

The Full Street-grid Solution

Review of the I-81 Project April 2019 DEIS Community Grid plan, and presenting an alternative plan

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This document begins with a critique of the NYSDOT I-81 Redevelopment Project April 2019 DEIS Community Grid (CG) plan. It then presents an alternative street-grid plan, which is an update and consolidation of a previously submitted street-grid plan, *Two Boulevards and a Bridge*, and its various addenda submitted over the past 5 years (See <https://arsteca.net/i81>).

A street-grid alternative to the I-81 viaduct rebuild was the “community alternative” option accepted into the I-81 Redevelopment Project. NYSDOT created a street-grid plan that, through subsequent community input and further analysis, became the current, NYSDOT named, “Community Grid” plan. The plan consists primarily of converting a 1.4 mile viaduct into an at-grade connected boulevard, retaining (or expanding) the limited access highway north and south of the viaduct, and adapting I-690 exits accordingly.

It is argued that since most of the highway infrastructure is retained, the CG plan is not truly a “street-grid alternative” but instead a “highway alternative” with a viaduct removal option. As such, it does not qualify as the requested “community alternative”: a street-grid option. It is further argued that all the limitations of the CG plan can be resolved by embracing the street-grid concept more completely by adopting a “full street-grid” solution, which would include transforming both northern and southern I-81 within the city into normal-size and well-connected city streets, and to upgrade parallel streets to create a truly distributed north/south path through the city. To that end, a “full street-grid plan” is presented and discussed in some detail. Included are a number of themes that arise from the plan: I-690 design; street upgrades; Canalway Park; Canal District; the importance of urban design and planning to foster development; and some urban design ideas.

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1 Overview

This report endorses a street-grid alternative replacement of I-81 through Syracuse. However, it finds several aspects of the current “Community Grid” plan flawed, and suggests an alternative street-grid plan to resolve those issues. The central issue is the failure to remove most of the highway infrastructure from the city. Which belies the “Community Grid” as a street-grid alternative. Although the South Side viaduct is removed and replaced with a boulevard, the highway south of the viaduct is retained; the North Side highway, with its multiple pairs of land-consuming ramps, is retained and further widened by one lane each way; only half of the downtown “spaghetti junction” to I-690 is removed. By retaining a limited access highway deep into the city from both north and south directions, traffic will continue to be funneled in a concentrated way into downtown as it is today—the cause of current congestion and blight. There are no design features to naturally disperse concentrated highway traffic closer to the city limits and well before it reaches downtown.

The I-81 Redevelopment Project’s “community alternative” proposal was to replace I-81 through the city with a street-grid solution. Removing the viaduct was only the highlighted talking-point. Just as big a prize is the removal of the “spaghetti junction” and the rest of the limited-access highway infrastructure within the city. NYSDOT agreed that a street-grid solution was a viable option; it accepted the option into the Project, and subsequently developed a provisional design. The first design did little more than lower the viaduct to grade for a short distance, then had it rise again to connect to I-690. This first design was strongly rejected by the community as simplistic, leaving so much opportunity on the table. Presumably, it was meant solely for scenario analysis, to show that even such a simplistic design was viable from a traffic engineering point of view. Fortunately, NYSDOT went on to develop a new design—accepting considerable input from the community—which it named the “Community Grid” (CG) plan. This current plan is a vast improvement from the previous one. However, it still has a long way to go to qualify as a true “street-grid” plan. The current CG plan is not truly a “street-grid alternative” but rather a “highway alternative” with a viaduct removal option. The only true street-grid plan worthy of the name is a “full street-grid” plan.

The suggested full street-grid plan presented below stretches from the city’s northern to southern border. It includes: highway-to-street transformations; designed-in traffic dispersal; various street extensions, reconnections, and upgrades; select intersection redesign; roundabouts; I-690 viaduct structure and junctions redesign; design and planning for future development; transit malls and pedestrian oriented ways; a viable “Canal District”; a new “Central/Canalway Park”; and suggestions for Syracuse Housing Authority South Side properties redevelopment.

It is important for NYSDOT, local government, and local residents to recognize that a thoughtfully realized street-grid plan is more of an urban design and planning effort than just a traffic engineering effort. And, in turn, urban design and planning has considerably to do with community preferences. Which is probably beyond the usual NYSDOT mandate and scope of work. Therefore, the community and the City should take the urban design and planning lead to inform and help guide NYSDOT to a final street-grid alternative plan, a \$2 billion project that can dramatically improve the future economic prosperity and cultural vitality of Syracuse—if done well.

Note: This document was written in substance and style to serve NYSDOT but also local residents as the intended audience.

2 Criticism of the Community Grid plan

Stated as concisely as possible. Please excuse the directness for the sake of brevity.

1. It is mostly a glorified 1.4 mile viaduct removal, with some other changes to accommodate the removal. It is not the removal of a highway from the city as the project’s “community alternative” intended. Most of the highway infrastructure remains:
 - a) South Side business loop BL-81 remains a limited access highway most of its length (from city limits to MLK Dr); if this section is not brought to grade and connected as a normal part of the street-grid, no future development along its length will be possible;
 - b) South Side BL-81 lacks street-grid connection at Colvin St and Brighton Ave; these two street are excellent and natural candidates for roundabout connections to the street-grid;
 - c) North Side BL-81 remains as a limited access highway and is further widened by one lane each way, which is contrary to the principle and design of a street-grid solution;
 - d) The multiple North Side BL-81 pairs of large land-consuming ramps remain (naturally), inhibiting development along the corridor;
 - e) High-speed ramps are retained for the North Side BL-81 and I-690 East junction; this is not needed nor required since BL-81 is not an Interstate.

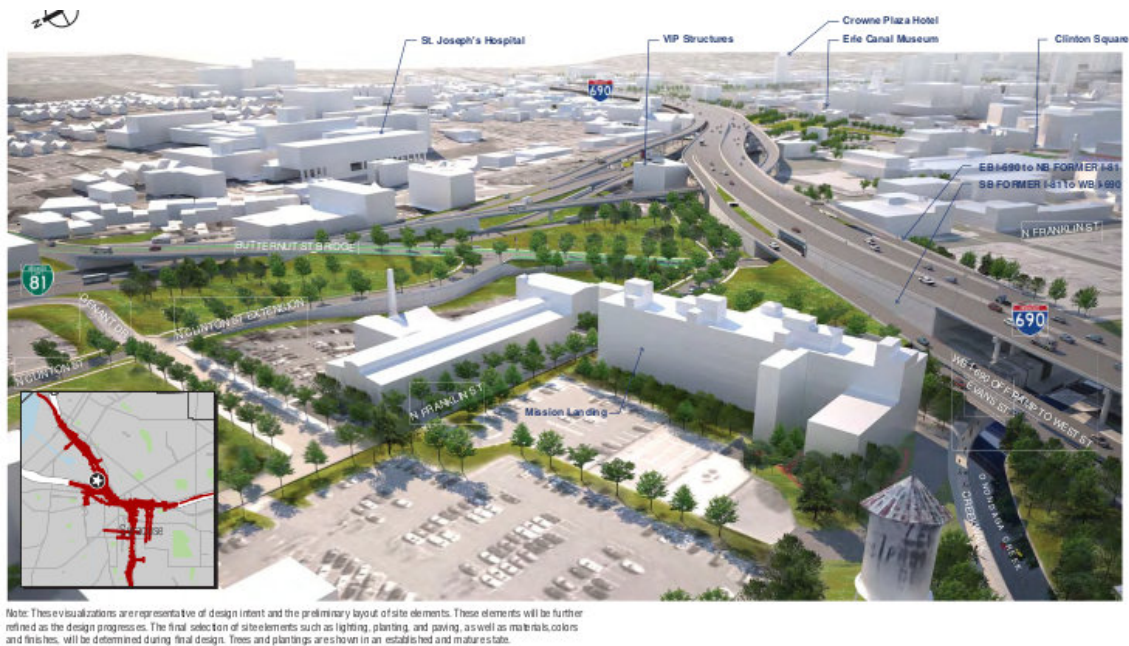


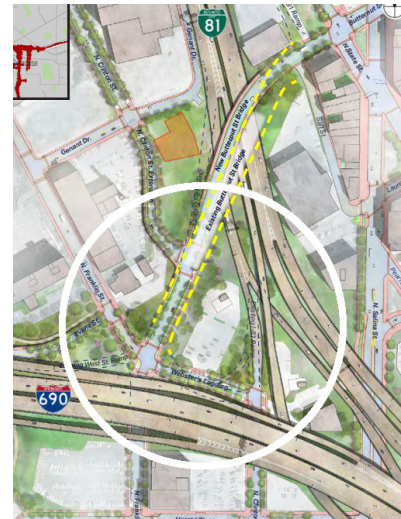
Figure 1: NYSDOT rendering: Franklin Square, looking southeast; a spaghetti junction remains, and it engulfs Webster’s Landing ever more; a high-speed junction for I-690 to BL-81 is not needed and undermines the street-grid concept—as does BL-81 itself.

2. The CG plan does not fundamentally alter the pattern of concentrated traffic into the city that I-81 creates today. Both north side and south side BL-81 will carry concentrated traffic all the way to downtown, like a car sewer, dumping traffic in a few locations, causing congestion both on the highway and on the street-grid near the on/off ramps. Converting just 1.4 miles of highway into a city street is not enough. A proper street-grid solution would begin dispersing traffic near the city limits.



3. In reference to NYSDOT terminology, the designated north/south path through the city should not be conceived as a “Business Loop” (higher-speed and more limited-access road) but as “business route” (normal speed, normally connected primary city street).
4. Butternut St bridge is retained with its long ramp aligned southward toward the Franklin Square intersection; this encumbers and precludes the area of Websters Landing from potential development. (See Section: 4.4.5)

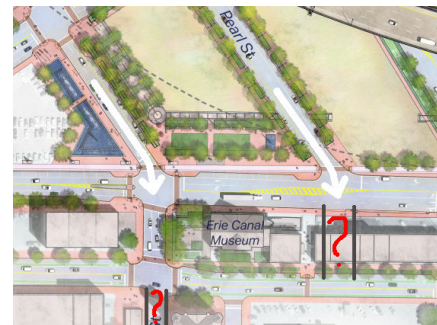
5. Franklin Square entrance (Webster’s Landing area) remains and is further engulfed in a slew of bridge and ramp roads, making it a pedestrian and development dead zone, and creates a blighted entrance to the Franklin Square neighborhood. (See Section: 4.4.6)



6. The I690/West St junction is wisely improved by replacing flyover ramps with underpass ramps; however, it may benefit even more by implementing a Fast Compact Urban Interchange (FCUI) which should provide greater traffic flow and be more attractive as well. (See Section: 4.5.1)

7. Evans St is/was wisely realigned to connect with the Franklin Square intersection; however, it fails to connect to the I-690/West St junction, which it could conveniently do if an FCUI is implemented. This would add a convenient north/south path for the Franklin Square area.

8. North Side BL-81 dumps and takes traffic to and from Erie Blvd via Oswego Blvd and Pearl St; since there are no usable streets directly across Erie Blvd from those two streets (only tiny 1-lane Montgomery St), traffic will have to jog east or west on Erie Blvd to find a street to continue south on; this means traffic will have to navigate two intersections on Erie Blvd in order to cross Erie Blvd. This will slow traffic and create unnecessary congestion.



9. The “Canal District” is a wise proposal; however, it cannot hope to succeed as an attractive and developable area if the large traffic of BL-81 on/off ramps (Pearl St, Oswego Blvd) cut through the zone; moreover, it must encompass a much larger area with more public spaces in order to successfully entice major new development (See Section: 4.6).



10. The lack of I-690 street connections between West St junction and the proposed Irving/Crouse Ave junction will cause significant I-690 traffic to overshoot their destination and have to double-back mostly along Erie Blvd, creating an unnecessary increase in traffic on Erie Blvd. A junction at Almond St should be included (See Section: 4.5.4).



11. Without an I-690 exit at Almond St, north/south downtown thru-traffic has no way to make use of I-690 as a land bridge to hop over downtown; it will have to use busy Erie Blvd or other less easily navigable downtown streets. There is a Clinton St --> I-690 --> Almond St alternative (See Section: 4.5.4).



12. It appears that Almond St is designed unnecessarily wide to consume the whole public Right Of Way (ROW) of I-81. Instead, it should be sized normally, with remaining space reserved for a new row of buildings along its west side (See Section: 4.5.6).

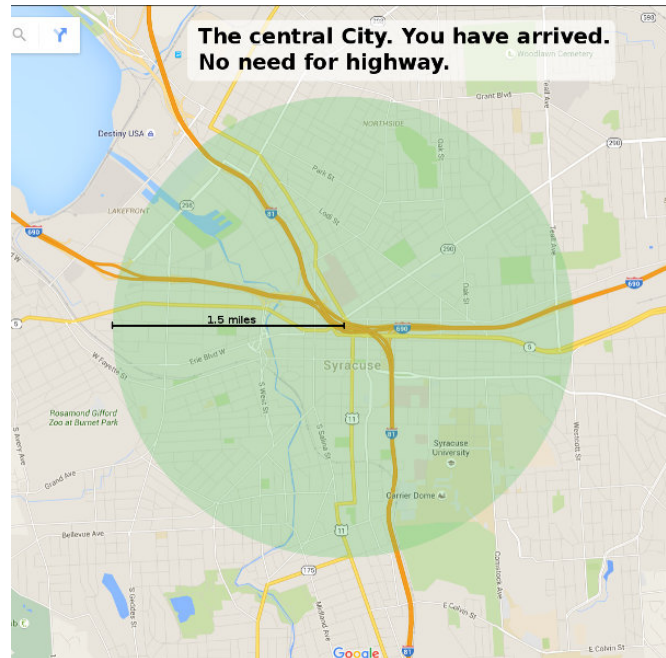
13. A Canalway Trail along Water St is misplaced. We have a great opportunity to create a touristically successful Canalway Trail through Syracuse. The trail should, for historical relevance, follow Erie Blvd through the middle of the “Canal District”, passing the Weighlock Building and the junction of the old Erie and Oswego Canals. Erie Blvd, broken at Clinton Square, is already unusable as a primary cross-town street; parallel streets should be upgraded. It is also redundant on the grid (having been a canal), cutting in half an already half-size block. It lends itself more naturally to being a mixed-use pedestrian oriented street, which will greatly enhance the Canalway Trail and “Canal District” (See Section: 4.6).



3 The need for a North Side street-grid solution

The CG plan includes—if imperfectly—a street-grid plan for the South Side (really just upper South Side). But it leaves—actually doubles down on—a highway solution for the North Side and lower South Side. Doing so keeps northerly traffic tightly concentrated all the way to downtown. Instead, multiple equally desirable traffic paths starting near the city limits should be designed-in to disperse traffic before it reaches downtown. Only a street-grid solution can resolve this issue. Creating one concentrated traffic path on the North Side precludes even the most ingenious South Side street-grid solution from working effectively because the distributed traffic paths on the South Side will lack their counterpart on the North Side to connect to.

The solution is to transform North Side I-81 into a connected normal-size city street, and to upgrade parallel streets to together absorb current I-81 traffic. This stretch of road, at 0–1.5 miles from the city-center, is already within the central city, where myriad destinations exist, and where today’s highway is backed-up and slower than city streets during rush hour, and where numerous parallel and underused city streets are available to move traffic in a distributed manner through the city.



All of the major flaws and limitations of the current CG plan can be resolved by creating a North Side street-grid solution to connect properly with the South Side. Following are some of the advantages of the North Side street-grid solution presented in this report:

1. Distributes North Side traffic to better connect to distributed South Side traffic.
2. Cleans up and simplifies the Onondaga Lake Pkwy, Park St, and I-81 little “spaghetti junction” and improves I-81N return path from Destiny Mall, Farmer’s Market, Transportation Center, and Ball Park by adding a new on-ramp that eliminates the need to use Hiawatha Blvd to get back on I-81N (See Section 4.3);
3. Initially splits traffic inherently between Park St, Salina St and Clinton St (path to I-690 E junction), then splitting further to Genant, State, Lodi and related streets (See Section 4.3);
4. Creates a new street “Oswego St” out of the I-81 ROW suitable to attract a new mixed-use developed neighborhood (See Section 4.4);
5. Eliminates the blight of ramp roads and re-aligns Butternut bridge to completely open-up the Webster’s Landing / Franklin Sq intersection to new development (See Section 4.4.6);

6. Upgrades multiple streets and intersections in the corridor zone, creating a more attractive environment and improved traffic for all residents at all times of day, not just for commuters at rush hour.
7. Creates new development opportunity for the several nearly dead streets to be upgraded (N Clinton St, upper Lodi St and State St), as well as for the whole Salina St to Inner Harbor zone due to increased traffic (exposure) and new public infrastructure planning and development (See Section 4.4).
8. Dramatically increases taxable land and property tax revenue from projected new development of the old I-81 ROW and nearby areas, roughly 100 acres plus nearby less developed land, and roughly \$4 Billion (city-wide) in new construction—assuming well-shepherded city-led design, planning, and infrastructure development. That is in addition to \$2 Billion in NYSDOT I-81 Project spending. (See Figure below)



Figure 2: Full street-grid solution: newly available taxable and developable land (darker) plus nearby land of increased development interest (lighter). Yellow hashed lines represent new, fixed, or extended streets.

4 A full street-grid solution

Following is a proposed full street-grid solution for Syracuse. There are several major and minor components to the design. It's important to understand how interconnected and interdependent they are. One should not reject individual parts without first understanding clearly how all parts function as a whole.

It's important to understand that any street-grid transformation plan is inherently more an urban design and planning effort—economic development/sustainability, public transit, community preferences—than just traffic engineering. Community input and municipal leadership in the project is crucial for its success. In fact, it is crucial that the City establish a fully capable urban design & planning office and lead that endeavor, providing NYSDOT with all the plans and preferences that go beyond the usual scope of the NYSDOT mandate of traffic engineering. Such office should be created with the intent of making it permanent. It is the norm in cities outside the USA, and will be intensely needed here for the next foreseeable 10-20 years.

The plan is necessarily not complete in all the details. There are more bits and pieces to add, more streets and intersections to redesign. But it is amply comprehensive in design and analysis to be a good starting point and guide for a final community developed plan. All parts merit more thought from more minds. And, as previously indicated, several design elements are less about technical traffic engineering constraints and more about urban design and development preferences, which should ultimately be determined by the community.

The focus of the plan is to show the viability and greater potential of a full street-grid solution over the CG partial street-grid solution; to describe the necessary changes to the core infrastructure components proposed by NYSDOT to make it work; and to convey some urban design themes (opportunities) that gracefully arise from a full street-grid solution.

Since no other alternative street-grid plans have been presented so far, I encourage local government, residents and NYSDOT to use this plan as a starting point for discussion; to modify it and improve it into a complete and detailed plan. If something is found that doesn't seem to work, don't discard it; think of how to adjust it while still preserving its original virtues.

The major parts of the plan are presented as much as possible in an order such that each part can be described more concisely and understood more easily based on the content and context of the preceding parts—thus avoiding unnecessary repetition. But, this means it's important to read the document serially rather than jump around, otherwise one may miss important context and misunderstand some parts.

4.1 I-690 viaduct visual redesign

Since I-690 is scheduled to be rebuilt from Leavenworth Ave to Beech St due to the radical restructuring of the junctions in the area, it is appropriate to consider the structure and design options for the new I-690 viaduct. How tall should it be? Should it rest on a mound, on columns, or float in the air like a suspension bridge? Should the aesthetic design be ultra modern or more traditional? How can we make the space underneath usable? I see two main viaduct design types:

1. **Streetscape Integrated** – For example, build a traditional style archway viaduct along viable sections (if not all) of the viaduct designed specifically to house shops in each archway, thus transforming a potentially ugly viaduct into an attractive, integral, and functional part of the streetscape. The shop spaces could be marketed primarily to artists, art dealers, restorers, clothing, shoe, leather boutiques, jewelers, small office, cafes, restaurants, thus creating a theme relating generally to the arts. The path could be called the “Viaduct of the Arts”, similar to the successful “Viaduc des Arts” in Paris. See <http://www.leviaducdesarts.com/en/>



Figure 3: Viaduc des Arts (Viaduct of the Arts). Exterior and interior scenes of shops built into the archways of a railroad viaduct along Avenue Daumesnil, Paris, France



Figure 4: Example I-690 archway viaduct (1) looking east along re-established Canal St from corner of State St; and (2) looking north across the new Canalway Park (State St and “Erie Way”), an area previously under the spaghetti junction. Each archway would be 30-35ft wide.

2. **Iconic** – For example, build part of I-690 as a land bridge between Clinton St and Almond St junctions. It could be a modern and architecturally iconic cable-stay bridge, a piece of architecture that Syracuse will forever in the future be recognized by. This option could also work as a section of the “Viaduct of the Arts” option.



Figure 5: Example I-690 iconic land bridge, a section of I-690 that would span between Clinton St and Almond St junctions; north/south traffic could use it to hop over downtown when connecting between the northern and southern “business route” (See Section: 4.5.3).

I-690 should be slimmed down, especially along the berm of the old train station. It would create space to re-establish Canal St and extend it to State St (as it once was), which would serve primarily as a rear drive to the projected new mixed-use buildings along Erie Blvd (See Section: 4.6.2). It would create new developable land along Burnet Ave, and provide a more attractive streetscape.

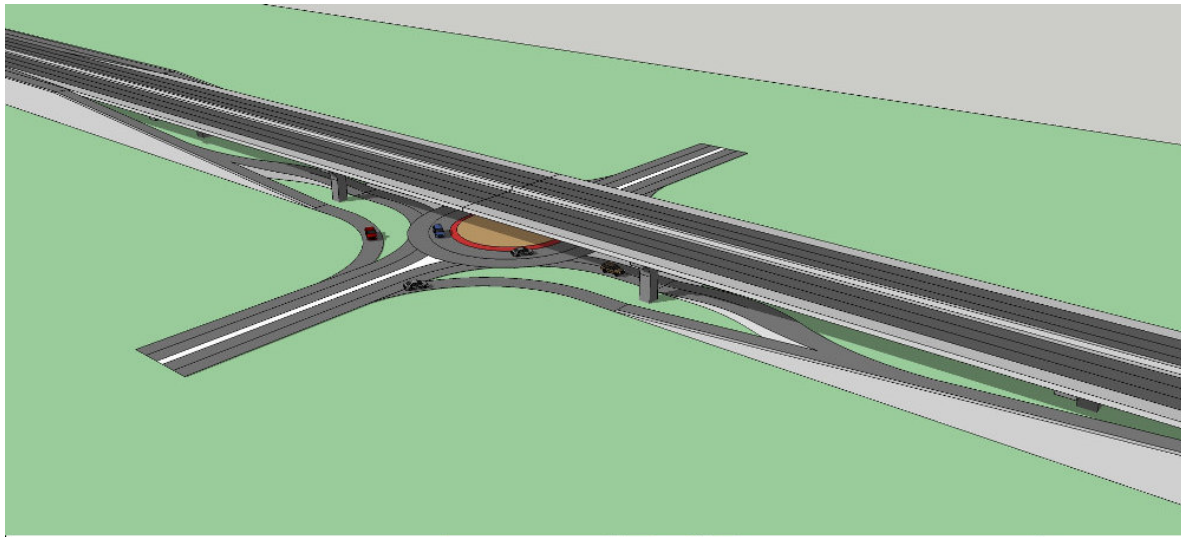
There will be considerably less traffic along the downtown stretch of I-690 when I-81 is removed as a destination. In its place, there will be multiple and more direct paths of equal desirability to reach points along or near the new Almond St (old I-81S), and new “Oswego St” (old I-81N). The planned half-junction at Clinton St (see Section: 4.5.3) and half-junction at Crouse Ave (See Section: 4.5.5) will further reduce I-690 traffic between Clinton St and Crouse Ave.

Therefore, strong consideration should be given to rebuilding I-690 with two rather than three travel lanes. Two travel lanes plus ramp lanes may well be sufficient even without the reduced traffic. It is rarely the lack of travel lanes that causes back-ups on a highway; it is (its namesake) “backed-up” ramp lanes due to inefficient exit intersections with the local street. That is the source of highway congestion in Syracuse, and that is where corrections should be made (See Section: 4.1.1). In any case, this street-grid plan, as proposed, will work with either 2 or 3 I-690 travel lanes. Still, the 2-lane option would greatly reduce the cost to rebuild I-690, as well as the cost of an iconic bridge option.

4.1.1 I-690 junctions: Fast Compact Urban Interchange (FCUI)

Since I-690 will be rebuilt, we have the opportunity to implement new highway-to-street junction designs. Thorough consideration should be given to a new junction design, the *Fast Compact Urban Interchange* (FCUI).

An FCUI brings onramps and offramps together to form a simple 4-leg roundabout junction. The rationale for using a roundabout at a highway-to-street junction is that it can provide close to double the traffic flow rate compared to a traditional *diamond junction* with traffic lights—given the same number of lanes. If optional slip lanes are added, flow capacity will increase substantially more. All this within an equal or smaller footprint than a *diamond junction*.



Fast Compact Urban Interchange

Uses a roundabout for continuous and high volume flow. Slip lanes optional.

Designed for the I-81 Redevelopment Project.

Applicable to:
 I-690 at West St
 I-690 at Clinton St
 I-690 at Almond St
 I-690 at Crouse Ave
 I-690 at Teall Ave
 I-481 at Genesee St

By Carlo Moneti, June 2016

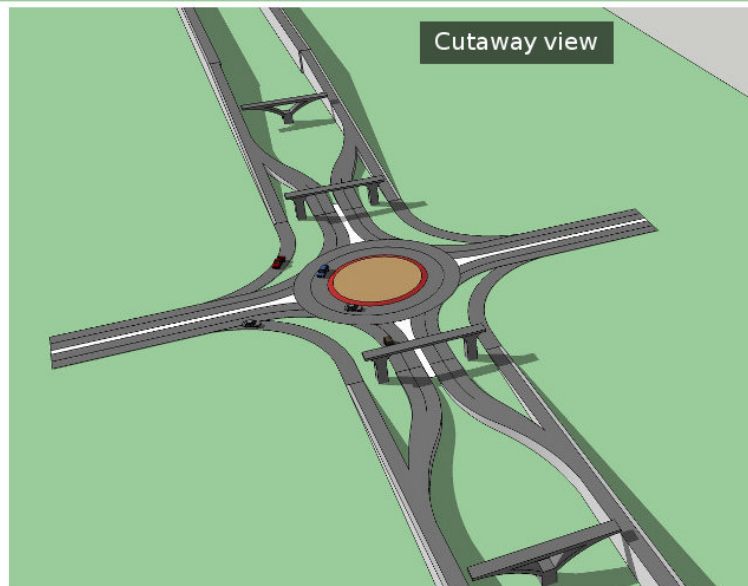


Figure 6: *Fast Compact Urban Interchange* (FCUI); provides smoother and greater traffic flow capacity while being more compact compared to the typical *diamond junction*. Although a longer bridge span makes it a bit more expensive, the greatly improved flow rate makes it much more cost-effective.

The weak link in traffic flow is rarely the number of travel lanes but the efficiency of intersections. Rush hour highway back-ups are rarely due to insufficient number of travel lanes; they are due to off-ramp traffic backing up at the intersection with the local street. The typical *diamond junction* often does not provide the flow capacity needed at peak traffic times. Extending ramp lanes or adding travel lanes to the highway is expensive and only modestly helpful. It only takes one car jockeying for the exit to slow or stop a travel lane. It is better to address the cause at its root: low traffic flow rate at the intersection of exit ramp and local street—and at other nearby intersections.

In the U.S., roundabouts are often made excessively large, perhaps in the search for speed. However, in the urban context, limited by 30 mph streets, roundabouts with diameters of 100-120 ft (1 lane) or 130 ft to 150 ft (2 lanes) are more appropriate. Larger sizes will encourage excessive speeds and reduce safety.

Roundabouts achieve higher flow rates at lower speed by providing continuous flow. They also eliminate the added turn lanes needed at lighted intersections, making pedestrian crossings more narrow and comfortable, and are overall no bigger than such intersections. Conveniently, right-sized roundabouts help make FCUIs more compact than *diamond junctions* and fit more attractively within the urban streetscape.

4.2 The street-grid and roundabouts in general

The city's street-grid is arguably not especially well-designed. Shifted street-grid angles and misaligned streets may have been charming and not a traffic issue in the 1800s, but they cause large inefficiencies today. More recently, I-81 and I-690 were hacked through the city; many streets were physically severed and blocked as a result. But, perhaps more importantly, street development policy chose dependency on the highways (and the deformation of normal well-functioning streets to facilitate their use) at the expense of developing a well-formed network of primary streets.

A network of major primary streets connected to each other (preferably exclusively) by roundabouts would allow traffic on those streets to flow continuously and efficiently throughout the city while greatly reducing travel times. This would also greatly improve the travel times on the public transit system. In addition to developing a “**Primary Streets Grid**”, there are numerous intersections in the city that would benefit greatly by conversion to a roundabout or other redesign. Some examples are included later (See Sections: 4.4.7, 4.9).

There are many types of roundabouts in operation around the world. The following quite readable research article offers a concise overview of some less common (in the USA) roundabouts applicable to the city environment and to the I-81 Project; it covers the experience in Germany over the past 25 years: https://arsteca.net/i81/roundabouts_germany.pdf .

4.3 Northern highways transition to street-grid



Figure 7: A redesign of the confluence of Onondaga Lake Pkwy, Park St, and I-81: simplified roadways; improved inter-connectivity; the I-81S Exit 23 flyover ramp is kept; and a new return path to I-81N is created that avoids using Hiawatha Blvd, greatly reducing traffic load on that street. A single roundabout option at OLP/Park St/I-81 double roundabout should also be analyzed.

The little “spaghetti junction” consisting of Onondaga Lake Pkwy (OLP), Park St and the traffic lights and stop signs related to it is replaced by a simplified roadway that incorporates roundabouts to provide connectivity with efficient traffic flow. The I-81S Exit 23 flyover ramp is kept (since it is convenient and already built). However, the Exit now also forks to the intersection with Park St and OLP; it allows traffic to turn toward Liverpool for the first time; and it allows city-destined traffic a choice of paths into town according to their destination. The virtues of this early division of traffic will be shown in following sections.

In this plan, I-81 highway can be seen as terminating at two points: at upgraded Exit 23 (OLP and Park St) and at N Salina St (part of Exit 23 today). This design can only be properly understood in the context of the broader plan. OLP flows to an extended and upgraded N Clinton St. Since Clinton St will have easterly ramps to I-690 (See Section: 4.5.3), and there will be a full I-690 junction at Almond St (See Section: 4.5.4), all traffic destined toward the East Side of downtown or beyond will prefer to use Clinton St in order to then use I-690 as a “land bridge” to Almond St or beyond. This design automatically divides I-81 traffic in three (including Park St), initially. Which will then further divide among the several available and upgraded parallel streets which, in turn, will provide more direct routes to myriad destinations in the city.

4.3.1 Two boulevards and a bridge

The Clinton St \rightleftharpoons I-690 \rightleftharpoons Almond St land bridge also provides a speedy and easily navigable north/south path through the city, making it an ideal path for a designated Business Route, BR-81. (See Section 4.7)

4.3.2 Park St to I-81N onramp

A new I-81N onramp off of Park St provides a convenient return path for northerly traffic destined to the mall, Farmers Market, Transportation Center, and Ball Park. They will be able to access I-81 more directly, without having to use Hiawatha Blvd. This will reduce Hiawatha Blvd traffic substantially, perhaps 5,000-7,000 cars per day, and much more during special events. This would be a great improvement today, independent of any I-81 Project plans. (See Figure 4.3)

4.3.3 Destiny roundabout

A roundabout at Destiny Mall, connects the mall, OLP, Clinton St, and Lodi St and provides improved mall access to all northerly traffic regardless of origin (OLP, I-81, Park St) while also improving southerly access. It also creates an attractive entrance to Destiny Mall. (See Figure 4.3)

4.3.4 Hiawatha Blvd roundabouts

Roundabouts should be considered for Hiawatha Blvd at the N Salina St and the Park St intersections. The space is available and traffic flow would be significantly improved (See Figure 4.3).

4.4 North Side street-grid plan

4.4.1 North Side I-81 becomes “Oswego St”

Keeping this roadbed as a limited access highway will continue to create concentrated traffic all the way to downtown, the opposite of what an effective street-grid solution should do: begin to disperse traffic near the city limits so that it is well-distributed before reaching downtown.

Therefore, this limited access highway design should be replaced from Hiawatha Blvd to downtown by a normal-size (roughly 66-80ft ROW) street well connected to the street-grid. This will also eliminate the unnecessary, urban-inappropriate, and vast space-wasting highway ramp roads. The result will provide at least 100ft of developable land on both sides of the new street. Rezoning for mid-rise, mixed-use residential/commercial development, along with appropriate new public infrastructure investment (wide sidewalks, decorative streetlights, attractive intersections, buried utility wires, elegant bridges, etc) and city-driven planning and promotion, will create strong demand for development. This new neighborhood, along a pedestrian-active street, overlooking the Inner Harbor, will become one of the city’s most sought-after and premier addresses.

Oswego St is designed as a “slow” street (e.g., 2-lane plus center turn lane, with wide sidewalks), focused mostly on pedestrians and locally destined traffic. Consider adding a streetcar line to help develop the corridor into a “transit mall” and reinforce the intended people-oriented development of the street. As a normally connected street, thought should be given to converting some of the bridges over current I-81 into street intersections, or otherwise providing access to cross streets.



Figure 8: “Oswego St” at Spencer St bridge: as highway CG plan (left); as mixed-use residential commercial street (right, bottom), with Genant Dr retained for rear access to the new line of buildings.



Figure 9: North Side street-grid plan. Multiple new and upgrade streets will provide more than twice the travel lanes as I-81 (14 vs. 6); "Oswego St" becomes a new mid-rise, mixed-use residential/commercial transit mall (pedestrian and public transit oriented); Court St and Butternut St are re-aligned; Kirkpatrick St is reconnected to N Kirkpatrick St; and the broader area becomes vastly more desirable for development.

In the current design, Oswego St does not connect to the Destiny Mall roundabout (only an optional pedestrian/bike/streetcar path to Destiny Mall or Liverpool) in order to discourage northerly traffic from taking this route by default and, instead, to encourage the calmer street, more locally destined traffic design. However, an option to extend Oswego St to the roundabout should be investigated.

4.4.2 North Side traffic flow

Traffic from I-81, OLP, and Park St will initially each have fluid access to 7 primary streets (Clinton St, Genant Dr, Oswego St, Lodi St, Salina St, State St, and Park St) to travel toward downtown. Currently, some or parts of these streets are cut-off or lightly used (N Clinton St, Genant Dr, upper Lodi St, Park St, upper State St). Moreover, the combined number of travel lanes of these streets will be significantly more than the number of I-81 travel lanes (i.e., 14+ vs. 6). These major routes, plus branching streets, should absorb ex I-81 traffic comfortably (See Figure 9).

Clinton St becomes the North Side “Business Route”, BR-81 (See Section 4.7), a designated north/south route through the city easily navigable by non-residents. Genant Dr is preserved as a secondary road and to provide rear access to a new row of buildings along Oswego St. The following streets would be built, extended, or upgraded as follows (general suggestions):

- **New Oswego St** – 2-way, 2-lane with center turn lane; wide sidewalks; buried utility lines; re-zoned mixed-use, residential/commercial. Rebuild the roadbed perfectly level. from Erie Blvd to OLP, as it was during the canal days, just in case of future interest in re-opening the canal—you never know. And bury utilities away from the road center for the same reason.
- **Genant Dr** – Spanning Wolf St to Butternut St; 2-way, 2-lane; a secondary street, mostly serving local residents (as a rear drive to a new row of buildings along “Oswego St”).
- **N Clinton St** – Reconnect to S Clinton St; extend north to new roundabout by Destiny Mall; 2-way, 2-lane plus center turn lane; convert S Clinton St to 2-way.
- **Lodi St** – Extend north to roundabout by Destiny Mall; widen and upgrade to match southern Lodi St; 2-way, 2-lane plus center turn lane.
- **N State St** – Upgrade to match southern State St; 2-way, 2-lane plus center turn lane.
- **Catherine St** – Upgrade; new roundabout at Hawley Ave; 2-way up to Lodi St; re-conceive junction at Lodi St and Butternut St (possibly new roundabout).
- **N Salina St** – Currently in good condition; re-conceive intersections at State St / Butternut St for greater efficiency and to provide a attractive piazza-like environment (See Figure 4.4.7).
- **Park St** – West of Hiawatha Blvd: 2-4 lane, heavily revised (see Figure 4.3). East of Hiawatha Blvd: optional (TBD).

4.4.3 Re-align Court St bridge

Re-align Court St and the Court St bridge directly toward the Inner Harbor and extend Court St to Solar St. This will help form orderly city blocks in the undeveloped area (See Figure 9). This item has been adopted in the CG Plan.

4.4.4 Re-align and reconnect Kirkpatrick St

Re-align Kirkpatrick St along its old path to connect with N Kirkpatrick St. Given the relatively level grade and the conversion of I-81 into a regular city street (“Oswego St”), either a bridge over the street or a connection to it are options worth considering. There is no better occasion than this project to reconnect S Kirkpatrick St to N Kirkpatrick St (See Figure 9).

4.4.5 Re-align Butternut St bridge

In past CG proposals, rebuilding Butternut Bridge perpendicular to I-81 was deemed non-viable for lack of sufficient distance to terminate properly at Clinton St, especially with the planned widening of I-81. However, with I-81 replaced by a normal-size street, there will be no shortage of space.

By re-aligning Butternut Bridge, the Webster’s Landing / Franklin Square intersection area will be cleared of highway and bridge ramps, creating an open area suited for new development and a more attractive entrance to the Franklin Square neighborhood.



Figure 10: Butternut St Bridge: The CG proposal (left) keeps Webster’s Landing clogged with bridge and highway ramps. By building it straight across new and narrower “Oswego St” (right, bottom), Webster’s Landing is freed up for development.

Alternatively, replace the bridge with an intersection. Oswego St will need some of its bridges replaced by intersections (or other solutions) for proper street-grid connection. The grade appears favorable once the man-made bridge berm is removed—which will also improve the streetscape.

4.4.6 Webster’s Landing / Franklin Square Entrance

With the elimination of highway ramps and the re-alignment of Butternut Bridge, the area around the entrance to Franklin Square becomes desirable and available for new development, especially with infrastructure investment at the Franklin Square entrance intersection (Websters’s Landing).

A roundabout is placed here to provide an efficient and attractive entrance to Franklin Square. Evans St is re-aligned to connect to its west side. Laurel St, either as a vehicular or a pedestrian-only street, is extended to connect to its east side. At minimum, pedestrian access here would be convenient and appropriate. With wide sidewalks and new mixed-use development surrounding it, the roundabout would create a new piazza-like environment, a desirable addition to the Franklin Square neighborhood.

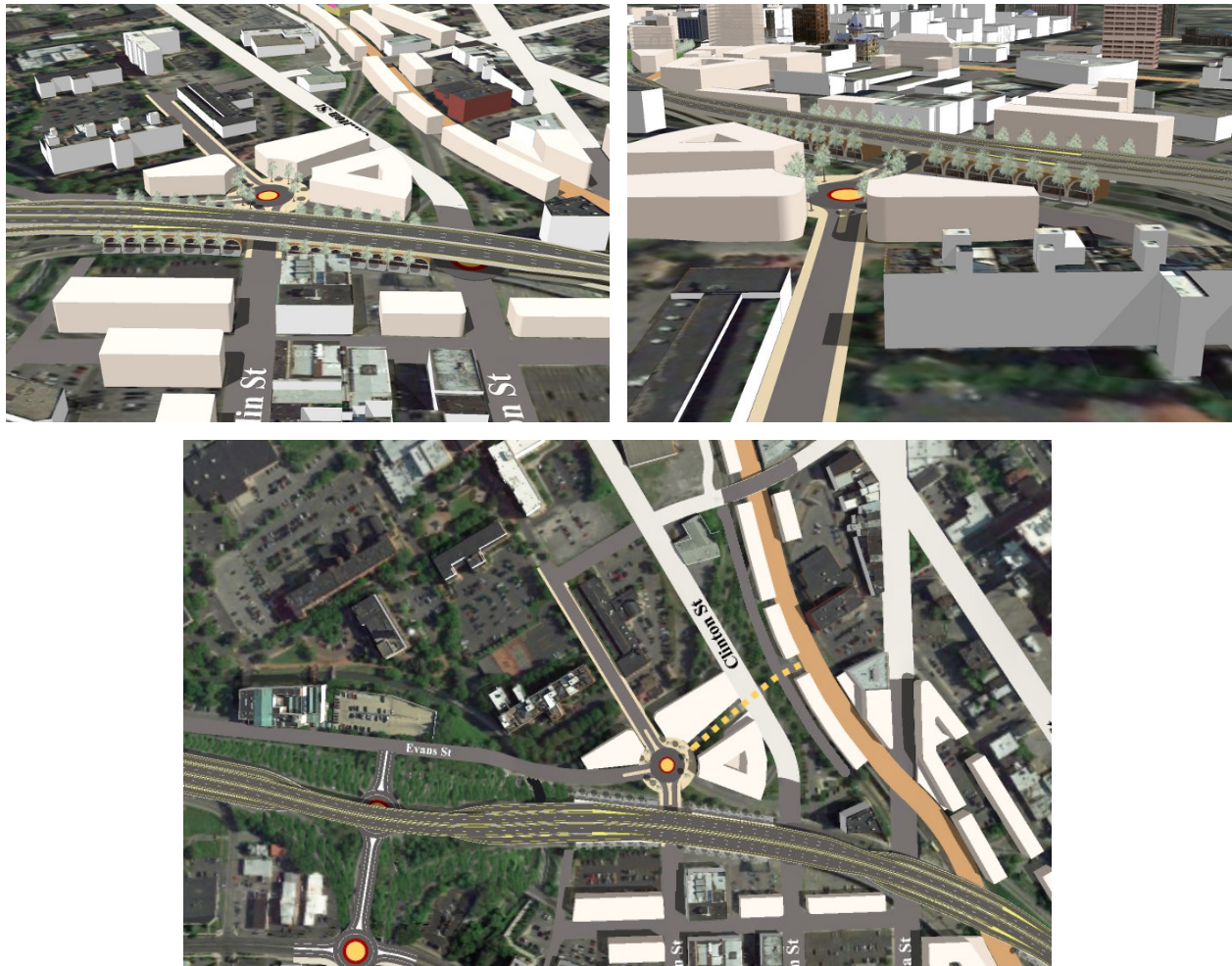


Figure 11: Websters Landing (rough renderings): New intersection and development after removal of highway and its ramps; dotted line indicates a pedestrian path.

4.4.7 Reconfigure Salina/State/Butternut St intersections

State St and Salina St are merged along one block, and a roundabout placed at each end. Thus, 5 intersections become 2 fluid ones, and a large amount of pedestrian space is created. The result is improved traffic flow with the bonus of a new piazza-like environment for the neighborhood.



Figure 12: Salina/State/Butternut St intersections reconfigured into a piazza-like environment.

4.5 Central street-grid plan

Without I-81 connections, I-690 is rebuilt slimmer and more attractive (See Section: 4.1). New FCUI type I-690 junctions (See Section: 4.1.1) are strategically placed to distribute traffic and create an efficient street-grid environment. The “spaghetti junction” area is opened to new development, including: Central/Canalway Park; Canal District; re-opened Canal St; Webster’s Landing development; and re-envisioned Erie Blvd. Several additional streets and intersections are revised accordingly (See Figure 13 overview below and following Sections).

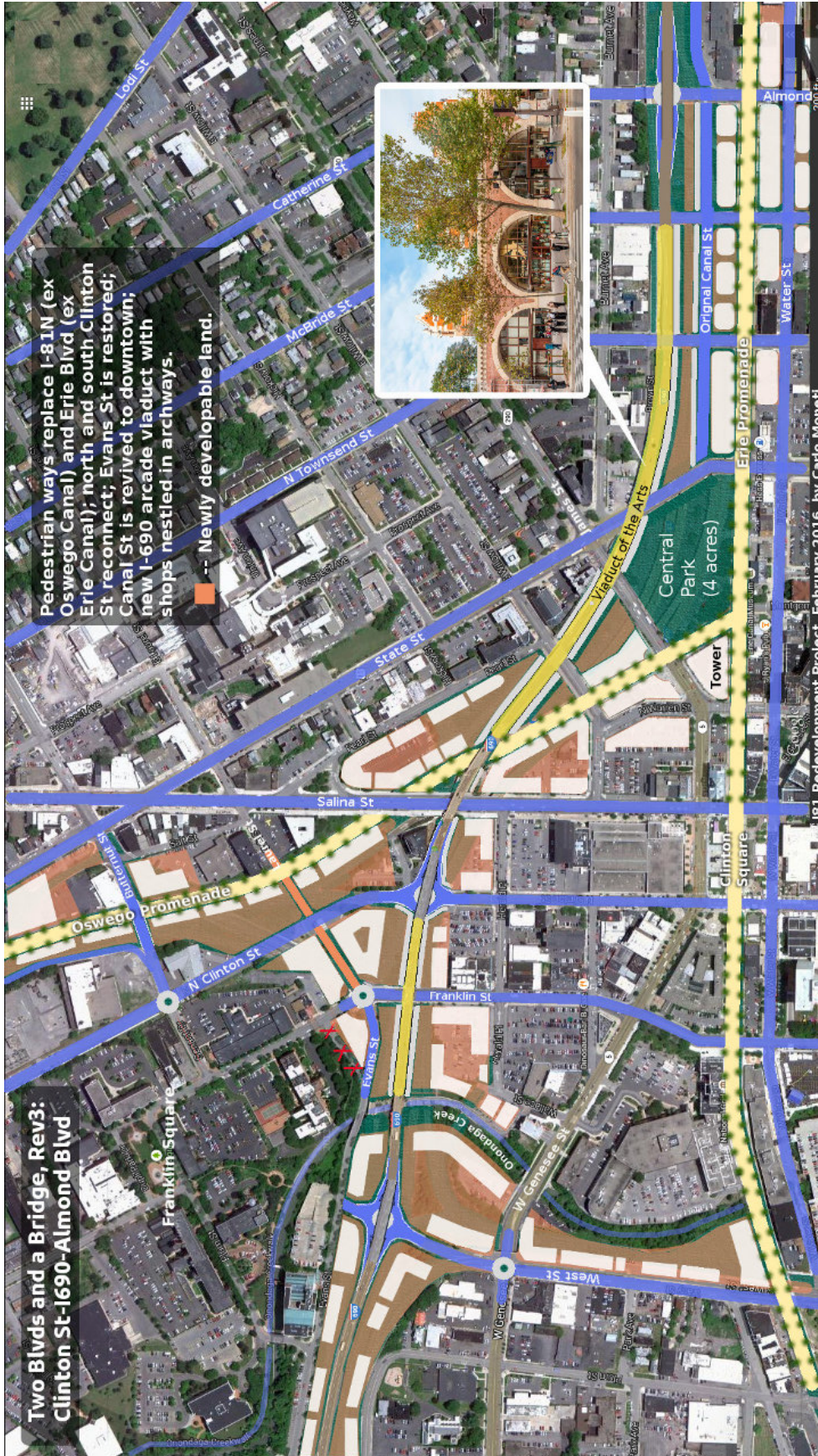


Figure 13: Central street-grid plan: I-690 connects at West St (full), Clinton St (half, easterly), Almond St (full), and Crouse Ave (half, easterly). This allows I-690 to function as a land bridge between Clinton St and Almond St for a speedy and simplified north/south route. Without I-81, I-690 can be rebuilt slimmer, which allows Canal St to be re-established. Erie Blvd and new “Oswego St” are envisioned as two-lane tree-lined streets featuring wide sidewalks and mixed-use residential/commercial development. The large 4 acre “Central Park” (or “Canalway Park”) can accommodate many features and uses. Old I-81 traffic is dispersed among numerous upgraded streets (in blue and yellow) as described previously.

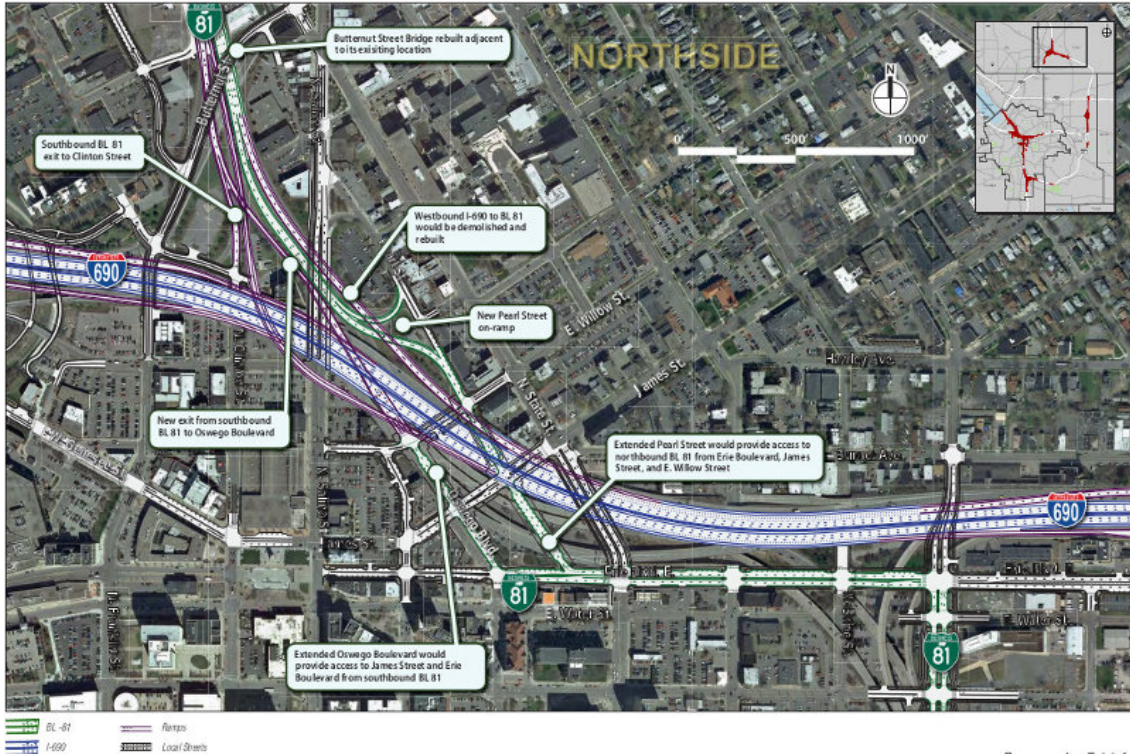


Figure 14: CG central plan: northern spaghetti junction remains; no North Side street-grid solution; no “land bridge” from North Side to Almond St; Erie Blvd will become congested, and “BL-81” Oswego Blvd and Pearl St ramps cut through the proposed “Canal District”, making the prospects of its successful development unrealistic.

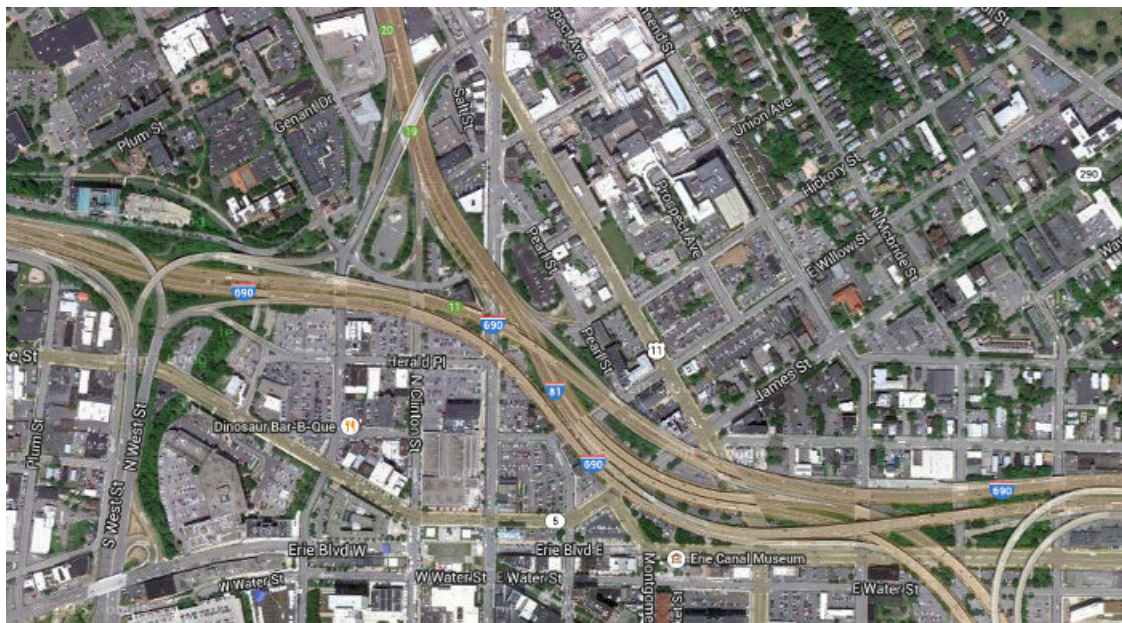


Figure 15: Downtown Today

4.5.1 West St / I690 junction

The CG proposal replaces the flyover ramps with at-grade ramps passing below the highway, plus a traffic light. This is a wise improvement—minus the traffic light. However, it may be further improved by connecting the ramps to a roundabout in the style of an FCUI (See Section: 4.1.1), which will eliminate the traffic light, and should together significantly increase traffic flow rates. This, in turn, may reduce the required length and width of the ramps.

The roundabout may be 130ft to 140ft (2-lane) in diameter. Consider also a *compact 2-lane* roundabout (one over-sized lane), which has a 2-lane entry and 1-lane exit. In the slower urban environment it allows greater “gap-filling”; left-vehicle naturally folds behind right-vehicle because it starts somewhat behind (no jockeying to pass); see [roundabouts_germany.pdf](#). The I-690 junction is gently shifted 50-100ft south to create comfortable space for a connection with Evans St.



Figure 16: West St / I690 junction (rough renderings): redesigned as an FCUI to eliminate traffic light, significantly increase traffic flow rate, and provide easy connection to Evans St. A roundabout added at West St / Genesee St junction (below) further improves traffic flow.

4.5.2 Connect Evans St to West St and to Franklin St roundabout

Extend West St north of I-690 to connect with Evans St. This will provide a convenient alternative north/south paths for the area—probably serving mostly neighborhood traffic (See Figure 16).

4.5.3 New Clinton St / I-690 half-junction

As described previously, N Clinton St is upgraded and extended north to a roundabout at Destiny Mall, and is also reconnected to S Clinton St. This will make Clinton St a new major north/south street to absorb part of old I-81 traffic. By placing an I-690 junction at Clinton St, all northerly traffic headed towards Almond St or further east will prefer Clinton St over Salina St and other streets, naturally dividing and dispersing traffic. It allows said traffic to skip over downtown by using I-690 as a “land bridge” from Clinton St to the Almond St junction (See Section: 4.5.4) or beyond. Which is the basis of the *Two Boulevards and a Bridge* theme of this plan.

Only a half-junction (easterly) at Clinton St is needed, which will accommodate the required distance between the Clinton St and West St ramps by foregoing westerly ramps. The junction should be a simple urban street-to-highway junction, an FCUI (See Section 4.1.1) and not a high-speed suburban-style connection.



Figure 17: I-690 FCUI half-junction at Clinton St; provides a speedy and easily navigable north/south path (I-690 “land bridge” over downtown to Almond St); the required distance between Clinton St and West St ramps is achieved by foregoing unneeded westerly ramps.

4.5.4 New Almond St / I-690 junction

The current CG plan eliminates I-690 junctions between West St all the way to the proposed new Irving/Crouse junction. It will cause a large amount of I-690 traffic to overshoot its destination and have to double-back mostly along Erie Blvd, to which it will add considerable traffic, undermine its development appeal and any prospect of a successful “Canal District”. Moreover, it lacks an Almond St junction required to complete the Clinton St <-> I-690 <-> Almond St “land bridge” over downtown, to provide a clear and speedy North/South path through the city.

Therefore, a full FCUI junction (See Section 4.1.1) at Almond St should be built. It completely resolves the above issues.



Figure 18: New Almond St / I690 junction; designed as an FCUI. The junction is crucial as part of a speedy and easily navigable north/south path through the city. Almond St area today (bottom).

4.5.5 New Crouse Ave / I-690 half-junction

The current CG plan proposes a full I-690 junction shared by Irving Ave and Crouse Ave. Since its western ramps would come too close to the previously proposed Almond St junction eastern ramps, the I-690 / Almond St junction was eliminated.

However, an Almond St junction is highly desirable (See Section: 4.5.4). And so is a junction at Crouse Ave to provide easterly traffic direct access to the east side of the central city, especially University Hill. All that is needed for this purpose is a Crouse Ave half-junction (westbound off, eastbound on). Making Crouse Ave a half-junction will provide the required distance between Almond St junction ramps and Crouse Ave junction ramps for the two to coexist. With this arrangement, westerly I-690 traffic will primarily use Almond St junction to access The Hill, and easterly traffic will primarily use Crouse Ave junction.

With Crouse Ave / I-690 junction serving only easterly traffic, Crouse Ave traffic will be less than CG plan projections. To what extent, if any, Irving Ave may be used integrally to support junction traffic is unclear (perhaps none in particular). However, Crouse Ave should be upgraded and made 2-way, perhaps all the way to Waverly Ave (TBD).



Figure 19: New I-690 half junction (easterly) at Crouse Ave (rough renderings); designed to coexist with Almond St full-junction; orange path is Erie Blvd as mixed-use residential/commercial pedestrian-friendly street; slimmed I-690 makes room to re-establish Canal St all the way to State St and provide rear access to a new row of buildings.

4.5.6 Almond St downtown

Almond St is upgraded to a normal-size primary street with two travel lanes each way plus a modest-width median (optional). Destined to be the future major mid-rise, mixed-use street of east downtown, it should have additional amenities such as wide sidewalks, bike lane, decorative lighting, buried utility cables, etc. It should align with the current east side of Almond St, leaving 80 to 90ft of space along the west side of the 200ft+ wide I-81 ROW for a new row of buildings.

To improve traffic flow as well as aesthetics, roundabouts are placed at Adams St, Harrison St, and Genesee St. Other primary streets (Fayette St, Washington St, Water St, “Erie Way”) need more study. Assuming a median, secondary streets would have right-turn access, and would use nearby roundabouts as natural U-turn locations when needed. Roundabouts provide pedestrian-friendly street crossings; they eliminate turning lanes, which shortens the crossing substantially. Specific street layout (number of travel lanes, median or center turn lane, parking, bike lane, sidewalk width, etc.) to be determined.

Given the area’s 30 mph speed limit, the roundabouts should be sized modestly for optimal flow, not high speed. If a modest-size roundabout is found to provide better flow than a lighted intersection alternative, then it is big enough. There appears to be abundant space for roundabouts up to 140ft+ diameter at Adams St, Harrison St, and Genesee St. 130–140ft roundabouts are projected.



Figure 20: New Almond St (rough renderings); proposed Nappi Wellness Center building (top right); new west-side building row (bottom). Actual street layout TBD.

4.5.7 West St

West St is rebuilt in the same general fashion as the new Almond St: normal-size, no more than two lanes each way, with wide sidewalks and other infrastructure to attract new mid-rise, mixed-use development. A roundabout should be strongly considered at Genesee St intersection.

The West St curve and split near Fayette St should be consolidated. It should pass east or west (straight) of the old Redhouse block, but not both. For a straight path, either the Redhouse block or roughly one bay (~16ft) of the white warehouse (WCNY) may need to be demolished. For the long-run, a central path with a roundabout at Fayette St is recommended. In all cases, rebuild the railroad bridge as necessary. **In fact, consider elevating the tracks from West St to Genesee St. It would facilitate natural pedestrian and vehicular pass-through and new development along Fayette St** (See Section 4.6.4).

The ramp connections to Erie Blvd are inappropriate for downtown and should be eliminated. Erie Blvd is not a good east/west arterial street (broken at Clinton Square) and so does not justify special access. In fact, the “Canal District” and Canalway Trail make its future better suited as a mixed-use local destination street. Three major concepts come to mind: 1) raise West St up to Erie Blvd grade for a normal intersection, likely a roundabout; 2) Leave grade as is, but remove the Erie Blvd ramps, and create indirect-only access via primarily Plum St; 3) Recommend (2) to facilitate a future option to re-establish the canal through Syracuse and further enhance the Canalway Trail economic potential (Syracuse is the only spot across the State that is blocking such a possibility).

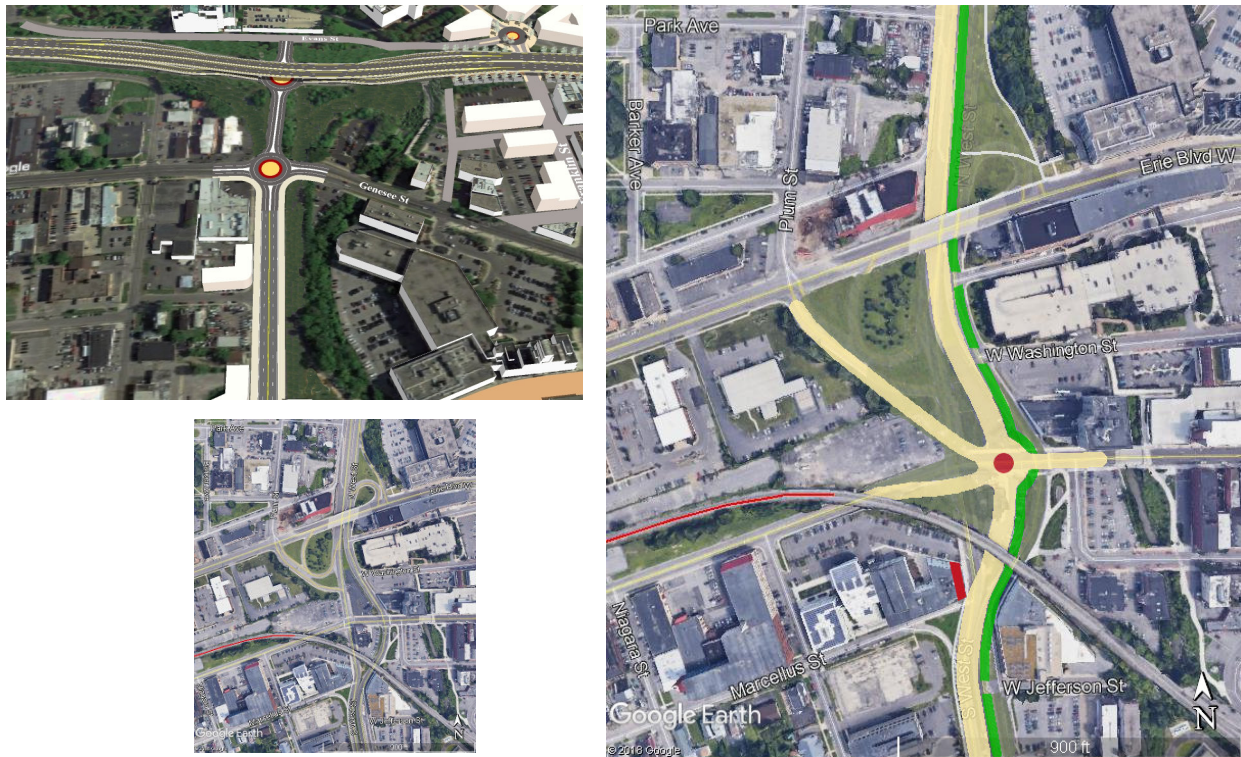


Figure 21: West St: roundabout at Genesee St; remove urban inappropriate ramps at Erie Blvd, and provide indirect access via Plum St; re-align Fayette St (remove split road) and add 5-leg roundabout, with Plum St extended to it (Redhouse block is demolished); Lower left is current state.

As West St is narrowed to normal-size, 4-lane street, plus on-street parking, up to 75 ft will be left over along most of the way. At a minimum, a wide ~30 ft strip on the east side can be transformed into a tree-line bike and pedestrian path that conveniently extends to the planned Creekwalk Park near the junction to I-690. It will make a nice pedestrian/bike connection between Armory Square, Canalway Trail, and Franklin Square. It could be further extended south of W Onondaga St to continue on a path near or along Onondaga creek (The Syracuse 1919 long-run development plan describes a north/south greenway along the Creek; the land is still open, and owned by the City).

4.5.8 Adams St and Harrison St

These streets, no-longer burdened to serve highway-generated concentrated traffic, should be re-structured as two-way, normal-size, wide sidewalk, pedestrian-friendly streets, designed to attract and support new mid-rise, mixed-use development.

Consider a two-lane street with center turn lane, on-street parking, plus restored wide sidewalk frontage to Central High School and along the whole downtown length. Consider closing the short section of Warren St between Central High and Billings Park (leave as bricked path for special purposes), and create a prominent roundabout at Adams St and Salina St and at Harrison St and Salina St.

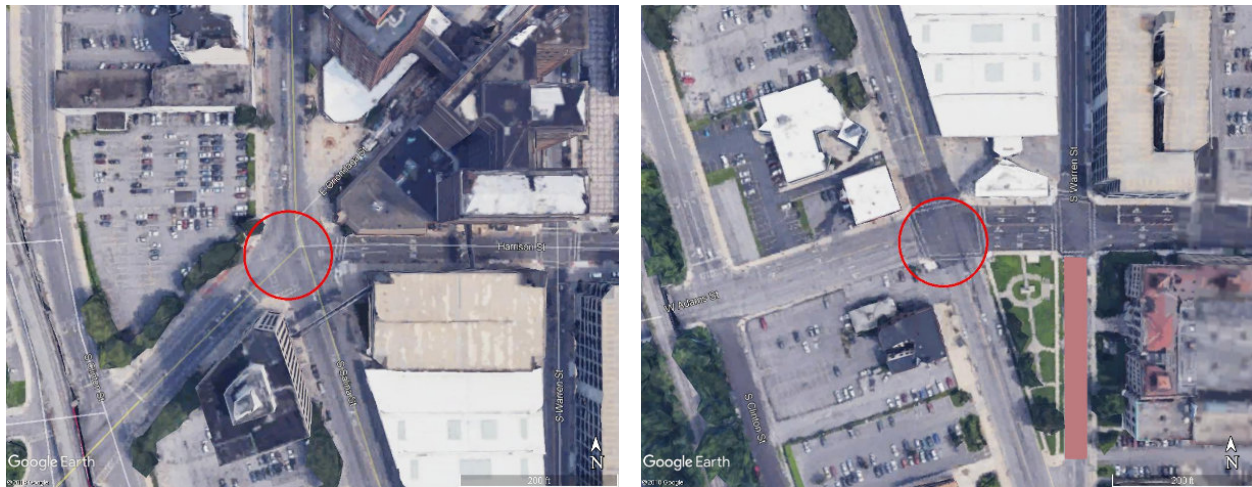


Figure 22: Roundabouts at Adams St and Harrison St; each projected with 125 ft diameter; each should improve traffic flow and greatly increase the aesthetics of the area.

As matter of general policy, City Planning should assure that new construction at these and other intersections allow sufficient space for possible future roundabout creation (e.g., Salt City Market Project: keep 10-20ft at corner free of construction).

Lastly, though it may sound harsh, the McKinney Manor block, a suburban-style sprawling low-rise residential development, wholly inappropriate at its downtown location along Adams St, should be demolished and replaced with new mid-rise, mixed-use development, with both subsidized and market-rate units. Though the block is fairly young and in apparently good condition, many more low-income families and the city itself will benefit more from redevelopment.

4.6 Canal District

The “Canal District” is a wise proposal. However, it cannot hope to succeed as an attractive and developable area if the large traffic of BL-81 on/off ramps (Pearl St, Oswego Blvd) cut through the zone. To be successful, the District should be more a destination for traffic, and less a pass-through for it. Moreover, the District must encompass a much larger area with more public spaces in order to successfully entice major new development.



Figure 23: Proposed NYSDOT Canal District: **Not realistic as planned;** Oswego St and Pearl St become highway on/off ramp roads that cut through the center of the District, undermine a new park, and additionally burden Erie Blvd (“Erie Way”)—the would-be *main drag* of the District.

A well-planned “Canal District” will attract mid-rise, mixed-use, residential/commercial development. Newly available land and new public infrastructure, such as wide sidewalks and park spaces to attract pedestrians and “activate” the street, will provide the catalyst. Naturally, new development will first arise on/near land newly liberated by the highway removal. However, the district should be planned to extend along Erie Blvd (“Erie Way”) from Beech St (east end) to Geddes St (west end). And several parallel streets on the East Side (Burnet St, Canal St, Water St, and Washington St) and on the West Side (Tracy St, resurrected “Auburn St” or extended Washington St, and Fayette St) should be included in the district, zoned and upgraded accordingly.

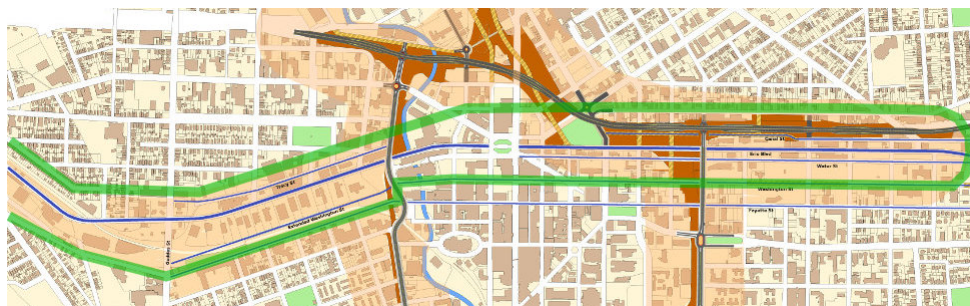


Figure 24: Recommended Canal District zone: From Beech St to Geddes St; sized for success, and for the greater enhancement of the Canalway Trail.

4.6.1 Central Park / Canalway Park

A new 4 acre park is created from the footprint of the southern portion of the downtown spaghetti junction; much larger than Clinton Square (roughly 2x); at the junction of the historic Erie and Oswego canals; the anchor of the Canal District, soon to become well-populated mid-rise, mixed-use, residential/commercial streets; along the path of the planned Canalway Trail, and will greatly enhance the tourism potential of the Trail.



Figure 25: New Canalway Park (rough renderings): approximately 4 acres (in place of the downtown spaghetti junction); along “Erie Way”; I-690 is rebuilt as an archway viaduct with shops underneath. (Note: beige buildings represent new development.)

4.6.2 Erie Blvd / “Erie Way”

Erie Blvd—near downtown—is an interesting case. First, it is a broken street, cut-off at Clinton Square, and makes a poor main thoroughfare or a suitable east/west street. Second, originally a canal, it cuts an already half-size block (Canal St to Water St) in half again; so, as a vehicular street, it is redundant on the grid. Assuming parallel streets are upgraded, it could be closed to regular traffic without harm, and re-opened as a canal or a pedestrian and public transit way (perhaps in the future). At minimum, it seems better suited as a calmer destination street rather than a through-traffic street. In addition, with the blight of the spaghetti junction removed, and the planned development of the “Canal District” and Canalway Trail, Erie Blvd and nearby streets will become of great interest to businesses and developers.

Therefore, Erie Blvd (as with “Oswego St”) is re-envisioned and rezoned as a mid-rise, mixed-use, residential/commercial, wide sidewalks, pedestrian oriented street. It should have no more than two travel lanes plus a center turn lane, and should have on-street parking. This zoning should extend at least from Beech St to Geddes St. Lined with ground-floor retail, restaurants, and small-office, the street will lend itself to becoming a “Transit mall”, which would be greatly enhanced by adding a streetcar line (a second streetcar line, north/south, along Oswego St and continuing south, is also highly desirable). Strongly recommended.



Figure 26: Erie Way (rough renderings): Erie Blvd transformed for a viable “Canal District” as a mid-rise, mixed-use, residential/commercial, pedestrian oriented street with wide sidewalks (specific street layout TBD). (Note: beige buildings represent new development)

Municipally-led planning, rezoning, infrastructure investment, and promotion will be the catalyst to draw businesses and developers. This, in turn, will propel the development of parallel streets: Burnet Ave, Canal St, Water St, Washington St, and Fayette St.

4.6.3 Canalway Trail

Current plans for the local Canalway Trail through the city are meager. The plans don't address historical relevance, enhancing historic features, or economic development opportunities. The selected route is based solely on which streets are *currently* best suited for bicycling. The route has little relation to the historic canalway; no historical features are evident (except the back of the Weighlock building); and there is little of the city's life or character to experience. This does not make a tourist draw; nor does it make Syracuse memorable in any positive way. The current local Canalway Trail plans are a waste of an economic opportunity.

For the Canalway Trail to be historically meaningful, it should follow the real canal path as much as possible. To obtain the most economic value as a tourist attraction, the path should be developed as mixed-use, residential/commercial, pedestrian-friendly zones that draw people (active-street) and provide shopping, dining, and hospitality opportunities for visitors. Hence the recommended transformation of Erie Blvd to "Erie Way" (See Section: 4.6.2).



Figure 27: Canalway Trail: placed historically appropriately along “Erie Way”, the center of the “Canal District”, in front of Weighlock building, along new Canalway Park and the junction of the original Erie and Oswego canals (Oswego St), and leading to Clinton Square.

West of Clinton Square, mixed-use, residential/commercial, pedestrian-oriented rezoning and development should be extended at least to Geddes St. Some buildings on Erie Blvd and Tracy St have already been redeveloped to mixed-use residential/commercial. **New large industrial, warehousing or wholesaling development should be rejected.** North of Erie Blvd, lightly used Tracy St should not be severed or otherwise compromised, but instead upgraded, with plans to extend it to Geddes St. It will serve well as rear access to a new or rehabilitated row of buildings. South of Erie Blvd, just north of the railroad tracks, old Auburn St (late 1800s) should be resurrected—or Washington St extended—to create rear access to future development there as well.

4.6.4 Elevate railroad along W Fayette St

An additional consideration. The railroad along W Fayette St creates a barrier to “Erie Way”. The area used to be a rail yard; the existing railroad, elevated throughout the city, came to grade here to access the rail yard, then rise again. With the rail yard gone, there is no reason for the railroad to come down to grade. Elevating this roughly 0.8 mile stretch of rail will remove a barrier to pedestrian and vehicular traffic flow between Fayette St and “Erie Way”. Leavenworth Ave could be extended to Niagara St, and Van Rensselaer St to Oswego St. Also, the Geddes St dip under the railroad can be eliminated, greatly enhancing the safety and appearance of the street. If the viaduct is built as an archway able to house shops, as in the *Viaduct of the Arts* concept (See Section: 4.1), it would greatly improve the streetscape and stimulate the economic development of the area.



Figure 30: Elevated railroad along W Fayette St: removes a multi-block barrier between W Fayette St and “Erie Way”; archway viaduct (left); eliminates pedestrian-dangerous Geddes St railroad underpass (right); allows useful street-grid connections (below).

4.7 Think “Business Route”, not “Business Loop”

NYSDOT defines “Business Loop” (BL) as a higher speed and limited access route, and “Business Route” (BR) as a normal speed and normal access route.

The CG plan chooses a “Business Loop”, which follows an expanded North Side highway, to four blocks along Erie Blvd, then onto a new Almond St which becomes/remains a highway south of MLK Dr. It is basically a limited access highway interrupted by 1.5 miles of city streets. The “Business Loop” conception is inappropriate in an urban project meant to replace a limited access highway with a street-grid alternative.

It is certainly reasonable and customary to designate an efficient and easily navigable cross-town path to aid non-residents. But for this project, the “Business Route” conception is more in-keeping with the street-grid plan. This means that the North Side highway should be converted to a street (See Section: 4.4), and the South Side highway converted to a street all the way to the I-81S junction, with a number of intersections added (Colvin St, Brighton Ave, Exit 17, and Glen Ave), as described below (See Section: 4.8).

In this Full Street-grid Plan, the designated “BR-81” follows new N Clinton St—now accessible to all northerly traffic at the new Destiny roundabout (See Figure: 9)—to a new I-690 half-junction (See Section: 4.5.3), onto I-690, off at a new Almond St junction (See Section: 4.4), and continuing on new Almond St extended all the way to I-81S junction (See Section: 4.8). This design also incorporates a segment of I-690 as a “land bridge” to hop over much of downtown. It creates an efficient and easily navigable north/south cross-town path through the city while improving the street-grid by eliminating the highway, increasing downtown connectivity, and improving the development potential of Syracuse.



Figure 31: Recommended “Business Route” BR-81: Clinton St to I-690 to Almond St. Uses I-690 as a **land bridge** to hop over downtown for a speedy and easily navigable north/south path.

4.8 South Side street-grid plan

The full length of South Side I-81 is restructured as an extension of new Almond St (i.e., a normally connected city street, perhaps with a median). Old I-81 roadbed is brought to grade and made a boulevard all the way to I-81/I-481 junction, and junctions with select major streets are added for proper street-grid integration and to facilitate future development. This includes: removing the berm used to elevate I-81 to meet the viaduct; converting Exit 17 to an at-grade intersection; and adding street-grid connections (preferably roundabouts) at Colvin St, Brighten Ave, Exit 17, and Glen Ave. Select secondary streets may also be connected (perhaps right-turn only, with roundabouts used for U-turns).

4.8.1 Remove I-81S berm

The berm south of Adams St built to raise the I-81 roadbed to the viaduct portion is no-longer needed and should be completely removed to bring the roadbed to grade to connect with the street-grid and to make the surrounding land developable.

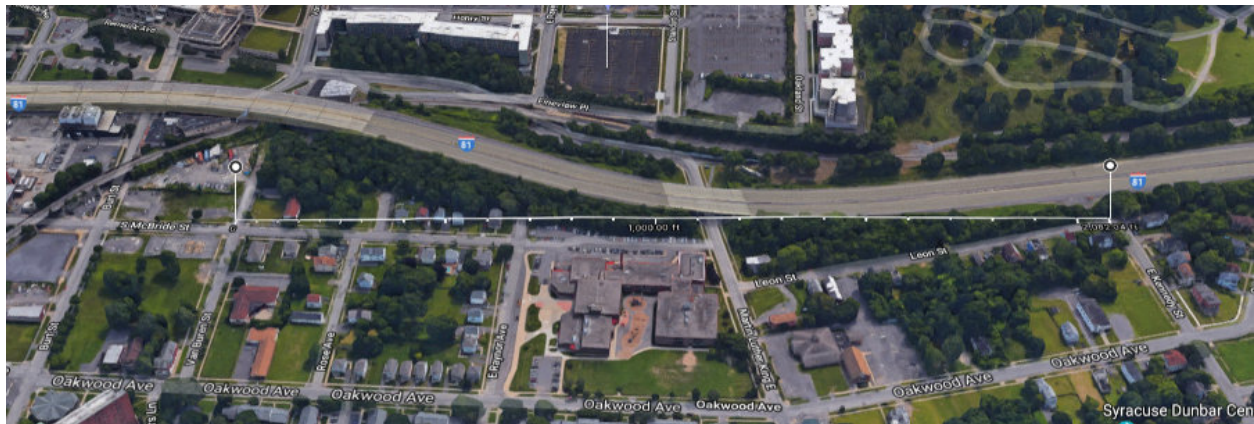


Figure 32: The roughly 2000 ft I-81 berm between Van Buren St and Kennedy St should be removed in order to tie the new Almond St to the street-grid and create new developable area.

4.8.2 Almond St at Taylor St and Castle St

A roundabout is placed at Taylor St, and has University Pl extended to it to provide perhaps the best option for a formal western gateway to the university (if the university is interested). Ideally, the extended University Pl would be a straight road to make the University entrance visible from Almond St. It would provide a smoother path compared to the Castle St → Van Buren St path, and could split the traffic with it.

A roundabout is placed at Castle St, a convenient east-west crossroad. It would also connect with Renwick Ave, which, via Van Buren St, currently provides western access to university and hospitals (See Figure: 33).

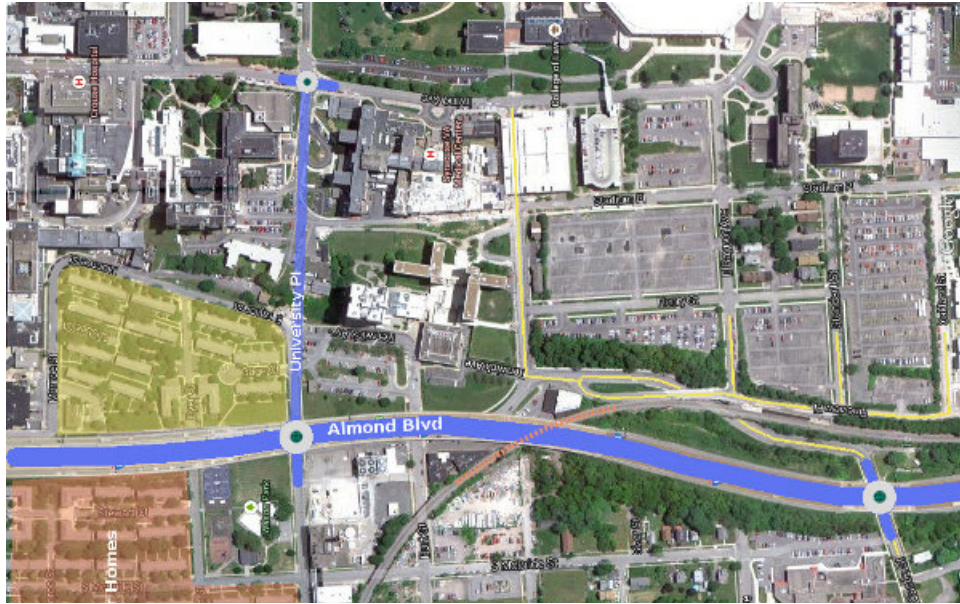


Figure 33: Almond Blvd showing roundabout junctions at Taylor St with gateway to SU, and at Castle St.

4.8.3 Almond St at Colvin St / Brighton Ave / Exit 17

A roundabout is placed at Colvin St, a convenient east-west crossroad, which gives southern access to university via Comstock Ave. A roundabout is placed at Brighton Ave and includes State St, which would allow southern access to the university area via Thurber St→Comstock Ave. An intersection is placed at the current Exit 17. It is an established junction worth maintaining due to existing businesses there, and it provides a useful and well-spaced street-grid connection between Brighton Ave and Glen Ave (See Figure: 34).



Figure 34: Roundabouts replace I-81 ramps along the new at-grade Almond St at Colvin St, Brighton Ave, and Exit 17.

4.8.4 Almond St at Glen Ave and I-81 junction

The CG plan re-aligns I-81 along current I-481. The I-81/I-481 ramps are transformed into the main highway road, and the existing highway road is transformed into ramps to Almond St. Fairly straightforward. Included is a diamond junction at Glen Ave, with Glen Ave bridging over Almond St. However, there is no requirement or need for a high-speed junction here since Almond St is no-longer a limited access highway. A roundabout at this junction would be more appropriate, consume less space, is less expensive to build, and would prepare traffic for slower city speeds.



Figure 35: I-81S junction at Almond St (NYSDOT); the planned high-speed diamond junction for Almond St / Glen Ave is not required or needed; a roundabout is more appropriate for city streets.



Figure 36: I-81S junction at Almond St (Full Street-grid plan): A roundabout replaces the proposed diamond junction at Glen Ave.

In addition to the alternative Almond St / Glen Ave junction, there is an alternative I-81 / Almond St junction that may be of interest. It consists of redirecting the I-81N off-ramp to Brighton Ave / Rock Cut Rd junction. It would eliminate two bridges. And, since much of I-81 on/off traffic would shift to Brighton Ave from Almond St, Brighton Ave may benefit from placing roundabouts at Rock Cut Rd and Glen Ave junctions. Which could be conveniently incorporated in the planned rebuilding of Brighton Ave bridge.

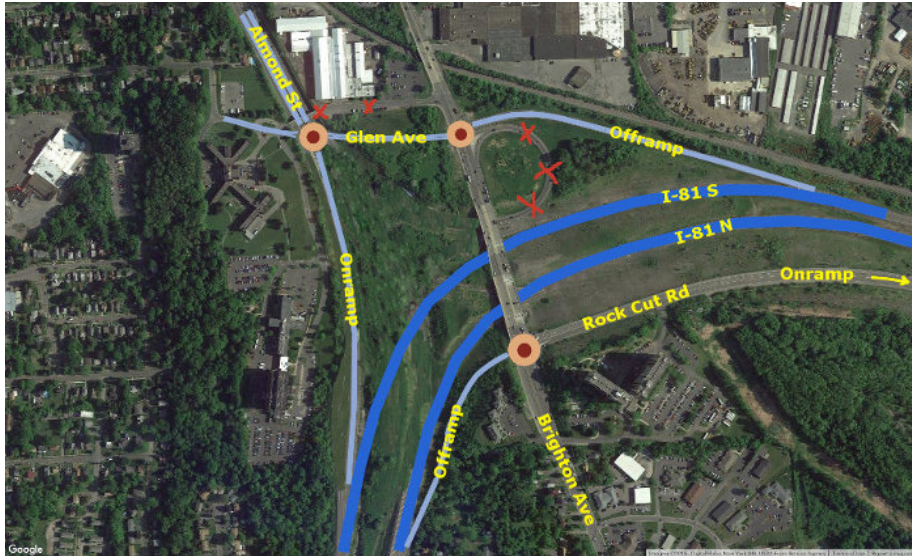


Figure 37: Alternative I-81 / Almond St junction that eliminates two bridges by rerouting I-81N off-ramp to Brighton Ave at Rock Cut Rd.



Figure 38: I-81S / I-481S junction today.

4.8.5 Rebuild public housing near the Almond St corridor

The Syracuse Housing Authority (SHA) is already planning to rebuild the several blocks it owns along this corridor. Rebuild into a mid-rise, mixed-use (residential/commercial) neighborhood, including a mix of subsidized and market-rate apartment, and perhaps condos. It will provide more low-income housing; and mixing-in market rate housing and commercial space will avoid creating the ghetto effect common to public housing projects. SHA should adopt the federal “Section 8” mortgage program to help the working poor buy and apartment. SHA, NYSDOT, and City should combine their design and planning for Almond St to achieve the best outcomes for both projects.



Figure 39: Example of public housing redeveloped into mid-rise, mixed use, subsidized and market rate apartments, and even condos (“Section 8 mortgages” and market rate).



Figure 40: Via Verde, NYC, a beautiful example of combined subsidized and market-rate apartments.

4.9 Other street improvements

As previously mentioned, the City should, over time, develop a network of major streets connected by roundabouts to provide efficient cross-town flow of traffic—a sort of “major streets grid”—which would inevitably engender the main mixed-use development and public transit routes of the city. (See Section: 4.2). In the meantime, there are many intersection that can be vastly improved independent of any broader plans. Below are a sampling that immediately stand out.

4.9.1 Butternut St / Grant Ave roundabout

This intersection has evolved closer and closer to a roundabout over time, and now seems begging to become one. As is, it feels somewhat uncomfortable to drive through and unsafe for pedestrians to traverse. A modern roundabout fits well at this location and would offer several advantages:

- Increases traffic efficiency while also more comfortable pedestrian traversal;
- Vastly improves the aesthetics of the area;
- Creates vastly more pedestrian space, enough to form a new neighborhood public square;
- Would likely attract new development (e.g., cafe, restaurant, retail shop, apartment building) and create an attractive new neighborhood destination.



4.9.2 Onondaga (Leavenworth) Circle roundabout

This intersection is currently poorly designed and confusing to drivers. There used to be an attractive circle here. Re-establishing it as a modern roundabout would greatly improve traffic as well as the aesthetic of the area.

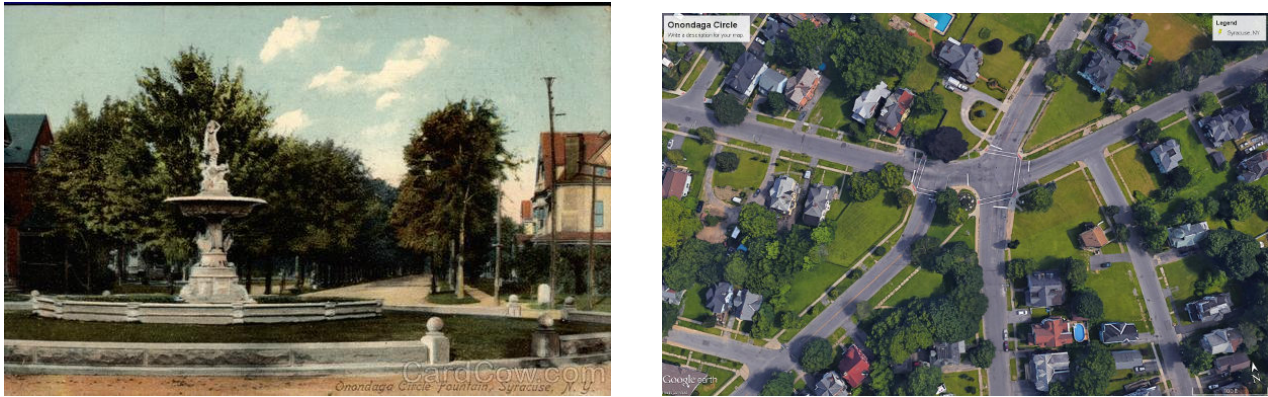


Figure 41: Onondaga Circle then and now.

This location, being residential with moderate traffic, lends itself to a relaxed-design roundabout. In fact, the original dimensions of Onondaga Circle (est. ~45–50ft center island, 25–30ft over-sized lane, minimal road markings) could be largely replicated to practical, and aesthetic effect.

A roughly 110ft roundabout should be sufficient for all traffic including Interstate class tractor trailers. A significantly larger higher-speed roundabout would be useless in a setting of 30 mph streets. Moreover, a larger roundabout will appear out-of-place and less attractive in such a setting. A right-sized roundabout will feel more cozy, have narrower street crossings, and lend itself to function as a local “square”, attracting pedestrian and small retail activity (if generous pedestrian space is included). The single 25–30ft lane should work well for shared space with cyclists.



Figure 42: Onondaga Circle revived as a roundabout (top and angled view). Leftover ROW and adjacent private parcels form an attractive piazza-like environment, with new mid-rise, mixed-use buildings housing shops and restaurants, and apartments above. A new neighborhood gathering place.

4.9.3 Glenwood Ave / South Ave / Valley Dr / Elmwood Ave roundel

This intersection is quite challenging due to its narrow and elongated “X” shape and the need to connect five streets. That precludes a simple roundabout solution.

Inspired by the Poynton, UK roundel, a two roundel (small mountable medallion) solution is suggested. The design vastly increases pedestrian space and creates a piazza-like environment. As an option, all curbing in the area is removed to create a shared space environment. If building without curbs, it is important to employ different pavement materials, colors, and textures to provide visual and tactile guidance to both vehicles and pedestrians. Build a bigger road, it will draw more cars; build more pedestrian space, it will draw more people. Such redesign will create a neighborhood destination and draw new mixed-use development to the area. See: [Poynton roundel video](#).

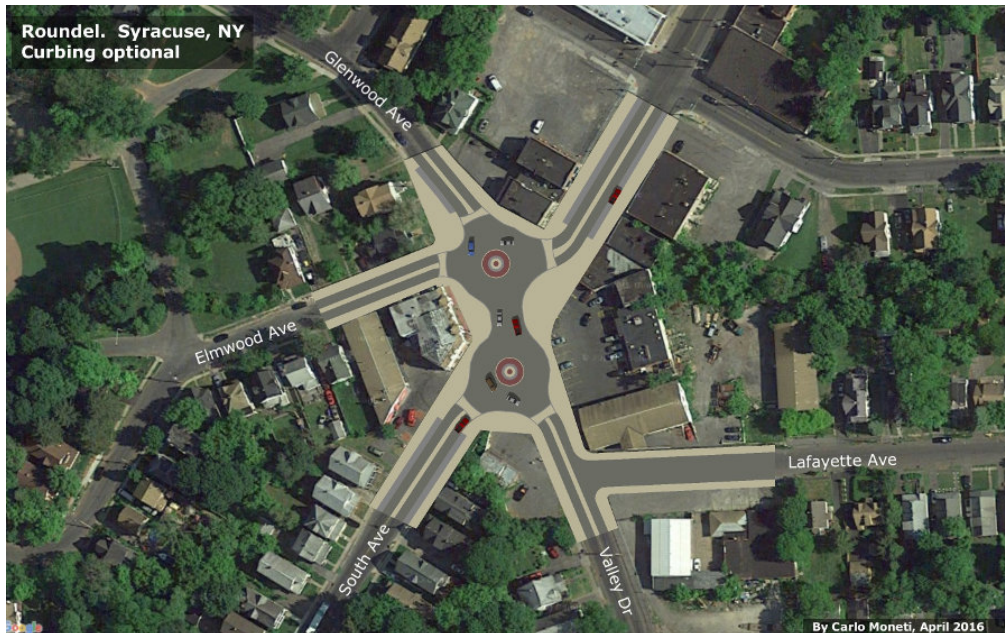


Figure 43: Glenwood / South Ave roundel; with expansive piazza-like pedestrian space; curbing optional.

South Ave Roundel Dimensions	
Inscribed circle diameter	90 ft
Inner circle diameter	20 ft
Street width	10 ft
“waistline” road width	35 ft
Street median width	5 ft
Parking lane width	7 ft

A roundel inscribed circle diameter is small, but so is the center medallion, which can be driven over when necessary.



Figure 44: Poynton, UK roundel design

4.9.4 Comstock Ave / Colvin St roundabout

This location would greatly benefit from a roundabout, and has ample area available (both ROW and accessible private land). The Syracuse Metropolitan Transportation Council (SMTC) has published a study for one (See Figure: 45). However, the included preliminary design does not seem quite optimal. The size is fine, but since all legs are 2-lane streets, there is no reason to make them 4-lane on approach to the roundabout (extra turn lanes are an artifact of lighted intersections). Alternatively, a “compact 2-lane roundabout”—two entry, one exit lane—may have merit if efficient “gap filling” is an issue (See: [roundabouts_germany.pdf](#)). Traffic smoothing may be the most relevant consideration here, followed by a bicycle-friendly design; and so any relatively simple and modest-sized roundabout should offer a great improvement over the current intersection.

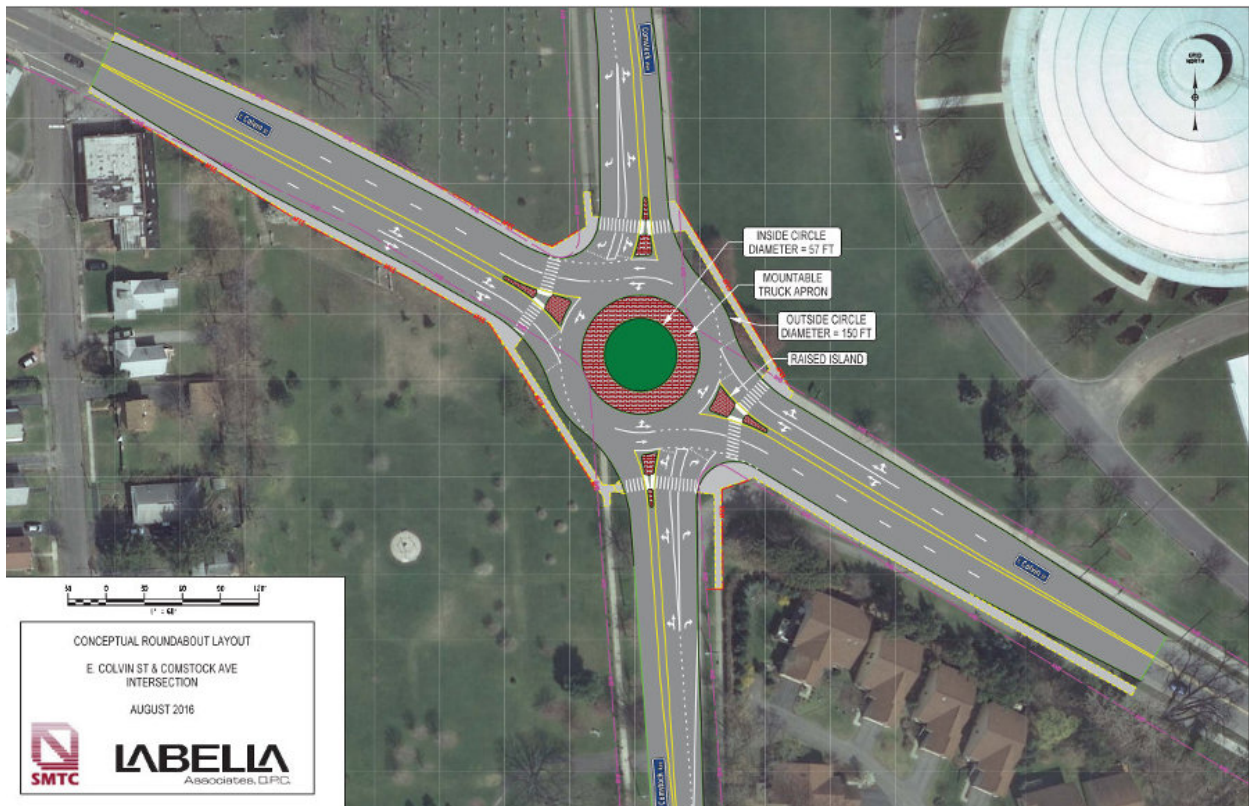


Figure 45: SMTC proposal for Comstock/Colvin roundabout.

4.9.5 Thompson Rd / Salt Springs Rd roundabout

This intersection should benefit nicely from a roundabout, and the space needed is available. SMTC has published a study for one (See Figure: 46). Overall traffic is modest, but gets congested during rush hours. It often feels congested due to the current All-Way Stop design. Given that all three connecting streets are 1-lane each way, the proposed 1-lane roundabout seems appropriately sized. Arguably, the truck apron diameter could be significantly reduced in favor of an over-sized lane so as to **not** discourage cars from making a more compact and convenient turn.



Figure 46: SMTC proposal for Thompson Rd / Springfield Rd roundabout.

4.9.6 Re-establish west entrance to Oakwood Cemetery

What used to be the main entrance to Oakwood Cemetery (at Oakwood Ave, the continuation of Townsend St) was blocked-off by the construction of I-81. With the removal of I-81 and lowering the roadbed back to at-grade for a new Almond St, this historic entrance can be restored and opened once again. Perhaps, an allocation of funds from the I-81 Project for this task—to repair the street-grid where it was broken by I-81—can be justified.

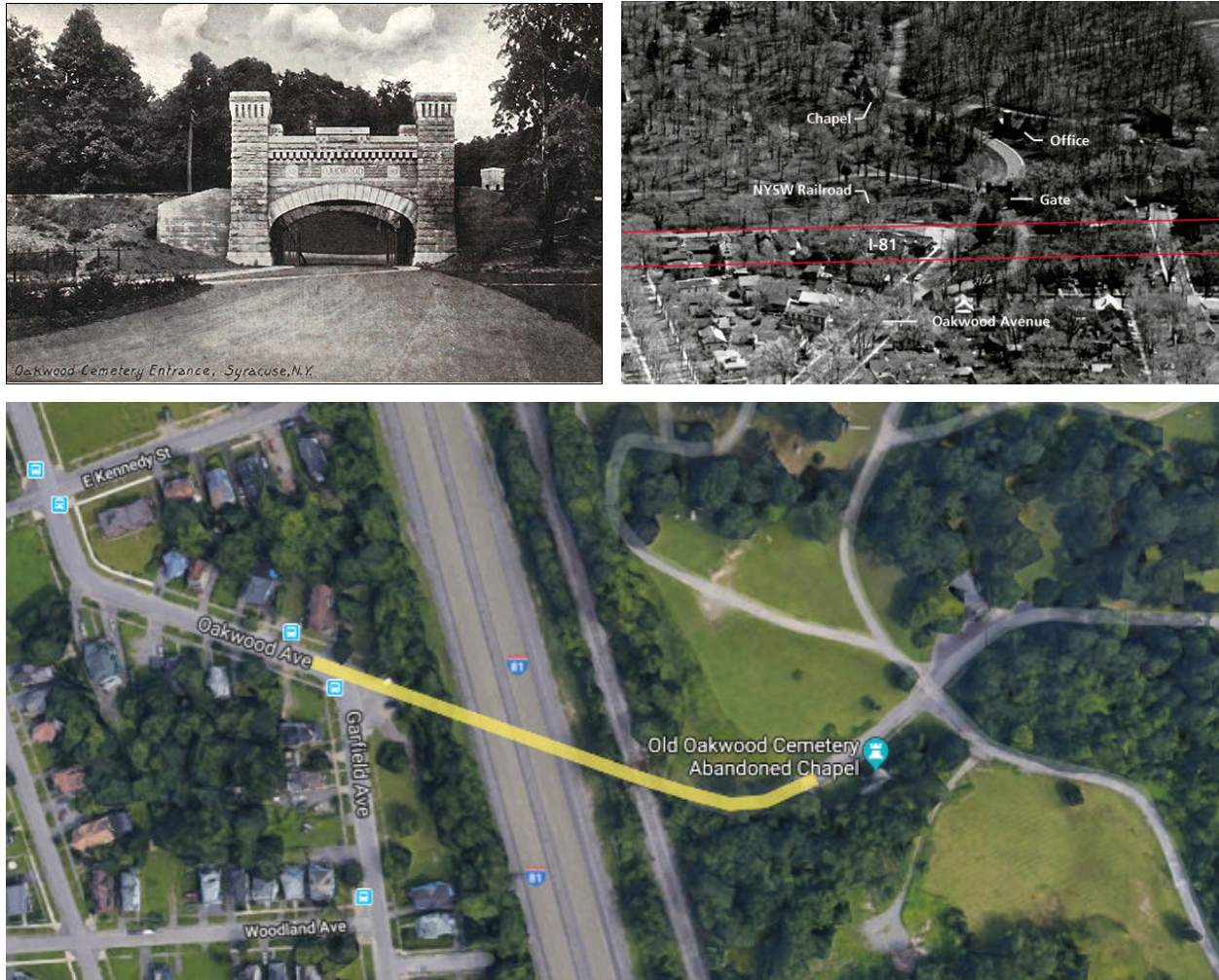


Figure 47: Oakwood Cemetery south entrance (also a railroad bridge); long barricaded by I-81 should be re-opened. Red lines (left image) indicate the path of current I-81.

How should Oakwood Ave traverse Almond St? An intersection (roundabout)?; an underpass (elevate Almond St)?; an overpass (light bridge over Almond St)? All three options deserve consideration. Perhaps we could hold a design competition and let the community choose.

5 Syracuse suburbs

5.1 I-481 junction at Genesee St

The CG plan adds travel lanes to I-481 to accommodate new I-81 through-traffic. However, rush hour congestion already exists here (from street and highway). As is often the case, the issue is not a lack of highway travel lanes, but rather backup from exit ramps, which is caused by poor traffic flow where the ramp meets the street, or at nearby intersections. Adding lanes to I-481 won't help. If exit traffic merges slowly due to high street traffic, a better exit-to-street junction is needed.

Genesee St congestion can be relieved by improving traffic flow at intersections, primarily Wegmans and Lyndon Corners, perhaps by converting them to roundabouts. Longer-run, additional roads should be built, extended, or upgraded to better distribute east/west traffic and unburden Genesee St. (Dewitt is a good illustration of a high population suburb with too few arterial roads.)

I-481 junction congestion (merging problem) may be relieved by converting to an FCUI (See Section: 4.1.1). The FCUI roundabout will, by design, give equal access to Genesee St and ramp traffic, greatly improving ramp traffic flow. No extra highway travel lanes needed.

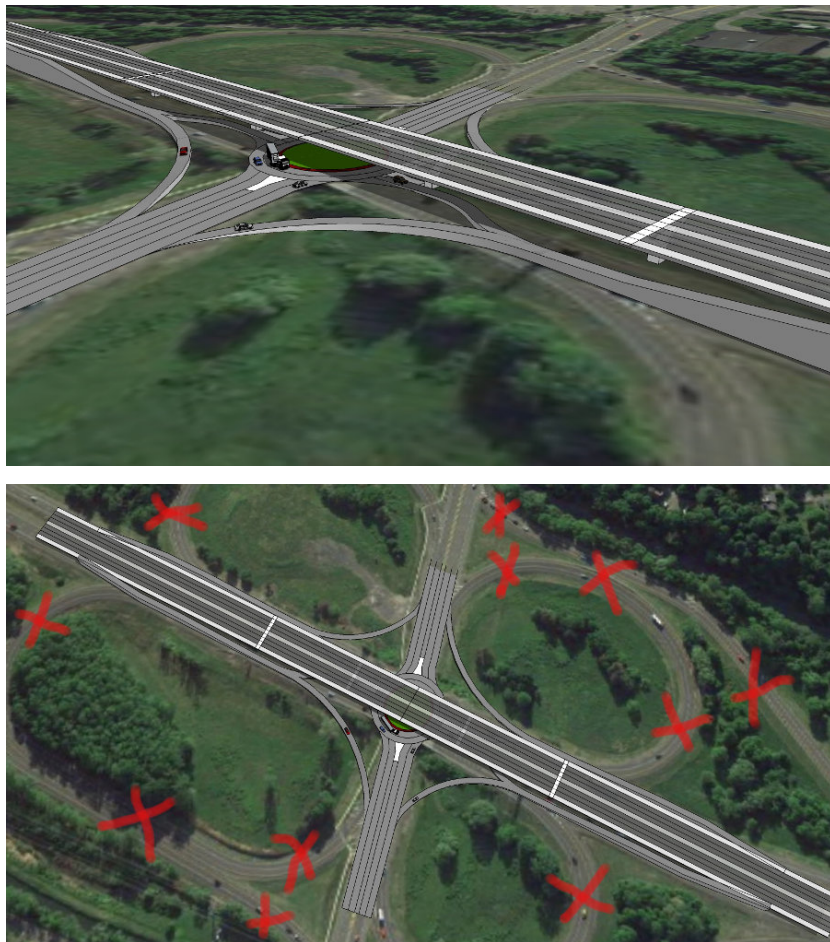


Figure 48: Fast Compact Urban Interchange (FCUI) at I-481 and Genesee St, Dewitt; designed to ease merging onto Genesee St; also reduces junction footprint. (Rough sketch; disregard lane details.)

6 Public Transit: A Discussion

Public transit is overall too big a subject to give full treatment in this report. Included here is a sketch view of how public transit affects the development of a city, how a truly functional (widely used) public transit system can be built in Syracuse, and how the I-81 Project can help.

Dense urban areas, by their very nature, do not have enough space for 1–2 cars per household. The more dense the population, the fewer cars (and car trips) per population; transportation options shift to public transit (including taxis), biking, and walking. Public transit and mixed-use development are required to make higher population density possible. Without their conscious planning (a municipal responsibility), we get enormous areas of center-less, low density suburban sprawl.

Public transit arises from two main conditions: 1) to resolve rising population density due to external forces (e.g., New York City, late 1800s); and/or 2) a conscious plan to grow the city.

There are strong economies of scale in a city of moderate size and density, most of which are achieved at populations of roughly 250,000–600,000. Such populations are large enough to support well-funded public schools, public parks and plazas, various cultural institutions, professional fully staffed (capable) municipal departments, and an efficient (practical) public transit system.

So, for Syracuse to develop into a more desirable, sustainable and prosperous city, it must attract more population, which will require more density, more public transit, and new land-use policy (already started with the new Zoning Code). In 1950, the Syracuse population was 220,000. So, a population of 250,000 can be accommodated just by infill development.

By choosing the *Full Street-grid Solution* for the I-81 Project, with its numerous street-grid re-designs and upgrades, we leverage enormous resources to restructure our city—transformed into a glorified suburb by I-81 the last 50 years—back into a real city (dense, mixed-use, walkable, with practical public transit); we can build much of the infrastructure for a network of high-density primary streets, which will provide highly efficient public transit routes through the city.

Public transit is subsidized by roughly 90% in Syracuse (here and almost everywhere in the world). Nothing wrong with that; our streets and sidewalks are 100% subsidized. Public transit system efficiency is not measured by how much its cost is covered by direct ticket sales, but rather by how much the public uses it and therefore benefits from it. If a bridge is heavily used and increases prosperity, it is a wise investment. So it is with public transit investment.

How and at what point in the system a public transit system is paid for (e.g., fee per use, or taxation) is an issue separate from its value to the public. The efficient solution is the one that generates high utilization at the lowest overall cost to the community (fees, taxes, less car ownership, etc.).

When calculating the costs and benefits of a public transit system, it is helpful to think in terms of the “community budget”, the total of all public and private spending on transportation (public transit, school transit, cars, vehicle (and road) maintenance, insurance, etc.). If practical public transit allows many households to do with one less car, saving \$6,000–\$8,000/yr, there will clearly be enormous community savings. Other benefits would include reduced pollution, less traffic for remaining cars, less land dedicated to parking, and less cluttered (more pleasant) public spaces.

Free public transit (free to use) encourages its wide and rapid adoption. For Syracuse, free access is a matter of coming up with another \$3–\$5 million. A Transit Utility Fee (TUF) on real property averaging \$200/property (perhaps \$100 per median household) would raise ~\$8.4 million/yr

(42,000 properties), enough to cover today's ticket revenue plus that of a future larger system. With free access, utilization will be high, and so each subsequent round of investment will be justified.

A public transit system can be successful (practical) only if it is comprehensive (complete coverage, high frequency, and reasonably quick). That means the whole comprehensive network must be built (large upfront cost) for the system to reach full adoption, provide the greatest public benefit, and justify its costs. A state of full adoption is often never achieved because a comprehensive network is never built, and so ridership doesn't materialize, and so the system remains incomplete (inefficient, impractical), and so no more funds appear justified. A Catch-22.

The solution is to actively create and align all the necessary conditions for public transit development success—which happily also coincide with how to grow a city. What are they?:

1. Commitment to a comprehensive (full coverage, high frequency) public transit network.
2. A network of high-density (population) and traffic-efficient primary streets to maximize access to the transit system and minimize transit times.
3. Proactive urban design and planning, infrastructure investment, and promotion to attract population and development in order to realize (2).
4. Make public transit free (to use): to make it a no-brainer option for most people; to achieve rapid and full public adoption; to demonstrate its high public benefit; and to justify its present and future funding.

An outline plan

1. New Erie Way streetcar: Teall Ave to W Genesee St (initially), designed to stimulate mixed-use development and a "transit mall" along "Erie Way".
2. New Oswego Way streetcar: Destiny Mall -> Oswego St -> Salina St -> Cortland Ave -> Midland Ave, designed to stimulate "Oswego Way" development as well as Midland Ave.
3. Include funding of (1) and (2) into the I-81 Project as integral to a successful project.
4. Plan for a larger streetcar network: extend (1) and (2); add additional lines.
5. Significantly expand bus service in both coverage and frequency; promote public transit infrastructure in all development planning and promotion.
6. Explore alternative solutions to the transit network layout (e.g., point-to-point, ring and spoke, instead of only a central hub and loop).
7. Consider converting some streets into pedestrian, bike, and public transit oriented ways to form a network of attractive and safe passages through the city, and as a feature to attract new residents throughout the city.
8. Encourage suburbs to develop more village-like centers, where public transit stations can be usefully built, and commuters can walk or be driven to a bus that takes them to the city or other village, eliminating the need and cost of a second car that will be parked all day.
9. Make the public transit service free (free to use): to attract broad and rapid adoption.
10. Promotion: "Mom, will you take me to the mall?" "Oh, honey, just take the bus."

7 Benefits of the Full Street Solution

The Full Street-grid Solution provides the following benefits and cost savings relative to the CG Plan (and all other DEIS alternatives):

1. The number of required land takings and building demolitions is reduced from dozens to perhaps zero.
2. It resolves the traffic flow weaknesses of the CG plan (primarily a viaduct removal plan, not a street-grid plan) by providing a complete north/south distributed traffic solution to replace I-81 through the city.
3. I-690 gains two more junctions in the central city to distribute traffic more evenly and efficiently, and to provide a “land bridge” for north/south traffic to skip over downtown for a quick and easily navigable route; and the planned I-690 rebuild is architecturally redesigned to blend with and add functionality and aesthetics to the streetscape.
4. The FCUI-type junction is proposed as a more compact and a higher traffic flow solution over the traditional diamond junction (and so more cost effective).
5. In place of sinking more money into enlarging North side I-81, “Oswego St” is created in its stead to form a new mixed-use, transit-oriented neighborhood that will attract new residents and more economic stimulus to the city.
6. Erie Blvd is transformed from a would-be catch-all traffic arterial road into “Erie Way”, to form another mixed-use, transit-oriented neighborhood, the center of the “Canal District” and the Canalway Trail.
7. The “Canal District” plan is revised into a realistically developable and economically viable environment by enlarging it, altering the traffic plan to create a large park, turning “Erie Way” into a destination, and fully integrating the Canalway Trail into the plan.
8. A vast increase in new primary and secondary developable area is created due to: the North Side street-grid solution, which creates or revives a number of streets with new infrastructure and visibility (traffic); a broader and more viable “Canal District” plan; and a more comprehensive plan for the Canalway Trail.
9. On top of \$2 Billion in direct I-81 Project spending, the Full Street-grid Solution provides the public infrastructure to stimulate on the order of \$4 Billion in new development, i.e., ~\$1 Billion per city quadrant (See Figure: 49 below).
10. The numerous development opportunities created by the plan will increase the population and business activity, a momentum of change and development that can in turn draw more interest, more business, and more population.
11. The vast street-grid restructurings included in the *Full Street-grid Solution* can be designed with an eye toward creating an efficient public transit network in the process.
12. Finally, the vast streets reconstruction provide the opportunity, through “dig once” policy, to fix city sewers, bury utility lines, and lay a new community-owned fiber-optic broadband network at greatly reduced cost.

In summary, the Full Street-grid Solution is not just a traffic engineering plan, but an infrastructure plan to maximize the future economic and cultural prosperity of Syracuse. It leverages the enormous resources of the I-81 Project to build infrastructure chosen not only to satisfy I-81 Project traffic engineering goals, but also to transform the development opportunities of several major areas of the city, creating a new development calculus, and so paving the way for the greatest economic stimulus the city has seen since the building of the Erie Canal.



Figure 49: Development opportunities: newly available taxable and developable land (darker) plus nearby land of increased development interest (lighter).

8 Parting Note

I Urge the City to establish a full-service *urban design and planning office* (which could provide services to other municipalities as well) in order to develop and to advise NYSDOT on the many aspects of the project that will primarily be more a matter of community preferences than strictly traffic engineering. It is crucially needed for the success of the I-81 Project and to shepherd the high rate of development that will follow the next 10-20 years. I urge NYSDOT to encourage the City to establish such an office.

* * * * *

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