Memorandum

TO: Evan Teich, Unified Manager
Selectboard
Trustees
FROM: Dennis Lutz, P.E., Public Works Director
Ricky Jones, Village Public Works Superintendent
DATE: 19 March 2019
SUBJECT: Acceptance of Report entitled "Assessment of Critical Non-Compliant Sidewalks, Paths and Crossings"

ISSUE: The issue is whether or not to accept the report entitled "Assessment of Critical Non-Compliant Sidewalks, Paths and Crossings", by the CCRPC and the Toole Design Group.

DISCUSSION: The Town and Village contracted through the Chittenden County Regional Planning Commission to hire a consultant under their Unified Work Planning Program to study sidewalk, paths and road crossings from the impact of the Americans with Disabilities Act (referred to as ADA). The firm, Toole Design Group, was hired to perform this study.

The background to this work is that the Town has twice attempted to secure funds for ADA correction at a number of intersections throughout the Town through VTRANs grants. Neither attempt has been successful. A copy of the grant application last submitted in 2016 is attached for reference. The hope was and is that a scoping-type study performed by an impartial third party might provide the basis for a successful future grant.

The cost to perform the needed infrastructure improvements is very high and would require a substantial investment by the Town and the Village to correct every sidewalk, path or crossing deficiency. For example, a ¼ inch difference in adjacent sidewalk panels indicates a deficiency. With Vermont winters and recurring freeze-thaw cycles, this standard is very difficult to achieve and maintain.

Another objective of the study was to identify priority improvements in areas where there is the greatest need/impact. The report identifies the standards and has provided guidance as to which locations should be prioritized before others.

It is recognized that the report was completed in 2018 and is only now being submitted for acceptance. Throughout last summer and into the winter, work effort of staff was directed towards alignment, budget format changes, school busing issues, processing and developing of active grants, building studies, storm water compliance with new permits and many other

pressing issues. While the report was not submitted for acceptance, the report was reviewed and ADA improvements were made or planned for this summer based on the report. The content of the report is currently being used.

A question may arise as to why the report is requested for acceptance and not approval. Historically, accepting a report means that the report is acknowledged as completed and allows staff to implement recommendations as applicable. Approval implies that the findings of the report will be followed as written or described. The report being considered contains an extensive amount of useful information but not all recommendations can or should be followed as described in the report. One example of this is the sketch provided on page 10 for the intersection of Essex Way and VT 15. While the sketch provides an ADA improvement at the location, the stop bar for traffic must be placed prior to the crossing and this places the stop bar too far back from this heavily travelled intersection. In addition, recent signal changes have moved the signal poles. While the identification of the intersection crossing is a valid issue, the report figure is not a preferred configuration by Public Works, considering all factors. It is for examples like this that the report is being requested for acceptance and not approval.

The report is only one element in an overall long-term plan that needs to be developed by staff and approved by the elected officials regarding the topic of ADA compliance on sidewalks, paths and crosswalks. There are both short-term inexpensive operational issues and longer term, costly improvements that need to be further prioritized and developed into a multi-year plan. Once deficiencies are identified, improvements need to be made but all improvements cannot be made in the short term given the reality of the funding that will be required.

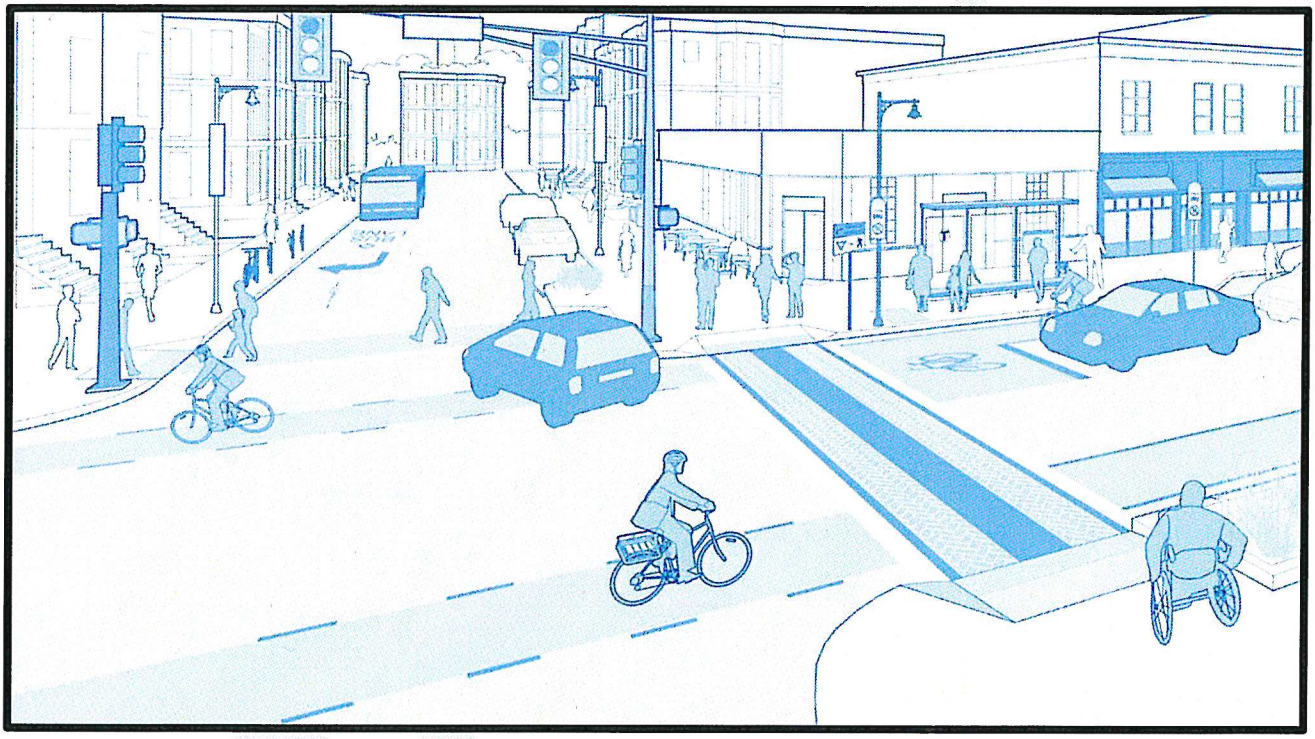
The grinding of sidewalks where adjacent sidewalks have a significant height offset or replacement of specific sidewalks with extreme differential settlement often falls under normal maintenance and operational concerns. However, more significant issues need not only to be identified, as in the report, but also cost- estimated and prioritized in a formally adopted plan. It may be that the work has to be identified as a separate category for incorporation in the Capital Plan and funds identified to actually construct the projects on the priority list.

It is the staff's intent to develop a five-year priority list of ADA related improvements with estimated yearly costs during early FYE20 for use in budget development considerations for FYE21. In the interim, ADA improvements will be made using available funds against priority locations as noted in the report and in previous analyses.

RECOMMENDATION: it is recommended that the Selectboard and the Trustees accept the report by the CCRPC and Toole Design Group entitled "Assessment of Critical Non-Compliant Sidewalks, Paths and Crossings" and direct staff to utilize the report to develop a five year-municipal plan in the Village and in the Town to address the ADA issues as they impact on sidewalks, paths and crossings.

Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossings

Essex, Vermont



For consideration by:

Essex, Vermont

Prepared by:

Chittenden County RPC

Toole Design Group

June 2018

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Communities Planning Together

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Project Committee

Dennis Lutz, Public Works Director, Town of Essex
Rick Jones, Public Works Superintendent, Village of Essex Junction
Peter Keating, Senior Transportation Planner, Chittenden County Regional Planning Commission
Chris Dubin, Transportation Planner, Chittenden County Regional Planning Commission
John Dempsey, Landscape Architect, Toole Design Group
Brian Tang, Engineer, Toole Design Group

This study was a collaborative effort of the Town/Village staff, CCRPC, and Toole Design Group, who possessed a wealth of combined knowledge and expertise regarding project background, history, local insight, and existing conditions. Their valuable insight and assistance was instrumental in developing the implementation strategy.

The preparation of this report has been financed in part through a grant from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code, as well as matching funds provided by Chittenden County's municipalities and the Vermont Agency of Transportation. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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1.0 Introduction

1.1 Background

The Town of Essex and the Village of Essex Junction, Vermont, with assistance from the Chittenden County Regional Planning Commission (CCRPC), assessed priority sidewalks, pathways, and intersection crossings located at identified study focus areas within the Town and Village. The assessment focused on the public right-of-way and does not address accessibility of buildings, public communications, or other areas. Refer to **Appendix A:** Study Focus Areas Map. While the assessment provides a framework for addressing accessibility in the near future, it is assumed that the assessment report will need to be updated and modified as improvements are implemented. As such, the assessment report should be considered the first step in an ongoing process to document the commitment to and strategy for identifying and addressing barriers to accessibility in the Town of Essex and Village of Essex Junction.

1.2 Purpose and Need

In the Vermont communities of Essex and Essex Junction sidewalks, driveways, and intersection crossing infrastructure may be deficient, with ADA ramps, deteriorating sidewalk or pathways creating travel impairments, and signalized intersections that may not meet these requirements. State and federal laws and regulations require local governments to ensure that people with disabilities have full access to civic life within their communities. The **purpose** of the *Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossings* is to assess, analyze, and develop a prioritization list of improvements to sidewalks, driveways, and intersections at identified study focus areas within the Town of Essex and Village of Essex Junction, Vermont.

Specifically, this study is **needed** to:

1. Develop a prioritization plan to make identified sidewalks, driveways, and roadway intersections accessible for all users;
2. Provide accessible, safe, efficient, interconnected, secure, equitable, and sustainable mobility modifications for the Town and Village communities; and
3. Support future or planned connections in the Town of Essex and Village of Essex Junction.

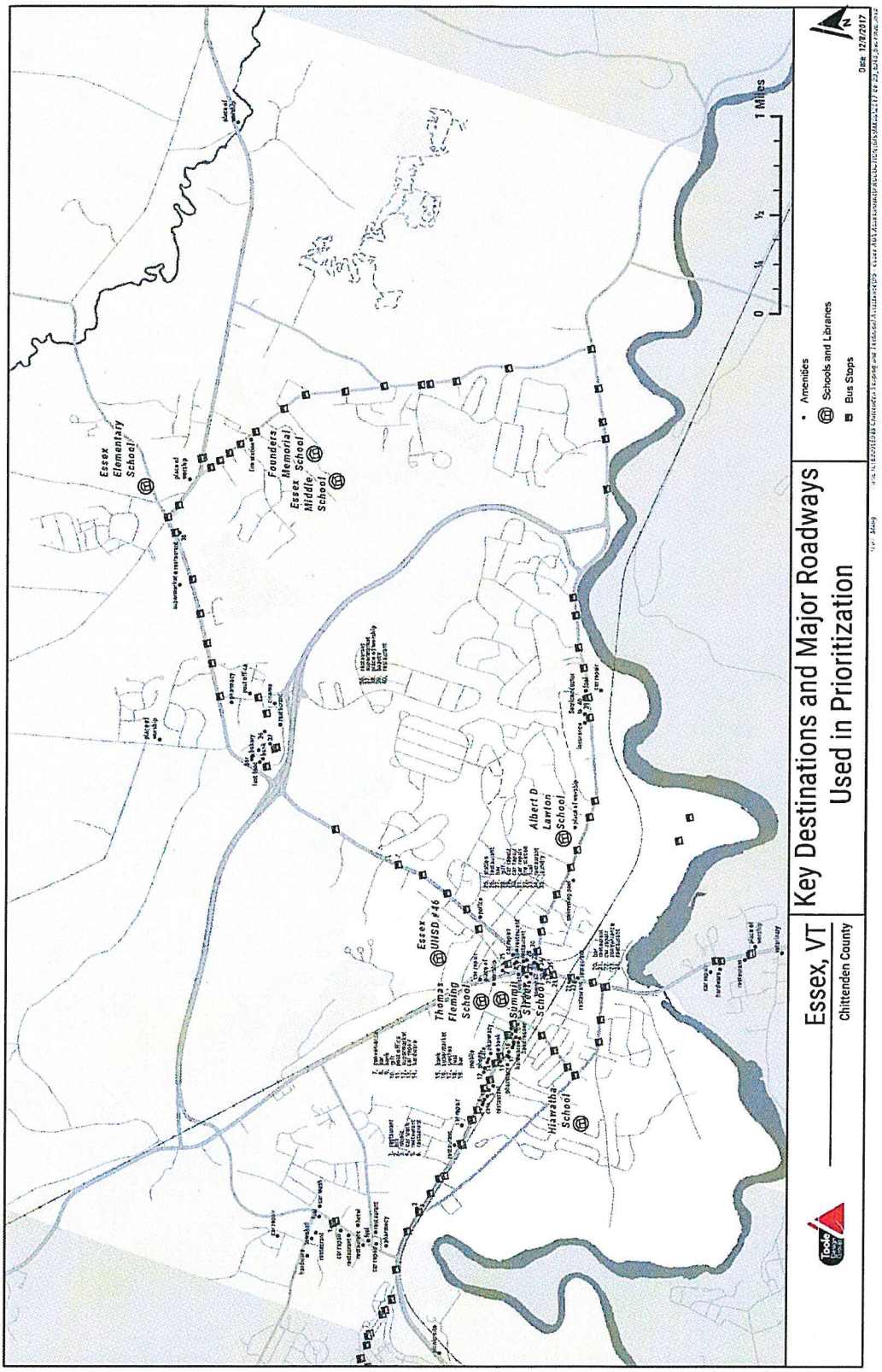


Figure 1: Project study area.

2.0 Methodology and Prioritization

2.1 Methodology

The analysis of existing conditions focused on a set of 50 priority intersections, 25 in the Village and 25, in the Town outside the Village. Study focus area locations outside the Village were selected from a set of previously identified priority locations for crosswalk accessibility improvements provided by the Town of Essex, while the focus area locations within the Village were drawn from all Village intersections. The focus area locations were selected using a prioritization method described below.

Over the summer and fall of 2016, CCRPC conducted a field assessment of the conditions of sidewalks, driveway crossings, and intersection crossings throughout the Town of Essex and Village of Essex Junction. CCRPC interns noted whether sidewalks met accessibility standards on the following criteria:

- width (whether at least five feet),
- cross slope (whether less than two percent),
- running slope (whether matching roadway, with level landings above ramps),
- level surface (free of lips greater than one quarter inch),
- horizontal obstructions (minimum clear path of 36"), and
- grates (oriented perpendicular to travel and gaps less than half inch).

Driveway crossing were assessed based on pavement characteristics and were recorded as either concrete in good condition, asphalt in good condition, or deficient. The accessibility of intersection crossings was assessed based on the following criteria, with each being noted as either present and compliant, present and deficient, or not present:

- entrances
- curb ramps
- detectible warning surfaces
- cut throughs in median islands
- pushbuttons
- crosswalks

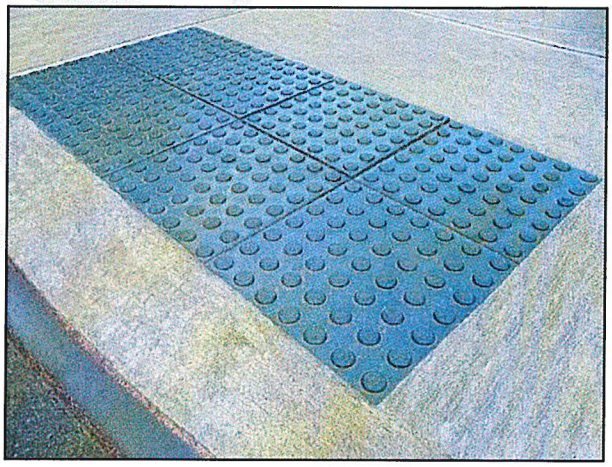


Figure 2: Detectable warning panels shall consist of a surface of truncated domes with a contrasting visually warning surface to the adjacent material.

Using this dataset, conditions were examined and summarized at the study focus areas identified through the prioritization process. Driveways were included in the study focus areas if they were within 200 feet of one of the 25 Village priority intersections or within 400 feet of one of the Town priority intersections. Sidewalk segments were included in the analysis and summary if they connected to the priority intersections.

2.2 Factors and Variables for Prioritization

The prioritization method employed for this study aggregates several variables to generate a single, location-based numerical score that ranks locations based on their relevance to four factors:

- Prioritize improvement of facilities that are observed and/or known heavily trafficked destinations and/or locations;
- Prioritize improvement of facilities that are observed and/or known heavily trafficked primary transportation corridors;
- Prioritize the improvement of facilities for intersections and segments that are adjacent to public facilities such as schools, churches, public buildings/transit, and/or congregate housing; and
- Prioritize the improvement of facilities that are in proximity to capital projects, new or future (re)development.

The variables used to generate the aggregate score were based on the weighted density of points and lines. Arterial roadways were the sole line density input and were given a relative weighting of 10. Point density inputs and relative weights were as follows:

- bus stops, primary health clinics and large medical facilities, schools and libraries, other public building (10)
- secondary health clinics (medical specialists) (8)
- childcare facilities, grocery stores, places of worship (6)
- parks (4)
- other conservation lands (2)

The locations of these point features were drawn from an open source database (OpenStreetMap) and manually corroborated against regional GIS datasets and other sources. Weighted density calculations yielded numerical scores for each location in space, with locations in closer proximity to higher weighted points or lines assigned a higher prioritization score.

Refer to **Appendix B** Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossings Memorandum for the complete existing conditions and analysis.

3.0 Study Focus Area Priority Locations

3.1 Priority Locations

Prioritization criteria were used to highlight connections in the network most essential to providing access to civic resources and amenities. These priority sites are mostly concentrated along the main thoroughfares in both the Town of Essex and Village of Essex Junction.

Refer to **Appendix C** Town and Village Assessment Reference Data Table for the comprehensive list of all intersections, sidewalks, and driveway crossings summarized in the Town and Village.

3.2 Priority Intersections in Essex Junction

In the summer of 2017, a major infrastructure resurfacing project resulted in replacement of nearly all curb ramps on Pearl Street, Lincoln Street, Main Street, and Maple Street. As a result, 21 of the 25 highest priority intersections in Essex Junction have new curb ramps assumed to be fully compliant with

accessibility standards. The condition of the sidewalks and driveway crossings connecting to these intersections, however, vary more widely.

3.3 Priority Sidewalks and Driveway Crossings in Essex Junction

Among the sidewalks and driveway crossings connecting to the highest-priority intersections within the Village of Essex Junction, most sidewalks are concrete with moderate weathering and continue level across driveways. One driveway in the heart of Essex Junction was found to be in poor condition is located on Lincoln Place, midway between Lincoln Street and Railroad Avenue. The driveway entrance design is a parallel crossing with landing (VTrans Type 2). In certain instances, this is an acceptable driveway entrance design for sidewalks adjacent to the curb. However, where the driveway elevation is greater than the gutter elevation, as is the case here, a combination crossing with flare (VTrans Type 1), with a grade break between the driveway ramp and level accessible route, is generally preferred to ensure the accessible route can be constructed with a level cross slope (less than two percent). Other centrally located driveways with issues identified in the inventory, such as the driveway entrance for the Federal Building on Lincoln Street, have subsequently been reconstructed with preferred designs. Among sidewalks connecting to the most civic resources in Essex Junction, the inventory found the sidewalks along Lincoln Street to be in the poorest condition, with weathered joints and some uneven sidewalk panels. Replacing the driveway entrance on Lincoln Place and these sidewalks, especially on the east side of Lincoln Street, would be a reasonable next priority now that nearly all high-priority curb ramps have been upgraded in Essex Junction.

3.3 Priority Intersections in the Town of Essex

Outside the village boundaries, a greater number of high-priority intersection crossings remain to be upgraded. Of the 25 intersections of highest priority for providing access to civic resources, three have been recently upgraded. The other 22 have curb ramps old enough to predate current design standards such as inclusion of detectible warning surfaces. Application of prioritization criteria indicated that the intersections in the Town of Essex most essential for enhancing access to civic resources are clustered along Essex Way near the post office, around Essex Center near Essex Elementary School, and along Sand Hill Road connecting to Founders Memorial School and Essex Middle School.

The intersection of Essex Way and VT Route 15 serves as a gateway to the large range of amenities available near Essex Way and forms the crossroads of several shared-use path connects in all directions. There is also a bus stop at the southeastern corner of the intersection that currently lacks a sidewalk or paved landing for loading and unloading wheelchairs from buses. The curb ramps at this intersection are constructed with bituminous pavement, some of which is in poor quality. None of the ramp designs meet current VTrans design standards. The intersection's large corner radii result in long crossing distances and create challenging constraints for implementing preferred accessible ramp designs. Due to the large corner radius on the southwestern corner, the existing crosswalk on the southern leg of the intersection has an irregularity midway across the street to bend around the raised median at the center of Essex Way. Crosswalks that are not straight, perpendicular to the crown of the roadway, and parallel to adjacent automobile traffic can be disorienting to people with visual impairments and also tend to have a longer crossing distance. If the large corner radius cannot be avoided—for example, if combination trailers must routinely turn right from VT Route 15 onto Essex Way—preferred crossing designs could still be achieved. One consideration would be to redesign the southeastern trail approach to be offset farther from VT Route 15. This would require a cut through in the existing median. The trail approach on the southwestern corner could also be modified to be offset less far from VT Route 15. By shifting the trail approaches and/or modifying the median, a straight crossing parallel to VT Route 15 is possible. Upgrading the ramps, median refuge, pedestrian signals, and bus stop at this intersection would not only benefit people with disabilities, but also trail users and transit riders of all ages and abilities.

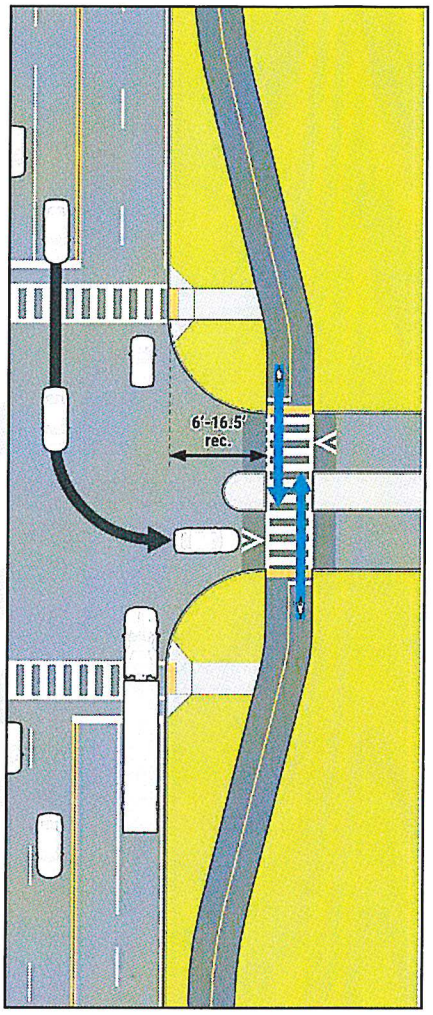


Figure 3: Shared-Use Path crossing with cut through median island.

3.4 Priority Sidewalks and Driveway Crossings in the Town of Essex

Among the sidewalks and driveways in need of attention in the town of Essex, several are on walking routes connecting to Essex Elementary School. While the ramps at the intersection of Browns River Road and Alder Lane have been recently upgraded, the sidewalks, and driveway crossings on the way to this intersection have not. For example, the sidewalk along Browns River Road was found to have weathered joints and uneven sidewalk panels. Overgrown vegetation obstructs segments of the pedestrian access route at several locations. On Alder Lane, the existing sidewalk was built nearly flush with roadway. Replacing the sidewalks and driveway entrances along these streets would improve access to Essex Elementary School to the north and the Essex Free Library to the south.

4.0 Summary

4.1 Summary of Highest-Priority Intersections, Sidewalks, and Driveways

The findings presented in this report provide an analysis and methodology of prioritizing identified study areas. Knowing the federal government is placing a higher priority on ADA compliance, the existing

conditions review and proposed methodology presented will assist with framing potential projects for prioritization.

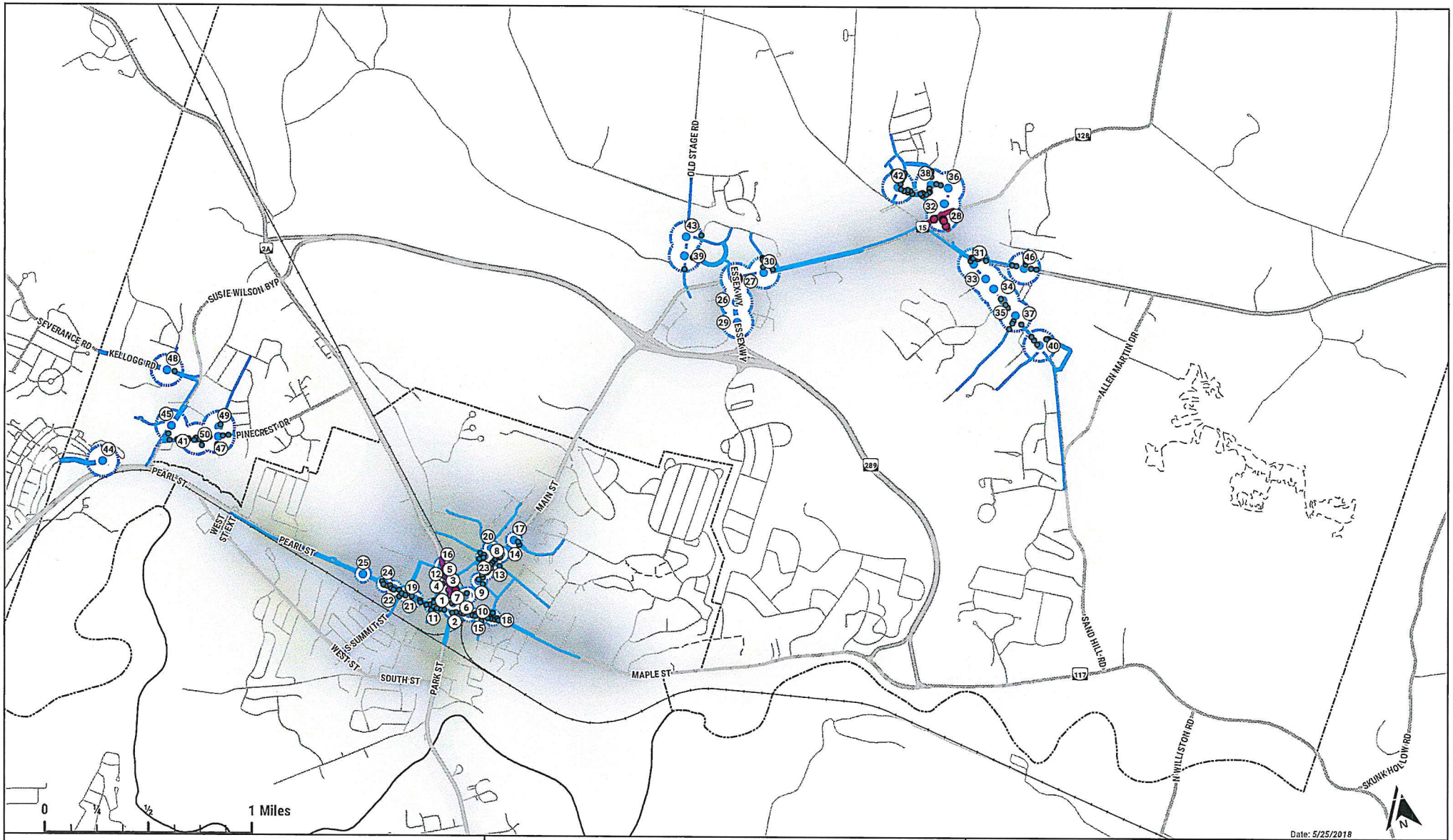
Prior and ongoing efforts to upgrade pedestrian facilities have roughly aligned to the areas predicted by our analysis to be most important for providing access to civic resources and amenities. This progress, much of it achieved very recently, will allow the community to shift attention to priority intersections outside the village boundaries and to sidewalks and driveway crossings connecting to priority intersections. Upgrading these key connections will benefit a range of users and help ensure access to civic resources and amenities.

Refer to **Table 1** for an abbreviated summary of the applied prioritization intersection rankings for the Town and Village.

Intersection Prioritization Ranking	Street	Cross Street
1	Educational Drive	Central Street
2	Maple Street	Railroad Street
3	Lincoln Terrace	School Street
4	Central Street	North Street
5	Main Street	Educational Drive
6	Essex Way	Carmichael Street
7	Center Road	Essex Way
8	Browns River Road	Bixby Hill Road
9	Essex Way	Essex Outlet Fair Entrance
10	Center Road	Londonderry Lane

Table 1: Abbreviated summary of high priority intersection locations for ADA modifications.

Appendix A
Study Focus Area Map



Date: 5/25/2018

Essex, VT

Chittenden County

ADA Inventory Priority Highlights

Sidewalk, Driveway, and Crosswalk Accessibility Assessment

Prioritization Score*
- High
- Low

* See report for details

- Study Focus Areas
- Focus Area Crosswalks
- Focus Area Driveways
- Focus Area Sidewalks
- Village and Town Limits
- Intersections Highlighted in Report
- Driveways Hightlighted in Report
- Sidewalks Highlighted in Report

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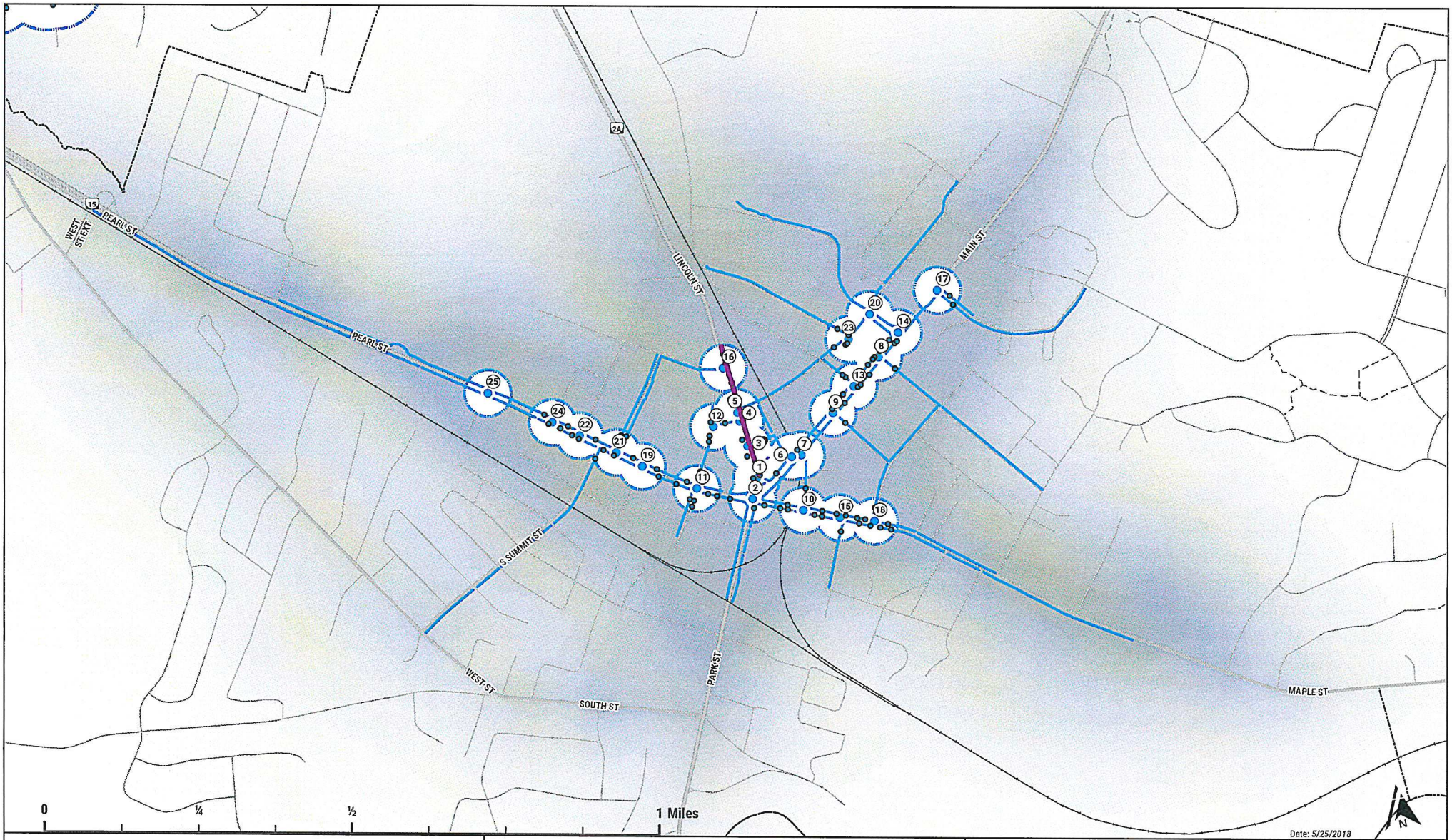

Toole Design Group

Essex, VT

Chittenden County

ADA Inventory Priority Highlights

Sidewalk, Driveway, and Crosswalk Accessibility Assessment

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Appendix B

Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossing Memorandum

TooleDesignGroup

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Memorandum

Date: December 13, 2017

To: Dennis Lutz, *Town of Essex, Public Works Director*
Rick Jones, *Village of Essex Junction, Public Works Superintendent*
Peter Keating, *CCRPC, Senior Transportation Planner*
Chris Dubin, *CCRPC, Transportation Planner*

From: John Dempsey, *Landscape Architect, Toole Design Group*
Brian Tang, *Engineer, Toole Design Group*

Project: Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossings

The Town of Essex and the Village of Essex Junction, Vermont, with assistance from the Chittenden County Regional Planning Commission (CCRPC), are assessing sidewalks, pathways, and intersection crossings located at identified study focus areas within the Town and Village. The assessment focuses on the public right-of-way and does not address accessibility of buildings, public communications, or other areas. While the assessment provides a framework for addressing accessibility in the near future, it is assumed that the assessment report will need to be updated and modified as improvements are implemented. As such, the assessment report should be considered the first step in an ongoing process to document the commitment to and strategy for identifying and addressing barriers to accessibility in the Town of Essex and Village of Essex Junction.

This memorandum summarizes existing observations from data collection activities performed by CCRPC during the summer/fall of 2016 and an inventory analysis of this data by Toole Design Group (TDG). This memorandum presents:

- Project purpose and need statement
- Methodology
- Factors and variables for potential project prioritization
- General observations of existing conditions
    - Sidewalks
    - Driveway Intersections
    - Roadway Intersections
- Attachment A- Key Destinations and Major Roadways Used in Prioritization
- Attachment B- Study Focus Area Map

Purpose and Need

In the Vermont communities of Essex and Essex Junction sidewalks, driveways, and intersection crossing infrastructure may be deficient, with ADA ramps, deteriorating sidewalk or pathways creating travel impairments, and signalized intersections that may not meet these requirements. State and federal laws and regulations require local governments to ensure that people with disabilities have full access to civic life within their communities. The **purpose** of the *Assessment of Critical Non-Compliant Sidewalks, Paths, and Crossings* is to assess, analyze, and develop a prioritization list of improvements to sidewalks, driveways, and intersections at identified study focus areas within the Town of Essex and Village of Essex Junction, Vermont.

The assessment conducted for this study contributes to ensuring accessibility throughout the public realm. New or reconstructed public facilities must meet ADA requirements and jurisdictions must put in place plans to upgrade existing infrastructure to meet requirements. This assessment can be used to develop an inventory of needed improvements and methods for prioritizing these future investment projects within the public right-of-way. The inventory of needed improvements uses established guidelines and best practices, as depicted in the graphic (Figure 1).

Specifically, this study is **needed** to:

1. Develop a prioritization plan to make identified sidewalks, driveways, and roadway intersections accessible for all users;
2. Provide accessible, safe, efficient, interconnected, secure, equitable, and sustainable mobility modifications for the Town and Village communities;
3. Support future or planned connections in the Town of Essex and Village of Essex Junction; and
4. Provide an estimate of probable construction costs of anticipated improvements to serve as a basis to apply for grant applications or funding.

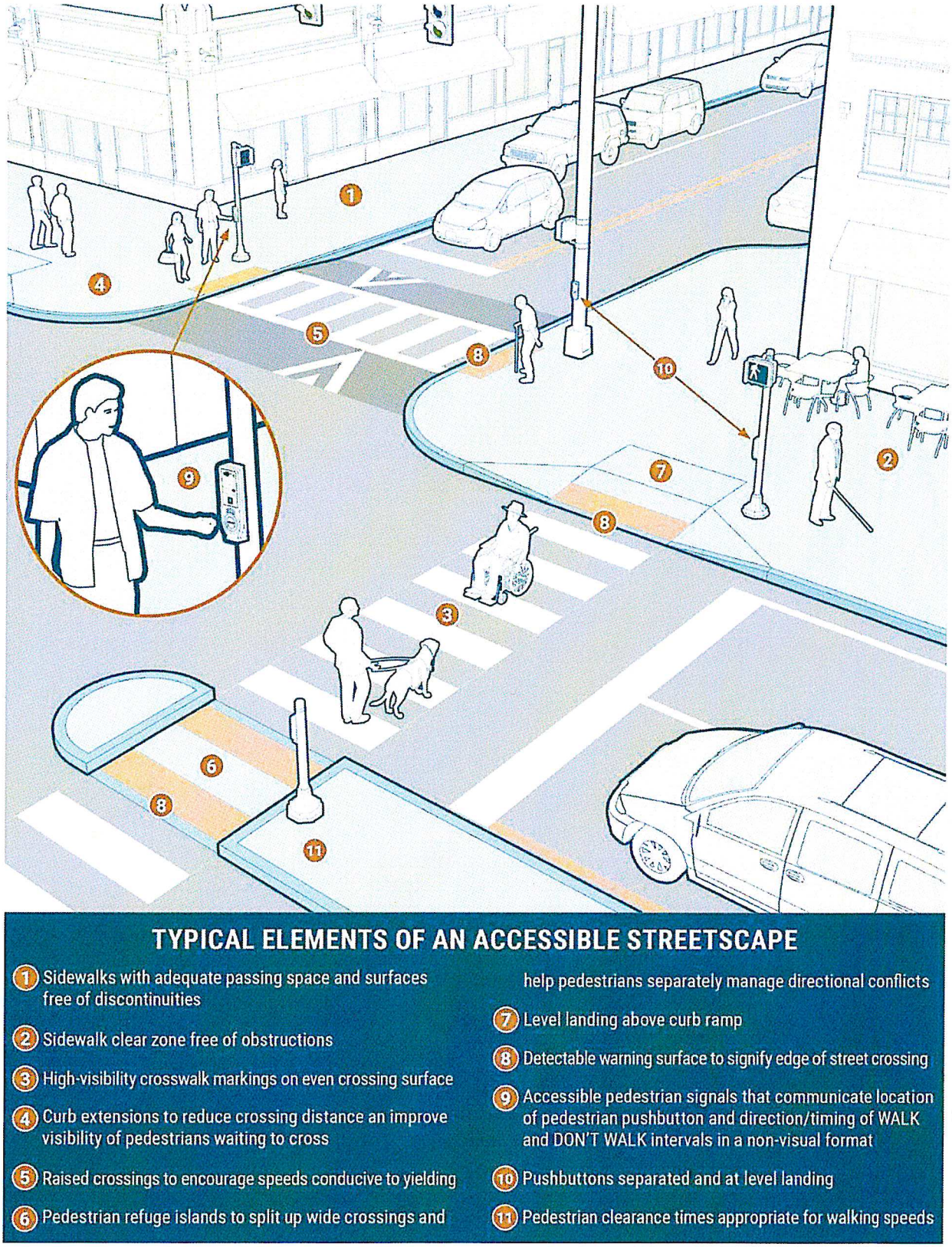

Figure 1: Typical Elements of an Accessible Streetscape

Methodology

The analysis of existing conditions focused on a set of 50 priority intersections, 25 within and 25 outside the Village and Town boundaries. Study focus area locations outside the Village and Town boundaries were selected from a set of previously identified priority locations for crosswalk accessibility improvements provided by the Town of Essex, while the focus area locations within the Village were drawn from all Village intersections. The focus area locations were selected using a prioritization method described below.

Over the summer and fall of 2016, CCRPC conducted a field assessment of the conditions of sidewalks, driveway crossings, and intersection crossings throughout the Town of Essex and Village of Essex Junction. CCRPC technicians noted whether sidewalks met accessibility standards on the following criteria:

- width (whether at least five feet),
- cross slope (whether less than two percent),
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Driveway crossing were assessed based on pavement characteristics and were recorded as either concrete in good condition, asphalt in good condition, or deficient. The accessibility of intersection crossings was assessed based on the following criteria, with each being noted as either present and compliant, present and deficient, or not present:

- entrances
- curb ramps
- detectible warning surfaces
- cut throughs in median islands
- pushbuttons
- crosswalks

Using this dataset, conditions were examined and summarized at the study focus areas identified through the prioritization process. Driveways were included in the study focus areas if they were within 200 feet of one of the 25 Village priority intersections or within 400 feet of one of the Town priority intersections. Sidewalk segments were included in the analysis and summary if they connected to the priority intersections.

Factors and Variables for Prioritization

The prioritization method employed for this study aggregates several variables to generate a single, location-based numerical score that ranks locations based on their relevance to four factors:

- Prioritize improvement of facilities that are observed and/or known heavily trafficked destinations and/or locations;
- Prioritize improvement of facilities that are observed and/or known heavily trafficked primary transportation corridors;
- Prioritize the improvement of facilities for intersections and segments that are adjacent to public facilities such as schools, churches, public buildings/transit, and/or congregate housing; and
- Prioritize the improvement of facilities that are in proximity to capital projects, new or future (re)development.

The variables used to generate the aggregate score were based on the weighted density of points and lines. Arterial roadways were the sole line density input and were given a relative weighting of 10. Point density inputs and relative weights were as follows:

- bus stops, primary health clinics and large medical facilities, schools and libraries, other public building (10)
- minor health clinics (8)
- childcare facilities, grocery stores, places of worship (6)
- parks (4)
- other conservation lands (2)

The locations of these point features were drawn from an open source database (OpenStreetMap) and manually corroborated against regional GIS datasets and other sources. Weighted density calculations yielded numerical scores for each location in space, with locations in closer proximity to higher weighted points or lines assigned a higher prioritization score.

Existing Observations

Existing conditions, as they relate to ADA, in the study area are presented here, with separate sections for sidewalks, driveways intersections, and roadway intersections, in each case, areas there are two tables of summary findings: one for priority locations within the Town and Village and one for priority locations outside the Town and Village.

Sidewalks

Most residential areas of Essex were built with sidewalks. Overall, approximately 70 percent of existing housing units in the Town and Village are on lots abutting streets with sidewalks. Of the existing 87.6 miles of sidewalks in Essex, 80.1 miles (91%) are paved with concrete; the remainder are paved with asphalt. Except for several stretches along major commercial streets, these existing sidewalks are separated from the street by vegetated buffers. These buffers serve several purposes, including extra space and comfort for pedestrians and space for snow storage and debris accumulation, which can reduce maintenance costs from snow storage and sidewalk weathering.

Figure 2: Recently reconstructed sidewalk in Chittenden County.

One tenth of the total sidewalk mileage in Essex meets ADA standards for widths, slopes, vertical discontinuities, obstructions, and storm grates. Of the sidewalk segments that failed to meet ADA criteria in the most ways and places, common issues included spalling and cracking due to weathering, sidewalk slabs lifted by tree roots, poor patch jobs exacerbated by weathering, grass growing in seams, and vegetation obstructing the walkway. The sidewalks in poor condition include several on major roadways and some in older residential neighborhoods.

Conditions on sidewalks at priority locations were separated geographically. Table 1 shows conditions in the Town and Village, and those outside the Town and Village are in Table 2. Using the number of violations per mile, the scores were divided into five groups. Comparing the percentage of the total sidewalk network, shown in the far-right column, to the number of violations per mile, gives an indication of the level of need. For example, in Table 1, just over half of the sidewalks at priority locations were in the worst condition, with at least 85 or more violations per mile.

Table 1: Summary of Sidewalk Conditions at Study Focus Areas within the Village and Town

Sidewalk Conditions	Mileage	Share, by length, of Sidewalks in Village Study Focus Areas
0-23 Violations per Mile	1.6	21%
24-49 Violations per Mile	1.4	19%
50-84 Violations per Mile	0.71	9%
85 or more Violations per Mile	3.9	51%
Total	7.7	100%
Sidewalk Conditions	Mileage	Share, by length, of Sidewalks in Village Study Focus Areas

Table 2: Summary of Sidewalk Conditions at Study Focus Areas outside the Village and Town

Sidewalk Conditions	Mileage	Share, by length, of Sidewalks in Village and Town Study Focus Areas
0-23 Violations per Mile	2.0	17%
24-49 Violations per Mile	3.7	31%
50-84 Violations per Mile	2.2	19%
85 or more Violations per Mile	3.9	33%
Total	11.8	100%

Driveway Intersections

In general, the design of driveways should aim to provide a continuous and level pedestrian zone across the vehicular path and encourage vehicles to yield to pedestrians on the sidewalk (Figure 3). Except for a few major commercial driveways, most driveways in Essex are consistent with this preferred design. Where driveways in Essex fail to meet standards for accessibility, the defects are mostly related to weathering and vehicular traffic.

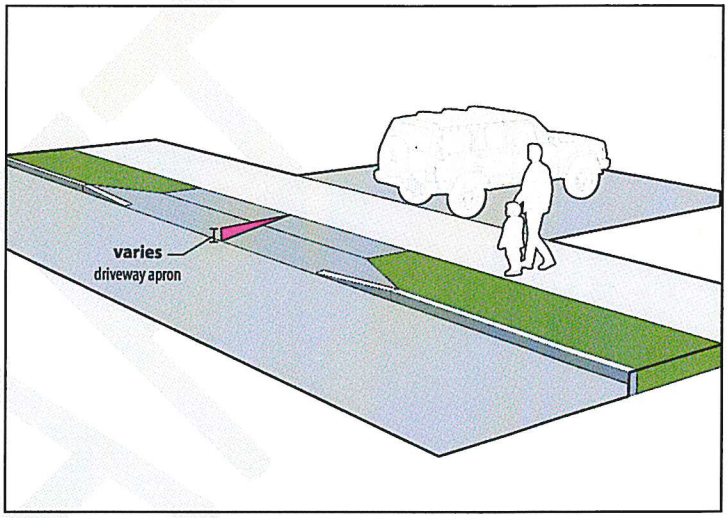


Figure 3: Continuous, level sidewalks across driveways encourage slower speeds and make it easier to create accessible pedestrian routes.

Within the study priority areas, inventory data found only a handful of driveways that do not meet accessibility standards. A slightly greater proportion of driveways within the Village focus areas (Table 3) were found to be deficient than outside the Village boundaries (Table 4). These were often driveways where either the sidewalk concrete pavement surface failed to extend across the driveway or the sidewalk had cracked and subsided, presumably through the combined effects of vehicle traffic and weathering. Ensuring driveway entrances are built to Vermont Agency of Transportation (VAOT) Standards C-2A and C-2B should help address this. This is particularly important in instances where narrow sidewalks without roadway buffers cross driveways. Some non-compliant driveways used a parallel crossing with landing type of design where either a combination

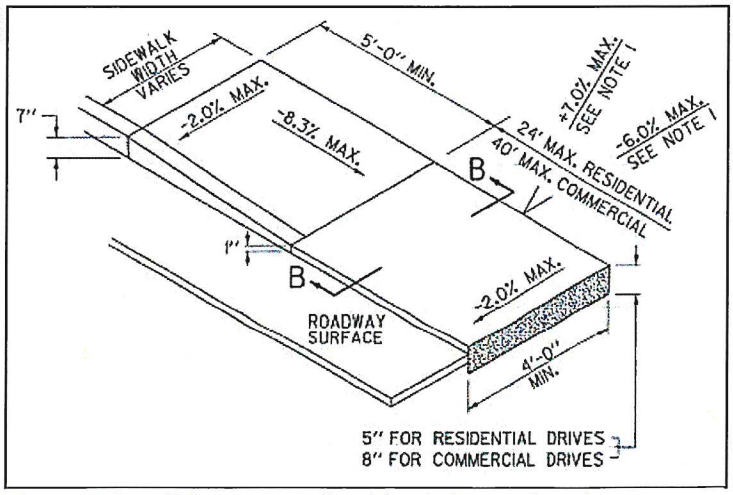


Figure 4: Parallel crossings should only be used on driveways that slope downhill from the street and care should be taken to avoid excessive cross slopes.

crossing with flare or jogged crossing (see VAOT Standard C-2A) would have been more appropriate given the grade change between the gutter and driveway. In these cases, the use of the parallel crossing design resulted in an excessive cross slope on the walkway.

Table 3: Summary of Driveway Crossing Conditions at Study Focus Areas in the Town and Village

Driveway Conditions	Number of Driveways	Portion of Driveways
Meets current ADA Standards	69	76%
Marginal*	12	13%
Does not meet ADA Standards	10	11%
Total	91	100%
* Generally asphalt pavement of acceptable quality		

Table 4: Summary of Driveway Crossing Conditions at Study Focus Areas outside the Town and Village

Driveway Conditions	Number of Driveways	Portion of Driveways
Meets current ADA Standards	75	82%
Marginal*	5	5%
Does not meet ADA Standards	11	12%
Total	91	100%
* Generally asphalt pavement of acceptable quality		

Roadway Intersections

field assessment Intersection conditions focused on:

- presence of signals; and
- ADA compliance for entrances, ramps, detectible warning surfaces, median cut-throughs, crosswalk signal push buttons, and crosswalk markings.

Components were noted as either compliant, non-compliant, or not present.

Figure 5: Example compliant ramp and crosswalk markings.

Of the 325 intersections assessed, 134 intersections, approximately two fifths of the total, had marked crosswalks. The available data do not distinguish between intersections where all crosswalk legs are marked and those where only some are. The remaining three fifths of intersections had no marked crossings. Many of these were on

minor residential streets, but they also included some on more major roads along direct walking routes to schools and other primary destinations.

All but 10 of the intersections assessed had ramps for at least some crossings. The available data do not distinguish between intersections where all crossings had ramps and those where ramps were present for only certain legs. Of the ramps assessed, 278, or about 15%, met accessibility standards for slopes and surface quality. Non-compliance was mainly the result of weathering to the pavement, however, some of the weathering and damage observed at intersection crossings were exacerbated by design characteristics. Few streets in Essex have curbs, accelerating pavement cracking at the roadway edge by allowing moisture into the ground during freeze-thaw cycles. The lack of curbs also results in many crosswalk "ramps" that are essentially level. The minimal positive drainage at these crosswalk landings sometimes results in grit, debris, and ice accumulation that degrades accessibility both as a direct hazard to pedestrians and by accelerating weathering.

Additional road and intersection issues to consider include whether Accessible Pedestrian Signal (APS) features are provided, which communicate information about crossing intervals in non-visual formats, and whether pedestrian signal faces include countdown timers to inform pedestrians of time remaining until the end of the pedestrian phase (see Figure 1 for illustration). The available data identified 20 signalized intersections. However, the data do not note whether APS features or pedestrian count down indicators are present. Supplemental visual inspection indicated that either or both features are present at some, but not all, of the signalized intersections in Essex.

Of the study focus intersections identified within (Table 5) and outside (Table 6) the Village boundaries, a much greater share of the focus intersections within the Village met or nearly met accessibility criteria for intersection crossings. This likely reflects, at least in part, the fact that the Town focus intersections were drawn from a list of intersections previously identified by Town staff as needing crossing improvements. In many cases, pedestrian ramps present reflect designs that predate current practices and need replacement. Earlier ramp designs were less likely to slope directly toward the crosswalk and less likely to provide separate ramps for each intersection leg. Current sidewalk ramp design standards are provided in VAOT Standards C-3A and C-3B.

Table 5: Summary of Intersection Crossing Conditions at Study Focus Intersections in the Town and Village

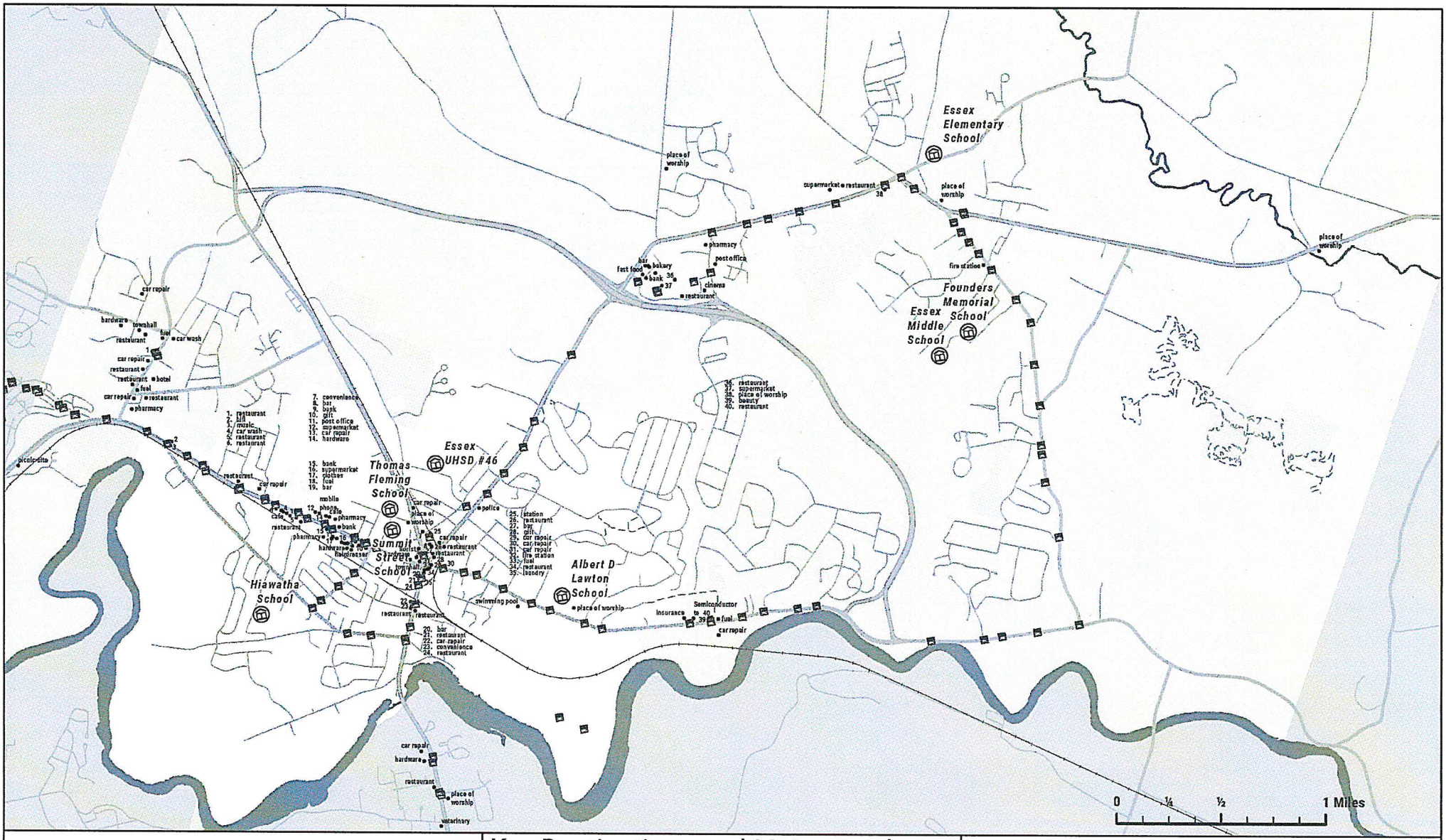
Roadway Intersection Conditions	Number of Intersections	Share of Intersections
Meets current ADA Standards	8	32%
1 Criterion not Met	10	40%
2 Criteria not Met	4	16%
3 or 4 Criteria not Met	3	12%
Total	25	100%

Table 6: Summary of Intersection Crossing Conditions at Study Focus Intersections outside the Town and Village

Roadway Intersection Conditions	Number of Intersections	Share of Intersections
Meets current ADA Standards	2	8%
1 Criterion not Met	6	24%
2 Criteria not Met	6	24%
3 or 4 Criteria not Met	7	28%
Data not Available	4	16%
Total	25	100%

Next Steps

The findings presented in this memorandum provide an analysis and methodology of prioritizing identified study areas. Knowing the federal government is placing a higher priority on ADA compliance, the existing conditions review and proposed methodology presented will assist with framing potential projects for prioritization. The information presented will next assign an associated estimates for an opinion of probable construction costs for sidewalk, driveway, and intersection modifications. This will provide the Town and Village information and estimated dollar values to assist in the identification of an ADA prioritization plan for implementation to develop a path forward for ADA accessibility.



Attachment A

Essex, VT

Chittenden County

Key Destinations and Major Roadways Used in Prioritization

- Amenities
- Schools and Libraries
- Bus Stops

Date: 12/8/2017

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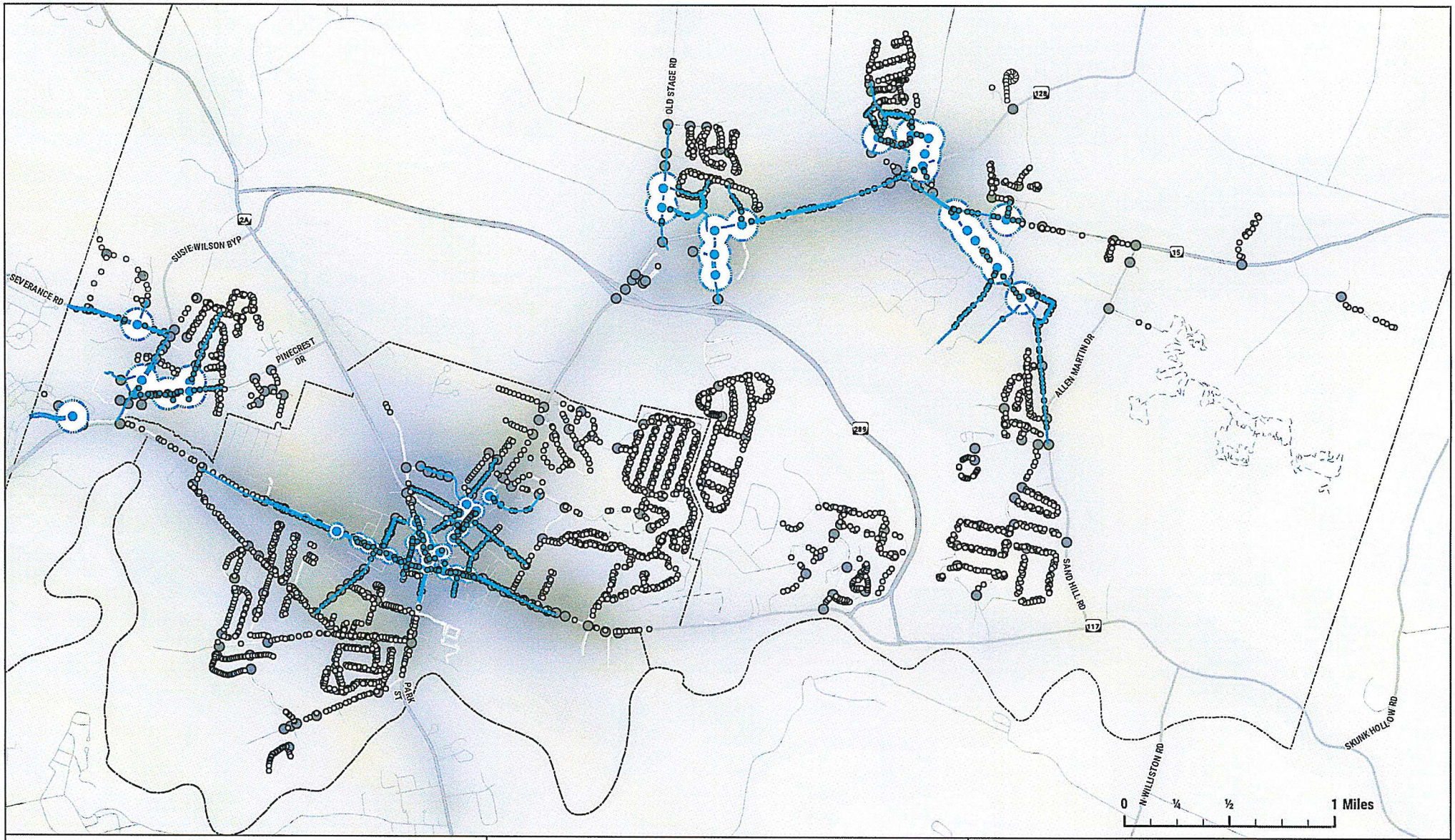

Attachment B

Essex, VT

Chittenden County

Study Focus Areas

Sidewalk, Driveway, and Crosswalk Accessibility Assessment

Prioritization Score*
High
Low
* See report for details

Study Focus Areas
Focus Area Crosswalks
Focus Area Driveways
Focus Area Sidewalks

Village and Town Limits
Crosswalks Assessed
Driveways Assessed
Sidewalks Assessed

Date: 12/5/2017

User: btang

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Appendix C

Town and Village Assessment Reference Data Table

Village of Essex Junction summary data
Intersections

Intersection Prioritization Ranking	Street	Cross Street	Pedestrian Signals	Ramp Landings	Ramps	Detectable Warning Surfaces	Median Cut Throughs	Pedestrian Push Buttons	Crosswalk Markings	Inventory Summary
20	Educational Dr	Central St	Not Present	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	DW missing on all ramps.
10	Maple St	Railroad St	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	DW missing on all ramps. Two DW also missing at RR crossing.
12	Lincoln Ter	School St	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	DW missing on both ramps.
23	Central St	North St	Not Present	Does Not Meet Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Meets Standards	May have been upgraded since inventory.
14	Main St	Educational Dr	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Ramps missing on all legs. No marked crosswalks. No cut-through of median on west leg.
11	Pearl St	School St	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Recently upgraded. Check if DW added to all corners.
1	Lincoln St	Main St	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Does Not Meet Standards	Recently upgraded. No change needed.
2	Pearl St	Main St	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Not Present	Meets Standards	Meets Standards	Recently upgraded. No change needed.
3	Lincoln St	Lincoln Pl	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
4	Lincoln St	Lincoln Ter	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
5	Lincoln St	Central St	Not Present	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
6	Main St	Railroad Ave	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
7	Main St	Ivy Ln	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
8	Main St	Pleasant St	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
9	Main St	Church St	Not Present	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
13	Main St	Grove St	Not Present	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Does Not Meet Standards	Recently upgraded. No change needed.
15	Maple St	Elm St	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
16	Lincoln St	Prospect St	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
17	Main St	Densmore Dr	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
18	Maple St	East St	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
19	Pearl St	Curtis Ave	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
21	Pearl St	Summit St	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
22	Pearl St	Hillcrest Rd	Does Not Meet Standards	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Does Not Meet Standards	Recently upgraded. No change needed.
24	Pearl St	Hillcrest Rd	Not Present	Meets Standards	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Meets Standards	Recently upgraded. No change needed.
25	Pearl St	Post Office Sq	Meets Standards	Meets Standards	Does Not Meet Standards	Does Not Meet Standards	Not Present	Does Not Meet Standards	Meets Standards	Recently upgraded. No change needed.

Village of Essex Junction summary data
Sidewalks

Intersection Prioritization Ranking	Parallel Street	Material	Places where Cross Slope Exceeds 2%	Places where Running Slope Exceeds 8.33%	Number of Lips Greater than 1/4"	Number of Sidewalk Obstacles	Number of Horizontal Obstructions	Number of Grates or Access Covers	Inventory Comments	Inventory Summary
1	LINCOLN ST	Concrete	0	0	0	0	0	0	New. Not concrete	Meets standards.
2	PARK ST	Concrete	0	0	6	0	0	2	Mostly new	About six lips greater than 1/4 inch observed. Two grates or access covers in pedestrian access route noted.
2	PARK ST	Concrete	1	0	13	0	0	1	Construction fresh sidewalk on 5 corners	Cross slope exceeded 2% at one location. More than a dozen lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
3	LINCOLN PL	Concrete	2	0	2	0	0	0	New except driveway entrances	Cross slope exceeded 2% at two locations. Two lips greater than 1/4 inch observed.
4	LINCOLN ST	Concrete	0	4	37	0	0	4	Rough in places	Running slopes exceeded 8.33% at about four locations. About three dozen lips greater than 1/4 inch observed. About four grates or access covers in pedestrian access route noted.
6	RAILROAD AVE	Concrete	0	0	0	2	0	4	Sidewalk very smooth but various access covers etc	Two sidewalk obstacles encountered. Four grates or access covers in pedestrian access route noted.
6	MAIN ST	Concrete	0	0	0	0	0	2	New	Two grates or access covers in pedestrian access route noted.
7	RAILROAD ST	Concrete	0	0	5	0	0	0	Decent	About five lips greater than 1/4 inch observed.
7	MAIN ST	Concrete	10	4	69	1	0	2	Mediocre shape. Trees causing cross slope	Cross slope exceeded 2% at about 10 locations. Running slopes exceeded 8.33% at about four locations. About 70 lips greater than 1/4 inch observed. One sidewalk obstacle encountered. Two grates or access covers in pedestrian access route noted.
8	PLEASANT ST	Bituminous	0	0	8	0	0	0	Walkway paved no sidewalk slabs	About eight lips greater than 1/4 inch observed. Bituminous pavement.
8	MAIN ST	Concrete	0	0	15	0	0	1	No cross walk across educational	More than a dozen lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
9	CHURCH ST	Bituminous	0	0	0	0	0	0	Pavement. Serious bumps and sags. Not passable	Inventory recorded segment as "not passable." Violation data not enumerated. Bituminous pavement.
9	MAIN ST	Concrete	0	0	16	0	1	0	Cracks here and there	More than a dozen lips greater than 1/4 inch observed. One horizontal obstruction found.
10	MAPLE ST	Concrete	0	0	4	0	0	1	New towards 5 corners	About four lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
10	MAPLE ST	Concrete	0	0	15	0	0	4	Good shape towards 5 corners	More than a dozen lips greater than 1/4 inch observed. Four grates or access covers in pedestrian access route noted.
11	PEARL ST	Concrete	0	0	3	0	0	0	Mostly new	Three lips greater than 1/4 inch observed.
11	SCHOOL ST	Concrete	0	0	0	0	0	0	New	Meets standards.
12	LINCOLN TERR	Concrete	0	0	3	0	0	0		Three lips greater than 1/4 inch observed.
12	SCHOOL ST	Concrete	0	0	5	2	0	0		About five lips greater than 1/4 inch observed. Two sidewalk obstacles encountered.
13	GROVE ST	Concrete	2	3	16	0	0	0	Rough towards vt15	Cross slope exceeded 2% at two locations. Running slopes exceeded 8.33% at three locations. More than a dozen lips greater than 1/4 inch observed.
15	ELM ST	Concrete	0	2	26	0	0	0	Decent shape. Cracking and pitting	Running slopes exceeded 8.33% at two locations. About two dozen lips greater than 1/4 inch observed.
15	MAPLE ST	Concrete	3	0	38	0	0	5	Decent shape. Well plowed.	About three dozen lips greater than 1/4 inch observed. Five grates or access covers in pedestrian access route noted.
16	PROSPECT ST	Concrete	0	0	11	0	0	0		About a dozen lips greater than 1/4 inch observed.

Village of Essex Junction summary data
Sidewalks

17	DENSMORE DR	Concrete	2	5	35	0	0	0	Rough shape especially around driveways.	Cross slope exceeded 2% at two locations. Running slopes exceeded 8.33% at about five locations. About three dozen lips greater than 1/4 inch observed.
17	DENSMORE DR	Concrete	0	2	8	0	0	0	Short but in decent shape.	Running slopes exceeded 8.33% at two locations. About two dozen lips greater than 1/4 inch observed.
18	EAST ST	Concrete	1	0	13	0	0	0		Cross slope exceeded 2% at one location. About a dozen lips greater than 1/4 inch observed.
18	MAPLE ST	Concrete	0	0	21	0	1	1	Bushes slightly block way. Good shape otherwise	About two dozen lips greater than 1/4 inch observed. One horizontal obstruction found (bushes). One grate in pedestrian access route noted.
18	MAPLE ST	Concrete	0	0	13	0	0	0	Decent shape. Cracks and weathering	About a dozen lips greater than 1/4 inch observed.
19	PEARL ST	Concrete	1	3	40	0	0	0	Cracking and pitting badly in spots	Cross slope exceeded 2% at one location. Running slopes exceeded 8.33% at three locations. More than three dozen lips greater than 1/4 inch observed.
19	PEARL ST	Concrete	0	1	14	0	0	0	Pretty good shape over all	Running slopes exceeded 8.33% at one location. About a dozen lips greater than 1/4 inch observed.
20	CENTRAL ST	Concrete	8	0	31	1	0	0	Decent overall	Cross slope exceeded 2% at about eight locations. More than two dozen lips greater than 1/4 inch observed. One sidewalk obstacle encountered.
20	EDUCATIONAL DR	Concrete	2	0	9	0	0	0	Fairly new. Last half is brand new	Cross slope exceeded 2% at two locations. About nine lips greater than 1/4 inch observed.
20	EDUCATION DR	Concrete	0	0	4	0	0	0	Pitting and cracked	About four lips greater than 1/4 inch observed.
20	DRURY DR	Concrete	1	2	7	0	0	0	3-4 block long pavement patch at bottom	Cross slope exceeded 2% at one location. Running slopes exceeded 8.33% at two locations. About seven lips greater than 1/4 inch observed.
21	S SUMMIT ST	Concrete	0	0	10	0	0	0		About a dozen lips greater than 1/4 inch observed.
21	SUMMIT	Concrete	0	0	0	0	0	0	Fairly new	Meets standards.
21	SUMMIT	Concrete	0	0	0	0	0	0	New no distresses	Meets standards.
21	PEARL ST	Concrete	0	1	28	0	0	3	Large depressed drain with huge cracks. Bad	Running slopes exceeded 8.33% at one location. About two dozen lips greater than 1/4 inch observed. Three grates or access covers in pedestrian access route noted.
23	NORTH ST	Concrete	0	1	23	0	1	0	Decent. Tree branch in the way	Running slopes exceeded 8.33% at one location. About two dozen lips greater than 1/4 inch observed. One horizontal obstruction found.
24	PEARL ST	Concrete	1	2	17	0	1	0	Pretty rough near cross walks	Cross slope exceeded 2% at one location. Running slopes exceeded 8.33% at two locations. More than a dozen greater than 1/4 inch observed. One horizontal obstruction found.
25	PEARL ST	Concrete	0	0	0	0	0	0	New	Meets standards.
25	PEARL ST	Concrete	0	0	10	0	0	0	Violations are far from renovated pearl st walkway	About a dozen lips greater than 1/4 inch observed.

Village of Essex Junction summary data
Driveways

Intersection Prioritization Ranking	Driveway Condition Noted in Inventory
1	Concrete driveway crossing in good condition
1	Concrete driveway crossing in good condition
1	Concrete driveway crossing in good condition
1	Concrete driveway crossing in good condition
2	Concrete driveway crossing in good condition
2	Concrete driveway crossing in good condition
2	Concrete driveway crossing in good condition
3	Concrete driveway crossing in good condition
3	Concrete driveway crossing in good condition
3	Driveway crossing in poor condition
4	Bituminous driveway crossing in good condition
5	Concrete driveway crossing in good condition
5	Concrete driveway crossing in good condition
7	Bituminous driveway crossing in good condition
8	Driveway crossing in poor condition
8	Concrete driveway crossing in good condition
8	Concrete driveway crossing in good condition
8	Concrete driveway crossing in good condition
8	Concrete driveway crossing in good condition
8	Driveway crossing in poor condition
9	Driveway crossing in poor condition
9	Concrete driveway crossing in good condition
9	Bituminous driveway crossing in good condition
10	Concrete driveway crossing in good condition
10	Concrete driveway crossing in good condition
10	Concrete driveway crossing in good condition
10	Concrete driveway crossing in good condition
10	Concrete driveway crossing in good condition
10	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition

Village of Essex Junction summary data
Driveways

11	Bituminous driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
11	Concrete driveway crossing in good condition
12	Concrete driveway crossing in good condition
12	Concrete driveway crossing in good condition
12	Concrete driveway crossing in good condition
12	Concrete driveway crossing in good condition
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14	Concrete driveway crossing in good condition
15	Concrete driveway crossing in good condition
15	Concrete driveway crossing in good condition
15	Concrete driveway crossing in good condition
15	Concrete driveway crossing in good condition
15	Concrete driveway crossing in good condition
16	Bituminous driveway crossing in good condition
16	Concrete driveway crossing in good condition
16	Concrete driveway crossing in good condition
16	Concrete driveway crossing in good condition
17	Driveway crossing in poor condition
17	Concrete driveway crossing in good condition
18	Concrete driveway crossing in good condition
18	Concrete driveway crossing in good condition
18	Bituminous driveway crossing in good condition

Village of Essex Junction summary data
Driveways

18	Concrete driveway crossing in good condition
18	Concrete driveway crossing in good condition
18	Driveway crossing in poor condition
18	Concrete driveway crossing in good condition
19	Concrete driveway crossing in good condition
19	Concrete driveway crossing in good condition
19	Concrete driveway crossing in good condition
21	Concrete driveway crossing in good condition
21	Concrete driveway crossing in good condition
21	Driveway crossing in poor condition
21	Concrete driveway crossing in good condition
21	Concrete driveway crossing in good condition
22	Concrete driveway crossing in good condition
22	Bituminous driveway crossing in good condition
22	Bituminous driveway crossing in good condition
22	Driveway crossing in poor condition
23	Concrete driveway crossing in good condition
23	Concrete driveway crossing in good condition
23	Bituminous driveway crossing in good condition
23	Bituminous driveway crossing in good condition
23	Concrete driveway crossing in good condition
24	Driveway crossing in poor condition
24	Bituminous driveway crossing in good condition
24	Bituminous driveway crossing in good condition

Town of Essex summary data
Intersections

Intersection Prioritization Ranking	Street	Cross Street	Pedestrian Signals	Ramp Landings	Ramps	Detectable Warning Surfaces	Median Cut Throughs	Pedestrian Push Buttons	Crosswalk Markings	Inventory Summary
26	ESSEX WAY	CARMICHAEL STREET	Not Present	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Not Present	Detectable warning surface missing on all ramps. Crosswalk marking present on only one leg.
27	CENTER ROAD	ESSEX WAY	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Detectable warning surface missing on three ramps. Existing detectable warning surface installed too far (8') from roadway edge.
28	BROWNS RIVER ROAD	BIXBY HILL ROAD	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Recently upgraded (since inventory). No change needed.
29	ESSEX WAY	Essex Outlet Fair entrance	Not Present	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Crosswalk marking faded (existing on N and W legs). Detectable warning surface missing on all ramps.
30	CENTER ROAD	LONDONDERRY LANE	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Detectable warning surface missing from both ramps. No marked crosswalk.
31	SAND HILL ROAD	SAND HILL ROAD	Does Not Meet Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Not Present	Does Not Meet Standards	Evidence of ponding on ramp (may have subsided to elevation lower than road). Detectable warning surface missing from all ramps. Inventory recorded crosswalk markings not consistent with current standards--faded stamped faux brick crosswalk across Sand Hill Rd.
32	BIXBY HILL ROAD	school entrance	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Not Present	Actually a driveway. Detectable warning surface on one of two ramps. Inventory recorded no crosswalk marking present.
33	SAND HILL ROAD	no name - town pool	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Does Not Meet Standards	Asphalt ramps. Detectable warning surface missing from both ramps. Inventory recorded crosswalk markings not consistent with current standards.
34	SAND HILL ROAD	CEMETERY ROAD	Does Not Meet Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Does Not Meet Standards	Asphalt ramps. Detectable warning surface missing from both ramps. Inventory recorded crosswalk markings not consistent with current standards.
35	SAND HILL ROAD	TANGLEWOOD DRIVE	Does Not Meet Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Does Not Meet Standards	Excessive cross slope on ramps? Detectable warning surface missing from both ramps. Inventory recorded crosswalk markings not consistent with current standards.
36	BIXBY HILL ROAD	IRIS STREET	Not Present	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Not Present	Excessive cross slope on ramps? Detectable warning surface missing from all ramps. Inventory recorded missing crosswalk marking.
37	SAND HILL ROAD	FOSTER ROAD	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Detectable warning surface missing.
38	BOBOLINK CIRCLE	IRIS STREET	Not Present	Does Not Meet Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Detectable warning surface missing. No existing crosswalk marking.
39	OLD STAGE ROAD	CRAFTSBURY COURT	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Detectable warning surface missing.
40	SAND HILL ROAD	MAPLELAWN DRIVE	Does Not Meet Standards	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Meets Standards	Recently upgraded (since inventory). No change needed.
41	PINECREST DRIVE	Market Place driveway	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Actually a driveway. Detectable warning surface missing.
42	CLOVER DRIVE	BOBOLINK CIRCLE	Not Present	Meets Standards	Meets Standards	Not Present	Not Present	Not Present	Not Present	Detectable warning surface missing. No existing crosswalk marking.
43	OLD STAGE ROAD	CABOT DRIVE	Not Present	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Not Present	Meets Standards	Excessive cross slope on northeast ramp? Detectable warning surface missing.
44	DALTON DRIVE	DALTON DRIVE	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Not Present	Meets Standards	Meets Standards	Good condition.
45	SUSIE WILSON ROAD	EWING PLACE	Not Present	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Not Present	Meets Standards	Detectable warning surface missing on western leg.
46	JERICHO ROAD	RICHARD STREET	Not Present	Does Not Meet Standards	Meets Standards	Not Present	Not Present	Not Present	Not Present	Missing Detectable warning surface. Inventory recorded missing crosswalk marking.
47	PINECREST DRIVE	PIONEER STREET	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Detectable warning surface missing.
48	KELLOGG ROAD	GAUTHIER DRIVE	Meets Standards	Meets Standards	Meets Standards	Not Present	Not Present	Meets Standards	Meets Standards	Detectable warning surface missing. Push buttons not accessible.
49	PIONEER STREET	IRA ALLEN DRIVE	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Does Not Meet Standards	Detectable warning surface missing. Inventory recorded crosswalk markings not consistent with current standards.
50	PINECREST DRIVE	PARIZO DRIVE	Not Present	Meets Standards	Meets Standards	Does Not Meet Standards	Not Present	Not Present	Meets Standards	Ramp configuration not symmetric across crossings of any leg. Detectable warning surface missing.

Town of Essex summary data
Sidewalks

Intersection Prioritization Ranking	Parallel Street	Material	Cross_Slop	Running_Sl	Level_Surf	Clear_Of_O	No_Horizon	Grates	Issues Noted in Inventory
26	ESSEX WAY	Concrete	0	0	1	0	0	0	One lip greater than 1/4 inch observed.
26	ESSEX WAY	Concrete	0	0	5	0	0	0	About five lips greater than 1/4 inch observed.
26	ESSEX WAY	Concrete	0	0	2	0	0	0	Two lips greater than 1/4 inch observed.
27	CRAFTSBURY COMMONS	Bituminous	0	0	0	0	0	0	Meets standards. Bituminous pavement.
28	BROWNS RIVER ROAD	Concrete	3	0	8	0	20	0	Cross slope exceeded 2% at three locations. About eight lips greater than 1/4 inch observed. About two dozen horizontal obstuctions found.
28	ALDER LANE	Concrete	2	0	8	0	1	0	Cross slope exceeded 2% at three locations. About eight lips greater than 1/4 inch observed. One horizontal obstuction found.
30	LONDONDERRY LANE	Concrete	0	0	11	0	0	1	About a dozen lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
30	CENTER RD	Concrete	0	0	4	0	0	0	About four lips greater than 1/4 inch observed.
30	CENTER ROAD	Concrete	7	4	63	0	0	8	Cross slope exceeded 2% at about seven locations. Running slopes exceeded 8.33% at about four locations. About 60 lips greater than 1/4 inch observed. About eight grates or access covers in pedestrian access route noted.
31	SAND HILL ROAD	Bituminous	0	0	4	0	0	0	About four lips greater than 1/4 inch observed.
31	SAND HILL ROAD	Concrete	0	0	3	0	0	0	Three lips greater than 1/4 inch observed.
34	SAND HILL ROAD	Concrete	10	0	48	0	3	0	Cross slope exceeded 2% at about a dozen locations. About four dozen lips greater than 1/4 inch observed. Three horizontal obstuctions found.
36	BIXBY HILL ROAD	Concrete	0	0	11	0	0	0	About a dozen lips greater than 1/4 inch observed.
37	FOSTER ROAD	Concrete	0	0	5	0	10	0	About five lips greater than 1/4 inch observed. About a dozen horizontal obstuctions found.
38	IRIS STREET	Concrete	2	0	12	0	0	0	Cross slope exceeded 2% at two locations. About a dozen lips greater than 1/4 inch observed.
38	BOBOLINK CIRCLE	Concrete	4	2	41	0	0	0	Cross slope exceeded 2% at about four locations. Running slopes exceeded 8.33% at two locations. More that three dozen lips greater than 1/4 inch observed.
38	BOBOLINK CIRCLE	Concrete	2	0	22	0	1	0	Cross slope exceeded 2% at two locations. About two dozen lips greater than 1/4 inch observed. One horizontal obstruction found.
39	OLD STAGE ROAD	Bituminous	0	0	0	0	0	0	Meets standards. Bituminous pavement.
39	CRAFTSBURY COURT	Concrete	0	0	13	0	0	0	About a dozen lips greater than 1/4 inch observed.
39	CRAFTSBURY COURT	Concrete	0	0	12	0	0	2	About a dozen lips greater than 1/4 inch observed. Two grades in pedestrian access route noted.
40	FOUNDERS ROAD	Bituminous	0	0	3	0	0	0	Three lips greater than 1/4 inch observed.
40	SAND HILL ROAD	Bituminous	0	0	35	0	0	0	About three dozen lips greater than 1/4 inch observed.
40	MAPLELAWN DRIVE	Concrete	0	0	5	0	3	0	About five lips greater than 1/4 inch observed. Three horizontal obstuctions found.
40	MAPLELAWN DRIVE	Concrete	0	0	10	0	3	0	About a dozen lips greater than 1/4 inch observed. Three horizontal obstuctions found.
41	PINECREST DRIVE	Concrete	1	0	10	0	0	0	Cross slope exceeded 2% at one location. About a dozen lips greater than 1/4 inch observed.
42	CLOVER DRIVE	Concrete	1	0	18	0	0	1	Cross slope exceeded 2% at one location. More than a dozen lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
42	COMMONS AT M.EDGE	Concrete	4	2	21	0	0	0	Cross slope exceeded 2% at about four locations. Running slopes exceeded 8.33% at two locations. About two dozen lips greater than 1/4 inch observed.
43	CABOT DRIVE	Concrete	2	0	15	0	0	2	Cross slope exceeded 2% at two locations. More than a dozen lips greater than 1/4 inch observed. Two grates or access covers in pedestrian access route noted.
44	DALTON DRIVE	Concrete	6	3	58	0	0	1	Cross slope exceeded 2% at about six locations. Running slopes exceeded 8.33% at three locations. About 60 lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
44	DALTON DRIVE	Concrete	2	0	31	0	0	0	Cross slope exceeded 2% at two locations. About three dozen lips greater than 1/4 inch observed.

Town of Essex summary data
Sidewalks

45	EWING PLACE	Concrete	1	0	6	0	0	0	Cross slope exceeded 2% at one location. About six lips greater than 1/4 inch observed.
45	SUSIE WILSON ROAD	Concrete	0	0	17	0	0	0	More than a dozen lips greater than 1/4 inch observed.
45	SUSIE WILSON ROAD	Concrete	0	0	12	0	0	0	About a dozen lips greater than 1/4 inch observed.
45	SUSIE WILSON ROAD	Concrete	0	0	13	0	0	0	About a dozen lips greater than 1/4 inch observed.
46	RICHARD STREET	Concrete	0	0	4	0	0	0	About four lips greater than 1/4 inch observed.
46	JERICHO ROAD	Concrete	3	2	38	0	0	3	Cross slope exceeded 2% at three locations. Running slopes exceeded 8.33% at two locations. About three dozen lips greater than 1/4 inch observed. Three grates or access covers in pedestrian access route noted.
48	KELLOGG ROAD	Concrete	0	0	13	0	0	3	About a dozen lips greater than 1/4 inch observed. Three grates or access covers in pedestrian access route noted.
48	KELLOGG ROAD	Concrete	0	0	19	0	0	1	More than a dozen lips greater than 1/4 inch observed. One grate in pedestrian access route noted.
48	GAUTHIER DRIVE	Concrete	0	0	4	0	0	0	About four lips greater than 1/4 inch observed.
49	PIONEER STREET	Concrete	8	0	50	0	6	0	Cross slope exceeded 2% at about eight locations. About four dozen lips greater than 1/4 inch observed. About six horizontal obstuctions found.
50	PINECREST DRIVE	Concrete	2	0	10	0	0	0	Cross slope exceeded 2% at two locations. About a dozen lips greater than 1/4 inch observed.

Town of Essex summary data
Driveways

Intersection Prioritization Ranking	Driveway Condition Noted in Inventory
28	Driveway crossing in poor condition
28	Concrete driveway crossing in good condition
28	Concrete driveway crossing in good condition
28	Driveway crossing in poor condition
30	Concrete driveway crossing in good condition
30	Concrete driveway crossing in good condition
30	Driveway crossing in poor condition
30	Concrete driveway crossing in good condition
31	Concrete driveway crossing in good condition
31	Driveway crossing in poor condition
31	Driveway crossing in poor condition
31	Concrete driveway crossing in good condition
31	Concrete driveway crossing in good condition
35	Driveway crossing in poor condition
35	Concrete driveway crossing in good condition
35	Concrete driveway crossing in good condition
36	Concrete driveway crossing in good condition
37	Concrete driveway crossing in good condition
37	Concrete driveway crossing in good condition
37	Concrete driveway crossing in good condition
37	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition
38	Driveway crossing in poor condition
38	Concrete driveway crossing in good condition
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38	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition
38	Concrete driveway crossing in good condition

Town of Essex summary data
Driveways

38	Concrete driveway crossing in good condition
39	Bituminous driveway crossing in good condition
39	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
40	Concrete driveway crossing in good condition
41	Bituminous driveway crossing in good condition
41	Driveway crossing in poor condition--cross slope exceeds 2%
41	Concrete driveway crossing in good condition
41	Concrete driveway crossing in good condition
41	Driveway crossing in poor condition--cross slope exceeds 2%
41	Bituminous driveway crossing in good condition
41	Concrete driveway crossing in good condition
41	Driveway crossing in poor condition
41	Concrete driveway crossing in good condition
42	Concrete driveway crossing in good condition
42	Concrete driveway crossing in good condition
42	Concrete driveway crossing in good condition
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42	Concrete driveway crossing in good condition
42	Concrete driveway crossing in good condition
42	Driveway crossing in poor condition
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42	Concrete driveway crossing in good condition

Town of Essex summary data
Driveways

42	Concrete driveway crossing in good condition
43	Concrete driveway crossing in good condition
45	Bituminous driveway crossing in good condition
45	Concrete driveway crossing in good condition
45	Concrete driveway crossing in good condition
46	Driveway crossing in poor condition
46	Driveway crossing in poor condition
46	Concrete driveway crossing in good condition
46	Concrete driveway crossing in good condition
46	Concrete driveway crossing in good condition
46	Concrete driveway crossing in good condition
46	Concrete driveway crossing in good condition
47	Concrete driveway crossing in good condition
47	Concrete driveway crossing in good condition
47	Concrete driveway crossing in good condition
47	Bituminous driveway crossing in good condition
48	Concrete driveway crossing in good condition
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