

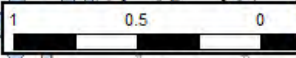
# CITY OF MANCHESTER BICYCLE MASTER PLAN

Bruce A. Thomas, P.E.

Design Engineer

Manchester Department of Public Works

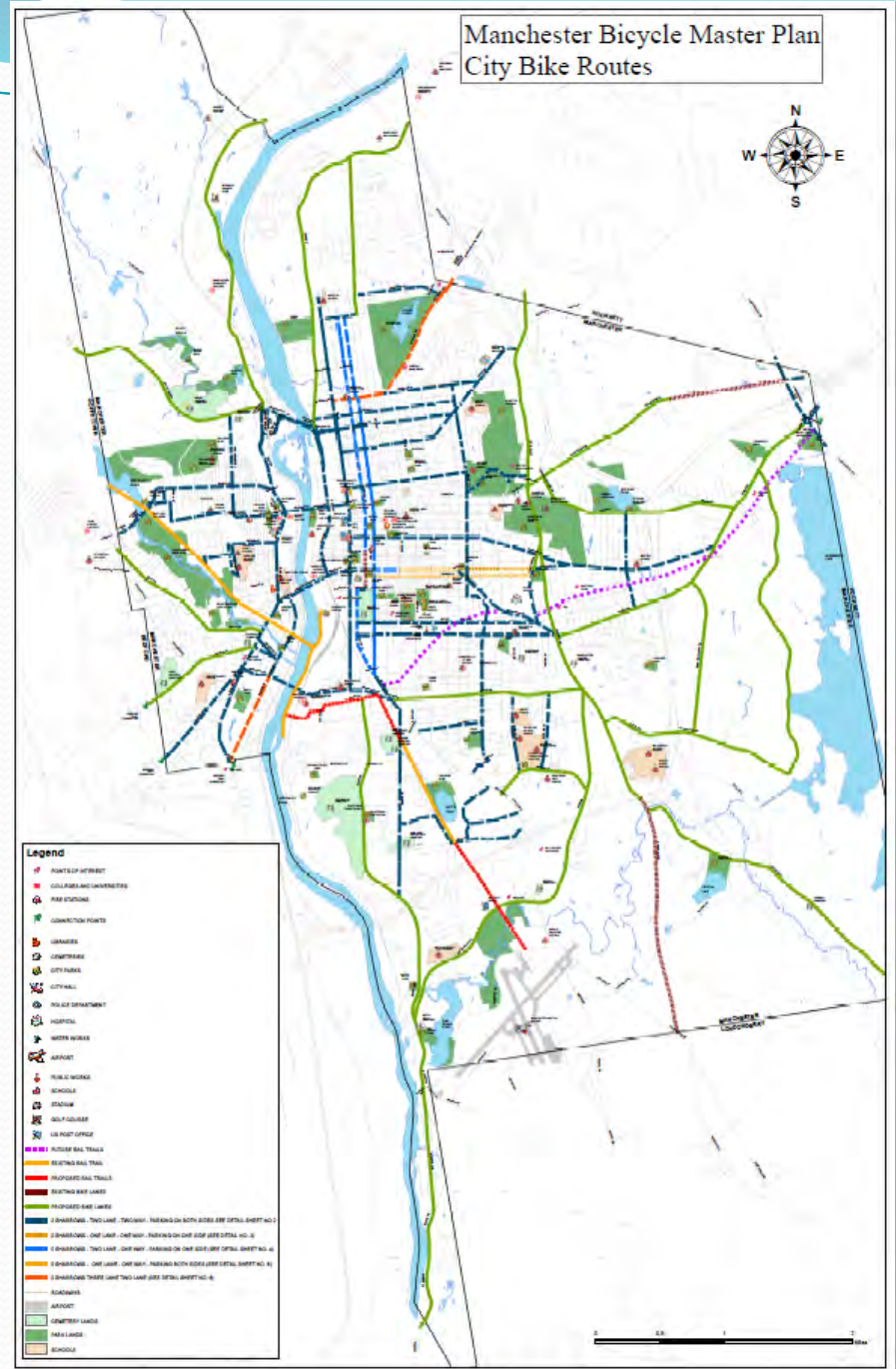
# CITY OF MANCHESTER BICYCLE MASTER PLAN



# WHAT'S IN THE PLAN:

- All future bike lanes, sharrows, etc...
- A Fact Sheet
- Acknowledgements
- Public Input
- Visions, Goals and Objectives
- Terms and Definitions
- Amenities
- Safety
- Cost of Program
- Implementation
- Helpful Hints

# BIKE MASTER PLAN



# FACT SHEET!

- The goals of this Master Plan are the following:
- Increase bike use.
  - Increase bike safety.
  - Provide network of bicycle routes throughout the City.
  - Connection to existing bike trails
  - Connection to points of interest such as schools, parks, etc....
  - Connection to all areas of the City.
  - Support facilities (bike racks at destinations).
  - Provide connectivity loops to provide bike rides for various distances (for example, five mile, 10 mile, and 20 mile trips).
  - Implementation strategy.
  - Enhance tourism.
  - Enhance multimodal connections throughout the City.
  - Provide health benefits and recreational opportunities for residents of the City and attract residents from the surrounding communities to utilize the trail system and the many amenities that the City has to offer.

# FACT SHEET!, CONT...

- The plan provides definitions of Bike Lanes, Sharrows or Shared Lanes and Multi-use trails.
- The plan provides for bike lanes, bike loops, routes to get to City destinations and connections to regional biking.
- A list and map of bike racks located throughout the City.
- Common Rules for Bicyclists and for Motorists are provided (as well as a complete list of bicycle R.S.A.s, Ordinances and Driver Manual rules in the appendix).

# FACT SHEET!, CONT...

- A summary of proposed pavement markings is provided (based on stated assumptions).
- Total marking costs are \$59,658 (in-house), or \$82,576 by Contract.
- A summary of proposed signage is provided (based on stated assumptions).
- Cost Based on State Bid Prices - \$32,832.50

# FACT SHEET!, CONT...

- Statistics:
- 40 miles of bike lanes provided.
- 83 miles of sharrows provided.
- 543 signs are provided (“Bike Lane”, “Share the Road”, “Bike Route”, and Bike Symbol sign. “Bike May Use Full Lane” and other signs not included at this time. All signs to conform to the MUTCD.



# PLAN DEVELOPMENT AND INPUT

Meetings were held in order to garner input and support for the development of this master plan.

February 26, 2015	Bike Manchester
March 26, 2015	Bike Manchester
May 1, 2015	Heath Auger (Resident and member of Bike Manchester)
June 4, 2015	Public Meeting – Public Works Offices
June 18, 2015	Change the World Day
July 23, 2015	Farmers Market
August 12, 2015	Conservation Commission
August 13, 2015	Cigna Road Race
August 22, 2015	Family First Day
December 1, 2015	Bike Collective - Open House
December 9, 2015	Bike Collective

# PEOPLE WHO HELPED:

- Heath Auger, Bike Manchester
- Abby Easterly, Queen City Bike Collective
- Peter Bragdon, Alliance for Biking & Walking
- FOMBA (Friends of Massabesic Bicycling Association)
- City of Manchester Conservation Commission
- The Southern New Hampshire Planning Commission  
(Amy Kizak, Adam Hlasny, etc....)

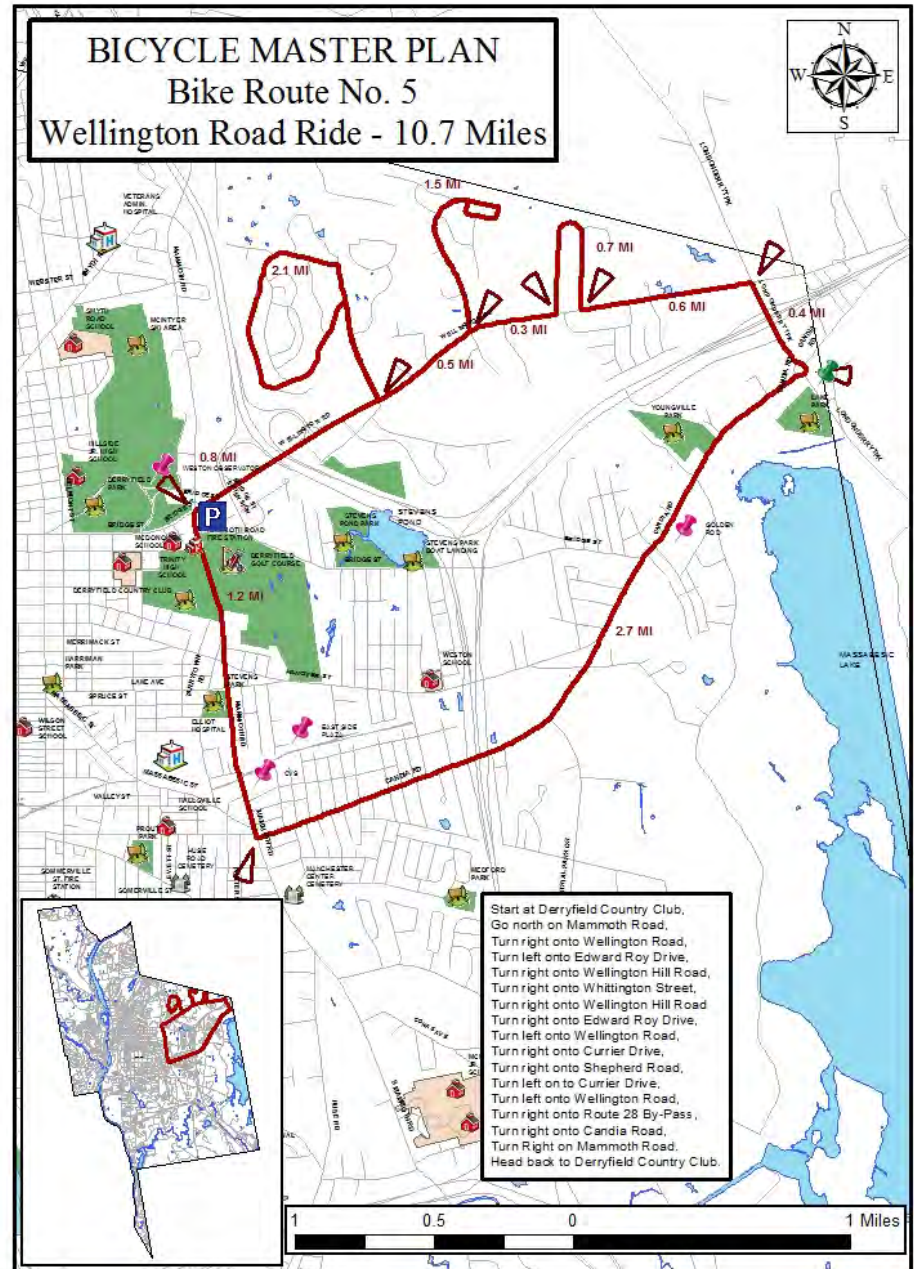
# TERMS AND DEFINITIONS

- BICYCLE LANES
- SHARROWS OR SHARED LANES
- MULTI-USE TRAILS

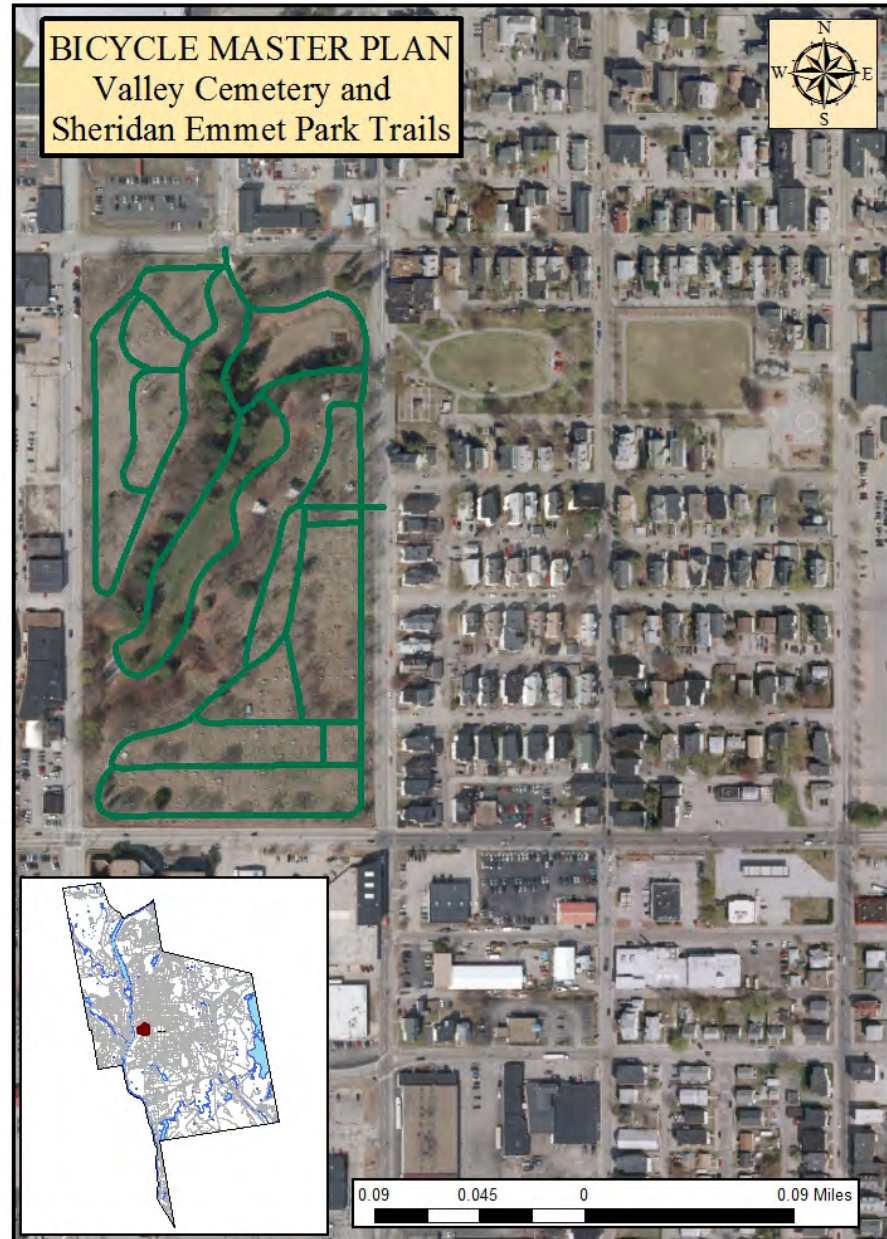
# AMENITIES

- BIKE PATHS
- BIKE LANES
- BIKE LOOPS
- CITY DESTINATIONS
  - PARKS, CEMETERIES, LIBRARIES, CREMELAND, BACKROOM, GOLDENROD, ETC....

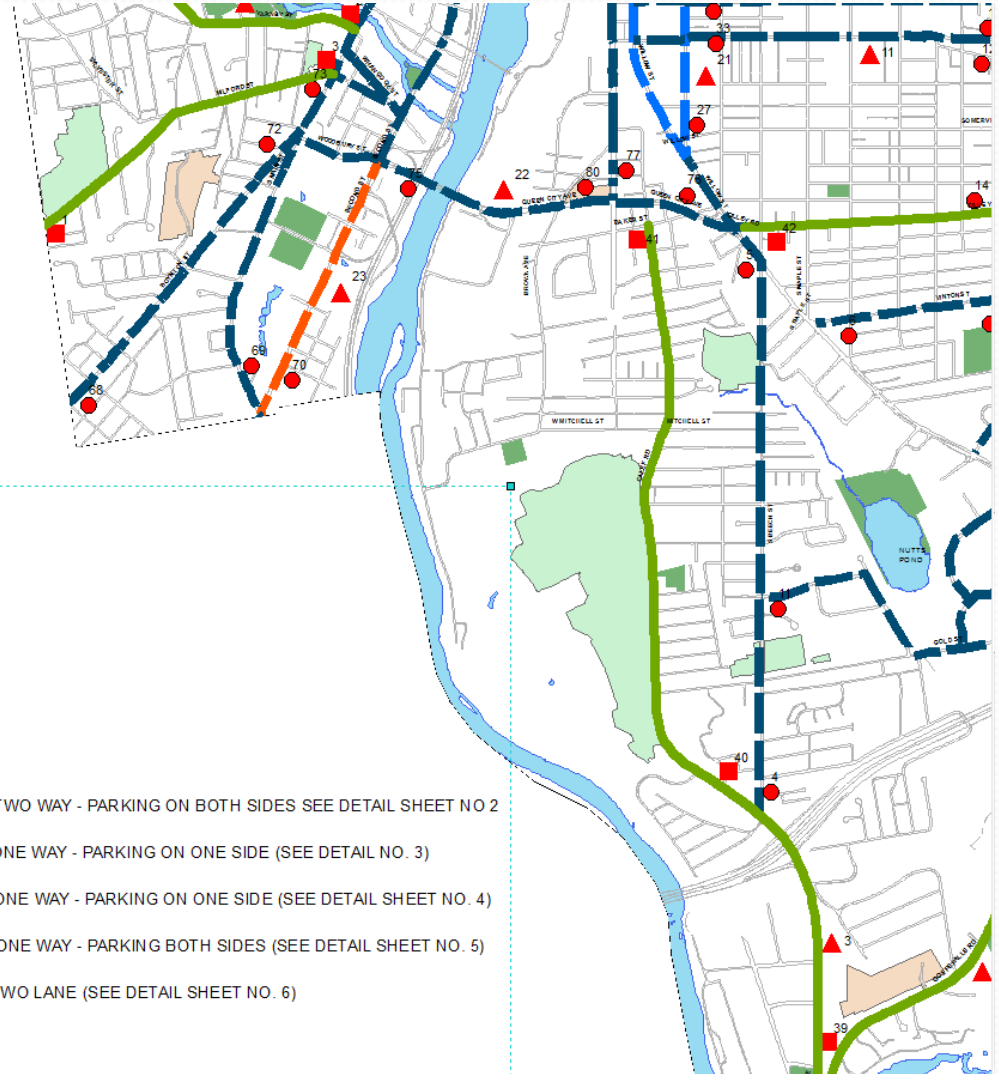
# EXAMPLE BIKE LOOP














# EXAMPLE DESTINATION: VALLEY CEMETERY



# EXAMPLE SIGNAGE PLAN DETAIL



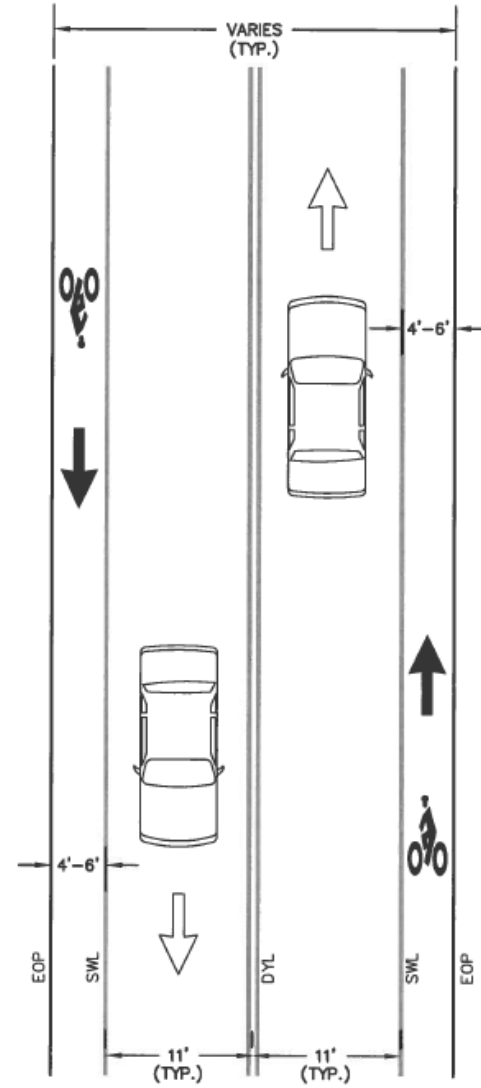
## Legend

-  EXISTING BIKE LANES
-  PROPOSED BIKE LANES
-  Bike Lane Signs
-  Bike Route Signs
-  Share Road Assemblies
-  0 SHARROWS - TWO LANE - TWO WAY - PARKING ON BOTH SIDES SEE DETAIL SHEET NO 2
-  0 SHARROWS - ONE LANE - ONE WAY - PARKING ON ONE SIDE (SEE DETAIL NO. 3)
-  0 SHARROWS - TWO LANE - ONE WAY - PARKING ON ONE SIDE (SEE DETAIL SHEET NO. 4)
-  0 SHARROWS - ONE LANE - ONE WAY - PARKING BOTH SIDES (SEE DETAIL SHEET NO. 5)
-  0 SHARROWS THREE LANE TWO LANE (SEE DETAIL SHEET NO. 6)
-  CEMETERY LANDS





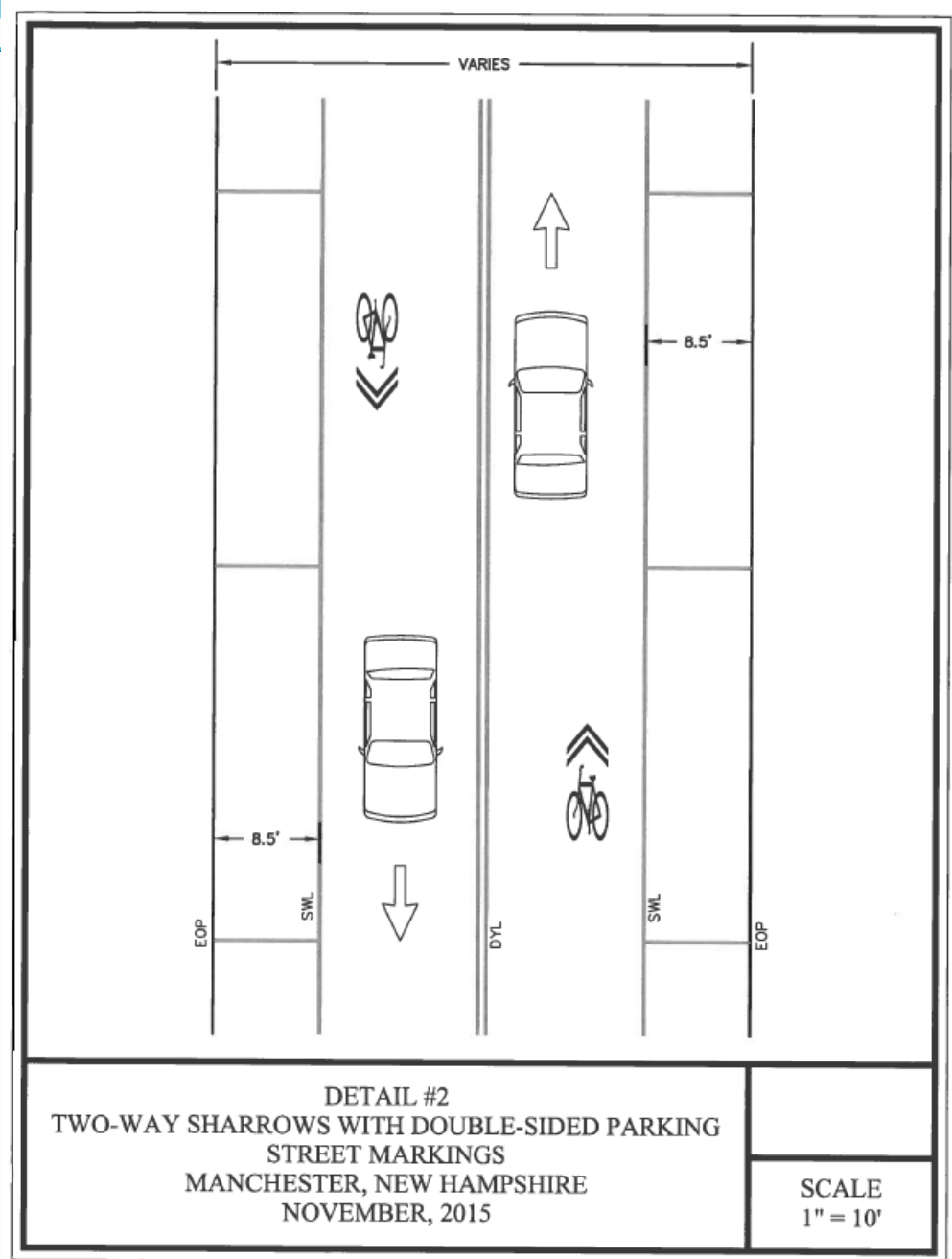
# EXAMPLE ROADWAY STRIPING - BIKE LANE:



DETAIL #1  
TWO-WAY BIKE LANE (TYPICAL)  
STREET MARKINGS  
MANCHESTER, NEW HAMPSHIRE  
NOVEMBER, 2015

SCALE  
1" = 10'

# EXAMPLE ROADWAY STRIPING - SHARROWS:



# SAFETY

- **RULES FOR BICYCLISTS:**
- Always wear a helmet.
- Always obey stop signs and traffic signals.
- Always ride in the same direction as adjacent motor vehicle traffic.
- Always ride on roadways versus riding on sidewalks.
- Operate with extreme care near pedestrians.
- Watch for turning drivers.
- Use hand signals.
- Keep both hands ready to brake.

# SAFETY CONT...

## **BIKE AWARENESS RULES AROUND MOTORISTS:**

- Watch out for parked cars (and their driver side doors).
- Always avoid pulling out from behind turning automobiles at an intersection (this is particularly important when bicyclists are behind large vehicles, because it is extremely difficult for motorists from the opposing direction to see approaching bicyclists).
- Always ride safely near large trucks including understanding safety issues related to right turns. To make right turn movements, trucks often move left, opening up space along the curb to their right. It is important not to enter this space, because the truck will swing right again to make the turn. Visibility on the right side of a truck also tends to be more difficult for the truck drivers.
- When riding at night, bicyclists must ride with front and rear lights to increase their visibility to drivers. Additionally, bicyclists should be encouraged to wear appropriate color clothing and other reflective materials to be even more visible.

# SAFETY, CONT...

## **MORE RULES FOR MOTORISTS:**

- Obey speed limits. Higher speeds result in greater injuries to cyclists and pedestrians.
- Obey signs, signals and markings. Never run red lights.
- Always look for bicyclists when turning left or right.
- Pass bicyclists giving at least three feet of space. Slow down and do not pass if space does not allow.
- Do not use your horn in close proximity to bicyclists.
- Look for bicyclists when opening doors.
- Watch for children.
- Watch for bicyclists riding at night.

# OTHER COOL STUFF IN THE PLAN:

- A comprehensive list of all laws pertaining to bicycles is included in the appendix (R.S.A.s, Ordinances, and the N.H. Drivers Manual)
- Links to regional biking
- Citywide bike rack location plan
- List of all bike shops in the area

# IMPLEMENTATION!

- The City's goal is to implement the plan on a continuing basis. As we reconstruct or resurface streets, we will install the pavement markings and signage designated in this plan.

# QUESTIONS, COMMENTS?

Bruce A. Thomas, P.E.

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