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Education and Engagement Recommendations

Three climate change education summits were held in the fall of 2007. More than 70 stakeholders worked in small groups to develop recommendations for educating and engaging the public. The initial work of the summit participants was based on the early options identified by the Technical Working Groups for the Climate Advisory Team's consideration.

The education summit stakeholders identified potential education and engagement opportunities, potential audiences to reach, what programs currently exist, and which programs need to be developed. The results from the three summits were used to draft the Citizen Engagement and Action Framework included in the report to Governor Gregoire on February 6, 2008 – *Leading the Way on Climate Change*.

The information in this document is the raw information gathered from the three climate change education summits. It can provide a springboard to further develop a plan for educating and engaging Washingtonians in limiting and preparing for the impacts of climate change.

Agriculture

MANURE DIGESTERS/OTHER WASTE ENERGY UTILIZATION

(Combine with manure management below)

Methane as a source for turbine power is a low energy return process. With our relatively low electrical power rates and gasoline approaching \$3.50 a gallon, methane for internal combustion engines appears to be a much higher beneficial application.

Three anaerobic digester projects were awarded state loans in 2006; show outcomes of these.

See WSU, WWU, Ecology, Tulalip tribe, Yakima Conservation District, Sunnyside Dairy for models.

Encourage innovation. Provide incentives and remove barriers.

Audiences:

- Dairy farmers
- Feedlots
- Chicken farmers
- Energy Consumer
- Shellfish Farmers

How to reach them:

- Farmer's markets
- Energy providers
- Energy producers
- Consumers in local agriculture

- Zoos and Aquarium
- Talk to the bottom line, economics

Existing Education Providers:

WSU Cooperative Extension
Conservation Districts

Potential Education Providers:

MANURE MANAGEMENT (handling and storage, and improve application methods; includes hobby farm and pet waste)

King County documented the amount of hobby farm produced organic waste and manure. There are also significant concerns about pet waste and water quality. Best management practices for manure from hobby farms, best pet waste practices.

Audiences:

- Hobby farmers
- Pet owners (esp. dogs / cats)
- Farmers
- Homeowners Associations
- Urban Gardeners/P-Patches
- Urban Horticultural program at UW
- New Home Buyers
- Real Estate Agents/Chambers of Congress
- Youth Groups, such as Scouts and 4-H

How to reach them:

- Broader watershed issues education in schools, conservation districts
- Educate in zoos and aquariums
- Educate about watershed relationships between farmers and marine resource folks
- Link producers of manure to gardeners
- Mass media markets
- WSU Watershed Stewards in all cooperative Extensions
- Watershed Pledges

Existing Education Providers:

Dr. Doo from Woodland Park Zoo (help educate people about manure management at the zoo)

Ecology- Washington Waters -- Ours to Protect

WSU Extension

Snohomish Co. has pet waste education program

Potential Education Providers:

Carbon Offset Education and outreach

Phase II stormwater communities

A. 1. AGRICULTURAL SOIL CARBON MANAGEMENT (Combine with urban/suburban soil)

Significant opportunities beyond current practices (e.g., conservation tillage/no-till).
Education through conservation districts – they need funding to do this.

Audiences:

- Farmers, hobby farmers, gardeners
- Master Gardeners
- County Extension
- Consumers/marketing

How to reach them:

- DNR and WESTCARB produced an inventory of terrestrial carbon sequestration opportunities in Washington
- “Carbon Friendly Farming” labeling

Existing Education Providers:

Potential Education Providers:

A. 2. AGRICULTURAL NUTRIENT MANAGEMENT

Significant opportunities beyond current practices (e.g., nutrient management plan requirements).

Education through conservation districts – they need funding to do this.

Audiences:

- Farmers
- WSU Cooperative Extension
- Consumers

How to reach them:

Composted solid waste from wastewater treatment education for consumers and farmers

Existing Education Providers:

- WSU Cooperative Extension
- Conservation Districts

Potential Education Providers:

WA Departments of Health, Ecology

A. 3. AGRICULTURAL WATER MANAGEMENT

Reductions depend on the extent that pumping can be reduced.

Education through conservation districts and irrigation districts – they need funding to do this.

Audiences:

- Farmers
- Educate consumers about purple water

How to reach them:

- Salmon safe farming
- Certification
- Saving water saves energy and money associated with infrastructure

Existing Education Providers:

- Conservation Districts
- WSU Cooperative Extensions
- Ecology – Irrigation Efficiency

Potential Education Providers:

- Water Systems
- Irrigation Districts
- Water Trusts
- Department of Agriculture
- Department of Health

CARBON SEQUESTRATION IN PERENNIAL SYSTEMS

Reductions based on increasing Washington orchard acreage by 10% by 2020 (17,200 acres).

Washington orchards estimated to sequester CO₂ at a rate of 35 lbs CO₂/tree/yr or 28,000 lb CO₂/ac/yr.

Education through conservation districts – they need funding to do this.

Audiences:

Orchardists

A. 1 URBAN/SUBURBAN SOIL CARBON MANAGEMENT

Deep incorporation of compost and other organics in soils undergoing development and the use of organic mulches in new and established landscapes.

Other benefits include increased plant health and vigor, reduced need for irrigation, fertilizers and pesticides and less stormwater run-off.

WSU Master Gardeners programs for gardeners, training for landscapers and professional gardeners.

Audiences:

- homeowners
- homeowner associations

- landscapers
- garden nurseries
- municipalities
- schools (composting school food waste)

How to reach them:

Manure sharing between producers and consumers

Existing Education Providers:

WSU Cooperative Extension

A. 2. URBAN/SUBURBAN NUTRIENT MANAGEMENT

Reductions depend on aggressiveness of policy to achieve land use change or change in fertilization practices; costs assumed to be low due to the savings associated with avoided fertilizer use.

Audiences:

- homeowners
- hobby farmers
- local government

Existing Education Providers:

- Ecology – Washington Waters -- Ours to Protect
- Farm Awards
- Conservation Districts
- WSU Cooperative Extensions
- Watershed Pledge programs

Potential Education Providers:

Phase II stormwater communities

A. 3. URBAN/SUBURBAN WATER MANAGEMENT

Urban/suburban users are important in managing water resources, including water harvesting/water rights and dealing with non-point pollution effluent from private individuals and businesses.

Homeowners and businesses have a tremendous impact on local water impacts for fish, climate change, energy consumption, etc.

Encourage zero-scaping.

PRESERVE OPEN SPACE/AGRICULTURAL LAND

Reductions dependent on levels of above and below-ground carbon on the agricultural land vs. developed land; additional indirect benefits of supporting smarter growth in some cases (and the associated GHG reductions).

Costs dependent on the cost of conservation easements.

Senate Bill 5248 “Preserving the viability of agricultural lands”: Counties and cities may not amend or adopt critical areas ordinances as they specifically apply to agricultural activities until July 1, 2010.

House Bill 1636; creation of a regional transfer of development rights (TDR): Subject to amounts appropriated, CTED is required to fund a process to develop a regional TDR program. The program must encourage King, Pierce, Snohomish, and Kitsap counties, and the cities within these counties, to participate in the development and implementation of a regional framework to make TDR viable.

Audiences:

- Municipalities
- Land trusts
- Voters

REDUCTIONS IN ON-FARM ENERGY USE AND IMPROVEMENTS IN ENERGY EFFICIENCY

Level of reduction assumes that the agricultural industry consumes 25% of industrial petroleum and that 50% reduction could be achieved via the policy. Additional GHG emissions would also come from electricity consumption in the agricultural sector. Renewable Energy System Cost Recovery (RCW 82.16.110) and Tax on Manufacturers or Wholesalers of Solar Energy Systems: provides incentives for the purchase of locally made renewable energy products.

Incentive payments are provided by electric utilities to customers generating renewable energy (i.e., solar, wind) on their property.

The federal Energy Policy Act of 2005 provided several renewable energy incentives. Hybrid systems have been developed for ‘big rig’ trucks, and could be adapted to farm use.

Audiences:

- Owners of agricultural lands
- Farmers

How to reach them:

No Till/Direct Seed Farming – saves fuel costs

Existing Education Providers:

Windmill Water pump pilot project– Whitman Conservation District
Conservation Districts

PROGRAMS TO SUPPORT LOCAL FARMING/BUY LOCAL

Transportation accounts for ~20% of food system-wide energy use. Alternative options for improving efficiencies in transportation need to be explored (i.e., rail, etc.).

If taking energy consumed in food processing, storage, and final preparation into account, the potential opportunities to reduce emissions may be higher.

Food production system is estimated to consume 10% of total US energy use.

Need core value change – not wanting strawberries in January.

Audiences:

- Consumers -- how to buy local (or grow own food)
- Carbon offset organizations
- Farmers
- Markets
- Grocers
- Food coops
- Local – Community Supported Ag (CSA) networks
- Wholesale food outlets
- Restaurants

How to reach them:

Carbon Offset Education...making this local and relevant

Food/shelf tags “locally grown”

“Support local economy”

Parents – 30 minute meal workshops that promote locally produced food and educate consumers about seasonal ingredients

Consumer Education-prepared foods and how they affect the environment, personal economy, personal health

Existing Education Providers:

SLOW Food networks –grassroots groups

Farmer’s Market Promoters (local builders are building community friendly neighborhoods that include things such as farmers markets – example, Greenstone Homes in Liberty Lake, WA)

Potential Education Providers:

Grocers

SIGNIFICANTLY EXPAND SOURCE REDUCTION, REUSE, RECYCLING AND COMPOSTING -- MUNICIPAL

Includes a broad range of actions, i.e., increase and expand existing programs, develop new programs, increase participation and recovery rates, expand infrastructure, reduce the toxicity and increase the recyclability of products, develop markets for recyclable materials, and encourage and utilize tools and techniques such as product stewardship, closed loop recycling and cradle-to-cradle manufacturing.

Full implementation of the state’s Beyond Waste Plan and incentives and partnerships with the private sector and local governments will be elements of implementing this action.

Don’t create new programs – coordinate existing programs and get more people to participate.

Make use of volunteers (Master Gardeners, Carbon Masters/Ambassador).

Cultural explanations of recycling instructions (bi-lingual).

Audiences:

- Manufacturers and producers of products
- Product designers
- Retailers
- Businesses that provide processing services
- Trade organizations
- Trainers in universities that educate these groups
- Policy makers
- Homeowners
- Homeowner associations
- Municipalities
- Stores
- Grocers
- Consumers

DIVERT ORGANIC WASTE FROM DISPOSAL

Could be an increase in jobs associated with composting or energy conversion technologies; could reduce Washington energy imports, if organics are used to generate energy.

One of the five major initiatives of Beyond Waste Plan, “Organics” is not limited to yard debris or food waste in the municipal solid waste stream and includes all biomass materials such as land-clearing, construction and demolition debris, wood waste, food waste, fabric, and paper (in some cases carbon-based plastics).

Audiences:

- Builders
- Builder Associations
- Landscapers
- Home gardeners
- Restaurants
- Grocers
- Municipalities/Counties
- Master Gardeners
- Landscaper associations
- Master Composters

How to reach them:

Create Community Compost Piles

ENERGY EFFICIENCY IMPROVEMENTS - UNDER WASTE MANAGEMENT AND WASTEWATER ACTIVITIES

Waste to energy plants

Decrease energy consumption to transport waste (i.e., long hauls to landfills)

Audiences:

- Municipalities

- Energy utilities
- PUDs
- Commercial building managers

How to reach them:

Provide Technical Assistance and energy audits (for free)

Existing Education Providers:

TREE Program – Ecology

Energy Supply

VOLUNTARY GHG COMMITMENTS

Several companies in Washington State have set aggressive voluntary GHG reduction goals.

Audiences:

- Utilities
- Businesses
- Industry
- Homeowners
- Schools
- Builders
- Government
- Academic institutions
- Business schools

How to reach them:

- Provide education and examples of utilities and businesses that have successfully set and met voluntary GHG reduction goals; provide awards; methods for tracking savings in all sectors.
- Utilities provide bill inserts; include carbon footprint data on bills
- Web advertising
- Track carbon output, state and local recognition of carbon savers in all sectors
- Home energy audits
- Incentives and disincentives (monetary)
- Utility DSM Programs
- Governmental programs
- K-20 educational programs, such as OSPI
- Integrate into existing courses, especially for freshmen
- Case studies designed for modular delivery to MBA students
- Summer training session on utility policy in carbon-constrained world

Existing Education Providers:

- Puget Sound Energy and all utilities
- DSM Engineers, Managers and Account Executives- C & I and residential customers
- Government Staff
- K-12 Teachers
- Higher Ed

Potential Education Providers:

- Utility customers (customer-to-customer education)
- Staff trainers to educate other staff
- Local expert teachers to train other teachers
- Students to educate fellow students

CLIMATE CHANGE EDUCATION INITIATIVES

A comprehensive education effort on climate change that would be in addition to focused education components of individual options.

Education and outreach can foster a broad awareness of climate change issues and effects related to energy supply (including co-benefits, such as clean air and public health). Such awareness engages citizens both in direct actions to reduce GHG emissions and in support of actions by government, industry or society.

Education and outreach efforts should integrate with and build upon existing outreach efforts involving climate change and related issues in the state.

Audiences:

Energy users by sector (as above)

How to reach them:

- Teacher workshops to teach how to report “carbon report cards” for schools; to direct schools/districts to report their carbon footprint from electricity, heating, transportation fuels, and waste annually.
- WAGS (WA State Green Schools)
- Web tools that connect communities; weekly TV show
- Clearinghouse of information
- Use endorsement of state agencies (smoking cessation as example – billboards, ads, etc)
- Home energy audits
- Selling CFL’s at school (COOL IT)
- Utilities collaborating with education programs to disseminate coupons, rebates, etc. Connect to other benefits (health, money, etc)
- Multiplier effect (if everyone does something)
- Educate public about incentives
- Conservation; live small
- Educate teachers on content of Global Climate Change (workshops, teacher ed. programs)
- Demonstrate examples of other cultures where sustainable behavior is a cultural norm – Amsterdam, etc.
- Marketing outreach through various media

GREEN POWER PURCHASES AND MARKETING

Washington State RCW 19.29A.090 directs larger electric utilities to offer their customers a green power electricity product. Consider requiring all agencies of the state

to purchase green power from their local utility starting at 20% and ramping up every two years.

Show carbon footprint reduction with green power purchasing. Provide technical assistance or workshops to convert agency use.

Audiences:

- State agency facilities managers & directors
- Local government
- Universities
- Householders and new home buyers
- Realtors
- Welcome Wagon
- Builders
- C & I

How to reach them:

Marketing directed and funded by government

Existing Education Providers:

- Utilities
- Government
- Educators

ENVIRONMENTAL (GHG EMISSIONS) DISCLOSURE

House Bill 2565 (Fuel Mix Disclosure Law) requires retail electricity suppliers in Washington to provide a disclosure label to their retail customers.

Goal of transparency without excess burden from reporting. GHG disclosure could be added to consumer information; prominently visible with each electricity bill.

Show improvements and track changes in plain talk descriptions. Show links to GHG and climate change.

Audiences:

All electricity customers

How to reach them:

- All products include a carbon footprint label (analogous to nutritional information label on food)
- Outreach to specific communities
- Utilities include footprint on bills

Existing Education Providers:

Community, Trade and Economic Development

COMPETITIVE ADVANTAGE

Anticipate future developments in clean energy.

Be a national leader in new developments in clean energy.

Develop forecasting models to predict future developments.

Forestry

IMPROVED FOREST HEALTH

Reduce GHG emissions from forest wildfires, disease and pests. Reduce fuels buildup attributable to decades of fire suppression and subsequent use of woody biomass for bio-energy production.

Prioritize recommendations focused on thinning, and “forest health treatments”, such as prescribed burns and integrated pest management.

Enlist fire control protocols that reduce GHG emissions in fire fighting, such as:

Technical Assistance

- a. Pilot Projects
- b. Professional advice to land owners
- c. Modeling

Stimulate markets

- a. Seed demand for small diameter material through biomass and other markets
- b. Position forest health treatments to be sold as carbon credits in anticipated carbon cap and trade market
- c. Target areas that “pencil” in economic terms first to buy time to resolve infrastructure and other economic limitations

Audiences:

- Forest landowners
- General public
- Environmental communities
- Education providers
- Local fire districts
- Those who would use small diameter material
- Private forestland owners and managers
- State-owned forest land managers
- USDA Forest Service

How to reach them:

Educate individuals on forest health issues

Help people understand and recognize various roles of forests; working forests vs. “natural forests”

REDUCE CONVERSION TO NON-FOREST COVER

Conversion of forestlands to other uses causes carbon emissions with the loss of biomass and soil disturbance. Non-forested areas = lower amounts of biomass and carbon reserves, with less capacity to sequester CO₂ than forested areas.

Forests may be a net source or a net reservoir of CO₂.

Incentive programs can maintain forestland by reducing conversion and promoting forests’ ability to continue to sequester carbon. Position Washington State forestland owners to participate in emerging carbon trading markets.

Develop and implement market initiatives and incentives programs to stem the rate of conversion to non-forest use. Educate forest landowners in program use.
Encourage conservation easements.
Expand Transfer of Development Rights.

Audiences:

- Private forestland owners and managers
- State-owned forest land managers
- USDA Forest Service

How to reach them:

- Local planning commissions
- Government officials
- Voting public
- Social marketing toward individual responsibility
- WSU

Existing Education Providers:

Translating these action items into existing universities and other relative curriculum

ENHANCED CARBON SEQUESTRATION IN FORESTS

Emphasize opportunities to increase and maintain overall carbon storage in the most stable reservoirs in the forest environment, especially stems, roots, and soils.

Position Washington forest landowners to participate in emerging carbon markets; implement programs & incentives to increase absolute levels of sequestered carbon.

Educate on advantages of:

- Increased lengths of harvest rotation.
- Harvest limitations.
- Restock under-stocked areas/Reforest non-forested areas historically in forest cover; use native tree species.
- Appropriate thinning of over-stocked areas.
- Avoid conversion to non-forest uses.
- Widen forested riparian corridor buffers.

Programs and incentives:

- Participate in regional and national carbon markets allowing large and smaller forest landowners.
- Increase conservation easements.
- New tax incentives to encourage forestry and management for greater forest carbon stocks and avoid conversion.
- Other identified forest landowner incentives that protect and preserve forests and address reality of increased ownership fragmentation.
- Change SEPA to require analysis and mitigation of climate impacts, including those related to possible depletion of forest carbon stocks.
- New “Green Building” (e.g., LEED) standards that require use of wood products from managed and sustainable forestland sources that store additional carbon.

Audiences:

- Private forestland owners and managers
- State-owned forest land managers
- USDA Forest Service
- “General public” (on role of forests and forest ecosystems in carbon sequestration)
- Forest harvesters – technical education on “how to”

How to reach them:

Communicate differences between working and natural forests

Existing Education Providers:

WSU Cooperative Extension
University of Washington

EXPANDED USE OF WOOD PRODUCTS FOR BUILDING MATERIALS

Use more long-lived wood products as a strategy for reducing GHG emissions. Wood products not only store significant amounts of carbon but they are also less energy-intensive to manufacture than substitute materials.

Include clear carbon footprint and embodied energy/life cycle information in green building standards and in consumer literature.

Use LCI tools, such as the GBI’s LCA tool for material assemblies (developed primarily for use in GBI’s Green Globe environmental assessment and rating system for commercial buildings) or BREEAM (used in Ecohomes UK green building standard).

Include carbon footprint information/literature on materials in building supply and homes.

Develop information and education programs to promote product substitution (using wood products whenever and wherever feasible) and the benefits gained through carbon sequestration and avoided emissions.

Promote product life-time (recycled stores, preservatives).

Audiences:

- Builders
- Building material suppliers
- Wood product industries
- Recycled building material sellers
- Home improvement stores and consumers
- State agencies (lead through example)

URBAN & COMMUNITY FORESTS

Urban Forests can reduce atmospheric CO₂ in two ways: Trees directly sequester CO₂ as woody and foliar biomass while they grow, and trees near buildings can reduce the demand for heating and air conditioning, thereby reducing emissions associated with electric power production.

- Incentivize/require local ordinances that plant the right trees in the right place to conserve energy (heating and cooling) in new homes and businesses.
- Incentivize and educate home and business owners to position the right trees in the right place to conserve energy (heating and cooling).
- Incentivize/require local municipalities to develop and implement forest management plans that include goals and strategies to increasing number of trees.
- Enable municipalities, utilities, and large urban landowners to help meet the goal through state “seed grants.”
- Position Washington’s additional urban trees for carbon offset markets.
- Establish disincentives (civil penalties) for violations of local ordinances or permits requiring tree retention.
- Consider impact fees and or 4:1 tree mitigation requirements for trees lost in cities and communities from development or other permanent conversion of forested land.
- Fees above local component go into “seed grant” account.

Audiences:

- City planners
- Homeowners
- Business owners
- Landscapers & urban designers
- Planning commissioners, politicians
- Public works & road directors on role of trees (hazards)
- Law enforcement and public safety advocates (they sometimes see vegetation as public safety issue and remove it)

Existing Education Providers:

WSU Cooperative Extension
DNR’s Urban and Community Forests Office

Residential, Commercial and Industrial

PROVIDE INCENTIVES FOR NATURAL GAS AND ELECTRICAL ENERGY CONSUMERS TO BE MORE ENERGY EFFICIENT

Consumers need to know incentives exist, how to access them, what to do, where to get contractors and supplies, etc.

- There is a key need for subsidized energy audits for homeowners, businesses, and industries.
- Need to provide low-cost loans for efficiency improvements, targeted sector by sector, starting with buildings that have large footprints and/or large public face and educational potential, such as schools, churches, non-formal educational buildings (aquariums, zoos, outdoor learning centers), community college and university buildings, entertainment-related buildings (theaters, sports facilities, etc.).

Tie low interest loans for energy efficiency upgrades to education/outreach conditions, i.e., require recipients of low interest loans to reinvest some percentage of energy savings in outreach to that organization's constituency on the energy efficiency elements that were funded. Show how to transfer these technologies from large buildings to the residential sector.

- Incentives for customer-sited renewable electricity and heat, including solar photovoltaic, passive solar space heat, and solar water heat.
- Incentives for specific technologies, such as white roofs/rooftop gardens/ landscaping, ground-source heat pumps, lighting, water heating, plug loads, networked personal computer management, power supplies, motors, pumps, boilers, customer-side transformers, water use reduction, etc.
- Appliance recycling/pick-up programs.
- Energy efficiency reinvestment funds to provide funding for specific sector efficiency improvements.
- Focus on specific market segments (low income residential, small and medium businesses).

Audiences:

- Energy users
- Households
- Businesses
- Industry
- Builders
- Institutions
- residential and commercial landlords

How to reach them:

- Radio and TV ads, websites, promote in energy bills, workshops – go to the audience where they gather to work with them. Show value and payback, cost savings and carbon savings.
- Find sector leaders to model energy efficient choices and then promote them.
- Demonstrations at appropriate venues, such as home centers.
- Public building examples (passive and active examples, signs versus tours).

- Tie existing energy efficiency rating systems (like Energy Star) to consumer incentives such as rebates, discounts, and coupons so that increased efficiency = increased reward.
- Point of sale campaigns at retail outlets ~ “This product makes good carbon sense!” Include incentives at home shows and trade shows as a way to target market specific retail products to potential new adopters.
- Provide retailers with signage templates (and/or other tools they need to remove the barriers to them reaching out to their customers on the benefits of the energy efficient products they offer).
- Promote a legislative requirement to upgrade existing rental building energy efficiency.
- Give landlords tax breaks to institute energy efficiency upgrades.
- Fund energy efficiency upgrades; provide special rates for 2nd mortgages.
- Church to church loans to fund energy efficiency low interest loans is another potential example.

Existing Education Providers:

- WSU offers an information clearinghouse / call center that functions as a referral service and technical information provider for commercial building operators, utilities, and others. 360-956-2000
- Utilities
- Retailers
- Local government
- One example is Home Energy Rating System (HERS)
- WSU Energy Office in Olympia
- Household hazardous waste offices

Potential Education Providers:

- Carbon master program
- Small business development
- Consumer Reports-like media sources rate and report on consumer products’ overall life cycle energy use
- Retailers
- Celebrities
- Need human technical assistance for home energy audits; on-line do it yourself tools are insufficient. Potential models: Master Gardeners model or via existing, skilled professional associations like the Master Builders Association.

ENERGY EFFICIENT APPLIANCES & EQUIPMENT

Provide Energy Star certification for institutions’ retail and bulk purchases.

Position energy efficiency technologies and practices so they are demanded by the public, chosen by builders & manufacturers, and provided by retailers and contractors.

Promote Energy Star, give tax credits or rebates for energy efficient purchases.

Consumer education is a significant supporting measure for market transformation programs.

Show cost benefits and payback periods, give incentives with rebates to remove barriers. Offer professional training through professional associations and contractors.

Audiences:

- Residential appliance users
- Realtors
- industrial/business equipment buyers
- building managers
- appliance retailers
- Codes and standards developers and enforcers
- Engineers, designers, and architects

How to reach them:

Find industry & neighborhood leaders to model improvements.

Create partnerships between government agencies, retailers, manufacturers, and nongovernmental agencies.

Existing Education Providers:

- Utilities
- NW Energy Efficiency Council
- WSU Energy Program
- U.S. Dept. of Energy
- U.S. EPA

Potential Education Providers:

- Media PSAs
- Retailers

PROMOTE AND PROVIDE INCENTIVES FOR IMPROVED ENERGY DESIGN AND CONSTRUCTION IN THE PRIVATE AND/OR PUBLIC SECTOR

Promote “building green” incentives, such as the City of Seattle’s LEED incentive for commercial and Built Green for residential construction, as well as Architecture 2030 standards and other guidelines.

Training, resources and certification of building professionals, consumer and primary/secondary education, performance contracting/shared savings arrangements, a clearinghouse for information with software to calculate impacts of energy efficiency and solar technologies in buildings.

Emphasize building materials’ “renewability”.

Provide business assistance program (like WSU program) to help identify and achieve GHG goals, and life-cycle cost analysis of buildings and building components.

Restructure public funding sources (like school construction and renovation funds at OSPI) to prioritize building designs intended for longer “useful life”, i.e., prioritize 50 year buildings over 30 year buildings.

Remove current financial and administrative burden to applying for LEED certification -- - i.e., provide funding and technical assistance for this paperwork process or streamline process to reduce burden.

Audiences:

- Developers
- Realtors
- college architect programs
- vocational technical and high school classes
- homebuyers
- local government planners and permit offices
- If tax incentives, include education for auditors and tax or chief financial officers so they can help promote
- renovation contractors

How to reach them:

Provide incentives with highly publicized awards for high performance.
Consider offering preferred purchasing status.

Existing Education Providers:

WSU sustainability initiative training in architecture and construction management courses
WSU Spokane Design Institute, commercial and retail development

Potential Education Providers:

Clinics, Master Gardener type demonstrations.
Retail environments (i.e., home centers).

ENERGY EFFICIENT COMMUNITIES – SMART GROWTH

Create livable communities designed for energy reduction within homes and businesses + transport sector, with reduced environmental impact.

Smart growth - clustering living units in walking distance to shops, schools, entertainment and recreational facilities.

Energy-efficient design and renewable energy in buildings, sharing energy facilities between buildings – i.e., district heating systems.

Preserving open spaces.

Conditioning of approval of hook-ups to city, county and utility services upon GHG emissions reduction plans.

Reduce urban “heat island” effects with green roofs, white roofs, plantings.

Implement or adjust hookup fees for new developments to provide incentives for Smart Growth.

Integrated design of communities and transport systems.

Conservation easements linked to Transfer of Development Rights.

Stronger regulation that causes development to happen near transportation and services (see if LEED Neighborhood standard will encourage this).

Audiences:

- Municipal planners, building code writers & policy makers
- City councils & mayors

- Land trusts
- Watershed planners
- Land speculators and developers
- Potential home buyers

How to reach them:

Thurston Regional Planning (trpc.org for contacts) developed a “Land Use Planning Game” that was used to do outreach to schools and neighborhood groups.

Existing Education Providers:

- Professional planning associations
- Non-profits are doing some smart growth education
- WSU Spokane, training for governmental services (i.e., professional development for public officials)
- County extension offices have volunteer-based programs for watershed programs and conservation

Potential Education Providers:

IMPROVE BUILDING OPERATIONS ENERGY EFFICIENCY

Require a *Resource Conservation Manager* in all medium or large commercial or agency buildings.

Let decision-makers in buildings know about incentives for energy improvements.

Make energy and CO2 measurement easy knowledge. Show cost savings with energy savings; show carbon footprint savings. Promote use of energy accounting software.

Offer technical training to certify a strong corps of *Resource Conservation Managers*, perhaps develop and offer a degree program.

Work with lenders to support energy efficiency lending.

Use LEED Existing Building as a tool.

Provide Building Operator Certification training (BOC.org or BOC.net).

Have monitoring systems that occupants can see for energy use, water use, etc.

Provide call center to access for technical questions and referrals (current WSU Energy Program EnergyIdeas Clearinghouse).

Audiences:

- Building facilities managers & operators
- Building occupants
- *Resource Conservation Managers*

How to reach them:

- *Resource Conservation Managers* could measure & track improvements, offer training & incentives in-house.
- Assist lenders to provide preferred status for rates.
- Set up competition with awards and create norms.
- Promote leaders in business and government.

Existing Education Providers:

- WSU Energy Program is developing a maintenance protocol – contact Karen Messmer
- WSU Energy Program
- Building Operator Certification (BOC) Program
- Puget Sound Energy is providing training for their customers
- Community Colleges
- Utilities – some are doing work in this area
- Washington Association of Maintenance and Operations Administrators (WAMOA)
- BOMA
- Chapters of US Green Building Council
- NEEA Better Bricks (may be for new construction only)
- UW Building management degree program (can't remember specific name)

Potential Education Providers:

- WSU Cooperative Extension offices
- Distance degree and professional programs
- Community college and 4 year institutions for continuing education

REDUCE WATER USE THAT REQUIRES ENERGY USE

Include rainwater capture, link to stormwater runoff.

Reduce water in, and wastewater out of homes, businesses, industries, institutions and facilities.

Include water-conservation appliances, greywater reuse. Engage local government in policies permitting/enabling healthy use of greywater. Change codes and requirements for grey and/or reclaimed water or rainwater use to reduce/modify prohibitive requirements.

Another role for *Resource Conservation Managers* in medium & large buildings.

Provide training to local governments.

May need to restructure water rates to encourage low water use and still allow water utilities to charge for water – avoid water privatization of public utilities.

Show value in cost savings and in 'water neutral', similar to 'carbon neutral'.

Encourage neighborhood/community level water capture and reuse (stormwater used for other purposes).

Promote native landscaping to reduce water use.

Promote use of rainbarrels.

Promote the use of reclaimed water (purple pipe systems).

Audiences:

- Builders, realtors
- Landscapers
- Water providers
- Local government planners & city councils
- Water utility managers (public works person at a city, for example)

- Treatment plant operators and managers

How to reach them:

- Involve health departments
- Provide direct technical assistance to users
- Demonstration projects (golf courses, “Brightwater” example in King County)
- Reach consumers with low flow water kits

Existing Education Providers:

- WSU Thurston County Native Plant Salvage Project
- Backyard Habitat Program (National Wildlife Federation?)
- Municipalities
- Public utility districts (water utilities)
- Ecology has done work with industry for water use reduction
- WSU Energy Program Industrial Services program provides technical assistance to reduce process water
- Professional associations of plant operators and public works directors etc.
- Master Gardener programs
- Home centers, landscaping advice to consumers

Potential Education Providers:

- Landscape architects, professionals
- Dept. of Health
- Irrigation Districts
- Wastewater Utilities

BAN SALE OF INCANDESCENT BULBS

Lighting issues need to be dealt with more broadly.

Lighting design and delighting to improve efficient use of energy.

Include outdoor lighting as part of efficiency discussions. Some cities are already doing this. Show the rationale behind this.

Show cost savings and carbon footprint advantages.

Show which CFL & LED lights work best for which applications.

Deal with disposal options.

Audiences:

- Retailers, householders
- Building facilities managers, builders (install CFL or LED fixtures)
- Architects, designers, building operators, building owners, etc.
- Municipalities for street and traffic lights.

How to reach them:

Retail sales outlets for lighting

Point of sale flyers – short & good graphics

Existing Education Providers:

- Lighting Design Lab
- Energy Ideas Clearinghouse
- The Dark Sky proponents may be promoting efficient use of energy and may be a potential outlet for information.
- Use university (WSU) experience in marketing/psych research that shows this is counter-productive in use. Be very careful on top down regulatory approaches with CFLs.

CONSUMER EDUCATION

Major investment in education is a top priority to the Climate Advisory Team. They want to include public school curricula at all levels to shape long term behavior

Limit population growth – educate on the connection between this issue and climate change.

Potential elements of consumer education programs include:

- Truth-in-advertising campaign
- In-home energy displays: measure to manage
- Provide tools and information for residents, businesses and communities to perform GHG inventories, to evaluate and act on results.
- Linkages of consumer education programs with retail sales organizations.
- Require retail education (that is, on packaging or on a handout provided at the time of purchase), to inform consumers about the energy consumption of their products and how to operate or use the products in the most energy efficient manner.
- Engage community leaders and community-based organizations (for example, institutions, municipalities, service clubs, businesses and business organizations, social and affinity groups, non-governmental organizations, and others) to recognize leadership; share success stories and role models; and expand climate involvement and participation within communities.
- Use existing models for education of businesses in the environmental impacts of their activities to have state agencies/local governments promote improvements within small business sectors and trade associations.
- Engage industrial firms to promote LEAN manufacturing techniques and other practices to reduce unnecessary energy and material consumption.

Could be best served by a revived Energy Outreach Office with local branches around the state. This is now called WSU Energy Program in WSU Cooperative Extension (Olympia office); they are expanding their work with local counties.

Use existing conduits for energy education -- utilities, local government programs, retail organizations, marketing networks, NGO's etc. Educate on the principles of sustainability.

Wise consumer choices – see above conduits for comprehensive lifestyle choices including for landscaping, recycling, purchasing local, construction, transportation, growth.

Partner with Tribal governments.

Best education is backed by regulation and enforcement. Structural changes are easiest way to effect behavior changes!

Audiences:

Each bulleted point in list has a range of specific audiences with some overlap.

- manufacturers, retailers consumers
- householders, homeowners, landlords, renters, utility companies
- conservation resource managers
- all schools

How to reach them:

- Offer incentives, assistance, tax credits, rebates, to assist rapid implementation of new technologies
- Showcase successes in key places for specific audiences.
- Make it part of the evening news or weather, column in the paper, on web for all key players to track successes and how they were accomplished, tools and techniques.
- Offer awards, recognition, tax incentives, rebates, preferred purchasing.
- Make a clear, graphic portrayal of priority.
- Visual renewable energy installations as a focal point for education.
- Use E3 Washington as a clearinghouse for connecting resources and local providers.
- Build decentralized renewable energy plants in communities; construct model community buildings.
- Use hope to inspire students, and the fact that they are the future.

Existing Education Providers:

- OSPI
- Puget Sound Energy
- some cities and counties
- Dept. of Ecology
- Veriditas Group (Bainbridge-based)
- National Wildlife Federation
- The Climate Project (Gore)
- EEAW, E3 Washington
- Transit (IT)
- Audubon
- Tribal leaders
- Sierra Club
- WSU, Energy
- NWEI course
- Climate Solutions
- 4H and other organizational methods are already open to this type of avenue. Get more information to them as needed.

Potential Education Providers:

Social Marketing opportunities. Make sure to track behavior changes with social and economic research center (public surveys)

Explore marketing degrees within higher ed community.

DGSS at WSU (search Nick Lovrich, Mike Gaffney)

Carbon Master program

-Schools – MS has 8 week env science but needs resources

-tribal schools, private schools

- all counties and cities

-E3 Washington

ENERGY EFFICIENCY & ENVIRONMENTAL IMPACTS AWARENESS IN SCHOOL CURRICULA

Long-term emissions reduction effectiveness depends on young consumers as well as adults.

Primary and secondary school students need education regarding energy and GHG emissions, implications of consumer & societal choices.

Public education and outreach is vital to fostering a broad awareness of climate change issues and effects (including co-benefits, such as clean air and public health) among the state's young citizens.

Preparation of new curricula, including concepts of integrated design for buildings and communities, would likely be a part of this option.

Redmond High School – Kids for Climate Change *Cool Schools* Challenge. This includes student auditors applying real math and science to engage teachers in competitive pledges to reduce their classroom GHG use. Excellent model program that is almost ready to roll out statewide for high school use. Key component is to tie in with school Conservation Resource Manager as energy efficiency auditor and teacher at Redmond High School.

NW Clean Air Agency & REsources in Bellingham – developed Choices: You make the Difference – Global Warming Resource Guide for grades 5-8, curriculum with board game.

OSPI has Sustainability Education and Sustainability by Design as a growing theme.

Retain energy dollars to build renewable energy education sites at schools.

Piggyback on high efficiency green building standards passed in 2005 for education purposes; legislation to fund dollar savings can be built into supporting/ rewarding programs, by providing incentives back to schools.

Provide funding for school retrofits and renovations.

Provide Resource Managers in each school, each jurisdiction; start-up external funding which is then supported by energy and disposal savings.

Audiences:

- Teachers & principals (need to see where curricula meets needs for improved student learning, passing WASL tests, aligning with GLE (grade level expectations) and more. (Teachers are already overwhelmed by requirements in the classroom, so provide lots of support for them if this is expected to be used.)
- Parents, community members around schools

How to reach them:

For older students, especially high school, give them real world applications for their math, science, social studies, language arts. Show positive actions taken by business and many cities.

Help students see the career options opening for them in energy audits, etc.

Use geographic opportunities at school sites, such as wind energy, solar, water, biodiesel generator – helps educate parents as well as students. Integrate into curricula -- social impacts, environmental impacts.

New LEED buildings are required to have public education built-in – signage, curriculum, etc.

Existing Education Providers:

- OSPI is running a public/private pilot program this upcoming year – Sustainability by Design.
- See Linda Paznokas at WSU for educational outreach.
- WSU Power your Future competition for high schools.
- Redmond High School -- Cool Schools
- Climate Project, climateclassroom.org
- WSU Energy program provides start-up funding for Conservation Resource Managers
- Green Schools program that is developing now for statewide guidance, training and incentives (mainly school pride and recognition)
- EPA “Tools for Schools” training and resources

POST-SECONDARY SPECIALIST EDUCATION AND CERTIFICATION FOR BUILDING ENERGY EFFICIENCY EXPERTS AND RELATED TRADES

Targeted education, outreach, and licensing requirements will be required for professionals in a variety of building-related trades.

Potential elements of this policy include:

- Training of building code and other officials in energy code enforcement.
- Training and education for builders and contractors (for example, HVAC sizing, duct sealing, and incorporation of renewable energy systems into buildings).
- Energy management training and training of building operators.
- Continuing education programs and/or requirements for building professionals.
- Establishment or extension of professional licensing requirements related to energy efficiency and/or GHG emissions assessment.
- Targeted community college/university programs (see below).
- Establishment of integrated design programs.

Implementation of the policy could begin with investment in a pilot program or programs at one or two leading schools – such as UW and/or WSU. See WSU Spokane Design Institute. Cascadia Community College is offering energy technician Sustainability AA courses in the fall of 2007. Bainbridge Graduate Institute offers an MBA in Sustainable Business.

Audiences:

- Building code enforcers
- Builders & contractors

- Building facility managers
- Architects & building professionals
- University & college programs
- Architects

How to reach them:

Stronger integration of existing programs in higher education to build students with these skills.

Energy audit at time of purchasing or building a home or business.

Incentive for putting in alternate energy or for purchasing homes that rate energy efficiency.

Energy audit prompted by use exceeding certain guidelines.

Existing Education Providers:

- Veriditas Group
- EPA Tools for Schools
- State and Local Agencies
- Opposite Regulatory Assistance (360-407-7564)

Potential Education Providers:

Need to Train the Trainers – who will teach these courses? Who already has curricula?

Use extension and distance degree programs to teach professional / trades “greening” for certification.

Link with high school advisers to promote technical training and career options.

PSE should reinstate providing home and small business energy audits.

POST-SECONDARY SPECIALIST EDUCATION AND CERTIFICATION FOR BUILDING ENERGY EFFICIENCY EXPERTS AND RELATED TRADES

Create and/or expand post-secondary programs to increase capacity of engineers, architects, technicians, and others in building energy, GHG and related trades.

Community college, college/university, and post-graduate levels; energy audits, and installation of energy-efficiency measures and renewable energy systems, design of low- or “net zero” emissions buildings and low-GHG/integrated community design.

Begin pilot program or programs at one or two leading schools – such as UW and/or WSU.

The “green collar” knowledge workers focused in this industry are exceedingly hard to find. We need to work to promote and fund new college and university programs, such as Lane CC in Oregon. Cascadia Community College is offering energy technician Sustainability AA courses this fall (2007). The Washington Center for Improving the Quality of Undergrad Education’s Curriculum for the Bio-Region Project (contact Jean MacGregor).

Audiences:

- Train the trainers

- Reach out to high school and college career counselors so they help students assess these options, also high school science & math teachers

How to reach them:

- Ties to Governor’s effort to keep high level technical jobs employing state citizens.
- Consider offering incentives such as tuition waivers and job placement for those scoring well in proficiency.
- Tie into a network so they can continually learn from each other to improve practices.

NET-METERING FOR DISTRIBUTED GENERATION AND COMBINED HEAT AND POWER

Encourage consumers to install distributed generation systems—especially those based on renewable fuels—and combined heat and/or cooling and power systems that improve overall efficiency of fuel use.

Focus on impacts of rate design on GHG emissions. Clearly identify time-of-use rates with impacts on GHG.

Clarify rules related to the interconnection of consumer-sited power sources to the electricity grid to assure that they offer equitable treatment of potential distributed generation hosts and safeguards for the public and power sector workers.

Provide customers with clear rate designs & access to necessary metering technology.

Promote consumer-sited power generation for use on-site and sell onto the grid.

Seek models to follow and customize for Northwest.

Provide incentives and tax/rebates, technical assistance.

Audiences:

- Provide training to consumer-sited power installers
- Builders
- Realtors
- Street of Dreams
- Retailers
- Contractors
- Business owners
- Farmers (See Extension programs at county level)

How to reach them:

Enable customers easy access to insured installers

Showcase successes and money and carbon savings over time

Choose community leaders and enable them to use this system

Existing Education Providers:

Utility companies working with neighborhood associations to get grants

Utilities are doing this for “into the grid” program (a bit).

Potential Education Providers:

- Veriditas Group
- EPA Tools for Schools
- State and Local Agencies
- Opposite Regulatory Assistance (360-407-7564)
- Advertising dollars
- Media and Marketing
- Student projects as an outreach activity (college and high school)
- Policy issues (Department of Energy, WSU Energy Office)

PROVIDE INCENTIVES TO PROMOTE AND REDUCE BARRIERS TO IMPLEMENTATION OF RENEWABLE ENERGY SYSTEMS, ESPECIALLY ON-SITE

Distributed electricity generation sited at residences and commercial and industrial facilities, and powered by renewable energy sources (typically solar, but also wind, small hydroelectric power sources, or biomass or biomass-derived fuels), used for water, processing and space heating.

Also includes solar roofs, water heaters and space heaters.

Huge advantage to site energy generation at point-of-use with options to add to the grid.

Combine with metering so operators can measure to manage.

Tie to carbon neutral and dollar savings.

Audiences:

- Residential, Industrial or Commercial building owners
- Schools
- Facility managers
- Homeowners
- Builders
- Lenders
- CPAs and tax consultants
- Installers, contractors
- Utilities
- Policy makers first, then the general public
- Legislature

How to reach them:

- Go beyond loans and offer rebates and property tax credits for a period of years after installation.
- Make this as easy as possible to implement, give technical assistance and financial incentives.
- Model success in highly visible areas, such as school buildings, libraries, city hall, local industry, state agency buildings, Street of Dreams homes, home & garden shows, etc.
- Training/certification of installers, contractors.
- Engage the utilities to assist with this transition.
- Showcase the NW as a leader in this technology, even with the cloudy days

NEGOTIATED/VOLUNTARY EMISSIONS OR ENERGY SAVINGS AGREEMENTS

Reductions in greenhouse gas emissions can be achieved in the industrial sector through energy efficiency, process changes, and/or switching to less carbon-intensive fuels for key energy services.

Voluntary actions require support and incentives, remove barriers.

Provide tools and information for residents, businesses, and communities to inventory GHG emissions, and to use inventory results to set reduction targets, can also be an element of this option - possibly through a business assistance program.

Provide consultants to assist.

Audiences:

- Plant managers
- Building facility managers
- If homeowners, use revived Energy Outreach Center (now called WSU Energy Program)
- If business – go through Business Assistance program (now called WSU Small Business Development Centers -- SBDC)

How to reach them:

Create energy star certifications to reward, preferred purchasing agreements.

Tax rebates or other incentives

Showcase successes

LABELING LIFE-CYCLE ENERGY & CARBON CONTENT OF PRODUCTS AND BUILDINGS

Label products and buildings being sold to provide feedback to consumers on their “carbon footprint”, and to encourage the use of lower-carbon products and building materials.

Would need a broad education campaign to recognize what this label means and how to apply it.

Make this the measuring criteria for purchasing & design.

Audiences:

- Architects
- Building designers and operators
- Product designers
- Consumers

Existing Education Providers:

Volunteer /existing organizations currently labeling products

Potential Education Providers:

State level regulations

Transportation

CLEAN CAR PROGRAM; GHG STANDARDS FOR AUTOS

On 1/1/2009, new cars and light trucks sold in the State must meet the California Clean Car vehicle emissions standards. Promote with agency, institution and corporate fleet managers plus the general public – show the advantages.
Show dollar savings in human health, plus clean air advantages for environment and climate.

Audiences:

- Fleet managers
- Dealerships
- Vehicle drivers/buyers
- Manufacturers

How to reach them:

- Web sites
- Presentations
- Incentive programs
- Social marketing with advertising and outreach
- Print and electronic communication
- Classroom education

Existing Education Providers:

- Psgreenfleets.org – on-line “tool kit” for fleet managers to “green” their fleet
- EPA Green Vehicles Web page
- Ecology (Car care = Clean air)

Potential Education Providers:

- Local Air Agencies
- EPA
- Non-profit climate change groups

FUEL-EFFICIENT TIRES

Get more information on fuel efficiency of these tires; address safety concerns.
Show advantages in dollar savings and carbon improvements.
Factor these in as part of the “wedge” graph of improvement to reduce GHG emissions.

Audiences:

- Tire sellers
- Fleet managers
- Vehicle drivers/buyers

How to reach them:

- Informational brochure and/or training for tire sellers with benefits listed
- Informational brochure for drivers/buyers
- Print advertising at tire and car sales places
- Make them mandatory for state vehicle fleets
- Provide information to sellers at meetings and conferences

Existing Education Providers:

Cascade Sierra Solutions (for semi-trucks and large commercial trucks)

Potential Education Providers:

- Local Air Agencies
- EPA
- Ecology
- Non-profit climate change groups
- Dept. of Licensing

VEHICLE PURCHASE OR REGISTRATION INCENTIVES FOR HYBRIDS OR FUEL EFFICIENCY

Offer incentives of registration fees waived, tax credits, feebates*, sales taxes waived, rebates, etc. Publicize incentives through auto dealerships and Dept. of Licensing stations and mailings.

*“Feebates”: (1) fees on relatively high emissions/lower fuel economy vehicles and (2) rebates or tax credits on low emissions/higher fuel economy vehicles.

State adopts programs to increase purchase of fuel-efficient or low-GHG vehicles (pure electric, hybrid, plug-in hybrid, and alternative fuel vehicles). Clean alternative fueled vehicles and hybrid passenger vehicles with a fuel economy of at least 40 mpg on the highway are exempted from state sales and use taxes starting in 2009, under SB 5916.

Higher vehicle registration fees can be charged for vehicles that have lower fuel economy. Vehicles that use alternative fuels or hybrid vehicles could be charged a lower vehicle registration fee. Base vehicle licensing fees upon vehicle weight, a dollar per vehicle-ton multiplier.

HB 1303 supports the use of plug-in hybrid vehicles by the state and provision of plug-in capability at state locations. Tax and fee incentives can be provided to encourage individual and fleet purchases of plug-in hybrid vehicles.

Tax credits offered for the first-time purchase of a hybrid, alternative fuel vehicle, or other set of specifications that incorporate low-GHG emission standards. Include as tax credits on B&O taxes for business, with actual rebates for individuals.

Audiences:

- Auto, SUV & truck drivers
- Dept. of Licensing stations & staff
- Auto retailers

- Business fleet managers
- Financial officers for agencies & businesses
- Tax accountants & CPAs
- Lenders

How to reach them:

- Insurance company billing inserts with information about incentives
- Kiosk information at DOL stations
- Consumer Reports auto buying guide
- Special sticker with “icon” on high fuel efficient cars (similar to “heart-friendly” icon on restaurant menus)
- TV Commercials
- Print and electronic communication
- Information and education to the public, maybe through workshops or to driver’s education courses

Existing Education Providers:

Potential Education Providers:

- Informational brochure at auto loan locations regarding incentives for hybrids or fuel efficient cars
- Local Air Agencies
- EPA
- Ecology
- Non-profit climate change groups
- Department of Licensing

DRIVER AND ALTERNATIVE TRANSPORTATION EDUCATION

Promote “best in class” vehicle guides that show comparative fuel efficiency and associated vehicle GHG emissions. Promote through auto lenders, auto sellers, auto maintenance shops, auto parts shops.

Promote maintenance to decrease pollution and vehicle operating costs, and increase fuel efficiency. Offer maintenance incentives, rebates or tax reductions for regular maintenance costs.

Encourage energy-efficient driving habits. Write into driver’s guides from Dept. of Licensing, driver’s training, posters & billboards.

Encourage the use of alternative modes of transportation

- show how to car pool; give carpool assistance
- use public transportation; print bus rider protocols inside bus boards and in schedules, on websites, offer classes. Give incentives of free bus passes.
- commute to work by bike, classes in biking safety & maintenance
- telework

- walk to work

Audiences:

- Drivers
- Future Drivers
- Lenders
- Auto shops & sellers
- Repair shops
- Fleet managers
- Driver’s training, license renewal questions
- Transit systems and bus riders
- Employers of large agencies or businesses
- Bike shops
- Community centers

How to reach them:

- Integrate alternate mode transportation options into existing driver education program
- Publish and distribute “Best in Class” guides; advertise the guides as a tool for reducing GHG emission impacts
- Print & electronic outreach
- Work with employers to advertise incentives within the workplace and arrange carpools

Existing Education Providers:

- Transit Agencies (i.e., Pierce Trips, Community Transit, Intercity Transit)
- Commuterchallenge.org
- Transportation Coalition
- WSDOT – Trip Reduction Performance Program (TRPP)
- Cascade Bicycle Club
- Bicycle Alliance of Washington
- Bike Station
- Spokane Clean Air
- Commutetrip.org

Potential Education Providers:

- Driver’s education programs
- PTSA’s (encourage carpooling to school sponsored events)
- “School pools”
- Safe Routes to schools
- Walking School bus
- Unigard Insurance – “pay as you drive” policy (pilot program with King County)
- Local Air Agencies
- EPA

- Ecology
- Non-profit climate change groups

ALTERNATIVE FUEL INFRASTRUCTURE DEVELOPMENT

Infrastructure can help promote alternative fuel use. Equipment and installation costs can be offset by creating an infrastructure. Work through WSU small business assistance center, partnered with WSU Energy Outreach Center to help businesses take advantage of these incentives.

Convenient station locations with alternative fuels at competitive prices can increase usage of the fuel.

Remove barriers & provide incentives.

2006 Leg -Energy Freedom Program in the Dept. of Agriculture; with \$17 million for the Energy Freedom Loan Program to develop a viable bio-energy industry, promote R&D in bio-energy sources and markets, and support growing bio-energy crops.

A 2007 Legislative bill created a vehicle electrification grant program; authorizes state agencies to provide electricity at state facilities for operation of state electric vehicles and privately-owned electric vehicles used for state business.

Audiences:

- Energy crop growers
- Plug-in electric hybrid vehicle sellers
- State agency facility managers & fleet managers

How to reach them:

Comprehensive education plan to address buyer's questions about biofuels and how they will work with their cars/SUVs

Train-the-trainer program to get the word out and develop businesses that are competitive and readily available

Existing Education Providers:

Existing alternative fuel provider: Biodiesel stations in Seattle (can't remember name...but brand-new, two locations in Seattle.) **Uses local farmer's crops to produce biofuel!** (Call Kendra @ ERO to get name)

Potential Education Providers:

School districts using biodiesel

WSU or UW to prepare print and electronic outreach and 800-number

RIDESHARING AND TRANSIT PROMOTION

Ridesharing programs reduce vehicle trips and miles traveled through assistance and encouragement to individuals and employers to use carpools and vanpools.

Government agencies can establish and expand ridesharing programs, provide incentives or assistance for others to do so, and provide supportive infrastructure (e.g., park and ride lots). This option could also involve promotion and marketing of transit, and/or reduction in transit fares.

2007 Leg: SB 5412 requires a plan to reduce per capita vehicle miles traveled (VMT). The State must commit to a series of aggressive VMT reduction goals.

Get people out of their cars, and then focus on getting the cars that are left to be as efficient as possible.

Audiences:

- Employers
- Employees
- Transit providers

How to reach them:

- Tabling events at worksites
- Business associations
- Bus to work day (ex. Microsoft)
- National Bike to Work Day promotion
- Public Service Announcements
- Making SOV transportation expensive
- Incentives through employers, ridesharing with other employees
- Print and electronic outreach
- Point of purchase at car dealerships about Rideshare online
- Encourage carpoolers to contact their car insurance agency about possible discounts for carpooling

Existing Education Providers:

- Rideshare online
- Wheel Options (WSRO) wheeloptions.org
- Flexcar program
- Ambassador Program (Intercity Transit)
- One less car promotion (Seattle)
- Portland Metro promotion –family challenge.

Potential Education Providers:

- Local air agencies
- EPA
- Ecology
- Non-profit climate change groups
- Department of Licensing

EXPAND TRANSIT INFRASTRUCTURE (RAIL, BUS RAPID TRANSIT) AND/OR IMPROVE EXISTING SERVICE (FREQUENCY, QUALITY, ETC.)

Increase public transit and reduce auto travel by expanding public transit infrastructure (e.g., rail lines, bus rapid transit routes).

Improving existing transit service (e.g., expanded hours or coverage of bus service, higher frequency bus routes, expanded intercity bus service).

Use WSDOT data on travel origins and destinations to determine priority intercity regional routes.

Query current and potential public transit riders for best alternatives, barriers to remove and incentives likely to assist them.

Audiences:

- Voters
- government officials
- city council members

How to reach them:

- Comprehensive trip planning resource – region-wide
- High frequency corridor concept
- Public involvement, pilot programs
- Create partnerships between city and county planners, etc. to consider public transportation, walkability and bike paths when developing land.
- Transit infrastructure should be considered in the planning stages of a project (development) – not as an afterthought.

BICYCLE AND PEDESTRIAN INFRASTRUCTURE IMPROVEMENTS

Better sidewalks and bikeways can increase pedestrian and bicycle activity while reducing auto use. Infrastructure improvements could include bicycle parking and shower/locker amenities at places of employment. Local government “complete streets” policies would help to achieve these improvements.

Audiences:

- Employers
- Local government planners

How to reach them:

- Include incentives to employers to provide shower/locker facilities for commuters.
- Workshops, citizens becoming involved (holding their government to their word) – maybe through citizen groups, led by educated volunteers.
- Create “no drive” zones in areas to promote walking (i.e., Pike Place Market)
- Creating traffic-calming measures

Existing Education Providers:

- Safe Routes to schools - (Walking School bus)
- City and county bike maps (TRPC, King County)
- Walking maps (City of Olympia)
- Office of Neighborhoods (Seattle)

Potential Education Providers:

- PTSA's (encourage carpooling to school sponsored events)
- "School pools"
- Existing school safety education programs regarding biking and walking

COMMUTER CHOICE PROGRAMS

Encourage employers to provide options such as telecommuting, transit subsidies, pre-tax transit fare programs, parking cash-out, and guaranteed ride-home service in order to reduce automobile commutes.

The telecommuting option includes the development and utilization of neighborhood telecommuting centers that offer office-type services in locations close to commuters' residences. As an incentive to develop and provide such services, a tax credit can be offered to companies.

Create programs to assist use of these alternatives. Seek incentives and remove barriers.

Government spending to encourage commuter choice can stimulate a large private-sector match (17 dollars of private incentives per dollar of public incentive, according to one source).

2006 Leg: Commute Trip Reduction (CTR) Efficiency Act –partnerships, employers, local jurisdictions, transit systems and the State to discourage traveling by single-occupant vehicles to the work place.

Audiences:

- Commuters
- Employers
- Local jurisdictions

How to reach them:

Incorporate information about programs and incentives into new employee orientations.

- "Social" networking opportunities for telecommuters (lunches) to deal with issues isolation

Existing Education Providers:

- CTR Programs
- Microsoft
- Boeing
- Commutetrip.org

Potential Education Providers:

- Private sector business-to-business mentoring program
- Create partnership with Kinko's (or other business support center) to provide access to business equipment to telecommuters
- Meet with Union reps for contract negotiations
- Expand CTR program to include all employers, regardless of size.

FUTURE COMMUTER OUTREACH

Provide information regarding alternative modes of transportation.
Educate about the benefits of public transportation.

Audiences:

- Elementary students
- Middle school students
- High school students
- College students
- Parents
- Educators

How to reach them:

- Classroom presentations
- Tabling events
- Parent/Teacher conferences
- Freshman orientations
- New media (YouTube, facebook, myspace, cellphone messaging)
- Free youth bus pass

Existing Education Providers:

- College bus pass programs
- Community Transit (myspace)
- Smart Moves (IT)
- "Class pass" programs (Pierce Transit)

Potential Education Providers:

- Youth Ambassador Program
- School pool program – creating a database for carpooling to school events

Other Recommendations

Network for Climate Educators

Create a forum where the Climate Education Network participants invite diversity into the conversation. Employ the Sustainability Principle: A+B+C=Eureka! Bring creativity into the discussion; the more diversity of the participants, the more likelihood of creativity.

Need a clearinghouse for climate change. Collectively pull together existing resources, such as videos, blogs, etc. -- whatever is effective, make it available in one place, such as a clearinghouse or library.

Create a “train the trainer” program for formal, non-formal and informal providers, so they can share resources, messages, etc.

Department of Ecology website should have resources and contacts.

Create a listserv for climate education network.

Take advantage of the E3 Washington process, including their on-line searchable data base.

Climate education needs to be a conspicuous component of E3 Washington and the final statewide comprehensive plan for EE.

The climate educators’ network needs to be positioned to carry on even in the absence of a mandate or a convener, or in the face of political changes.

The “network” needs to include more local sustainability groups.

Consider “network for climate educators” rather than “climate educators’ network”.

Consider naming the climate educators’ network, such as NICE – network for integrated climate education.

Need a good two-way conduit to universities (get the latest research, inform university programs, etc.).

Use county government as clearinghouse for regional sustainable resources.

Figure out how to not be one more group, not another “add-on”.

Don’t duplicate efforts.

Have the right people at the table, be part of the community.

The language we use is important; don’t exclude people (for example, energy efficiency is more palatable to some audiences than climate change).

ZAA - An merging consortium including the Woodland Park Zoo, Seattle Aquarium, NW Tresk and Pt. Defiance Zoo and Aquarium can help – they are called the “Zoo and Aquarium Alliance” (ZAA or “the Alliance”). They reach about 5million visitors a year and have interest in linking with Dept. of Ecology on this effort. Stephanie Stowell from WPZ works with ZAA as does Mark Plunkett and Brooke Nelson at the Aquarium.

Community Education / Outreach

Encourage/catalyze the larger environmental education community to see themselves as climate educators.

Need to educate about cap and trade concepts, especially at the local level.

Adults need to know their carbon footprint – educate consumers.

Make carbon footprint understandable in every-day terms, for everyday activities. Use common language & descriptors / equivalencies. Similies – “as big as” “as small as” “equals the same as”

Issue statewide challenge to every individual to reach 2020 goal (pattern after Seattle program and B.C.’s One Ton Challenge).

Have Puget Sound Energy website that shows activities local people (city, county level) can take.

The language we use is important; don’t exclude people (for example, energy efficiency is more palatable to some audiences than climate change).

Localize, target messages to audiences.

Business

Need to educate about cap and trade concepts, especially at the local level.

Have Puget Sound Energy website that shows activities local people (city, county level) can take.

“Pay it forward” idea – one business gets help (such as technical assistance) and in turn helps two other businesses (or refers two other businesses to tech assistance).

Teachers K-20

Needs to be cross-curriculum with others who are not specifically dealing with climate change. Climate change problems/solutions go beyond science – integrate into all subject areas.

Need a good two-way conduit to universities (get the latest research, inform university programs, etc.).

Public schools should be required to report their carbon footprint. Consider developing a cap and trade program for schools who meet the climate challenge before 2020.

Teach students and teachers to speak “carbonese”.

Have classes within schools do “cap and trade” competitions.

Need more climate change education in secondary schools:

- Conduct teacher workshops, first to secondary science teachers, then others.
- Require all new teachers to take environmental studies course
- Environmental science classes in every high school (kids want solutions, not just gloom and doom)

We need to increase the content knowledge of secondary teachers on climate change.

Ideas for teachers:

- Require all new secondary science teacher to complete a course in college in environmental science
- Fund a 3-day teacher workshop for existing secondary science teachers to learn about climate change, etc.
- Establish an endorsement for teachers in environmental science

Propose partnering with WSU’s “Power Your Future” competition and OSPI’s Sustainability by Design program to create a peer to peer climate change communications component. WSU’s competition encourages public outreach and communication teams; Ecology could add value to this effort by specifically targeting this component.

Consider high school student’s Culminating Projects requirements as a potential focus for climate change innovation.

Students / Youth

Encourage students to be involved in creating alternative energy in schools (i.e., solar schools in CA, Cool Schools, Chelan PUD, etc.).

Fund the development of an environmental science course to be offered in each high school (could be an A.P. course)

Have youth develop youth-oriented materials (websites, videos, music, etc.) to reach youth-oriented audiences.

Peer to peer education: young people are more likely to pay attention to communication from their peers. Experienced educators have said that young people are not engaged by slickly produced videos, etc. They want to see things produced by people their own age.

Use You Tube, My Space, blogs, text messaging, etc.

Media

Partner with the media to get information, messages out.

Develop a weekly ½ hour TV show on climate change, with ideas and solutions (perhaps on TVW?).

Television stations want to be “green”; see about having weather forecasters give climate change information/tips with every newscast.

Create a soap opera called “As the World Warms”.

Television writers should write in energy conservation and climate into scripts, action and dialog (make it a recognized norm, like smoking and martinis used to be).

Collaborate among government, non-profit organizations, foundations, and businesses to fund weekly half hour TV show to educate the public.

Have weather forecasters announce climate education actions for evening and morning news weather reports (most people watch TV news for the weather).

Funding

Influence regional and national initiatives to use funds from off-sets for environmental education/sustainability education. (note: encourage rigorous evaluation & efficacy reporting to sustain this investment – show the very real successes, extrapolate potentials)

Use climate registry money for those who reduce CO₂. (Incentives)

Need joint funding of positions, for example, use WSU’s Carbon Masters as a pilot.

General

Climate change is beyond “just” an environmental problem; it’s social, economic, etc.

Need to have verifiable Washington-based carbon offsets (Laura Curley knows someone who writes software to collect this data).

Need to educate about cap and trade concepts, especially at the local level.

Most effective education to change public's behavior is backed by legislation and enforcement. Build it and they will change – wherever possible, build in the changes.

“Pay it forward” idea – one business gets help (such as technical assistance) and in turn helps two other businesses (or refers two other businesses to tech assistance).

Need proactive actions, to look at sustainability – try to anticipate, predict, be proactive, become leaders in the nation (such as clean energy).

Use carbon situation as an opportunity to economically capitalize on what will be happening 10-15 years from now.