

CITY OF BELMONT—NORTH BELMONT CITY FACILITY GENERAL LOCATIONS AND STREAMS—UPDATED: OCTOBER 2018					
★ CITY HALL / PLANNING & ZONING	◆ FRADY-CRESCENT PARK (NOT SHOWN)	⊕ HAGER ST WATER TOWER (NOT SHOWN)	● HALL LIFTSTATION (NOT SHOWN)	● GRAYSTONE LIFTSTATION (NOT SHOWN)	■ NANCY HANKS BRANCH (NOT SHOWN)
★ PARKS & RECREATION (NOT SHOWN)	◆ GANTT PARK (NOT SHOWN)	⊕ ACME RD WATER TOWER	● DIXIE LIFTSTATION (NOT SHOWN)	● MORGANS BRANCH LIFTSTATION	■ FITES CREEK
★ POLICE DEPARTMENT (NOT SHOWN)	◆ RODDEN BALLFIELD (NOT SHOWN)	● PEBBLE CREEK LIFTSTATION	● RANKIN LIFTSTATION (NOT SHOWN)	● LAKE POINT LIFSTATION (NOT SHOWN)	■ FITES CREEK TRIBUTARY 1 & 1A
★ BELMONT FIRE DEPARTMENT (NOT SHOWN)	◆ STOWE PARK (NOT SHOWN)	● CASON LIFTSTATION	● POINT CROSSING LIFTSTATION (NOT SHOWN)	● REFLECTION POINT LIFTSTATION	■ SOUTH FORK CATAWBA RIVER TRIBUTARY 2
★ WATER TREATMENT PLANT (NOT SHOWN)	◆ DAVIS PARK (NOT SHOWN)	● DUNCAN LIFTSTATION	● SOUTHRIDGE LIFTSTATION (NOT SHOWN)	● OVERLAKE LIFTSTATION (NOT SHOWN)	■ HALLS ROCKY BRANCH (NOT SHOWN)
★ WASTE WATER TREATMENT PLANT	◆ ROCKY BRANCH MTB PARK (NOT SHOWN)	○ STOWE LIFTSTATION	● SOUTH POINT RIDGE LIFTSTATION	● CONSERVANCY LIFTSTATION (NOT SHOWN)	■ CURTIS BRANCH (NOT SHOWN)
★ PUBLIC WORKS (NOT SHOWN)	◆ REID PARK (NOT SHOWN)	● ABBEY PLACE LIFTSTATION	● BELMONT TOWN CENTER LIFTSTATION (NOT SHOWN)	● SOUTH SHORE LIFTSTATION (NOT SHOWN)	■ KITTYS BRANCH (NOT SHOWN)
★ SOUTH POINT FIRE DEPARTMENT	◆ LINFORD PARK	○ LINCOLN LIFTSTATION (NOT SHOWN)	● PINSTO LIFTSTATION (NOT SHOWN)	■ ABBEY CREEK	■ UNNAMED STREAM
◆ LOFTIN RIVER PARK (NOT SHOWN)	◆ OAK ST STAND PIPE (NOT SHOWN)	○ CLAY LIFTSTATION (NOT SHOWN)	● BELLEMEADE LIFTSTATION (NOT SHOWN)	■ STOWE BRANCH & TRIBUTARY	

Appendix K

Streets and Stormwater System Operation & Maintenance



Streets & Stormwater System

Operation & Maintenance

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1. Introduction to the Streets & Stormwater System O&M

Intent: The procedures in this document are set forth in an effort to prevent or reduce, to the maximum extent practicable, polluted runoff from municipally owned stormwater systems, streets, roads, sidewalks, rights-of-way, and parking lots.

Purpose: To provide stormwater staff and the street sweeper operator(s) a set of basic guidelines to follow in the daily operation and maintenance of the streets and stormwater system.

Street Sweeper Required Training: Class B CDL's, or higher, with Tanker Endorsement are required to operate the Street Sweeper. In-house training by the Stormwater Coordinator, or designee, is required before operating the Street Sweeper.

Street Sweeper Make and Model:

2015 Johnston VT-651 Full Vacuum Sweeper

Gross Weight is 33,000 lbs

Hopper Loaded Weight is approximately ONE TON depending on type of debris picked up

Manufacturer's User Manual(s) is located in the Stormwater Coordinator Office.

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I. Operation of Street Sweeper	Frequency
1. Follow manufacturer’s recommended operating procedures for optimal cleaning efficiency. (See Street Sweeper User Manual)	Always
2. Ensure all hoses, sprayers, and brushes are working properly before leaving Public Works.	Always
3. Fill the water tank daily or as needed.	Always
4. Always use water during street sweeping activities to provide lubrication for hoses and to control dust. Not using water will wear down the hoses and cause increased repair costs and street sweeper down-time.	Always
5. Replace brushes when bristle length is less than six inches.	Always
6. While sweeping, drive between 3 mph and 5 mph to allow for optimal cleaning efficiency.	Always
7. Perform required Daily, Weekly, and Monthly Maintenance per manufacturer’s recommendations (see Manufacturer’s User Manual).	Daily, Weekly, Monthly

II. Sweeping Frequency	Frequency
1. All City Streets shall be swept according to the dedicated routes. Dedicated routes are marked on the Street Sweeper Route Map located in Appendix A. The established Route Listings and recommended schedules are located in Section 2 of this document.	Always
2. Check storm drain tops on Priority Streets before and after forecasted heavy rain events or flash flood warnings for needed cleaning. Use Sweeper or clean by hand using pitch forks and shovels to clean storm drain tops. Priority Streets are marked on the Street Sweeper Route Map located in Appendix A, and are listed in Section 2 of this document.	As Needed
3. Check storm drain tops on Priority Streets after unexpected thunderstorms and heavy rains. Use Sweeper or clean by hand using pitch forks and shovels to clean storm drain tops. Priority Streets are marked on the Street Sweeper Route Map located in Appendix A, and are listed in Section 2 of this document.	As Needed
4. Sweep the affected streets after outdoor special events (i.e. fairs, festivals, parades, etc.).	As Needed
5. Perform additional street sweeping after leaf pickups in the autumn and winter months.	As Needed
6. Perform additional street sweeping after salt/slag applications and winter storm events in the winter months.	As Needed

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III. Disposal of Street Sweeper Debris and Wash Water	Frequency
<p>1. <u>For applicable vehicles and equipment</u> - When large amounts of water have been used to clean storm drains/catch basins/pipes and the wastewater is stored in the hopper, decant wastewater into the sanitary sewer before dumping debris from hopper. This procedure will not be necessary before every dump, only when large amounts of water have been used and stored in the hopper. Decant area is located at the Waste Water Treatment Plant's Sludge Transfer Station, the drain is connected to sanitary sewer and goes to the plant influent.</p> <p>Note: The decant process requires time to allow for the solids to settle to the bottom of the hopper thusly separating the wastewater and the solids. The street sweeper must not be moved to allow for proper settling.</p> <ol style="list-style-type: none"> a. Park for <u>two</u> hours at the WWTP sludge transfer station. b. Once solids have settled to the bottom, the wastewater can be drained from the top of the hopper. c. Solids are not to be deposited or dumped at the sludge transfer station, only wastewater. d. Once decant is complete, wash down the decant area into the sanitary sewer. e. Once decant process is complete continue to procedure 2 below. 	Always
<p>2. Dump hopper debris at the temporary solid waste storage area. The temporary solid waste storage area is on an impervious surface (gravel). The temporary solid waste storage area is located at Waste Water Treatment Plant outside the gate west of Office and Lab Building.</p>	Always
<p>3. After the last dump of each day, scrape out excess debris from the hopper at the temporary solid waste storage site.</p>	Always
<p>4. After scraping out excess debris from the hopper, wash out the hopper and wash down the Street Sweeper. The washout/wash down area is located at the fire hydrant in the rear of Public Works Facility. Washwater runoff drains to densely vegetated area of kudzu and brush undergrowth. Ensure that each morning after washout/washdown the area is swept by the Street Sweeper to pick up any debris.</p>	Always
<p>5. At the end of each week and after final wash-out is complete, ensuring removal of debris to the maximum extent practicable, hook up the hopper to a fire hydrant, at a location to be determined by the Director of Public Works, to thoroughly clean the screens in the hopper. Ensure that each morning after hydrant-hook up the area is swept by Street Sweeper to pick up any debris.</p>	Weekly or As Needed
<p>6. At the end of each work day, park the street sweeper in the designated area at Public Works.</p>	Always
<p>7. Inspect the temporary solid waste storage area for run-on, run-off, and debris scattering. Pick up scattered debris and dispose of properly. Note any maintenance issues pertaining to run-on and run-off and notify the Stormwater Coordinator.</p>	Daily
<p>8. Ensure that the materials at the temporary solid waste storage area are disposed of and taken to the permanent disposal site. The permanent</p>	As needed

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disposal site is located at the Gaston County Landfill in Dallas, North Carolina.	
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IV. Storm Drain and Catch Basin Cleaning Procedures	Frequency
1. Inspect Storm Drain/Catch Basins (SD/CB) for build-up of sediments, debris, trash, vegetation, structural condition etc. If SD/CB is one-third to one-half full from the invert of pipe to the top of the grate, then it requires cleaning. If SD/CB is more than one-half full then it should be cleaned more frequently. If the structural condition requires maintenance, the drainage structure is scheduled for maintenance by city staff or contracted repair.	Annually
2. Work with a crew of two or more people when cleaning storm drains and catch basins.	Always
3. Use Street Sweeper to remove debris from curbside and storm drain/catch basin tops in the work area before removing storm drain/catch basin grates and tops.	Always
4. Using manhole hooks or other approved equipment, two people are to remove the grate from the storm drain/catch basin.	Always
5. If the storm drain/catch basin has a concrete slab top, use a back hoe or other approved equipment to move the top. Do <u>not</u> attempt to move it manually.	Always
6. Use wandering pressure wash hose and vacuum hose on street sweeper to break up and provide suction of debris in storm drain/catch basin box. The manual use of shovels may be required to supplement break up of debris.	Always
7. Manually clean storm drain/catch basin inlet and/or outlet pipe orifices with shovels to the maximum extent practicable. Use the street sweeper catch basin hose to get the debris out of the storm drain/catch basin box.	Always
8. Use the minimum amount of water practicable to clean storm drains/catch basins.	Always
9. Once storm drain/catch basin is cleaned to the maximum extent practicable, put grate or concrete slab top back in place.	Always
10. Clean up the work area of excess debris and City equipment.	Always
11. Dispose of all collected debris properly. See Section III "Disposal of Street Sweeper Debris and Wash Water" of this SOP for details.	Always

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V. Piped Conveyance Cleaning Procedures	Frequency
<p>1. Inspect piped conveyances for build-up of sediments, debris, trash, vegetation, structural condition, etc. If pipe is one-half full from the invert of pipe to the top of the pipe, then it requires cleaning. If pipe is more than one-half full then it should be cleaned more frequently. If the structural condition requires maintenance, the piped conveyance is scheduled for maintenance by city staff or contracted repair. NOTE: Piped conveyances can be inspected at time of Storm Drain/Catch Basin Inspections.</p>	Annually
<p>2. Cleaning clogged stormwater pipes:</p> <ol style="list-style-type: none"> a. Work with a crew of two or more people when cleaning clogged stormwater pipes. b. Use the jet/vac truck to jet and simultaneously vacuum debris from pipe. c. Set up jet/vac truck downstream of clog/impediment. d. Jet in the upstream direction so that sediments and debris flow back to jet/vac truck to be vacuumed. e. Some clogs may require jetting in the downstream direction in order to be cleared, vacuum must be running to collect as much debris as possible. f. Dispose of all collected debris properly. See Section III “Disposal of Street Sweeper Debris and Wash Water” of this SOP for details. g. This procedure may be contracted out to an environmental contractor that uses a jet/vac truck to remove debris from pipes. (Local Environmental Contractors include Stanley Environmental Solutions, Bio-Nomics, Jaamco, Hepaco, and Haz-Mat Environmental) h. Do not flush stormwater pipes to clean <u>unless</u> you have a basin for catching sediment and pollutants. Ensure a check dam is in place at basin outlet or outfall to filter sediments, debris, and pollutants. See the Stormwater Coordinator before flushing stormwater pipes and for basin clean up procedures. 	Always

VI. Vegetative Conveyance Cleaning Procedures	Frequency
<p>1. Inspect Vegetative Conveyances for build-up of sediments, debris, trash, invasive vegetation, erosion etc. If the vegetated conveyance is one-half full from the invert to the top of the slope, then it requires cleaning. If the vegetative conveyance is more than one-half full then it should be cleaned more frequently. If the vegetated conveyance is eroding or washing out, then it requires maintenance and is put on schedule for maintenance by city staff or contracted repair.</p>	Annually
<p>2. Work with a crew of two or more people when cleaning vegetated conveyances.</p>	Always
<p>3. Remove build-up of sediments, debris, trash, invasive vegetation, etc. with backhoe, excavator, and/or shovels. Keep spoil pile at minimum two feet from top of slopes.</p>	Always

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4. Once the vegetative conveyance is cleaned, re-work the conveyance to ensure the grade is correct for proper runoff flow. Ensure conveyance is compacted properly to avoid erosion issues	Always
5. Load up spoil pile and any other debris to be hauled off.	Always
6. Seed and mat the invert and one-half of the side slopes. Dress, seed, and straw the remainder of the disturbed area.	Always
7. Clean up the work area of excess debris and City equipment.	Always
8. Dispose of all collected debris properly. See Section III "Disposal of Street Sweeper Debris and Wash Water" of this SOP for details.	Always

VII. Manhole Cleaning Procedures	Frequency
1. Inspect Manhole for build-up of sediments, debris, trash, vegetation, structural condition, etc. If the manhole is one-half full from the invert of pipe to the top of the grate, then it requires cleaning. If the manhole is more than one-half full then it should be cleaned more frequently. If the structural condition requires maintenance, the manhole is scheduled for maintenance by city staff or contracted repair.	Annually
2. Work with a crew of two or more people when cleaning manholes.	Always
3. Using manhole hooks or other approved equipment, two people are to remove the cover from the manhole.	Always
4. Use wandering pressure wash hose and vacuum hose on street sweeper to break up and provide suction of debris manhole. The manual use of shovels may be required to supplement break up of debris.	Always
5. Manually clean manhole inlet and/or outlet pipe orifices with shovels to the maximum extent practicable. Use the street sweeper vacuum hose to get the debris out of the manhole.	Always
6. Use the minimum amount of water practicable to clean manholes.	Always
7. Once manhole is cleaned to the maximum extent practicable, put cover back in place.	Always
8. Clean up the work area of excess debris and City equipment.	Always
9. Dispose of all collected debris properly. See Section III "Disposal of Street Sweeper Debris and Wash Water" of this SOP for details.	Always

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VIII. Permeable Pavers Operation and Maintenance and Inspections	Frequency
<p>Permeable pavements require maintenance to provide long-term stormwater benefits. The majority of maintenance efforts are keeping the surface from clogging as well as avoiding pollutants such as deicing salts that might affect groundwater quality. Regular inspection will determine whether the pavement surface and reservoir are functioning as intended. Practices for keeping the pavement unclogged:</p> <ul style="list-style-type: none"> • Clean the surface with portable blowers frequently, especially during the fall and spring to remove leaves and pollen before they irreversibly reduce the pavement’s surface permeability • Do not stockpile soil, sand, mulch or other materials on the permeable pavement. • Do not wash vehicles parked on the permeable pavement. • Place tarps to collect any spillage from soil, mulch, sand or other materials transported over the pavement. • Cover stockpiles of same near the permeable pavement. • Bag grass clippings or direct them away from the permeable pavement. • Do not blow materials onto the permeable pavement from adjacent areas. • Do not apply sand during winter storms. • Immediately remove any material deposited onto the permeable pavement during maintenance activities. Remove large materials by hand. Remove smaller organic material using a hand-held blower machine. • Remove weeds growing in the joints of PICPs by spraying them with a systemic herbicide such as glyphosate and then return within the week to pull them by hand. After the weeds are removed from paver joints, the pavement shall be swept (with a vacuum sweeper if possible) to remove the sediment and discourage future weed growth. 	
1. Inspect the SCM using the Permeable Paver Inspection Report Form. Fill out form completely and schedule any needed maintenance. Keep completed inspection report on file.	Quarterly
2. Remove debris and trash by hand or with Street Sweeper.	Always
3. Remove build-up of sediments with a handheld or backpack blower. If sediments are impacted and pavers clogged, use of the Street Sweeper may be necessary to remove the clogging. When using the Street Sweeper, be careful not to vacuum up the pavers.	Always
4. Check underdrain cleanouts and outlets for clogs.	Always
5. Correct any bare and or eroded areas that may be draining to the permeable pavers. Erosion and sedimentation can clog the permeable pavers.	Always
6. Clean up the work area of excess debris and City equipment.	Always
7. Dispose of all collected debris properly. See Section III “Disposal of Street Sweeper Debris and Wash Water” of this SOP for details.	Always

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IX. Level Spreader Operation and Maintenance and Inspections	Frequency
<p>A Level Spreader that is not maintained properly may become a source of pollution rather than a pollutant removal mechanism. During the first two years after construction, a Level Spreader should be inspected after every moderate to major storm event for proper distribution of flows and signs of erosion. After the first two years, the Level Spreader may be inspected quarterly. If evidence of erosion exists, the eroded areas should be filled in and reseeded. The cause of the erosion should then be determined and eliminated.</p> <p>For the first two years after the Level Spreader is established, it will be inspected quarterly and within 24 hours after every storm event greater than 1.0 inch. After two years of successful performance, the LS-VFS will be inspected quarterly. Records of operation and maintenance will be kept in a known set location and will be available upon request.</p>	
1. Inspect the SCM using the Level Spreader Inspection Report Form. Fill out form completely and schedule any needed maintenance. Keep completed inspection report on file.	Quarterly
2. Remove debris and trash by hand.	Always
3. Remove build-up of sediments in forebay area with equipment. Dispose of sediments offsite.	Always
4. Remove invasive vegetation	Always
5. Correct any bare and or eroded areas.	Always
6. Clean up the work area of excess debris and City equipment.	Always

X. Other Standard Operating Procedures	Frequency
1. Street Sweeper Operator and/or Stormwater Staff is to report any seen spills, illicit discharges or connections immediately to the Stormwater Coordinator at (704)901-2076. Include the address (or nearest address) and the nature of discharge, connection, and/or spill in the report.	Always
2. Do not sweep freshly patched or paved streets, as the street sweeper has enough suction power to pull up the freshly applied asphalt. Wait at least ten days to sweep these streets or areas.	Always
3. Do not use private driveways as turn-arounds.	Always
4. Follow all standard safety procedures regarding work zone safety and traffic safety.	Always
5. Follow all NCDOT Traffic Rules and Regulations.	Always

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XI. Record Keeping and Documentation	Frequency
1. Keep a copy of the Strep Sweeper Standard Operating Procedures Manual on the street sweeper.	Always
2. Use the iWorQ Work Order System to create a "Stormwater - SW3 DVI" Work Order a) In the "Work Order Description" log "Start Mileage." b) Add a "Note" to indicate any issues found and corrected during Pre-Trip Inspection. c) At end of day, in the "Work Order Description" log "End Mileage" d) Log the "Employee" total time spent for the Daily Vehicle Inspection. e) Close out Work Order.	Always
3. Use the iWorQ Work Oder System to create a work order for any Street Sweeper Maintenance Activities a) In the "Work Order Description" note maintenance activity b) Log "Materials" used for maintenance activity. c) Log "Employee" total time spent on maintenance activity. d) Log "Equipment" total time spent for maintenance activity. e) Add a "Note" for any additional comments. f) Close out Work Order.	Always
4. Use the iWorQ Work Order System to create a work order for the day's sweeping activities and to document information. a) Under "Work Type", select the appropriate Street Sweeper Route (Route 1, Route 2, etc., Priority Streets, or Miscellaneous) b) Per the Route selected, the route's streets are in the "Work Order Description." c) Record the number of catch basin/storm drain tops cleaned to the side of each street in the "work order description." d) Add a "Note" to work order to indicate any storm drains needing additional maintenance. e) In the "work order description" log the number of loads dumped at the temporary storage area. f) In the "work order description" log the type of debris removed from streets, curb and gutter, and storm drain tops. g) In the "work order description" log the approximate amount of water, in gallons, used for the onboard water tank and for cleaning/maintenance of the Street Sweeper. h) Log the "Employee" total time spent running Street Sweeper (to include drive times, dumping, and cleaning of Sweeper and Hopper). i) Log the "Equipment" total time spent operating (to include drive times, dumping, and cleaning of Sweeper and Hopper). j) Close out Work Order.	Always
5. Use a Street Sweeper Log Sheet for use in the field to track progress on sweeping activities. Blank Street Sweeper Log Sheets are located in Appendix B.	As Needed

2. Introduction to Routes and Recommended Schedules:

There are approximately 50 miles of City Streets and State Roads with curb and gutter to be swept.

On average there are 22 Workdays in each month.

Total Sweep time for Routes 1 through 7 is approximately 33 Workdays, and this approximation does not include additions to sweeping schedules as outlined in Section 1.II. of the Street & Stormwater System O&M (1.II.2, 1.II.3, 1.II.4, 1.II.5, and 1.II.6).

Sweeping Workdays are Monday through Thursday.

1 Sweeping Workday = 6 hours of sweeping, dumping, decanting (if necessary)
.5 hour for lunch
1.5 hours for day-to-day maintenance and wash down

Fridays are reserved for maintenance and thorough cleaning of the street sweeper, unless otherwise instructed by supervisor.

Recommended start days for each Street Sweeper Route are based off the Trash Route Schedule. The recommended start days are meant to stagger the two operations so that trash cans and recycling bins are not left in the streets or along the curbing. This allows homeowners one to two days to collect their cans from the street-side and optimizes street sweeping efficiency.

Actual route times will vary due to seasons/time of day – All estimated route times herein are based on “best conditions” for Street Sweeping Practices.

All established routes herein are color coded to coincide with the Street Sweeper Route Map located in Appendix A.

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Priority Streets and Rain Events	Focus on Catch Basin Tops
<i>Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i>	
Linestowe Dr	Miller St
E Catawba St	Pebble Creek Dr
Sixth St	Wilkerson St
Howe St	Palm Ln
Church St	Linford St
Hawley Ave	Pleasant St
E Woodrow Ave	Llewellyn St
Glenway Ave	Cason St
Catawba St	Boundary St
N Main St	Jackson Ave
Myrtle St	Cathedral Dr
McLeod Ave	Rankin St
Poplar St	Lambert St
Prince St	Cross St
S Main St	Live Oak Ave
Eagle Rd	Archibald St
Park Dr	South Fork Dr
Oak St	Crossing Ave
Harris St	Creek Hollow Tr
S Central Ave	Point Crossing Dr
Ethan Ln	Stowe Park
N Central Ave	Keener Blvd
Woodrow Ave	Park St
W Woodrow Ave	
Sacco St	
Westwood Dr	
Moore Dr	
Cedar St	
Todd St	
Lincoln St	
Centerview St	

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Street Sweeper Route 1	Approx. Total Time = 5 Workdays Approx. Total Miles = 9.9
<i>Recommend starting Route 1 Streets on Wednesdays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i>	
North Belmont Area Woodlawn Ave Sierra St Ross Ct White Water Cr Cason St Jade Cr Pebble Creek Dr Burton St Boundary St Palm Ln Linford St Jackson St Wilkerson St Pleasant St Walton St Arc St Llewellyn St Belmont Ave Carson St Centerview St Miller St Suggs St	2 Workdays 4.2 Miles
North Main Street & Belmont-Mt Holly Rd (from the Central Ave/Main St merge "The Point" to Woodlawn Ave)	
Abbey Place Neighborhood Cathedral Dr Abbey Ct Abbey Place Dr Cardinal Ct Bishop Ct	4 Hours .9 Miles
South Fork Neighborhood (behind Kangaroo Express) Elm Tree Ln Lambert St Live Oak Ave Archibald St Cross St Orchard St Hand St Rankin St	4 Hours .8 Miles
North Central Area N Central – Hwy 74 to Main St Westwood Dr Reid St West Woodrow Ave Mingus St Clay St Lincoln St Moore Dr Cedar St Quincy Dr Todd St Southern St Sacco St Todd St Extension Sacco St Extension Elm St	2 Workdays 4 Miles

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Street Sweeper Route 2		Approx. Total Time = 5 Workdays Approx. Total Miles = 6.6
<i>Recommend starting Route 2 Streets on Thursday. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i>		
South Main St (to Garibaldi Ridge)		1 Hour
Davis Park Area Harris St Vesta St Oak St Elizabeth St Mrytle St Burns Mitchell Ave Park Dr Lee St Kingston St Ferrell Ave		5 Hours 2.3 Miles
Belmont Reserve Neighborhood Belmont Reserve Row Rosemont Row Summerfield Place		2 Hours
Eagle Rd		1 Hour .5 Miles
Eagle Park Lexington St Bountiful St Assembly St Rialto St Blueberry St		
Merewood Neighborhood Merewood Rd Glen Arbor Dr Heritage Ct		2 Hours .9 Miles
Dogwood Ln		3 Hours .5 Miles
Gaston Ave Faires Ave McKnight St/Cemetery Entrance		5 Hours .3 Miles
Garibaldi Ridge Ct		.5 Hours .2 Miles
Melon Rd		.5 Hour .4 Miles
Belmont Village Neighborhood		.5 Hour .4 Miles
Point Crossing Neighborhood South Fork Dr Knoll Ct Crossing Ave Point Crossing Ct Creek Hollow Trail		3 Hours .9 Miles
South Point Ridge Neighborhood Southridge Dr Victoria Blake Dr Bailey Kendall Ave Shannon Dr Rachel Anne Dr Ashley Ct Emily Dr		3 Hours 1.6 Miles
Nixon Rd (from Southridge Dr to South Point High School)		1.5 Hours
South Point Rd (from Nixon Rd to Stowe Rd and Corner of South Point Rd and R.L. Stowe Rd)		1 Hour
Damon Pointe Dr		1 Hour .1 Miles
Katherine Ct		1 Hour .1 Miles
South Point Village Mckee Farm Ln Wade Hampton Cr Middleton Farm Dr		1 Hour 1.5 Miles

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Street Sweeper Route 3			Approx. Total Time = 8 Workdays Approx. Total Miles = 9.59
<i>Recommend starting Route 3 Streets on Mondays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i>			
East Ave Area (Behind Handy Pantry) East Ave Devine St Green St Ethan Ln South St Excelsior St Forest Ln North St			2 Hours .4 Miles
R.L. Stowe Rd (from Keener Blvd to North St)			1 hour
Poplar St Area Poplar St Bryant St Johnson Dr Smith St Hall St South Main St (Central to Myrtle St) Prince St			1.5 Workdays 1.4 Miles
Stowe Manor Neighborhood (no alleyways) Poplar St Wisteria Ln Camellia St			City has not taken over roads yet
Hawthorne Park (no alleyways) Hawthorne Park Ave Berkshire Ct Fort William Ln Cliveden Ct			3 Hours .7 Miles
Keener Blvd / Flowers Court Area Keener Blvd (from Vine St Parkdale Dr Central Ave to Hwy 74) Morning Glory Ave Sandra Ct Faith St Ewing Dr Childers St Hope St Charles Dr 5th St Ext			7 Hours 2.3 Miles
Park St Area Planetree St Hawley Ave Sterling St Garrison Dr McLean St Spruce St Brewster St			5 Hours 1.1 Miles
Downtown Area E Woodrow Ave Davis St Brook St Woodrow Ave Glenway Ave Myrtle St S & N Main St Chronicle St McLeod Ave Circle Dr Ervin St Mill St Todd St N & S 1 st St Airline Dr Cedar St Short St Hawthorne Dr Kenwood St Back St Catawba St (N Main to Keener Blvd)			10 Hours 3 Miles
River District Brook St Old No. 7 Sloan St Tucker St East Catawba St 9 th St 2 nd St Church St 10 th St 4 th St 3 rd St 11 th St 5 th St 6 th St 12 th St 7 th St Watson St 13 th St Oneway Linstowe Dr Pratt St Alice Ave Linstowe Dr Howe St Fuller St Laye St Edgemont Dr Redspire Ln River Dr Volk St Parkdale Dr Caldwell St Piedmont Dr			5 Workdays 3.3 Miles

**CITY OF BELMONT - STREETS & STORMWATER SYSTEM
OPERATION & MAINTENANCE**

Street Sweeper Route 4			Approx. Total Time = 6 Workdays Approx. Total Miles = 7.1									
<p><i>Recommend starting Route 4 Streets on Tuesdays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i></p>												
<p>Bellemeade Neighborhood Bellemeade Cr Brentwood Dr Stowe Ridge Ln Beechwood Ct Valley View Ln Cedar Hill Ct Hill Vale Dr</p>			<p>1.5 Hours 1.6 Miles</p>									
<p>Pinsto Forest / Stowe Point Neighborhood Stowe Rd Samuel Pickney Dr Kildare Ct Amity Cr Nancy Hanks Pl Dinsmore Ln Allen St Hanks Creek Ln Gilchrist Cr James Dr Ashley Pl Raymond St Lakeridge Dr McLaren Dr South Cove Ln Ainsley Ln Channel View Landing Thorburn Way North Cove Ct Dorie Dr Amanda Ln</p>			<p>7 Hours 3.8 Miles</p>									
<p>Graystone Neighborhood Graystone Estates Dr Mill Stone Ct Ivey Stone Ct Stoney Ridge Dr Birch Stone Ct</p>			<p>1 Hour .75 Miles</p>									
<p>Lake Point Neighborhood Applewood Point Ln Colchester Ct Peninsula Dr</p>			<p>1 Hour .5 miles</p>									
<p>Morgans Branch Acadian Way American Bittersweet Raspberry Dr Ardent Trail Littleton Ln Serenade Ct Daybreak Ln Cromlish Crossing Morgans Branch Rd</p>			<p>City has not accepted streets for maintenance</p>									
<p>South Shore Shimmerlake Ln South Shore Dr Lanyard Ln Cape August Pl Seven Oaks Lndg Summer Shoal Pl Cross Current Ln Cherry Crossing Ln</p>			<p>City has not accepted streets for maintenance</p>									
<p>The Conservancy Conservancy Dr Wood Lily Dr Gardenbrook Tr Mayapple Way Trilium Way</p>			<p>3 Hours</p>									
<p>The Overlake</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td></tr> <tr><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td></tr> <tr><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td><td style="width: 33%; height: 15px;"></td></tr> </table>												<p>City has not accepted streets for maintenance</p>

**CITY OF BELMONT - STREETS & STORMWATER SYSTEM
OPERATION & MAINTENANCE**

Street Sweeper Route 5 *To be done Quarterly or As Needed	Total Time = 4 Workdays Approx. Total Miles = 10.6
<i>Recommend starting Route 5 Streets on Wednesdays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A. **Operator to come in early to sweep Hwy 74 intersections and islands. Start-Time to be determined by Supervisor.</i>	
Hwy 74 Westbound (from Dale's Superette to Georgia Belle Ave)	1 Workday 2.3 Miles
Hwy 74 Eastbound (from Hubbard St to Dale's Superette)	1 Workday 2.6 Miles
Intersections including islands/medians N Main St and 74 (Petro Express/Bojangle's) Park St and 74 (Exxon/Taco Bell) East Catawba St and 74 (Dale's and SECU)	2.5 Hours .2 Miles 2.5 Hours .3 Miles 2.5 Hours .3 Miles
Hwy 74 Islands/Medians that were not swept when doing the intersections (Eastbound and Westbound)	1 Workday 4.9 Miles

Street Sweeper Route 6	Approx. Total Time = 4 Hours Approx. Total Miles = .9 Miles
<i>Recommend starting Route 7 Streets on Mondays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i>	
Greenwood Cemetery	4 Hours .9 Miles

**CITY OF BELMONT - STREETS & STORMWATER SYSTEM
OPERATION & MAINTENANCE**










Route 7 – City Facility Parking Lots *To be done Quarterly or As Needed	
<p><i>Recommend starting Route 8 Streets on Mondays. Route does not have to be done in this specific order. See Street Sweeper Route Map located in Appendix A.</i></p> <p>**Operator to come in early to sweep City Facility Parking Lots to maximize sweeping efficiency. Start-Time to be determined by Supervisor.</p>	
City Hall – parking lot and entry/exit (N Main St to parking lot)	
Planning and Zoning parking lot	
Water Treatment Plant – N Tenth St, parking lot, and paved service road through plant grounds.	
Waste Water Treatment Plant – parking lot and paved service road through plant grounds	
Police Department – parking lot (front and rear)	
Fire Department - parking lot and front/rear bay entry/exit	
Parks and Recreation Department – P&R Center - parking lot and entry/exit Davis Park – parking lot Reid Park - paved parking lot and entry/exit Linford Park – paved parking/basketball court Gantt Park – paved parking lot and Brook St parking spaces Loftin Riverfront Park – paved parking lot and roundabouts	
Public Works Department – parking lot, entry/exit, Thirteenth St (from E Catawba St to connecting service road), and connecting service road	
City Public Parking Lots – North Main Parking Lot A North Main Parking Lot B (gravel) Glenway Parking Lot Myrtle St Parking Lot Mill St Parking Lot	

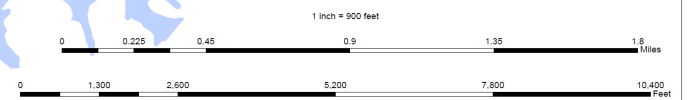
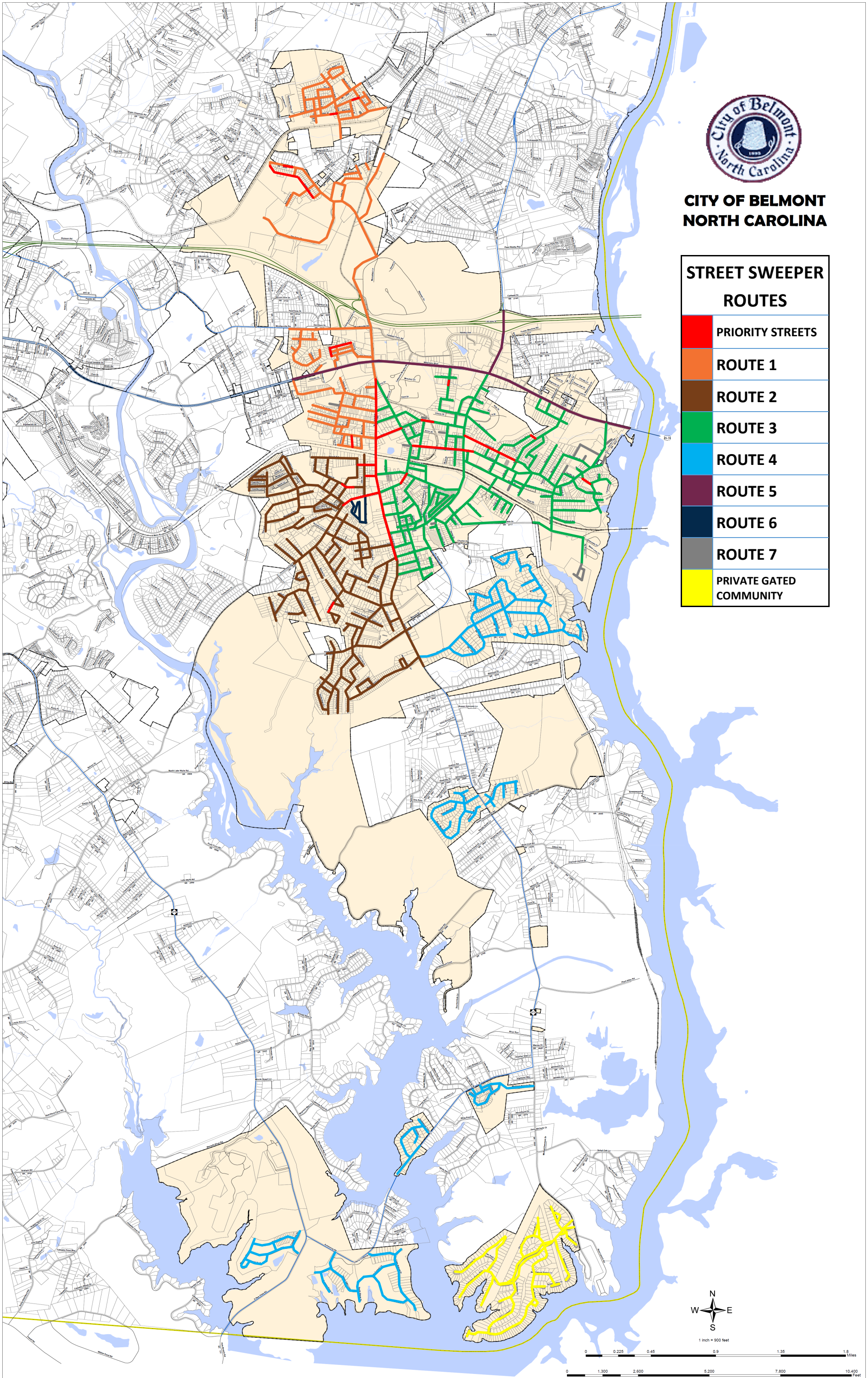
Appendix A

Street Sweeper Route Map



**CITY OF BELMONT
NORTH CAROLINA**

STREET SWEEPER ROUTES	
	PRIORITY STREETS
	ROUTE 1
	ROUTE 2
	ROUTE 3
	ROUTE 4
	ROUTE 5
	ROUTE 6
	ROUTE 7
	PRIVATE GATED COMMUNITY



Appendix B

Street Sweeper Log Sheets

Appendix C

Sweeper Service and Inspection Records

(*Records are available)