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TO: Rose Revezi, Council Member, Town of Potsdam, NY
FROM: Erik C. Backus, Director, Construction Engineering Management Program
SUBJECT: Potsdam Comprehensive Plan Complete Streets
DATE: Friday, September 28th 2018

Introduction

The Town of Potsdam recognizes that when it's roads were originally designed and constructed, the needs of motorists received primacy, leaving pedestrians, cyclists, and other non-motorized users with a transportation network that poorly accommodates them, if not jeopardizing their safety. Between the two village centers in Potsdam and the distinctly rural Town of Potsdam, a unique cadre of users are generated such as slow moving agricultural equipment, Amish buggies, cyclists, pedestrians, and athletes, among others. It is the Town of Potsdam's goal to ensure that it's roads serve these users in a fashion that promotes cohesion, directness, equity, accessibility, safety, and comfort.

Specific Goals

The Town's primary goals for this project are to decrease energy use, promote community health, increase pedestrian, cyclist and motorist safety, increase multi-modality of existing network and to increase equity in existing network.

Problem 1: Vehicle Speed

Solution: Implementing traffic calming techniques

Desired outcome: Increasing safety for pedestrians and reducing severity of vehicle / pedestrian collisions

Achieving the goal of: Increasing pedestrian, cyclist, and motorist safety

The Town of Potsdam supports initiatives to calm traffic speeds on its roads to increase safety of pedestrians and cyclists. Studies have concluded that while only 19 percent of the population lives in rural areas, 58 percent of all fatal crashes and 60 percent of traffic fatalities were recorded in rural regions.^{1 2} Understanding that vehicle speed is a critical factor in the survivability of collisions with pedestrians (**Figure 1**), and that lowering

¹ *Pedestrian Safety on Rural Highways*. FHWA, Washington, DC, USA, 2004.

² *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016.

speeds is favorable to elderly drivers,³ the Town of Potsdam supports the use of traffic calming techniques on roads that are identified as pedestrian corridors. These techniques include:

1. Striping roads and painting shoulders to create narrow travel lanes (**Figure 2**)
2. Narrowing existing travel lanes ⁴ (**Figure 2**)
 - Local roads can be reduced to a minimum of 9 feet
 - Rural collector roads can be reduced to a minimum of 10 feet
 - Rural arterial roads can be reduced to minimum of 11 feet
3. Installing speed feedback signs (**Figure 3**)

Figure 1

Figure 5-1. Impact speed and a pedestrian's risk of severe injury or death (Tefft 2011).

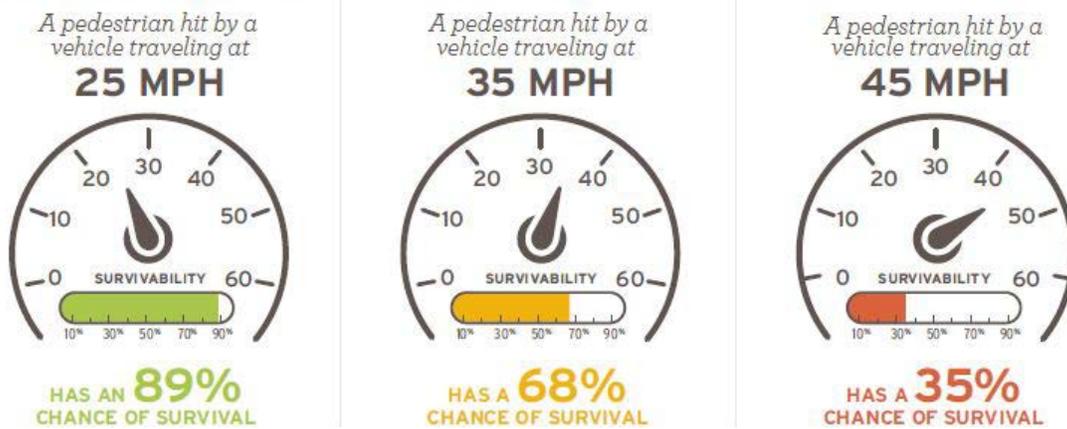


Figure 2



<http://www.pedbikeinfo.org/topics/completestreets.cfm>

Figure 3

³ *Planning Complete Streets for an Aging America*. AARP, Washington, DC, USA, 2009. Page 41.

⁴ *A Policy on Geometric Design of Highways and Streets*. AASHTO, Washington, DC, USA, 2011.



<https://www.trafficsafetywarehouse.com/Radar-Speed-Signs/products/69/>

Problem 2: Lack of pedestrian infrastructure

Solution: Providing infrastructure that separates pedestrians and cyclists from motorized traffic

Desired Outcome: Creating safe pedestrian corridors that encourage non-motorized transportation

Achieving the goals of: Increasing pedestrian, cyclist, and motorist safety

Increasing multi-modality of existing network

Decreasing energy use

Promoting Community Health

The Town of Potsdam supports initiatives to enhance its pedestrian corridors on existing roadways, in addition to developing new pedestrian infrastructure. Retrofitting existing roadways to better accommodate non-motorized traffic is a function of vehicle speed; as motor vehicle speed increases, more physical separation is required.⁵ There are many strategies the Town wishes to employ to bolster its non-motorized network:

1. Creating “advisory shoulders” on rural roadways with residential development and slow vehicular speeds (**Figure 4**)

⁵ *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016.

2. Constructing paved shoulders where they do not exist (**Figure 5**)
3. Constructing bike lanes (**Figure 6**)
4. Constructing shared use paths and side paths where vehicular speeds are too great for shared accommodation (**Figure 7**)

Figure 4

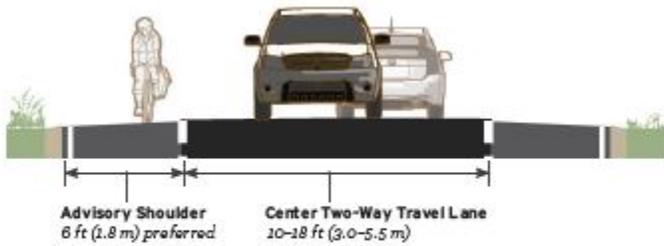


Figure 2-9. Advisory shoulders clarify positioning and yield priority on roads too narrow to provide exclusive travel space. When pedestrians or bicyclists are present, motorists may need to yield to users present in the advisory shoulder before passing.



Source: *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016. Page 2-19.

Figure 5

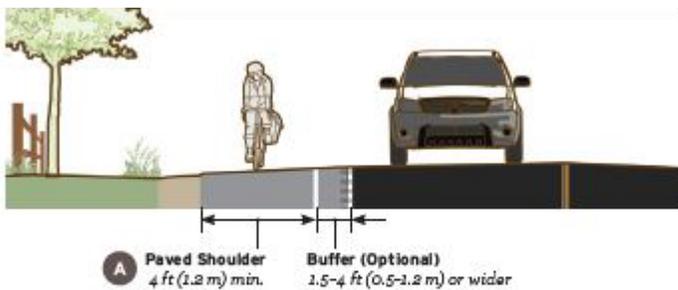


Figure 3-1. When adequate width is provided, shoulders can serve bicycle trips along roads too busy for comfortable shared roadway travel.



Source: *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016. Page 3-5.

Figure 6

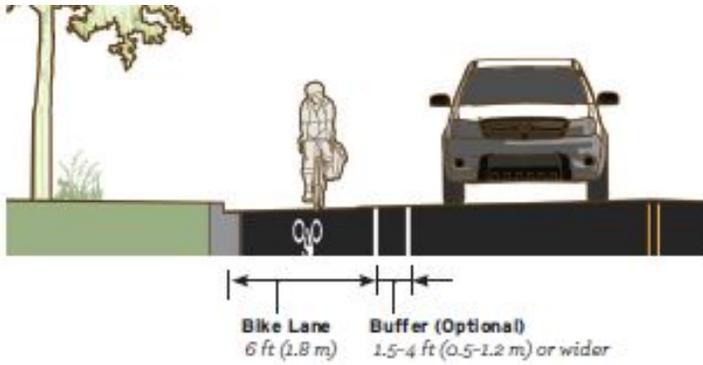
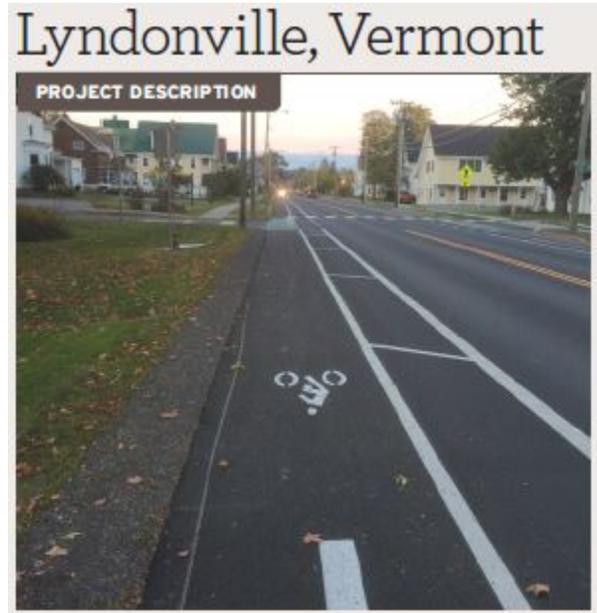


Figure 3-7. Bike lanes establish an area for exclusive bicycle use outside the path of motor vehicles.



Source: *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016. Page 3-13.

Figure 7

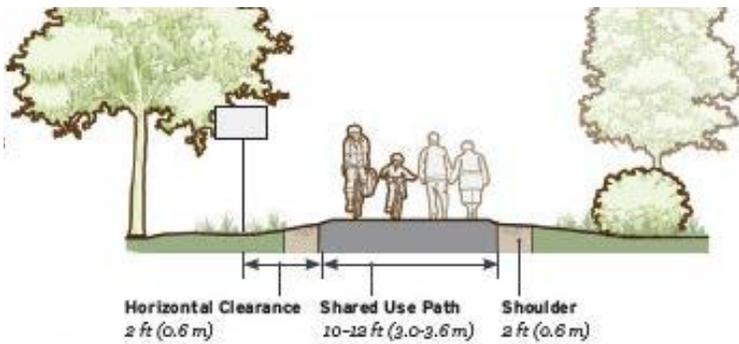


Figure 4-1. Shared Use Path Dimensions



Source: *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016. Page 4-5.

Problem 3: Lack of safe / alternative transportation options to shopping centers

Solution: Provide appropriate infrastructure for non-motorized access

Desired Outcome: Creating a safe and accessible means of accessing shopping centers outside of the Village

- Achieving the goals of:*
- Increasing equity in the existing network*
 - Decreasing energy use*
 - Promoting community health*
 - Increasing pedestrian, cyclist, and motorist safety*
 - Increasing multi-modality of existing network*

The Town of Potsdam is committed to increasing the equity of its current transportation network and pursuing projects to advance the transportation needs of underserved communities. It is a goal of the Town to assess the current network within the town to determine areas that adversely impinge on the mobility of those with the fewest transportation options. For example, the shopping plaza outside of the village to the west (See Figure 8) is located approximately two miles from the village via Highway 11. As a result, between the distance and lack of safe pedestrian infrastructure, most notably on the bridge crossing the railroad (See Figure 9) and at the stoplight for the shopping plaza (See Figure 10), travel along this corridor necessitates the use of a car, a luxury that many cannot simply afford or access. Thus, it is in the best interest of the Town of Potsdam to ameliorate the inequities found in this corridor, in addition to others.

Figure 8

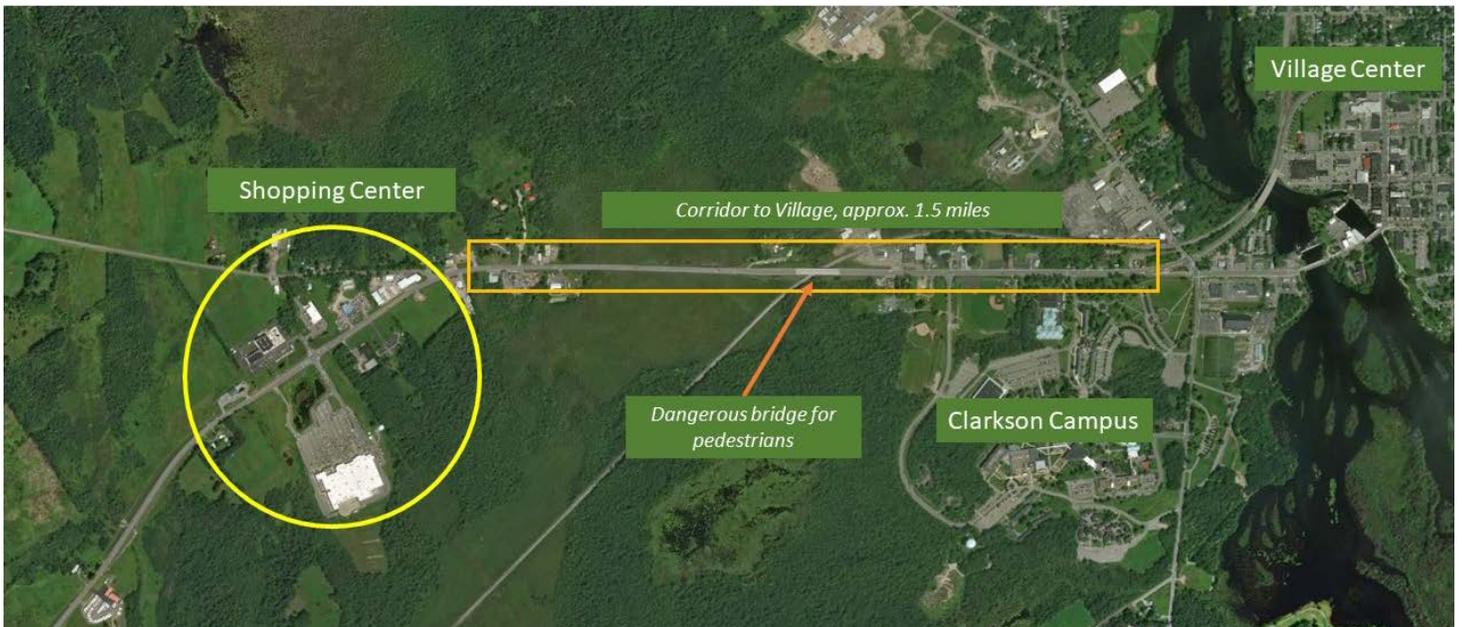


Figure 9



Figure 10



Problem 4: Lack of pedestrian visibility to motorists

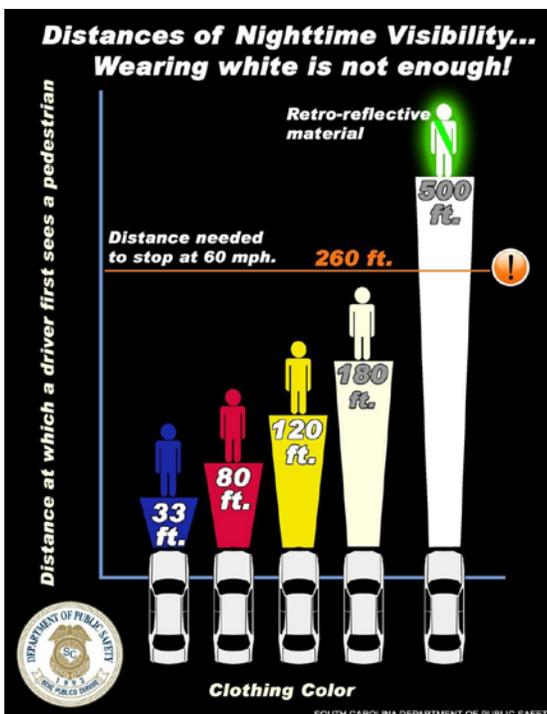
Solution: Pedestrian visibility awareness campaigns

Desired Outcome: Decreasing injuries sustained by motorists by increasing visibility

Achieving the goals of: Increasing pedestrian, cyclist, and motorist safety

The Town of Potsdam recognizes that most rural pedestrian fatalities occur on dark, unlighted roadways⁶, and as such, is committed to developing and supporting publicity campaigns to promote pedestrian visibility. Pedestrians and cyclists will be encouraged to wear florescent clothing and use flashing LEDs to increase visibility to motorists (**Figure 11**). The Town, working with the Village and Potsdam School District, will also explore avenues to fund programs that provide school-aged children who walk or bike to school with visibility-enhancing devices.

Figure 11



<https://www.cyclescheme.co.uk/community/featured/how-to-commute-in-the-dark>

⁶ Pedestrian Safety on Rural Highways. FHWA, Washington, DC, USA, 2004. Page 9.

Problem 5: Lack of safe bicycle corridors to Canton and Norwood

Solution: Develop bike lanes and multi-use paths in both corridors

Desired Outcome: To increase active transportation between nearby communities

- Achieving the goals of:*
- Decreasing energy use*
 - Promoting community health*
 - Increasing pedestrian, cyclist, and motorist safety*
 - Increasing multi-modality of existing network*

The Town of Potsdam recognizes that a significant amount of traffic travels between the Village of Potsdam and the Villages of Canton and Norwood, and that the existing corridors between these two communities poorly accommodate non-motorized traffic. Although both U.S. Route 11 and State Highway 56 currently have shoulders, these shoulders are generally unsafe for cyclists and other forms of pedestrian traffic, such as buggy traffic, as drivers typically use the shoulder as a passing lane around left turning vehicles. Additionally, given the rate of vehicular speed along these two corridors, it would be unwise to encourage pedestrian use of the shoulder without providing for additional separation from traffic.^{7 8} The Town of Potsdam is committed to providing safe non-motorized corridors between these two communities, which will enhance connectivity, public health, and environmental health.

Problem 6: Lack of non-motorized provisions on town roads that connect residences with the Village

Solution: Retrofit designated rural feeder roads to safely accommodate non-motorized traffic

Desired outcome: To provide for and encourage non-motorized conveyance from residences outside of the village to the village core

- Achieving the goals of:*
- Decreasing energy use*
 - Promoting community health*
 - Increasing pedestrian, cyclist, and motorist safety*
 - Increasing multi-modality of existing network*

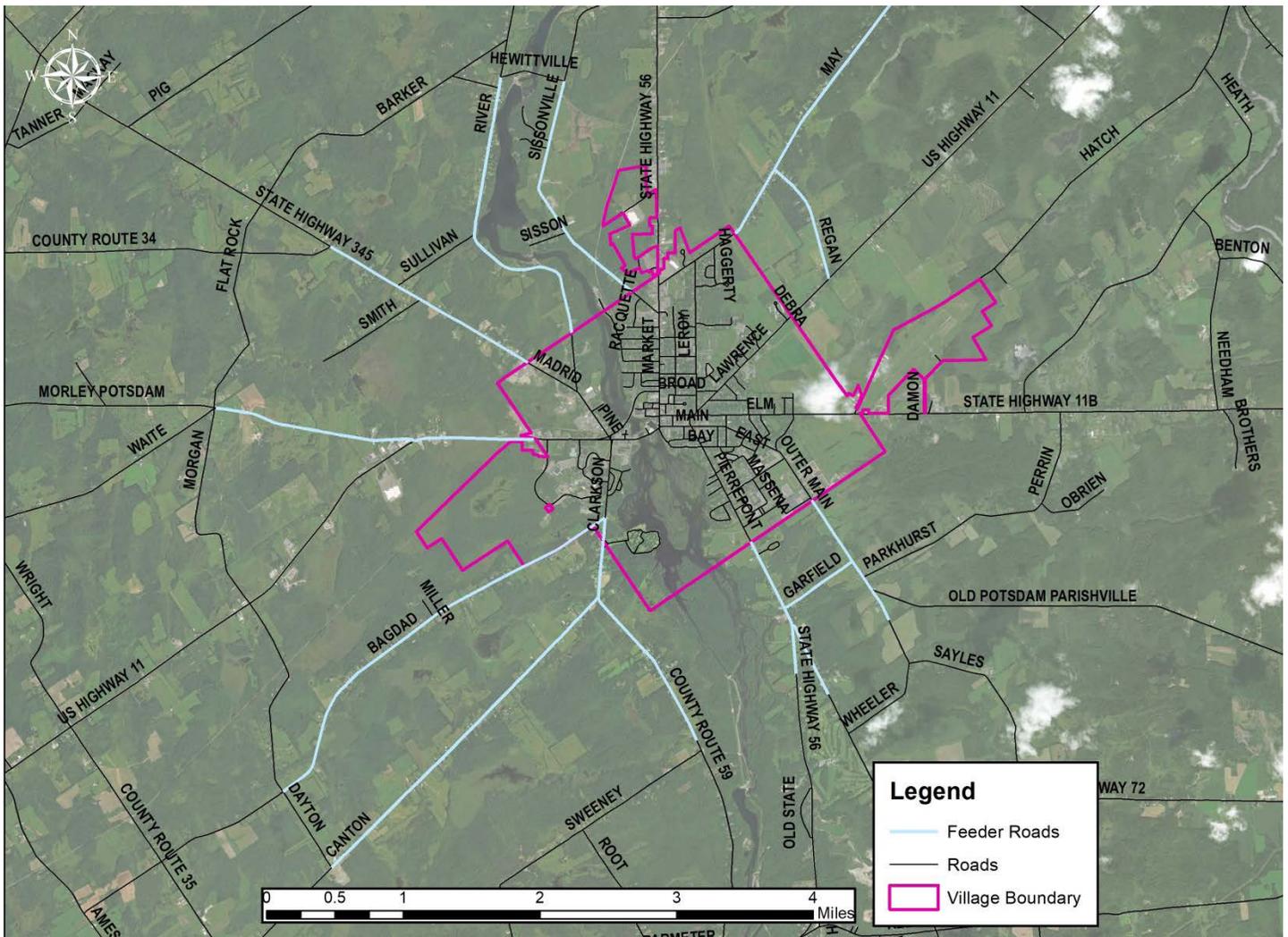
The Town of Potsdam recognizes that, although a greater proportion of pedestrian traffic is contained to village roads, there are many town roads that feed pedestrian traffic into the village (**See Figure 12**). These roads provide access to areas of mid to low density residential development and share similar attributes: narrow travel lanes, often without shoulders; adverse road geometrics creating poor sight distances; and low traffic volumes traveling at moderate to high speeds. These characteristics are all known to create hazardous conditions for all forms of pedestrian traffic (Rural Highways). In an effort to improve the safety of these town feeder roads for bicycling and pedestrian use, thereby encouraging the use of nonmotorized transportation for conveyance to

⁷ *Small Town and Rural Multimodal Networks*. FHWA, Washington, DC, USA, 2016. Page 3-4.

⁸ *Pedestrian Safety on Rural Highways*. FHWA, Washington, DC, USA, 2004. Page 11.

work, school, and general travel, the Town of Potsdam is committed to developing pedestrian infrastructure such as advisory lanes, paved shoulders, bike lanes, and multi-use paths (See Figures 4-7).

Figure 12



This figure demonstrates the roads, highlighted in blue, that funnel pedestrian traffic into the village, outlined in purple.

Target area: May / Regan Roads, River Rd, SH 345, Bagdad, South Canton, Morley Potsdam and Route 11, CR 59, SH 56, Outer Main

Problem 7: Lack of public transportation service between shopping centers, universities, and underserved communities

Solution: Develop a shuttle service

Desired Outcome: To increase equity in the existing network, and reduce reliance on personal vehicles

Achieving the goals of: Increasing equity in the existing network

Decreasing energy use

Increasing multi-modality of existing network

The Town of Potsdam recognizes that there is an inadequate amount of public transportation services linking Potsdam's shopping centers, universities, and residential communities, especially underserved communities where access to reliable transportation is a chronic issue. The Town of Potsdam is committed to working with the Village and local academic institutions to investigate the feasibility of implementing a shuttle service, similar to that of SUNY Canton's.

Problem 8: Lack of recreation and exercise promotion

Solution: Create a website that promotes local bicycle routes, public land, and canoe routes

Desired outcome: To promote physical activity and health in the Potsdam community and showcase local recreational resources

Achieving the goals of: Decreasing energy use

Promoting community health

In its commitment to improving community health, the Town of Potsdam understands that there is a distinct need for enhancing its recreational resources. Such resources, such as safe playgrounds, parks, bike paths, trails, and other recreational facilities, are often difficult to achieve in dispersed rural areas,⁹ and the Town is resolved in providing more of these amenities to promote active living in the following ways:

1. Establishing a bicycle route website – The Town of Potsdam, working with the Village and local recreation clubs, will create a website that collects data from local cyclists about optimal routes in the region. This site will include both on-road and off-road opportunities.
2. Promoting canoe routes – The Raquette River is revered for its paddling opportunities but is underutilized due to a lack of promotion. The Town is committed to creating resources that map the extent of the Raquette in Potsdam, detailing portages, launches, scenic viewsheds and other points of interest.
3. Promoting local public recreation– The Town of Potsdam, working with the Village, will work with Nature Up North to catalogue every area available to public use, including parks, state land, university trail systems, easements, trails, and other developed or undeveloped facilities.

Problem 9: Lack of current data collection apparatus on pedestrian safety / public feedback

Solution: Create a program to collect data and community input

Desired outcome: Trends in the data and community input may reveal areas that need the most improvement for traffic of all forms to move safely and efficiently

The Town of Potsdam understands that to better serve the needs of pedestrians, other forms of non-motorized conveyance, and motorized conveyance, data collection programs must be established to understand current problems and concerns in Potsdam, thereby informing planning agencies what projects and improvements are

⁹ *Promoting Active Living in Rural Communities*. Active Living Research, September 2015. Page 2.

needed most.¹⁰ This data collection program will be two tiered, collecting metrics from governmental sources and other agencies and from local users.

The following are examples of data that will be collected from governmental sources and other agencies: crash statistics, spot locations with crash concentrations, traffic loads, and road metrics

The following are examples of data that will be collected from the community: spot locations that pose threats to non-motorized users, spot locations that pose threats to motorized users, areas of greatest conflict between non-motorized and motorized users, specific barriers that prevent non-motorized transportation and recreation (i.e. lack of access, lack of resources, threat to safety), and recommendations for improvements

Problem 9: Motor vehicles colliding with Amish buggies

Solution: Increase driver awareness of Amish buggies and increase Amish awareness of on-road visibility

The Town of Potsdam understands that Amish horse-drawn buggies are a form of non-motorized conveyance utilizing local roads, and compared to other users, poses a unique set of challenges to planners and regulators. Horse drawn buggies are similar to agricultural vehicles in their speed and size, but remarkably different when cultural context is considered. In following with their customs, Amish buggies are painted black and aside from reflective tape and kerosene lanterns, do not feature any active visibility-enhancement mechanisms. And unlike agricultural vehicles, Amish buggies travel both on rural and urban roads, at all times of the day and night.

The Town of Potsdam recognizes that the Amish population is growing in the North Country, and buggy traffic will become a more normalized mode on local roads. In an effort to reduce motor vehicle conflict with buggy traffic, the Town favors a two-pronged approach as follows:

Increasing driver awareness of buggy traffic

The Town of Potsdam, working with the County, State, and other local municipalities, will create and disseminate material for motorists on how to best navigate around traveling buggies, especially at night. The Town of Potsdam will lobby that these guidelines should be implemented into drivers' education classes, and into the state licensure education materials and exams:

- Vehicles should slow down when approaching a buggy, and pass only if there is ample room and visibility
- Vehicles should never rev their engines or make other sudden loud noises while passing
- Vehicles should slow down even more in rainy conditions to prevent water spray from striking the horse
- Vehicles should dim lights at night when approaching a buggy head on to prevent blinding of the horse and buggy operator
- Vehicles should flash headlights when approaching buggy at night to let buggy driver know that they are seen

Increasing the visibility of buggies

The Town of Potsdam recognizes that the topic of buggy visibility is inherently sensitive and to maintain good relationships with Amish community leaders, cannot easily be addressed through traditional legal means. The Town of Potsdam supports the framework and outcome of the 2015 Heuvelton Agreement, in which a consortium of political leaders, law enforcement, and Amish leaders agreed to increase buggy reflectivity from

¹⁰ *Pedestrian Safety on Rural Highways*. FHWA, Washington, DC, USA, 2004.

72 square inches of reflective tape to 144 inches. The Town supports this consensus-based approach to improving buggy visibility, and strongly encourages that dialogue and discussion are maintained to ensure compliance with current agreements, and explore additional enhancements generated from other Amish communities, as shown in **Figure 13**.

Figure 13



<http://amishamerica.com/swartzentruber-amish-testing-unusual-buggy-visibility-solution/>

In this design, sections of PVC covered in reflective tape are attached to the wheels of the buggy to create a slow strobe effect.

Conclusion

The Town of Potsdam is committed to their goals of decrease energy use, promote community health, increase pedestrian, cyclist and motorist safety, increase multi-modality of existing network and to increase equity in existing network. These will ensure that the Town's roads serve these users in a fashion that promotes cohesion, directness, equity, accessibility, safety, and comfort.