CITY OF CONCORD PEDESTRIAN MASTER PLAN

MAPS AND APPENDICES

Engineering Recommendations

Location	Program	Accessibility	Safety		Description	Treatments
Pleasant/Warren/Fruit St	CIP 570	High	High	Med	Proposed roundabout to replace existing signals. Potential for ADA compliance, improved crossings, better Pleasant St access, improved safety, and placemaking/livability benefits. Located near High School and Memorial Field.	Roundabout, streetscapes
McKee Square, Broadway and West	CIP 31	Med	High	High	Safety issues exist at these locations for all road users. Opportunity for ADA compliance, placemaking/livability. Located at a neighborhood center area and Safe Routes to School route.	Roundabout, streetscapes, potential refuge island, bump-outs
Loudon Rd Safety Improvements	CIP 19	High	High	High	Often cited as a problem area for walking. Various enhancements including a 3-lane option would improve safety and walkability and better balance the needs of all road users. Additional streetscape enhancements could bring additional benefits.	Road Diet, Refuge Island, crossing beacon, streetscapes
Storrs St Extension North	CIP18	High	High	High	There is currently no direct pedestrian access from Storrs St near Downtown to the Commercial St area. A new connection would improve access, eliminate a major (real and perceived) safety concern, and open vacant land to pedestrian oriented development.	New "commercial corridor" type roadway. Possible shared us path or sidepath.
393, Bouton Main	I-93 Bow Concord	Med	Med	Med	This location is not especially friendly to pedestrians due to the size of the intersection and the very high traffic volumes. This intersection should be evaluated as part of the I-93 Bow-Concord project.	
Exit 14 Area	I-93 Bow Concord	Med	High	High	Among the most cited locations in Concord for pedestrian related concerns, sidewalks here have little or no separation from very heavy traffic. Poor balance between the needs of pedestrians and other road users at this important connector between Downtown and the Heights.	Multiple
Broadway	Neighborhood Safety (CIP 380) or Sidewalk Streetscape (CIP 17)	Low	High	Med	Difficulty crossing Broadway was often cited in visioning sessions and survey. In the middle of the South End neighborhood, Safe Routes to School and safe access to Rollins Park are important to the neighborhood.	Bump-outs, general traffic calming, streetscapes
Low Avenue	CIP 97	Low	Med	High	Low Avenue, a back alley behind Main St buildings, is primarily used for parking and deliveries. Potential exists for enhancements that could enable retail or other uses at the rear of Main St buildings in this pedestrian oriented environment. May accompany private development.	Shared street, aesthetic improvements
General Corridor Improvements (Broadway, Green, South, State, Storrs, Canal, parts of Main)	Neighborhood Safety (CIP 380) or Sidewalk Streetscape (CIP 17), new CIP item, or SRTS	Med	Med	Med	Several corridors were noted as having deficiencies. Many had locations that were difficult to cross, some had aesthetic issues, others had speed or traffic concerns. A corridor analysis of these roadways may fine-tune specific solutions beyond the spot treatments listed in this plan.	Bump-outs, general traffic calming, streetscapes, Lead Pedestrian Interval
Various Spot Treatments (bump-outs, crossings, raised intersections etc)	Neighborhood Safety (CIP 380) or Sidewalk Streetscape (CIP 17), new CIP item, or SRTS	Med	Med	Med	Spot improvments can be made at specific locations that have been identified as in need of improvement. In some cases, a corridor-wide analysis and approach may be preferable to spot treatments.	Bump-outs, crossings, raised intersections, refuge islands, general traffic calming, streetscapes, Lead Pedestrian Interval

Non-Infrastructure Recommendations

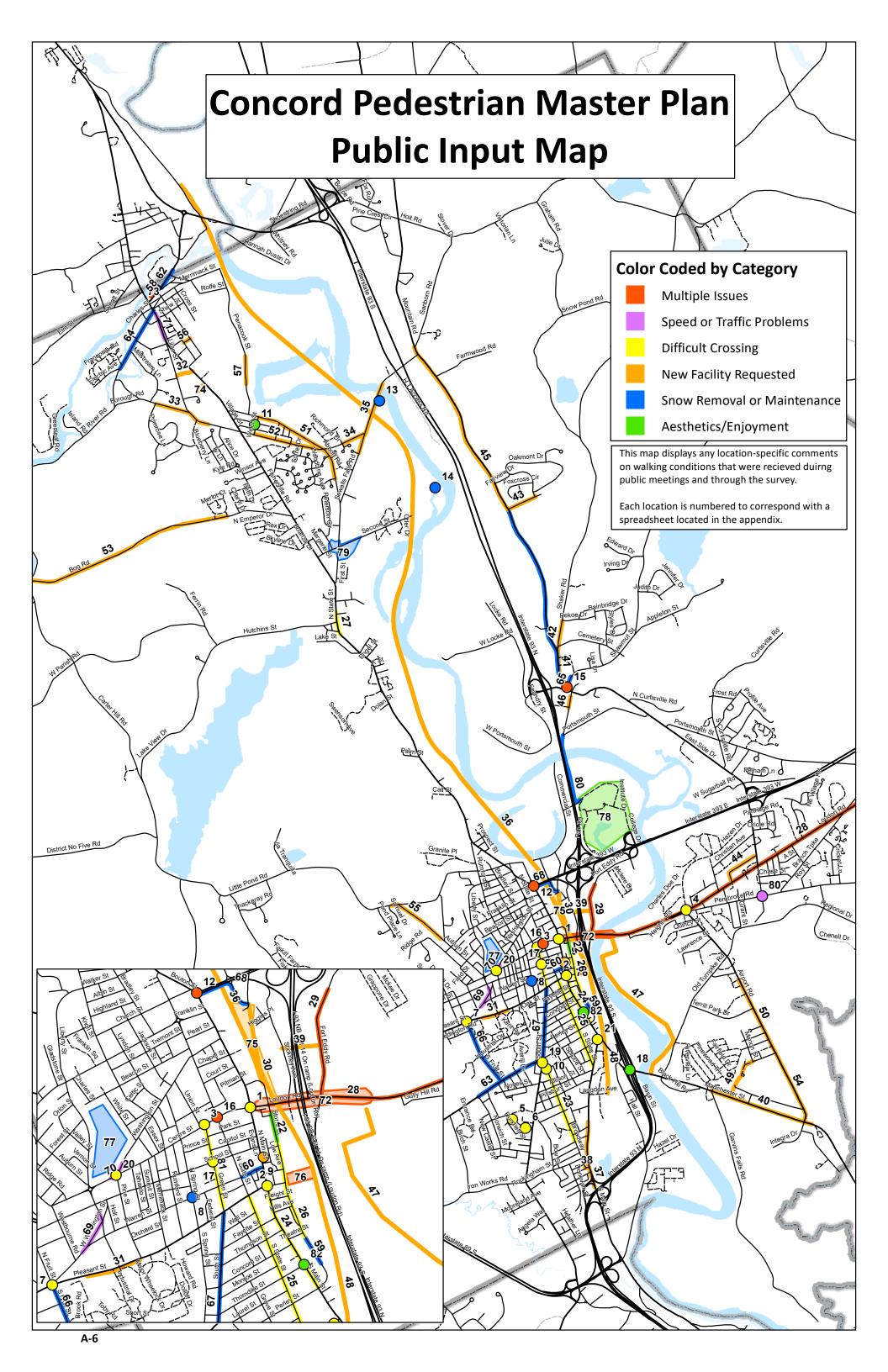
Category	Recommendation	Implementers	Accessibility	Safety	Enjoyment	Comments	Timeframe
Engineering	Apply a Complete Streets approach to snow removal and sidewalk maintenance	City Council, General Services	High	High	Med	Better snow removal and winter maintenance can increase safety and accessibility. This may require increasing or adjusting the snow removal budget. See	Short to Mid
Engineering	Work with private plow operators to reduce the illigal plowing of snow onto sidewalks, and enforce repeat offenders.	General Services, Police Department, Residents via "Report A Concern"	Med	Med	Med	The illicit banking of snow onto sidewalks from private lots and driveways impedes the ability for General Services to clear sidewalks	Ongoing
Education, Encouragement, Evaluation, Enforcement	Expand participation in the Citywide Safe Routes to School program with participation from all elementary and middle schools in the City.	City staff, school administrators, teachers, parents, Regional Planning Commission	High	High	Med	Safe Routes to School can cover all 5 "E's", Education, Encouragement, Evaluation, Enforcement, and Engineering.	Short to Mid
Education	Provide trainings for City staff, boards, and committees	City leadership, City Staff, various City boards	Med	Med	Med	Best practices continue to evolve and sometimes the details can be nuanced. Education will help everyone stay ahead.	Ongoing
Education	Have Pop-Up Demonstration Projects on City streets and sidewalks	TPAC and TPAC subcommittees, Advocacy groups	Med	Med	High	Temporary demonstration projects can help people envision complete streets implementation.	Ongoing
Education	Reach out to Employers to engage them in walking activities and smart commuting	CNHRPC through Transportation Demand Management activities, business leaders	Low	Low	Med	Helps achieve desired outcomes of improved public health through physical activity and strong economy through vibrant work environments.	Ongoing
Encouragement, Education	Apply for Walk Friendly America Designation with a goal for achieving a bronze or better award.	TPAC and TPAC subcommittees, City Staff	Med	Med	Med	The application process and the feedback received are both informative. The designation provides motivation and encouragement.	Every 4 years
Encouragement, Education	Install signage for pedestrians showing destinations and distances to encourage more walking and advertise walking as a transportation choice.	TPAC and TPAC subcommittees, Planning and Engineering Divisions	Low	Low	Med	Sometimes it may not occur to people that walking is a viable way to get around. These signs can help.	Short
Encouragement	Organize walks and walking groups	Various health and wellness organizations, community leaders	Low	Low	High	Getting more people out on foot will help improve conditions and improve public health.	Ongoing
Encouragement	Hold Bike-Walk to Work day events on Bike-Walk to Work day and at other times.	TPAC subcommittees, CNHRPC, State Offices, Employers	Low	Low	Med	Encouraging people to make trips by foot instead of by car can have multiple benefits to everyone.	Annually
Encouragement	Continue the CommuteSmart NH program or similar Transportation Demand Management (TDM) activities.	CNHRPC, local employers, NH Department of Transportation	Low	Low	Med	Encouraging people to make trips by foot instead of by car can have multiple benefits to everyone.	Ongoing

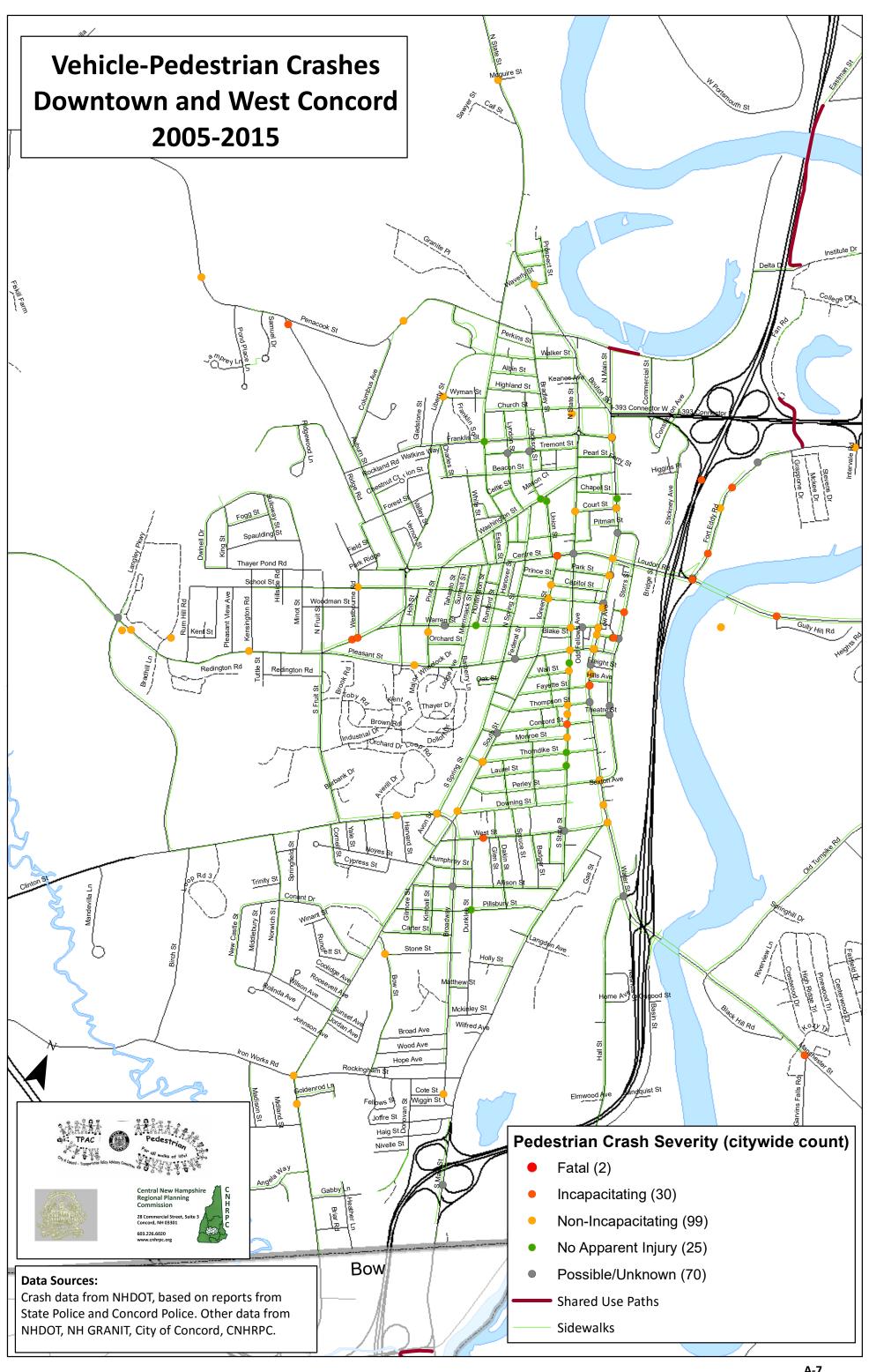
Encouragement	Hold street events and car free events.	Intown Concord, other community organizations	Med	Low	High	Events such as Market Days and Halloween Howl are a great way to get people out of their cars on in town on their feet.	Ongoing
Enforcement, Evaluation	Continue monitoring and evaluating motor vehicle/pedestrian crashes, identify solutions, and record data.	Police Department, Traffic Operations Committee, NH Department of Transportation	Med	High	Med	This is a critical component to ensuring that walking is a safe activity.	Ongoing
Enforcement	Enforce traffic laws with an eye toward safety.	Police Department	Low	High	Med	Distracted driving is a relatively new threat that needs to be addressed, in addition to speeding, DWI, stop violations etc.	Ongoing
Enforcement	Continue the Police Department practice of reporting crashes and discussing them at Traffic Ops. Committee, create a more accessible database.	Police Department, Engineering, Traffic Operations Committee	Low	High	Low	Concord keeps excellent, detailed reports on collisions, however improvements could be made in database management to improve the ability for analysis.	Mid
Evaluation and Planning	Adopt a Pedestrian Master Plan and update every 10 years or less.	TPAC and TPAC subcommittees, Planning Board, Planning and Engineering Divisions	High	High	High	A plan is essential to helping guide progress and envision the future.	Mid
Evaluation and Planning	Ensure land use plans and decisions incorporate the needs of walking.	Planning Board, Planning Division, Engineering Division	Med	Med	High	A high quality walking environment means more than just sidewalks!	Ongoing
Evaluation and Planning	Review zoning, site plan, subdivision, or other regulations and ordinances to ensure they enable and encourage walkable environments.	Planning Board, Planning Division, Engineering Division	Med	Med	High	The City can use these tools ensure that private development enhances the walking environment to the extent possible.	Mid
Evaluation and Planning	Continue to conduct bicycle and pedestrian counts, improve the dataset, and regularly incorporate the date into plans and studies.	TPAC and TPAC subcommittees, CNHRPC, Planning and Engineering Divisions	Med	Med	Med	Good data can better inform decisions. Concord is a statewide leader in bicycle and pedestrian counting.	Ongoing every May, September, and as needed

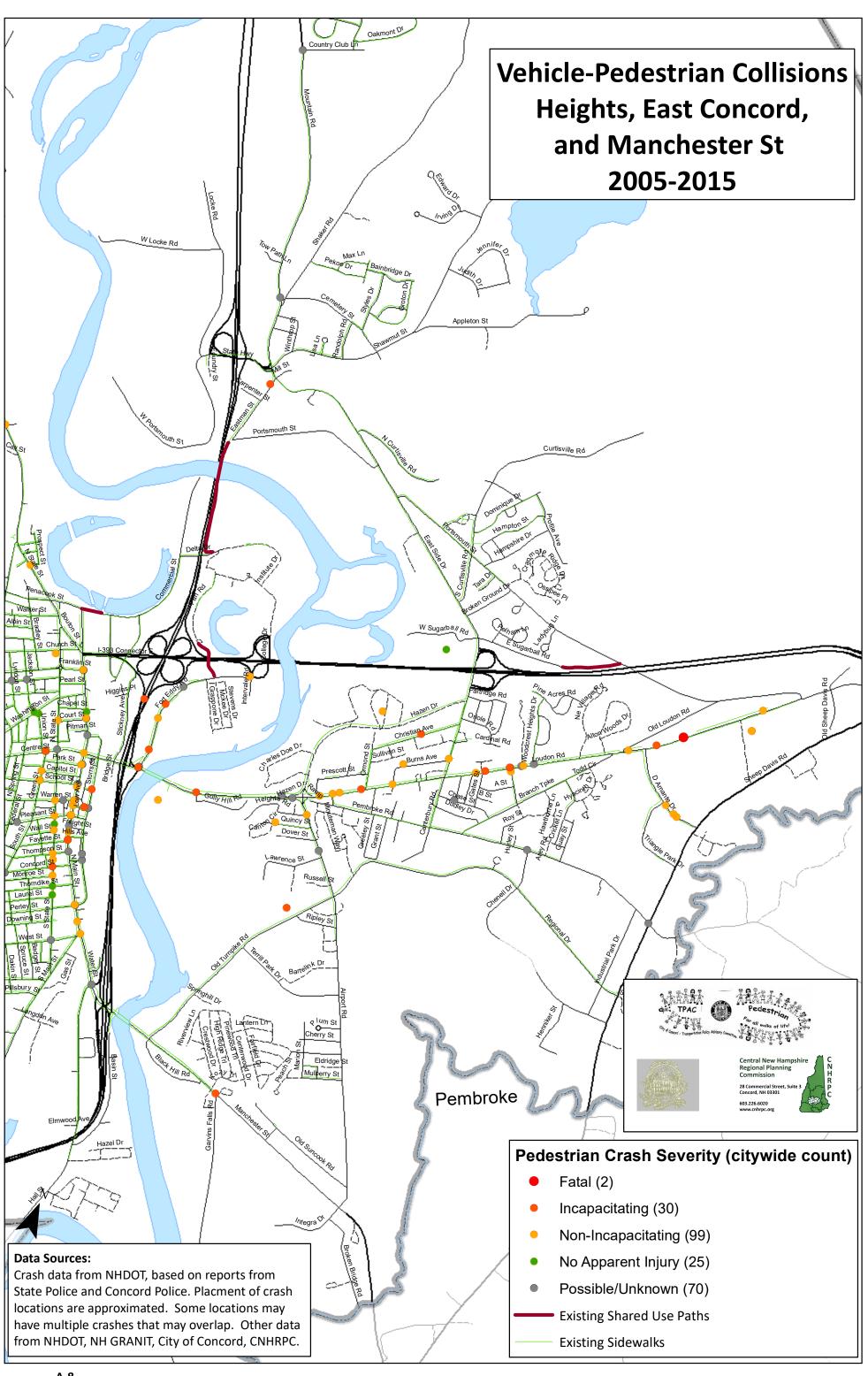
Public Input Map Comments

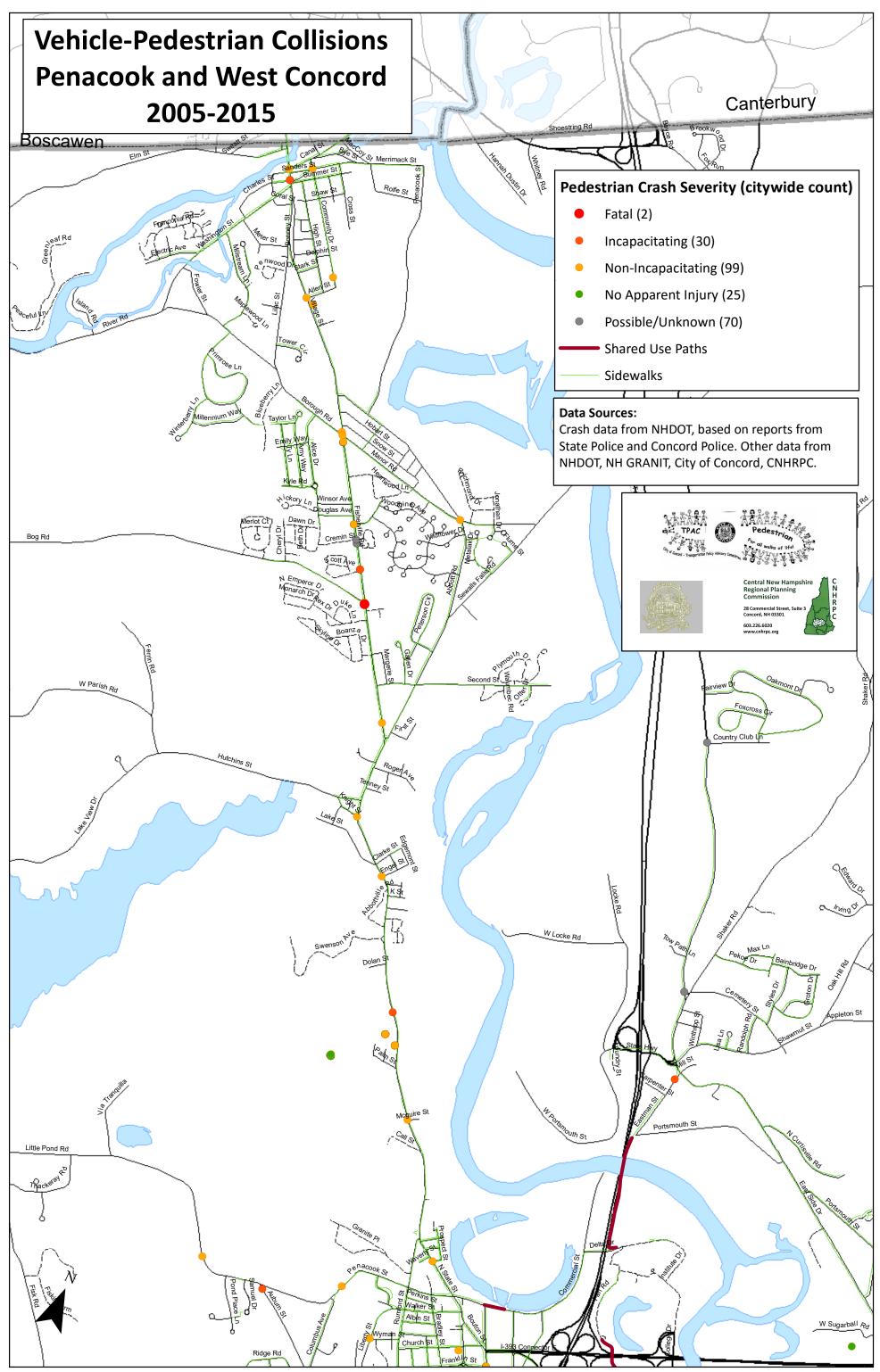
ber	Location	Comments	Meeting	Category
	1 Main and Center/Loudon Rd	Waiting time is too long, crossing time is short, Cars too fast	Penacook, Survey	Difficult Crossing
	2 Main and Pleasant	Long wait to cross, illegal right turns on red (old), Cars turn while you have a walk signal (new)	Penacook, Survey, General Outreach	Difficult Crossing
	3 Center and Green	Long wait time to cross	Penacook, Survey	Difficult Crossing
	4 Loudon Rd and Hazen/Airport	Difficult to Cross, especially N to S	Penacook	Difficult Crossing
	5 Conant Dr Crosswalk	Unusual crosswalk - no sidewalk on opposite side	Downtown	Difficult Crossing
	6 Conant Dr and Rundlett St	No Crosswalk, important for school kids	Downtown	Difficult Crossing
	7 Pleasant Fruit Warren St	Pedestrian crossings should be better, the corner between Warren and Pleasant is bad, overall neds ped i	mr Downtown, Survey	Difficult Crossing
	8 Warren and N Spring	Snow removal problems on SW corner	Downtown	Snow Removal or Maintena*
	9 Main St plaza at Phenix Hall	Put Handrails on steps	Survey	other
1	.0 West and Broadway	Unsafe Crossing	Survey	Difficult Crossing
1	11 Grange at Hobart and Welsh	Turn into community park etc.	Survey	Aesthetics/enjoyment
1	12 393, Bouton, Main	Not Pedestrian Friendly	Survey	Multiple
1	13 Sewall's Falls parkig	Poor snow removal means difficult winter access to trails	Survey	Snow Removal or Maintena*
1	14 Sewall's Falls parkig	Poor snow removal means difficult winter access to trails	Survey	Snow Removal or Maintena*
1	L5 Mountain Rd, East Side Dr, exit 16	Not Pedestrian Friendly	Survey	Multiple
	L6 Center and State	Make more Pedestrian Friendly, long wait times to cross	Survey, General Outreach	Multiple
1	17 School and Green	General improvements	Survey	Difficult Crossing
1	L8 Manchester St at Exit 13	Unpleasant for walking due to traffic/noise	Survey	Aesthetics/enjoyment
1	L9 McKee Square	Long wait times to cross	Survey	Difficult Crossing
	20 Center and Washington	Difficult/unsafe crossing	Survey	Difficult Crossing
	21 S Main, Water, West St	Intersection near Vinnie's Pizza is poor, especially crosswalk across west st	Survey	Difficult Crossing
	22 Legislative Parking Garage	Remove Parking garage to show stone building and make better for walking	Survey	Aesthetics/enjoyment
	23 Broadway	Broadway is difficult to cross, especially school kids at school times, Broadway is unsafe in the Morning	Downtown, Survey	Difficult Crossing
	, 24 South Main	Hard to cross	Survey	Difficult Crossing
	25 S State St	Difficulty crossing, blind spots	Survey	Difficult Crossing
	26 Storrs St	Difficulty Crossing/blind spots	Survey	Difficult Crossing
	27 N State in West Concord	Difficult crossings	Survey	Difficult Crossing
	28 Loudon Rd	Unpleasant walking, add shade trees, snow removal is important, hard to cross (Keach Park kids!)	Downtown, General Outreach	Multiple
	29 Ft Eddy Rd	Unpleasant walking conditions, no buffer between heavy traffic	Downtown	Multiple
	30 Storrs to Constitution	Pedestrian connection needed	Penacook	New Facility
	31 Pleasant St near State Offices	Gap in Sidewalk, need sidewalk	Penacook	New Facility
	32 Woodlawn Cemetery	Use Woodlawn Cemetery for kids to walk to school	Penacook	New Facility
	33 Borough Rd	New Sidewalk, fill the gap	Penacook, Survey	New Facility
	34 Manor Rd and Sewalls Falls Rd	Add Sidewalk	Survey	New Facility
	35 Sewall's Falls Rd	New sidewalk from Manor Rd area to Sewall's Falls Rec area and bridge, speed/traffic concerns when brid	•	New Facility
	86 Rail Trail	Rail Trail or other Trail from Penacook to Downtown	Penacook, Downtown, General Outreach	New Facility
	37 S Main St near exit 12	Add sidewalk along S Main to fill in gap N of exit 12	Penacook	New Facility
	38	Add Sidewalk	Penacook	New Facility
	39 93 crossing at LL Beans	Consider adding another ped crossing under 93 in this area	Downtown	New Facility
	10 Manchester St	No sidewalk	Downtown	New Facility
	11 Mountain Rd	There should be a sidewalk on both sides of Mountain Rd	Survey	New Facility
	12 Mountain Rd	There should be a sidewalk on both sides of Mountain Rd	Survey	New Facility
	13 Country Club Ln	There should be a sidewalk on Country Club Rd to connect to Mtn Rd, plus a crosswalk	Survey	New Facility
	14 Burns Ave	A sidewalk on Burns Ave would be nice	Survey	New Facility
4	TT DUILID AVC	A Sidewalk Off Buffls Ave would be filed	Jul VCy	THE VV T GETTILY

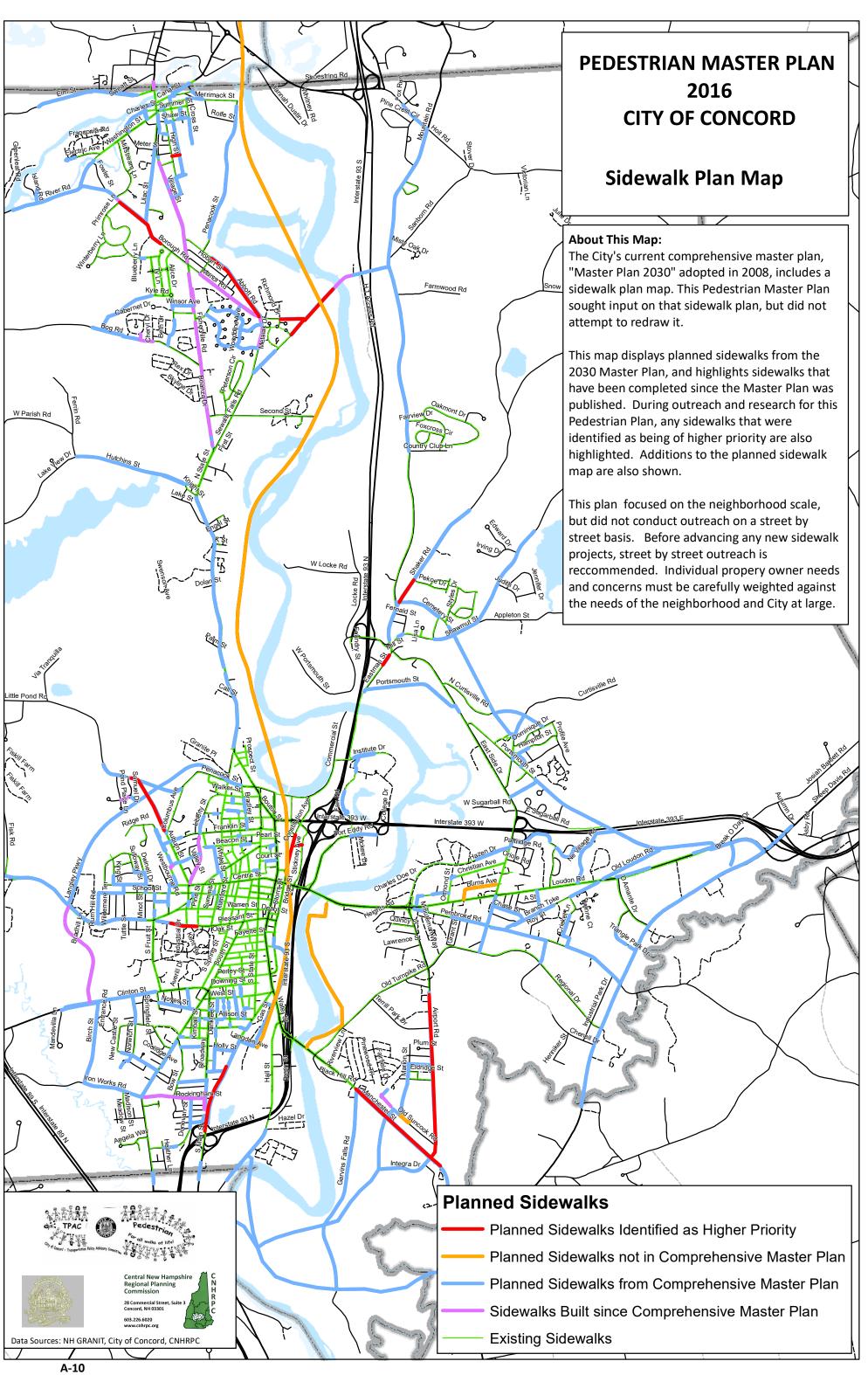
46 Eastman St	Needs sidewalk	Survey	New Facility
47 Merrimack River near downtown	Bike Paths on River near downtown	Survey, General Outreach	New Facility
48 Railroad Tracks	Clean up railroad tracks for a bike path near downtown	Survey	New Facility
49 Near Mullbury St	More Sidewalks	Survey	New Facility
50 Airport Rd	More Sidewalk	Survey	New Facility
51 Abbot Rd	More sidewalks	Survey	New Facility
52 Manor Rd	More Sidewalk	Survey	New Facility
53 Bog Rd	Unsafe walking due to fast cars and no sidewalk	Survey	New Facility
54 Airport Rd	Bad for walking, need sidewalk	Survey	New Facility
55 Auburn St	Sidewalk needed	Survey	New Facility
56 Dolphin St	Sidewalk needed, school kid safety issues	Survey	New Facility
57 Penacook St Penacook	Speeding, safety concerns, lack of shoulder or sidewalk	Survey	New Facility
58 Canal St North Side	Vegetation overhanging the sidewalk	Penacook	Snow Removal or Maintena*
59 South Storrs St	Snow removal problems/drainage	Downtown	Snow Removal or Maintena*
60 Warren St near Main	Winter maintenance is poor due to narrowness	Downtown	Snow Removal or Maintena*
61 Mountain Rd	Poor winter maintenance, not walkable in winter	Survey	Snow Removal or Maintena*
62 Canal St	Vegetation blocking sidewalk	Survey	Snow Removal or Maintena*
63 Clinton St	Not Pedestrian Friendly, Poor snow removal	Survey	Snow Removal or Maintena*
64 Washington St	Sidewalks Blocked by Snow in winter	Survey	Snow Removal or Maintena*
65 Shawmut Street	Vegetation grown into sidwalk	Survey	Snow Removal or Maintena*
66 S Fruit St	Poor snow removal	Survey	Snow Removal or Maintena*
67 South St	Snow removal problems, intermittant poor sidewalk conditions	Survey	Snow Removal or Maintena*
68 End of 393 at N Main	No snow removal	General outreach	Snow Removal or Maintena*
69 Liberty Washington Warren	Speeding traffic, vegetation onto sidewalk	Downtown	Speed or traffic problems
70 Center and Washington	Speeding turning traffic, difficult/unsafe crossing	Downtown	Speed or traffic problems
71 Village St N of Meter	Speeding traffic	Penacook	Speed or traffic problems
72 Exit 14 and Loudon Rd Bridge	No buffer between sidewalk and heavy traffic, unpleasant conditions, snow removal important, discon-	necte Penacook, Downtown, Heights, Survey	, Gener Multiple
73 Tannery Site	Should be a walkable area, walk-to destinations like farmers market, library etc.	Penacook	Multiple
74 Penacook Community Center	Community Center should be walkable	Penacook, Survey	New Facility
75 Storrs St to Constitution	Safety Concerns/crime, no access, bad in winter	Downtown, General Outreach	New Facility
76 Train Station	Rebuild Train Station, clean up railroad tracks area, more ped friendly in this area	Survey	Multiple
77 Whites Park	Paths are difficult for stroller, improve path conditions	Survey	Snow Removal or Maintena*
78 NHTI Campus	Visually Unappealing for walking	Survey	Aesthetics/enjoyment
79 Beaver Meadow School	Poor snow removal around Beaver Meadow School	Survey	Snow Removal or Maintena*
80 Pembroke Rd and Canterbury Rd	Speeding traffic and rolling stops at stop sign	Heights	Speed or traffic problems
81 Green Street	Hard to cross, parked cars block view of peds in crosswalk, too many crosswalks?	General outreach	Difficult Crossing
82 Main and Thorndike Bumpout	Dark, lonely, empty, bump out is hard for cars to see and may be vulnerable to being hit	General outreach	Aesthetics/enjoyment
Bus stops citywide (not mapped)	Many bus stops are blocked due to snow and ice, sometimes even if the nearby sidewalk is clear	General outreach	Snow Removal or Maintena*

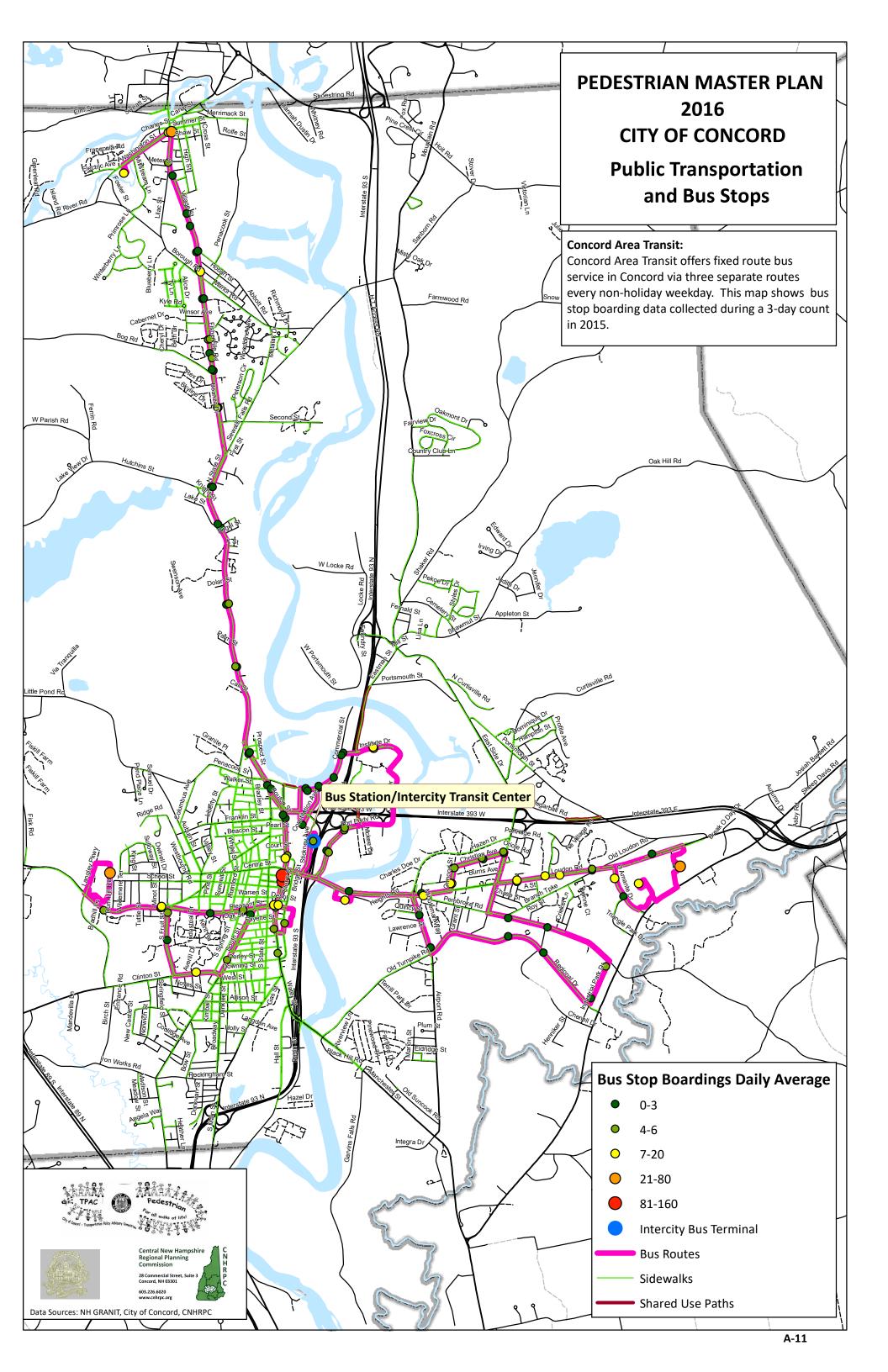


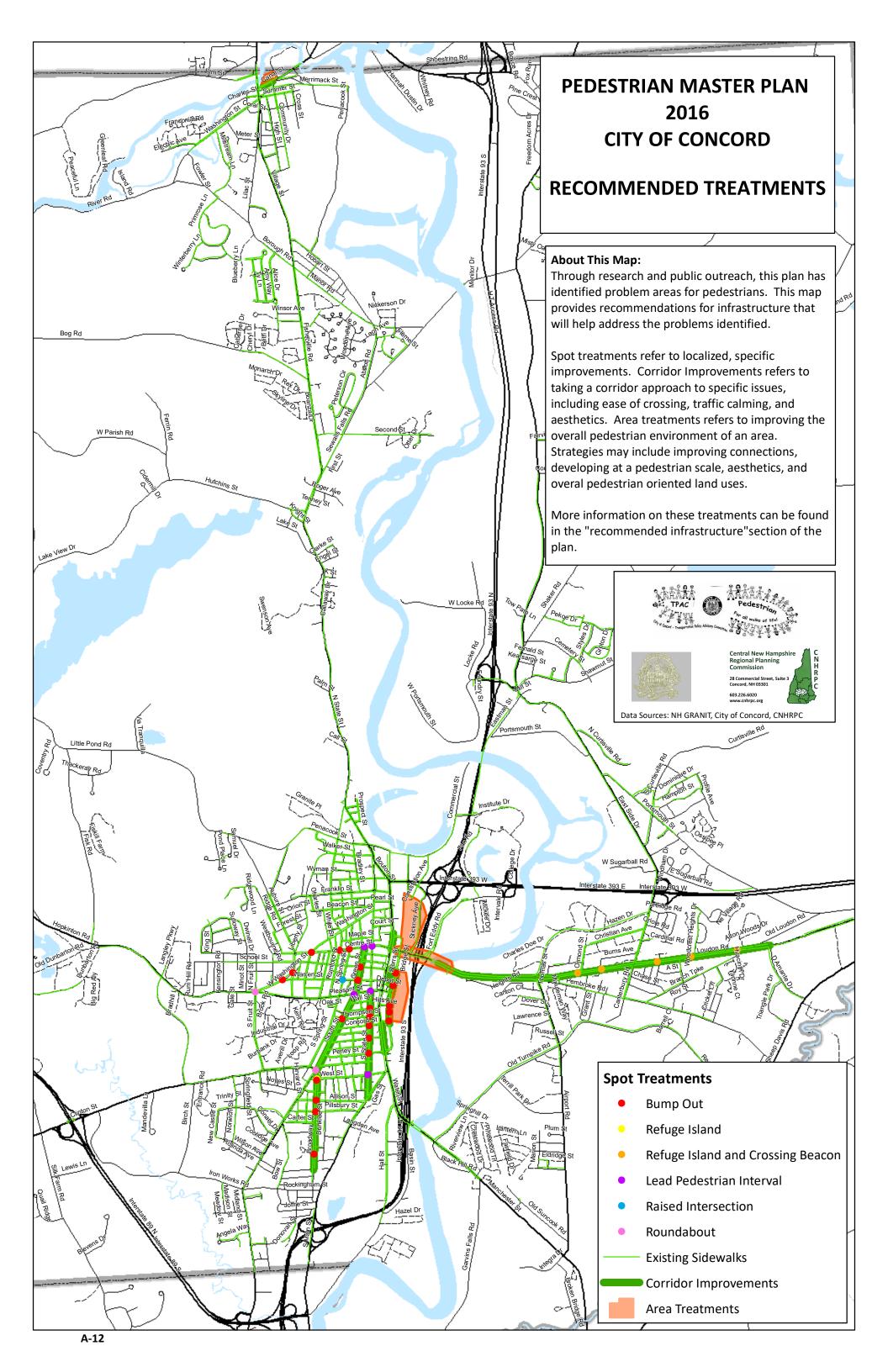






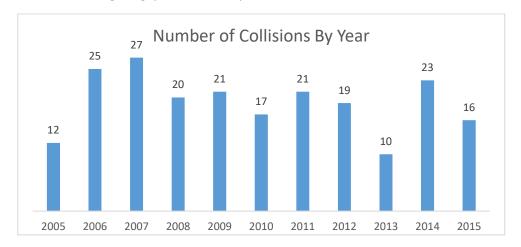




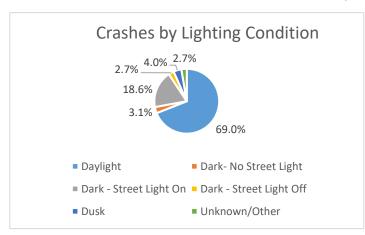


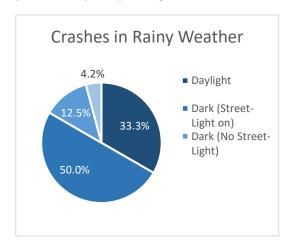
Pedestrian-Vehicle Crashes 2005-2015

This appendix contains an overview and analysis of vehicle-pedestrian collisions from 2005 to 2015. This data originates from police reports that are forwarded to the State for processing. This selection of visuals attempts to paint a picture of where and how collisions occur. This is an important component of improving safety. When infrastructure improvements are made that may affect pedestrian safety, a closer analysis of the nearby area should be made to investigate how to improve pedestrian safety. These figures can also help identify other factors that may affect safety, such as driver behavior, enforcement, lighting, private development, winter maintenance, etc.

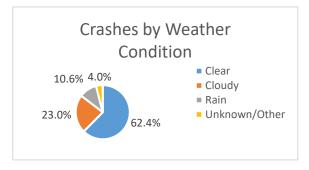


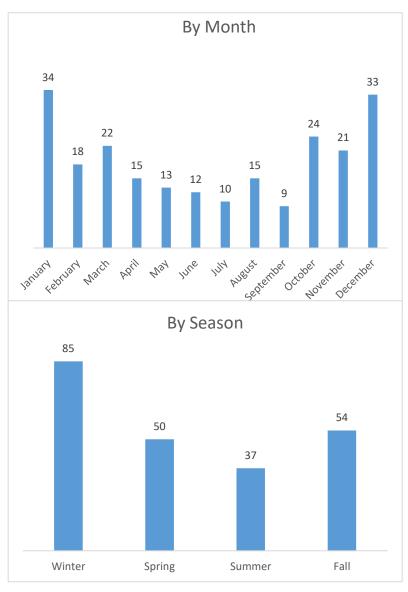
The number of collisions has varied little over the past 10 years, with perhaps a slight overall decrease.



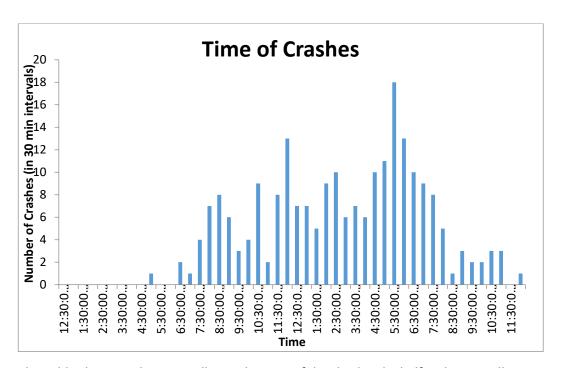


Most collisions occur in good weather, and during the daylight hours, but crashes in rainy weather become much more common at night. This data is not detailed enough to evaluate whether street lighting is correlated with collisions. During rainy weather, there are much more collisions at night then during the day. This suggests the risk of collisions with pedestrians is increased during these times.

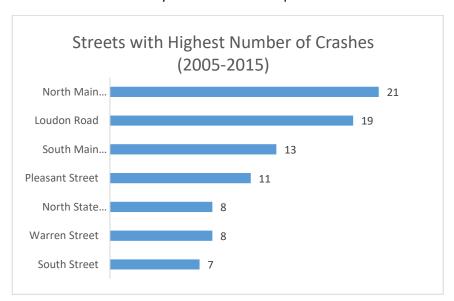




The months of December and January have the highest number of collisions. It is possible that increased nighttime hours might be contributing, as the days are much shorter in the early winter. This is especially pronounced when considering there is more pedestrian activity during the warm weather months than during the winter. It also may be possible that sidewalk conditions may be contributing to the higher rates of collisions in the winter. Snow piles may reduce visibility, and icy/snowy sidewalk conditions may entice people to walk in the street versus the sidewalk. A more detailed analysis would be required to determine with more certainty the causes for the increased collisions during winter months.



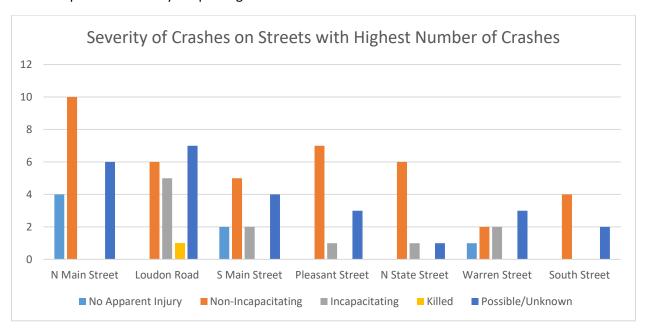
This table shows pedestrian collisions by time of day, broken by half an hour. Collisions peak in the evening, with secondary peaks in the morning and mid-day. The temporal distributing of pedestrian and motor vehicle traffic likely contributes to this pattern.



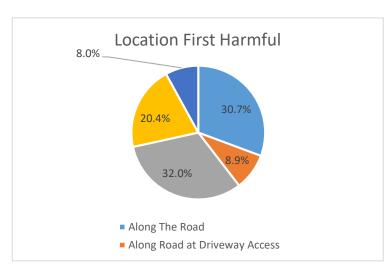
North Main Street had the highest number of collisions over the 10 year period, likely in part due to the high number of pedestrian activity there. Loudon Rd also has a high amount of pedestrian traffic, though not as much as North or South Main Street. It is also relatively long, and in an environment that is not oriented towards pedestrians. South Main sees a lot of pedestrian traffic, and is relatively long. The presence of Warren and South streets on this list may come as a surprise. This selection excludes collisions that occur in parking lots or driveways.



It appears that most collisions with pedestrians involve an injury, with a relatively small portion reporting no apparent injury. Fatalities are relatively rare, but have occurred. Research has shown that the rates of injuries and fatalities increases dramatically with increased motor vehicle speeds. Collisions that took place in driveways or parking lots are not included in this table.



This chart breaks down severity for the streets with the highest number of collisions. Note that N Main Street has a high proportion of "no apparent injury" and a low percentage (none) of incapacitating or fatal crashes reported. This is likely due to the relatively low speeds that are typical of most of the street. Collisions appear to be most severe on Loudon Rd, where prevailing motor vehicle speeds are higher and the environment is much more car-oriented. This chart does not include collisions that took place in parking lots or private driveways.



This chart breaks crashes down by where the crash is located (or where it began). Most crashes are located at intersections, with a good number also located along the road. A substantial number (about 30%) of crashes take place in parking lots and private drives, indicating that the Planning Board should consider pedestrian safety and access during the site plan process, as should site plan regulations.

Finally, when reviewing City of Concord Police Department crash reports, it appears that a large portion of collisions involve an error by both the driver and the pedestrian. The combined effects of these errors resulted in a collision. It is important for both motor vehicle operators as well as pedestrians to exercise good judgment and due care.