

G. RECOMMENDATIONS: TRANSPORTATION & LAND USE

“Suburbanization and rising wealth following World War II dramatically transformed American living and driving patterns. The country saw a ubiquitous increase not only in daily travel distances, but also in the frequency with which households used their vehicles to get to work, to shop, and to carry out a variety of personal business trips. Between 1970 and 2005, the average annual vehicle miles traveled (VMT) per household increased almost 50 percent, from 16,400 to 24,300. At the same time, vehicle ownership per household increased even as average household size fell.”¹

The Transportation Sector accounts for approximately 43% of total Falmouth community emissions, or ~70,000 tons of CO₂e. Not only is Transportation a big contributor to greenhouse gasses, it also has a large economic impact on household budgets. Transportation is the second largest expense for American households, costing more than food, clothing, and health care. Even before the recent run-up in gasoline prices, Americans spent an average of 18 cents of every household dollar on transportation, with the poorest fifth of families spending more than double that figure.² Reducing dependence on vehicles will save families money, as well as reducing emissions and increasing energy security.

1. CHARGE TO THE LPAC | COMPREHENSIVE PLAN COMMITTEE

Transportation is integrally related to land use and land use planning. The town is in the process of updating its comprehensive plan. The Council has the opportunity to “charge” the Comprehensive Plan Committee.

A Comprehensive Plan (“Comp Plan”) is the basic foundation for local planning; it lays out a community’s vision and priorities. The adopted plan is used by citizens, elected officials, town committees, business investors and others to make daily decisions about the issues and opportunities that shape the town’s physical, social and economic development. It is used to develop the legal foundation for land use regulations and other activities. It is not a zoning ordinance, but ordinances must be in compliance with the Comp Plan. A Comp Plan is generally updated every five years. Falmouth’s last Comp Plan update was in 2000.

¹ Metropolitan Policy Program at Brookings, “Shrinking the Carbon Footprint of Metropolitan America”, May 2008.

² “Transportation Costs and the American Dream: Why a Lack of Transportation Choices Strains the Family Budget and Hinders Home Ownership: A Special Report from the Surface Transportation Policy Project July 2003” www.transact.org

Make the Connection between Land Use and Climate Change and Energy

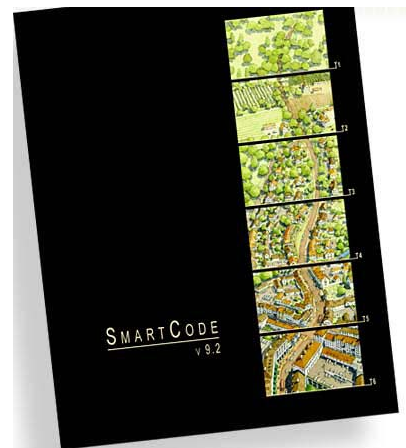
This time, the Comp Plan update should be informed by an awareness of the connection between land use and transportation, and how land use and transportation needs impact energy efficiency and emissions. Some examples of making the connections:

- Large minimum lot sizes spread housing out, and increase distance travelled. It can also reduce the efficacy of public transportation.
- Long dead end roads increase miles travelled from Point A to Point B.
- Increasing suburbanization and subdivisions may compromise land suitable for agriculture.

Smart Code

As excerpted from the website smartcodecentral.org:

*“The Smart Code is an alternative to traditional zoning and regulates land uses and density based on a concept known as a transect. The SmartCode is an integrated land development ordinance. It folds zoning, subdivision regulations, urban design, public works standards and basic architectural controls into one compact document. It is also a unified ordinance, spanning scales from the region to the community to the building. The SmartCode is open source, available for use without charges or licensing fees. The SmartCode enables the implementation of a community’s vision by coding the specific outcomes desired in particular places. It allows for distinctly different approaches in different areas within the community, unlike a one-size-fits-all conventional code....**The SmartCode supports these outcomes: walkable and mixed-use neighborhoods, transportation options, conservation of open lands, local character, housing diversity, and vibrant downtown. The SmartCode discourages these outcomes: sprawl development, automobile dependency, loss of open lands, monotonous subdivision...**”*



We strongly urge that the Smart Code be carefully considered during this Comprehensive Plan process.

Deal with Density

For a number of years, the town has wrestled with the question of density. Where is it appropriate? What does density mean? Should we use transfer of development rights? Vancouver has made the connection between density and environmental responsibility. Vancouver has adopted an “Eco Density Charter” in its town charter (<http://www.vancouver.ca/ecodensity>). According to the Vancouver web site:

EcoDensity is an acknowledgement that high quality and strategically located density can make Vancouver more sustainable, livable and affordable. It has been illustrated as a tricycle, where the driving wheel is environmental sustainability, while the side wheels that keep it up and allow movement, are livability and affordability. The right kind of quality density in the right places can help lower our ecological footprint.

There are a number of Q and A's on the Vancouver web site Example:

Q: How does density help the environment?

A: Two key contributors to climate change are transportation and building energy use. EcoDensity can help reduce both. Well-located density puts people close to shops, jobs, amenities and services, meaning more trips are made by walking, biking and transit, instead of by car. This also creates a larger customer base for local shopping areas, supporting a wider array of shops and services, which in turn, means that even more needs can be fulfilled close to home. Similarly, putting people close to transit means more trips are made using transit, and makes better transit service more feasible.

Density also reduces building energy use. Housing with shared walls uses less energy. Density also makes renewable energy sources more feasible and affordable. Systems like neighborhood energy utilities generate energy with little or no greenhouse gasses. And, density combined with green building features, will go even further to reduce greenhouse gases, as well as to conserve water, reduce waste, and provide other environmental benefits.

Containing sprawl also minimizes the regional impacts on vital agricultural and conservation lands.

Adopt Smart Growth Practices

Smart Growth refers to development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle to more destinations. Smart growth policies typically reduce per capita vehicle travel 10-30%³. Although these land use changes take many years to be achieved, they provide diverse and durable benefits.

There are existing Smart Growth checklists, which could be required to be filled out during the Planning Board permitting process, and points are assigned. Categories include:

1. Near existing development and infrastructure
2. Range of housing options
3. Protection of open space, farmland and critical environmental areas
4. Mix of uses

³ Victoria Transport Policy Institute, "Win-Win Emission Reduction Strategies". 2009. Todd Litman.

5. Choices for getting around
6. Walkable, designed for personal interaction
7. Respectful of community character, design and historic features

For example, such a checklist could be used to guide the discussion around the proposed expansion of the Falmouth Shopping Center.⁴

Plan for Changing Climate: “Climate Adaptation”

Published federal government reports are now showing where changes in traditional climate patterns are likely to affect specific geographic areas including coastal areas of Maine. Land use planning should look forward to what these changes are likely to be and consider these changes when looking at public and private investments (wastewater treatment plants, bridges, parks, etc). This is now being referred to as “adaptation”. The Casco Bay Estuary Partnership has recently completed a study that examines climate change impacts within the Casco Bay watershed and may inform the planning discussion within the town. Taking climate adaptation into account in the Comprehensive Plan update will increase the resiliency of our community and will ultimately allow the town to save money, make better policy decisions, and create a sustainable community. The Comprehensive Plan Committee should take forecasted impacts of climate change and changing weather patterns into account during its discussions and plan update.



Recommendation: The Council should include in its charge to the Comprehensive Plan Committee the following:

The Comp Plan should address **connection between land use & transportation and energy and climate change.**

Adopt the **Smart Code** in place of the traditional zoning, and use the transect methodology of the Smart Code in planning for future land development, densities, and uses in town.

Recommend to the Committee that it investigate the **“eco density”** charter of Vancouver and introduce the concept to the community.

Embed **“smart growth”** policies and recommendations in the Comprehensive Plan.

Take **projected climate change impacts** into account in updating the Comp Plan.

⁴ Victoria Transport Policy Institute, “Win-Win Emission Reduction Strategies”, July 10, 2008. Todd Litman, author.

1. DISTANCE TRAVELLED

“Between 1970 and 2005, the average annual vehicle miles traveled (VMT) per household increased almost 50 percent, from 16,400 to 24,300. At the same time, vehicle ownership per household increased even as average household size fell.”

- Brookings Institutes, Metropolitan Policy Program, May 2008 “Shrinking the Carbon Footprint of Metropolitan America”

“The transportation sector is the fastest growing carbon dioxide source in the United States with emission rates rising 2% per year. Projections show that more efficient fuels and ‘clean’ vehicles won’t be enough to offset the projected 59 percent increase in driving between now and 2030. Even with expected improvements in vehicle and fuel economy, carbon emissions from transportation would be 41 percent above today’s levels by 2030 if driving is not curbed .”

– National Complete Streets Coalition

As a suburban, car-centric community, with 41% of its emissions and energy use in the transportation sector, we need to address how much we drive. The first way to attack this is to make driving less necessary.

In recent years, Falmouth has tracked the national interest in walking and biking for recreation and we appear poised to transition to again thinking of walking and biking for transportation. Falmouth is well-suited for biking and walking as its terrain is gentle, commuting distances are limited, its population is not large and vehicular traffic is not heavy. In spite of significant winters, walking and biking remain viable mobility options for eight months a year. The town continues to make progress on the Bike/Ped master plan which was created in the first part of this decade. The town has installed sidewalks along Brook and Leighton roads, Route 1, Depot Road and most recently Johnson Road.

Mix of Uses

Residents on the Foreside enjoy being able to walk to Town Landing Market, to places of worship, to Skillins, preschool, and some can walk to work in the few small commercial buildings on Route 88. This same ability to walk to destinations should be enjoyed by more parts of town. There has been discussion of allowing a greater mix of uses in Pleasant Hill. Our conventional zoning has resulted in separating residential from other uses, necessitating driving to cover most distances.

Smart Growth as a Transportation Strategy

Smart growth policies would help us to understand the advantages of mixing uses and the resulting decrease in necessary vehicle transit. Smart Growth refers to development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle to more destinations. Smart growth policies typically

reduce per capita vehicle travel 10-30%. Although these land use changes take many years to be achieved, they provide diverse and durable benefits.

Smart growth policy also prioritizes locally oriented retail, as opposed to regional retailing. Large scale retail development encourages reliance on driving and discourages walking and biking; our present culture of development emphasizes our reliance on private passenger cars.

Additionally, large scale retail development at one location will make local retail development in other locations (yes, even other towns) less likely. Regional shopping, big box development should be neither encouraged nor allowed except under the most strenuous conditions. For example: sufficient population within walking distance to support the retail development, or sufficient customers arriving via public transportation; maximum parking; evidence the development or its tenants will not endanger the economic well being of local shopping within its projected catchment area.

Connectivity

Beginning in the 1960's roadway design practices favored a poorly connected *hierarchical* network, with numerous cul-de-sacs that connect to a few major arterials. Falmouth has grown significantly since then and our road system reflects the predominant thinking of this time. Connectivity includes street connectivity, and also walking and biking connections.

Victoria Transport Policy Institute describes some of the benefits of connectivity:

“By improving [accessibility](#), increasing route options, improving walkability and reducing vehicle travel, improved roadway connectivity can provide a variety of benefits. Improved connectivity tends to increase transportation system [resilience](#) by increasing route options, reducing problems when a particular link is closed. It **improves emergency response** by allowing emergency vehicles more direct access, and reduces the risk that an area will become inaccessible if a particular part of the roadway is blocked by a traffic accident or fallen tree. A more connected street system **allows a fire station to serve about three times as much area as in an area with unconnected streets**, increases the efficiency and safety of services such as garbage collection and street sweeping (crash rates and insurance costs for such vehicles tend to increase if they are frequently required to back up)...These can result in substantial government cost savings or service quality improvements.”

Other benefits of connected streets include more efficient public transportation routing, and increased walking and bicycling. According to the Victoria Transport Policy Institute, people drive 5-15% fewer miles in communities with good street connectivity.

For example, providing a connection between high school and Community Park would allow students to safely walk/bike/run/ski from the school campus to community park for practices and

athletic events and conversely would allow students in nearby neighborhoods to safely walk/bike/run/ski to school.

Recommendation: The Council should provide leadership to engender a culture within town of minimizing travel distances, and should adopt appropriate changes to ordinances. Examples of actions include:

Permit small scale, locally oriented commercial and civic uses in residential districts (corner stores, coffee shops, churches, cemeteries, garden centers). Permit and encourage home-based businesses. Encourage local agriculture.

Make walkability a criteria for locating community buildings (schools, town hall, library). Provide for smaller lot sizes. Require all developments to connect to a trail system that can be used for transportation not just recreation.

Shorten length of dead end roads and require through roads, and particularly pedestrian connections. Delete the provision in the ordinance which allows the Planning Board to make an exception for street connections. Educate residents about the benefits and importance of connected streets.

Change how we plan streets to a "platting system" such as is done in Colorado.

Provide for "pocket parks".

2. RELIANCE ON VEHICLES

"The potential to reduce carbon emissions by shifting trips to lower-carbon modes is undeniable. The 2001 National Household Transportation Survey found 50% of all trips in metropolitan areas are three miles or less and 28% of all metropolitan trips are one mile or less – distances easy to walk, bike, or hop a bus or train. Yet 65% of the shortest trips are now made by automobile, in part because of incomplete streets that make it dangerous or unpleasant for other modes of travel. Complete streets would help convert many of these short automobile trips to multi-modal travel. Simply increasing bicycling from 1% to 1.5% of all trips in the U.S. would save 462 million gallons of gasoline each year. "

– National Complete Streets Coalition.

Looking at shifting just 20 trips per day (avg. within Falmouth trip 4 miles, roundtrip) from single occupant automobiles to bicycles could reduce up to 16,320 pounds of CO₂e a year and save \$1,516. Co-benefits from more biking and walking include less vehicle traffic, healthier citizens, a greater feeling of community with increased social interaction and the projection of a town which is friendly and livable.

There is a national coalition which has formulated a global approach called Complete Streets. A Complete Street is designed to accommodate and operate to enable safe access for all users. Pedestrians, motorists, bicyclists and transit riders of all ages and abilities must be able to move safely along a complete street. Instituting a Complete Streets Policy ensures that the town and the state, when designing roads within the town (example Woodville Road) routinely design and operate the entire right of way to enable safe access for all users. See www.completestreets.org.

In addition, the town should adopt a Complete Streets policy so that when roads in town are proposed by developers or are under review for upgrades or redesign, the designers and consultants will have to address the question of how non-motorized transport can use that right-of-way for transportation.

We need not only the infrastructure for non-vehicle modes of transit, but people need to feel safe when using them. Cars which pass on the right on Route 88, using the bike lane as a passing lane, are not making bikers and walkers feel very safe, nor are they safe. Lawn maintenance companies which use bike lanes as parking areas force bicyclists and walkers out into the travel lane; again this doesn't give non-motorists a feeling of safety. Motorists should be educated on sharing the road, and laws and rules should be enforced.

There is a planned train from Portland to Freeport and on to Brunswick. We should lobby for a train stop in Falmouth, with not only a park and ride but also bike and walking trails leading to the train.

We should stop looking at trails as something just for a "walk in the woods" or as a place to get exercise but as infrastructure for transportation. Trails should allow a user to get to a friend's house, a store, a school, work. We know of at least one person who uses the trails behind Underwood Park to commute to work on Route 1. Envision a trail system which is so embedded in town that every home is no more than a short walk from the town trail system, and what a valuable asset that would be to our community.

Recommendations:

The Town should put in place the infrastructure that provides for transportation for all modes of transit; it should adopt a "Complete Streets" policy.

Town should encourage a train stop in town for the line that is planned for Freeport/Brunswick.

Make roads safe for all forms of transit. Example: Prohibit vehicles from parking or passing in/on shoulders which are designated bike lanes. Clearly sign bike lanes. Give police mandate to ticket and enforce, and give police towing authority for violators. Police should educate the public about sharing the road with other modes (horses, bikes, people).

Falmouth Trails Committee should look at trails as a form of transportation and strive to put together a master trail plan which allows people to get to destinations via trail network.

3. SHARE THE RIDE

One of the easiest ways to increase energy efficiency and reduce emissions is to share the vehicle. This applies to all of us, whether we are commuting, running errands, going to and from school and sports. Sharing the ride requires both private choices and supporting those choices with transportation alternatives and through the design of our built environment.

School Traffic

We have heard a lot about traffic around the schools, and residents wondering why all students don't ride the bus to school. According to Safe Routes to School (www.saferoutestoschool.org) a recent study in Marin County CA found that 21% of morning traffic is from private vehicles on their way to school. Some of this is high school students driving themselves, some are parents taking their children to school. A study in Vancouver corroborates this, finding that 25% of their morning traffic was to and from school.

One way to address this is to model the behavior we want to see. If students and parents see other students and parents sharing the ride, it's more likely to catch on. The School Community should educate and encourage parents to encourage ridership via school bus and to combine school drop-offs to reduce "single child" autos going to school. It could also provide reserved parking spaces for carpools.

Busses and Town Trolley



The recently expanded Metro Route 7 brings the bus within a reasonable distance of much of the Foreside, Tidewater, and the Flats. The Metro route to and from West Falmouth Crossing brings the bus within an easy distance of west Falmouth neighborhoods. It takes time for people to adjust their habits and schedules to fit the bus into their regular routes. Ridership has steadily increased since its inception. We should continue to support Metro.

We used to have an electric trolley in Falmouth that came out from Portland. We should remember our history when thinking about the future. We should look very hard at the economics and usefulness of a town "trolley" that would be either in addition to or in place of Metro, and in place of or in addition to

school bus transportation. If there is a plan for an alternative to the conventional school bus system that has the support of the community, then we should lobby for any necessary change in state law.

Parking lots & Bus Shelters

One way to change the culture of one person per car is to make parking a little less front and center. There are excess parking spaces in Falmouth parking lots most of the time. Our ordinances require a minimum number of parking spaces for commercial establishments. Excess parking is expensive to maintain, creates heat islands and an unnecessarily large impervious area which contributes to polluted storm water run-off. Turn that around; provide for a maximum number, not a minimum number, of parking spaces.

Make it more comfortable to ride the bus (both school bus and other busses). Private benches and bus shelters make it more comfortable in all climates. When designing streets and intersections, plan now for how we can accommodate bus stops and where bus shelters can go.

Recommendations:

School parking areas should give preference for car pools; make parking for students a little less convenient; encourage carpooling and ridesharing. Set up a ride board for going places after school, and look at an on-line ride board.

Continue to support Metro. Investigate a town trolley in addition to or in place of Metro and school bus transportation.

Change land use ordinances to set maximum, not minimum, parking requirements. Plan for bus stops and shelters when designing roads and intersections.

Budget: unclear.

4. WATCH YOUR TAILPIPE

We have discussed minimizing the distances between uses and destination points, transporting via non-motorized vehicles, and sharing vehicles to reduce emissions and energy use by our transportation sector. When we are using our cars and trucks, we should seek to minimize emissions and gasoline consumption.

Minimize Idling

Idling vehicle engines contribute to greenhouse emissions. Idling a vehicle for 5 minutes a day wastes about 13 gallons of gas a year and produces 247 pounds of CO₂e. According to the Brookings Institute,

most gasoline and diesel fueled vehicles use only 15 to 35 percent of the fuel's energy to move the vehicle down the road. The rest is lost to engine inefficiencies and idling. It is known that vehicle emissions also contribute to air pollution generally and aggravate lung ailments such as asthma. In Maine, 9.3% of children currently suffer from asthma, the highest rate in New England according to a 2004 study report.

Idling takes place at traffic intersections, drive-throughs, while waiting for people, and when people are “warming up” their vehicles. Over the last twenty years, the town has seen an increase in “idling infrastructure”: traffic signals have been added at the intersection of Route 1 and Johnson Road and the intersection of Woodville Road and Route 9; drive throughs have been added at both West Falmouth Crossing and on Route 1. We know that the population has increased and traffic has increased, but it is not necessary to see a commensurate increase in idling.

Ways to reduce idling include getting people to voluntarily change their habits (education and outreach, policies); rule making (“No idling ordinance”); designing a physical environment which minimizes idling (banning drive-throughs (as Yarmouth has done) or prohibiting new drive throughs; using roundabouts at intersections in place of stop signs and traffic signals):

a. Idling Ordinance: “Idling Gets You NoWhere”

Towns, cities and states around the country are adopting “no-idling” ordinances or policies for all vehicles. In 2008 Maine passed a no-idling law which pertains solely to commercial vehicles.

Private companies are finding that attention to idling pays benefits both in money and environmentally. Green Mountain Coffee Roasters equipped their trucks with Engine Control Modules, and found that their truck engines were idling 30% of their run time. Over two years, with an annual driver safety training and idling awareness program, and quarterly tracking of engine use, GMCR reduced idling to 10% of run time, resulting in a fuel cost savings of 4% annually, and a reduction in consumption of 5,000 gallons annually.



Adopting ordinances and/or regulations against idling is “low hanging fruit”: it requires very little investment and is beneficial to our air, health and wallets immediately. Both policies and ordinances are more effective when combined with an education/signage program, and in both cases there are exceptions for traffic, public safety, and weather conditions.

Portland (Maine) and Minneapolis, Minnesota have adopted no-idling ordinances. Kennebunk adopted a clean air, no idling policy for non-commercial, private passenger vehicles on public ways and public parking areas, and encourages businesses and individuals to adopt the same policies on their property,

including asking businesses to post “clean air | no idling signs” at convenience stores, drive-throughs, banks, etc. Police are to be given a “user friendly” informational educational piece to hand to the idler.

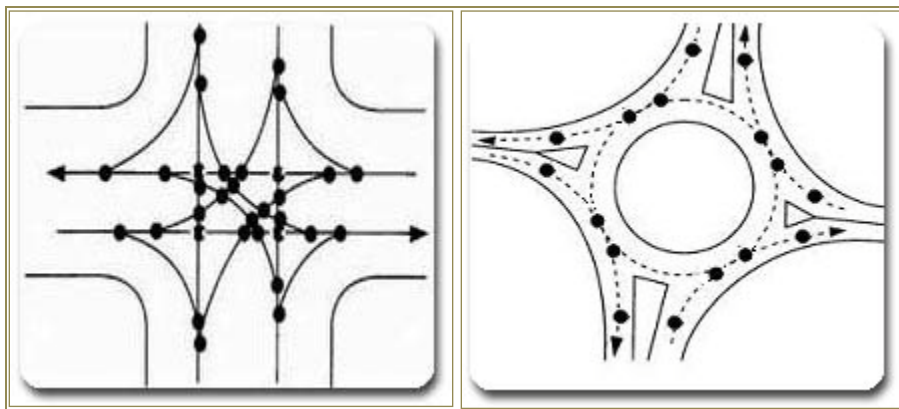
b. Roundabouts

A roundabout is a type of circular intersection that eliminates left turn movements (Maine DOT). In terms of emissions and energy saving, roundabouts cut hydrocarbon emissions at intersections by as much as 42%. Ten roundabouts in Virginia save 200,000 gallons of gas a year. Carmel, Indiana has studied their roundabouts and has seen a 78% drop in accidents involving injuries, and an estimated savings of 24,000 gallons of gasoline per year, per roundabout. This does not measure the savings from the electricity of traffic signals that are displaced.

A roundabout reduces potential conflicts between vehicles and improves the efficiency of the intersection. In terms of safety, roundabouts provide traffic calming, reduce angle and head on crashes, reduce crash severity, and improve intersection capacity. One study looked at 24 intersections that had been converted from traffic lights to roundabouts and found that total crashes dropped nearly 40% while injury crashes dropped 76% and fatal crashes by about 90%.

Drivers must slow down to enter a roundabout. Roundabouts are specifically designed to keep traffic flows at 15 to 25 miles per hour.

Because there are no traffic signals, drivers are not encouraged to speed up to beat the yellow signal. In the event of a power outage, no police are required to man the intersection, and there is almost no maintenance on a roundabout.



In a roundabout, there are half as many potential conflict points as compared to a traditional four-legged intersection.

Pedestrian Safety: All available research (there is a lack of good research in this area) shows roundabouts are safer or similar to conventional intersections for pedestrians. Single-lane roundabouts are safer than multi-lane roundabouts for pedestrians, because pedestrians have less width to cross.



The intersection between Route 1 and Route 88 would have benefited from a roundabout in terms of safety for both vehicles and bicyclists. The intersection at Route 9 and Woods Road would have benefited from a roundabout.

Infrastructure for Low Emission Vehicles

For alternative fuels to become accepted, we need the infrastructure to fuel them, whether that is the ability to fill up a natural gas vehicle or recharge an electric vehicle. Natural gas is the cleanest of all fossil fuels. Most of gas is methane, but the main product of the combustion of natural gas are carbon dioxide and water. Companies like UPS are moving more of their vehicle fleet towards natural gas. As noted earlier in this report, we recommend pursuing extension of the natural gas line that currently runs through Falmouth but is not accessed with a lateral. In the context of accessing the gas line, plans should be laid for natural gas filling stations, which would also allow school buses and other town vehicles to run on natural gas.



Formalize Town Policy

The Town Manager has been working to purchase gasoline efficient vehicles, and he has done away with reimbursement for employees' use of personal vehicles in favor of their using a Town-owned hybrid gas-electric Prius, one of the most fuel-efficient vehicles available today. To institutionalize these policy changes, the Commission recommends that the Town Manager develop written policies for purchase and use of Town-owned vehicles.

Inform Vehicle Owners of their Emissions

What is not measured is not controlled. Many residents may not focus on how many miles they drive their vehicles per year, as we tend to speak in terms of minutes per drive (“It takes me 10 minutes to get to work; I live 15 minutes from school”). We also don’t focus on what those miles mean in terms of emissions. Currently the odometer reading of each vehicle is provided at the time the vehicle is registered. It should be relatively easy for software to calculate the emissions from that vehicle for the past year, as the town/state has the year, make, model and mileage of the vehicle. It could be very informative and behavior changing if the emissions were to be printed on the receipt and/or registration form each year which is given to the vehicle owner. Vehicle users need to rapidly increase their awareness of their vehicles carbon emissions, and providing this information to them could be a very powerful tool.

Recommendations:

Adopt a “no-idling” ordinance or policy, complete with associated signs and public education.

Adopt a policy that all intersections should be considered for a roundabout prior to consideration of installing a stop sign or traffic signal.

Look for opportunities to provide infrastructure for natural gas filling stations.

Formalize the current town policy of using energy efficient low-emission vehicles.

Vehicle owners should be given a print out showing the vehicle carbon emissions at the time they register / renew their vehicle registration.

Budget: immediate budget \$0. At some point there may be a cost for software for the last recommendation.

5. INTEGRATED TRANSPORTATION PLANNING

Transportation is the movement of people and [goods](#) from one location to another. This implies movement by varied modes such as bike, car, bus, feet, etc. As recommendations above describe, we recommend planning for varied transport modes.

Coordinated transportation planning is important in order to realize reductions in gasoline consumption and related emissions, to allow for efficient transportation resources, and to safely and efficiently integrate different transportation modes.

We understand that town departments are presently working on a master transportation plan for Falmouth. We hope that this planning includes the integration of varied transportation modes and

infrastructure, whether the infrastructure is as informal as a trail or as involved as a transportation hub. As the plan takes shape, we ask that it be informed by our Commission's report.

Recommendation: That town staff take the discussion and recommendations of this report into consideration during any transportation planning.

Budget: \$0

6. TREES



There is an essential role that trees play in our environment and in our community. In addition to beautifying our landscape and providing wildlife habitat, trees reduce the urban heat island effect, improve water quality, provide wind breaks and noise barriers, fight soil erosion, and reduce air pollution by absorbing CO₂. While our inventory does not address the CO₂ costs of cutting trees or the benefits of trees as carbon sinks, it is well-known that each tree, during its lifetime, can sequester several tons of carbon dioxide. Globally, while about 70% of total historic increase in greenhouse gas levels is attributed to the burning of fossil fuels, about 30% is attributed to deforestation.⁵

For many years we have required that trees be included in parking lots as part of planning board approval. The emphasis has been primarily aesthetic. We now understand that a full tree canopy over a parking area and properly located deciduous trees can reduce the heat from the parking area and reduce the air conditioning needs of nearby structures, and allow for solar gain in the winter. We should shift the goal of our planting requirements to provide for a full tree canopy over paved commercial parking lots.

Developers often will cut trees in advance of developing land. This destroys the tree canopy well in advance of what may be required once the land is developed or sold. We should have a tree cutting ordinance which provides for tree management but not clear cutting in advance of development.

Tree Cities are nationally recognized communities which adhere to the standards of Tree City USA. Yarmouth, Westbrook, Bath, Portland, and South Portland are nearby Tree Cities. Standards for inclusion include⁶

⁵ International Journal of Wilderness, August 2009, Volume 15, number 2, page 8.

⁶ <http://www.arboday.org/programs/treeCityUSA/index.cfm>

- Creation of a Tree Board or Department – often a volunteer group assisted by an arborist (Falmouth already has an ordinance regarding the responsibilities of a tree warden. Tony Hayes, former Director of Public Works, was our last active warden. The Town does contract with a local business and its arborist to do tree care.)
- Development of a Tree Care Ordinance – establishes a Tree Board and sets out policies which will provide clear guidance for planting, maintaining and removing trees from streets, parks and other public places.
- A Community Forestry Plan with a budget of at least \$2 per Capita (based on today’s population, this is approximately \$25,000 annually; the Ombudsman’s cost should satisfy this budget requirement).
- An Arbor Day Observation and Proclamation – a way to engage and educate the community about tree care and plant a tree(s).

The benefits of becoming a Tree City include:

increased public awareness of the many social, economic and environmental benefits of urban forestry practices;

provides education to improve current urban forestry practices;

builds cooperation between public and private sectors to effectively manage urban forests;

community pride;

serves as a blueprint for planting and maintaining a community’s trees;

puts people in touch with other communities and resources that can help them improve their program;

brings solid benefits to a community such as helping to gain financial support for tree projects and contributing to safer and healthier urban forests;

sometimes gives preference over other communities when allocations of grant money are made for trees or forestry programs;

Recommendations:

Change the land use ordinance to provide for true tree canopy over paved parking areas (find a suitable ordinance from another community and adopt it).

Plant roadside trees, particularly along Route 1; create a “boulevard” with a tree canopy.

Prohibit clear cutting of lands in anticipation of development.

Become a “Tree City USA”.

Budget: \$0.

7. ELEPHANT IN THE ROOM



Although the topic of a gas tax is beyond the obvious scope of our task, our discussions brought us back to the price of gasoline time and again. That is the elephant in the room.

To increase our energy security, to reduce our emissions and to prepare for a cleaner energy future, we need to reduce our consumption. A price of gas which is artificially low relative to its costs makes it much more difficult to make investments and decisions which will lower our reliance on gasoline.

The capital investment and maintenance costs associated with driving are not covered by the gas tax, nor are the environmental costs associated with the refining, transportation and emissions of gasoline.

How can we even imagine “raising” the gas tax? Americans appear to hate the gas tax almost as much as they love their cars. The Federal gas tax of \$.18 per gallon has not changed since 1993, when the federal gas tax represented 17.3% of the average cost of a gallon of gasoline. Today the federal gas tax represents 6.5% of the cost of a gallon of gasoline. It is so politically unlikely that the gas tax will be raised that one might question why we should even address this.

In Europe, where gas taxes are high relative to the US, they organize their towns, appliances, building methods assuming high energy costs, and thus their economies face a much lower disruption when prices show the kind of volatility that we saw in 2008.

If we were to recognize the true costs of driving in the gas tax, we would have more connected feedback between our decisions and the costs of those decisions, and we would have a more energy secure future.

Recommendation: All future state transportation bonding should be funded through an increase in the gas tax, which is voted on by the voters as part of the vote for the transportation bond.