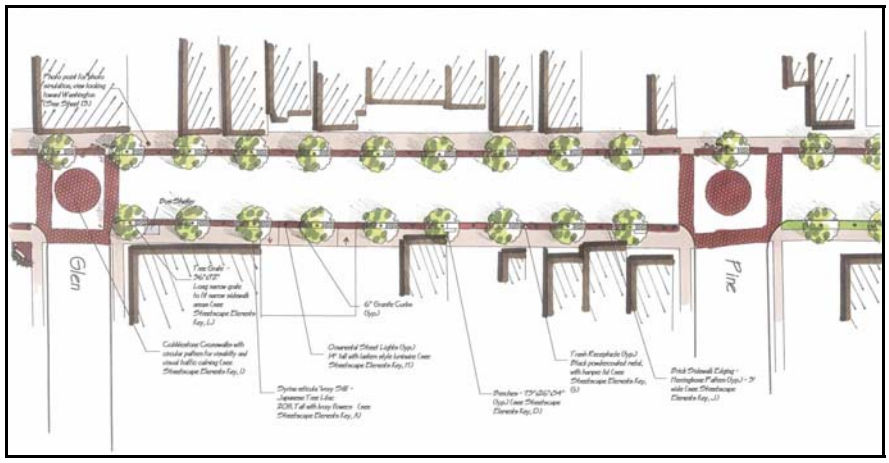
North Broadway Corridor Study



Conceptual Corridor Improvement Plan Report

City of Rensselaer, New York

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I. Project Overview:

The North Broadway Corridor Study, funded through the New York State Small Cities Technical Assistance program, is designed to provide technical guidance for the City of Rensselaer as it moves forward with citywide revitalization efforts. The City identified the study area as a critical area, due to its function as a gateway neighborhood, requiring a strategic plan for future public and private investments. The recommendations provided in the Study require additional analysis and refinement before entering the final design phase.

A joint Comprehensive Plan/North Broadway Steering Committee provided guidance and review during the development of the North Broadway Corridor Study. The City determined that this organization would improve overall consistency between recommendations and ensure compliance with the overall vision for the community. A public meeting to review the draft North Broadway Corridor Study and collected input from the community was held on January 22, 2004.

II. Plan Development:

A. Project Limits:

The North Broadway Corridor Study is limited to the intersection of Broadway and Partition to the south and the intersection of Broadway and Washington Avenue to the north. Development in the corridor includes a mixed-use district running from the Broadway and Partition intersection to the Broadway and John intersection. The district is characterized by a mix of commercial and residential uses, and the building setbacks are much closer to the sidewalk. A transitional district runs from the Broadway and John intersection to the Broadway and Pine intersection, characterized by the continuation of some commercial and retail uses, but a greater number of primarily residential structures. The residential district runs from the Broadway and Pine intersection to the Broadway and McNaughton intersection, and includes a mix of structures containing apartments, multi-family and single-family uses. Broadway and McNaughton to Broadway and Tracy is also a residential district, but is primarily comprised of single-family homes. The gateway and bath historic district runs from Broadway and Tracy to Broadway and Washington, and includes a mix of apartments, multi-family and single-family structures. The project area also contains a small pocket park at the southwestern corner of Broadway and Tracy.

B. Existing Conditions: (*Figures 1-9*)

Existing conditions information was gathered through a series of site visits and aerial photographs overlaid with information obtained from Cornell University Geospatial Information Repository (CUGIR), the NYS GIS Clearinghouse, and Rensselaer County. Information gathered from GIS files included parcel lines, road lines, railroad right-of-ways, land use, and flood zones.

The site visits were conducted to gather information on the current streetscape conditions and building conditions. Streetscapes were rated on the sidewalk, pavement, and curb conditions. Building conditions were rated on the façade, structural, and window conditions, which were then averaged to give the general condition of the structures in the corridor. The information gathered was then developed into a series of structural conditions maps.

C. North Broadway Sewer Capacities (*Figure 10 and Table 1*)

The existing combined and sanitary sewers on North Broadway consist of six distinct runs of piping. The maximum capacity of each run is based upon the maximum capacity of the limiting segment of piping, i.e. the segment with the lowest capacity of all the segments. Capacities were calculated using the Manning equation in conjunction with field-measured elevations, pipe sizes, and distances between manholes. A Manning "n" coefficient of 0.013 was utilized; this is the value stipulated for design of sanitary sewers by the *Recommended Standards for Wastewater Facilities* (Ten States Standards). The actual "n" coefficient for the North Broadway sewers is likely higher due to the age and type of piping (vitrified clay pipe with joints every 2 to 3 feet), which would result in lower capacities than those indicated below. However, the actual coefficient cannot be established without flow testing.

<u>Sanitary Sewer from south of Washington Avenue to Tracy Street outfall line</u>. This sewer consists of 10" and 12" vitrified clay pipe (VCP). The maximum capacity of this sewer is 3.00 million gallons per day (MGD) between Tracy Street and Central Avenue, and 1.75 MGD north of Central Avenue.

<u>Combined Sewer from Fowler Avenue outfall line to Tracy Street outfall line</u>. The maximum capacity of this 12" VCP sewer is 1.82 MGD.

<u>Sanitary and Combined Sewer on east side of Broadway from south of McNaughton Avenue to Fowler Avenue outfall line</u>. South of McNaughton Avenue, this sewer is a 10" VCP sanitary sewer. North of McNaughton Avenue, it is a 12" VCP sewer carrying combined flows. The final downstream run of this piping is at a negative slope, requiring some surcharging for flow to occur. The maximum capacity of this sewer is 1.18 MGD.

<u>Sanitary and Combined Sewer on west side of Broadway from south of McNaughton Avenue to Fowler Avenue outfall line</u>. This sewer is a 12" VCP sanitary sewer south of McNaughton Avenue and 18" VCP sewer carrying combined flows north of McNaughton Avenue. The final downstream run of this piping is at a slightly negative slope, requiring some surcharging for flow to occur. The maximum capacity of the sewer,

assuming a maximum surcharge without overflowing the manhole midway between McNaughton Avenue and Fowler Avenue, is 7.22 MGD.

Sanitary and Combined Sewer from south of McNaughton Avenue to the outfall line south of Harrison Avenue. This sewer is a 12" VCP sanitary sewer north of Pine Street, and a 12" VCP combined sewer from Pine Street to the outfall line south of Harrison Avenue. The final downstream run of this piping is at a negative slope, requiring some surcharging for flow to occur. The maximum capacity of this sewer is 2.05 MGD north of Harrison Avenue, and 3.62 MGD south of Harrison Avenue.

Combined Sewer from Partition Street to the outfall line south of Harrison Avenue. The maximum capacity of this 12" VCP sewer is 4.94 MGD.

III. Private Space Improvement Recommendations

Based upon the general land use districts within the corridor, possible private space improvement recommendations were developed. As seen below, the range of options is diverse and will require city officials to further consider the feasibility of each option. It is important to recognize that private investment is typically staggered after the public space improvements. In addition it is recommended that the City's Zoning Code be updated and a reassignment of land use districts be developed and implemented over a number of years.

A. **Mixed Use District (Partition to John):** This area requires a structure-by-structure approach to encourage private investment. The existing building stock and proximity to the train station, residential areas and the Central Business District support the redevelopment of this area for both commercial and residential use. The City will need to work with each landowner to identify the appropriate reuse strategy for the structure taking into consideration building code limitations and surrounding uses. Possible programs to encourage investment may include a matching façade improvement program, small business loan program, low interest improvement loans and possibly a business improvement district (*see page 17 for an explanation*) in the future.

B. **Transitional District (John to Pine)**: The Transitional District provides a mix of single use structures, typically either residential or commercial. Rarely is there a mix of uses within a structure, as seen in the mixed-use district. For this reason, this area will require a combination of programs from both the mixed use and residential areas.

C. **Residential District (Pine to Washington)**: The residential district is primarily limited to areas north of the Pine Street and Broadway intersection. While this area is viewed as a residential district, the City should consider allowing small storefronts through a conditional use permit. A mix of well-maintained and dilapidated housing is present in this area. An aggressive approach to

redevelopment and re-use is required in the residential district. As the primary approach in this area, the City should look to empower landowners, providing the assistance needed to implement the desired vision. This may include a mix of homeownership and improvement programs funded through no and low interest loans (*See Loan insurance programs through HUD page 18*). The rehabilitation of housing is the highest priority for the City and, as a distressed community, the City must apply for assistance from state and federal housing programs. In addition, the City should encourage property maintenance through the development of a "Best Block" award, similar to the structure in Albany and many other cities across the state.

In addition, the City will need to be more proactive in property maintenance enforcement. There are many examples of property maintenance violations within the residential district of North Broadway. If the City does not enforce its maintenance code, it will lead to blight. In addition, Rensselaer will need to eliminate a handful of dilapidated structures, already identified by the City.

IV. Streetscape Design Elements:

Streetscape design elements and improvements included in the Conceptual Corridor Improvement Plan are illustrated in the conceptual plan maps for each block (D*rawing 01 – Drawing 13*) and are described below:

1. New concrete sidewalks, a minimum of 5 feet wide, with 3 feet brick edging or 5 feet tree lawns to accommodate street trees and to visually and aesthetically break up vehicular and pedestrian space. In some areas current sidewalks are retained because they meet the 5 feet minimum width and they are in excellent condition due to recent replacement. Options to consider when choosing edging materials include brick, brick colored concrete pavers, or colored concrete stamped in a brick pattern.
2. Reset or replace granite curbs as determined by the streetscape conditions analysis. (*Figure 4*)
3. New cobblestone crosswalks in the mixed-use and transitional districts, with a circular center pattern. This will visually break up the blocks and alert drivers that they are about to enter a pedestrian area. Options to consider in the use of cobblestone are the reuse of cobblestones dug up from city streets, the use of cobblestone pavers, or the use of concrete colored and stamped in a cobblestone pattern.
4. New asphalt paving as determined by the existing conditions analysis. (*Figure 3*)
5. Tree grates in areas with brick edging; rectangular tree grates will be used in areas with brick edging to allow trees to be placed in areas of limited pedestrian space.
6. Three new street tree types were recommended throughout the corridor - *Syringa reticulata 'Ivory Silk'*, *Malus 'Prairie Fire'* and *Crataegus*

crus-galli 'inermis' - to achieve several goals. Two issues to address were limited tree lawn space and overhead utility wires. Smaller trees were used to accommodate this - species under 25 feet in height - as recommended by the National Arbor Day Foundation. Then, due to the length of the corridor, three different species were used to break up the districts and to vary the species in case of the development of future disease or pest problems. This would prevent the entire loss of the corridor's street trees. If overhead utilities were buried, there would be no height limitation on chosen street trees, however the size of street trees are still restrained by the limited tree lawn space. If larger street trees are desired with the burial of utilities, some recommended species are *Gledistia triacanthos*, *Fraxinus pennsylvanica 'Patmore'*, *Celtis occidentalis*.

7. Ornamental street lighting no taller than 14 feet is to be used to bring the lighting down to a pedestrian scale and to add to the beautification of the corridor.
8. Planting boxes in areas where there is no room for street trees, to continue the softer feel that vegetation brings to a streetscape.
9. Gateway markers in areas of notable entry. Markers let both pedestrian and vehicular traffic know that they are entering a defined area, help welcome visitors, and create a sense of place to the corridor.
10. Furniture and site amenities:
    a. Benches
    b. Planters
    c. Trash receptacles

V. Corridor Improvement Overview:

The following recommended improvements are broken down per block. Recommended improvements to the Pocket Park located at the intersection of Tracy and Broadway are also provided separately.

<u>Partition to Harrison</u> (Drawing 01)

- Replace granite curbs
- Repave street
- New concrete sidewalks with brick edging
- Planting boxes on the southwestern end until brick edging starts
- Gateway markers at Partition
- Ornamental period style street lights
- New street trees in rectangular tree grates
- Benches
- Trash receptacles
- Corner paving details
- Cobblestone crosswalks
- Burial or consolidation of utility lines

<u>Harrison to John</u> (Drawing 02)

- Replace granite curbs
- Repave street
- New concrete sidewalks with brick edging
- Ornamental period style street lights
- New street trees in rectangular tree grates
- Benches
- Trash receptacles
- Cobblestone crosswalks with patterned centers
- Burial or consolidation of utility lines

John to Glen (Drawing 03)

- Replace granite curbs
- Repave street
- New concrete sidewalks with brick edging
- Ornamental period style street lights
- New street trees in rectangular tree grates
- Benches
- Trash receptacles
- Cobblestone crosswalks with patterned centers
- Corner paving details
- Burial or consolidation of utility lines

Glen to Pine (Drawing 04)

- Replace granite curbs
- Repave street
- New concrete sidewalks with brick edging
- Ornamental period style street lights
- New street trees in rectangular tree grates
- Benches
- Trash receptacles
- Cobblestone crosswalks with patterned centers
- Burial or consolidation of utility lines
- Gateway markers
- New bus shelter at Glen and Broadway

Pine to McNaughton (Drawing 05 & 06)

- Replace granite curbs
- Repave street
- New concrete sidewalks with brick edging on the west side
- Ornamental period style street lights
- New street trees in rectangular tree grates on the west side
- New street trees in a 5 foot tree lawn on the east side
- Cobblestone crosswalks
- Mid-block crosswalks
- Corner paving details
- Burial or consolidation of utility lines
- Proposed future bus shelter at mid-block crossing

McNaughton to Fowler (Drawing 07 & 08)

- Reset granite curbs
- Repave street
- Concrete sidewalks with brick edging on the west side
- New street trees in rectangular tree grates on the west side
- New street trees in a 5 foot tree lawn on the east side
- Ornamental period style street lights
- Cobblestone crosswalks
- Mid-block crosswalks
- Burial or consolidation of utility lines

Fowler to Tracy (Drawing 09)

- Reset granite curbs
- Repave street
- Concrete sidewalks with brick edging on the west side
- New concrete sidewalks on the east side
- Ornamental period style street lights
- New street trees in rectangular tree grates on the west side
- New street trees in a 5 foot tree lawn on the east side
- Cobblestone crosswalks
- Burial or consolidation of utility lines
- New bus shelter at Tracy and Broadway

Tracy to Central (Drawing 09)

- Replace granite curbs
- Repave street
- Concrete sidewalks with brick edging on the west side
- New concrete sidewalks on the east side
- Ornamental period style street lights
- New street trees in rectangular tree grates on the west side
- New street trees in a 5 foot tree lawn on the east side
- Cobblestone crosswalks
- Corner paving details
- Burial or consolidation of utility lines

Central to Washington (Drawing 10)

- Reset granite curbs
- Repave street
- New concrete sidewalks with brick edging
- Ornamental period style street lights
- New street trees in rectangular tree grates
- Cobblestone crosswalks
- Burial or consolidation of utility lines
- Gateway markers

Pocket Park on Tracy (Drawing 11)

- Repave and repaint basketball court
- Repaint squares on basketball backboards
- New shuffleboard court
- New benches
- New trash receptacles
- New bike rack
- New playground equipment
- New sidewalk connections
- New trees for additional screening

Bus stop and Bus Shelters: Currently there is a bus stop at every intersection along the North Broadway corridor, however there are no shelters. Part of this design concept proposes the addition of two bus shelters along the corridor and a possible third shelter with the development of Killian's Landing. The two shelters would be located at the northeast corner of the Glen and Broadway intersection and at Tracy and Broadway on the southeast corner. If the Killian's Landing development occurs, a third shelter is proposed mid-block between Pine and McNaughton at the paper street, Catherine Street.

Burial or Consolidation of Utility wires: The burial or consolidation of utility wires would significantly improve the aesthetic appeal of the corridor. From the review of previous studies and reports, the cost of burying utility wires range from $4 to 6 million dollars per mile plus the cost of individual connections, which can run up to $6,000 each (generally at the cost of the building owner). If the City would like to pursue the burial of utility wires, the development of an Overall Utility Burial Plan, addressing where utilities should be buried for the entire city, is recommended to assist in working with the utility company. The alternative to burial of utilities is the consolidation of utility poles. It is recommended that if the city chooses not to bury utilities, that the utilities then be consolidated onto one side of the road onto larger and less frequent poles.

VI. Preliminary Cost Estimate for Corridor Improvements:

The following conceptual cost estimates for the corridor improvements were developed using pricing from the New York State Department of Transportation website. The units used are linear feet (lf), square feet (sf), and each (ea). Quantities were based on the scale for the North Broadway Corridor Study maps. Cost estimates are itemized per block.

Partition to Harrison (Drawing 01)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	470	$204	$95,880
2.	Sidewalk Replacement	sf	6,880	$4	$27,520
3.	Curb Replacement	lf	860	$35	$30,100
4.	Sanitary Sewer Replacement*	lf	430	$90	$38,700
5.	Storm Sewer Replacement*	lf	430	$80	$34,400

6. Waterline Replacement*	lf	430	$75	$32,250
7. Gateway Markers	ea	2	$5,000	$10,000
8. Ornamental Street Lighting	lf	720	$85	$64,080
9. Flower Planters	ea	6	$650	$3,900
10. Trash Receptacle	ea	4	$350	$1,550
11. Bench	ea	5	$500	$2,700
12. Tree	ea	16	$450	$7,200
13. Tree Grate	ea	16	$600	$9,600
14. Shrub	ea	8	$150	$1,200
15. Flower Planters	ea	2	$650	$1,300
16. Brick Sidewalk Edging	sf	1,750	$5.40	$9,450
† *Stamped Concrete Edging*	*sf*	*1,750*	*$4.50*	*$7,875*
17. Cobblestone Crosswalks	sf	1,080	$23	$24,840

† *sample pricing to show the cost difference if stamped concrete were used instead of brick. This cost is not included in the Total Construction Cost.*

Total Construction Cost	$394,670
Maintenance & Protection of Traffic (2%)	$7,893
Engineering, Legal & Contingency (25%)	$97,668
Subtotal w/ Utilities*	**$501,231**

Total Construction Cost (w/o Utility Replacement*)	$289,320
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$5,786
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$72,330
Subtotal w/o Utilities*	**$367,436**

Harrison to John (Drawing 02)

Item	Unit	Qty	Price/Unit	Total
1. Pavement Reconstruction	lf	440	$204	$89,760
2. Sidewalk Replacement	sf	7,040	$4	$28,160
3. Curb Replacement	lf	880	$35	$30,800
4. Sanitary Sewer Replacement*	lf	440	$90	$39,600
5. Storm Sewer Replacement*	lf	440	$80	$35,200
6. Waterline Replacement*	lf	440	$75	$33,000
7. Ornamental Street Lighting	lf	880	$85	$74,800
8. Trash Receptacle	ea	3	$350	$1,050
9. Bench	ea	8	$500	$4,000
10. Tree	ea	22	$450	$9,900
11. Tree Grate	ea	22	$600	$13,200
12. Brick Sidewalk Edging	sf	2,340	$5.40	$12,636
13. Cobblestone Crosswalks	sf	1,410	$23	$32,430

Total Construction Cost	$404,536

Maintenance & Protection of Traffic (2%)	$8,091
Engineering, Legal & Contingency (25%)	$101,134
Subtotal w/ Utilities*	**$513,761**
Total Construction Cost (w/o Utility Replacement*)	$296,736
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$5,935
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$74,184
Subtotal w/o Utilities*	**$376,855**

John to Glen (Drawing 03)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	400	$204	$81,600
2.	Sidewalk Replacement	sf	6,400	$4	$25,600
3.	Curb Replacement	lf	800	$35	$28,000
4.	Sanitary Sewer Replacement*	lf	400	$90	$36,000
5.	Storm Sewer Replacement*	lf	400	$80	$30,000
6.	Waterline Replacement*	lf	400	$75	$32,000
7.	Ornamental Street Lighting	lf	800	$85	$68,000
8.	Trash Receptacle	ea	3	$350	$1,050
9.	Bench	ea	6	$500	$3,000
10.	Tree	ea	21	$450	$9,450
11.	Tree Grate	ea	21	$600	$12,600
12.	Shrub	ea	7	$150	$1,050
13.	Flower Planters	ea	2	$650	$1,300
14.	Brick Sidewalk Edging	sf	2,170	$5.40	$11,718
15.	Cobblestone Crosswalks	sf	1,490	$23	$34,270

Total Construction Cost	$375,638
Maintenance & Protection of Traffic (2%)	$7,513
Engineering, Legal & Contingency (25%)	$93,910
Subtotal w/ Utilities*	**$477,060**
Total Construction Cost (w/o Utility Replacement*)	$277,638
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$5,553
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$69,410
Subtotal w/o Utilities*	**$352,600**

Glen to Pine (Drawing 04)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	365	$204	$74,460
2.	Sidewalk Replacement	sf	5,840	$4	$23,360

3. Curb Replacement	lf	730	$35	$25,550
4. Sanitary Sewer Replacement*	lf	365	$90	$32,850
5. Storm Sewer Replacement*	lf	365	$80	$29,200
6. Waterline Replacement*	lf	365	$75	$27,375
7. Gateway Markers	ea	2	$5,000	$10,000
8. Ornamental Street Lighting	lf	730	$85	$62,050
9. Trash Receptacle	ea	2	$350	$700
10. Bench	ea	6	$500	$3,000
11. Tree	ea	19	$450	$8,550
12. Tree Grate	ea	19	$600	$11,400
13. Brick Sidewalk Edging	sf	1,860	$5.40	$10,044
14. Cobblestone Crosswalks	sf	1,250	$23	$28,750

Total Construction Cost	$347,289
Maintenance & Protection of Traffic (2%)	$6,946
Engineering, Legal & Contingency (25%)	$86,822
Subtotal w/ Utilities*	**$441,057**

Total Construction Cost (w/o Utility Replacement*)	$257,864
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$5,157
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$64,466
Subtotal w/o Utilities*	**$327,487**

Pine to McNaughton (Drawing 05 & 06)

Item	Unit	Qty	Price/Unit	Total
1. Pavement Reconstruction	lf	1000	$204	$204,000
2. Sidewalk Replacement	sf	16,000	$4	$64,000
3. Curb Replacement	lf	2,000	$35	$70,000
4. Sanitary Sewer Replacement*	lf	1,000	$90	$90,000
5. Storm Sewer Replacement*	lf	1,000	$80	$80,000
6. Waterline Replacement*	lf	1,000	$75	$70,000
7. Ornamental Street Lighting	lf	1,000	$85	$85,000
8. Tree	ea	53	$450	$23,850
9. Tree Grate	ea	27	$600	$16,200
10. Shrub	ea	7	$150	$1,050
11. Flower Planters	ea	2	$650	$1,300
12. Trash Receptacle	ea	1	$350	$350
13. Bench	ea	1	$500	$500
14. Brick Sidewalk Edging	sf	3,085	$5.40	$16,659
15. Cobblestone Crosswalks	sf	1,666	$23	$38,318
16. Grass Tree Lawn	sf	4,750	$0.50	$2,375

Total Construction Cost	$763,602
Maintenance & Protection of Traffic (2%)	$15,272

Engineering, Legal & Contingency (25%)	$190,901
Subtotal w/ Utilities*	**$969,775**
Total Construction Cost (w/o Utility Replacement*)	$523,602
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$10,472
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$130,901
Subtotal w/o Utilities*	**$664,975**

McNaughton to Fowler (Drawing 07 & 08)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	830	$204	$169,320
2.	Sidewalk Replacement	sf	0	$4	$0
3.	Curb Reset	lf	1,660	$35	$58,100
4.	Sanitary Sewer Replacement*	lf	830	$90	$74,700
5.	Storm Sewer Replacement*	lf	830	$80	$66,400
6.	Waterline Replacement*	lf	830	$75	$62,250
7.	Ornamental Street Lighting	lf	830	$85	$70,550
8.	Tree	ea	45	$450	$20,250
9.	Tree Grate	ea	23	$600	$13,800
10.	Brick Sidewalk Edging	sf	2,325	$5.40	$12,555
11.	Cobblestone Crosswalks	sf	816	$23	$18,768
12.	Grass Tree Lawn	sf	3,875	$0.50	$1,937.50

Total Construction Cost	$568,631
Maintenance & Protection of Traffic (2%)	$11,373
Engineering, Legal & Contingency (25%)	$142,158
Subtotal w/ Utilities*	**$722,161**
Total Construction Cost (w/o Utility Replacement*)	$365,281
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$7,306
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$91,320
Subtotal w/o Utilities*	**$463,906**

Fowler to Tracy (Drawing 09)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	385	$204	$78,540
2.	Sidewalk Replacement	sf	1,925	$4	$7,700
3.	Curb Reset	lf	770	$35	$26,950
4.	Sanitary Sewer Replacement*	lf	385	$90	$34,650
5.	Storm Sewer Replacement*	lf	385	$80	$30,800
6.	Waterline Replacement*	lf	385	$75	$28,875

7. Ornamental Street Lighting	lf	385	$85	$32,725
8. Flower Planters	ea	2	$650	$1,300
9. Trash Receptacle	ea	1	$350	$350
10. Bench	ea	1	$500	$500
11. Tree	ea	20	$450	$9,000
12. Tree Grate	ea	10	$600	$6,000
13. Shrub	ea	8	$150	$1,200
14. Brick Sidewalk Edging	sf	1,020	$5.40	$5,508
15. Cobblestone Crosswalks	sf	1,040	$23	$23,920
16. Grass Tree Lawn	sf	1,700	$0.50	$850

Total Construction Cost	$288,868
Maintenance & Protection of Traffic (2%)	$5,777
Engineering, Legal & Contingency (25%)	$72,217
Subtotal w/ Utilities*	**$366,862**

Total Construction Cost (w/o Utility Replacement*)	$194,543
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$3,891
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$48,636
Subtotal w/o Utilities*	**$247,070**

Tracy to Central (Drawing 09)

Item	Unit	Qty	Price/Unit	Total
1. Pavement Reconstruction	lf	305	$204	$62,220
2. Sidewalk Replacement	sf	1,525	$4	$6,100
17. Curb Reset	lf	610	$35	$21,350
18. Sanitary Sewer Replacement*	lf	305	$90	$27,450
19. Storm Sewer Replacement*	lf	305	$80	$24,440
20. Waterline Replacement*	lf	305	$75	$22,875
21. Ornamental Street Lighting	lf	310	$85	$25,925
22. Flower Planters	ea	2	$650	$1,300
23. Trash Receptacle	ea	1	$350	$350
24. Bench	ea	1	$500	$500
25. Tree	ea	16	$450	$7,200
26. Tree Grate	ea	8	$600	$4,800
27. Shrub	ea	8	$150	$1,200
28. Brick Sidewalk Edging	sf	780	$5.40	$4,212
29. Cobblestone Crosswalks	sf	880	$23	$20,240
30. Grass Tree Lawn	sf	1,300	$0.50	$650

Total Construction Cost	$230,812
Maintenance & Protection of Traffic (2%)	$4,616
Engineering, Legal & Contingency (25%)	$57,703

Subtotal w/ Utilities*	**$293,131**

Total Construction Cost (w/o Utility Replacement*)	$156,047
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$3,121
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$39,012
Subtotal w/o Utilities*	**$198,180**

Central to Washington (Drawing 10)

	Item	Unit	Qty	Price/Unit	Total
1.	Pavement Reconstruction	lf	340	$204	$69,360
2.	Sidewalk Replacement	sf	0	$4	$0
3.	Curb Reset	lf	680	$35	$23,800
4.	Sanitary Sewer Replacement*	lf	340	$90	$30,600
5.	Storm Sewer Replacement*	lf	340	$80	$27,200
6.	Waterline Replacement*	lf	340	$75	$25,500
7.	Gateway Markers	ea	2	$5,000	$10,000
8.	Ornamental Street Lighting	lf	340	$85	$28,900
9.	Tree	ea	19	$450	$8,550
10.	Tree Grate	ea	19	$600	$11,400
11.	Brick Sidewalk Edging	sf	1,800	$5.40	$9,720
12.	Cobblestone Crosswalks	sf	360	$23	$8,280

Total Construction Cost	$253,310
Maintenance & Protection of Traffic (2%)	$5,066
Engineering, Legal & Contingency (25%)	$63,328
Subtotal w/ Utilities*	**$321,704**

Total Construction Cost (w/o Utility Replacement*)	$170,010
Maintenance & Protection of Traffic (2%) (w/o Utility Replacement*)	$3,400
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$42,503
Subtotal w/o Utilities*	**$215,913**

Pocket Park at Tracy and Broadway (Drawing 11)

	Item	Unit	Qty	Price/Unit	Total
1.	Repave and Paint Basketball Court				$2,000
2.	Repaint Backboard Squares				$200
3.	New Shuffleboard Court				$500
4.	Bench	ea	4	$550	$2,200
5.	Trash Receptacles	ea	2	$400	$800
6.	Bike Rack	ea	1	$500	$500
7.	Playground				$35,000
8.	Sidewalk Connections				$2,000

9. Trees	ea	7	$450	$3,150

Total Construction Cost (w/o Utility Replacement*)	$42,850
Engineering, Legal & Contingency (25%) (w/o Utility Replacement*)	$10,713
Park Subtotal	**$53,563**
Corridor Project Total w/ Utilities	**$4,664,679**
Corridor Project Total w/o Utilities*	**$3,267,984**

VII. Phasing Options:

The implementation of these design improvements can be phased to reduce annual cost burden, either by a geographically based perspective, such as phasing by block or district, or by phasing based on the specific improvements, such as sidewalk replacement or the addition of benches and trash receptacles. When approaching implementation of a major corridor project, some improvements will dictate the order in which other improvements can be done. For example, all utilities should be installed prior to repaving the roadway and replacing sidewalks. It is the recommendation of this study that a geographically based perspective be taken.

VIII. Possible Funding Resources:

The implementation of corridor improvements identified in this study, will require creative financing strategies. The following is a list of possible funding options:

A. **Special Assessment District** – The residential and transitional districts in the North Broadway Corridor Study may be appropriate for the implementation of a Special Assessment District. In this scenario, landowners would be required to either pay an additional tax or the City would identify a portion of the existing tax assessment to be allocated specifically for improvements in the district in question. This allocated revenue can be used for matching grant funds, capital improvements or specialized funding opportunities such as facade improvement and home-ownership programs.

B. **Business Improvement District** – A Business Improvement District (BID) may be appropriate for the mixed-use areas of the North Broadway Corridor. A BID is provided for under New York State's general municipal law (Article 19-A), whereby a district is created in which property owners are assessed an additional charge on their tax bill to pay for services and activities that will benefit the properties in the district. Services can include security, clean up, beautification, marketing and promotion, business development and capital improvement projects. There are limitations to the amount of money each property can be assessed (no more than 20% of their annual taxes). The District forms a 501c3 and a Board of Directors oversees the BID's activities. In

order to form, a BID plan must be developed that outlines, among other things, the BID boundary, the properties included therein, the assessment formula to be used and a description of the activities and services that will be supported by BID money. Due to the level of complexity, this strategy is recommended as a long-term option. In the short term, the City should organize a Local Development Corporation (*LDC, See Below*) and then implement a Main Street Program (*See Appendix E for an explanation of the Main Street Program*). While the Main Street Program will not contribute significantly to the financial requirements for implementing the North Broadway Corridor Study, it will provide the necessary framework for the future BID.

C. **Community Development Block Grants Program (CDBG)** – The CDBG Program, through the Governor's Office for Small Cities, provides grants to eligible cities, towns, and villages with a population under 50,000 and counties with a population under 200,000 to revitalize neighborhoods, expand affordable housing and economic opportunities and/or improve community facilities and services.

D. **Property Improvement Loan Insurance (Title I)** – Title I is through the US Department of Housing and Urban Development (HUD), and is a way that the Federal Housing Administration (FHA) makes it easier for consumers to obtain affordable home improvement loans by insuring loans made by private lenders to improve properties that meet certain requirements.

E. **Rehabilitation Mortgage Insurance (Section 203 (k))** – Section 203 (k) is also through HUD and is another FHA program. Section 203 (k) insurance enables homebuyers and homeowners to finance both the purchase (or refinancing) of a house and the cost of its rehabilitation through a single mortgage or to finance the rehabilitation of their existing home. Through insuring the mortgage it encourages lenders to make mortgage credit available to borrowers who would not otherwise qualify for conventional loans on affordable terms and to residents of disadvantaged neighborhoods.

F. **Urban and Community Forestry Program** – The New York State Department of Environmental Conservation (NYSDEC) administers the Urban and Community Forestry Program, which is designed to provide technical assistance in tree preservation, species selection, tree inventory, and management strategies. Funding for community forestry projects is available through the Urban Communities Grants Program.

G. **Tree City USA** – Is a program through the National Arbor Day Foundation. It does not directly provide funding, but can be a tool to open up other funding options. Tree City USA is a program that provides direction, technical assistance, public attention, and national recognition for urban and community forestry programs. Preference is sometimes given to Tree City

USA communities over other communities when allocations of grant money are made for trees or forestry programs.

H. **NYS Water and Sewer Co-Funding Infrastructure Initiative** – The Co-funding Initiative, provided through the Governor's Office for Small Cities, provides information on applying to government funding programs in an attempt to maximize the delivery of resources to those communities in need of infrastructure improvements. It allows applicants to gain access to information on other water and sewer funding programs, making it possible for communities to match potential funding sources with their proposed projects.

I. **Clean Water State Revolving Fund** – The CWSRF, provided by the NYS Environmental Facilities Corporation and the NYSDEC, provides low interest rate loans to municipalities to construct water quality protection projects. A variety of publicly owned water quality improvement projects are eligible for financing. Eligible projects include point source projects such as wastewater treatment facilities and non-point source projects such as landfill closures and stormwater management projects, as well as certain habitat restoration and protection projects in national estuary program areas.

J. **Drinking Water State Revolving Fund (DWSRF)** – The DWSRF, provided by the NYS Environmental Facilities Corporation and the NYSDEC, provides financing for community water supply systems, both public and privately owned, and non-profit, non-community water supply systems. Projects eligible for DWSRF financing include investments to upgrade or replace infrastructure, maintain compliance with federal or state health standards, and provide safe, affordable drinking water.

K. **Water and Environmental Programs (WEP)** – WEP, provided through USDA Rural Utilities Services, provides loans, grants and loan guarantees for drinking water, sanitary sewer, solid waste and storm drainage facilities in rural areas, cities and towns with a population of 10,000 or less.

IX. Plan Implementation and Management:

As recommended in the Downtown Redevelopment Plan, the City of Rensselaer should consider the development of a Local Development Corporation (LDC) to handle the implementation of the North Broadway Corridor Study. This public-private entity has greater flexibility than the City, allowing for property acquisition, project oversight and specialized funding opportunities. In addition, an LDC can manage multiple projects including a Main Street Program *(See Appendix E for additional explanation)* and, in the future, a Business Improvement District.

References

Clark Patterson Associates utilized the following resources in the development of the North Broadway Corridor Study:

1. Capital District Transportation Authority

2. Governor's Office for Small Cities, www.nysmallcities.com

3. Keegan, Andrew. (2003). "Complex scenario involved in Lewes underground utilities."
   Cape Gazette. Retrieved 2/3/2003, from
   www.beachpaper.com/storiescurrent/lewesutilities091203.html

4. National Arbor Day Foundation, www.arborday.org

5. Main Street Program, www.mainstreet.org/About/msapproach.htm

6. NYS Department of Conservation, www.dec.state.ny.us

7. NYS Environmental Facilities Corporation, www.nysefc.org

8. Tax Increment Financing,
   www-personal.umich.edu/~mooretc/up538handbookTIFs.html

9. USDA Rural Utilities Services, www.usda.gov/rus/water

10. US Department of Housing and Urban Development, www.hud.gov

10. US Department of Transportation, Federal Highway Administration. *Flexibility in Highway Design*. Publication # FHWA-PD-97-062.

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Steering Committee Members

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Phil Erlich
Hank LaBarba
Kathleen L. Ryan
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Mike Stammel
Dominic Tagliento

Information Resources

The Capital District Transportation Commission
Rensselaer County Economic Development and Planning Department

Special thanks for the dedicated assistance of the City of Rensselaer Planning Department.

Marybeth Pettit
Christopher Eastman

Appendix A

Existing Condition Maps

Appendix B

Sewer Map

Appendix C

North Broadway Sewer Line Capacities

Table 1: City of Rensselaer

North Broadway Sewer Line Capacities

Upstream MH		Downstream MH		Pipe								
MH #	Invert Elev. (ft)	MH #	Invert Elev. (ft)	Dia. (in)	Length (ft)	Calculated Slope (ft/ft)	Calculated R (A/P), (ft)	Calculated Vel. (ft/sec)	Calculated Full Flow Capacity (cfs)	(gpm)	(mgd)	Comments
							Manning n =	0.013				
From south of Washington St. to Tracy St. outfall line (flowing south)												
S-312	57.0	S-327	54.0	10	196	0.0153	0.208	4.97	2.71	1,217	1.75	
S-327	53.7	S-328	***50.4***	12	125	0.0264	0.250	7.37	5.79	2,598	3.74	S-324 Inv. Elev. Estimated - MH paved over
S-328	***50.3***	C-344	42.2	10	180	0.0450	0.208	8.52	4.65	2,086	3.00	S-324 Inv. Elev. Estimated - MH paved over
From Fowler Ave. outfall line to Tracy St. outfall line (flowing north)												
C-346	39.5	C-344A	***38.4***	12	177	0.0062	0.250	3.58	2.81	1,261	1.82	C-344A Inv. Elev. Approx.-MH Rim Elev.not surveyed
C-344A	***38.3***	C-344	35.9	12	197	0.0122	0.250	5.01	3.93	1,765	2.54	C-344A Inv. Elev. Approx.-MH Rim Elev.not surveyed
From south of McNaughton Ave. to Fowler St. outfall line, on east side of Broadway (flowing north)												
S-377	61.2	S-376	***52.7***	10	154	0.0552	0.208	9.44	5.15	2,310	3.33	S-376 Inv. Elev. Estimated - MH could not be opened
S-376	***52.6***	C-378	50.9	10	154	0.0110	0.208	4.22	2.30	1,033	1.49	S-376 Inv. Elev. Estimated - MH could not be opened
C-378	50.9	C-367A	***45.0***	12	169	0.0349	0.250	8.48	6.66	2,988	4.30	C-367A Inv. Elev. Approx.-MH Rim Elev.not surveyed
C-367A	***44.9***	C-367	44.3	12	227	0.0026	0.250	2.33	1.83	822	1.18	C-367A Inv. Elev. Approx.-MH Rim Elev.not surveyed
C-367	44.0	C-348	40.1	12	207	0.0188	0.250	6.23	4.89	2,195	3.16	
C-348	40.0	C-347	39.5	12	178	0.0028	0.250	2.40	1.89	848	1.22	
C-347	39.2	C-346	39.4	12	23	-0.0087	0.250	Cannot be calculated - pipe at negative slope.				Pipe at negative slope
C-348	*40.0*	*C-346*	*39.4*	*12*	*201*	*0.0030*	*0.250*	*2.48*	*1.95*	*874*	*1.26*	Calculated equivalent slope from C-348 to C-346, to
												compensate for negative slope between C-347 and
												C-346. Results in some surcharging at C-347.
From McNaughton Ave. to Fowler St. outfall line, on west side of Broadway (flowing north)												
S-375	49.1	S-366	38.3	18	368	0.0293	0.375	10.18	18.00	8,077	11.63	
S-366	38.3	C-345	39.0	18	451	-0.0016	0.375	Cannot be calculated - pipe at negative slope.				Pipe at negative slope
S-375	*49.1*	*C-345*	*39.0*	*18*	*819*	***0.0113***	*0.375*	*6.32*	*11.17*	*5,012*	*7.22*	Calculated equivalent slope from S-375 to C-345, to
												compensate for negative slope between S-366 and
												C-345. This would result in overflow at S-366, so set
												equivalent slope for max. flow without overflowing S-366.
From south of McNaughton Ave. to outfall line south of Harrison Ave. (flowing south)												
S-386	60.8	S-387	56.2	12	301	0.0153	0.250	5.61	4.40	1,977	2.85	
S-387	56.1	C-397	47.2	12	357	0.0249	0.250	7.16	5.63	2,525	3.64	
C-397	47.0	C-407	38.9	12	358	0.0226	0.250	6.82	5.36	2,405	3.46	
C-407	38.8	C-420	30.7	12	391	0.0207	0.250	6.53	5.13	2,302	3.31	
C-420	30.9	C-435	27.5	12	428	0.0079	0.250	4.04	3.18	1,425	2.05	
C-435	27.5	C-452	21.4	12	187	0.0326	0.250	8.19	6.43	2,888	4.16	
C-452	21.4	C-453	22.4	12	20	-0.0500	0.250	Cannot be calculated - pipe at negative slope.				Pipe at negative slope
C-435	*27.5*	*C-453*	*22.4*	*12*	*207*	*0.0246*	*0.250*	*7.12*	*5.59*	*2,510*	*3.61*	Calculated equivalent slope from C-435 to C-453, to
												compensate for negative slope between C-452 and
												C-453. Results in some surcharging at C-452.
From Partition Street to outfall line south of Harrison Ave. (flowing north)												
C-456	35.8	C-455	29.3	12	36	0.1806	0.250	19.28	15.14	6,795	9.79	
C-455	29.3	C-454	24.1	12	113	0.0460	0.250	9.73	7.64	3,431	4.94	
C-454	23.8	C-453	23.1	12	10	0.0700	0.250	12.00	9.43	4,231	6.09	

Appendix D

Corridor Improvement Design Maps

Appendix E

Main Street Program

Main Street Program

for commercial district revitalization

The following describes the National Main Street Center's approach to downtown revitalization (http://www.mainstreet.org/About/msapproach.htm). The Main Street program's success is based on a comprehensive strategy of work, tailored to local needs and opportunities, in four broad areas, called the Main Street Four Point Approach:

Design: Enhancing the physical appearance of the commercial district by rehabilitating historic buildings, encouraging supportive new construction, developing sensitive design management systems, and long-term planning.

Organization: Building consensus and cooperation among the many groups and individuals who have a role in the revitalization process.

Promotion: Marketing the traditional commercial district's assets to customers, potential investors, new businesses, local citizens and visitors.

Economic Restructuring: Strengthening the district's existing economic base while finding ways to expand it to meet new opportunities -- and challenges from outlying development.

The Main Street Philosophy

The National Main Street Center's experience in helping communities bring their downtowns back to life has shown time and time again that the Main Street Four Point Approach succeeds only when combined with the following eight principles:

Comprehensive: A single project cannot revitalize a downtown or commercial neighborhood. An ongoing series of initiatives is vital to build community support and create lasting progress.

Incremental: Small projects make a big difference. They demonstrate that "things are happening" on Main Street and hone the skills and confidence the program will need to tackle more complex problems.

Self-Help: Although the National Main Street Center can provide valuable direction and hands-on technical assistance, only local leadership can initiate long-term success by fostering and demonstrating community involvement and commitment to the revitalization effort.

Public/private partnership: Every local Main Street program needs the support and expertise of both the public and private sectors. For an effective partnership, each must recognize the strengths and weaknesses of the other.

Identifying and capitalizing on existing assets: One of the National Main Street Center's key goals is to help communities recognize and make the best use of their unique offerings. Local assets provide the solid foundation for a successful Main Street initiative.

Quality: From storefront design to promotional campaigns to special events, quality must be the main goal.

Change: Changing community attitudes and habits is essential to bring about a commercial district renaissance. A carefully planned Main Street program will help shift public perceptions and practices to support and sustain the revitalization process.

Action-oriented: Frequent, visible changes in the look and activities of the commercial district will reinforce the perception of positive change. Small, but dramatic improvements early in the process will remind the community that the revitalization effort is under way.

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