

**The New Hampshire Climate Change Policy Task Force**

**New Hampshire Climate Action Plan**

*A Plan for New Hampshire's Energy, Environmental  
and Economic Development Future*

**Draft Appendix 4.5:  
Encourage Appropriate Land Use Patterns  
That Reduce Vehicle-Miles Traveled**

**Prepared by the  
NH Department of Environmental Services  
March 2009**

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## TLU Action 2.C.1.a – Assess Greenhouse Gas Development Impact Fees

### Summary

For any new development project seeking a state permit, assess a state impact fee based on the estimated greenhouse gas impact of the project, and/or enable municipalities to adopt similar programs. The size of the impact fee would be determined from the estimated transportation demand generated by the project and would be administered through a statewide permit program. The new impact fees would encourage development that has lower GHG impacts, e.g., projects designed around compact, mixed-use, walkable environments in existing community centers. Funds raised through impact fees could be used to support public transit or promote other GHG offsets with the goal of achieving “carbon neutrality” or, at the very least, reduced carbon footprints for new state-permitted development projects.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): Introduce a statewide permit program to assess a transportation-based GHG Development Impact Fee to encourage responsible, pedestrian- and transit-oriented development projects. GHG emissions would be calculated on the basis of the change in VMT associated with any new development. Impact fees could be used for expansion of public transit and other enhancements to reduce overall GHG emissions.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. Method of Establishment (*e.g., legislation, executive order*):
    - Pass enabling legislation to require a transportation-based GHG emission permit for projects that will generate above a certain VMT threshold (or number of trips per day). This could be done by a revision to the current State Driveway Permit program under RSA 236:13, or applied to any project (of a certain size) requiring a state permit.
    - The landowner or developer where such a project is proposed will be required to quantify the change in mobile-source GHG emissions caused by the project and submit such calculations for review.
    - Develop rules to determine GHG emission impact fees that such developments must pay to offset any increase in mobile-source emissions caused by the new development. These impact fees could be set aside to establish or expand transit use and implement other transportation enhancements to reduce VMT or congestion on the roadway corridors affected by the development.
    - Impact fees could be reduced or waived for developments within existing community centers by an appropriate revision to RSA 674:21.
  - b. Resources Required: Initial costs will include approximately 0.5 FTE staff for one year to setup a new statewide GHG program and coordinate on-going implementation, including reviews of project-specific technical studies and setting fee levels (could be a reduced on-going staff commitment depending on the number of permits to which the impact fee is applied). After initial setup, the new program will be self-funded by developers through permit fees.
  - c. Barriers to Address (*especially for medium to low feasibility actions*):
    - Lack of familiarity with standards, measurements, and technology of GHG emissions related to land use
    - Introduction of a new statewide permit program
    - Compliance and coordination with overlapping federal regulations

- Concerns over equal protection and loss of development rights of property located within and outside of existing community centers.

3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):

- Parties Responsible for Implementation:* Legislature, State Agencies, and Municipalities
- Parties Paying for Implementation:* Proponents of new developments and redevelopment projects. State government would pay for initial program development, e.g., process development, rulemaking.
- Parties Benefiting from Implementation:* In addition to general benefits, developers of qualifying low-GHG projects will benefit from faster permit processing timeframes, less uncertainty in obtaining approvals, and lower costs to secure approvals. Communities will benefit from increased redevelopment of existing core areas by increased tax revenues and better utilization of existing infrastructure. Communities and planning agencies will have an objective tool to encourage the protection of open space while allowing the expansion of housing, employment, and goods and services in an environmentally sound manner.

4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*):

- Federal environmental laws (e.g. Clean Air Act, Clean Water Act, Endangered Species Act)
- NHDES Regulatory Programs (e.g. Wetlands, Brownfields, Shoreland Protection)
- NHDOT Driveway Permit Program
- Municipal Zoning Ordinances
- Municipal Impact Fee Ordinances

5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):

- Existing:* RSA 79(E): Tax abatement for significant rehabilitation of structures within designated areas.
- Proposed:*
  - TLU Action 2.A.7 – Create Initiative to Reduce Availability of Free and Inexpensive Parking
  - TLU Action 2.B.1.a – Expand Local/Intra-Regional Transit (Bus) Service
  - TLU Action 2.B.1.b – Improve Existing Local/Intra-Regional Transit (Bus) Service
  - TLU Action 2.B.1.c – Expand and Improve Bicycle and Pedestrian Infrastructure
  - TLU Action 2.B.2.a – Maintain and Expand Passenger Rail Service
  - TLU Action 2.B.2.b – Maintain and Expand Freight Rail Service
  - TLU Action 2.B.2.c – Implement a Stable Funding Stream to Support Public Transportation
  - TLU Action 2.B.2.e – Expand Park-and-Ride Infrastructure
  - TLU Action 2.B.2.g – Expand Inter-City Bus Service
  - TLU Action 2.B.2.h – Improve Existing Inter-City Bus Service to Increase Ridership
  - TLU Action 2.C.1.b – Streamline Approvals for Low-GHG Development Projects
  - TLU Action 2.C.3 – Develop Model Zoning for Higher-Density, Mixed-Use Development
  - TLU Action 2.C.4 – Use State Funding and Grants to Encourage Low-GHG-Impact Development
  - TLU Action 2.C.5 – Enable/Apply a Two-Rate Tax Structure Based on GHG Impacts
  - TLU Action 2.C.7 – Establish Entity(ies) to Support Compact Land Use Patterns and Open Space Preservation
  - TLU Action 2.C.8 – Continue/Expand Funding, Education, and Technical Assistance to Municipalities

6. Timeframe for Implementation: Appropriate legislation could be introduced in the next legislative session. Rule-making, permit program setup, and project implementation can be expected to begin in 2010. Municipalities can be expected to take the necessary actions gradually within the next two to five years thereafter.

7. Anticipated Timeframe of Outcome: Land Use regulations are by definition long-term in nature. New Hampshire's traditional "community center" form of land use began to change in the mid-20<sup>th</sup> century. In the past 50 years, a rapid increase in road-building and broad introduction of segregated zoning districts has led to sprawl and the current dependence on the single-occupant automobile.

It is expected that the New Hampshire economy will expand between 80% and 100% in the next 50 years. Therefore, the state will have the opportunity to rebuild itself completely during this period. Therefore, a return to a mixed-use community-center model can have a substantial impact on the character of our communities and the per capita VMT necessary to live, work, shop, learn, and recreate in New Hampshire.

### Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reductions: Not individually quantified.
2. Economic Effects:
  - a. Costs:
    - i. Implementation Cost: Low (0-\$2.5 million)
    - ii. Timing: Constant / even
    - iii. Impacts: State government
  - b. Savings:
    - i. Potential Economic Benefit: Supporting mechanism only
    - ii. Timing of Benefits:
    - iii. Impacts:
3. Other Benefits/Impacts:
  - a. *Environmental*: By promoting development in mixed-use community centers, development pressure on greenfield sites (sprawl) will be reduced, and preservation of open space and the character of the state's remaining undeveloped areas will be enhanced. This would also reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
  - b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.
  - c. *Social*: Benefits attendant to VMT reduction through higher-density, integrated land use patterns.
4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):
  - a. *Technical*: Although the technical resources already exist and are generally well understood, the new program will require substantial outreach to the development community for understanding and acceptance.
  - b. *Economic*: After program setup, the costs to the state will be nominal. Costs to developers to prepare technical studies can be minimized by detailed regulatory guidance on estimating impacts and may be partially offset by savings from streamlined permitting of low-GHG impact projects.
  - c. *Statutory/Regulatory*: New legislation and new agency administrative rules will be required.

- d. *Social*: The action is anticipated to have good public support, but could face some resistance from development community.

5. Other Factors of Note:

6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO<sub>2</sub> emissions from the transportation and land use sector.

7. References:

a. *California SB97*

The California legislature is considering legislation to encourage local jurisdictions to evaluate and reduce increases in greenhouse gas emissions caused by their land use decisions. Feasible mitigations measures related to transportation include:

- High-density developments that reduce vehicle trips and utilize public transit.
- Transportation impact fees on developments to fund public transit service.
- Regional transportation centers where various types of public transportation meet.

b. *US EPA Smart Growth Study*

The U.S. Environmental Protection Agency (EPA) sponsored a case-study comparison of a smart growth community (Metro Square) in Sacramento, California, and two conventional suburban developments. The research found that the pattern of development had a significant impact on transportation. The residents of Metro Square were four times as likely to accomplish daily tasks by walking and take only half as many driving trips, driving a total of 40 percent to 50 percent fewer miles. (1)

Another study compared an infill development in an urban, walkable, transit-friendly neighborhood of Atlanta—the Atlantic Steel site—to hypothetical developments of the same square footage in three suburban, sprawl locations in the Atlanta metropolitan area. The modeling estimated that the Atlantic Steel site would result in 22 percent to 62 percent lower CO<sub>2</sub> emissions per year than the sprawl sites. (2)

<sup>1</sup> Kaid Benfield, “Environmental Characteristics of Smart Growth Neighborhoods: An Exploratory Case Study” (New York, NY: Natural Resources Defense Council, October 2000).

<sup>2</sup> U.S. Environmental Protection Agency, Transportation and Environmental Analysis of the Atlantic Steel Development Project, prepared by Hagler Bailly, Inc., November 1, 1999.

c. *Minneapolis Zoning Code – Travel Demand Management Plan*

The City Zoning Code requires non-residential developments with new or additional gross square feet of 100,000 or more to include a travel demand management (TDM) plan. This plan is to address the transportation impacts of the development on air quality, parking, and roadway infrastructure. It also is to identify measures to minimize transportation impacts of the development. These TDM Plans include methods to encourage and coordinate carpooling among tenants and employees. There is also a zoning ordinance regarding bicycle facilities requirements in new developments of over 500,000 square feet or more of new or additional gross floor space in downtown districts.

## TLU Action 2.C.1.b – Streamline Approvals for Low-GHG Development Projects

### Summary

Adopt new policies to streamline permit review processes, apply alternative requirements, or otherwise reduce barriers for development projects in *existing* community centers with low-GHG footprints. Conduct a broad evaluation of state permit processes and requirements to identify barriers that now deter development from locating in low-GHG impact areas – including existing downtowns and community centers – and develop practical solutions to removing such barriers. Encourage municipalities to adopt similar strategies in their development ordinances and permit processes.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): Facilitate regulatory approvals by state agencies for land development projects having low-GHG footprints.
  - a. To qualify for preferential review standards, the development project would need to meet four criteria:
    - Be located within a defined low-GHG impact development area (e.g., see TLU Actions 2.C.3 and 2.C.2),
    - Achieve acceptable goals of density and land use,
    - Incorporate pedestrian- and transit-oriented facilities, and
    - Demonstrate a verifiable GHG reduction over an alternative design or location.
  - a. For projects that qualify, preferential review standards could include, for example:
    - *GHG Impact Fees*. Waive GHG impact fees for qualifying projects (see TLU Action 2.C.1.a).
    - *Wetlands*. Reduce mitigation and setback requirements for qualifying projects. Create a standing “General Permit” for qualifying projects below a certain threshold of proposed fill.
    - *Rare/Endangered Species*. Allow regulators to exclude designated areas from “critical habitat” definitions for certain listed species.
    - *Shorelands*. Waive or reduce setback distances for qualifying projects.
    - *NHDOT Driveway Permits*. Expedite permits for qualifying projects. Waive or reduce permit fees based on future VMT reductions associated with pedestrian- and transit-oriented development features in qualifying projects.
    - *Local Traffic Impact Fees*. Allow regulators to offset traffic impact fees by considering future VMT reductions associated with pedestrian- and transit-oriented development features in qualifying projects.
    - *Priority Tracking*. For projects that qualify, establish a priority track for faster processing of permits and approvals.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*:
    - i. Pass legislation to establish a GHG program within OEP or DES to work with existing permit programs and make rules to define the following:
      - Low-GHG impact development areas (see also TLU Actions 2.C.2 and 2.C.3),
      - Qualifying projects
      - Priority processing policies for regulatory agencies

- General permit guidelines for certain existing regulatory programs
  - Waivers of permit fees for certain existing regulatory programs
- ii. Revise applicable DES and other agency administrative rules to provide for expedited permit review timetables and alternative review standards.
- b. *Resources Required:* Initial costs would include costs to setup a new GHG program with adequate facilities and staff. After initial setup, the new program would be self-funded by developers through permit fees. The new program staff would work with other regulatory staff to coordinate administrative rules and policies for expedited permit review and alternative review standards.
  - c. *Barriers to Address (especially for medium to low feasibility actions):*
    - i. Introduction of a new statewide permit program and resistance to revisions to existing permit program requirements
    - ii. Compliance and coordination with overlapping federal regulations
    - iii. Lack of familiarity with standards, measurements, and technology of GHG emissions related to land use.
3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
    - a. *Parties Responsible for Implementation:* Legislature, State Agencies, and Municipalities
    - b. *Parties Paying for Implementation:* Initial costs must be provided from general fund revenues. After establishment, costs will be borne by applicants (developers of new Qualifying Projects).
    - c. *Parties Benefiting from Implementation:* In addition to general benefits, developers of qualifying low-GHG projects will benefit from faster permit processing timeframes, less uncertainty in obtaining approvals, and lower costs to secure approvals. Communities will benefit from increased redevelopment of existing core areas by increased tax revenues and better utilization of existing infrastructure.
  4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*):
    - Federal environmental laws (e.g. Clean Air Act, Clean Water Act, Endangered Species Act)
    - NHDES Regulatory Programs (e.g. Wetlands, Brownfields, Shoreland Protection)
    - NHDOT Driveway Permit Program
    - Municipal Zoning Ordinances
    - Municipal Impact Fee Ordinances
  5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):
    - a. *Existing*
    - b. *Proposed:*
      - TLU Action 2.A.7 – Create Initiative to Reduce Availability of Free and Inexpensive Parking
      - TLU Action 2.B.1.a – Expand Local/Intra-Regional Transit (Bus) Service
      - TLU Action 2.B.1.b – Improve Existing Local/Intra-Regional Transit (Bus) Service
      - TLU Action 2.B.1.c – Expand and Improve Bicycle and Pedestrian Infrastructure
      - TLU Action 2.B.2.a – Maintain and Expand Passenger Rail Service
      - TLU Action 2.B.2.b – Maintain and Expand Freight Rail Service
      - TLU Action 2.B.2.c – Implement a Stable Funding Stream to Support Public Transportation
      - TLU Action 2.B.2.e – Expand Park-and-Ride Infrastructure
      - TLU Action 2.B.2.g – Expand Inter-City Bus Service
      - TLU Action 2.B.2.h – Improve Existing Inter-City Bus Service to Increase Ridership

- TLU Action 2.C.1.a – Assess GHG Development Impact Fees
- TLU Action 2.C.3 – Develop Model Zoning for Higher-Density, Mixed-Use Development
- TLU Action 2.C.4 – Use State Funding and Grants to Encourage Low-GHG-Impact Development
- TLU Action 2.C.5 – Enable/Apply a Two-Rate Tax Structure Based on GHG Impacts
- TLU Action 2.C.7 – Establish Entity(ies) to Support Compact Land Use Patterns and Open Space Preservation
- TLU Action 2.C.8 – Continue/Expand Funding, Education, and Technical Assistance to Municipalities

6. Timeframe for Implementation: Appropriate legislation could be introduced in the next legislative session. Rule-making, permit program setup, and program implementation can be expected to begin in 2010. Municipalities can be expected to take appropriate actions gradually within the next two to five years thereafter.

7. Anticipated Timeframe of Outcome: Land Use regulations are by definition long-term in nature. New Hampshire’s traditional “community center” form of land use began to change in the mid-20<sup>th</sup> century. In the past 50 years, a rapid increase in road-building and broad introduction of segregated zoning districts has led to sprawl and the current dependence on the single-occupant automobile.

It is expected that the New Hampshire economy will expand between 80% and 100% in the next 50 years. Therefore, the state will have the opportunity to rebuild itself completely during this period. Therefore, a return to a mixed-use community-center model can have a substantial impact on the character of our communities and the per capita VMT necessary to live, work, shop, learn, and recreate in New Hampshire.

Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reduction: Essential action but not individually quantified.

2. Economic Effects:

a. Costs:

- i. Implementation Cost: Low (0-\$2.5 million)
- ii. Timing: Constant / Even
- iii. Impacts: State government

b. Savings:

- i. Potential Economic Benefit: Supporting mechanism only
- ii. Timing of Benefits:
- iii. Impacts:

3. Other Benefits/Impacts:

- a. *Environmental*: By promoting development in mixed-use community centers, development pressure on greenfield sites (sprawl) will be reduced, and preservation of open space and the character of the state’s remaining undeveloped areas will be enhanced. This would also reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer

days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.

- c. *Social*: Benefits attendant to VMT reduction through higher-density, integrated land use patterns.
- d. *Other*:

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical*: Although the technical resources already exist and are generally well understood, the new program will require substantial outreach to the development community for understanding and acceptance.
- b. *Economic*: After program setup, the costs to the state will be nominal, and will be covered by a new permit fee. Developers of low-GHG impact projects should experience savings over current regulatory processing costs (most notably time cost).
- c. *Statutory/Regulatory*: New legislation and coordinated changes to numerous Agency administrative rules will be required.
- d. *Social*: The action is anticipated to have high public support among developers and the general public once it is properly explained and understood.

5. Other Factors of Note:

6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO<sub>2</sub> emissions from the transportation and land use sector.

7. References:

a. *California – SB 97*

The California Attorney General has asked local jurisdictions to evaluate and reduce increases in greenhouse gas emissions caused by land use decisions. Feasible mitigation measures identified by the Attorney General include:

- High-density developments that reduce vehicle trips and utilize public transit.
- Parking spaces for high-occupancy vehicles and car-share programs.
- Electric vehicle charging facilities and conveniently located alternative fueling stations.
- Limits on parking.
- Transportation impact fees on developments to fund public transit service.
- Regional transportation centers where various types of public transportation meet.
- Energy efficient design for buildings, appliances, lighting and office equipment.
- Solar panels, water reuse systems and on-site renewable energy production.
- Methane recovery in landfills and wastewater treatment plants to generate electricity.
- Carbon emission credit purchases that fund alternative energy projects.

Not all of these mitigation measures would work for all projects, but the list provides some examples and ideas that could be adapted to fit the project at issue.

b. *Smart Growth Case Studies – US EPA*

The EPA sponsored a case-study comparison of a smart growth community (Metro Square) in Sacramento, California, and two conventional suburban developments. The research found that the pattern of development had a significant impact on transportation. The residents of Metro

Square were four times as likely to accomplish daily tasks by walking and take only half as many driving trips, driving a total of 40 percent to 50 percent fewer miles. (1)

Another study compared an infill development in an urban, walkable, transit-friendly neighborhood of Atlanta—the Atlantic Steel site—to hypothetical developments of the same square footage in three suburban, sprawl locations in the Atlanta metropolitan area. The modeling estimated that the Atlantic Steel site would result in 22 percent to 62 percent lower CO<sub>2</sub> emissions per year than the sprawl sites. (2)

<sup>1</sup> Kaid Benfield, “Environmental Characteristics of Smart Growth Neighborhoods: An Exploratory Case Study” (New York, NY: Natural Resources Defense Council, October 2000).

<sup>2</sup> U.S. Environmental Protection Agency, Transportation and Environmental Analysis of the Atlantic Steel Development Project, prepared by Hagler Bailly, Inc., November 1, 1999.

c. *Wisconsin General Laws Chapter 286*

This law provides for the management of emissions of specified greenhouse gases, including carbon dioxide. The law requires the Department of Natural Resources (DNR) to promulgate rules requiring the monitoring and reporting of greenhouse gas emissions by significant sources of those emissions. The law requires DNR to approve a plan, no later than January 1, 2010, for achieving reductions of greenhouse gas emissions that are technologically feasible and cost-effective. The bill authorizes DNR to authorize the use of market-based compliance mechanisms.

d. *Massachusetts General Laws Chapter 40R*

This chapter encourages mixing land uses and increasing the availability of affordable housing by creating a range of housing opportunities in neighborhoods. It takes advantage of compact design, fosters distinctive and attractive communities, preserves open space, farmland, natural beauty and critical environmental areas, strengthens existing communities, provides a variety of transportation choices, makes development decisions predictable, fair and cost effective and encourages community and stakeholder collaboration in development decisions.

## TLU Action 2.C.2 – Develop Model Zoning to Support Bus/Rail Transit

### Summary

Develop model zoning regulations or standards governing land use around bus/rail service access points to maximize ridership and potential GHG reductions. Encourage, assist, or require municipalities to adopt and implement the model zoning regulations around bus/rail stations. The model language or standards would define criteria for minimum development density, mix of land uses, and an interconnected, walkable street pattern. Grants for specific technical assistance to support implementation could be awarded to communities (under TLU Action 2.C.8) and/or incentives implemented to promote adoption (e.g., access to additional state grants under TLU Action 2.C.4).

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): The state would establish model land development regulations that promote higher density, mixed-use development (including affordable housing) to maximize ridership and potential GHG reductions associated with the extension/improvement of inter-city bus/rail service. The model regulations could either be offered to a municipality as a voluntary program or required to be in place before bus/rail service would be provided to that community.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*: A voluntary program could be established through development of a model ordinance by the Office of Energy and Planning that municipalities could be encouraged to adopt. A mandatory program could be adopted by Executive Order of the Governor, or by separate legislative action, that would be tied to investment in rail and bus service extensions.
  - b. *Resources Required*: A voluntary program could be developed through either OEP or DES with existing or expanded staff resources. A mandatory program would require development of a rail and bus capital and operating expansion program linked by a legal requirement for local adoption of model zoning provisions.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: The mandatory program would require capital and operating funds to implement an expanded rail and bus system.
3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
  - a. *Parties Responsible for Implementation*:
    - Voluntary programs: OEP, with others (e.g., DES, Regional Planning Commissions, DOT)
    - Mandatory programs: OEP, with others (e.g., DES, Regional Planning Commissions, DOT)
  - b. *Parties Paying for Implementation*: Development of the model regulations would be absorbed by the designated state agency and municipalities that elected to adopt the model regulations. Mandatory programs would be the responsibility of the designated state agency to develop and monitor the zoning regulations, and NHDOT funding for rail/bus service extensions.
  - c. *Parties Benefiting from Implementation*: Developers, citizens, municipalities
4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*):
5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):
  - a. *Existing*: RSA 9B

- b. *Proposed*: TLU Goal 2 – Reduce Vehicle Miles Traveled (particularly those actions involving the expansion or improvement of bus and rail service).
6. Timeframe for Implementation: Model ordinances could be developed within one year. State legislation and funding would be required to implement a mandatory program
7. Anticipated Timeframe of Outcome: Mid- to long term

Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reduction: Not individually quantified.
2. Economic Effects:
  - a. Costs:
    - i. Implementation Cost: Low (0-\$2.5 million)
    - ii. Timing: Constant / even
    - iii. Impacts: State government
  - b. Savings:
    - i. Potential Economic Benefit: Supporting mechanism only
    - ii. Timing of Benefits:
    - iii. Impacts:
3. Other Benefits/Impacts:
  - a. *Environmental*: This would lead to the protection of rural open space, reduced reliance on single occupancy vehicles as well as reduced emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
  - b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease. Compact development patterns and increased use of public transportation encourage more walking.
  - c. *Social*: More compact development patterns foster greater social connectivity. Transit-oriented development can foster positive economic development for communities.
4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):
  - a. *Technical*: Limited technological requirements.
  - b. *Economic*: Bus and rail service extensions will be costly.
  - c. *Statutory/Regulatory*: Voluntary programs would need to be adopted on a municipal level and require extensive promotional efforts to produce significant results. Mandatory programs would require significant legislative efforts to adopt, both for the land use legislation and the parallel transportation funding.
  - d. *Social*: There may be resistance as the public may perceive any type of “dense” development to be bad.
5. Other Factors of Note:
6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO<sub>2</sub> emissions from the transportation and land use sector.
7. References:

## TLU Action 2.C.3 – Develop Model Zoning for Higher-Density, Mixed-Use Development

### Summary

Develop model zoning regulations to promote and facilitate higher-density, mixed-use, walkable development (including affordable housing) in designated areas of a community. Encourage, assist, or require municipalities to adapt and implement the model zoning and regulations. Areas developed with these characteristics have lower GHG impacts than other forms of development (e.g., they generate fewer car trips, shorter trips, and have a smaller development footprint per unit). Grants for specific technical assistance to support implementation could be awarded to communities (under TLU Action 2.C.8) and/or incentives implemented to promote adoption (e.g., access to additional state grants under TLU Action 2.C.4).

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): The state and/or regional planning agencies could draft model zoning regulations that set standards for compact, mixed-use, walkable development (including affordable housing). The model regulations would specify what “smart growth” means to the state and would provide the foundation for a program to encourage designated “growth centers.” A growth center program could be:
  - A voluntary program with incentives, such as state funding priority (TLU Action 2.C.4) or increased technical assistance (TLU Action 2.C.8) that encourages designation of municipal growth centers at locations deemed to be desirable by the state and/or region, or
  - A mandatory state-legislated process requiring that communities (perhaps of a certain minimum size) designate municipal growth centers.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*:
    - i. A voluntary program would require the State OEP, with others (e.g., Regional Planning Commissions, DES) to develop a model zoning ordinance that defines standards and criteria for compact, mixed use development. The implementing agency could then promote, educate and assist interested municipalities in pursuing adoption of the model regulations (see also TLU Action 2.C.8).
    - ii. A mandatory program would require communities to designate a specified area(s) through zoning for higher density, mixed-use development.
    - iii. Under either a voluntary or mandatory program, designation of a specified area (e.g., “growth center”) could be tied to eligibility for a variety of state funding opportunities such as transportation, school aid, environmental grants, CDGB, etc (see Action 2.C.4).
  - b. *Resources Required*: Development of a model ordinance could be accomplished, as a priority project, with redirection of existing state staff. Promoting, educating and providing technical support to communities seeking to implement the model regulations would likely require administrative funding support to the designated state agency or the regional planning commissions (see Action 2.C.8). A mandatory program would require additional rulemaking responsibility across all affected state funding agencies and likely additional staff resources to manage and monitor program compliance.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: Municipalities can currently adopt this type of zoning on their own, but have not – therefore part of this action will need to focus on identifying and removing existing barriers (e.g., public acceptance, lack of resources to implement). A

purely voluntary approach of providing a model is unlikely to result in significant changes in land use to reduce GHG impacts.

A mandatory program would require state rulemaking procedures to be followed, and likely legislative authorization. Staff resources to pursue broad municipal adoption (either voluntary or mandatory) would require additional state agency or regional planning commission financial support that might be derived from other climate change regulatory fees.

3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
  - a. *Parties Responsible for Implementation*: Legislature, OEP and/or DES and/or regional planning commissions and municipalities.
  - b. *Parties Paying for Implementation*: Administrative costs for a voluntary program would be paid through implementing state agencies. A mandatory program would require coordination and monitoring of local compliance, resulting in added administrative support costs.
  - c. *Parties Benefiting from Implementation*: Communities that participated in the program would benefit from reduced costs of infrastructure services resulting from more compact development patterns and potentially, greater access to state and federal funding.
4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*): RSA 9B, DOT funding, DES funding, CDBG funding, etc.
5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):
  - a. *Existing*: RSA 9B
  - b. *Proposed*: Transportation and Land Use Goal 2: Reduce Vehicle Miles Traveled
6. Timeframe for Implementation: A totally voluntary program could be implemented in less than a year (although it may take more time to identify and implement accompanying incentives) with municipal adoption taking 10 years or more to produce meaningful results. A mandatory program would likely require legislative approval and associated rulemaking requirements by designated funding agencies – assume 2-3 years to fully implement the program.
7. Anticipated Timeframe of Outcome: Because the program is based on changing land use development patterns, through local regulation, the outcomes for more compact, mixed use development would occur over decades. A mandatory program would be expected to reduce the implementation timeframe significantly.

#### Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reduction: Not individually quantified.
2. Economic Effects:
  - a. Costs:
    - i. Implementation Cost: Low (0-\$2.5 million)
    - ii. Timing: Constant / even
    - iii. Impacts: State government
  - b. Savings:
    - i. Potential Economic Benefit: Supporting mechanism only
    - ii. Timing of Benefits:
    - iii. Impacts:

3. Other Benefits/Impacts:

- a. *Environmental*: More compact, mixed-use development will reduce energy consumption for transportation and possibly buildings. It will foster greater use of public transportation and reduce the level of development in rural areas of the state. This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease. Compact development patterns and increased use of public transportation encourage more walking.
- c. *Social*: More compact development patterns foster greater social connectivity. Positive economic development within a community
- d. *Other*:

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical*: Model ordinances should produce no technical challenges. Coordination of targeted grant funding and technical assistance will require close coordination and cooperation with affected state agencies.
- b. *Economic*: Designated growth centers would likely generate positive economic development within a community and provide for efficient/maximum use of municipal infrastructure investments; however, can be challenging to coordinate public funding to implement necessary infrastructure improvements to support more intensive development.
- c. *Statutory/Regulatory*: Voluntary programs would need to be adopted on a municipal level and require extensive promotional efforts to produce significant results. Mandatory programs would require significant legislative efforts to adopt, both for the land use legislation and the parallel funding incentives.
- d. *Social*: Public education is required to ensure understanding and acceptance of this approach and the benefits it can provide for NH (to overcome public perception that “dense” development is bad.

5. Other Factors of Note:

- 6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO<sub>2</sub> emissions from the transportation and land use sector.

7. References:

## TLU Action 2.C.8 – Continue/Expand Funding, Education, and Technical Assistance to Municipalities

### Summary

Support and expand funding and technical assistance made available through existing programs to promote: 1) coordinated local planning for land use, transportation, and the environment, and 2) policy changes at the local level that result in land use with reduced GHG impacts. Update existing publications where appropriate to incorporate GHG considerations and prepare new materials where needed. Provide increased coordination between, and expansion of, existing programs now implemented by various agencies such as the Office of Energy and Planning, the Department of Environmental Services, and the Regional Planning Organizations, as well as professional and other associations such as the New Hampshire Planners Association, Local Government Center, UNH Cooperative Extension, and Clean Air Cool Planet.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): There are a variety of policy actions that could be implemented to further marketing, education, and technical assistance to municipalities. These include:
  - a. Establish a clearinghouse of all existing resources and an initial targeted outreach process designed to “jump start” local GHG planning initiatives.
  - b. Continue and/or expand outreach on the connections between land use, transportation, and the environment to incorporate GHG considerations into local planning efforts and demonstrate ways to adjust land use patterns to achieve GHG savings. Examples of land use planning methods that can reduce GHG emissions include conserving important natural resource areas, directing development toward preferred locations, and improving the design of new development to retain community character.
  - c. Expand and/or continue successful grant and specific technical support efforts such as the I-93 Community Technical Assistance Program (CTAP), New Hampshire Estuary Project Community Technical Assistance Program, Housing and Conservation Planning Program, Regional Environmental Planning Program, and Nashua Regional Planning Commission’s iTRaC (Integrating Transportation and Community Planning) Program.
  - d. Ensure easy access to necessary publications, tools, and information such as model ordinances, factsheets, and GIS data.
  - e. Continue and/or expand existing conferences, trainings, and workshops that emphasize the connections between land use, transportation, and environmental planning.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*: Marketing, education and technical assistance rarely requires new legislation, executive orders or other enabling mandates, thus simplifying its method of establishment. Legislative action may be required to increase funding levels to expand existing programs.
  - b. *Resources Required*: Resources are the key to successful implementation and establishment of marketing, education and technical assistance. Key resources required include:
    - Staff time and expertise to coordinate efforts and create and provide new initiatives and products.
    - Funding to produce new products, increase the level of grants and/or assistance provided, and expand training opportunities without significant costs to the end user/participant.

- A centralized clearinghouse of resources including training opportunities and publications.
- c. Barriers to Address (especially for medium to low feasibility actions): Barriers to providing additional outreach and education include:
- Town budgets include little or no funds to pay conference or workshop registration fees for citizen or staff planners or to purchase new publications.
  - Cost to produce new materials.
  - Most citizen planners work full-time jobs and have little time for training, reviewing outreach publications or attending workshops.
  - Time to produce new materials and cost to hire new staff to develop new products.
  - Need for more innovative training opportunities like via the web, discussion boards, public access stations.
  - Finding a suitable time of year to hold new or additional workshops and trainings – April through October are eliminated as many existing conferences are held either right before or after summer vacations.
  - Marketing – getting information out in a way that makes it appealing
3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
- a. *Parties Responsible for Implementation:*
- Primary responsible parties – Office of Energy and Planning and the Department of Environmental Services
  - Secondary responsible parties – Regional Planning Commissions, UNHCE, Clean Air Cool Planet, Local Government Center, NH Planners Association, additional state and regional organizations
- b. *Parties Paying for Implementation:* The primary responsible parties will need to identify additional and necessary funding resources. While some education and outreach can be accomplished through existing program staff, new funding will be necessary for additional resources and materials production. Additionally, the more elaborate and concerted the education and outreach program is, increased staffing capacity may be necessary, however, additional staffing may not be necessary for this action item alone but may be combined with many other proposed action items in order to create a coordinated state program.
- c. *Parties Benefiting from Implementation:* NH Municipalities and their staff and volunteer boards.
4. Related Existing Policies and Programs: (*Note: The following list is illustrative of the types of programs that might appropriately be involved in implementing this action and should be reviewed and refined at a later date.*)
- a. Existing training opportunities include:
- Regional Planning Commission trainings and roundtables
  - Planning Board clerk training conducted by the NH Association of Regional Planning Commissions
  - Local Government Center (LGC) fall Law Lecture series
  - LGC and UNH T2 “Hard Road to Travel”
  - Northern New England Chapter of the American Planning Association Annual Conference
  - NH Planners Association Annual Spring Conference
  - NH Housing Finance Authority Annual Conference
  - Clean Air Cool Planet
  - Carbon Coalition’s local energy committee trainings

- b. Existing educational publications include:
  - Clean Air Cool Planet’s online Community Tool Kit ([http://www.cleanair-coolplanet.org/for\\_communities/toolkit\\_home.php](http://www.cleanair-coolplanet.org/for_communities/toolkit_home.php))
  - Planner’s Handbook on Energy Efficiency and Climate Change (<http://www.nhplanning.com/Energy/energyhb.htm>)
  - DES Fact Sheets (<http://www.des.nh.gov/openme.htm>)
  - OEP Technical Bulletins (<http://www.nh.gov/oep/resourcelibrary/TechnicalBulletins.htm>)
  - DES/NHARPC’s Innovative Land Use Planning Techniques: A Handbook for Sustainable\_Development (<http://www.des.nh.gov/REPP/index.asp?go=ilupth>)

- c. Existing grants and funding opportunities that have an educational component include:
  - Housing and Conservation Planning Program
  - Community Technical Assistant Program
  - NH Estuary Project Community Technical Assistance Program
  - Regional Environmental Planning Program.
  - Nashua iTRaC Program (Integrating Transportation and Community Planning)

5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):

- a. Existing:
- b. Proposed: TLU Action 2.C.4 – Use State Funding and Grants to Encourage Low-GHG-Impact Development

6. Timeframe for Implementation: One to two years should be allocated to successfully implement this action. Time will be needed to evaluate existing publications, training, and grant programs, identify and detail changes that need to be made, and then implement those changes.

7. Anticipated Timeframe of Outcome: Once initiated, education and outreach efforts should be an ongoing effort without a specified end-date. Membership on local boards and commissions is continually changing, creating a perpetual need for additional training and up-to-date outreach publications. This action supports implementation of near- and longer-term changes in local land use policies that will help reduce carbon emissions from transportation.

Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reduction: Not individually quantified.

2. Economic Effects:

a. Costs:

- i. Implementation Cost: Low (0-\$2.5 million)
- ii. Timing: Constant / even
- iii. Impacts: State government

b. Savings:

- i. Potential Economic Benefit: Supporting mechanism only
- ii. Timing of Benefits:
- iii. Impacts:

3. Other Benefits/Impacts: Any additional benefits would be secondary ones derived from the development behavior induced through the grant and funding incentive.
  - a. *Environmental*: Focusing development in already developed areas generally reduces the negative environmental impacts
  - b. *Health*: Low GHG-impact development forms facilitate walking, increasing personal health
  - c. *Social*: Compact, mixed-use, walkable development supports increased economic activity and community vitality (e.g., citizen interaction)
  - d. *Other*:
4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):
  - a. *Technical*: The technical resources and expertise required to implement this action already exist.
  - b. *Economic*: This action may require additional funding resources to prepare new publications and innovative training mechanisms such as online/on-demand training modules.
  - c. *Statutory/Regulatory*:
  - d. *Social*: Current development trends have been leaning more toward “green” design and energy efficiency. This may be easily supportable mechanism to provide greater access to information related to such development.
5. Other Factors of Note: While education and outreach is a key and easily acceptable action item, it often needs to be coupled with an incentive that will encourage municipalities to take the “next step” and implement that which they have learned. Incentives might include direct technical assistance and grant funding that provide either direct staff time or the necessary funds to implement new initiatives. A recent example includes the NH Housing Finance Authority’s “Inclusionary Zoning Implementation Program” that jointly provides grant funds and technical assistance to municipalities to adopt inclusionary housing ordinances. The Authority preceded the grant program with an education campaign centered on the benefits and need for inclusionary zoning.
6. Level of Group Interest: High. The working group considered this an essential action to undertake in the near-term to achieve significant reductions in CO<sub>2</sub> emissions from the transportation and land use sector.
7. References: