I. Introduction

The Town of Bethlehem has made a commitment to becoming a more sustainable community and has established an initiative- Sustainable Bethlehem- to meet its long term goals in this area. The goals of Sustainable Bethlehem are listed below.

- Town government leads by example through improving energy efficiency and reducing greenhouse gas emissions in its operations and by actively promoting its own sustainability successes and informing residents of available resources to become more sustainable at home and work

- Foster a prosperous business environment for both local and new businesses focused on delivering products and services that meet the current and future needs of Bethlehem and the region

- Enhance Bethlehem's character to incorporate more mixed use options creating a live, work play environment

- Support a safe and accessible network of bicycle and pedestrian infrastructure that is well maintained, and extensively utilized for commuting, recreation, and daily trips

- Conserve open space and protect natural areas through effective land use policies

- Provide diverse, affordable, and energy efficient housing options

Through Sustainable Bethlehem, the Town is leading by example to create a pathway to sustainability that will ensure a balance exists between the needs and resources available to support economic, social, and environmental activity in Bethlehem. Getting people out of their cars contributes to improved air quality, greater health benefits, and reductions in greenhouse gas emissions. In order to do this, the Town must first ensure that multi-modal transportation options exist and are connected through a safe and accessible network that is well maintained, and extensively utilized for commuting, recreation, and daily trips. Bethlehem has prioritized becoming a walk and bicycle friendly community as one way to meet this goal.

The completion of the sidewalk evaluation and roadway pavement evaluation for bicycles will serve as the basis for indentifying sidewalk and roadway pavement maintenance needs, which may range from patching, resurfacing, restriping, to complete reconstruction

Since 2009, the Town of Bethlehem has made significant progress towards improving mobility and connectivity throughout the town. Specifically, through the creation of the PaTHs 4 Bethlehem (Pathways to Homes, Hamlets & Healthy Hearts) Committee, the Town has:

- Identified a network of priority bicycle and pedestrian routes throughout the town
- Developed evaluation criteria to assist in the prioritization of these routes should funds become available
- Prepared and distributed bicycle and pedestrian safety tips palm cards
- Hosted trainings and events, such as the Bike Rodeo, to teach Bethlehem residents around bicycle safety

Recognizing that the foundation for safe and accessible bicycle and pedestrian infrastructure has been laid, the Town is eager to maintain its infrastructure for safe and efficient bicycle and pedestrian travel. Sidewalks and bicycle accommodations are recognized as Town facilities and it is important that they are maintained in the same manner as other Town assets.

Why this Manual was Created

This Manual was created to allow for the Town of Bethlehem to further support walking and bicycling throughout the town by ensuring safe and accessible sidewalk and roadway conditions. The Town already has an effective roadway assessment and maintenance process for motor vehicle travel, which these new sidewalk and roadway rating systems- specific to pedestrians and bicyclists, respectively- will be incorporated into.

The completion of the sidewalk evaluation and roadway pavement evaluation for bicycles will serve as the basis for indentifying sidewalk and roadway pavement maintenance needs, which may range from patching, resurfacing, restriping, to complete reconstruction. As a result of this system, the Town should be able to apply specific sidewalk and roadway maintenance projects into the annual Town budgeting process or a Capital Improvement Plan.

How to Use This Manual

This manual was specifically designed to be integrated with the Town of Bethlehem's existing roadway maintenance assessment process. The two rating systems for sidewalks and roadways are modeled off of the current PASER system which the Town is using. The manual is anticipated to be used primarily by the Town's Highway Department staff that are responsible for the overall roadway assessment and maintenance.

II. Sidewalk Rating System for Pedestrians

Sidewalks

Sidewalks are defined as the portion of a street between the curb line or lateral line of a roadway and the adjacent property line that is paved and intended for use by pedestrians. Over time, sidewalks can deteriorate from weathering and cracking of the pavement surface, tree root upheavals, settlements, and damage from unauthorized vehicle parking. These defects can result in an uneven walking surface which could present a tripping hazard especially to children, senior citizens and mobility impaired residents. As with other public ways, municipalities are responsible for maintaining sidewalks in a safe and useable condition. Thus to ensure pedestrian safety on Bethlehem's sidewalks and minimize the Town's liability exposure, it is important to implement a program to regularly inspect, repair or reconstruct damaged sidewalks. As of the date of this publication, the Town maintains 40 miles of sidewalk.

Goal of Sidewalk Maintenance Program

The goal of the sidewalk maintenance program is to identify and repair sidewalk trip hazards in a timely manner in the interest of public safety. As of the date of this publication, the Town maintains 40 miles of sidewalk.

Use of this Rating System

The Town of Bethlehem currently conducts a routine inspection and maintenance program of its roadways. Roadways are inspected every two years. The roadway inventory process can be amended to also evaluate sidewalk conditions—perhaps in the opposite year of the roadways. Sidewalks in areas within a quarter-mile of likely pedestrian traffic generators including schools, libraries, Town Hall, recreational facilities, bus stops, and the hamlet shopping/retail districts would be designated as high traffic sidewalks. Sidewalks beyond a quarter-mile distance of these generators are considered standard traffic areas. High traffic sidewalks would be inspected every two years concurrent with the adjacent roadway evaluation. Standard traffic sidewalks are inspected on every other roadway inspection cycle or every four years. The Bethlehem Bicycle and Pedestrian Priority Network map is a useful resource as it identifies destinations or pedestrian traffic generators. Maintenance activity should be focused on roadways that are located on the Bicycle and Pedestrian Priority Network.

The photo evaluation page is intended to be used in addition to the photo evaluation pages in the Pavement Surface Evaluation and Rating System (PASER) Manual and to be used by Highway Department staff during their biennial field inspections.

General Guidance

General Approach

The sidewalk inspection approach will generally follow the PASER criteria currently used by Bethlehem Highway Department staff for roadway pavement ratings. The sidewalk maintenance manual has a table describing defects accompanied by photographs, each with a ranking between one (1) and nine (9). In this case, the Highway staff would simply refer to the descriptions and photographs in the manual and record the specified rating of one (1) to nine (9) as is done for the roadway pavements using the "PASER" evaluation system. The advantage of this system is that Highway Department staff has a system that is familiar to them.

Sidewalk Pavement Condition

The standards provided below are directly derived from PASER numbers. Currently, sidewalks in Bethlehem consist of three pavement types: cement concrete pavement, older cement concrete that has been overlaid with bituminous pavement (asphalt), and bituminous pavement (asphalt). Although PASER is generally used to evaluate the middle of the automobile traffic lane, in this appendix to the Town's existing PASER Manual the following standard is used to evaluate pavement on the Town's sidewalks.

Rating: 9 (excellent)	The pavement is new. Does not require maintenance.
Rating: 8 (excellent)	Recent overlay/maintenance. Like new.
Rating: 7 (good)	Similar to Rating 6, however the sidewalk is in a slightly better condition.
Rating: 6 (good)	The pavement shows first signs of aging. Needs routine maintenance such minor spot patch repairs/crack filling.
Rating: 5 (fair)	Similar to Rating 4, however the sidewalk is in a slightly better condition.
Rating: 4 (fair)	The pavement surface is aging. Needs preservative treatments/ seal coat/joint grinding.
Rating: 3 (poor)	Similar to Rating 2, however the sidewalk is in a slightly better condition.
Rating: 2 (poor)	The pavement has significant aging. Needs milling and/or structural overlay/patching or replacement of specific section full width.
Rating: 1 (failed)	The pavement has severe deterioration or failed and is a hazard to pedestrians. Needs reconstruction of base and surface pavement.

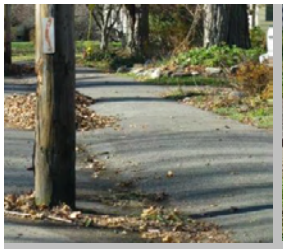
Maintenance for Debris

Similar to roadways, sidewalks are often susceptible to having debris, such as glass or sand, accumulate in the area near the roadway side. Therefore, regular sweeping is necessary. A smooth surface, free of potholes and debris, should be provided.

It is important that joints and finished patches be flush with the surface of the sidewalk.

The following ADA guidelines should be used when addressing changes in level for sidewalks:

- *Small changes in level up to 6 mm (¼ in) may remain vertical and without edge treatment;*
- *Small changes in level between 6 mm (¼ in) and 13 mm (½ in) should be treated with a beveled surface with a maximum slope of 50 percent;*
- *Changes in level such as curbs that exceeds 13 mm (½ in) should be ramped or removed.*

Surface rating	*Visible distress*	*Examples*
9 Excellent	Pavement is new. Does not require maintenance	
8 Excellent	Less than ⅛" vertical edge; little or no depressed or raised areas, for cement concrete cracked squares (no more than 2 pieces),no spalling of concrete surface or raveling of bituminous surface, no horizontal separation, or debris/vegetation	
7 Good	Same as 6, but in slightly better condition. Needs routine maintenance – spot patch repairs/crack filling.	 
6 Good	Vertical edge between ⅛" and ¼"; 0-1" raised/depressed; no more 3 cracked squares of cement concrete; less than 25% spalled concrete surface or bituminous surface, less than an inch of horizontal separation; less than 25% covered by debris/vegetation	
5 Fair	Same as 4, but in slightly better condition. Needs preservative fractural sealcoat/joint grinding.	 
4 Fair	Vertical edge between ¼" and ½" 1-2" raised/depressed; no more than 4 cracked squares of cement concrete; 25-50% spalled concrete surface or raveled bituminous surface; less 1-1 1/2" of horizontal separation; 25-50% covered by debris/vegetation	
3 Poor	Same as 2, but in slightly better condition. Needs milling and/or structural overlay/patching or replacement of sections full width	 
2 Poor	Significant aging. Vertical edge between ½" and ¾"; 2-3" raised/depressed; no more than 5 cracked squares of cement concrete; 50-75% spalled concrete surface or bituminous surface; less 1 1/2-2" of horizontal separation; 50-75% covered by debris/vegetation	
1 Failed	Vertical edge between ¾" and 1"; greater than 3" raised/depressed; more than 5 cracked squares of cement concrete; more than 75% spalled concrete surface or bituminous surface; more than 2"of horizontal separation; more than 75% covered by debris/vegetation	 

III. Roadway Condition Rating System for Bicycles

On-Road Bikeways

Pavement surface conditions and the presence of markings and signs dictate whether a roadway is offering a suitable riding environment for bicyclists. Deteriorated pavement surfaces can create a serious hazard for bicyclists or force a bicyclist to leave the lane or swerve to avoid an obstacle or pothole. Often this movement is unexpected by motorists because they do not realize there is deteriorated pavement that can present a dangerous hazard to bicyclists or because drivers are simply not accustomed to sharing the road. Roadways with bicycle traffic generally do not require a more frequent or higher level of maintenance than other roadways; however there are special roadway defects that are significantly more dangerous to a bicycle than a motor vehicle. Bethlehem is working to identify these hazards and take steps to minimize them. Additionally, the Town recognizes the importance of special bicycle signs and pavement markings and these will be added as feasible and should be routinely inspected and kept in good condition and in prominent locations.

Use of this Rating System

The Town of Bethlehem currently has an effective routine maintenance process for roadways to accommodate motor vehicle travel. Its existing assessment of roadways can be modified to also evaluate conditions impacting on-road bicyclists. The criteria and photos provided in this section are intended to amend the photo evaluation pages in the Pavement Surface Evaluation and Rating System (PASER) Manual and used by Highway Department staff during their biennial field inspections.

General Guidance

The guidance and ratings provided below are intended to help determine appropriate roadway maintenance needs specific to bicyclists. This information is based on professional experience in the bicycle and pedestrian infrastructure field as well as best practices from around the country, including the City of Ann Arbor, Michigan, which has implemented a similar program. Ann Arbor's bicycle system inventory and rating approach can be found here:

http://www.a2gov.org/government/publicservices/systems_planning/Transportation/Pages/Bike.aspx.

Pavement Condition

This roadway standard for bicycles is derived directly from the PASER Manual which the Town is currently using to assess roadway conditions for motor vehicles. Although PASER is generally used to evaluate the middle of the automobile traffic lane, this rating system will be used to evaluate pavement

on roadways for bicycle use and will be initially focused on the Town roadways located on Bicycle and Pedestrian Priority Network identified by Bethlehem.

Bikeways and roadways with bicycle traffic are often susceptible to having debris, such as glass or sand, accumulate in the area near the right edge where most bicyclists ride. Therefore, regular sweeping is necessary. A smooth surface, free of potholes and debris, should be provided. The pavement edges should be uniform.

It is important that finished patches be flush with the surface of the path. Ruts should be removed by whatever measures are appropriate to give a satisfactory result and avoid recurrence. Drainage grates should not have parallel openings that could catch narrow bicycle tires. Grates should always be positioned so that openings are at perpendicular to the bicyclist's direction of travel. The *Roadway Rating System: Description of rating system with definitions and photos of defects* provides a guide with images, describing common road defects that can be detrimental to bicyclists. It is included at the end of this section.

Rating System for Pavement Conditions

Rating: 9 – 10 (excellent)	The pavement is new or like new. Does not require maintenance.
Rating: 7 – 8 (good – very good)	The pavement shows first signs of aging. Needs routine maintenance or crack filling.
Rating: 5 – 6 (fair – good)	The pavement surface is aging. Needs preservative treatments/ seal coat.
Rating: 3 – 4 (poor – fair)	The pavement has significant aging. Needs milling and/or structural overlay.
Rating: 1 – 2 (failed – very poor)	The pavement has severe deterioration or failed and is a hazard to bicyclists. Needs reconstruction.

Bicycle Lane and Shoulder Stripe Integrity

The integrity of a bicycle lane or shoulder stripe refers directly to its visibility. The visibility is often variable along the extent of an entire segment, thus the rating is usually based on the average integrity of the corridor segment. Striping that has a visible integrity score of two or less needs to be restriped.

Rating System for Bicycle Lane and Shoulder Stripe Integrity

Rating: 9-10 (excellent)	Visible, like new.
Rating: 7-8 (very good)	Visible, with minimal wear.
Rating: 5-6 (good)	Visible, with normal wear.
Rating: 3-4 (fair)	Visible, with considerable wear.
Rating: 1-2 (poor)	Not visible/barely discernable.

Pavement Marking Integrity

The criteria for pavement marking integrity (bike lane symbols, shared lane markings—aka sharrows), like stripe integrity, are also related to visibility (an example of a new shared lane marking is shown in photograph). Pavement marking integrity is often variable along the extent of a segment. The rating is usually based on the average integrity of pavement markings in the segment.

Pavement markings that have a visible integrity score of two or less need to be re-striped.

Rating System for Pavement Marking Integrity

Rating: 9-10 (excellent)	Visible, like new.
Rating: 7-8 (very good)	Visible, with minimal wear.
Rating: 5-6 (good)	Visible, with normal wear.
Rating: 3-4 (fair)	Visible, with considerable wear.
Rating: 1-2 (poor)	Not visible/barely discernable.

Roadway Resurfacing

When roadways are resurfaced or lane markings for existing streets are restriped, consideration can be given to adjusting the lane widths and providing a bike lane, shoulder, or a wide curb lane for bicycles. The addition of edge lines can better delineate a shoulder, especially at night. When shoulders are resurfaced, a smooth surface suitable for bicycle riding should be considered.

Signage

The presence of signage, like the presence of pavement markings, helps to effectively delineate a shared roadway facility to all roadway users. Like pavement markings, signage should be evaluated for reflectivity, location and lateral offset, mounting height, orientation, and post mountings in terms of compliance with Part 2A of the 2009 Manual on Uniform Traffic Control Devices (MUTCD) and the New York State Supplement.

Roadway Rating System

Description of rating system with definitions and photos of defects

SURFACE DEFORMATION

Rumble strips are virtually impossible to ride a bicycle on or over. They are at best uncomfortable, even for very short distances, and at worst can cause a cyclist to lose control of their bike and fall. They can damage a bicycle wheel, can cause a flat tire, and/or shake lose parts off a bicycle. Consequently, cyclists will avoid riding over them -- and when rumble strips leave no room on a shoulder, the cyclist will have no other option than to ride in the travel lane. (Source: League of American Bicyclists) If rumble strips are installed, the configuration, depth and spacing should conform to bicycle friendly designs developed by the Arizona DOT, Colorado DOT or the Delaware DOT.

SURFACE DEFORMATION

Pavement heaves due to tree roots can cause cyclist to fall or suddenly divert out into vehicle travel lane.

- Heaves <1/2" -- rating good (7)
- Heaves 1/2" -- rating fair (5)
- Heaves 1" to 2" -- rating poor (3)
- Heaves >2" -- rating failed (1)

SURFACE DEFORMATION

Bicycle Safe Drainage Grates: Storm grates pose a hazard for bicyclists when the openings are parallel to the bicyclists' direction of travel. Bicycle tires can get caught between the bars of these grates and cause bicyclists to fall. Unsafe drainage grates should be replaced with grates that are designed for bicycles.

- Unsafe grate -- rating very poor (2)

CRACKS

Wide longitudinal cracks can trap a bicycle wheel and cause sudden and severe fall.

- Cracks open 1/2″ -- rating fair (5)
- Cracks open 1/2″ to 1″ -- rating poor (3)
- Cracks open >1″ -- rating very poor (2)

CRACKS

Large transverse cracks can create an uneven surface causing cyclists to lose control and fall.

- Follow general PASER rating system

PATCHES

Uneven utility patches in bike lane or anticipated bicycle travel path can cause cyclists to divert out into traffic flow or lose control and fall.

- Follow general PASER rating system

MARKINGS

Faded sharrows or lane markings in bike lanes or in an anticipated bicycle travel path may not be visible in poor weather conditions or at night.

- Barely discernable or not visible -- rating poor (1)
- Visible with considerable wear -- rating fair (4)
- Visible with some wear -- rating good (6)
- Visible new or minimal wear -- rating very good (8)
- Visible like new -- rating excellent (10)

SURFACE DEFORMATION

Drainage grates that are oriented with the openings perpendicular to the roadway travel lane can be a hazard if they are located opposite driveway openings and side streets.

- Rating -- very poor (2)

SURFACE DEFORMATION

Railroad Crossings: Under certain circumstances, railroad tracks crossing the road can present a dangerous condition for bicyclists. At diagonal at-grade crossings, the gap next to the rail can trap the front wheel of a bicycle causing the bicyclist to fall. To prevent this from happening, the bicycle lane or shoulder should be designed to enable the bicyclist to approach the track at an angle closer to 90 degrees (but not less than 60 degress) without having to swerve into motor vehicle travel lanes. The width and the dimensions of the widened area discussed above will be dependent upon the skew of the railroad tracks relative to the bicyclist crossing point. It is important that the bicyclist is given sufficient space on the approach and the departure of the crossing to safely transition back to the travel way.

PASER RATINGS		
10 Excellent	None.	New construction.
9 Excellent	None.	Recent overlay. Like new.
8 Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40′ or greater). All cracks sealed or tight (open less than 1/4″).	Recent sealcoat or new cold mix. Little or no maintenance required.
7 Good	Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4″) due to reflection or paving joints. Transverse cracks (open 1/4″) spaced 10′ or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6 Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4″– 1/2″), some spaced less than 10′. First sign of block cracking. Sight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
5 Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2″) show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2″)
4 Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2″ deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2″ or more).
3 Poor	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1″ or 2″ deep). Occasional potholes.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
2 Very Poor	Alligator cracking (over 25% of surface). Severe distortions (over 2″ deep) Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.
1 Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

IV. Recording of Sidewalk and Roadway Ratings

Current Roadway Pavement Evaluation Data Collection

The Town of Bethlehem's Highway Department currently uses a Trimble brand hand held global positioning system (GPS) receiver/data collector for field reviews and evaluations of roadway pavements to accommodate motor vehicle travel. The Trimble Juno™ ST provides 2 to 5 meter GPS positioning in real time. ESRI's ArcPad version 7.0, installed on the Trimble Juno™ ST, is utilized as the GIS program during mobile field data collection. The Trimble Juno™ ST includes a "Pavement.mxd" workspace, loaded onto the device by the Town's GIS Coordinator. The only layer in the workspace is a roadway "Streets.shp" shapefile, which includes the following attribute fields – Street Name, Rating, Date, and Length. Current Town practice is for the Highway Department staff to select the roadway being evaluated and enter the pavement condition rating (0 – 10 scale) into the attribute field. Once the year's roadway pavement evaluation is completed by the Highway Department, the Town GIS Coordinator uploads the evaluation rating data ("Streets.shp" shapefile) to the Town's GIS database and prepares a color coded map based on the pavement ratings (i.e. Green – good condition, Red – poor condition). The GIS Coordinator also conducts post processing of the data based on the observations and notes prepared by the Highway Department staff who conducted the evaluation. The Highway Superintendent utilizes the roadway pavement evaluation as the basis for roadway resurfacing projects.

Sidewalk Evaluation Data Collection

The evaluation of sidewalk surface conditions should be collected in the same manner as currently practiced for the Town's roadway pavement evaluation. Specific necessary modifications include the creation of a new "Sidewalks.mxd" workspace containing the existing Town "Sidewalk.shp" shapefile layer uploaded to the Trimble Juno ST. This will allow the Highway Department's evaluator(s) to select the specific sidewalk on each side of the roadway (if available) and provide an evaluation rating for each sidewalk (block by block) based on the scale provided in Section II of this document. Once completed a sidewalk conditions map could be prepared by the Town's GIS Coordinator.

The completion of the sidewalk evaluation will serve as the basis for indentifying sidewalk maintenance needs, which may range from patching, resurfacing to complete reconstruction.

The completion of the sidewalk evaluation will serve as the basis for indentifying sidewalk maintenance needs, which may range from patching, resurfacing to complete reconstruction. As a result of this

system, the Town should be able to apply specific sidewalk maintenance projects into the annual Town budgeting process or a Capital Improvement Plan.

Additional Data Fields

While the condition of the sidewalk surface is the important feature to collect, additional collection of sidewalk characteristics will be beneficial to the Town's overall bicycle and pedestrian program. While the evaluator is documenting the sidewalk condition, it would be helpful to also document the sidewalk width, surface type, adjacent land use environment, ADA accessibility, etc., characteristics. For this additional data collection to be feasible, the GIS Coordinator would add these attribute fields to the "Sidewalk.shp" shapefile layer. A customized "data dictionary" providing a drop down list of variables to enter into the attribute fields would be helpful to the evaluator for consistency in logging similar characteristics.

Roadway Condition Rating Data Collection for Bicycles

The evaluation of a roadway's condition to safely accommodate bicycle travel would include the recording of the following roadway characteristics: pavement, bicycle lane and shoulder stripe, pavement marking, and signage (as outlined in Section III). To accommodate this evaluation, attribute fields reflecting pavement, bicycle lane and shoulder stripe, pavement marking, and signage should be added to the "Streets.shp" shapefile layer. The Highway Department staff evaluator(s) would utilize the rating system outlined in Section III and enter the rating for each characteristic mentioned above. Once again, the GIS Coordinator could prepare a map based on each rating characteristic reflecting the roadway's conditions to safely accommodate bicycle travel.

This practice is currently followed by the City of Ann Arbor, Michigan and has been conducted by the City for the past four years as a basis for maintenance recommendations. Ann Arbor was designated a Silver-level Bicycle Friendly City by the League of American Bicyclists since 2005 and was named the 14th most bike-friendly city in America by Bicycling Magazine in 2010. An example of Ann Arbor's bicycle facility inventory and ratings are provided below and the 2010 inventory document can be found here: http://www.a2gov.org/government/publicservices/systems_planning/Transportation/Documents/2010%20Bike%20Lane%20Inventory.pdf As shown in Ann Arbor's inventory and rating tables, once an inventory and rating is performed over consecutive or multiple years, condition changes can be documented and observed to assist in identify maintenance trends.

As the Town of Bethlehem implements additional bicycle facility improvements, (i.e. shared lane markings, shoulder striping, etc.) Ann Arbor's recording and evaluation process would serve as a good practice to follow.

City of Ann Arbor, MI Bicycle Inventory and Rating Example

Table of 2010 On-Road Bicycle Lanes and Rankings

Name	Extents	Length	Pavement Condition	2009	Stripe Integrity	2009	Marking	Marking Integrity	2009	Signs	Change From 2009	Comments
Ann Street	Main - Division	600	9	9	3.5	5	Yes	4	5	Yes	Pavement → Stripe ↓ Marking ↓ Signs →	Good end signs, no beginning signs
Ann Street	Glen - Zina Pitcher	525	9	9	5	5	Yes	4	4	Yes	Pavement → Stripe → Marking → Signs →	Needs "Share the Road" sign at end
Catherine Street	Glen - Ingalls	803	9	9	5	5	Yes	4	4	No	Pavement → Stripe → Marking → Signs →	Needs signage, including beginning and terminal treatments.
Dexter Road	N. Maple - M14	6336	6.5	6.5	3.5	5	Yes	5	0	No	Pavement → Stripe ↓ Marking ↑ Signs →	Needs signage, including beginning and terminal treatments.
Dhu Varren Road	Nixon - Pontiac	7160	7	7	4	2.5	No	5	0	No	Pavement → Stripe ↑ Marking ↑ Signs →	Improper end treatment
Division	Packard -Detroit	4495	7.5	n/a	5	n/a	Yes	5	n/a	no	New lane	Lane width too narrow north of Kingsley
Earhart Road	Geddes - Pine Brae	2303	4	4	3	3	No	0	0	No	Pavement → Stripe → Marking → Signs →	No pavement markings or signage.

2010 On-Road Bicycle System Segment Detailed Inventory:

Bicycle Lanes

Given the length of certain segments, lane conditions can vary considerably. In the past city staff calculated an average, however for the sake of greater detail; several segments were evaluated based on smaller subsections. This technique will continue in the future, and the average will still be calculated and reflected in the table of lanes and rankings found elsewhere in this document.

Ann (Main – Division)	2010	2009	Change		Comment
Pavement Condition:	9	9	0	⬌	No Change
Stripe / Stripe Integrity:	3.5	5	-1.5	⬇	Normal Wear
Marking / Marking Integrity:	4	5	-1	⬇	Normal Wear
Signs:	Yes	Yes	0	⬌	No Change

- Construction site in front of city hall slightly overlaps bike lane, otherwise the lane is in good condition.

Ann (Glen – Zina Pitcher)	2010	2009	Change		Comment
Pavement Condition:	9	9	0	⬌	No Change
Stripe / Stripe Integrity:	5	5	0	⬌	No Change
Marking / Marking Integrity:	4	4	0	⬌	No Change
Signs:	Yes	Yes	0	⬌	No Change

Caption: Exemplary signage and pavement marking

- This is an exemplary bike lane, constructed by the University of Michigan. Photos are from a previous year.