PLANNING & ECONOMIC DEVELOPMENT COMMITTEE

MARCH 15, 2016

A meeting of the Planning and Economic Development Committee was held on Tuesday, March 15, 2016, at 7:00 p.m. in the Aldermanic Chamber.

Alderwoman Mary Ann Melizzi-Golja, Chair, presided.

Members of Committee present:	Alderman-at-Large Daniel T. Moriarty, Vice Chair Alderman-at-Large Brian S. McCarthy Alderman Tom Lopez
Members not in Attendance:	Alderman Benjamin M. Clemons
Also in Attendance:	Ms. Sarah Marchant, Director, Community Development Division

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PUBLIC COMMENT - None

DISCUSSION

Ms. Sarah Marchant, Director, Community Development Division

Ms. Pattison and Mr. Friedman are from the NRPC and they have been our partners on this project. We received a new partnership, Community Development, Public Health, HEAL and NRPC received a grant last year from the CDC through the American Planning Association of $125,000. We were one of sixteen communities in the nation to receive this grant. It was a grant that was designed to partner planning and public health to improve community health through all kinds of planning related functions. We were working on building a base of Complete Streets in Nashua which I will say we have some work done but we really wanted to build some data and really start the conversation.

Plan4Health Nashua Program

Ms. Camille Pattison, Nashua Regional Planning Commission

Ryan and I are just going to give you some highlights of the efforts that we have done so far on Plan4Health Nashua. We have been working on this for about the last nine months and the real focus here has been on promoting overall health with improving access to bicycle and pedestrian amenities throughout the city. Some of the main things that we focused on throughout the project have been to develop an audit of the current land/use regulations throughout the city. We also conducted some street mapping to figure out where people felt safe biking and walking in the city. The other key thing that we developed is a Complete Streets Guidebook and there is a training next Thursday morning, it is March 24th from 8:00 a.m. – 10:00 a.m.in the City Hall Auditorium. Simply put, Complete Streets are streets that are designed for everyone in mind not just the vehicle. It's really intended so that bicyclists and pedestrians can get around safely and have plenty of amenities and it's a pleasant experience for everyone. It's especially important in a city like Nashua, an old mill city, where many of those intercity neighborhoods were actually designed before the advent of a car. The bones were there but it's just at this point trying to make some enhancements and improvements to make it more attractive for biking and walking. It's two-fold; you maybe have the benefit of not needing a vehicle but also the health benefits associated with it as well. This example is Concord in 2014 and then Concord in 2015. They have done what you call a road diet. On the other picture you can see more lanes of traffic and on the lower picture they have actually reduced the size of the roadway and as you can see the sidewalk is much larger and now there is a better seating area and the parallel parking has moved further up the street. Complete Streets in Nashua; this is already going on in the city. There are a couple of great examples here. The top two photos are the intersection of Manchester Street and Reservoir Street and the upper photo is what

it had been like for quite some time. Driver's come down that street at a faster time than they should so the improvements that are there now are great. You've got build outs so pedestrians have a larger area to stand and there's a much more visible raised intersection and the crosswalk is stamped and there's also something that's called a graduated ladder indicating as you come up to it with increased lines that says there is something happening and you need to slow down. As part of the project we went out and did some community outreach. We were really interested in finding out where people fest safe walking and biking. We went to the YMCA, some local neighborhood events and we engaged Goodale's Bike Shop and some community leaders. This is one of the handouts that you have. We have a marketing staff member on the project and she was able to come up with a whole bunch of materials that we were able to hand out or put on Facebook and Twitter.

NRPC Complete Streets Audit and Study

Mr. Ryan Friedman, Nashua Regional Planning Commission

The land/use audit is really focused on looking at all of the land/use regulations in the city. We looked at seven of them and we talked about specific goals that they were trying to achieve in relationship to Complete Streets and what gaps were there and what improvements could be made. The focus was on safety, transportation, land/use, design and site specific. In the guidebook has two pages and each one is designated to one of those topics. This is a safety scorecard so for each topic we had a scorecard and there is one for each of the other topics as well. You are not meant to see this is great detail so you can look at it more in the actual guidebook that you have but the items that are across the top are the topics that we actually used to rank against. You can see that in many of the advisory documents really address all of the issues or at least are spoken about but when you get to the regulatory documents that actually bind a developer to do something they are discussed in a much lesser degree and that's where the gap is coming in and what we came up with is recommendations on how the city could strengthen some of your regulations so that they are more binding so when you go through the development review process you can actually work with a developer to require something to be done. The ideas were there, it was just getting them one step further. I'm just going to talk about the key highlights of each of the topics. For safety one of the recommendations that we had was to develop a traffic common plan; so identify specific locations and the specific traffic calming measure that can be implanted throughout the city. A couple of benefits are that one, it could be used as a budgetary tool for staff and elected and officials and also for the Planning Board and developers during the site plan review process. Another issue that was identified was maintenance planning and coming up with a long-term maintenance plan specific to trails, bike lanes and sidewalks. Maintenance for streets happens naturally but to a much lesser degree for trails and sidewalks, which if you are trying to promote that you need a better long-term plan as to how you will do that in the future. It's really challenging because we've got harsh winters. With transportation we focused on developing a maintenance and Master Plan for pedestrian and bicycle amenities. Right now there really isn't a specific bike and pedestrian plan and you could identify specific infrastructure expansions and improvement and how you will maintain and pay for them. There are two documents that are currently in place as well; there's Standard Specifications for Roadways and Standard Specifications for Sidewalks; as you can see one is from 1986 and one is from the mid-90's. It's time to update them to make sure that they are consistent with today's practices. For land/use a couple of years ago you began an overnight parking process in specific areas of the city so one of the recommendations is looking at expanding that to all of the inner city or central neighborhoods. There's a continued interest in increasing that to the residential development downtown so with that you will have a new demand for parking. If you allow some of that parking on the streets you reduce the need to have surface lots and you also provide a buffer between pedestrians on the sidewalk and moving vehicles. Another suggestion was to update and consolidate some of those downtown area Master Plans. You have the Downtown Master Plan, the East Hollis Street Master Plan, a Tree Streets Plan and then the Citywide Master Plan. There were great recommendations in them but the likelihood of a Board member sitting down and looking through all of those individual plans and pulling out recommendations is probably not going to happen so it would be worthwhile for having someone sit down and look at all of the recommendations and prioritize them and then possibly looking at other neighborhood plans throughout the city like south Nashua or on Daniel Webster Highway; they might benefit from unique plans developed specific to their needs. For design we looked at parks and playgrounds, we have hundreds of acres

of parks and playground but the issue might be on enhancing some of the access to them. Many of them are accessible by bike and walking but not all of them. Some of them don't have safe good connections to get to them. It might be the small things like improving some of the access points on the crosswalks and make them more visible so families feel safe getting to them from the neighborhoods. The biggest thing in here is coming up with an actual Complete Streets design guideline manual. This would be pretty comprehensive and it would look at your desired features and also some of the construction methods that you want to see with that. Ideally you would elements from that and adopt them into the land/use code; by doing that you give it strength and then it also can be enforceable by staff and they can require things to be developed in the future. For site specific we looked at enhancing some of the existing commercial corridors, specifically Daniel Webster Highway and Amherst Street. At this point the city is largely built out so the remaining development that you would see would probably be more redevelopment. So the focus on this is making sure that when you redevelop sites that not only do you improve the access within the site but also access between the sites. I mean we are all probably guilty of it, you go to Target and then you drive over to Petco but if you had a nice way to walk you would get some more steps in.

Alderman McCarthy

I wonder what we can do in the land/use code that gets us something we don't have already. With regard to easements from site to site, we've been pretty successful at getting cross access vehicle wise just by negotiation by the applicants and without anything in the land/use code. In fact, sometimes when you put absolute criteria on the land/use code you get results that are not as good as by negotiation. What sort of things do you recommend that we do look at in those terms that we would get a better result if we modified the land/use code?

Mr. Friedman

You are right on the cross access. You do have good vehicular access but if you go back to the Target example; I've tried to do that myself and it's not pleasant. There is a crosswalk and you should be able to safely do it but there are cars whizzing in and there are not that many people walking so people aren't attuned to stop so I think there is green space and extra parking so what if you had it as more pedestrian enhancements as well. Maybe more tempered lighting that's on a more human scale or seating area. If you look by Barnes and Noble and where they built the new Starbucks, there's actually a pretty wide green space in there. You could have some pedestrian refuge areas where there are some actually amenities in it maybe people would actually stop. Maybe put in a shade tree in there so you don't feel like you are going to swelter in the sun in a sea of vehicles. I guess I would make it more specific to amenities and visually to something that a biker or walker would use because I think you are right, on access points it's in there and it's good, it's done well. Even some of the artwork that you have done downtown, if you were able to expand it to some of the other outlying areas then it creates a bit more of a sense of place.

Mr. Friedman

What the mapping and analysis attempted to do was to take these abstract plans and concepts and try to bridge the gap between those and eventually down the road what Nashua might want to do specifically in different neighborhoods for actual on the ground implementation and recommendations. This is the first step in trying to get you to the point where you can do that. This is based on how stressful it is for a biker or a walker to get from point A to point B using the existing infrastructure on the streets and trails. To do that we used a system called LTS which stands for level of traffic stress for bicyclists and we came up with our own similar formula to mirror that for walkability and called it LOW for level of walkability. The goals were in the state transportation world and regionally, everything needs data behind it to justify why you might want to move forward with a project. We wanted an objective and quantifiable way to measure what's going on in your streets in terms of bike ability and walkability. We wanted to look at the hot spots for origins and destinations and overlay those with the areas of need that have to do with public health so we looked at schools and parks that are in those key interest areas. Once you develop a scoring system for those and find the connections

from those origins and destinations that are too stressful for certain people or maybe they are broken or have gaps and make those priority areas of where you might want to go and fix and all the while using that background idea of Complete Streets as the end goal of the types of implementation that you might want to consider. First on the level of stress for bicycling only, this was a formula developed by the Mineta Transportation Institution which operates out of Northeastern University. The particular plan that led us to this system was developed for San Jose, CA and it was developed based on the idea of people having different levels of stress when they are on their bikes and different levels of riders correspond to those stresses. Nashua was one of the cities that were involved in a LTS project being undertaking by DOT at the state level. We caught onto the tail end of that and moved it forward and use it for the purposes of this project. The riders which were introduced was a scale of 1 to 4 with LTS 1 being the least stressful and LTS 4 being the most stressful and each level corresponds to a specific category of rider. The low stress level – 1; which you will see in green on all of the maps, those are appropriate for all riders including children and as you move up to the level of stress – 2; you are kind of dropping the kids for various reasons and picking up your recreational adults like adults who know what they are doing on a bike but maybe they are not fearless. Then as you get to 3 and 4 you are talking about experienced people who are enthused about biking no matter what the situation is and they are confident no matter where the traffic conflicts are. LTS 4 is really reserved for places where you look at those types of bikers and wonder why they are where they are. We split the data up into three segments which is the vast majority along the street itself, the approach which gets at the turning lanes as you get to an intersection and the conflicts that vehicles presents and the crossing itself; is it a signalized crossing, does it have a special signal for bikes which is more relevant to other city's than it is to Nashua but the possibility is there for that as well in the formula. You combine all of those elements together to come up with one seamless road network that you can use to do your analysis on. Some examples of the attributes that go into calculating the score for this; whether or not there is a bike lane is a huge one, if you have a bike lane you are in LTS 1 or 2 no matter what the rest of the road looks like. The width of the travel lane, the width of the shoulder, the prevailing speed of the vehicle traffic, whether or not there is on-street parking which comes into play mostly in downtown Nashua and the surrounding land uses. So two roads that are otherwise exactly the same as far as physical attributes and cross sections, they are going to be different levels of stress depending on if it's a residential or commercial area where there would be different types of traffic moving at different speeds not really used to seeing bikes on the side. The table at the bottom on the screen is an example of the formula that goes into LTS. If you have a two or three lane street and its 35 mph or above then you are at that LTS 4 already. A big thing that we talked about in this project was these physical attributes, these objective elements of a street are not the only thing that contributes to someone's perception of stress. There's all these other subjective elements such as safety, esthetics, winter maintenance, how steep the terrain is, what the pavement conditions are and all these little things that goes into someone's perception that one person might call safe but another biker might say no, I wouldn't send my child out there. We kicked around including these in the actual formula but in the end we decided to keep the objective and the subjective separate. People pointed out places where, such as the Heritage Trail, where it's an off-road trail and level of stress there is a 1, however, at night it's a special issue where they wouldn't send their kid there because of lighting issues or overall crime issues. We did hear from people that said in the winter this is a vastly different situation than it is in the summer. We didn't put that in the formula, however, in the data, if and when you choose to use the data to inform your decisions there are comments on every segment in terms of this is a 1, however someone has pointed out that the lighting could use improvement or this could use a crosswalk or the signal is mistimed. Here, finally, is the street wide map for where we are with bicycle level of stress right now. You can see the vast majority of your residential neighborhoods are green LTS 1 and when you start to get in the 3's and 4's you get more into the commercial and downtown areas. You can kind of see the pattern in the residential areas of the collector roads being 2's and 3's in south Nashua and then once you get off of that you are looking at scores of 1's and 2's. This is the network that we built our modelling analysis off of. I want to jump over to walkability. There was no existing formula for walkability that came close to what we were doing for bike ability. A lot of the walkability math that you will see out there is more concerned with how much is there to walk to. Like if you live in downtown Nashua and there are 50 restaurants and 100 stores around then that's walkable and there is not thought given to how safe or stressful it is. We used a lot of the same road attributes that we did for the bike side. Obviously sidewalks are substituted for a bike lanes and that's the top of the decision tree. If there is a sidewalk is there a buffer between the sidewalk and the street and if there is one is it

a paved or parking buffer or is it a nice natural grass with trees; all of that goes into the score. Some of the same elements pop up like shoulder width, speed of traffic, road classification which stands in for traffic volume; we felt how many cars that were out there was almost as important as the speed in some cases. We don't have traffic volume data for every segment of the city so we used road classification, urban, rural, collector and arterial as a proxy for that information. Again, optional stressors on the walk data; we realized that people's perception of how safe it is to walk are influenced by a lot more than just what the road looks like and how much room they have to operate.

Alderman Lopez

Did you consider somebody who might be pushing a stroller in your walkability study?

Mr. Friedman

No, we didn't hear any comments about that but we hope that would fall under the same guise as pavement conditions. The width of the sidewalk is definitely something that if we were going to fine-tune this or once you use this as the general tool to get you in the right neighborhood to make a recommendation and you were ready to look at a neighborhood's specific project then you would want to drill down to those kinds of things.

Alderman Lopez

I think that if you are going to look at the elderly population particularly, they may be walking but they may need a cane or other adaptive technology. Or it may be parents pushing their kids and they will chose to walk places where they can do all of those things versus places that are really just walking in terms of getting from A to Z quickly.

Mr. Friedman

Absolutely and schools are a big destination so you do get the family aspect there. That would be a great thing to keep in mind. At the scope and scale of our project it makes it difficult to quantify that citywide so it's not in the formula.

Alderman Lopez

Can you differentiate between adult walkability and kids?

Mr. Friedman

Walking is a lot more freeform than biking; cutting through yards and such and you can't account for that. We do have trails in addition to the roads and that's kind of the backbone of our walking system. The analysis that this uses won't send people off in any other direction but certainly a local (inaudible) would trump that if you were start to bring this to a specific project area. A similar map for walkability, I wanted to point out a couple of limitations. You lose a lot of green in the residential areas because our formula weighted heavily towards sidewalks so in those recent sub-divisions where the streets are wide but there is no sidewalk, they are is certainly, depending on traffic volume, very safe to walk on regardless as to whether there are sidewalks to walk on but because our formula wanted to emphasis where the sidewalks were and were not because we envision that as a potential future connection that is relatively straight forward to make. I showed you three elements of bike ability and one of them was crosswalks and approaches. We do not have the scope to factor that into our formula, the model will not send people across a street where there is no intersection. We don't have a way to quantify a good crosswalk or a good intersection vs. bad ones. That's another thing that you will want to fine-tune. We have our network and we want to concentrate on getting the most bang for your buck in looking at where we think the most people are going to be walking or biking from and where they would want to walk or bike to so we this census based origin and destination analysis. For origins we looked at census

blocks with a high concentration of the appropriate level of median income to capture the idea of people in need. We looked at ages, their reported vehicle availability via census data; some people with zero to one vehicle are more likely to be walking. What they are saying what the current length of commute is so someone with a five to ten minute commute is probably a good candidate, we could probably convert some of those vehicle trips over to biking or walking. Commute choice, we already have the data that tells us what percent of people in this census block are already choosing to walk, bike or take the bus and that helps us zero in on the right areas. We also wanted to look at proximity to schools so we looked at if you live within a certain distance of the school then you don't get bussed so we gave priority to those areas. That map on the left is the heavily, the darker shades are the higher concentration of people that live that we think are more apt to account for some of those bike and walk trips. The blue map on the right is kind of the same idea but for destinations so we concentrated on schools and weighted it on enrollment and age, the parks, large centers of employment and bus stops with large reported ridership numbers. We have the network, we have the places that we want to connect them to and the last step was to do the analysis and try to find examples of where there might be gaps to help steer decision makers towards priority areas for implementation of certain projects. The Complete Streets Guide that will be featured at that training next week has ten to fifteen of these example maps. We took at least one origin destination point from each of our key focus areas around the city and we did a bike and a walk analysis from or to whatever that point was. This is an example of what the map looks like now but I'd like to walk you through what all of these colors mean on one interactive example. For this example we are going to be considering anyone walking within one mile to or from the Dr. Crisp Elementary School which is the green star and we are going to limit them to using only level of walkability of 1. Right now the thick grey lines are the roads that you can get to within one mile using the road network and any trails that may be in the area but I don't think that comes into play here. What happens if you restrict travel to only those levels of stress or walkability of 1, roads you can only use those roads that just showed up in orange. The idea here and you would look back at your citywide map and look at the colors and find segments along East Hollis Street that are about a level of stress 1 and you can look at the data behind why those streets got those scores and figure out if it's because of speed, the shoulder width issues or a combination of everything and maybe the only thing that will fix this is a bike lane or some other drastic solution. If you did that and recalculated this to find out where these kids would end up it would open up a whole neighborhood.

Alderman Lopez

When you calculated the stress and routes, when you are talking about a cyclist did you consider one-way streets?

Mr. Friedman

Yes, we based it off of our traffic model. This is just a tool to generally get you an idea of what's out there in terms of attributes and data. Here's another example with all of the data already finished up. This is a biking example within one mile. The destination point is Bronstein Apartments and now we are limiting travel to LTS 2 so this would be your average everyday adult biker that might live there. If they are restricting themselves to LTS 2 then they can only reach those peach colored roads but if you are going to make a couple of changes on Main Street, Amherst Street and Concord Street there could be drastic changes, you would open up Main Street, Greeley Park and Holman Stadium. You can see on the map how many more healthy destinations open up to the population when you do that.

I included this because it's a drastic example. Let's consider bikers leaving from Royal Crest Apartments in the south end and you can't get anywhere outside of your own complex without hitting a road that is too stressful if you are a level of 2 biker. If you were to make some improvements along the Spit Brook corridor and D.W. Highway east of the turnpike then you have opened up the corridors themselves but all that Spit Brook area west of the turnpike including some key recreational opportunities like Roby Park and some schools including the Nashua River Rail Trail.

Ms. Marchant

This grant is coming to an end and we are hoping that this conversation is just starting. The training is next week but one of the final steps that we are hoping to do with the money from the grant is to look at doing creative crosswalks outside of Holman Stadium. Not necessarily in the streets but around the stadium and in the walkable area. We are going to show you a short clip from Butch's Creative Crosswalks which is Haverhill, MA where they have already done this with great success and they have used it as somewhat as an economic development tool so we are thinking in our area around Holman is looking at baseball bats and baseballs. Link to clip is below.

www.youtube.com/watch?v=j-vwp5W8CGI

We have had conversations with DPW and they have done some amazing complete street already if you look at the Main Street project. We would like to move that forward at Holman before opening day and see how that works out as a pilot project. I think there is a lot more discussion to happen. There's a huge Complete Streets movement going on around the state and at the legislative level to study this and make Complete Streets a DOT policy and quite a few communities who have adopted Complete Streets policies. Our focus here has really been on the redevelopment private development side but communities themselves have adopted these kinds of policies and really incorporate them into everything that they do and all of their infrastructure improvements. We are just getting started here.

Chairwoman Melizzi-Golja

Is the training going to be televised or taped so that people who are not able to attend are able to get the information?

Ms. Marchant

We talked about that, I think it could be recorded. It's a two-hour training class but it is doable.

Mr. Friedman

It's primarily made up of presentations like this one so all of the presentations will be on the website.

Ms. Marchant

The project has a website of its own and it's in the packet of information that you have.

Alderman Lopez

The presentation looks like a pretty legitimate community health issue and I know that Lamprey has a television show that they do through local access and they put there segments on You Tube so that would be an easy way to get a digital copy of it.

Ms. Marchant

I think that's a great idea and we will look into it. As part of the national grant that we received and the website that is developed, part of the goal is to share what we have done here; especially the walkability study information. This is the first done in the nation of this. The hope is we could look at small intersection improvements and open up quite a bit.

Alderman Lopez

Because it's the first and it's going to draw that visibility in terms of viewership; that might be enough incentive to find somebody who would edit it like Pearl Street Productions.

Ms. Marchant

That's a great idea.

Chairwoman Melizzi-Golja

Thank you.

COMMUNICATIONS – None

UNFINISHED BUSINESS - None

NEW BUSINESS - None

GENERAL DISCUSSION - None

PUBLIC COMMENT - None

REMARKS BY THE ALDERMEN

Alderman Lopez

The Complete Streets Project is particularly important in the Tree Street and in my Ward. We've had difficulty which may be because of the Broad Street Parkway activation with speeding, particularly in the Palm Street area on 7th Street and on Grand Avenue so I would like to remind the public to remember that they are driving through people's neighborhoods and there may be kids playing so please be careful. Hopefully, we as a city can do something to support the neighborhoods that are having the increased traffic flow run through them.

This Saturday at Greeley Park at 11:00 a.m. there is going to be a walk for heroin awareness.

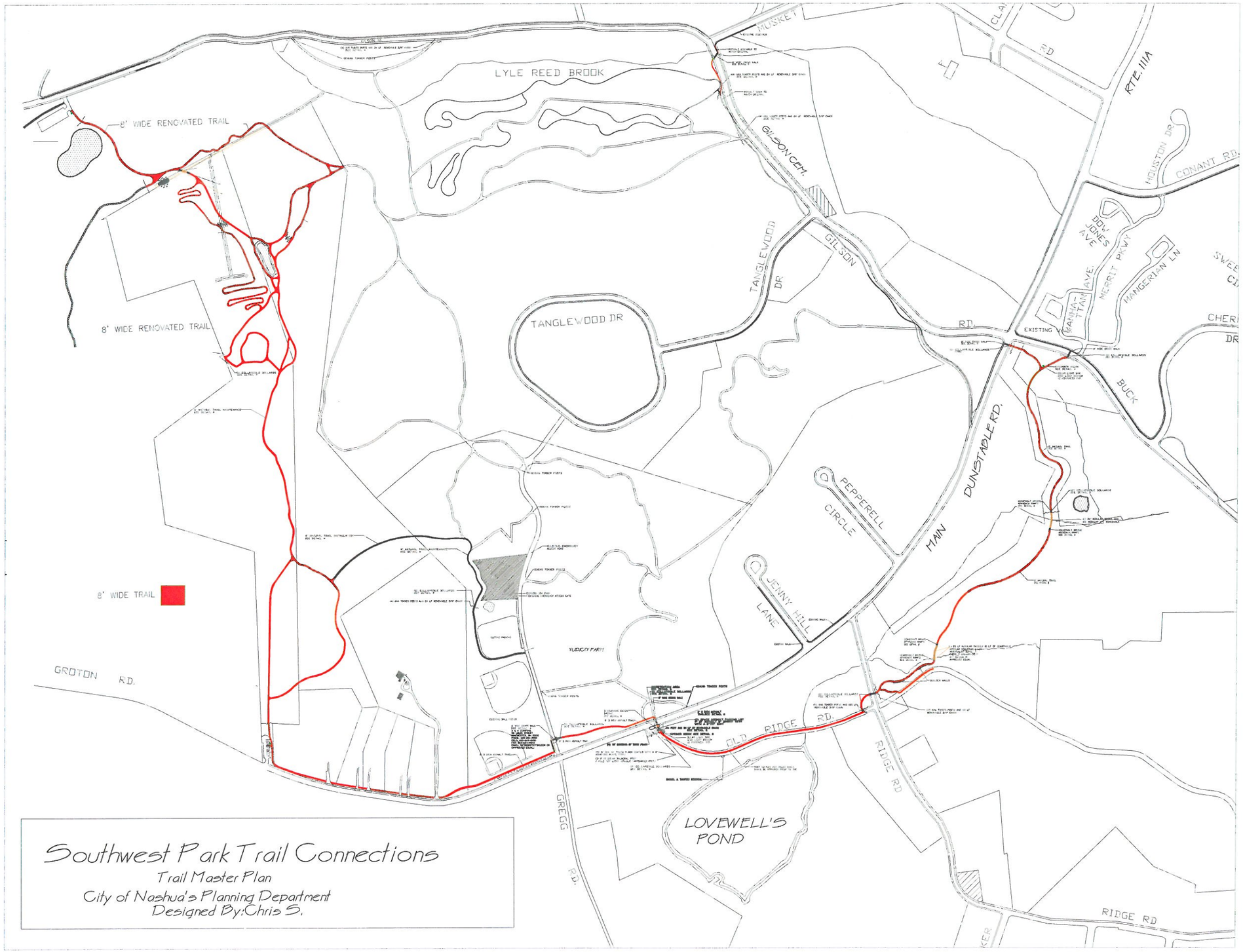
POSSIBLE NON-PUBLIC SESSION

ADJOURNMENT

MOTION BY ALDERMAN MORIARTY TO ADJOURN
MOTION CARRIED

The meeting was declared adjourned at 7:46 pm.

Alderman-at-Large Daniel T. Moriarty
Committee Clerk

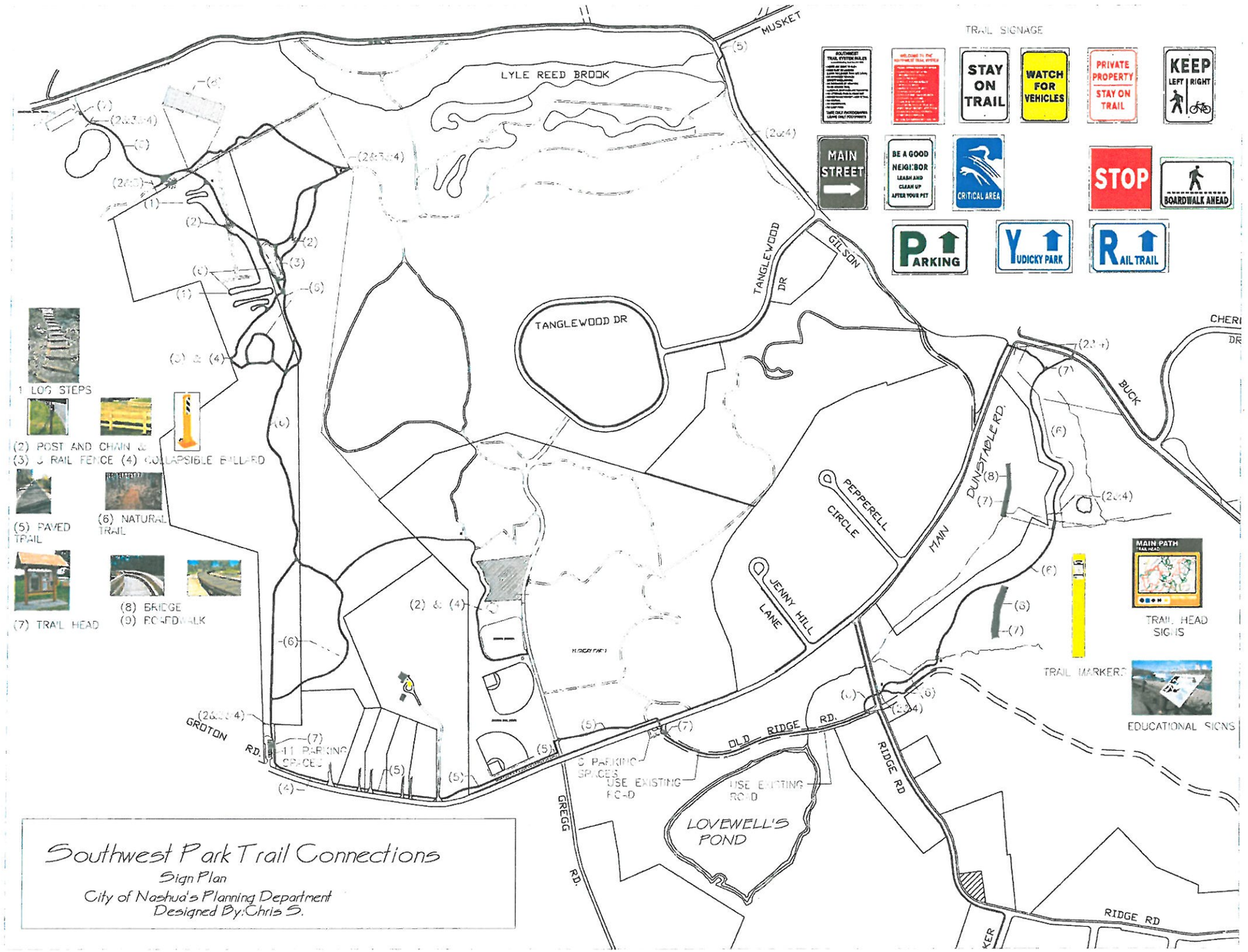


Southwest Park Trail Connections

Trail Master Plan

City of Nashua's Planning Department

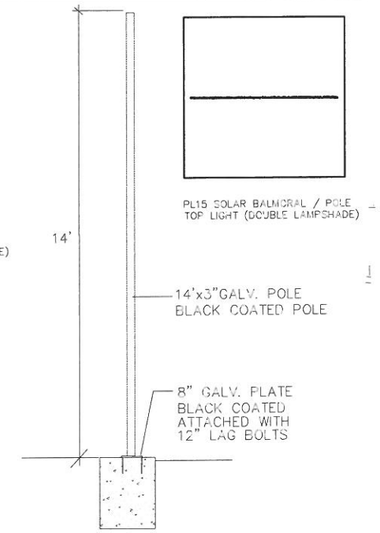
Designed By: Chris S.


TRAIL SIGNAGE
STAY ON TRAIL
WATCH FOR VEHICLES
PRIVATE PROPERTY STAY ON TRAIL
KEEP LEFT | RIGHT
MAIN STREET
BE A GOOD NEIGHBOR LEASH AND CLEAN UP AFTER YOUR PET
CRITICAL AREA
STOP
BOARDWALK AHEAD
PARKING
YUDICKY PARK
RAIL TRAIL
LYLE REED BROOK
MUSKET
TANGLEWOOD DR
TANGLEWOOD DR
GILSON
BUCK
DUNSTABLE RD
PEPPERELL CIRCLE
JENNY HILL LANE
MAIN
OLD RIDGE RD.
RIDGE RD
GREGG RD.
GROTON RD.
LOVEWELL'S POND
1 LOG STEPS
(2) POST AND CHAIN &
(3) 3 RAIL FENCE (4) COLLAPSIBLE BOLLARD
(5) PAVED TRAIL
(6) NATURAL TRAIL
(7) TRAIL HEAD
(8) BRIDGE
(9) BOARDWALK
MAIN PATH
TRAIL HEAD SIGNS
TRAIL MARKERS
EDUCATIONAL SIGNS
11 PARKING SPACES
5 PARKING SPACES
USE EXISTING ROAD
USE EXISTING ROAD
Southwest Park Trail Connections
Sign Plan
City of Nashua's Planning Department
Designed By:Chris S.

SOLAR LIGHTS NOTES

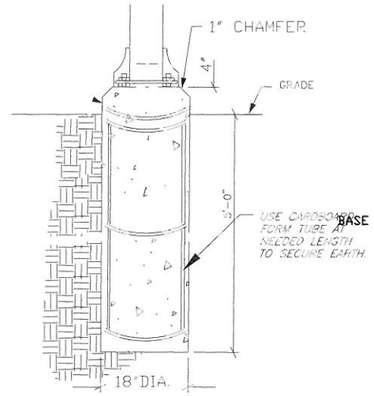
BY GATE CITY FENCE OR APPROVED EQUAL. POLE ARE TO BE LAGE BOLTED TO THE PROPOSED LIGHT BASE.
11 Ledge St,
Nashua, NH 03060
(603) 883-3217

PL15 SOLAR BALMORAL POST / POLE TOP LIGHT (DOUBLE LAMPSHADE)
SOLAR ILLUMINATIONS USA OR APPROVED EQUAL
5611 Halifax Avenue
Fort Myers, Florida 33912
Phone: (239) 461-5522
Fax: (239) 337-7887
sales@solarilluminations.us



POLE DETAIL

NTS

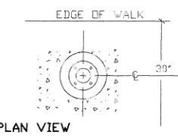


LIGHT POLE BASE DETAIL

NTS

SOLAR ILLUMINATION P011DOUBLE LAMP POST WITH SOLAR LIGHT

REQUIRES A SOLID, LEVEL, HORIZONTAL SURFACE TO FIX TO.
HOLES ARE PRE-DRILLED INTO THE PEDESTAL BASE FOR SCREW OR BOLT DOWN FIXING. THE PRE-DRILLED HOLES ARE APPROX. 1/2
THE PEDESTAL BASE HAS A FOOTPRINT OF APPROXIMATELY 10
SUPPLIED IN SECTIONS WHICH SIMPLY FITS TOGETHER IN MINUTES.
POLE HEIGHT ALONE, IS APPROX. 10
FOR INSTALLATION, EXPANDING ANCHOR BOLTS AND TEMPLATE ARE INCLUDED.



BASE PLAN VIEW

HEADQUARTERS ADDRESS:
5611 Halifax Avenue,
Fort Myers, Florida, 33912, USA.

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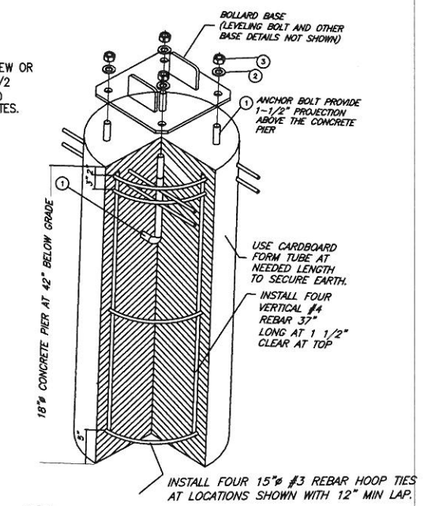
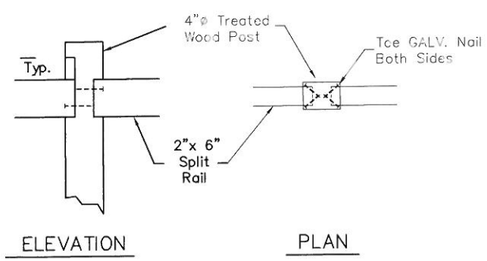
FAX: +1 239-337-7887
EMAIL:
sales@solarilluminations.com



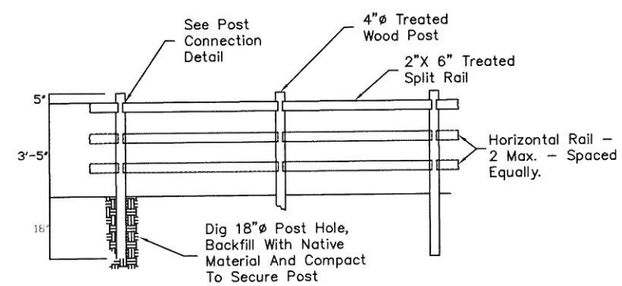
COLLAPSABLE BOLLARD BASE DETAIL

NTS



POST CONNECTION DETAIL

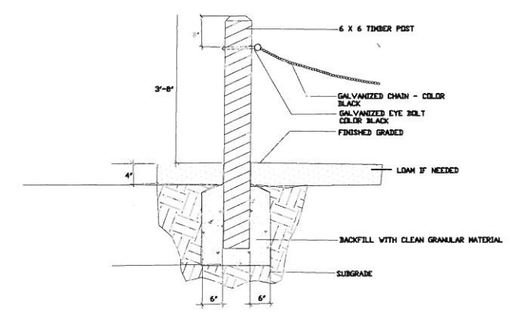
NTS



BY GATE CITY FENCE OR APPROVED EQUAL. FENCE
11 Ledge St,
Nashua, NH 03060
(603) 883-3217

POST AND RAIL

NTS



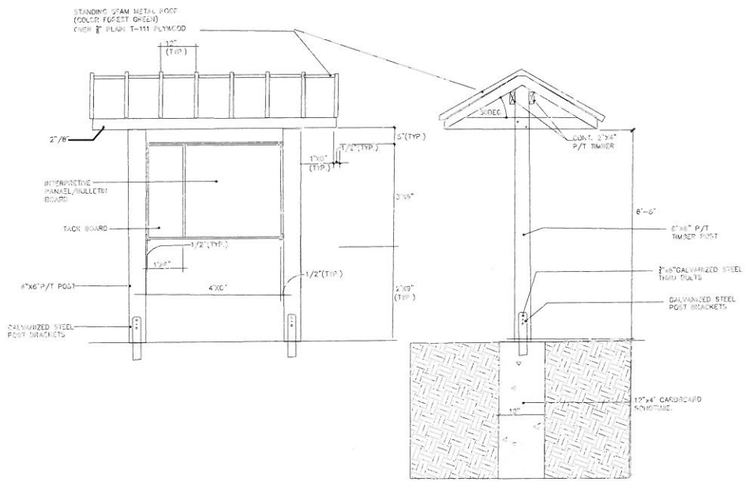
6'X6' TIMBER POST WITH CHAIN DETAIL

NTS

PLANNING DEPARTMENT
DETAILS #2

SW TRAIL CONNECTION
DESIGNED BY: CHRIS S.
JULY 2013

SHEET
4 OF 4



TIMBER GAZEBO

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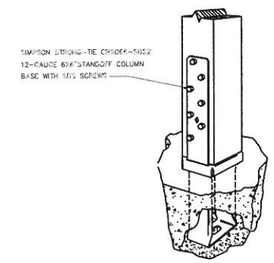
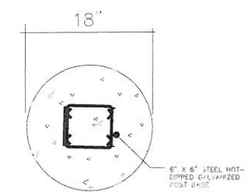


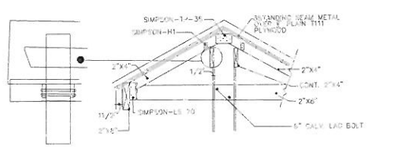
POST BASE DETAIL

NTS



FOOTING SECTION

NTS



ROOF SECTION

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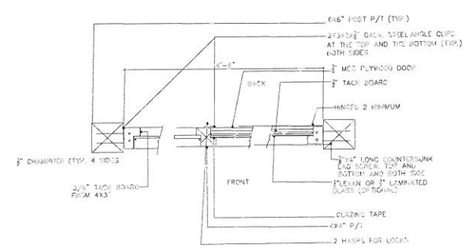
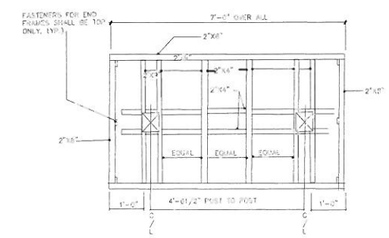


TIMBER GAZEBO

NTS



ROOF SECTION

NTS

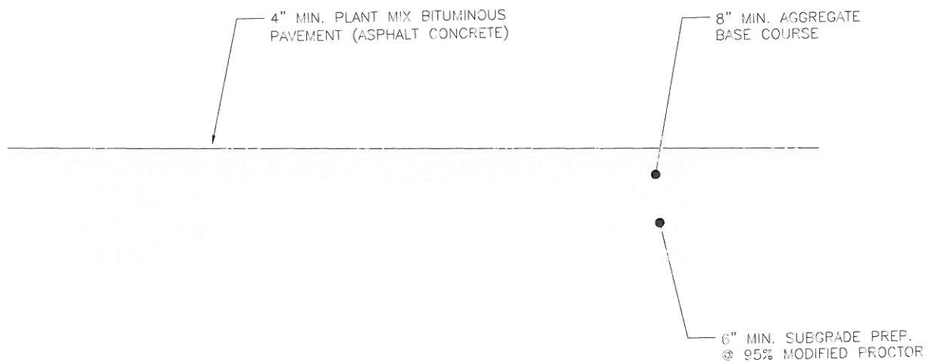
SW TRAIL CONNECTION

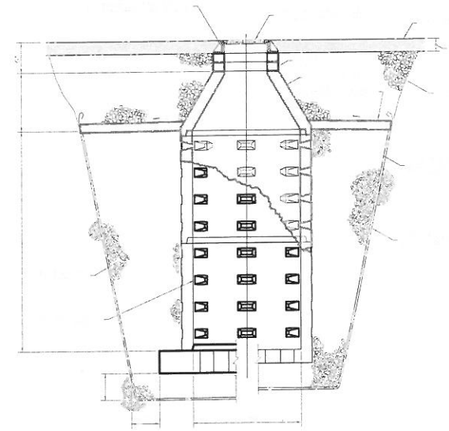
CITY OF NASHUA'S PLANNING DEPARTMENT

DESIGNED BY: CHRIS S.

DETAILS #2

SHEET 4 OF 4





ALTERNATIVE FOOTING PRECAST

INTEGRAL GATE PRECAST WITH RISER

CUTAWAY ELEVATION VIEW

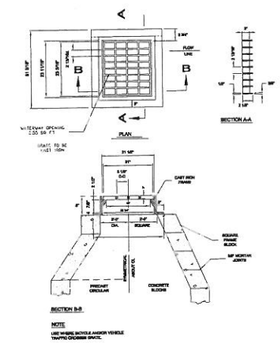
NOTES

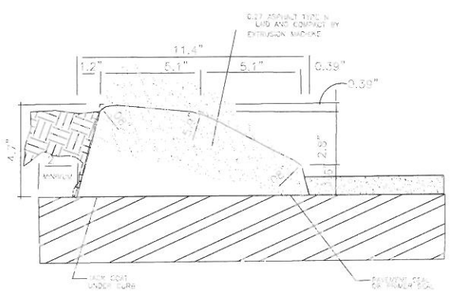
1.

2.

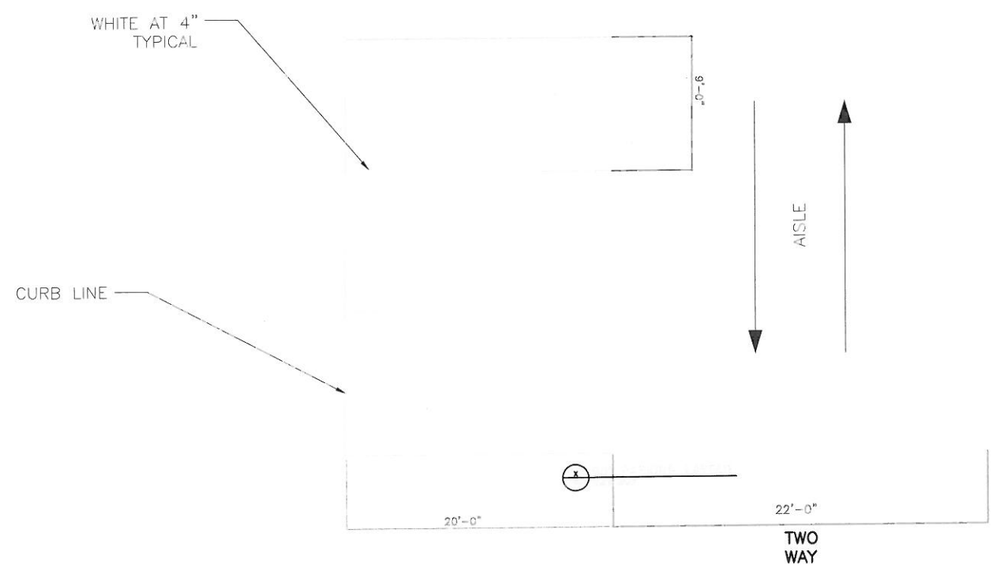
3.

4.





CAPE COD ASPHALT CURB



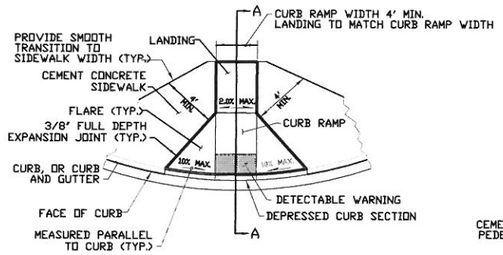
PLANNING DEPARTMENT

DETAILS #1

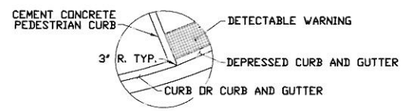
SW TRAIL CONNECTION

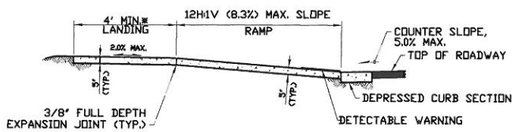
DESIGNED BY: CHRIS S.

SHEET 3 OF 4



CURB RAMP TYPE 1A

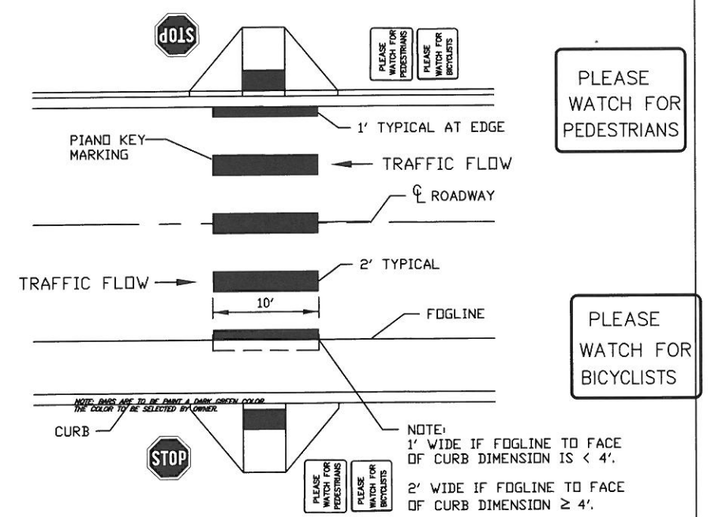




SECTION A-A

LEGEND
SLOPE IN EITHER DIRECTION
PAY LIMIT (CITY-FUNDED PROJECTS)

NOTE: SEE TE-12A FOR CURB RAMP CONSTRUCTION NOTES.
* 5' IF CONSTRAINED AT BACK OF LANDING (WALL, FENCE, RAILING, ETC).
** MAY BE REDUCED TO A MINIMUM WIDTH OF 4' WITH PRIOR APPROVAL FROM THE ENGINEER.

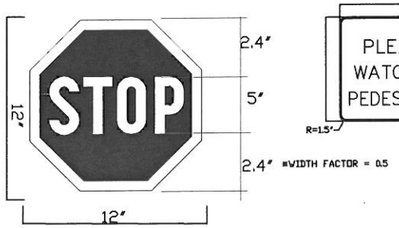


PLEASE WATCH FOR PEDESTRIANS

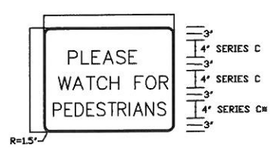
PLEASE WATCH FOR BICYCLISTS

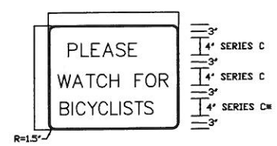
NOTES:

1. MATERIAL SHALL BE THERMOPLASTIC, HOT APPLIED OR HEAT FUSED PREFORMED (90 MIL. MIN.), UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. GAP WIDTH SHALL BE 2' MINIMUM.
3. CROSSWALK MARKING STYLE TO BE DETERMINED BY TRAFFIC ENGINEERING.



THE STOP SIGN A OCTAGONAL SIGN WITH A WHITE BORDER AND WITH THE WORD "STOP" IN WHITE ON A RED BACKGROUND.





NOTES:

1. USE ½" WHITE BORDER WITH NO MARGIN.
2. USE WHITE LEGEND ON BLUE BACKGROUND.

PLANNING DEPARTMENT
DETAILS #1

SW TRAIL CONNECTION
DESIGNED BY: CHRIS S.

SHEET
3 OF 4

MODULAR TRAIL STRUCTURES LLC

Modular Trail Structures Boardwalk Frame Specifications

6' Wide and 8' Wide Frames for Pressure Treated or Composite Decking.

A. Galvanized Steel
   1. Post fabrication the entire frame assembly is hot dipped galvanized with a minimum of 3.9 micron thickness of zinc based galvanizing.
   2. Frames are then hand rasped and cleaned to remove any sharp edges without compromising the galvanizing integrity.

B. Boardwalk Frames
   1. All frames meet or exceed International Building Code requirements of 100 pounds per square foot load capacity.
   2. Walkway perimeter frame members fabricated with ASTM A500 Structural Steel for 6' and 8' widths.
   3. Perimeter frame members are enclosed with the flexible hinge mechanism.
   4. In-fill frame is fabricated with ASTM A500 Structural Steel spaced at proper distances for specified decking material.
   5. Support legs fabricated with ASTM A500 Structural Steel Tubing for both 6' and 8' widths.
   6. Leg footplates are fabricated with plate steel. Size depends on organic composition of wetland soil.

C. Design Loads
   1. Boardwalk shall be designed for an evenly distributed load of 100 pounds per square foot as required by AASHTO. Boardwalks shall also be designed for occasional maintenance vehicle. Example: golf cart, recreation vehicle, maintenance vehicles. The vehicle design load shall be 2,500 pounds plus 30% impact. Load shall be distributed as a 4 wheel vehicle load.

D. Materials
   1. Frame material galvanized steel.
   2. Welding materials shall be in accordance with the American Welding

Modular Trail Structures Steel Truss Bridge Specifications

Steel Truss Bridge w/ Treated Lumber Deck and Guardrail

A. Structural Steel Frame
   1. Bridge frame structure shall be constructed with either ASTM A/36 or ASTM A992 structural steel.
   2. Bridge shall be a truss design.
   3. Beams shall be one span. No field splice.
   4. All bridge frame steel to be hot dipped galvanized.
   5. Welding when required will meet American Welding Society standards for structural steel.

B. Wood Decking
   1. Pressure Treated Lumber(Arsenic Free)
   2. Galvanized fasteners
   3. Maximum ¼" gap between boards.
   4. 2x6 profile boards

C. Bridge Dimensions
   1. Width: 8'
   2. Length: 24' (length to be confirmed by contractor survey)
   3. Elevation: Determined by City of Nashua.

D. Design Criteria
   1. Minimum uniform live load of 85 pounds per square foot applied to entire deck surface.
   2. Vehicular Load of 5000 pounds.
   3. Wind Load: 30 pounds per square foot.
   4. Snow Load: 25 pounds per square foot.
   5. Contractor shall submit an approved and stamped set of plans by a State Certified Structural Engineer with all structural detail

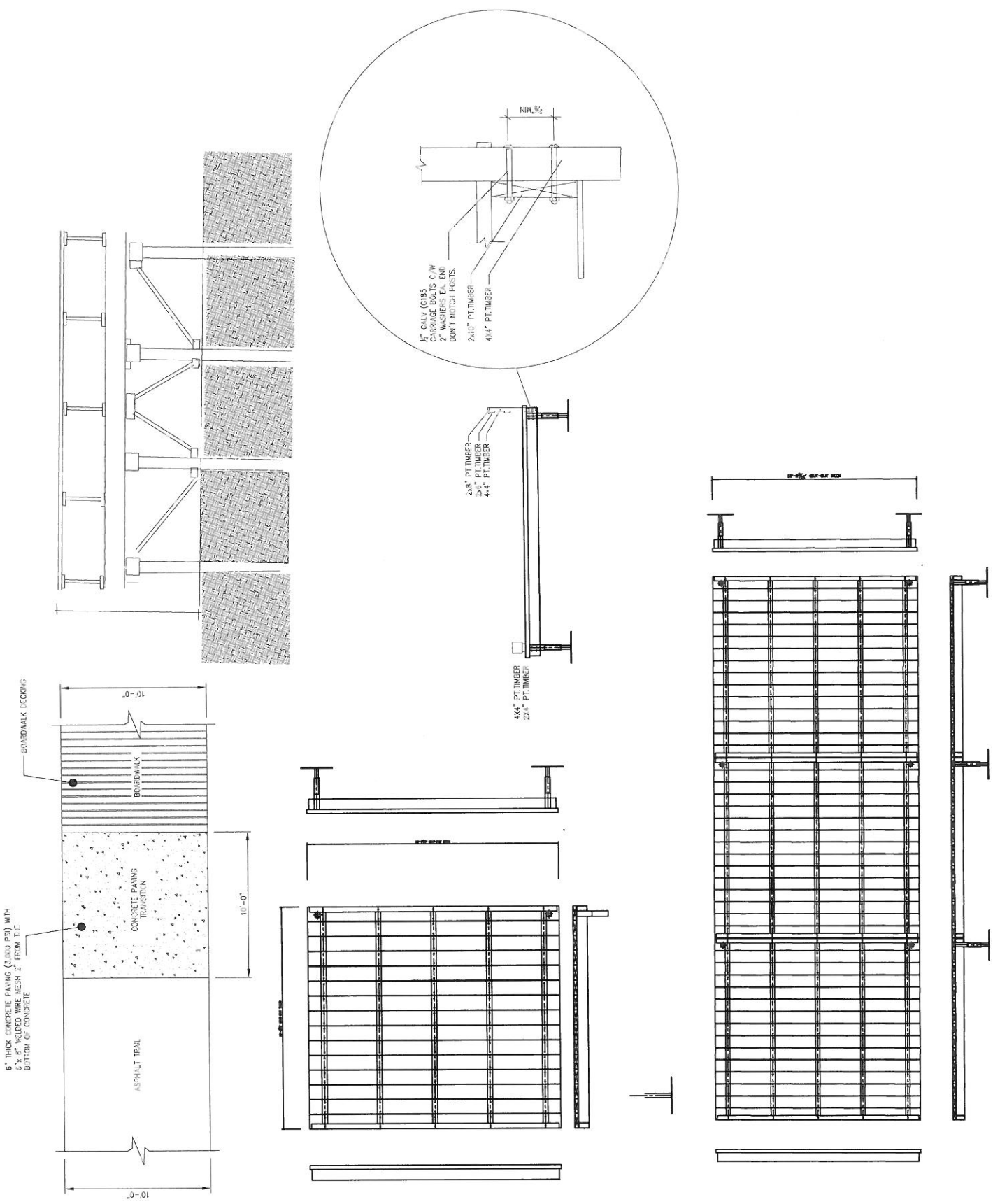
E. Bridge Abutment
   1. Bridge abutment designed by other.
   2. Hardware for securing bridge to bridge abutment called out by engineer with bridge design approval

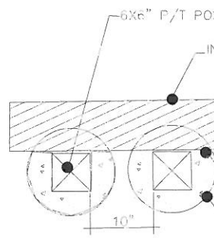
F. Guard Rail
   1. Pressure treated lumber guard rail will meet ADA requirements and City of Nashua specifications.
   2. Galvanized steel hardware required.

PLANNING DEPARTMENT
DETAILS #1

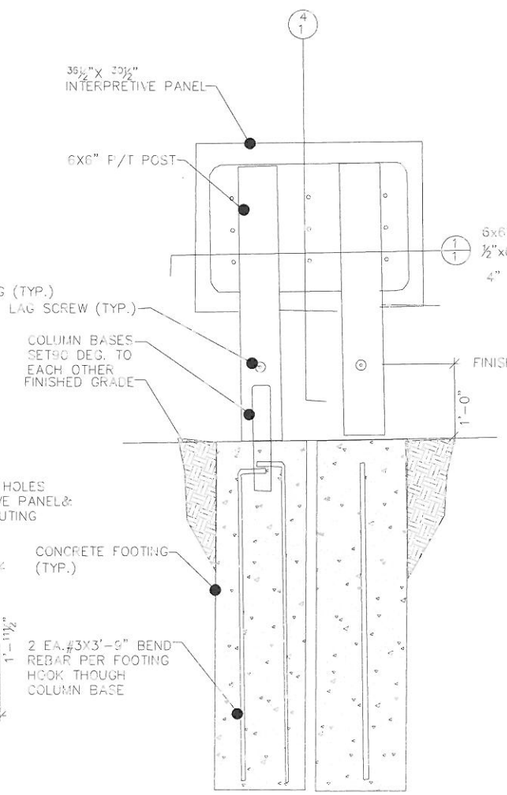
SW TRAIL CONNECTION
DESIGNED BY: CHRIS S.

SHEET
3 OF 4

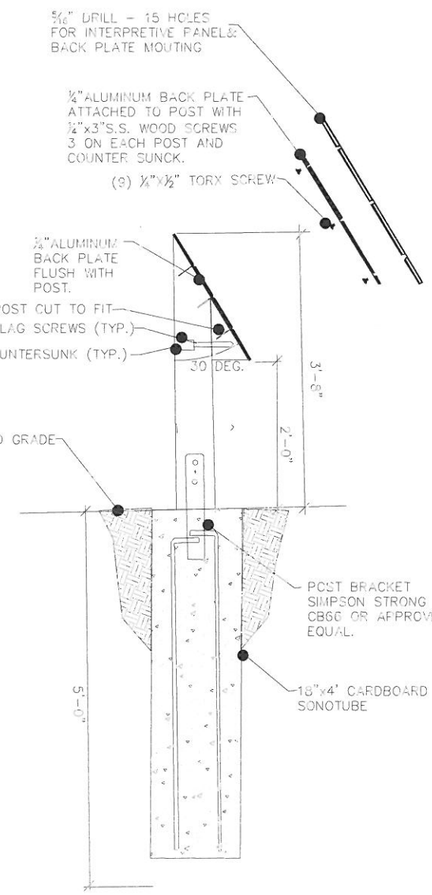




SECTION
NTS



BACK ELEVATION
NTS



SECTION
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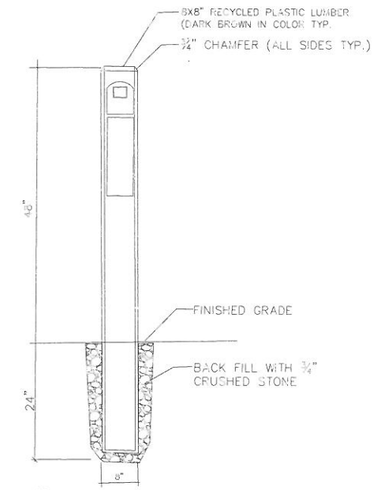
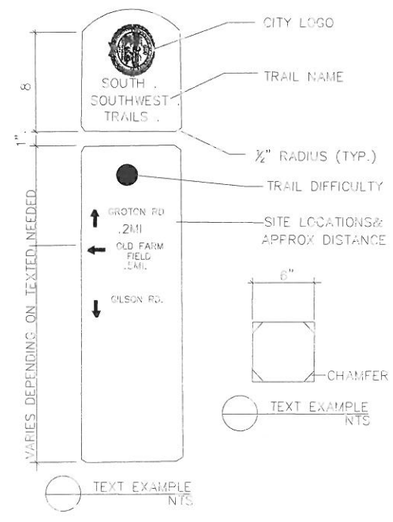
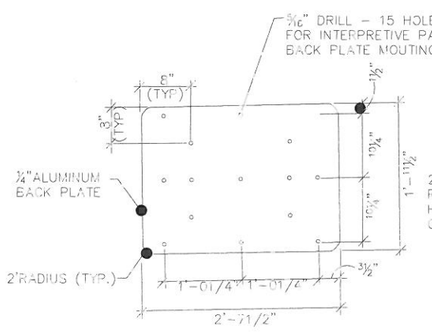


WAYFAIRING SIGN ELEVATION
NTS



TEXT EXAMPLE
NTS

TEXT EXAMPLE
NTS



ALUMINUM BACK PLATEE
NTS

SW TRAIL CONNECTION

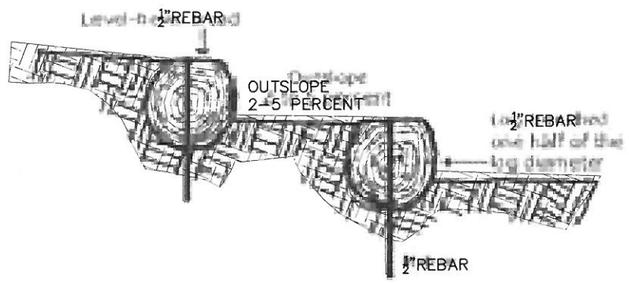
CITY OF NASHUA'S PLANNING DEPARTMENT

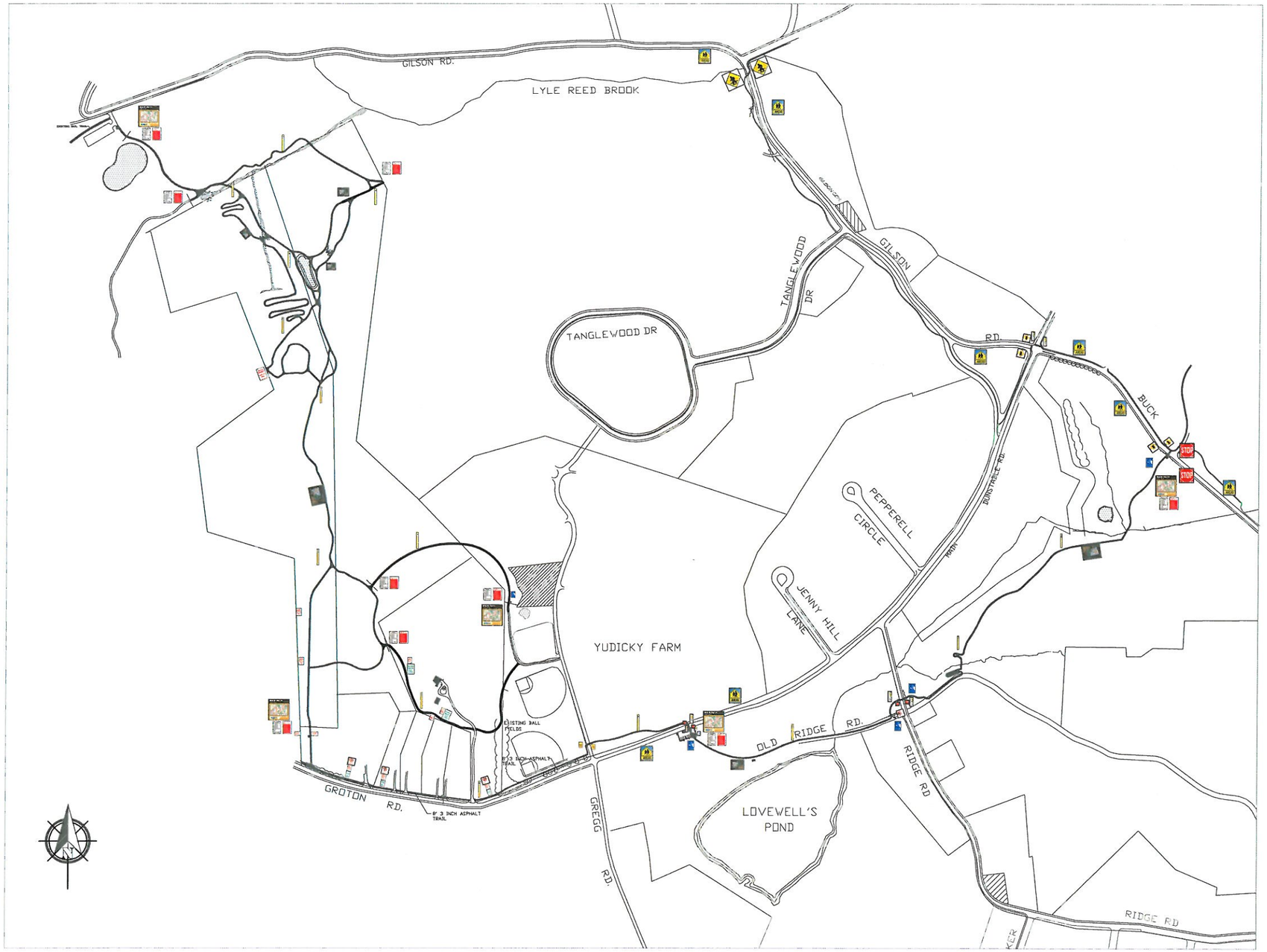
DESIGNED BY: CHRIS S.

JULY 2013 DETAILS #2

SHEET
4 OF 4

Log Riser Stairway





SIGNS

NO.	REVISION DESCRIPTION	DATE

SOUTHWEST TRAIL PROJECT

SIGN PLAN

L GROTON RD, L OLD RIDGE RD, L BUCKMEADOW

SCALE: 1"=105'

PREPARED BY:

CITY OF NASHUA NEW HAMPSHIRE

PLANNING DEPARTMENT
229 MAIN STREET
NASHUA, NEW HAMPSHIRE 03061

Plan4Health Nashua

A collaborative project integrating planning and public health where we live, learn, work, and play.

Encouraging the design of streets for all modes of travel.

Complete Streets

Priority Activities

- Identify and convene partners
- Audit current regulations and ordinances
- Conduct street mapping and data analysis
- Develop Complete Streets guidebook
- Educate about Complete Streets strategies
- Engage partners and community through strategic communications

Founding Partners:

heal nh
HEALTHY EATING ACTIVE LIVING

TOWNSHIP OF DUNSTABLE
CITY OF NASHUA
1853.
1673.

NRPC

NHPHA
NEW HAMPSHIRE
PUBLIC HEALTH
ASSOCIATION
Improving Health, Preventing Disease, Reducing Costs for All

What are Complete Streets?

- Streets designed to enable safe access for all travelers, including pedestrians, cyclists, transit riders, and motorists of all ages and abilities.

- Complete Streets conversions often involve some form of a ‘road diet,’ where travel lanes are narrowed and sidewalks and/or road shoulders are expanded.

A Complete Streets transformation in Downtown Concord, NH narrowed Main St. from 4 to 2 travel lanes and dramatically expanded sidewalk facilities.

North Main Street, Concord, NH
2014

North Main Street, Concord, NH
2015

Complete Streets in Nashua

- Several streets in Nashua have been converted to be more consistent with a Complete Streets framework.
- Examples include the recent Main Street sidewalks project as well as installations along Manchester Street in the North End of the city.

Community Outreach

- Educate community
- Garner support for Complete Streets
- Feedback about walking and bicycling habits and comfort level to adjust LTS data as necessary
    - YMCA
    - Local Neighborhood Events
    - Art Event
    - Local Bike Shop
    - Community Leaders

Multi-Media Communications

- Press releases
- Guest editorials
- Visibility at events
- Webpages
- Facebook & Twitter
- Fact sheets & rack card
- Newsletters
- Video

Plan4Health Nashua
A collaborative project integrating planning and public health where we live, learn, work, and play.

About Nashua's Plan4Health Project
- Began in early 2015 with a national Plan4Health grant award of $125,000
- Supports a healthy, economically vibrant community with roads that provide safe access for all users
- Focuses on Complete Streets philosophy and guidelines to encourage bicycle and pedestrian transportation in Nashua
- A priority strategy of the 2015-2018 Community Health Improvement Plan (CHIP), supported by the Greater Nashua Public Health Advisory Council

Planned Activities
- Identify and convene partners
- Conduct street mapping and data analysis
- Audit current regulations and ordinances
- Develop Complete Streets training guide
- Educate about Complete Street strategies
- Engage partners and community through strategic communications

Short-Term Outcomes
- Build on strong multi-agency efforts to reduce chronic disease in Nashua Nashua Community Health Improvement Plan (CHIP)
- Grow coalition by engaging more partners with a wide range of expertise
- Improve perceptions about physical activity within the community
- Establish support and tools for a Complete Streets way of thinking

Long-Term Outcomes
- Make it more convenient for people to be physically active by increasing access to safe active transportation
- Decrease the burden of obesity and chronic disease in the City of Nashua
- Support a healthy, economically vibrant community

CONTACTS:
SARAH MARCHANT, AICP, Community Development Division Director, City of Nashua, NHNINECAPANH Legislative Liaison: (603) 589-3095 | marchants@nashuanh.gov
BEVERLY DOOLAN, Program Coordinator, Nashua Division of Public Health and Community Services: (603) 589-4508 | dooland@nashuanh.gov
NICHOLAS J. COATES (NIHQ), Active Living Coordinator, HEAL NH: (603) 415-4263 | ncoates@healthynh.com

Plan4Health Nashua Complete Streets Project
Trabajando para hacer las calles más amigables para caminar y andar en bicicleta o cualquier forma que elija para moverse en Nashua!

Qué es el Proyecto Complete Streets?
Caminos diseñados para la seguridad de todo el mundo, no importando la edad y la manera en que elijan desplazarse en la comunidad

Como el Proyecto Complete Streets mejora donde Yo vivo?
Más opciones para llegar al trabajo, la escuela o las empresas locales
Promueve actividades saludables e independencia
Calles bien iluminadas y más árboles hacen el vecindario más seguro, más atractivo y un buen lugar para conocer a otros residentes
Apoya nuestra economía local porque las personas tienen un acceso más fácil a las tiendas y comercios
Aceras y carriles para bicicleta que hacen más fácil y más seguro viajar

Como el Proyecto Complete Streets se mira?
Aceras anchas y "bajadas en las esquinas" en los cruces para peatones para personas con discapacidades que utilizan sillas de ruedas y coches
Carriles para bicicletas y paso para peatones bien señalados
Paradas de autobús que son de fácil acceso
Arboles y plantas en las aceras que hacen un barrio más atractivo y agradable

Como Puedo Ayudar?
En los primeros meses del proyecto, el departamentos de planificación y de salud pública de Nashua, junto con otros socios como Plan4Health Nashua, están reuniendo información acerca de cómo la gente en la comunidad se desplaza de manera segura y que se puede mejorar.
Estamos pidiendo a la gente apoyar estos esfuerzos, de diferentes maneras y compartiendo información de como se desplazan en la ciudad y que compartan información sobre el proyecto.

PARA MAS INFORMACION CONTACTAR:
BEVERLY DOOLAN, Program Coordinator,
Nashua Division of Public Health and Community Services
(603) 589-4508 | dooland@nashuanh.gov

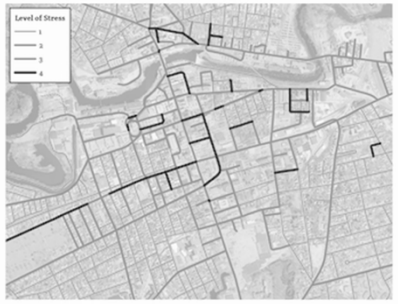
Plan4Health Nashua es una iniciativa de the Greater Nashua Public Health Advisory Council

Plan4Health Nashua at Neighborfest

The Telegraph
It's Your Community.

Greater Nashua groups receive grant to study, maybe ease, 'traffic stress'
Nashua Telegraph, 3/26/15

Plan4Health Nashua – Land Use Audit



Land Use Audit

What is a Land Use Audit?

Analyze land use regulations to determine how well they support specific goals and identify gaps for improvement.

Why is this audit important?

This audit is focused on complete streets guidelines that support equitable access to safe, healthy multi-modal transportation, economic growth, and quality of life in Nashua.

Documents Reviewed

Land Use Code

Code of the City of Nashua

Roadway and Sidewalk Design Standards

City of Nashua Master Plan

Downtown Master Plan

East Hollis Street Master Plan

Tree Streets Plan

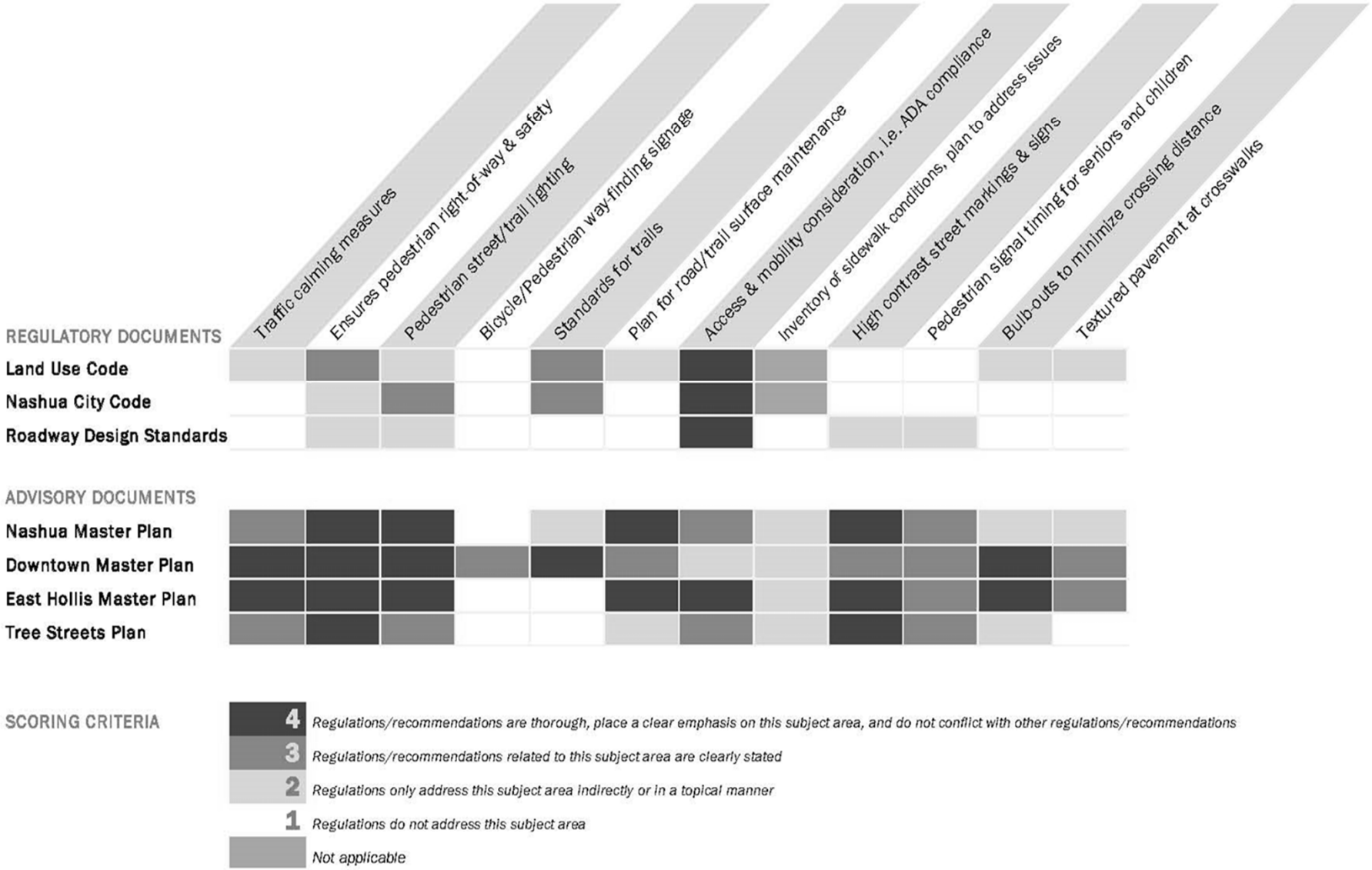
Audit Topics

1. Safety
2. Transportation
3. Land Use
4. Design
5. Site Specific

Understanding the Audit

- Each of the five topic areas include an analysis, potential action steps and a scorecard.
- The scorecard includes all of the criteria used to review and evaluate each topic area.

PLAN4HEALTH AUDIT FINDINGS: SAFETY SCORECARD



Safety

Traffic Calming Plan

- Identify specific locations and traffic calming measures.
- Planning and budgetary tool for staff and elected officials.
- Used by the Planning Board and developers in the site plan review process.

Maintenance Planning

- A long-term plan for maintenance needs specific to trails, bike lanes, and sidewalks.
- Challenging in with our harsh winter environment and older infrastructure.

Transportation

Maintenance & Master Planning

- No plan to address future improvements for pedestrians and bicycle users.
- Develop a Pedestrian and Bicycle Plan for specific infrastructure expansions or improvements.

Update the Standard Specifications for Road (1986) and Sidewalk (1995) Construction

- These documents address typical sections, materials and general construction guidelines for roads and sidewalks.
- An update of each would ensure that they are reflective of current standards and practices to best meet the needs of all transportation users.

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- Additional downtown housing will increase demand on parking.
- On-street parking provides a barrier between sidewalks and traffic lanes.
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- Could consolidate these plans to prioritize recommendations.
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- Focus on redevelopment of existing sites.
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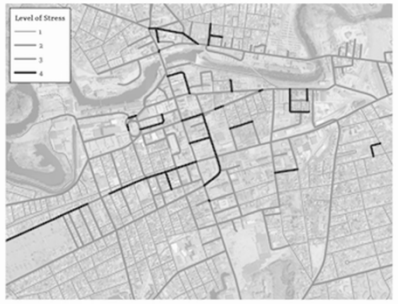
Plan4Health Nashua – LTS Overview



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Objective: Determine how easy or difficult it is for bicyclists and pedestrians to get around the City

- Level of Traffic Stress (LTS) score was given to Nashua streets
- A similar study is being done for walkability

Data Goals

- Quantify bikability and walkability
- Map potential origins and destinations
- Identify stressful or broken connections
- Inform Complete Streets decision making

Bicycle Level of Stress

- Developed by MTI for San Jose, CA
- Based on rider comfort levels established in the Netherlands
- LTS pilot project in New Hampshire

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Bicycle Level of Stress

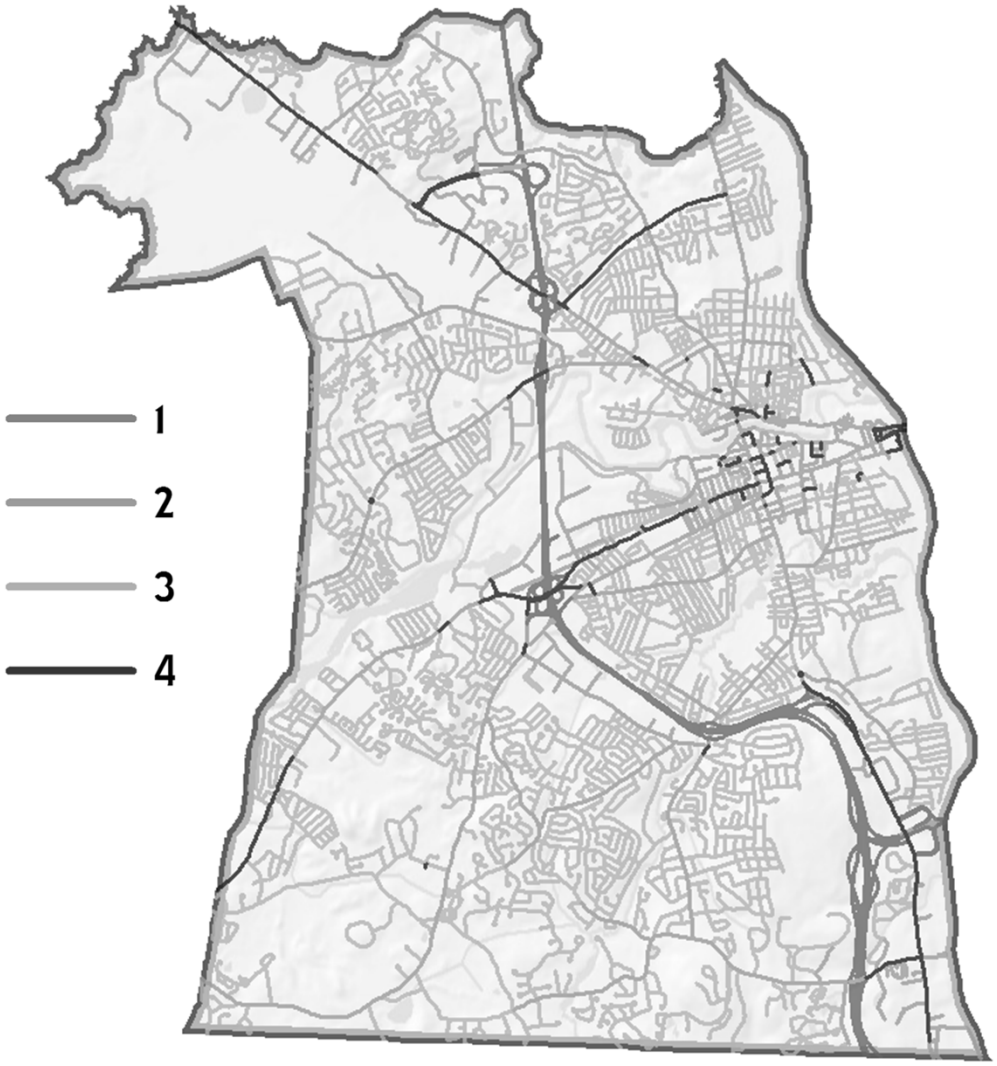
- 3 elements
  - Segments
  - Approaches
  - Crossings
- Optional stressors
  - Safety
  - Aesthetics
  - Terrain and pavement
- How it's calculated
  - Presence of bike lane
  - Travel lane width
  - Shoulder width
  - Speed limit
  - On-street parking
  - Land use

Table 4. Criteria for Level of Traffic Stress in Mixed Traffic

	Street Width		
Speed Limit	2-3 lanes	4-5 lanes	6+ lanes
Up to 25 mph	LTS 1[a] or 2[a]	LTS 3	LTS 4
30 mph	LTS 2[a] or 3[a]	LTS 4	LTS 4
35+ mph	LTS 4	LTS 4	LTS 4

Note: [a] Use lower value for streets without marked centerlines or classified as residential and with fewer than 3 lanes; use higher value otherwise.

Bicycle Level of Stress



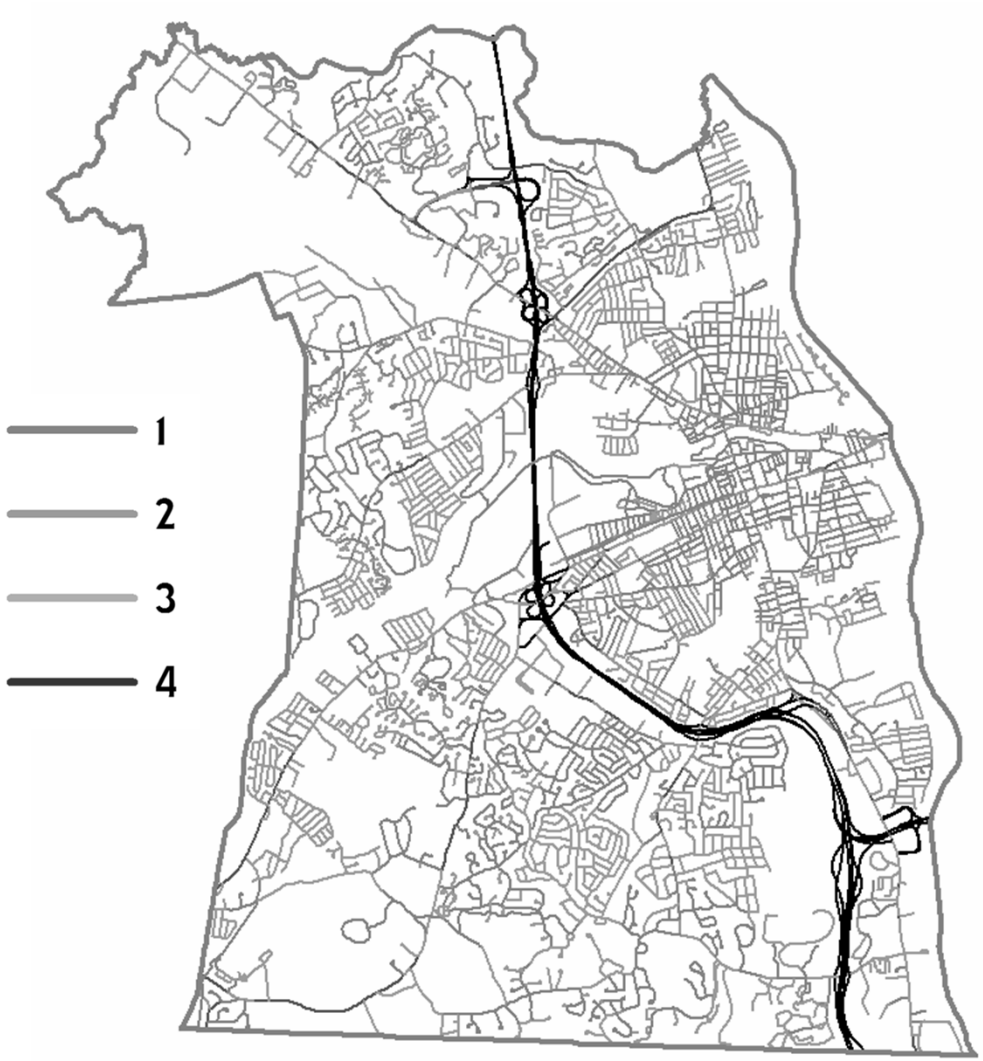
Level of Walkability

- Very little precedent for data-centric approach
- Nashua P4H team developed formula to mirror bike LTS
- Elements
  - Presence of sidewalk and type of buffer
  - Shoulder width
  - Traffic speed
  - Road class
- Optional stressors
  - Safety
  - Aesthetics
  - Pavement condition/terrain

Level of Walkability

Limitations

- Crossings not factored in
- Heavily weighted towards sidewalks



Data Analysis

Origins and destinations

Origins

Income
Age
Vehicle Availability
Commute Length
Commute Choice
Proximity to School

Destinations

Schools
Parks
Employment
Bus Stops

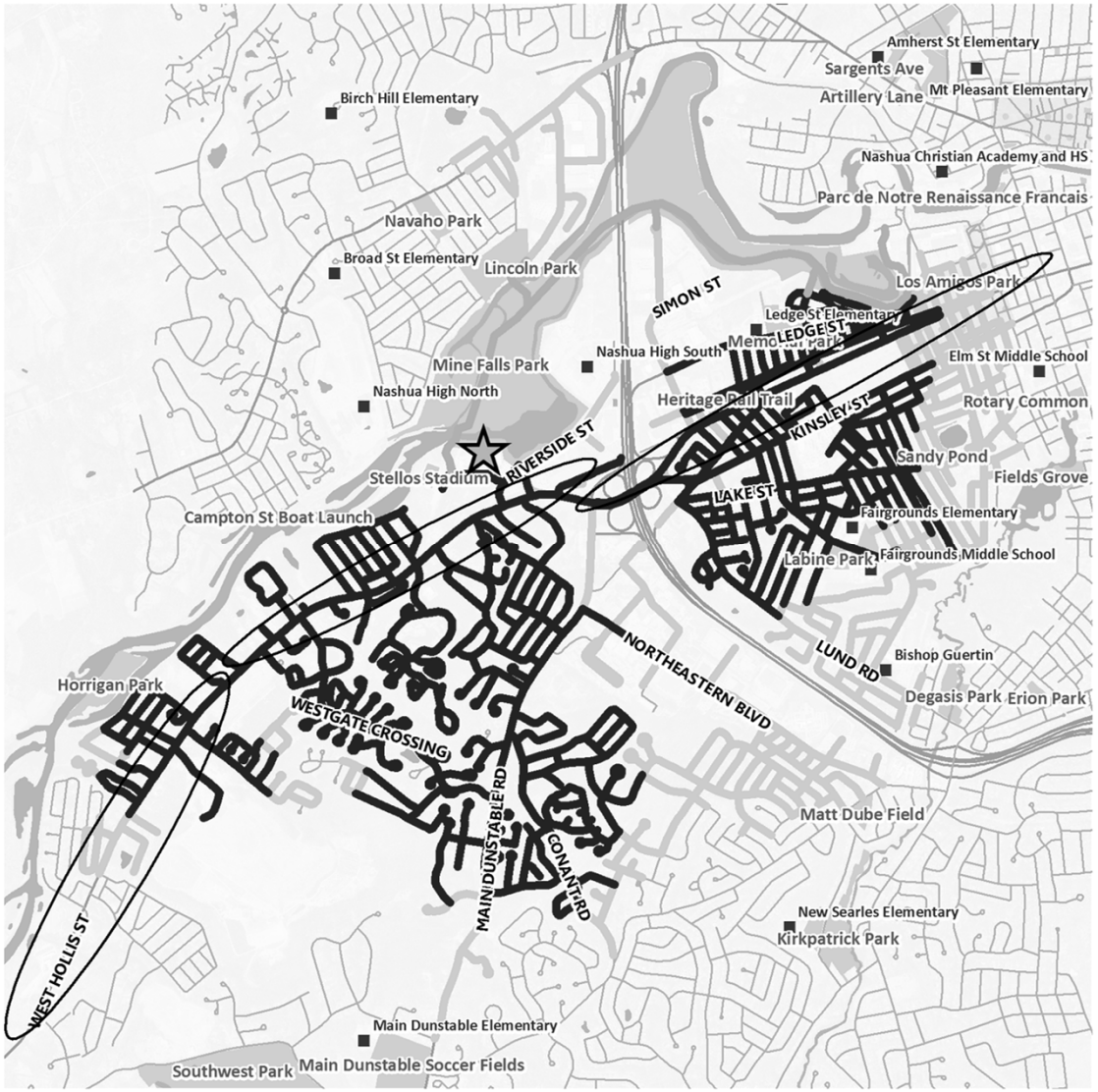
Data Analysis

Connectivity Islands

Where are the gaps?

Where can't people go?

With improvements, where can they go now?

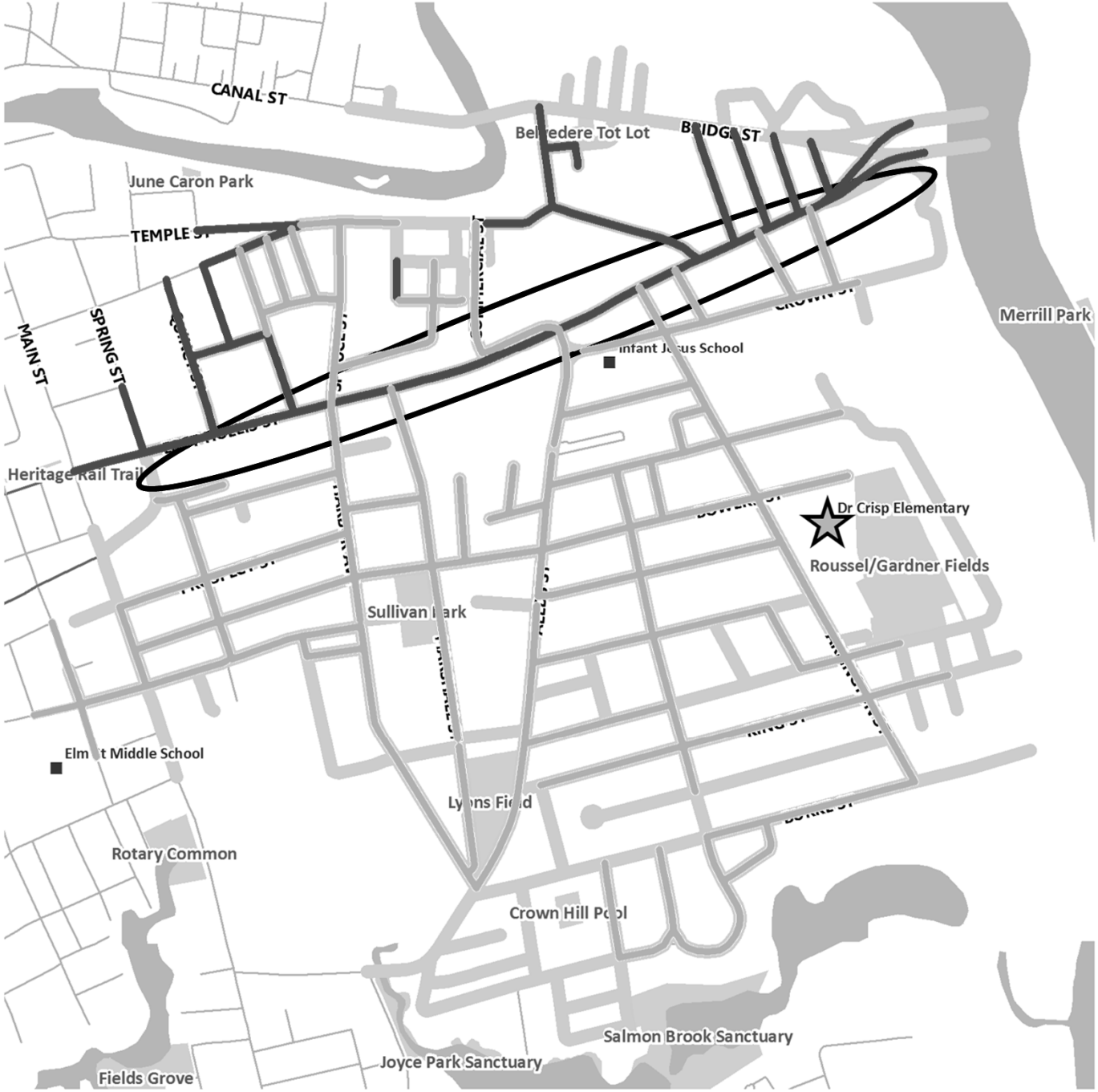


Walking

1 mile

Dr. Crisp

LoW 1



Biking

1 mile

Bronstein Apts

LTS 2

Biking

2 miles

Royal Crest

LTS 2

Next Steps

Creative Crosswalks

Training

Butch's Creative Crosswalk

Complete Streets Training

Thursday, March 24th 8 – 10 am

Learn More

Contact

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(

Plan4Health Nashua

A collaborative project integrating planning and public health where we live, learn, work, and play.

Encouraging the design of streets for all modes of travel.

Complete Streets

Priority Activities

- Identify and convene partners
- Audit current regulations and ordinances
- Conduct street mapping and data analysis
- Develop Complete Streets guidebook
- Educate about Complete Streets strategies
- Engage partners and community through strategic communications

Founding Partners:

heal nh
HEALTHY EATING ACTIVE LIVING

TOWNSHIP OF DUNSTABLE
CITY OF NASHUA
1853.
1673.

NRPC

NHPHA
NEW HAMPSHIRE
PUBLIC HEALTH
ASSOCIATION
Improving Health, Preventing Disease, Reducing Costs for All

What are Complete Streets?

- Streets designed to enable safe access for all travelers, including pedestrians, cyclists, transit riders, and motorists of all ages and abilities.

- Complete Streets conversions often involve some form of a ‘road diet,’ where travel lanes are narrowed and sidewalks and/or road shoulders are expanded.

A Complete Streets transformation in Downtown Concord, NH narrowed Main St. from 4 to 2 travel lanes and dramatically expanded sidewalk facilities.

North Main Street, Concord, NH
2014

North Main Street, Concord, NH
2015

Complete Streets in Nashua

- Several streets in Nashua have been converted to be more consistent with a Complete Streets framework.
- Examples include the recent Main Street sidewalks project as well as installations along Manchester Street in the North End of the city.

Community Outreach

- Educate community
- Garner support for Complete Streets
- Feedback about walking and bicycling habits and comfort level to adjust LTS data as necessary
    - YMCA
    - Local Neighborhood Events
    - Art Event
    - Local Bike Shop
    - Community Leaders

Multi-Media Communications

- Press releases
- Guest editorials
- Visibility at events
- Webpages
- Facebook & Twitter
- Fact sheets & rack card
- Newsletters
- Video

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About Nashua's Plan4Health Project
- Began in early 2015 with a national Plan4Health grant award of $125,000
- Supports a healthy, economically vibrant community with roads that provide safe access for all users
- Focuses on Complete Streets philosophy and guidelines to encourage bicycle and pedestrian transportation in Nashua
- A priority strategy of the 2015-2018 Community Health Improvement Plan (CHIP), supported by the Greater Nashua Public Health Advisory Council

Planned Activities
- Identify and convene partners
- Conduct street mapping and data analysis
- Audit current regulations and ordinances
- Develop Complete Streets training guide
- Educate about Complete Street strategies
- Engage partners and community through strategic communications

Short-Term Outcomes
- Build on strong multi-agency efforts to reduce chronic disease in Nashua Nashua Community Health Improvement Plan (CHIP)
- Grow coalition by engaging more partners with a wide range of expertise
- Improve perceptions about physical activity within the community
- Establish support and tools for a Complete Streets way of thinking

Long-Term Outcomes
- Make it more convenient for people to be physically active by increasing access to safe active transportation
- Decrease the burden of obesity and chronic disease in the City of Nashua
- Support a healthy, economically vibrant community

CONTACTS:
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BEVERLY DOOLAN, Program Coordinator, Nashua Division of Public Health and Community Services: (603) 589-4508 | dooland@nashuanh.gov
NICHOLAS J. COATES (NIHQ), Active Living Coordinator, HEAL NH: (603) 415-4263 | ncoates@healthynh.com

Plan4Health Nashua Complete Streets Project
Trabajando para hacer las calles más amigables para caminar y andar en bicicleta o cualquier forma que elija para moverse en Nashua!

Qué es el Proyecto Complete Streets?
Caminos diseñados para la seguridad de todo el mundo, no importando la edad y la manera en que elijan desplazarse en la comunidad

Como el Proyecto Complete Streets mejora donde Yo vivo?
Más opciones para llegar al trabajo, la escuela o las empresas locales
Promueve actividades saludables e independencia
Calles bien iluminadas y más árboles hacen el vecindario más seguro, más atractivo y un buen lugar para conocer a otros residentes
Apoya nuestra economía local porque las personas tienen un acceso más fácil a las tiendas y comercios
Aceras y carriles para bicicleta que hacen más fácil y más seguro viajar

Como el Proyecto Complete Streets se mira?
Aceras anchas y "bajadas en las esquinas" en los cruces para peatones para personas con discapacidades que utilizan sillas de ruedas y coches
Carriles para bicicletas y paso para peatones bien señalados
Paradas de autobús que son de fácil acceso
Arboles y plantas en las aceras que hacen un barrio más atractivo y agradable

Como Puedo Ayudar?
En los primeros meses del proyecto, el departamentos de planificación y de salud pública de Nashua, junto con otros socios como Plan4Health Nashua, están reuniendo información acerca de cómo la gente en la comunidad se desplaza de manera segura y que se puede mejorar.
Estamos pidiendo a la gente apoyar estos esfuerzos, de diferentes maneras y compartiendo información de como se desplazan en la ciudad y que compartan información sobre el proyecto.

PARA MAS INFORMACION CONTACTAR:
BEVERLY DOOLAN, Program Coordinator,
Nashua Division of Public Health and Community Services
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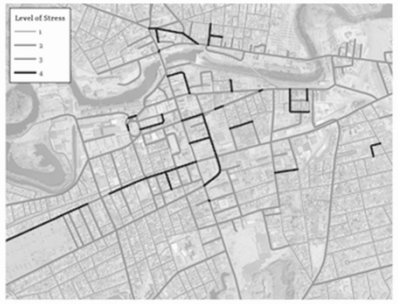
Plan4Health Nashua es una iniciativa de the Greater Nashua Public Health Advisory Council

Plan4Health Nashua at Neighborfest

The Telegraph
It's Your Community.

Greater Nashua groups receive grant to study, maybe ease, 'traffic stress'
Nashua Telegraph, 3/26/15

Plan4Health Nashua – Land Use Audit



Land Use Audit

What is a Land Use Audit?

Analyze land use regulations to determine how well they support specific goals and identify gaps for improvement.

Why is this audit important?

This audit is focused on complete streets guidelines that support equitable access to safe, healthy multi-modal transportation, economic growth, and quality of life in Nashua.

Documents Reviewed

Land Use Code

Code of the City of Nashua

Roadway and Sidewalk Design Standards

City of Nashua Master Plan

Downtown Master Plan

East Hollis Street Master Plan

Tree Streets Plan

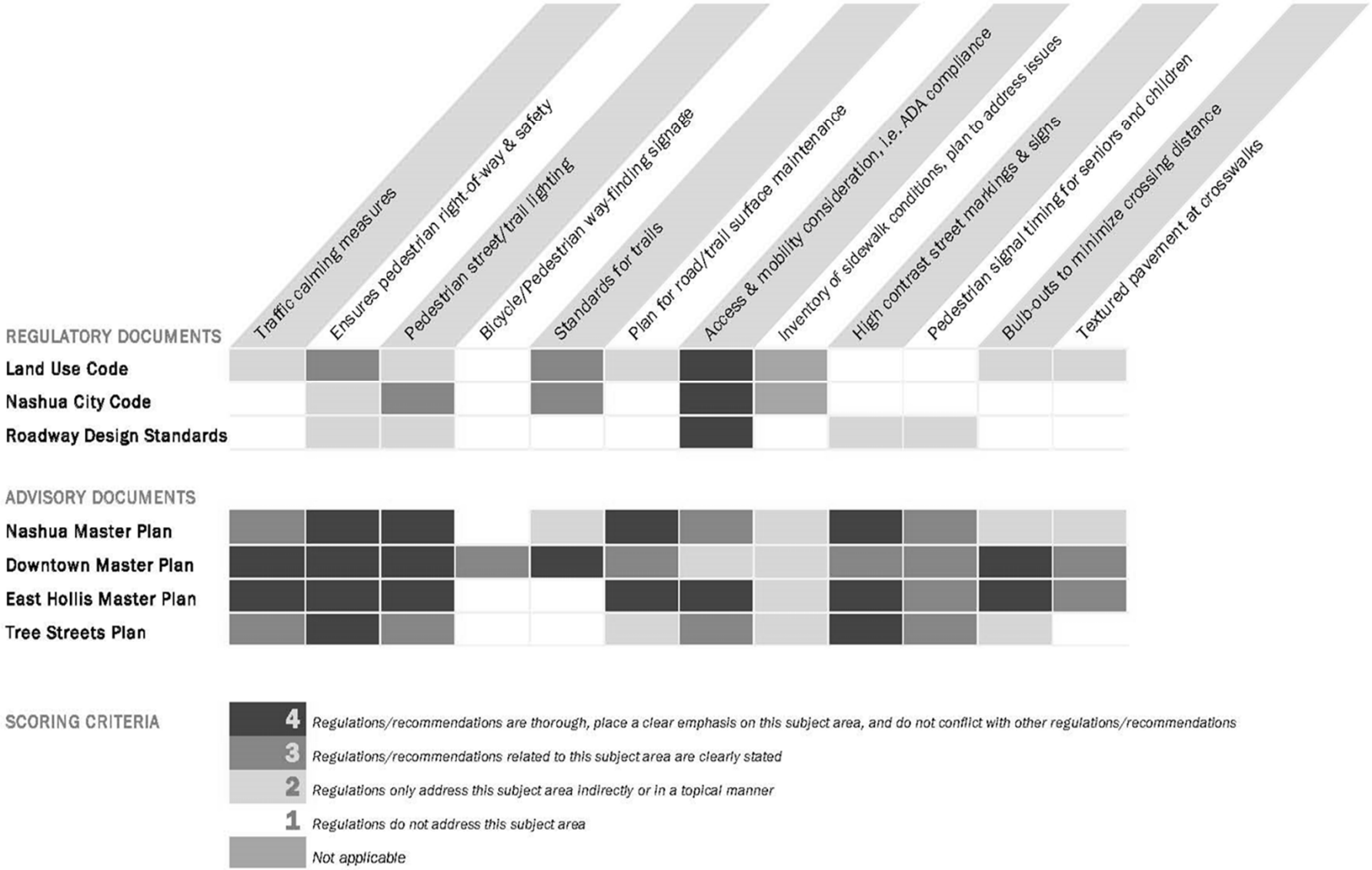
Audit Topics

1. Safety
2. Transportation
3. Land Use
4. Design
5. Site Specific

Understanding the Audit

- Each of the five topic areas include an analysis, potential action steps and a scorecard.
- The scorecard includes all of the criteria used to review and evaluate each topic area.

PLAN4HEALTH AUDIT FINDINGS: SAFETY SCORECARD



Safety

Traffic Calming Plan

- Identify specific locations and traffic calming measures.
- Planning and budgetary tool for staff and elected officials.
- Used by the Planning Board and developers in the site plan review process.

Maintenance Planning

- A long-term plan for maintenance needs specific to trails, bike lanes, and sidewalks.
- Challenging in with our harsh winter environment and older infrastructure.

Transportation

Maintenance & Master Planning

- No plan to address future improvements for pedestrians and bicycle users.
- Develop a Pedestrian and Bicycle Plan for specific infrastructure expansions or improvements.

Update the Standard Specifications for Road (1986) and Sidewalk (1995) Construction

- These documents address typical sections, materials and general construction guidelines for roads and sidewalks.
- An update of each would ensure that they are reflective of current standards and practices to best meet the needs of all transportation users.

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Consider extending overnight on-street parking to all central Nashua neighborhoods

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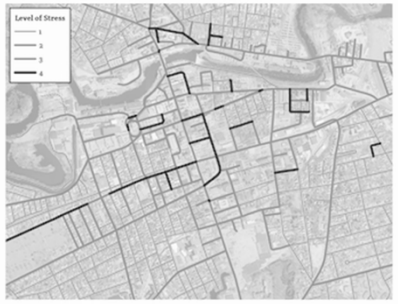

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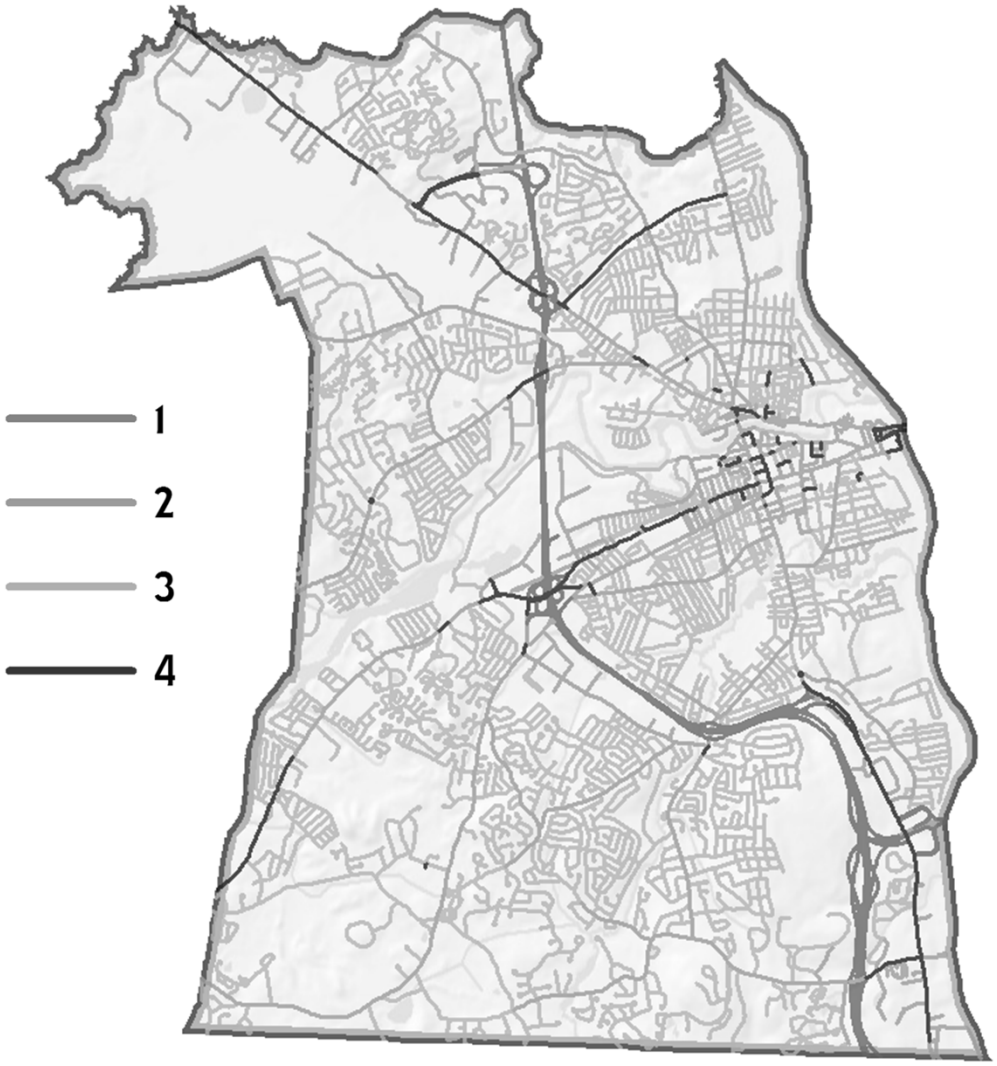

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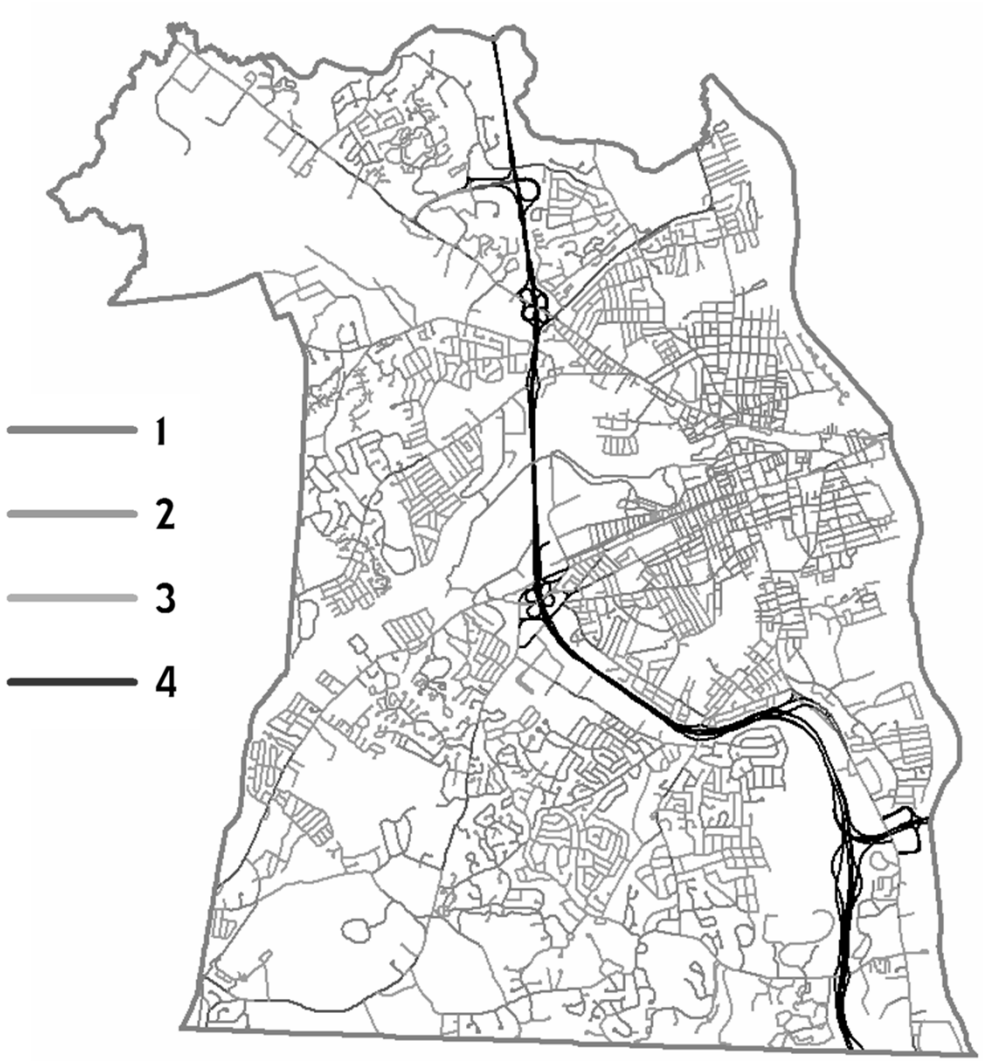

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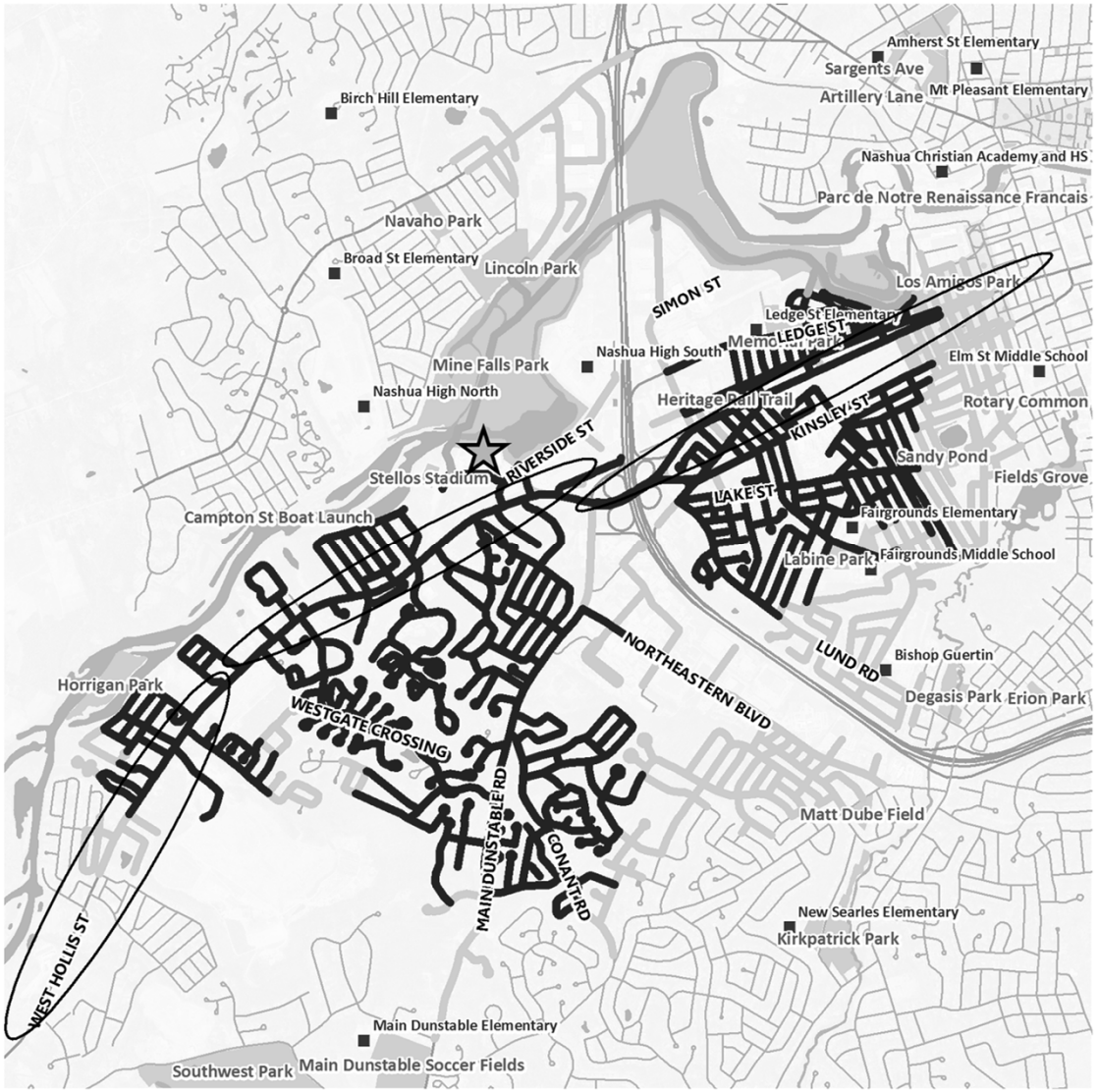
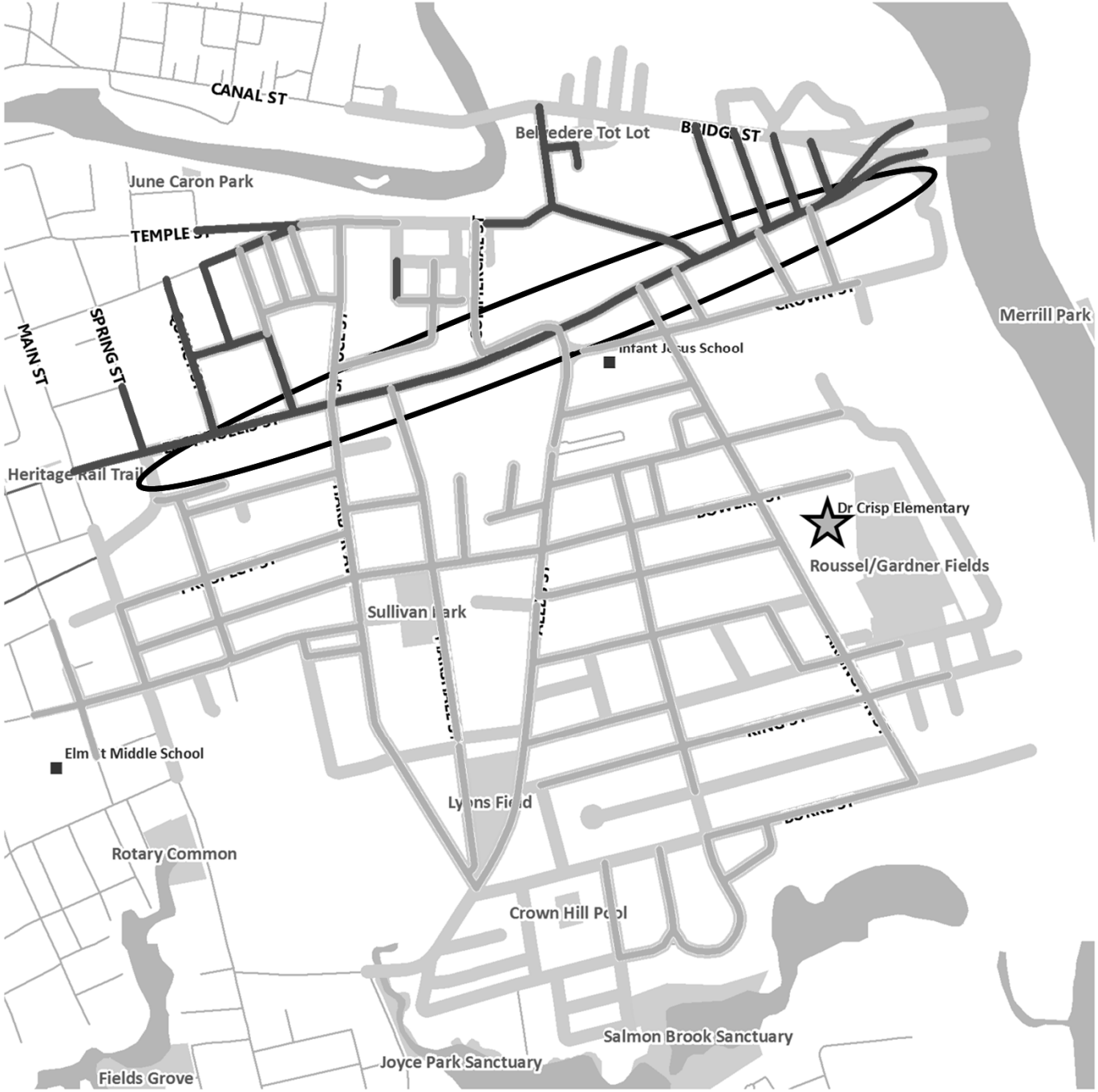


Walking

1 mile

Dr. Crisp

LoW 1



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