MINUTES

Thursday – November 15, 2018
5:30 PM
Park House – Manchester, VT

Janet Hurley (Manchester), Mark Anders (BCRC), Dixie Zens (Abacus Automation, BCIC), Michael A. Walker (Pownal), Joe Segale (VTrans), Jack Irons (Woodford), Amy Verner (Bike Manchester), Robin Verner (Bike Manchester), Jim Hand (Bike Manchester), Wayne Goodman (BCRC), Kathy Dillmann (Bike Manchester), Greg Sulcienk (New England Newspapers), Phil Chapman (Rupert), Nancy Faesy (Dorset), Rob Costantino, (Shaftsbury), Anthony Maclaurin (Manchester Village), Pauline Moore (Manchester), Andrew McKeever, (Manchester), John LaVecchia (Dorset), Maurice Hill (Bike Manchester)

Following a light meal the meeting was called to order at 6:00 PM.

I. Minutes of September 20th, BCRC Meeting

It was determined that there was not a quorum of Commissioner’s present, so the minutes could not be approved.

II. Proposed BCRC Bylaw Amendments – Overview

It was determined that there was not a quorum of Commissioner’s present, so the agenda item was skipped.

III. Planning for Connected and Autonomous Vehicles – Joe Segale, Policy, Planning & Research Director, VTrans

The presentation was an overview of a looming future change in Vermont’s transportation system – connected and automated vehicles, and the potential benefits and costs, and federal and state roles.

Automated vehicles use advanced technologies including: cameras, software, radar, lidar, and dedicated short-range communication. Vehicle automation ranges from Level 1, Driver Assistance (e.g. cruise control) to Level 5, Full Automation, which is still an emerging technology. Connected Automated
Vehicle (CAV) communicate with other automated vehicles and with infrastructure, such as charging stations. It is estimated that by 2050, 40-60% of all vehicles on the road will be automated.

Automated vehicles may impact vehicle ownership models. It is anticipated that many vehicles will be not owned by individuals but will instead be owned by “mobility services.” Potential benefits of vehicle automation are use in first/last mile transit connections, reduced space for parking and the adaptive re-use of parking lots and garages. Some issues that government will need to address are: safety, pricing and fees, providing adequate pick-up and drop-off areas, equity, and employment disruption. The timing and impacts of automated vehicles are uncertain, but VTrans has started to think about what planning and legislation will be needed in the future.

IV. Manchester Transportation Improvements

Part 1. Manchester Rail Trail, Amy and Robin Verner, Bike Manchester VT

The Verner’s presentation was about an effort by a local group (the Old Railroad Bed LLC) to create a rail-trail along the abandoned Manchester, Dorset, and Granville rail line. Interest in creating a rail trail along the rail line dates back to the 1980’s. The current effort began in the 1990’s. The group formed and purchased the rail line, which has an 80’ wide right-of-way. In 2000, BCRC did a feasibility study. The project was temporarily shelved when abutters showed up to a public meeting and objected to the project. Later, abutters put up “No Trespassing” signs. In a case that went all the way to the VT Supreme Court in 2014, abutters tried to prove adverse possession, but their argument was rejected by the court. In 2016, at a Town meeting, a resolution was passed in support of the rail-trail. The Town then applied and was awarded a VTrans Bicycle/Pedestrian grant for a scoping study. The group has cleared long sections of the trail. When it is complete, the trail will be nearly 5 miles long.

Part 2. Depot Street Improvements, Janet Hurley, Manchester Planning Director.

The presentation was about a project to improve conditions for pedestrians and cyclists on Depot Street in Manchester. The Town was awarded a $820,000 grant from VTrans to design, permit, and construct the project. Current conditions include excessively-wide travel lanes, lack of crosswalks, shoulders or bike lanes, street trees, and a buffer between the sidewalk and the road. The proposed project will eliminate portions of the road’s middle “suicide lane” and use the space gained for planted buffers between the road and the sidewalk. Left-turn lanes will be retained in some areas. Travel lanes will be narrowed to 11-feet and five-foot bike lanes will be added in both directions, as well as new crosswalks. Janet dedicated her presentation to her friend Leslie Pray, who was killed on her bicycle on November 3 in Claremont, California.

Meeting adjourned at 7:00 PM.
PREPARING FOR AUTOMATED VEHICLES IN VERMONT

Bennington County Regional Commission
November 15, 2018

Joe Segale, P.E./PTP.
Policy, Planning & Research Bureau Director
PRESENTATION

- Connected and Automated Vehicles Overview

- Potential Benefits and Consequences

- Federal and State Roles
DEFINITIONS

- **Connected vehicles (CV)**
  - **V2V**: vehicle-to-vehicle
  - **V2I**: vehicle-to-infrastructure
  - **V2X**: vehicle to everything

- **Automated Vehicles (AV)**
  - Self-driving without connected input from the surroundings.
  - Some aspect of a Dynamic Driving Task (e.g., steering, throttle, or braking) occurs without direct driver input.

- **Connected Automated Vehicle (CAV)**
CAMERAS
Stereo and infrared camera data helps avoid obstacles, identify road sign messages, and visualize lane markings.

SOFTWARE
On-board computers run advanced software to analyze data collected by sensors to make intelligent maneuvers and real-time route determination.

RADAR
Radar tracks nearby objects, which helps maintain the car's distance from vehicles ahead and detect blind spot obstacles.

LIDAR
Light detection and ranging system generates a point cloud that gives the car a 360-degree view.

DEDICATED SHORT RANGE COMMUNICATION
Provides communication between vehicles (Vehicle to Vehicle - V2V) and between vehicles and the transportation infrastructure (Vehicle to Infrastructure – V2I). DSRC is expected to be utilized where existing Intelligent Transportation Systems (ITS) are already in place, such as urban areas, high volume limited access facilities, and managed lanes.
VEHICLE AUTOMATION LEVELS

Levels of Automation

- **0**: No Automation
- **1**: Driver Assistance (e.g., cruise control)
- **2**: Partial Automation (e.g., adaptive cruise control, lane-keeping assist)
- **3**: Conditional Automation
- **4**: High Automation
- **5**: Full Automation

**Human driver control**
- Driver has full control of vehicle

**System control**
- System has full control of vehicle

SOURCE: Liberty Mutual “Automated Vehicles: Changing Role of the Driver”
AUTOMATED VEHICLE AVAILABILITY

Fig 2. Overview of AV market, 2015–2030 estimated timeline. Not meant to be exhaustive. The data points were estimated based on media articles from wired.com, motortrend.com, forbes.com, bbc.com, and from manufacturers’ websites and public statements.

https://doi.org/10.1371/journal.pone.0184652.g002
AUTOMATED VEHICLES ON THE ROAD
(CONSERVATIVE FORECAST)

Autonomous Vehicle Fleet Projections
(as a percentage of all vehicles on the road)

- 2020's: Large Price Premiums (01%-02%)
- 2030's: Moderate Price Premiums (10%-20%)
- 2040's: Minimal Price Premiums (20%-40%)
- 2050's: Standard on Most New Vehicles (40%-60%)

Source: GHSA
AUTOMATED VEHICLES ON THE ROAD
(ALTERNATIVE AGGRESSIVE FORECAST)

- Assumes a Shared, Electric Vehicle Scenario
- By 2030 95% of Passenger Miles will be in Shared AVs
- Average American Family will save $5,600 per year

Source: Rethinking Transportation 2020-2030 The Disruption of Transportation and the Collapse of the Internal-Combustion Vehicle and Oil Industry, RethinkX, May 2017
Cumulative Value of Mainstream Transactions

Includes automaker and tech company investments, acquisitions, gifts, and partnerships

Source: The Brookings Institution

https://www.brookings.edu/research/gauging-investment-in-self-driving-cars/
37,461
IMPACTS DEPEND ON OWNERSHIP MODEL

Individual Ownership

Shared Ownership & Mobility as a Service
UTOPIAN URBAN DESIGN SCENARIO

- Highways re-purposed as linear greenspace and trails
- Adaptive re-use of parking lots and garages
- Driveways and cul-de-sacs become common spaces

Source: Here’s How Self-Driving Cars Will Transform Your City, Sam Lubell, Wired, October 21, 2016
TRANSIT OPPORTUNITIES

- First/Last Mile
- Circulator
- Fixed Route Vehicle Replacement
- Bus Rapid Transit Platooning
- Paratransit
- Better Service
  - Integrated trip planning
  - Real-time schedules
  - Electronic Fare Payment
WHAT IS TRUCK PLATOONING?

Truck platooning is the linking of two or more trucks in convoy, using connectivity technology and automated driving support systems. These vehicles automatically maintain a set, close distance between each other when they are connected for certain parts of a journey, for instance on motorways.

The truck at the head of the platoon acts as the leader, with the vehicles behind reacting and adapting to changes in its movement — requiring little to no action from drivers. In the first instance, drivers will remain in control at all times, so they can also decide to leave the platoon and drive independently.
POLICIES TO GUIDE AV IMPACTS

- Pricing
  - Vehicle Miles Travelled
  - Parking
  - Occupancy

- Site Design Standards

- Drop-off/Pick-up Areas

- Maximum Parking Standards

- Smart Growth strategies to promote higher densities and mixed uses

- Designated Truck Platooning Highways
OTHER ISSUES

- Ethics
- Employment Disruption
- Equity
- Driver Education
- Law Enforcement and Emergency Response

"Self-driving cars will have to decide who should live and who should die. Here's who humans would kill"; Washington Post, Oct 24, 2018, Carolyn Y. Johnson

The Moral Machine Experiment
**FEDERAL AND STATE ROLES**

<table>
<thead>
<tr>
<th>Federal (NHTSA) Role</th>
<th>State Role</th>
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</thead>
<tbody>
<tr>
<td>• Set Federal Motor Vehicle Safety Standards (FMVSS)</td>
<td>• Operator licensing</td>
</tr>
<tr>
<td>• Ensuring compliance with FMVSS</td>
<td>• Operator education &amp; training</td>
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<tr>
<td>• Investigating &amp; managing recalls</td>
<td>• Vehicle registration</td>
</tr>
<tr>
<td>• Communicating &amp; educating the public on motor vehicle safety issues</td>
<td>• Regulate motor vehicle insurance and liability</td>
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<tr>
<td>• Issuing guidance for vehicle and equipment manufacturers to follow</td>
<td>• Vehicle safety inspection</td>
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<tr>
<td></td>
<td>• Establish &amp; enforce traffic laws*</td>
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<tr>
<td></td>
<td>• Build and operate infrastructure*</td>
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</tbody>
</table>

* Municipalities also establish and enforce traffic laws, build and operate infrastructure
In the Fast Lane With Self-Driving Cars
State Action on Autonomous Vehicles

States with Enacted Autonomous Vehicle Legislation

LEGEND
- Enacted
- Executive Order

SOURCE: National Conference of State Legislatures
VT STAKEHOLDER FEEDBACK

- Managing safety through the transition
- Most agree VT should require a permit for testing AVs on public roads
- AVs will be important to VT’s economy
- VT should actively prepare for AVs
ALLOW AND REGULATE TESTING OF AVs IN VT

Why?
- Facilitate deployment in VT
- Build public confidence
- Protect the traveling public

What?
- Allow for waivers to existing statutory barriers
- Define role of municipalities
- Insurance requirements
- Law enforcement role
- Public notification
EXPLICITLY ALLOW AND REGULATE DEPLOYMENT OF AVs IN VT

· Why?
  · Ensure compliance with VT rules of the road
  · Ensure compliance with licensing and registration
  · Assign legal obligation

· What?
  · Satisfaction of FMVSS
  · Remove statutory obstacles and ambiguities
    · Definition of operator
    · Definition of standard equipment
    · Minimum liability insurance amounts
    · Allow zero occupancy vehicles
    · Clarify prohibition of handheld devices and texting
    · Open container law
    · And more...
SUMMARY

- Expect a mix of conventional and automated vehicles
- Timing and impacts are uncertain
- Begin planning, but remain flexible
- Planners have familiar tools to maximize benefits for their communities
- Legislation to manage short-term risks
Manchester has always supported RECREATION
The Manchester Recreation trail
from Manchester Middle School to Riley Rink
Junior Mountain Bike Trail is part of it
Existing Manchester Recreation Trail
In 2000 the Bennington County Regional Commission did a feasibility study to determine if the old Manchester, Dorset and Granville railroad bed would make a good recreational trail.
September 5, 2000 the project was introduced to the community to solicit public input. Only 35 people attended the meeting, mostly the abutters, who had received a letter informing them of the meeting.

**Conclusion of the Study**

“It is likely in the interest of the town not to proceed with the project that does not have strong support of the whole community”

Unfortunately the meeting took place on a holiday weekend and many people were not aware of it.
There continued to be interest in the Trail. An asset like this could not be ignored. With some assurances from the Selectboard and interested residents, a group got together to pursue the Recreation Trail.
Manchester Rail Trail

Formerly
The Manchester, Dorset and Granville Railroad line established in
1903
In 2009 Old Railroad Bed LLC was formed to purchase the rail bed.
This is the original railroad bed (all that’s left) from the Manchester, Dorset and Granville rail line that carried marble from the Norcross/West Quarry in Dorset to finishing plants in Manchester. It never made it to Granville.

It is 5,300 feet long
Artifacts of the railroad bed
There was opposition but we prevailed
Overview of project

When all is done the trail should be almost 5 miles
Manchester VT Town Meeting 2016

Article 10 passed by a 71% majority
Article 10 passed, giving the Selectboard and Town Manager authority to pursue the acquisition of the Old Railroad Bed, LLC for a town owned multi-use trail.

Non Binding
Clearing the trail
Preparing to be viewed
We had Jon Kaplan Vtrans Bike-Ped view the project
Josh Carvajal, P.E.CFM
Rivers Program Agency of Natural Resources
Tim Knapp, P.E.
Engineer with the Dufresne Group
The Media and Historical Society
Shawn Harrington contributed these pictures courtesy Manchester Historical Society.
Picnic Table
Donated by Joe Miles, rk Miles Lumber
Promotions by
20/20 group/BikeManchesterVt (.com)
Group Walks
Green Mountain Club
Bennington Chapter
Winter use
The Western New England Greenway will have an alternative route using the Rail Trail.
Working on the last easement
Manchester VT
Town Meeting
March 2018

Article 12 passed which states that the acquisition of Old Railroad Bed, LLC from Riley Rink to North Rd will be by paper ballot.
National Trails Day
Local talent

- **Vote No to This Path**
  - in small:
    - A luxury our town does not need!

- **Heady Says No Rail Trail Please...**
  - Too many neighbors
  - Impacted Plus... Wild Life!
Maintenance
Applying for a Grant

2018 BICYCLE/PEDESTRIAN GRANTS

Providing Safe & Convenient Alternative Transportation Options

The Vermont Agency of Transportation is excited to announce up to $3 million to fund either the scoping or design/construction of bicycle and pedestrian facilities. Project elements can include, but are not limited to: bicycle lanes, sidewalks, crossing improvements, bicycle/pedestrian signal upgrades, and shared use paths. For more details, see contact information.

VTrans

50% local match for small projects
20% local match for scoping studies
20% local match for large Federal aid projects

ELECTRONIC SUBMISSION ENcourAGED

APPLICATIONS AVAILABLE APRIL 2018
DUE END OF JUNE 2018

Bicycle & Pedestrian Program
Janet Kaplan
802-828-0103
Jan.Kaplan@vermont.gov

For More Information:
http://vtrans.com/grants
Pauline Moore,
Economic Development Coordinator Manchester VT
Grant Writer for the Scoping Study
Finished product
As it should be...
Depot Street Conditions

• Wide travel lanes – highway standards.
• Minimal or no shoulders, no bike lanes, no shared lane markings.
• Sidewalks not well separated from the road, not well illuminated by street lights, and not well shaded with street trees.
• Only 4 crosswalks along the 3000 foot length (0.55 mile) project corridor.
• Some areas of sidewalk not ADA compliant.
• Excessive stormwater accumulations during rain events.
Manchester, Vermont, ca. 1872
(Special Collections, University of Vermont, Bailey-Howe Library, Burlington, Vermont)
B-3: Bicycle Lanes with Variable 8-foot Green Space and Turn Lanes
Variable Green Space with Turning Lanes

B-3: Bicycle Lanes with Variable 8-foot Green Space and Turn Lanes
This presentation is dedicated to my friend, Leslie Pray, killed on her bicycle on November 3, in Claremont California.