

July 3, 2008

Dear Mayor and Village Trustees,

The Irvington Climate Protection Task Force convened in the fall of 2007 and undertook its mission as assigned by the Village Trustees.

Members of the Task Force are: Chris Canning, Adele Falco, Mark Gilliland, Roz Galtz, Eric Grossfeld, Anne Jaffe (Chair), and Esther Samra.

Sections of this report were thoroughly researched by individual members, noted as primary section authors. Members attended local meetings on climate change, and interviewed Village administrators, school officials, Village business owners, and leaders of Village civic and faith-based organizations. Climate change committees and activist organizations in neighboring communities have also been a source of valuable information and ideas. We acknowledge and greatly appreciate the help and cooperation of all.

The value of this report depends upon follow-through by the Irvington Board of Trustees and village staff. The recommendations contained herein have been assigned priority by the CPTF according to environmental benefit. Successful implementation of recommendations will require the commitment of the Board, and the "buy-in" of the Village administration and citizens of Irvington.

Please contact me to schedule a time at which the Task Force can present our recommendations to the Board. The Chair and Members of the CPTF also encourage you to contact us if you have follow-on questions or would like to discuss any of the recommendations contained in this report in greater detail.

Members of the Irvington Climate Protection Task Force thank you for the opportunity to undertake this potentially high impact study, and look forward to supporting and assisting the Village in its implementation.

Sincerely,

Anne Jaffe
Chair, Irvington CPTF

Irvington
Climate Protection Task Force
Report

June 2008

<i>section</i>	<i>page</i>
Section Primary Authors	3
Premises	4
Public Awareness	6
Water Management	9
Waste Management	14
Transportation	17
Energy	21
Land Use	24
Schools	27

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PREMISES

Recommendations contained in this report are predicated upon the following understandings about climate change:

P1. There is global scientific consensus that climate change is underway and is largely attributable to human factors. Furthermore, there is scientific consensus that the process of global warming cannot be stopped, but can be mitigated by changes in human behavior. The dramatic nature of environmental consequences of climate change will also require adaptation measures by governments at all levels in order to preserve human life and maintain functional societies.

P2. The progress of climate change is "front loaded". While it is prudent and necessary to set goals as far out as 2050, what we do now and in the next 5-10 years will determine the severity of climate change and the resulting alterations in our environment. The focus of our action must be immediate.

P3. Mitigating and adapting to climate change will require sacrifice in the level of personal comfort and convenience to which we are all accustomed. Our cultural concept of "quality of life" will need to be re-examined and re-defined. New levels of cooperation and inter-reliance will emerge as we seek ways of reducing energy use and carbon emissions in our daily lives and commerce.

P4. While the changes required for mitigation of climate change will entail personal and collective sacrifice, members of this Task Force believe that these changes may also bring profound benefits. Cleaner air, water, soil, healthier foods and a more physical lifestyle are all part of the proposed action plan for reduction of carbon emissions. Cost savings for government, businesses, families and individuals may be substantial through the conservation of energy, water, and reduction of material waste. The deepening and enrichment of community can also be achieved through the pursuit of cooperative action to mitigate and adapt to climate change.

P5. Every sector of our Village must participate in mitigating and adapting to climate change: Village government, business, residents/citizens, the school district, civic organizations, faith-based communities. Village government must therefore seek in every way possible and at every opportunity to increase public awareness of the challenges we face in climate change, and to nurture commitment in all sectors to the goal of reducing carbon emissions.

P6. Irvington's historically high level of volunteerism and many active cultural and civic institutions - if activated - can be powerful engines in the Village's effort to reduce carbon and adapt to climate change.

P7. Climate protection is a global challenge. Irvington must work closely with neighboring municipal governments and the Town of Greenburgh, and take advantage wherever possible of material and financial resources available through the County, State and Federal governments.

P8. The Village Board and Administration need to do in-depth risk assessment and financial planning for potentially catastrophic weather-related occurrences as well as extreme resource disturbances, such as severe flooding or drought, pollution of drinking water supply, impediment of roads and railways, human health epidemics, etc. Financial planning should be done in concert with neighboring villages and the Town of Greenburgh, as well as with awareness of the planning, processes and available resources of NY State and the federal government.

Note About Priorities:

Each recommendation within this report (excluding **Schools**) has been assigned a priority (1,2,3) indicated by a leading bracket such as: **[1]**.

PUBLIC AWARENESS

Village Follow-Through

[1] Formally Endorse County Global Warming Action Plan

The Village Board should pass a resolution endorsing the Westchester Action Plan for Climate Change and Sustainable Development 2008 (WAP 2008). Endorsement of the WAP could be paired with the appointment of a Village Green Policy Task Force and Sustainability Coordinator, as recommended below.

The WAP 2008 is a well-researched comprehensive plan to address the problem of climate change. The recommendations set forth within this report are inline with the goals and recommendations of WAP 2008. The Village will save both time and money by aligning with County WAP initiatives, and utilizing County resources such as educational materials and programs, expert consultants, and County funding opportunities.

[1] Create Irvington Green Policy Task Force

Create a Green Policy Task Force to study the recommendations contained in this report as well as the County Global Warming Action Plan, and create a prioritized legislative agenda for the Village Board. Members of the Green Policy Task Force should include broad representation of the Irvington community.

[1] Appoint Village Sustainability Coordinator

Appoint a part or full-time Village Sustainability Coordinator (VSC) whose job would be to:

- a. Develop and implement a public awareness and education campaign about climate change and the role of human behavior in global warming.
- b. Network and coordinate climate protection efforts in our village with those of neighboring municipalities, the Town of Greenburgh and the County, especially in issues such as development, water management, and transportation where cooperation and joint action are essential to effect lasting change.
- c. Seek out material, informational, and financial resources already available from other sources that can be helpful in the campaign for climate protection in Irvington.
- d. Research and apply for grants from government, corporations and foundations to support climate protection initiatives in our Village wherever possible.

Note: Without the steady focus of an appointed staff person, the Village will continue to have great difficulty in taking action on environmental issues. The cost of a full-time staff person dedicated to climate protection could be shared with other municipalities or sponsored by a grant from a corporation or foundation. This position might become self-funding through a combination of sponsorships or grants and cost savings to the Village.

Focused Public Education

[1] Create Educational-Public Dialogue Events

The Village should sponsor educational and community dialogue events focusing on each area of Climate Protection: Energy, Transportation, Water Management, Land Use, Waste Reduction.

Villagers need reliable, up-to-date information on climate change and what we can do about it. Equally importantly, the Village government needs to hear questions, concerns and ideas from all sectors of the community. Therefore, educational events should include or be paired with opportunities for discussion and public dialogue about the issues of Climate Protection. There are many speakers and programs readily available which could be scheduled for events in Irvington at relatively low cost or even free. The VSC could be charged with seeking out and proposing speakers/events who would be most effective in educating and stimulating efficacious discussion in Irvington.

[1] Make financial planning for climate change adaptation a public affair.

When people realize the serious fiscal impact of climate change, they will become more likely to act. Hold public lectures and town meetings facilitated by professionals (e.g, from RPA or ICLEI) to help the community begin considering questions such as: How much additional money should we begin to set aside for additional road damage? How much for building damage? park damage? evacuations/relocations?, etc.

[1] Cooperation between Village & School District

The Village should continue to build on cooperative projects and initiatives with the Irvington School District in all areas of Climate Protection: Energy Conservation, Water Conservation and Protection, Transportation, Waste Reduction, and environmentally-conscious Land Use.

[1] Village Hall Informational Area

Establish an area of Village Hall for display and dissemination of climate protection education materials.

[1] Utilize Village Website

Insert a direct link on the Village Website to the WAP 2008, and create a "Green Page" link for posting information and Village news relating to the work of the GWAAC and carbon emission reduction in general, and containing links to other relevant resources. Incorporating a Green Page specific to Irvington on the Village website would be an important tool for both communication of Village activities regarding climate protection, as well as education about specific ways Villagers can reduce carbon emissions.

[3] Cable Air-Time

Make cable air time available for educational shows about climate change, as well as the environment. Encourage students or Village groups to utilize the educational possibilities of the Villages' cable television access channel(s).

Encourage Sustainable Practices and Lifestyles

[1] Green Awards Program

Establish an annual Green Awards Program to acknowledge individuals, businesses and organizations in the Irvington community for taking initiative to reduce carbon emissions in their operations/lifestyle. Such recognition can provide additional positive incentive for reducing emissions while also providing education and inspiration by making others aware of what their neighbors are doing to address this shared problem.

Award recipients could be recommended to the Board by the Green Policy Task Force or by "voting" on the Village website Green Page. Acknowledgement can be through simple means such as a Board resolution, a featured story on the Village website "Green Page", or a posting on the Village Main Street bulletin Board. Alternatively, the Village could hold an annual gala ceremony at the Irvington Town Hall Theater. The gala could also be a fundraiser for a chosen carbon-reduction project within the Village.

[1] Green Homes & Businesses Program

Create a Green Homes & Businesses Program of voluntary participation in energy, water, and waste audits. This program would be conducted mostly through a link on the Village website, and managed by the Village Sustainability Coordinator. The GHBP would provide the Village with a database that would be a tool for setting goals and quantifying progress on reduction of carbon emissions for participating households and businesses as statistical representatives of our community.

[1] Make Public Space Available without charge

The Village should allow Irvington-based grassroots organizations to use public meeting spaces without charge (subject to scheduling through regular channels) in their efforts to educate and promote Climate Protection.

WATER MANAGEMENT

Stormwater Management

[1] Encourage rain water (storm water) and “gray” water (bath, sink) re-use, especially for gardening and irrigation. A pamphlet can be generated (or may already be available through the county or state) which outlines the various techniques to use on your property. Ensure building code does not prevent such re-use systems.

[1] Encourage water quality by bio-filtering and sedimentation of storm water before on-site storage and controlled discharge/disbursal into storm drain system. A pamphlet can be generated (or may already be available through the county or state) which outlines the various techniques (“best practices” include rain gardens, vegetative swales, etc.) to use on your property. Ensure building code does not prevent such re-use systems.

[1] Require 1, 5 and 10 year maintenance programs (including on-going funding model and/or escrow requirements) to be specified for all site development stormwater management systems. To be reviewed and approved by ECB, Planning Board, village engineer. Monitoring (yearly) by village engineer and/or wetlands expert. Remediation requirements and process to be clearly specified in village code.

[2] Keep contaminants out of storm water system. Wash cars (etc.) on lawn or gravel (pervious surfaces) instead of on asphalt driveway or street. (Or utilize a commercial cash wash facility which treats and recycles water.) Clean up after pets (lawn, street, parks). Keep feces & contaminants out of the storm water system. Don't dispose of business or household hazardous waste into sinks, toilets or storm drains (which contaminate the storm water system and eventually, the Hudson River). Mainly public education with some local & regional enforcement aspects.

[2] Demonstration rain gardens and use of rain barrels – locate, create and install at village facilities and/or at schools. Partly public education, partly to expose village staff and boards to appropriate technology use for pre-filtering storm water runoff before it gets sent into the storm drains to the river.

[2] Ensure that a riparian buffer zone is created at Irvington Reservoir to act as a bio-filter for any run-off from trailhead parking area (Cyrus Field Road) - may be expanded to include the DPW staging area.

Building Code

[1] Reduction of impervious surfaces – village building codes (FAR and site coverage regulations) should be updated to include all impervious surfaces including driveways in coverage calculations. Storm water retention site planning should be expanded to allow bio-filtering rain gardens and re-use via irrigation system. Approvals for repair (over a certain % surface area) or replacement of existing driveways should require inclusion of a complete storm water system. Municipalities in our region are now requiring that developers must provide 1½ times the impervious surface (effective rain volume) in retention capability.

[1] Mandate installation of reduced-flow shower heads, toilets, appliances and fixtures for new construction and renovation. Couple this with an educational component outlining the benefits of upgrading appliances and facilities to meet (county or town?) “Energy Star” requirements.

[2] Upgrade water meters throughout village to be “automatic” (remote) reading. Adjust water and sewage rates to reflect actual cost-of-service. Accompany all water bills with educational materials promoting simple ways to conserve water for residences and businesses.

[3] Green Roofs & Green Walls – encourage the development and installation of green roofs and green walls on new construction or for retro-fit on renovation projects. *If the Village moves to incorporate LEED™ by reference in its building or land use codes, then Green Roof and Green Wall technologies should be classed as prerequisites, rather than voluntary points. (The same holds if the Village decides to offer incentives such as density bonuses for LEED™ construction and design.)*

Flood Mitigation

[1] Identify areas of potential flooding around the village and develop plans for mitigation of these flood prone areas. Budget for, develop plans & mitigate. Apply for Westchester County grant for immediate mitigation study & measures. As part of this effort, support the passage of a Westchester Flood Control District – and/or become a member of an ad hoc inter-municipal flood control/planning group for our region.

[1] Perform longer term analysis of potential impact of rising Hudson River water levels on the water front areas of development and on parks. Review and adjust all building codes for river front and nearby low lying area development to reflect increase hazard of flooding due to more frequent extreme weather events.

[2] Reduce or eliminate storm water runoff from merging into waste sewer system. Full mapping of existing storm water systems should be undertaken by village. Significant fines should be in place for intentional abuse by builder, contractor or homeowner or business operator. (Includes School District!)

Wetlands and Water Courses

[1] Develop 3 year plan to restore and maintain natural water courses such as Barney Brook, Halsey Pond. Erosion of stream beds can create property and infrastructure damage, increase flooding, and clog downstream storm water systems. Riparian buffers and repaired/strengthened natural stream beds (and channels) serve as a primary bio-filtering process and flow control for storm water runoff. They can also serve as wildlife habitat for diverse species.

[1] Protect, maintain and expand wetlands. Eliminate issuance of zoning variances in wetlands – especially relating to over-development due to approval of fractional site capacity variances. The village should consider a moratorium on building on wetlands while it reviews possible amendments to the current wetlands ordinances with a goal of increasing wetlands

protection and more clearly outlining a standard evaluation workflow between ZBA and Planning Board for sites containing wetlands. Require Board of Trustees to be lead agency for approval of any wetlands SEQR & variance.

[2] Ensure village staffing to monitor man-made wetland solutions so as to determine how well the solutions work (or have not worked). Hold developers and builders responsible over a 5 year timeframe (via performance bond in escrow) to maintain manmade wetlands & perform any restitution required. (Ditto for drainage control / storm water management projects.)

[2] Enforce erosion control best practices and methodology for all building sites, regardless of size. Prevent runoff from construction site from getting into storm water system. May contain debris, soil and mud (potential clogging hazard) as well as contaminants from site. This includes staffing of a building department enforcement officer for on-going post-permit monitoring.

Water Supply

[1] Examine the village's water infrastructure including a detailed risk and cost analysis of existing regional water agreements (both for "normal" and "emergency" conditions). A detailed report on conditions, problems and deficiencies requiring replacement or repair should be generated by an independent engineer. A 3 year plan based upon estimated costs for such replacements or repairs should be proposed for Board of Trustee review. *Note: full details of current water agreements and policies was not made available to the committee due to "homeland security" concerns.*

[2] Ensure that Irvington Reservoir can be utilized as an emergency alternate water source for regional disaster scenarios.

[3] Consider Relocating Firing Practice Range

The location of the current police firing range above Irvington's Reservoir is potentially a problem, should the Village need to rely on the Reservoir as a back up water supply. Alternate locations for target practice should be considered.

Tree Preservation

[1] Upgrade the existing village tree code from a tree-cutting permit process to a true tree preservation code. A report detailing possible Tree Preservation Code upgrade could be developed by existing Tree Commission staff based upon local experience and review of other region tree codes. The violation remediation process needs to be codified, regularized, strengthened. A village staff position (Building Dept. inspector?) for tree code enforcement is needed. Lists of protected and recommended tree species should be developed. A tree valuation methodology is also required.

[1] Zoning code / tree code should be updated to explicitly protect the local tree canopy. A mandatory replacement policy for tree removal during site development is now in place in many local communities in our region. Some required 1 for 1 replacement, others

required 2 for 1 replacement using guidelines based upon species, size and replacement types. Replacement can be on client property under development, on village property (parks) or an equivalent contribution should be made to a village tree replacement fund.

[2] Creation of a GPS-based tree canopy coverage map with on-going monitoring so as to map secondary “rate-of-change” impacts, as well. Such a map is most useful if regionally based, not just determined by single municipality. (Cornell Co-operative has a pilot program for municipal tree mapping called “SWAT” which records location, species type, size, pruning and health status, etc.) Coverage maps should be used by Planning Board (etc.) in determining neighborhood impact of tree removal proposed in a site plan.

[2] Educate business and residential communities regarding the economic and environmental benefits of trees (such as temperature and stormwater mitigation), as well as the proper care and protection of trees (especially during site construction). Important to have such material available for architects, builders and contractors and homeowners through the Building Department and the Planning Board. Ensure the village departments and boards have a thorough knowledge as to the benefits of tree preservation towards counteracting the effects of global warming.

[2] Develop a deer management program to reduce severe overpopulation. At current densities, deer herds are wiping out all woodland and urban forest understory growth, including tree seedlings, native wild flowers and shrubs. This is resulting in a “seedling gap” which will prevent normal forest re-growth and generational tree succession. The village needs to work with local municipalities, at county level and with the State to define and implement an effective response.

[3] Village needs to adopt a law (similar to that adopted by Greenburgh and other municipalities) which gives additional oversight and approval rights to village during Con Ed or Verizon utility right-of-way trimming and clearing.

Landscaping

[1] Encourage Sustainable Landscaping practices include composting, mulching with leaves, organic lawn care, utilization of native species, increased planting of trees, storm water management (*as outlined elsewhere herein*), riparian buffers, wildlife habitat zones and untouched open space.

[1] Reduce use of fertilizers on lawn and in gardens, especially excess application of phosphorus on lawns. Consider a ban on lawn fertilization. Encourage business and homeowner testing of soils before application of fertilizers or other compounds/augmentation.

Bio-contaminants

[1] Reduce or eliminate contamination of water and land with bio-active compounds, residues and by-products sourcing from personal medication. This may require a 2-pronged approach:

- Special filtering/processing of sewage waste water before discharge (expensive and not totally effective?).
- Elimination of used, spare, out-of-date and unwanted medications from the solid waste stream – in other words, special recycling and processing for bio-medical wastes & discarded prescriptions. (Already offered infrequently via County Waste Clean-up Days.)

[2] Reduce, eliminate or prohibit use of synthetic grass in any village athletic field or court. Educate the public as to the long term issues of health impact, ground water contamination and materials disposal problems.

WASTE MANAGEMENT

[1] Intensive Public Awareness and Education Campaign on principles of Reduce, Recycle, Reuse & Reclaim:

The Village should immediately begin an intensive public awareness and educational campaign to promote reducing reusing recycling and reclaiming materials that might otherwise enter the waste stream to minimize the financial and ecological burdens of waste. Westchester County and New York State are serious about waste reduction and recycling because of the economic as well as the environmental benefits. Money spent on effective public education about waste reduction and recycling is money well spent.

Note that the Citizens Budget Advisory Committee also recommended: "Expand recycling: Research and adopt best practices from other municipalities to expand source separation of recyclables. . . . The Village incurred \$125,000 in the current fiscal year for dumping sanitation and construction debris. The village pays no fees for recycling."

[1] Acquire and Install Public Area Recycling Containers:

Every garbage can in the Village should be recycling-enabled. The Village should procure and place appropriate outdoor recycling containers (in keeping with those used in neighboring municipalities/County) in Irvington parks, and eventually all public areas including on Main Street.

There are several ways in which the cost of acquiring recycling containers can be reduced:

a) If the IDPW feels the public area recycling containers covered in the County's purchasing contracts will be effective in our parks, those containers can be purchased at discount through the County. Peter Costa, head of Purchasing for the County DEF can be reached at: 813-5427.

Steeper discounts can be gotten through the County if municipalities and school districts pool their recycling container orders. By combining orders for recycling containers with the Irvington School District and neighboring municipalities, Irvington would enable the County to negotiate even lower prices per unit on the selected models.

b) Through NYS DEC Assistance Programs for Waste Reduction and Recycling, Irvington is eligible for a 50% reimbursement on:

- Recycling containers
- Vehicles used for recycling
- Recycling Coordinator salaries and educational programs run by the municipality.

This NY State assistance is available to municipalities on a non-competitive basis. Go to: "<http://www.dec.ny.gov/pubs/4776.html>"

c) Sponsorship of public area recycling containers could be solicited from Irvington businesses. Tarrytown has had Main Street businesses purchase recycling containers for placement on their Main Street. Such a sponsorship program might be extended by soliciting sponsorship also from community civic organizations, faith-based communities, etc. The more participation there is in the placement of recycling containers, the more commitment there will be for using the containers properly.

[1] On-Property Composting of Leaves, Grass-Clippings, Yard Waste:

The Village should create an educational program to encourage on-site composting of leaves, grass clippings and yard waste. Eventually, on-site composting of leaves and other yard wastes should be mandated and fees assessed for the service of Village collection and disposal of yard waste.

Leaf pick-up by the Village is expensive in terms of both costs to the Village and carbon emissions. Leaves blown to the street for pick-up by the Village frequently end up clogging storm drains or creating hazardous driving conditions, and requiring repeated and costly pick-up trips by DPW vehicles.

Note that the Citizens Budget Advisory Committee recommended that Irvington follow Dobbs Ferry in requiring property owners to bag their leaves. The CBAC considered that bagging of leaves would reduce the considerable expense of DPW overtime during leaf season. Composting of leaves by property owners would be an even greater financial and environmental savings for the Village.

[2] Discourage/Eliminate Use of Plastic Shopping Bags in Village:

The Village should work with the Chamber of Commerce to discourage the use of plastic shopping bags in Irvington, encouraging Village businesses to charge for service of providing plastic shopping bags. A public awareness campaign should be conducted on the problem of plastic bags in storm drains, the River, and for wildlife to win the cooperation of residents. The school district can also be encouraged to create awareness among students of the many facets of the issue.

[2] Recycling of Food Waste:

Village restaurants and food stores should be encouraged to donate or compost food wastes if they are not already doing so. Village residents should be encouraged to compost their kitchen wastes responsibly. Appropriate home composting bins and, most importantly, composting education programs should be made conveniently and inexpensively available through the village.

[3] Adopt Long-Term Goal of Pay-As-You Throw Waste Removal Service:

Begin to move the Village waste system to a "pay as you throw" basis. Although it will be a challenging change for our Village residents and businesses, "pay as you throw" has been extremely successful in many other municipalities, with reduction in solid waste by large percentages. See the EPA's website Pay As You Throw:

"<http://www.epa.gov/epaoswer/non-hw/payt/intro.htm>"

TRANSPORTATION

Encourage alternatives to SOV (single occupancy vehicle) travel.

[1] Lobby County for Bus Shelter on Route 9 & Main

Villagers are less likely to use the bus if they get wet every time it rains. Using mass transit is an important component in reducing carbon emissions from transportation. The Village should exert whatever pressure possible on Westchester County DOT (Transportation Commissioner Larry Salley) to get a bus shelter placed on Route 9 and Main Street to encourage the use of the Beeline.

[1] Install Bike Racks in Business District

Bike racks should be installed at the library, train station and in the area of Town Hall. The schools should also have adequate bike rack capacities. Providing a convenient and safe place to leave your bicycle may encourage some to bicycle where otherwise they would drive, thereby reducing carbon emissions.

[1] Create priority spots for motorcyclist and scooter users.

Motorcycles and scooters use far less energy to transport motorists to and from the train station. Moreover, two parking spaces for cars could accommodate 8-10 motorcycles or scooters. This measure would increase the availability of parking as well as reducing carbon emissions. The Village could work with the MTA and All-Rite Parking or could designate some spots which actually belong to the Village on the Street or in the municipal lot at the foot of Main Street.

[2] Lobby 1W Bus connection to trains station.

The Village should exert whatever pressure possible on Westchester County DOT (Transportation Commissioner Larry Salley) to get the 1W bus to come down main street, loop around via North Buckhout Street and Bridge street to stop at the train station at the foot of Main Street. Irvington is the last rail stop on the Hudson line before the 1w turns inland for White Plains. Train riders from the south and particularly the north, where the 1W does not serve, could connect with the bus to travel to and from White Plains with minimal disruption to current service. This would also promote cross-use of mass transit modes.

[2] Consider instituting a Main Street Shuttle Serving Commuter Trains

A shuttle bus serving commuter trains on weekdays could be explored as a way to alleviate traffic on Main Street during commuter hours. The Senior Center vans/buses might be used to shuttle people up and down Main Street between the train station and either end of Route 9. A stop could also be made at the aqueduct for pick-up/drop-off points during peak commuter periods. If train commuters who currently ride are provided a reliable alternative, they may chose not to drive to the train station, reducing emissions due to the SOV use of

their cars. A reliable service might even support charging a small fare each way as motorists would not have to pay for monthly permits. Fewer cars would also reduce congestion on Main Street during peak commuter hours, further reducing carbon emissions.

Continue Walkable Community Campaign with School District

[1] Continue to work with the School District on a campaign to encourage students to walk, bus, bike or carpool to and from school. The Village should develop disincentives for using Single Occupancy Vehicle (SOV) transportation and/or incentives, such as decals for back packs, for walking, biking, carpooling or riding the bus. The Village could work with the School District to create a website which would allow students and staff who walk, ride the bus or car pool to log on daily and see how many pounds of CO₂ they reduced their footprint by that day and cumulatively over the year. The total for the schools would also be displayed, and the schools could compete with another to achieve the most eco-friendly record.

Empty buses and SOV's are the least fuel efficient and highest carbon-emitting modes of transportation for students. Getting two people to ride in a car is twice as fuel efficient. Getting someone to walk is infinitely more fuel efficient. In addition, the extra vehicles needed to transport students single creates/adds to the congestion to and from the middle/high school, which further increases CO₂ emission. As more students walk, bike, bus or carpool, this multi-faceted problem will be dramatically relieved at no cost to the Village or School District.

[1] Repair the Trails from the Cedar Ridge Development to the Middle/High School.

The Village should partner with the School District and the Fieldpoint Homeowners Association to repair the trails from the Cedar Ridge development to the Middle/High School so that they are useable in almost all weather. Only if a trail is reliable no matter what the weather and relatively convenient will students habitually walk to school from the Cedar Ridge neighborhood. Walking will reduce car trips, which will reduce CO₂ emission and also reduce congestion, further reducing CO₂ emissions.

[1] Create a useable Trail from Mountain Road in East Irvington to the Middle/High School.

The Village should partner with the School District and the developer of the Westwood Property to create a trail from Riverview Road at Mountain Road, Hudson Avenue and Sunnyside Place (both via the water tower) to the Middle/High School which would be useable in almost all weather. It is a significantly shorter distance to walk via the above trails to the schools than to drive. Given the current levels of congestion on High School Drive, it might be even faster to drive. Only if a reliable trail is provided will students use it. Walking will reduce car trips, CO₂ emission and congestion.

Encourage Smaller, Fuel-Efficient Vehicles/Discourage Low-Efficiency Vehicles

[1] Village Resident Parking Fees could be structured to encourage smaller, more fuel efficient cars by having lower parking fees for hybrid, electric, fuel cell, or other fuel efficient/very low emission vehicles. Ownership of smaller, more fuel efficient vehicles by Villagers would alleviate not only the exhaust and carbon emissions on Main Street, but also the dangerous crowding and narrowing of the street due to the size of vehicles. If smaller vehicles were more common, parking spaces could be smaller, and more vehicles might be accommodated in the business district.

Village should Invest in Hybrid Motor Vehicles

[1] When the current police cruiser fleet reaches the end of its useable life, they should be replaced with hybrid vehicles. Hybrid vehicles generate virtually no carbon emissions when idling, which can constitute a considerable portion of a police officer's patrol. Current hybrid vehicles are adequately powerful to deliver a police officer to the scene of an emergency in a timely fashion. Irvington is such a small and peaceful community, that there is no need to have police vehicles traveling in excess of the State Speed limit anywhere in the Village.

[2] Make Fuel Economy Efficiency/Low Emissions a Priority in Replacing DPW Vehicles. If state-of-the-art DPW service vehicles are not an improvement in fuel-efficiency over current DPW vehicles, delay purchases of new trucks, etc. as long as possible. Explore sharing selected service vehicles with neighboring villages or the Town of Greenburgh in order to be able to afford the newest, fuel-saving technology available.

Long-term Adaptation Measures

[1] Join with other municipalities on the train line to work with MTA regarding transportation contingency plans in the event the current train tracks become flooded.

[1] Study and prepare for re-establishment of Ferry and Water-Taxi service to Irvington. Irvington should begin to prepare for long-term re-establishment of the waterfront as a "back door" to Irvington. The Village owns access to the River at the end of Main Street, and some people still remember the days when a ferry operated between Irvington and Piermont.

Any plans for developing the waterfront should leave open the possibility of re-instating river transportation access to Irvington. The Village government will have to work with developers to achieve the goal of re-opening River transportation to Irvington.

Yonkers and other villages are developing ferry service for tourism and water taxis for commuters. Irvington has great restaurants and Theater, but transportation by road can get bogged down in congestion, and parking can be difficult at peak commuter and theater show times. In the long term, Irvington may not be able to effectively compete with neighboring communities as a destination for visitors if River transportation is not opened up.

ENERGY

[1] Shift electrical use to off peak-demand times when possible. Village should explore possibility of shifting its own electrical use in municipal buildings to non-peak periods when possible, as well as encouraging residents and businesses to do the same.

[1] Mandate LEED™ Silver standards for all new construction and major renovations. In lieu of mandating that new construction be LEED™ Silver standard, incentivize compliance with meeting LEED™ Silver standards in all new construction and major renovations with expedited site review, tax/zoning benefits, etc. At minimum, adopt Greenburgh's Energy Star Homes Standards for all new construction and renovations. Many municipalities are requiring new construction to be LEED™ Silver standard to ensure best practices in energy efficiency and carbon reduction both in the construction process and in the use of the building.

[1] Encourage new construction as well as retrofitting of existing structures to incorporate alternative sources of energy including geothermal (e.g. Bridge St. property, Ossining Library), solar thermal panels, solar photovoltaics, and wind. At minimum, ensure building and zoning codes do not impede or discourage use of alternative energy. Further, the village should explore incentives to support and encourage use of alternative energy. Half of homeowner energy costs in a typical NY home go to heating or cooling. The EPA pronounced geothermal heat pumps the most energy efficient, environmentally clean and cost effective space conditioning systems available - 48% more efficient than gas, 75% more so than oil and more cost efficient and practical than solar for this region.

[1] Adopt anti-idling ordinance against idling for more than 3 minutes with penalty for non-compliance, exempting certain vehicles such as emergency vehicles, an engine being used to provide power for an auxiliary purpose such as loading, discharging, mixing or processing cargo, controlling cargo temperature and others as necessary. Idling in traffic should not be permitted. It is the norm in other countries to cut the engine when stuck in traffic. The exception would be on a hill in a vehicle that rolls. Violators should be issued appearance tickets and fines. Banning excessive idling will minimize the production of green house gases. Every gallon of gas burned emits 22 pounds of carbon dioxide so idling for 10 minutes emits 1.5 pounds of carbon dioxide. Many local villages have already adopted anti-idling ordinances such as Bronxville, Hastings, Rye, Port Chester, Scarsdale, Somers, and Yonkers.

[1] Adopt ordinance banning use of 2-stroke engine lawn/yard maintenance equipment with penalty for non-compliance. Two-stroke engines emit a greater amount of unburned hydrocarbons (HC) and particulate matter (PM) than 4-stroke engines; 2-stroke engines emit up to 25% of raw, unburned gas in their exhaust forming ground-level ozone and respiratory and cardiac health hazards.

[1] Limit use of leaf blowers with penalty for non-compliance. Leaf blower use impedes the formation of organic materials needed for the regeneration of topsoil, thus impeding the promotion of healthy vegetation useful to control flooding and water purification. Additionally, leaf blowers create airborne particulates, many of which are respirable and may provoke asthma in children and increase the severity of chronic lung disease in the elderly. Beyond the health and environmental hazards posed by unlimited leaf blower use, their use creates a great deal of noise and a "nearly constant intrusion on the peace and quiet of the community, diminishing the quality of life in our community." Dobbs Ferry, Tarrytown, Rye, Bronxville, Greenburgh, Larchmont, Mamaroneck, New Rochelle, Pelham, Scarsdale and White Plains have banned off-season use of leaf blowers.

[2] Retrofit tennis courts with manual timers.

[2] Evaluate lighting efficiency at Matthiesson, Memorial Field and Scenic Hudson Parks. The lights at the ball fields at Scenic Hudson remain "brighter than day" even in the absence of games. Village should explore using manual controls of lighting systems. Lights should not be on when the park is locked and closed to visitors.

[2] Village should encourage residential and commercial sectors to conduct energy audits as part of an educational and outreach program and offer incentives for participation. The more aware of where energy expenditures are, the better able residents and businesses will be to reduce their energy consumption. The village has a number of tools at its disposal for education and outreach including a cable TV airtime, the village website, and newsletters. In order to offset costs of audits, the village can seek corporate sponsorship or apply as a member of an inter-municipal entity for County and/or State funding as in the case of flood insurance. Another alternative approach would be to facilitate the creation of an NGO such as Sustainable Hastings. Incentives could include raffles or giveaways of 'kilowatts,' reusable bags, cash awards towards greening one's home, green seals, etc.

[2] Buy Local: Encourage local businesses and residents to buy locally, to investigate sources of goods purchased. Support local and organic agriculture, farmers markets, local food events and organic community gardens; form CSAs (Community Supported Agriculture buyers co-ops). Utilize expertise of Cornell Cooperative Extension outreach (Master Gardeners) for community gardens – explore additional areas within the village for such gardens.

[2] Buy Green: Encourage residents and businesses to buy green, recycled and less-toxic products as this practice saves energy and minimizes harmful impact on the environment.

Educate Village Residents & Businesses to Conserve Energy

[1] Develop materials and programs to education Village residents and businesses to conserve energy and reduce related carbon emissions. Some points to be addressed in public education efforts include:

- Turn lights off when room not in use.
- Use power strips with switched outlets to control AC adapters.
- Insulate and seal home.
- Clean furnace and air conditioner air filters.
- Tune and clean furnace yearly.
- Install programmable thermostats for heating and cooling.
- Limit showers to 5 minutes.
- Buy compact florescent bulbs (CFLs).
- Fix leaky faucets.
- Install low-flow showerhead(s), toilet(s) and faucet aerators.
- Shade air conditioner(s).
- Run full loads - dishwasher & clothes washer.
- Switch from oil heat to natural gas.
- Explore alternative/green energy sources.
- Reduce waste.
- Reuse materials.
- Recycle.
- Compost kitchen and yard waste.
- Purchase in bulk.
- Buy local.
- Buy “green”.
- Buy post-consumer, recycled goods.
- Install window canopies.
- Shade windows in summer (blinds) and winter (drapes).
- Install thermal paned, double paned windows.
- Landscape home for maximum seasonal energy efficiency.
- Purchase Energy-Star rated appliances when replacing/buying new.
- Use timers and motion sensors on outdoor lights.
- Use reusable shopping bags instead of plastic or paper.
- Purchase Carbon Offsets (e.g., with programs like Terrapass.)
- Car pool, walk, bike, use mass transit.
- Organize car-based errands for best route efficiency, including off-peak travel.

LAND USE

[1] Zoning statement of purposes.

Add language to the Zoning statement of purposes at § 224-1 that reflects Irvington's desire to:

- maintain ecological integrity;
- use zoning as a tool to promote mitigation of and adaptation to climate change;
- promote density, walkability, transit adjacency and mixed-use development as strategies for preserving an economically vital and environmentally healthy community.

[1] Adaptation to Water level rise

The Village must think proactively about how it will cope with water level rise. There are two main components to this issue:

Train line

Partner with other towns on the train line to work with MTA so that the Village has a say in the development of plans to ensure the train tracks remain viable as Hudson River water levels rise.

Waterfront Development

Planning for flooding of riparian parcels should be a central issue in any negotiations with developers concerning waterfront properties. *Please note:* this is a rapidly evolving area of finance and law; the Village must consult with qualified attorneys and finance specialists to devise approaches that will truly protect Irvington as waterfront development continues concurrent with water level rise. The committee, therefore, does not recommend any particular step but merely outlines below one potential, *theoretical* strategy for safeguarding Village interests whenever the Village enters negotiations with a would-be waterfront developer:

- The Village should hire, at developer's expense, qualified experts to assess Irvington's vulnerabilities as the Hudson rises.
- The Village should consult, at developer's expense, with environmental insurance and finance specialists to devise packages of comprehensive insurance coverage, bonds, and/or other forms of indemnification to ensure the Village bears no cost for the following:
 - clean-up operations for conventional and/or hazardous materials when waterfront properties flood;
 - rescue or relocation activities connected to flooding of waterfront properties;
 - closure and decommissioning of facilities and operations once use of waterfront properties becomes impractical.
- Acceptance of such a package by developer should be a precondition to approval of site plans for any waterfront redevelopment.
- The Village should take steps to ensure that if a parcel subject to these conditions is transferred or sold, the new owner must assume commensurate financial responsibilities or else the decommissioning requirement would be triggered.

[1] Financial planning for adaptation

Make financial planning for climate change adaptation a public affair. When people understand the serious fiscal impact of climate change, they may become more likely to act. Hold public lectures and town meetings facilitated by professionals (e.g., from RPA or ICLEI) to help the community begin considering questions such as: How much additional money should we begin to set aside for expected increases in road damage? How much for building damage? park damage? evacuations/relocations?, etc.

[1] Responsible Transit Oriented Development

Promote a dense, vibrant, mixed use district in the area adjacent to the station. Irvington has admirable density and a relatively compact form, but its areas are not well connected by walkable routes, and there is not enough of a business center to allow residents to take care of basic needs without the car. Steps to creating a more vibrant node include:

- Encourage Mixed-Use Development on South Astor Street, as proposed in the 2003 Plan at p. 77;
- Court responsible developers to create a mixed-use project on the triangular lot (backing to Buckhout) presently occupied by Public Works. Leverage assets (the site, ability to re-zone for residential, etc.) to find a developer who will deliver high-level green building practices and a vibrant, mixed-use project;
- Amend the land use map in the Comp Plan at 87 to extend the mixed use “pink” zone so that it covers the area up to and including Buckhout (north to the Mathiesson property and south to where it meets S. Astor);
- Re-zone to allow/encourage accessory apartments by permit within a .5 mile radius of the train station. Modify language at § 224-8 B(7)(a) to conform with this change;
- Re-open talks with MTA to create a pedestrian overpass connecting Astor Street with the business/restaurant area across the tracks and with Scenic Hudson Park. (The 2003 plan, at 78, suggests that Irvington is interested in such a bridge and has already discussed the idea with MTA.) A developer of the Public Works lot and/or the Bridge Street developer could potentially be induced to contribute to a pedestrian overpass project;
- Ensure that work is completed on the lighted pedestrian pathway to Scenic Hudson Park as proposed in the 2003 Plan at p. 78.

[2] Planning Experts

Initiate cost sharing plans with neighboring rivertowns to ensure that Irvington has adequate sustainable planning experts to help it meet the challenges of climate change. Consider appointing a joint green building/green planning staff.

[2] Subdivision Ordinance

Integrate an aggressive conservation subdivision ordinance into the zoning code to ensure that remaining large parcels such as the Nevis site will be handled responsibly if/when they are sold to developers.

[2] Overall connectivity and walkability:

As noted, Irvington is relatively compact, but there are many impediments to walking/biking as an alternative to travel by car.

- Hire planners to assess walking and biking routes to downtown area and to schools. (Work with schools on latter);
- In lieu of hiring experts, or as follow-up: create a walking/biking committee of villagers whose sole task it is to walk and bike areas of the town and come up with practical ways to enhance walking and biking (NYC does something akin to this);
- Ensure that work is completed on the lighted pedestrian pathway to Scenic Hudson Park as proposed in the 2003 Plan at p. 78;
- Partner with other towns to ensure continuous greenbelts that have good walking/biking paths.

[3] Public Awareness

Foster public awareness concerning the vital role that land use planning and building practices play in climate change solutions:

- organize one or more public lectures/discussions that highlight the link between the built environment and climate change;
- create a board at the library and/or in front of town hall devoted to land use and building issues and their role in addressing and adapting to climate change.

[3] Next Comprehensive Plan

Ensure that the next Comprehensive plan incorporates language to support the Village's use of 'climate friendly zoning.'

SCHOOLS

S1. **Walk or bike to school:** please see the "Continue Walkable Community Campaign with School District" section of Transportation.

S2. **Representative on the Community Advisory Board (CAB):** a representative should be designated who would sit on the CAB and whose role it would be to work on projects and initiatives relating to the environment and climate protection. Examples of projects that could be organized via the CAB would be:

- An "Earth Day" sustainable fair which would include demonstrations to educate the community and children about climate change.
- A school and village-wide contest to "Envision Irvington Year 2050."
- Collaborative environmental design projects and natural resource projects (examples include the HS architecture class redesign of Matthieson Park, monitoring water quality at Halsey Pond and other significant wetlands areas, clearing of woodland trails) that promote climate protection.
- An annual Irvington "Clean Up" day.
- Creating village environmental projects for IHS senior internships (such as a carbon inventory, recycling education, residential composting, solar power installations, etc.) or for pre-high school school clubs.
- Girl and boy scout environmental initiatives.
- The village and the school district can co-sponsor speakers who would address topics concerning climate change, carbon reduction and individual and community environmental responsibility.
- Work on an annual "Walk to School" day at the beginning of each October (the designated week for International Walk to School.)

S3. **Green practices:** the village can share best practices concerning organic turf management, storm water runoff and management, recycling, electricity usage, green chemicals and other carbon-reducing activities with the school district. The village can identify federal, state, or regional grants to assist the school district in using green technologies, and/or other carbon-reducing pilot programs.

S4. **Direct stewardship:** the village and the school district can work together to engage children in environmental stewardship: a current example includes the woodland trails clearing, but others might include Irvington Town Recreation offerings that dovetail with after-school programs or school environmental clubs, assisting a school district environmental club with projects and equipment, working on collaborative projects about the Hudson River and protecting its watershed, creating a nature center.

S5. **Educational outreach:** the village and the school district could select an environmental theme annually and promote this throughout the year in events, speakers, and on-site demonstrations. Examples would include: waste reduction, composting, walking, recycling, conserving electricity, growing a garden. A common signage project that educates and clarifies these issues could be undertaken, with signs posted throughout both the school district and village for consistency of message.

S6. **Gardening initiatives:** the village and school district should explore ways in which resources can be used to encourage more gardening in the schools and in the village. This could include demonstration gardens, use of Irvington master gardeners, or collaborative garden projects along Main Street.