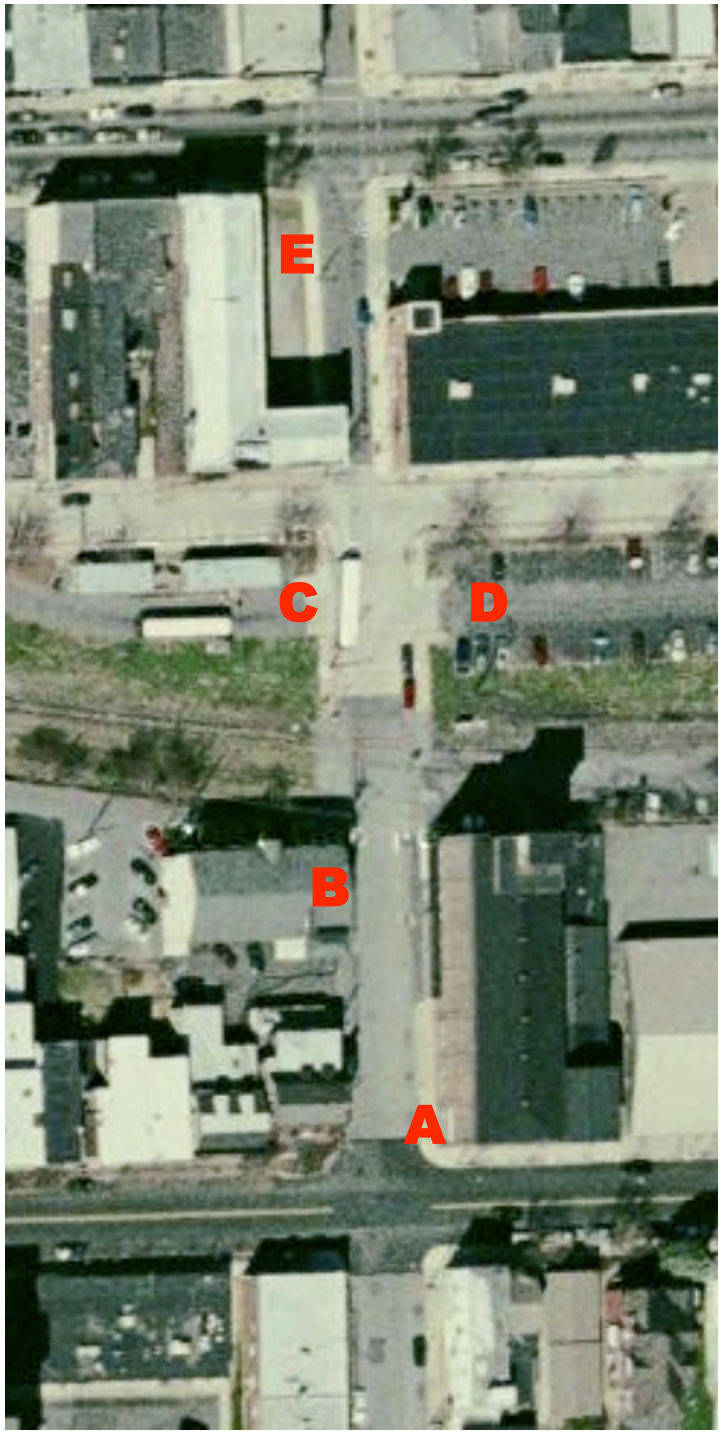
- 3rd Street West;
- 3rd Street East;
- 4th Street East;
- Five Points;
- The 3rd/4th Knuckles
  - New Street
  - Adams Street
  - Fillmore Street

When walkability is connected to walkability, the number of pedestrians multiplies. 3rd Street is a largely walkable Corridor, and 4th Street is too. But the walkable paths between them are few. Despite their small separation, these streets have been unable to effectively combine into a self-reinforcing pedestrian loop.



The Urban Triage Plan identifies three knuckles that can close this circuit. New street is already a strong, healthy connection between 3rd and 4th. Adams Street is well located to create a simple heart-of-the-South-Side loop, and has strong potential to do so. Fillmore Street is one of several streets that could be used to connect 3rd St. to the area of Four Blocks International, and, with the construction of the proposed parking garage, is well positioned to play this role.

Only one surface parking lot, owned by the City, blights the excellent trajectory of New Street. This is a high-priority redevelopment opportunity.



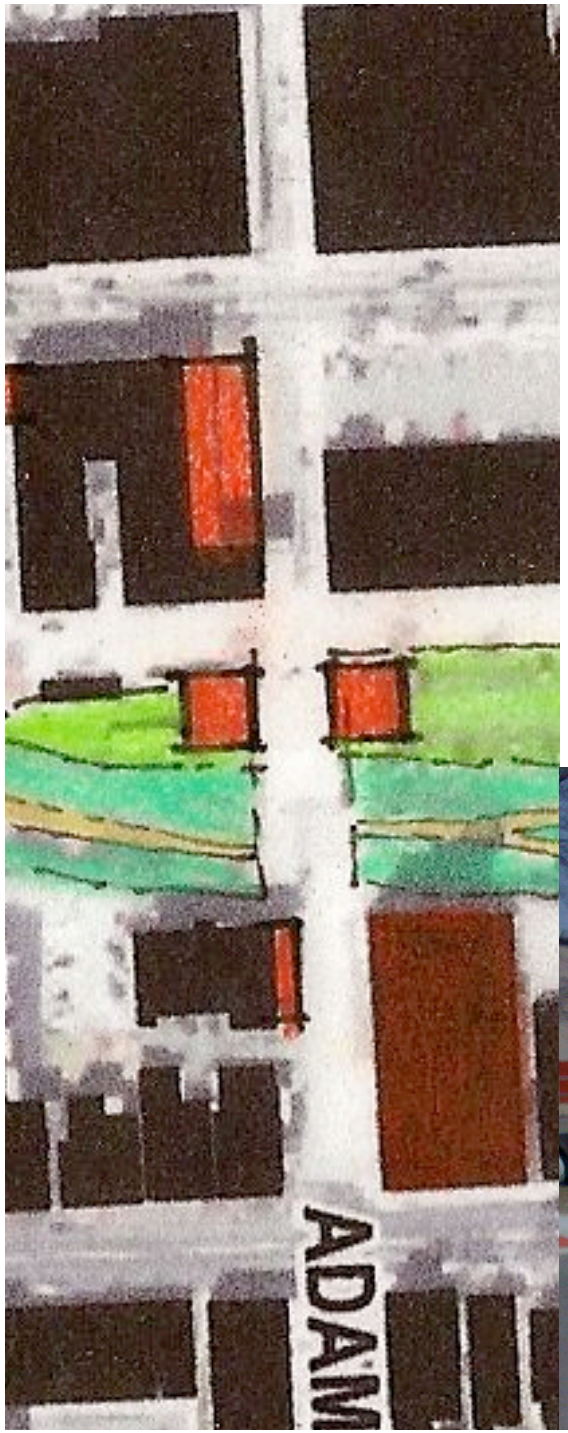
Adams Street would benefit from five interventions:

A. The redevelopment of Lehigh's cold storage warehouse;
B. The re-facading of an apartment house;
C. The replacement or removal of temporary transit and police trailers;
D. The removal or shielding of a municipal parking lot; and
E. The infill of the missing tooth already mentioned.

Lehigh already has plans to make better use of the beautiful cold storage warehouse. While “opening” the false windows on the upper stories would be ideal, the more important strategy would be to create more, larger openings at street level. The use of massive steel beams to support the upper stories would allow a glassy ground floor on Adams Street.

Next, the street edge is well-defined but blighted by perhaps the ugliest building in Bethlehem. It is clear that this historic structure has good bones, and was marred through renovation. If there was ever a building that qualified for a city-led historic-preservation façade-rehabilitation grant effort, this is it.

The transit trailer is to be relocated. The police trailer would be best replaced by an attractive permanent pavilion that gives an edge to Adams Street and supervises the greenway.



This pavilion could perhaps have a twin across the street, as shown here. These could also be replaced by open space. As will be discussed, I have proposed replacing the surface parking lot with an expanded greenway. But if the parking lot is to remain, it should be shielded from view.

Fillmore Street was selected as the eastern connection between 3rd and 4th Streets because of its proximity to Four Blocks International, and in anticipation of the parking structure on the surface lot at 3rd Street, which can place an active edge against Fillmore to entice pedestrians up the hill.

Fillmore terminates on the historic entrance into the Bethlehem Steel facility, which is slated to provide excellent access into the expanded BethWorks site.

Heading up the hill, one crosses the greenway and then passes some healthy rowhouses.

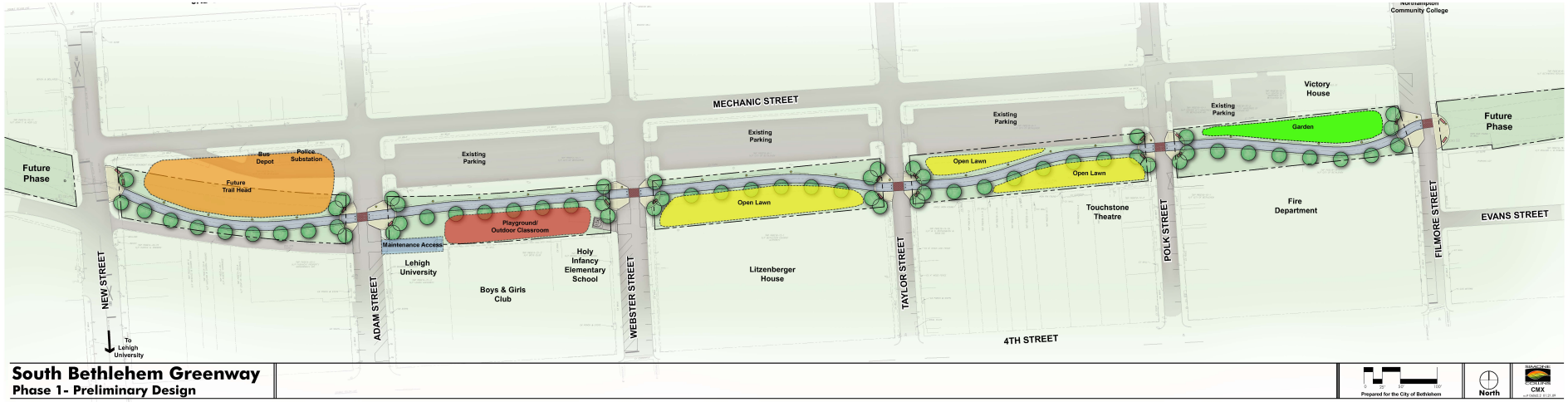
The plan shows how infill buildings frame the walk, especially against the edge of the parking structure. It is unfortunate that this axis ends at a gas station on 4th street. A decorative pavilion is suggested for the corner of that property, as a lantern to attract people up the hill.

THE SOUTH SIDE

This section will discuss the following locations:

- 3rd Street West;
- 3rd Street East;
- 4th Street East;
- Five Points;
- The 3rd/4th Knuckles
  - New Street
  - Adams Street
  - Fillmore Street;
- The Greenway

The greenway is planned for the defunct rail line between 3rd and 4th. It will be a real community asset, connecting to a regional trail system. But it it really a greenway if it is lined by parking lots?



These City-owned lots blight all the connections between 3rd and 4th Streets, and should be replaced with a single structure that consolidates demand and creates an anchor within the neighborhood. It can be lined with apartments that supervise the greenway. The plan shows one of several possible locations.

THE SOUTH SIDE

This section will discuss the following locations:

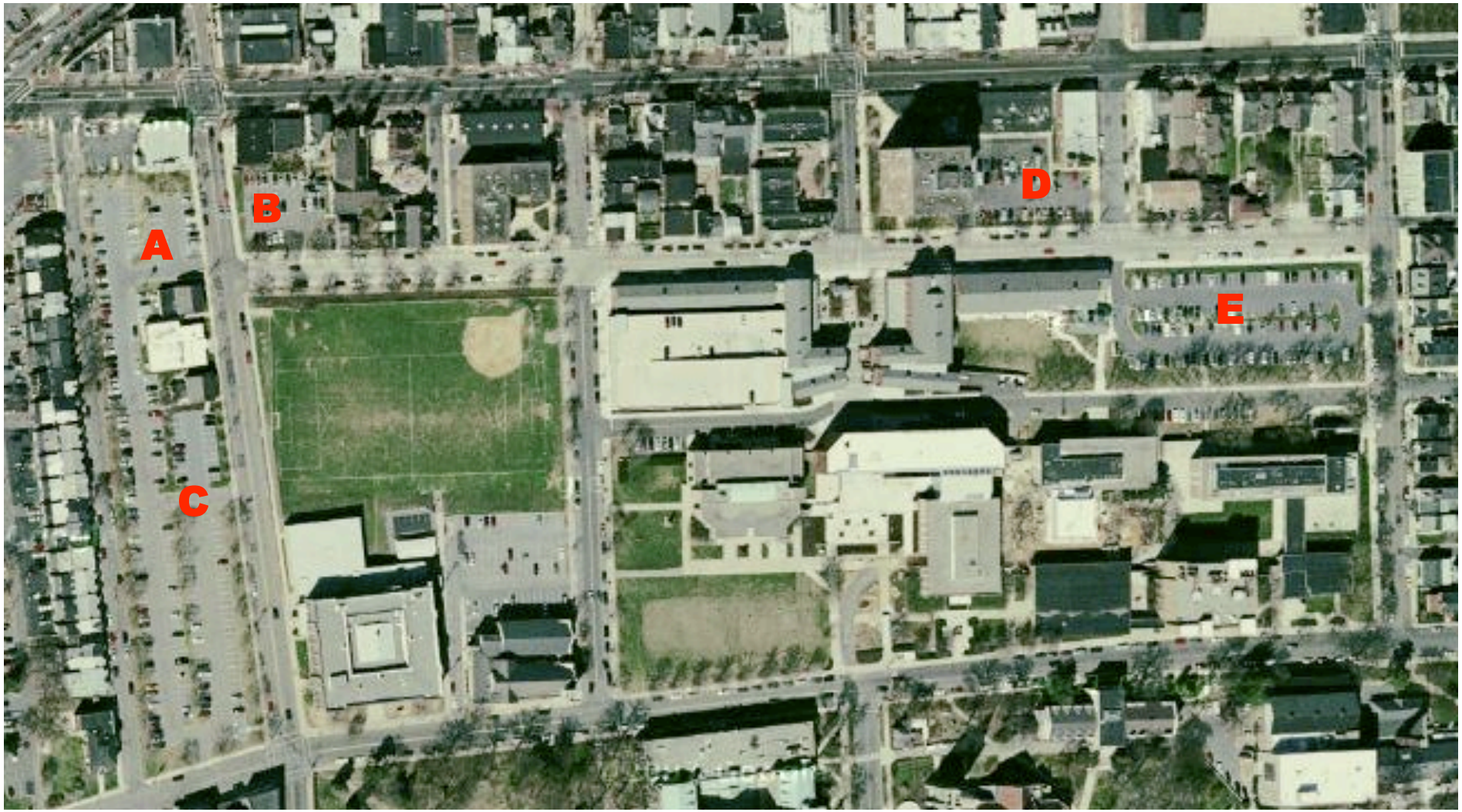
- 3rd Street West;
- 3rd Street East;
- 4th Street East;
- Five Points;
- The 3rd/4th Knuckles
  - New Street
  - Adams Street
  - Fillmore Street;
- The Greenway; and
- The Lehigh Interface

Lehigh is a tremendous asset to Bethlehem. This report argues that the converse is also true, because there are two distinct university experiences that attract students to higher education. One is the verdant, pristine campus. The other is the lively, funky, street life of the college town. Students with a choice demand both.

Universities like Penn and Yale have made great strides by integrating their academic buildings seamlessly into their city neighborhoods.

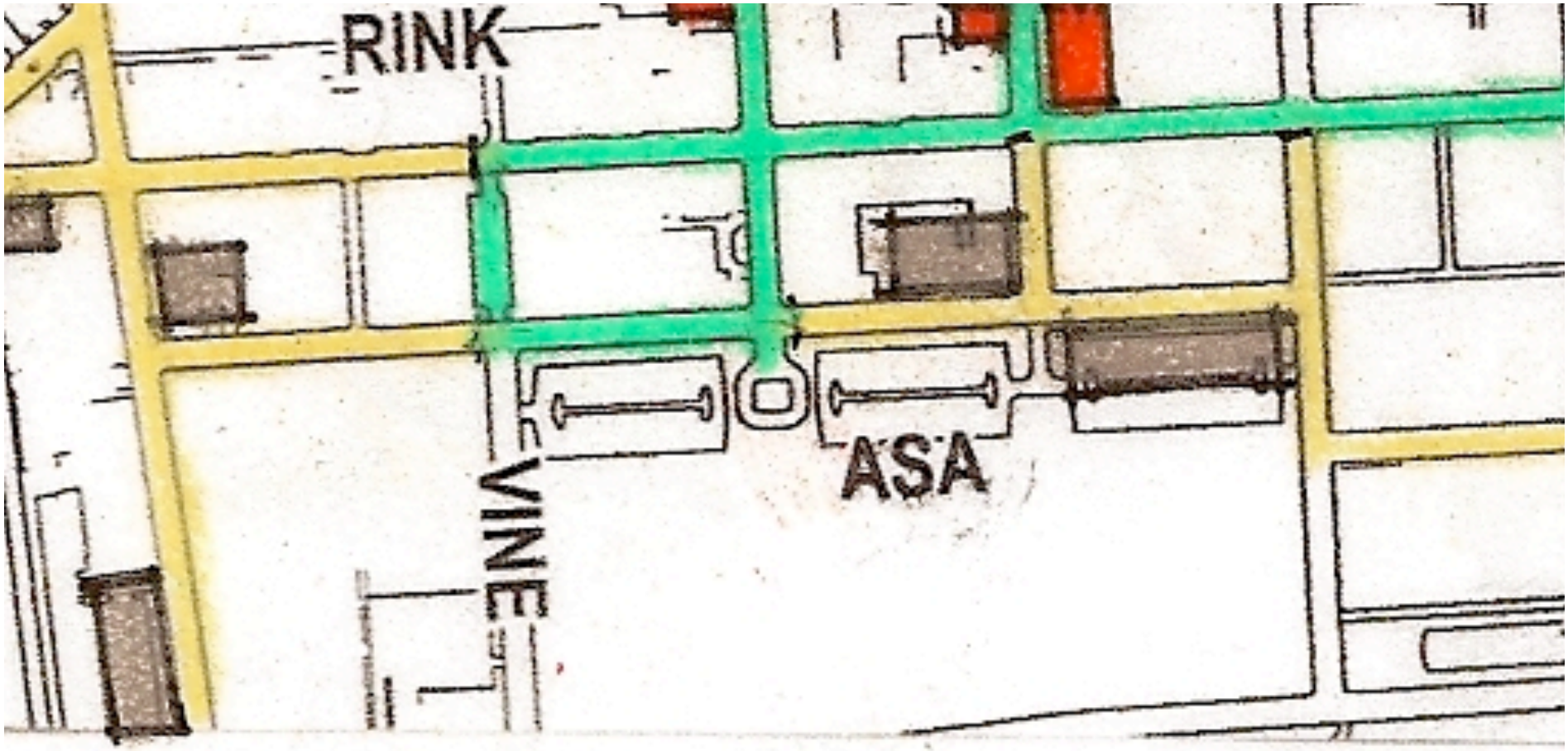
This Lehigh campus map shows how the University has begun to connect itself to the urban fabric of the South Side. This effort affords students a more complete university experience while making the downtown safer—and more walkable.

The next Lehigh building can go either up the hill in the campus or down the hill in the city. If it goes up the hill, it will replace a leafy, grassy area, and make the campus less campus-like. In contrast, if it goes down the hill, it will replace a paved parking lot and make the City better.



After it refurbishes the Cold Storage Warehouse, the next Lehigh buildings should be sited on these five lots, which currently interrupt the urban fabric.

Most of these lots occupy corners, making them particularly important. Parking should be reduced, or consolidated in a structured lot.



The Urban Triage Plan identifies these lots as second-tier priority, because they are slightly outside the immediate core of walkability. But they should be the highest priority sites for Lehigh.

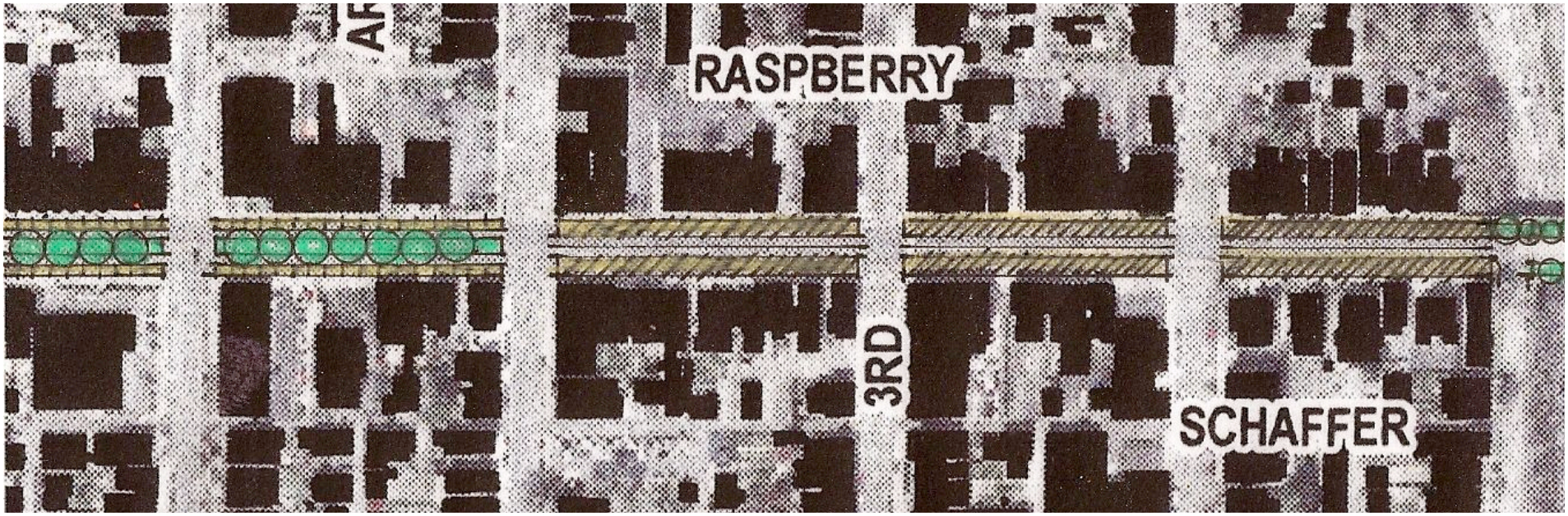
The West Side

The near west side of the city is centered on Broad Street, its main pedestrian connection to downtown. This street is on the cusp between pedestrian and automotive, and a proper redesign could cause many west-side residents to chose to get downtown on foot or bike.

Broad street is considerably wider than it should be. It suffers from travel lanes that are well in excess of the 10’ standard, and left-hand-turn lanes that are longer than they need to be (if they are necessary at all). The proper solution for narrowing the street depends on whether or not a block has active retail frontage.

In those places, a higher demand for parking justifies replacing parallel parking with angle parking.

It has been suggested that the street is a few feet too narrow to support two sides of angle parking. But one look is all it takes to see that the City's current angle parking dimension is much deeper than it needs to be.



A back-in angle parking solution is recommended for the blocks between 4th and 1st Avenues. For the remaining blocks heading west, the roadway can be narrowed by digging out the center of the pavement and planting trees. Given the excess roadway dimensions, these medians could be as much as 20 feet wide. Where a left-hand-turn lane is needed, it can reduce the median width by 10'.

Connections

CONNECTIONS

This section will discuss the following locations:

- The Broad Street Bridge; and
- Fahy Bridge North; and
- Fahy Bridge South.

CONNECTIONS

This section will discuss the following locations:

- The Broad Street Bridge

As mentioned, a few people do already choose to walk across the Broad Street bridge to downtown

But most choose to drive, because the trajectory is dominated by automotive motion. The bridge is actually two bridges, one over a beautiful valley, and one over an ugly highway.

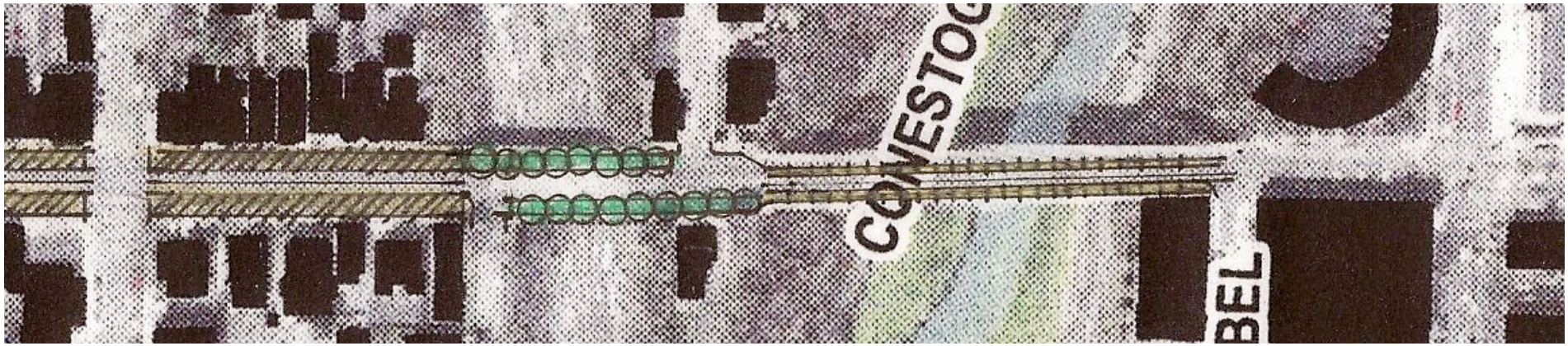
Inexplicably, the road widens over the highway.

No parking is allowed here, so this if effectively two 30-foot-wide driving lanes.

. . . which may be a world record.

The eastern span provides beautiful views, but neither on-street parking nor trees protect pedestrians from speeding cars. Fortunately, the roadway is more than wide enough to accept parallel parking.

Potential demand for this parking exists because of its adjacency to the lot at Main Street Commons. Parking should be striped on the street and offered for free. Even when unoccupied, the striping will slow cars down.



The super-wide highway bridge provides a more daunting problem. It could fit angle parking, but there is no demand for it. This novel challenge demands an unorthodox solution. One possibility would be to narrow the roadway to 20 feet with tall curbs, and then to lay dirt between the old and new curbs. The height of the dirt mound would depend on the bridge's capacity to carry weight. If tall enough, it could hold trees; if not, groundcover. In any case introducing this separation between roadway and sidewalk would do wonders for pedestrian safety and comfort.

CONNECTIONS

This section will discuss the following locations:

- The Broad Street Bridge; and
- Fahy Bridge North

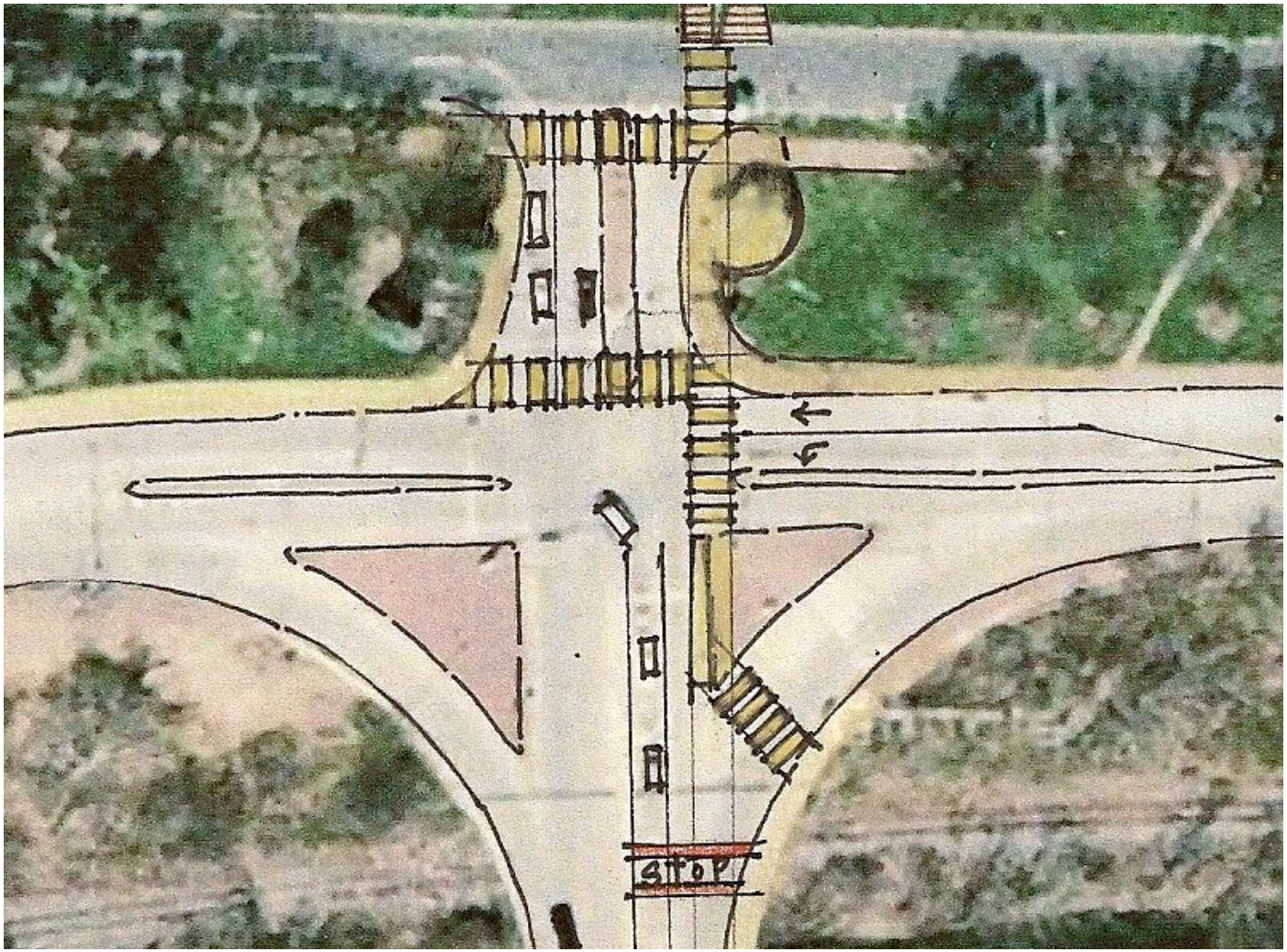
The walk across the Fahy Bridge can be a pleasure. . .


. . . but getting on and off of it can be scary.

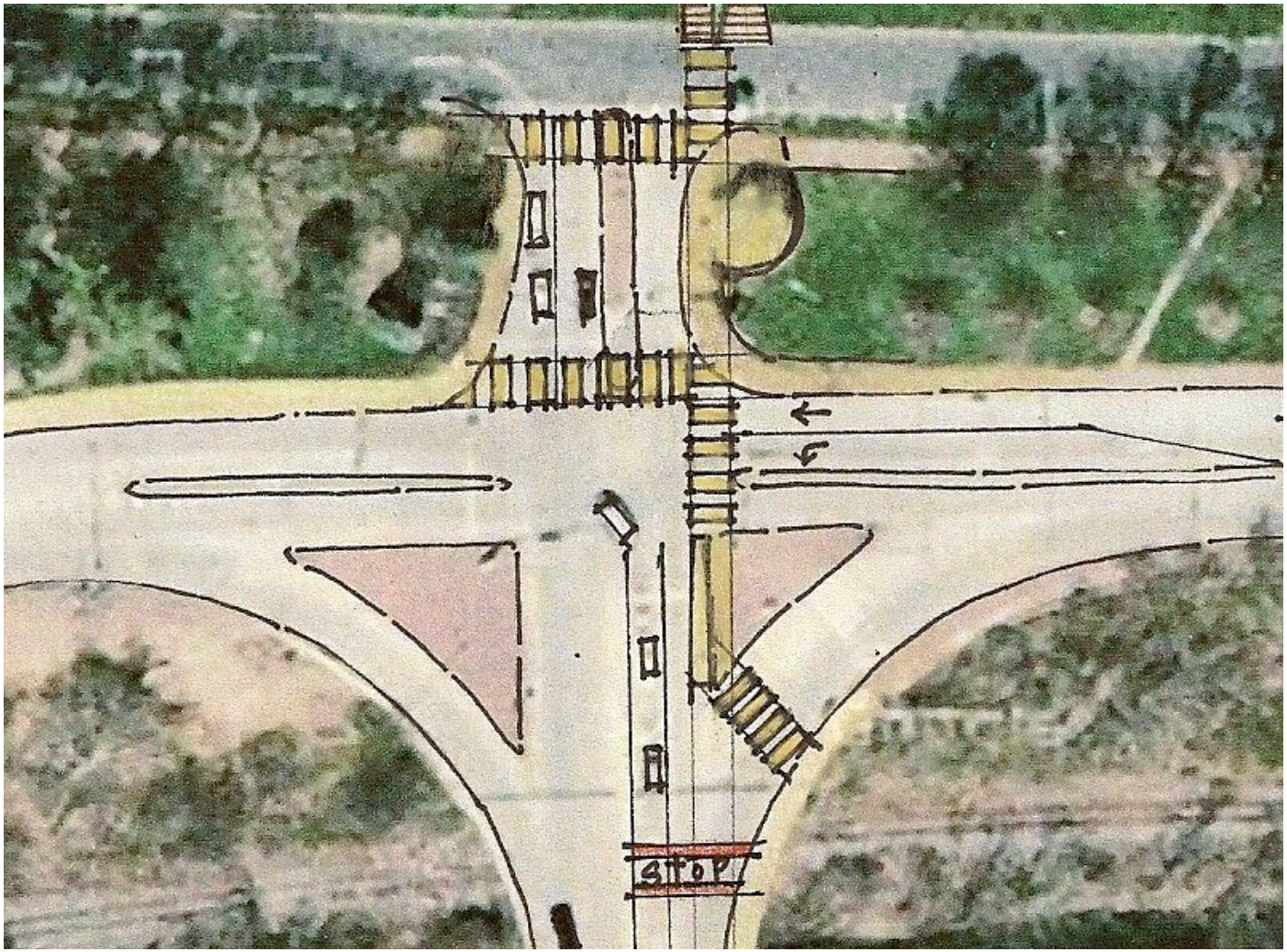
Inviting pedestrians across the Lehigh River on foot is a key to the walkability of downtown and the success of the South Side. Right now, both the north and south access points to the bridge present hazards and discomfort to pedestrians. Fixing these is a high priority item.

Right now, a highway-style right-hand-slip lane speeds cars around the corner, precisely where pedestrians are trying to cross.

The crosswalk is located where cars get little warning before encountering a pedestrian. For pedestrians crossing south to north, it is impossible to see if a car is about to turn the corner and hit you. This condition is exacerbated by cars travelling at high speeds due to the high-speed geometrics of the roadway.



The easy and obvious solution is to eliminate the right-hand-turn slip lane. Negotiations with the DOT should begin with that goal. The solution drawn here assumes failure, perhaps incorrectly.



But if the roadway *must* stay the same, it would make sense to move the crosswalk to where it is more visible, and to require drivers to stop before turning right. Note also how other missing crosswalks have been replaced.

But, eliminating the right-hand turn lane is worth a fight. Doing so will not increase congestion, it will simply slow traffic to reasonable speeds. The DOT must be obliged to explain why high speeds are appropriate to this location. If the only objection is cost, the problem can be temporarily solved with one Jersey barrier.

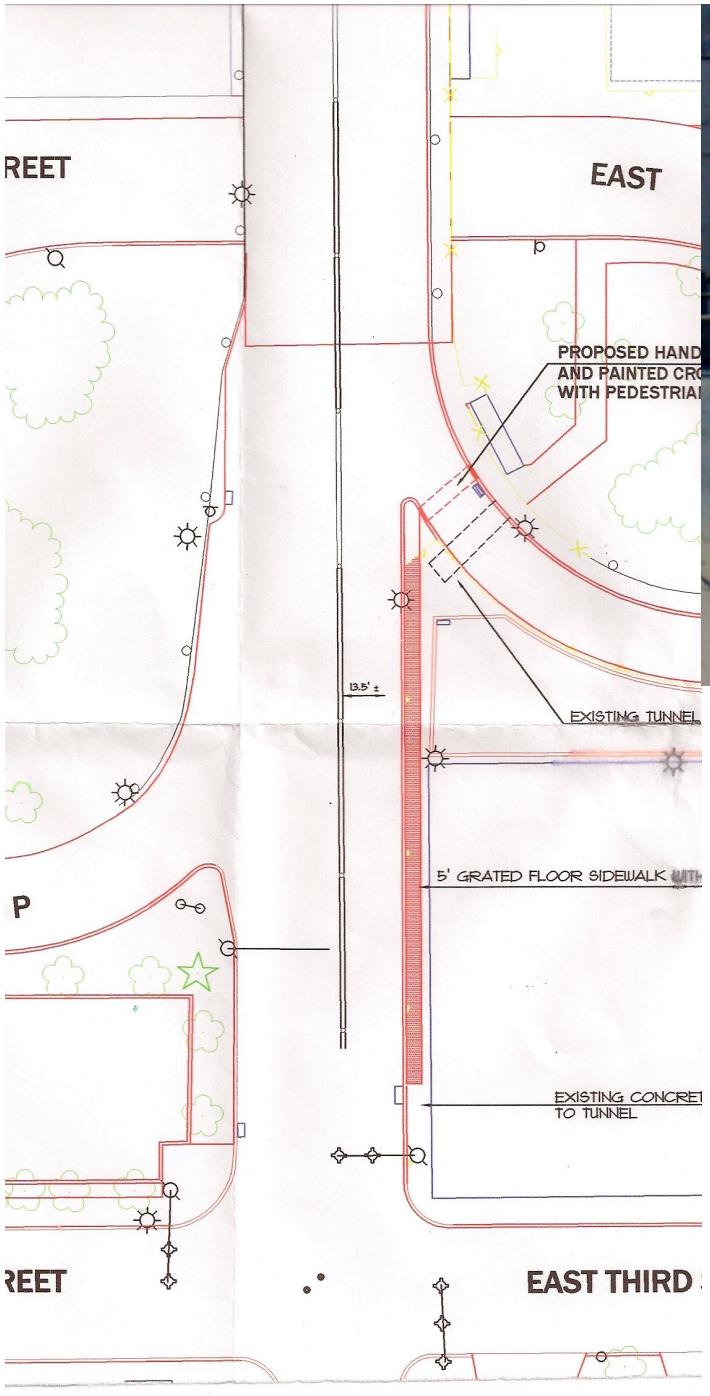
CONNECTIONS

This section will discuss the following locations:

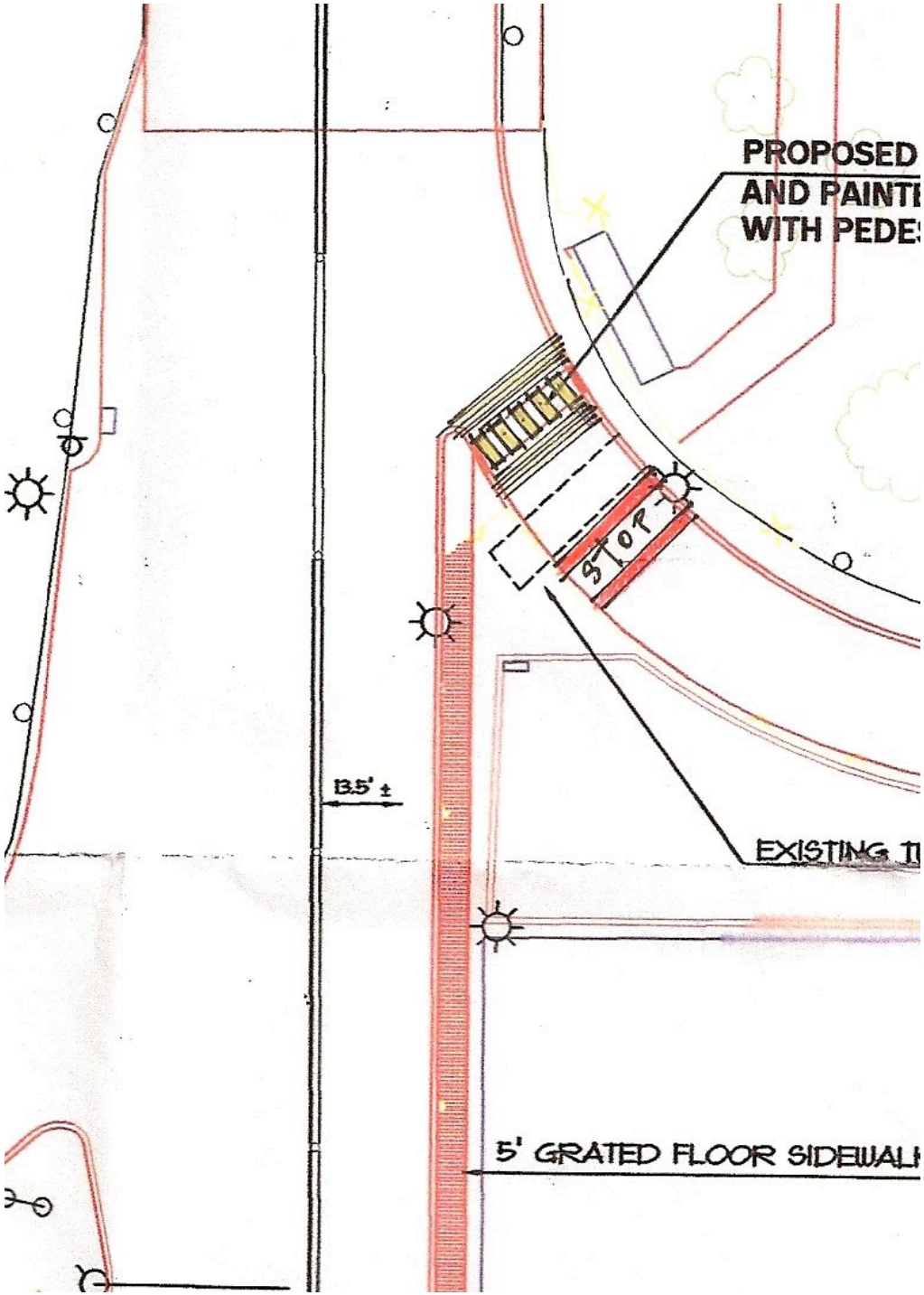
- The Broad Street Bridge;
- Fahy Bridge North; and
- Fahy Bridge South.

The southern entry to the bridge feels like a crime scene.

The graffiti doesn't help, but it is the experience of walking through a damp and shadowy tunnel that scares most people away. Pedestrian tunnels under roadways are a challenge in any city.



A proposal has already been made to replace the tunnel approach with a ramp alongside the bridge. This smart proposal was rejected by PennDOT because the curb was higher than allowed by code. It was deemed too expensive to rebuild the curb.



This revised design proposes that the curb be left where it is, but that a speed table be introduced to raise the street so that it is the proper distance below the curb. It also proposes a stop sign to further protect pedestrians at this tricky corner. It is important that both of the Fahy Bridge's pedestrian crossings be addressed in short order.

CITY-WIDE ISSUES

Part 4:

General Recommendations

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;
4. Dedicated Walk Signals;
5. Code Enforcement;
6. Bike Lanes; and
7. The Shuttle.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets

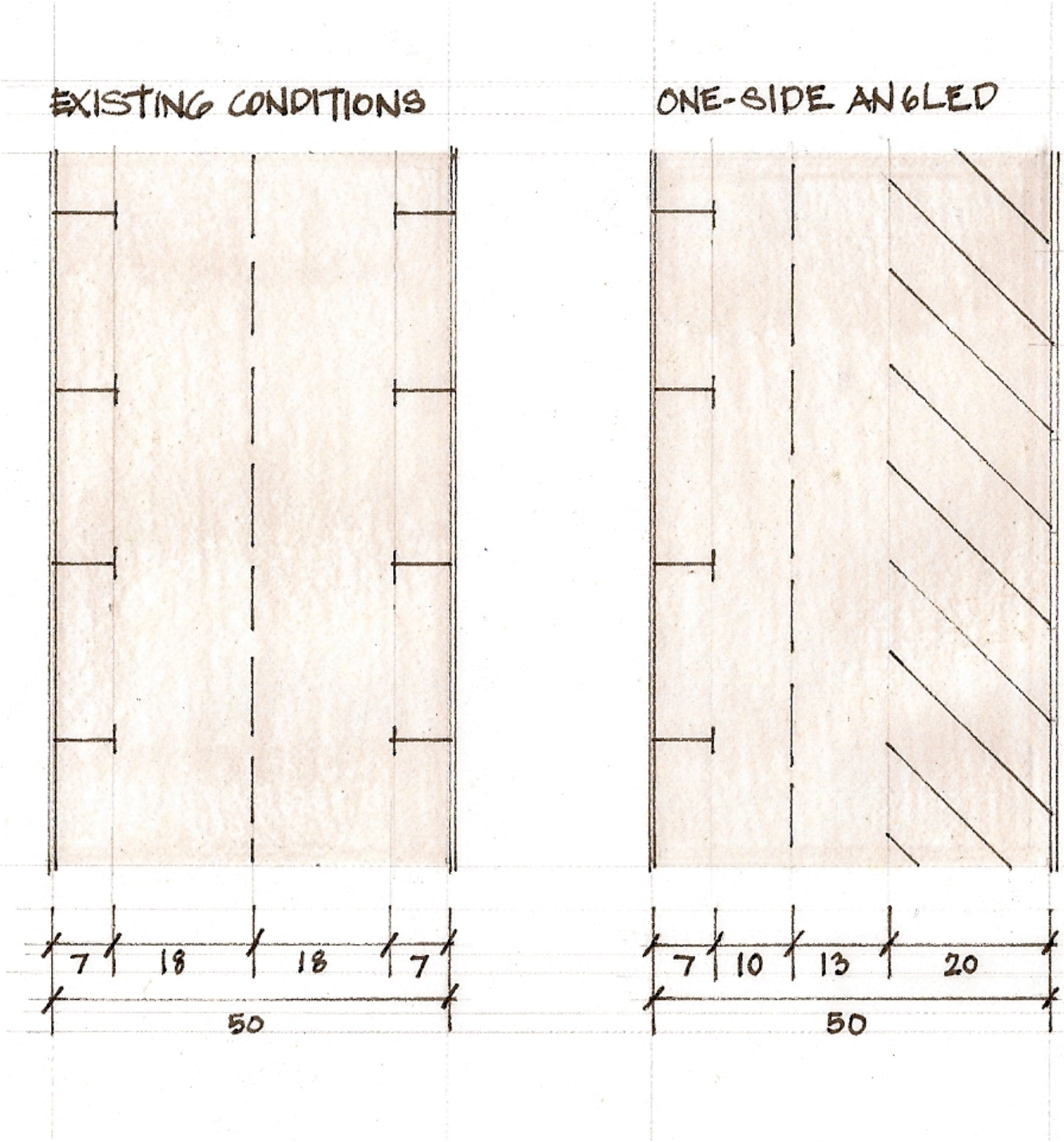
Unlike many cities that have widened their streets to speed traffic, most of Bethlehem's streets were simply built extremely wide, at a time when this was considered a desired luxury. Since moving curbs is expensive, few have been changed, and they exist in two conditions: striped with an extra lane in areas of more traffic, and un-striped in areas of less traffic. In places where cars are perceived as speeding, it makes sense to investigate ways to narrow the roadway to conventional size, through striping or other means. Narrowing streets may also make sense where tree cover is sorely lacking.

We must remember that a two-lane street (without center turn lanes) can easily handle 10,000 cars per day, and that volumes above that amount are rare in Bethlehem.

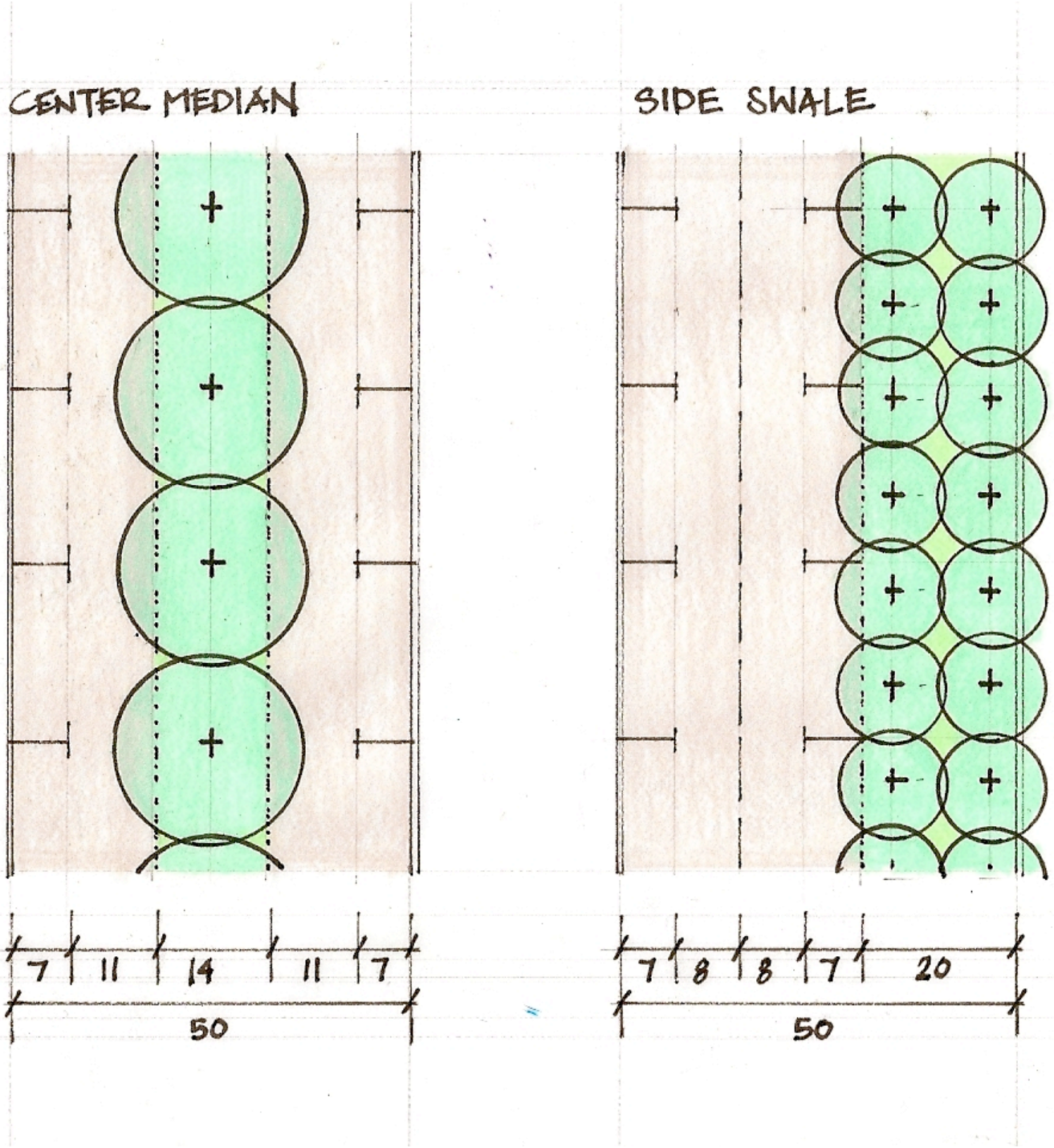
New Street as it approaches City Hall is one place where an excess width seems to encourage speeding. In one place, the extra lane serves a purpose, which is the queue for daily pickup from the day school. But this lineup only takes one block, so the rest of the street could receive angle parking on one side. This parking would take pressure off the parking garages, delaying new construction and saving money.

Market Street and High Street are two overly wide streets that are not striped. High street is about 50 feet wide and has trees. Market Street is about 55 feet wide and has almost no trees. Historically, residential streets with limited traffic and two-sided parallel parking tend to range from 26 to 36 feet wide, so there is plenty of extra pavement here.

Two levels of intervention are possible here. There is nothing cheaper than paint, and where there is strong demand for parking, a simple restriping to include angle parking would do wonders to slow traffic. However, in cases of limited parking demand, and especially where tree cover is lacking, the City should consider the possibility of digging up pavement and inserting rain gardens in the roadbed. The citizens of each over-wide street should be given the opportunity to collectively request these interventions, which reduce impervious surfaces and thus improve stormwater management.



This drawing shows how the extra width of a 50-foot street can be absorbed by angle parking. This solution is viable whether the street is currently un-striped, or striped with an extra lane.



Here are two solutions for rain gardens, with the latter allowing a larger green area. Notice the narrower lane widths, which correspond to “slow flow” geometries.

Rain gardens are produced by tearing up the pavement, reconstituting the soil underneath, and planting native permeable groundcovers and trees. They are given gapped curbs—or no curbs—so that surface water may flow directly into them for treatment. They are particularly useful as planters for trees in streets that are blighted by a lack of tree cover. Bethlehem has made great gains in tree planting in recent years, but a full understanding of the economics of urban forestry would suggest that a greater investment is warranted, including the cost of building rain gardens.

In addition to protecting the pedestrian from traffic and better shaping the street space, studies show that continuous street trees provide the following benefits:

- absorption of the first 30% of most precipitation, reducing storm-water runoff.
- 5 to 15 degrees local sidewalk heat reduction.
- 4 to 7 degree reduction in overall summer urban temperature.
- UV protection.
- significant absorption of tailpipe emissions.
- significant reduction in ozone.
- $15 - 25,000 increase in home or business value.
- 12% higher income streams to businesses.
- 40% to 60% lengthening of pavement life.

According to Dan Burden of Glatting Jackson:
“For planting costs of $250-$600 (includes first 3 years of maintenance) a single street tree returns over $90,000 of direct benefits (not including aesthetic, social and natural) in the lifetime of the tree.”

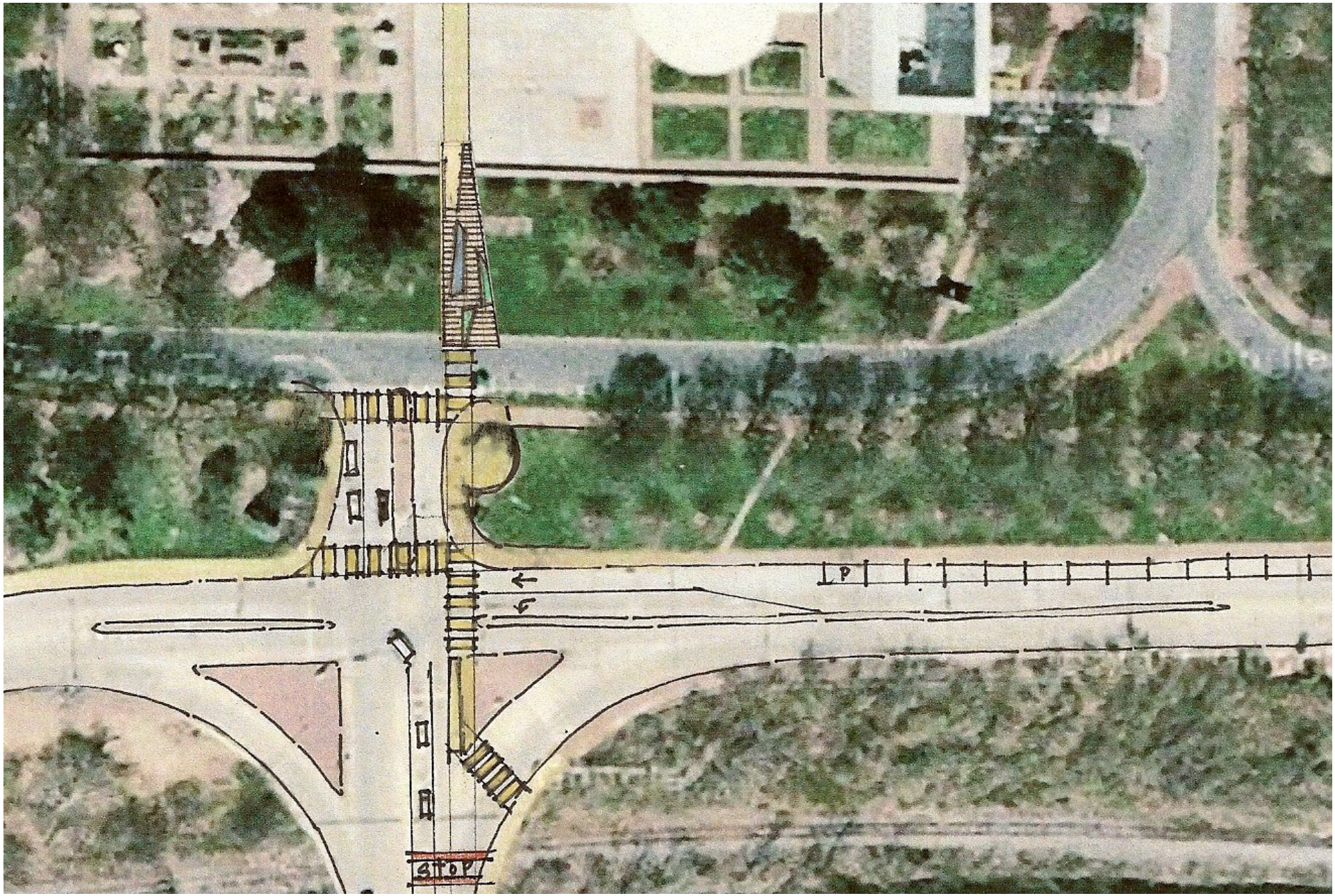
Even if that estimate is off by a factor of ten, it is high enough to justify the reconstruction of places like High Street.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;

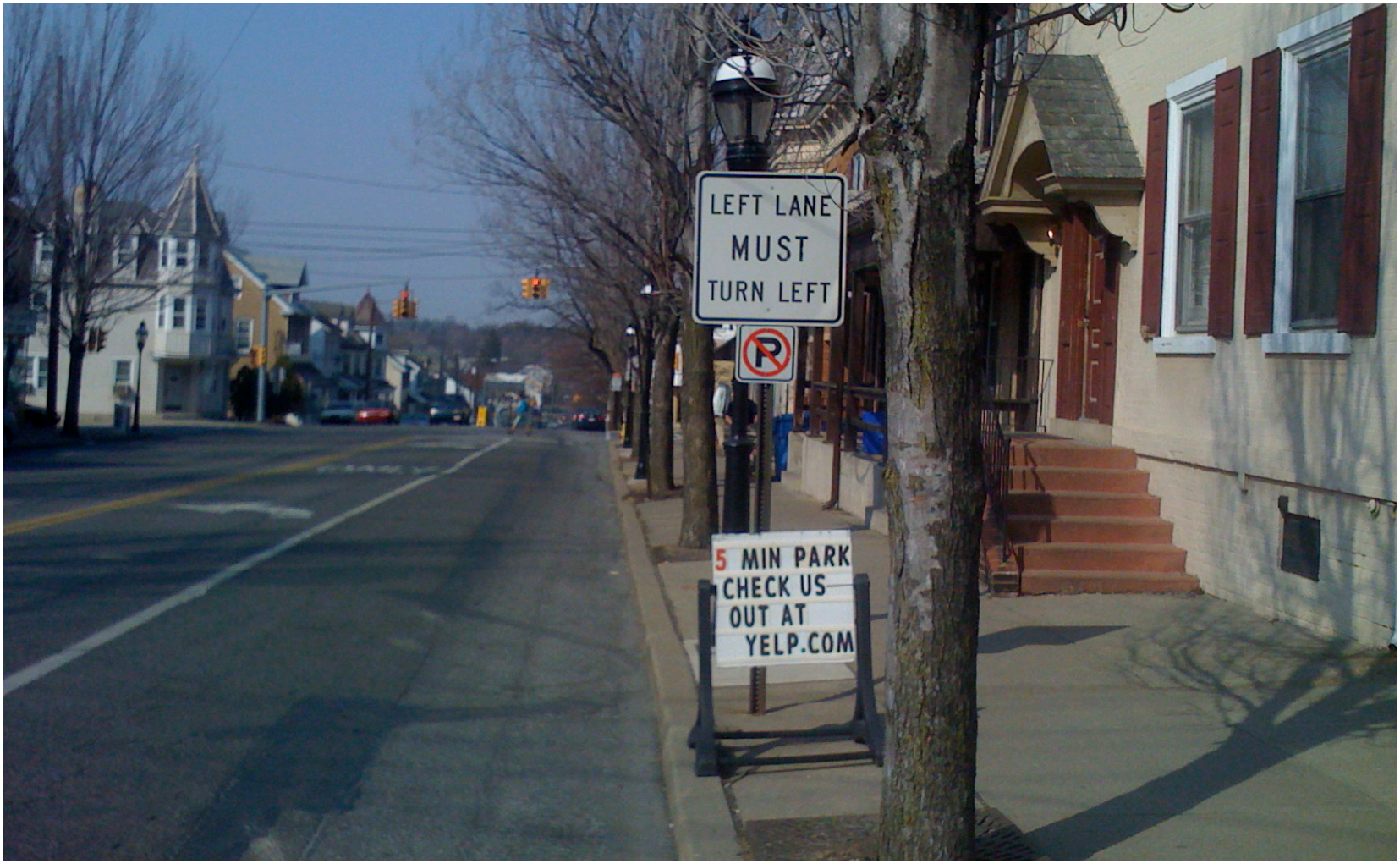
PennDOT is not the only one to blame for Bethlehem's collection of over-long left-hand-turn lanes. Most of them are controlled not by the State, but by the City.

Lehigh Street, for example, has a left-hand-turn lane that is even longer than the one on Wyandotte. Shown during rush hour at right, it seems to be about five times as long as it needs to be. Shortening it would allow for some much-needed parallel parking by City Hall.



. . . as shown here at right.

Left-hand turn lanes that are not justified by traffic volumes are the standard throughout downtown Bethlehem, resulting in sidewalks that are unprotected by parallel parking, and businesses that struggle to attract customers.



Here a business is forced to ask its patrons to park illegally. If a left-hand turn lane is needed at all—which seems doubtful—it can be much shorter. This problem can be fixed tomorrow with paint and meters.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;

Another easy paint fix—although bricks or elastomeric prints are better—is the downtown crosswalks that are simply missing, especially on the South Side. You don't need an out-of-town consultant to tell you that crossings are safer when then are marked. For crossings that are especially important or dangerous, vertical markers should also be considered.

. . . as can be seen here on Main Street.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;
4. Dedicated Walk Signals;

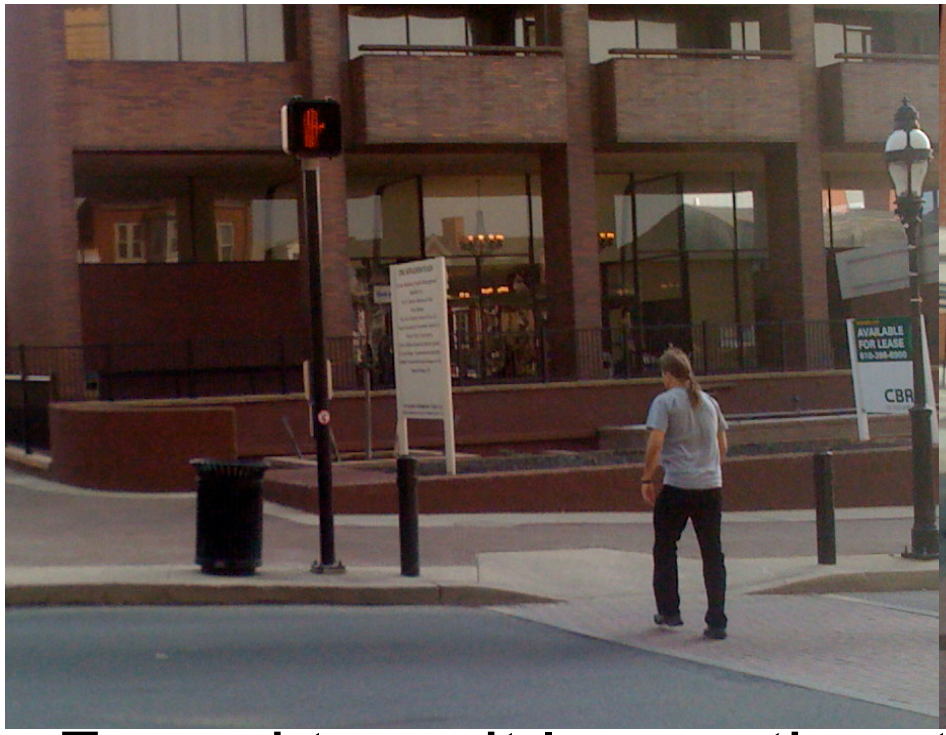
A traffic engineer was once presented with a great idea for improving pedestrian safety. His colleagues told him, “it’s really effective. It has been shown to work very well in practice.”

“That’s fine,” he responded. “But how does it work in theory?”

Dedicated Walk Signals are an idea that works well in theory. The pedestrian waits while traffic flows in both directions, and then is given an opportunity during the light cycle to cross the intersection in either direction. There is no risk of injury, since no cars are moving at that time.

The problem is that they don’t work in practice.

Most pedestrians' paths across the downtown are not due north or south but diagonal. With a standard signalization regime, they can usually keep moving at intersections by crossing in the direction allowed. But, whatever the direction of the walk, being forced to stand still for long waits is extremely frustrating.



Forced to wait longer than they are willing, many pedestrians simply jaywalk. These are two of many instances witnessed. The dedicated signal regime was instituted to protect pedestrians from drivers making turning motions. Most cities, like Chicago and Manhattan, make the drivers yield, not the pedestrians. Provided to protect pedestrians, the dedicated crossing signal implies that they are second-class citizens.

. . . as does the push-button walk signal (here at New and 3rd). These are only appropriate along broad surface highways. No real walking city has them in any significant number. They should be replaced by a standard signalization regime.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;
4. Dedicated Walk Signals;
5. Code Enforcement

Despite its lack of trees, High Street has no lack of attractive architecture and urban charm. . .until one reaches this spot.

While the awkwardness of the architecture gives new meaning to the term *historical fiction,* the real problem here is urban design. A house has been allowed to sit back from the established street-wall, and violate the safety of the sidewalk with the only driveway on the entire block.

Appropriately, the yellow tape suggests a crime scene. Any approvals process that would give this house a variance is simply broken. This case needs to be investigated so that similar errors are not allowed to further degrade the quality of your historic neighborhoods.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;
4. Dedicated Walk Signals;
5. Code Enforcement;
6. Bike Lanes

On a brighter note, the City is making great gains in installing bike facilities within the downtown. While dedicated 5-foot-wide bike lanes should be considered as a way to use up excess street width, the preferred alternative is the *shared travel lane* technique currently being implemented.

Wherever two lanes are present in the same direction, one of them should receive this marking. It allows cars and bikes to mix in a way that slows cars down and lowers the risk to bikers of opening car doors.

SEVEN GENERAL RECOMMENDATIONS:

1. Overwide Streets;
2. Left-Hand Turn Lanes;
3. Missing Crosswalks;
4. Dedicated Walk Signals;
5. Code Enforcement;
6. Bike Lanes; and
7. The Shuttle.

This map shows the proposed path of the new shuttle that will connect the Sands property to the North Side, and conveniently provide another means of quick travel across the river. While this additional service is needed, it is worth asking whether these funds might better be spent on doubling the frequency of the F Bus.

The LANTA F bus currently connects the North Side to the South Side and runs too infrequently to serve its ridership well. To truly thrive, transit must arrive so frequently that riders need not consult a schedule before heading to the curb. Typically, this means headways of 15 minutes or less. The F Bus has a 30 minute headway, which is inadequate. It is worth investigating whether the money being spent on the shuttle is more than would be needed to double the frequency of the F Bus. Whatever the outcome, it should be acknowledged that the future success of the Lehigh Valley will be tied to transit, and the first step in that direction would be to guarantee that nobody ever has to wait more than fifteen minutes for a ride across the river.

CONCLUSION:

NEXT STEPS

This report contains page after page of specific recommendations for action by the City, business community, public institutions, and citizens of Bethlehem. Some are easily achieved, some harder. Some are cheap, some expensive. Some are likely to win public support, some not. While some of the hardest, most expensive, and least popular ideas may be the most beneficial, it makes sense to start by listing the easy wins. Many of these recommendations, such as changing street striping or signal timing, can be implemented at very low cost. Others, like improving access to the Fahy Bridge, have a limited cost but require mostly the will to negotiate with PennDOT. Finally, many recommendations concern the disposition of private property. For these sites, the City should

reprioritize its permitting and incentives process around the sites identified here as first- and second-priority development targets. Without making it harder to develop sites anywhere in the Bethlehem, the City should use all the tools at its disposal to make it easier to develop the sites that need it the most. This is not about spending more money, but rather about spending the same amount of money in a prioritized way. In the months and years that follow, Bethlehem will invest in pedestrian facilities, street improvements, parking structures, and even in the development of key private parcels. All cities do. This report asks not that those investments be made larger, but that they be directed in a way that makes the city more walkable, not less. The steps for doing so are clear.

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