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June 30, 2008

Mike Thorne, Chair
Taskforce Members
Big Look Taskforce
DLCD

Chair Thorne and Taskforce Members,

I am writing to respond to your request for input on the May 30, 2008 draft of the *Stakeholder Group Briefing Booklet* and to provide, in writing, comments I provided Chair Thorne and DLCD staff at our recent meeting to discuss the booklet.

First, let me congratulate you on what is clearly a difficult task and sincere effort to address what I would agree are legitimate issues with the existing land use planning program and, just as importantly, to explicitly recognize the important contributions the state wide planning program has made with regard to protecting Oregon from unbridled sprawl and conversion of farm, forest, and natural resource lands to urbanization.

We have many specific comments regarding the document that I will provide at the end of this letter. But, first we will address a few global, big picture issues.

Urbanization and Urban Growth Boundaries: Without question, the single most important positive aspect of the existing program is the requirement that every jurisdiction have an urban growth boundary. One of the best examples of the importance of UGBs to promote compact form and protect working and natural landscapes from urban sprawl is the Portland metropolitan region. The region's population increased about 31% between 1990 and 2000, while land conversion increased by only 3%. This spectacular UGB performance stands in stark contrast with metropolitan regions without urban growth boundaries where relative modest population increases, or in some cases population loss, are accompanied by 50% to 100% increases in land consumption. The requirement for UGBs and tough, enforceable rules that reduce UGB expansions must be central to Oregon's land use planning system.

Parity of Natural Resource Protection with Farm and Forest Protection: While we strongly support the protection of the state's working landscapes including farm, forest, vineyards, and nurseries, there is irrefutable evidence that the land use program, as it is currently constituted and applied, is woefully inadequate with regard to protecting natural resources, particularly in the urban environment. It's clear that the

state wide planning program was created first and foremost to protect the state's agricultural resource lands and to a lesser extent commercial forest lands. When it comes to protecting natural resources the planning program, as it has been applied by local jurisdictions, has been at best inconsistent and in most cases has been a miserable failure at protecting the state's ecosystems and the biodiversity and natural capital they provide us, inside or outside the state's UGBs, but particularly in our cities.[iiiiii]

Whatever form the planning program takes it must abandon the "silo" approach to natural resource protection and integrate protection and, where necessary, restoration of Oregon's natural landscape in an ecosystem-oriented program that addresses water and air quality, fish and wildlife habitat, and maintaining the state's biodiversity in a unified, holistic program. Furthermore, both urban and rural natural resource protection must be coequal in importance.

When I began my work on urban natural resource issues in 1980 I was told by some planners in the Portland metropolitan region that natural resources were not intended to be protected inside the region's UGB, that nature was outside the UGB and cities were intended to be built out, with the highest density possible, without regard to natural resource protection. I was told by otherwise progressive land use professionals that protecting "too much" urban greenspace would result in urban growth boundary expansions. The UGB had come to be seen as an end of the planning program, rather than as a means to an end.

When we founded the Urban Greenspaces Institute we adopted as our motto, "In Livable Cities is Preservation of the Wild." Our intent was to promote a corollary to H. D. Thoreau's "In wildness is the preservation of the world." If we do not produce cities that people admire and wish to live in there will continue to be pressure to live in the rural landscape. For cities to be livable urban residents must have access to nature where they live. Natural ecosystems in the city are as important as rural ecosystems. Oregon's land use system must be revamped to reflect our changing perception of the importance of nature in the city to a city's quality of life.

The program must also be results oriented, not process driven as with the current program where natural resource protection or restoration is not actually required. The only evaluation of whether a local jurisdiction's having meeting the requirements of the state's Goal 5 program, for example, is whether the administrative rule has been followed. Demonstration of on-the-ground ecosystem protection is not a required outcome of the planning program so long as the inventory, ESEE analysis, and program processes have been addressed. The state must set clear performance based goals, require planning for natural resources, and ensure that programs are based on the best available science.

Green Infrastructure and Ecosystem Services: The booklet makes no mention of green infrastructure or ecosystem services. This is a particularly notable gap in the *Growth Management* and *Economic* sections of the booklet. The protection, restoration, and management of

urban green infrastructure[iv] and the ecosystem services[v] that green infrastructure provides society are both critical to maintaining livability of both the urban and rural areas of the state and introducing "true cost" accounting for the loss or protection of natural ecosystems through sound land use planning. The contributions that healthy ecological systems and green infrastructure, and their attendant contributions to the state's and local economy and quality of life—particularly in urban areas---should be a central tenet and significant driver of Oregon's land use program and any cost-benefit analyses of land use decisions.

Climate Change: We are pleased to see Climate Change in the document, although in reading the booklet it seems that climate change was added more as an afterthought rather than a central theme and focus that it deserves, given the direct nexus between land use planning and the climate change implications for both the built and natural environments.

We are concerned, however, that the Taskforce's recommendations focus exclusively on Mitigation actions such as reduction of VMT and transportation related issues. By contrast, the Governor's Climate Change Integration Group's Final Report to the Governor[vi] is replete with references to both Mitigation[vii] <u>and</u> **Adaptation**[viii] and the nexus with land use planning. The Taskforce recommendations must be expanded to include specific land use related actions that will allow for adaptation to the predicted increased winter time and spring flooding; lower summer flows; increased risk of landslides and fire hazards; and direct negative impacts on both grey and green infrastructure.[ix]

GIS Library and Resources To Support Local Planning: We are very pleased to see the recommendation for establishing a GIS-based library and more tools to assist local and regional governments with their planning efforts. Based on thirty years of work in the planning arena, one of the greatest shortcomings of the existing planning program is the lack of expertise and data at the local level. Creating a GIS database of existing information, particularly natural resources would be of inestimable value to local and regional governments. A GIS data base will also ensure that information is transferred as administrations and staff change.

However, simply providing a library of GIS-based information will be of limited value if this information is not accompanied by access to expertise from local, state, and federal agencies, non-profit organizations, and universities. This concept should be expanded to include establishing a "swat team" of experts in the natural resources arena (fish and wildlife habitat; floodplain, hazardous slopes and fire hazards; water quality; stormwater management; and restoration) that can provide scientifically credible advice and input into local and regional planning efforts.

For example, U. S. EPA committed $8 million to fund the Willamette Ecosystem Consortium. People like David Hulse at U of O School of Landscape Architecture; Stan Gregory, OSU Fisheries and Wildlife Department; John Christy, Oregon Natural Heritage Information Center Institute for Natural Resources, Oregon State University, and others have invaluable information that should inform all planning efforts, be they local

or regional in every Willamette Valley community. The state's human and financial resources need to be targeted in a manner that goes beyond simply creating a GIS planning library to include engaging expert scientists and natural resource experts in the development of ecologically based "safe harbors", monitoring and evaluation of planning tools, potential impacts of climate change, and advice on restoration.

Finally, the combination of a GIS-based data base and the attendant expertise that could be marshaled with significant state investment would help reduce or, one would hope, eliminate the incredible duplication of effort associated with each local jurisdiction's land use decisions with regard to natural resources. Over the past thirty years I have participated in numerous local and regional planning efforts. Each time months and in some cases years have been spent gathering data and developing basic natural resource information that could have been provided by a well maintained state funded GIS data base of inventories and science-based information regarding resource protection, restoration, and management.

Specific Comments

Suggestions for added language are <u>underlined</u>.

Page 1

Four Overarching Principles:
First bullet: Should be more specific: Replace Providing a healthy environment with: <u>Sustaining a healthy environment, including the full range of functional ecosystems and biodiversity native to the state of Oregon</u>

Second Bullet: Add to: Sustaining a prosperous economy, <u>including the ecosystem services and natural capital provided by healthy, functioning ecosystems in both the urban and rural areas.</u>

Third Bullet: Ensuring a (delete desirable) <u>high quality of life in both urban and rural communities</u>

Fourth Bullet: Change to <u>Maintaining a program that is applied in a manner that recognizes both individual and community rights and responsibilities and that....</u>

Last paragraph: Specify that the UGB, in particular, has been a significant success in Oregon and a model for the rest of the nation with regard to containing urban sprawl. Perhaps the single most important feature of the current program that is working and should be retained and strengthened.

Page 2
Paragraph 1: Good to see Climate Change highlighted. This should be one of the most highly prioritized elements of the Big Look, particularly with regard to **adaptation** (as noted in opening comments).

Preliminary Recommendations:

1). There is absolutely no way, without a mandate, that local governments will implement programs to protect natural resources. And, while we are are pleased to see that regulations will continue to be part of the program, We are extremely skeptical that market-based tools will have a long term positive impact on natural resource protection and restoration, at least not until the full range of ecosystem services that natural systems provide us are an integral part of any economic analysis.

Local and regional governments must be given specific performance based outcomes with regard to maintaining and restoring fundamental ecological functions of riparian corridors, wetlands, and upland habitats to maintain the stat's biodiversity across both the urban and rural landscapes. Any regulatory safe harbors must be regional in scope to address ecosystem functions that cross jurisdictional boundaries (stream corridors, wildlife corridors, and habitats that are multi-jurisdictional in nature. Furthermore, the financial resources and staff will have to be allocated within every state agency if the state is going to assume a greater role in identifying resources of statewide importance.

2). We strongly support the concept of improving quality of life in urban areas. For too long the UGB has been seen as an end, rather than as a means to and end, and quality of life issues, protection of natural resources and access to nature, within our cities has been largely ignored.

Regionally based "safe harbors" for fish and wildlife habitat, water quality, hazard lands, and related natural resource functions and values should be developed with the best available science by state and federal fish and wildlife agencies, non-profits with expertise in natural resource issues, and other experts from universities, consulting organizations, and citizens.

Add a bullet: Provides for the protection, and where necessary, the restoration of natural ecosystems within city and regional Urban Growth Boundaries.

Add a bullet: Provides for access to park land, trails, and natural areas throughout urban and urbanizing areas.

Add a bullet: Fully integrates the built and natural environments through protection an restoration of urban green infrastructure that supports air and water quality, fish and wildlife habitat, and provides access to nature within the city.

Page 3

3). Change 4th bullet to read: Require collaborative regional planning that mandates contiguous cities and counties to work cooperatively to meet statewide goals, in particular those that cross jurisdictional boundaries such as stream corridors and other natural resource areas. Financial leverage and incentives should be used to induce collaborative regional planning efforts.

Add a bullet: Establish regional and subregional teams of experts from state and federal agencies (Oregon Department of Fish and Wildlife,

Oregon Department of Environmental Quality, NOAA fisheries, EPA, U S Fish and Wildlife, National Park Service, U. S. Forest Service, Bureau of Land Management, USGS), non-profit organizations, universities, and citizens to assist in developing safe harbor programs for natural resources for use by local and regional governmental bodies.

4). Add: Include in any economic strategies information relevant to the ecological services that the natural environment contributes the state and local communities through avoided or reduced costs for infrastructure, support of local regional, and statewide tourism industry; and related economic benefits that accrue to the state from natural capital.

5). Add bullet: Ensure the protection and restoration of natural resource and hazard lands reflect the likely realities that climate change will bring to natural ecosystems and the state's urban and rural landscapes (e. g. increased floodplain areas and attendant frequency of flooding, especially in urban areas; increased incidence of landslides in both the working and urban landscapes, increased frequency of fires; decreased water quality and stream health due to higher winter runoff and reduced summer runoff, especially in the urban environment).

Page 5
Last paragraph: Repeat UGB effectiveness, but with caveat regarding quality of life inside the UGB.

Page 7
Four overarching principles.....see earlier comments

3rd bullet: I would argue that Oregonians **strongly** support the planning program. Data from the Portland metro area strongly suggests that while they support property rights that they also support regulations that protect water quality, fish and wildlife habitat and quality of life. In fact, during Metro's Title 13 planning process several polls revealed that over 60% of metropolitan area voters favored strong regulations to protect streams even if it mean regulating private property.

Last bullet: I would add the word "process" after tactics.

Page 8
3rd paragraph, replace the word oil with energy (increases are not restricted to oil)

Page 9
Resource Lands and Rural Areas
I strongly agree with the last sentence in paragraph 1. One of the most significant weaknesses of the current program, as described in Defenders of Wildlife's *No Place for Nature* and Audubon Society of Portland/Metro/1000 Friends of Oregon's *To Save or To Pave*, is the lack of natural resource protection in either the urban or rural landscapes.

Paragraph two: I reject the statements regarding regulatory tools. Without the Clean Water Act, Clean Air Act and Endangered Species Act

this national would have fared far worse with regard to water and air quality and loss of biodiversity. The same is true at the state level. Without strong, enforceable regulations that require natural resource protection, market-based tools will not work. It's fine to add market-based tools and incentive as part of the larger tool kit for natural resource protection and restoration. However, the state must start with a baseline natural resource protection that is mandated by state and federal laws.

Page 10
Resource Lands and Rural Areas Preliminary Recommendations
The recommendation that local and regional governments should determine appropriate uses of lands not of state significance is unacceptable, without mandates from the state planning program what outcomes are expected with regard to protecting water quality, fish and wildlife habitat, preserving biodiversity, and providing park land and maintaining a high quality of life in both the urban and rural landscapes. Local and regional governments should be required to adopt scientifically established safe harbor regulations to protect riparian, wetland and upland habitats. These should be ecologically based to ensure water quality, water quantity, habitat values, and open space values are integrated into a comprehensive, holistic approach that would replace the current "silo" approach to natural resource issues.

Develop tools to identify resource lands: I strongly support this recommendation, but this information should be produced by regional and subregional teams of experts from state and federal agencies (Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, NOAA fisheries, EPA, U S Fish and Wildlife, National Park Service, U. S. Forest Service, Bureau of Land Management, USGS), non-profit organizations, universities, and citizens to assist in developing safe harbor programs for natural resources for use by local and regional governmental bodies.

Identify which lands are of statewide importance are at the greatest risk of development: There are thousands of acres of critical fish and wildlife habitat that are not at risk for imminent development but would be irreparably damaged if a revised program allowed low density rural residential development. This is particularly true in areas described as "merely" sagebrush country.

Page 11
Use Market-based tools: See our earlier comments regarding the efficacy of market-based tools. While land trusts can certainly play a role and have played an important role in the past, their effectiveness should not inflated our over relied on. What do you mean by "new entities?" If you cannot specify examples then this proposal amounts to a "pig in a poke" recommendation.

Allow land uses for rural lands that are not of statewide importance ...."carrying capacity" "acceptable." The state program should focus on maintaining biodiversity across the state and should address cumulative impacts.

Last paragraph: Task Force believes.....should change continue to be to become. We reject giving more autonomy to local and regional governments, without mandates for natural resource protection as an explicit outcome, which are ecosystem based and predicated on the best available science.

(photo you should have a healthy stream photo on page 11 This photo looks like a channelized, degraded stream to my eye.)

Page 12
Growth Management:

I strongly agree with the statement, "instead of on the quality or character of the places most people will live. Add to the following sentence:

While the Oregon land use planning program is predicated on.....it lacks the tools to foster desirable patterns of urbanization and protecting natural resources inside Urban Growth Boundaries."

I strongly agree with the final sentence in this paragraph.

Add to the last paragraph: strengthen its system of urban growth management, including protecting, restoring, and maintaining ecological systems in the urban environment.

Page 13
I strongly support the fist set of recommendations.

Prioritize and increase funding.....infrastructure must include the "green infrastructure" that also supports infill and increased densities. Rewrite: Developing additional sources of funding for infrastructure (both grey and green) investment.....

Add to the end of that paragraph: Funds for the acquisition, restoration, and management of parks, trails, and natural areas are critical to maintaining a high quality of life in our urban areas.

Prioritize and increase funding for infrastructure.....add: Developing funding for infrastructure, both grey and green, is critical to making both small and large cities work as places that the private sector will invent and that people want to live in. A fund that is targeted for these areas is essential. Add: Funds for the acquisition, restoration, and long term management of parks, trails, and natural areas is critical for maintaining and improving livability in our cities. Increased densities and intensified urbanization must be accompanied by protecting and , where necessary increasing parks, trails, and access to nature where most Oregonians live, in our cities. By doing so we will reduce the pressure to develop the rural working landscapes.

Page 14

Expand the use or urban/rural reserves: Change the following sentence as follows: Rural reserves are areas designated for the purpose of providing long-term protection of lands for farms, forestry and other working landscapes and for the protection and, where necessary, restoration of healthy, functional ecosystems and the state's biodiversity. The Governor's Climate Change Taskforce recommends are relevant here. To reiterate our earlier comments, the Governor's Taskforce recommendations included the following: "6.5. **Plan at larger scales**: "Efforts to increase resiliency to climate impacts within one sector or region must be carefully meshed with similar efforts underway within other sectors and regions if they are to succeed. **For example, preparation efforts within forestry and agriculture must be linked with natural system preparation efforts**. In many cases achieving this integration will require planning at much larger scales than is currently done. We need to strengthen our approaches to integrated, system-wide planning." (p 21)."

Page 15

The use of "safe harbors" is a sound public policy and one we strongly support. Many local jurisdictions do not have the size of staff or expertise to analyze and carry out some planning issues, particularly in our experience natural resource related issues. There should be a safe harbor for natural resources that is based on the protection of whole ecosystems and protecting the state's biodiversity. The existing stream corridor safe harbor is woefully inadequate and is not grounded in the best available science. An ecosystem-based safe harbor should be developed that ensures the full range of functions are maintained in the state's riparian, wetland and upland habitats.

Page 16

Governance: **Preliminary Recommendations**: We agree with the recommendation to evaluate the program with an eye to whether they are outcome based or merely process-focused, based on our experience with the state's Goal 5 program, which is virtually totally process oriented, with no required outcomes other than having proceeded through the steps outlined in the administrative rule. Our concern is with the terms "flexibility" and "adaptability." While we would agree that the planning program should not be overly complex, we do feel strongly that it should be consistent (would the authors describe this as "rigid?") across the landscape to ensure protection and restoration of natural resources in both urban and rural areas.

We would recommend that, to the maximum extent possible, regional planning should be required, particularly with an eye toward addressing natural resource issues that cross political/jurisdictional boundaries. Furthermore, we believe any regional problem solving approach that requires unanimous or consensus agreement of all local governments is impractical to impossible to achieve.

Page 17
Change the following sentence to read: This review should be carried out by a small team of state, local, federal, private sector, citizens and NGOs, with guidance from the legislature.

Page 18
Economic Prosperity: This chapter needs serious work with regard to going beyond the current problems and recommendations to embrace the economic contributions that green infrastructure and ecosystem services that the state's natural areas represent. We have highly respected firms in Oregon such as ECONorthwest, David Evans Associates and others all of whom are capable of fleshing out this chapter to include the economic value of natural areas, particularly in the urban environment.

Page 18
GIS Library: See our comments above regarding the need to go beyond a GIS Library to ensure scientific experts are brought to bear in the development of natural resource oriented land use plans.

Collaborative Regional Planning: We feel strongly that the stated needs to do whatever is necessary to require, not encourage, regional planning efforts, particularly where natural resource issues cross jurisdictional boundaries. One way to go beyond simply encouraging regional planning would be to tie any state assistance for land use planning to a requirement for multi-jurisdictional planning. Regional disbursement of transportation funding is a good model to apply to regional land use planning. If local governments request financial assistance for their planning efforts the state should require coordinated regional planning, particularly for natural resource protection and management, as a quid pro quo to funding.

Pages 19 and 20
Economic Prosperity:
The Economic Prosperity chapter needs to be broadened to include the myriad contributions a healthy environment makes to local, regional, and state wide economic health. Nowhere in this chapter is there even a passing mention of the economic value of clean water and clean air. There is no mention of the tremendous economic contribution of green infrastructure and ecosystem services, particularly in the urban environment.

As with the GIS library concept, there should be a state sponsored Ecosystem Services and Natural Capital Center that is charged with providing local and regional planning agencies with data regarding the economic contributions of parks and recreation and green infrastructure so that more balanced economic analyses can be integrated in the land use planning process.

Page 21
Climate Change
In the opening paragraph the impending impacts on natural ecosystems is referred to, yet there is no recommendation regarding the need to address

ecosystem impacts in the planning process. A key concept that needs to be added to this chapter is **Adaptation**.

The Governor's Climate Change Integration Group's Final Report to the Governor[x] is replete with references to both mitigation and adaptation and the nexus with land use planning:

"Even if greenhouse gas emissions are rapidly reduced...It is therefore vital to rapidly devise, test, fund, and implement strategies and policies to prepare **Oregon's ecosystems and biodiversity**; built infrastructure, human services, and economic systems to adapt to climate change." (p 15).

The report goes on to state, "Oregon is exceptionally vulnerable to the effects of climate change because its natural systems and much of the economy is dependent on water. Climate change is likely to bring significant changes to Oregon's water resources. Snow pack, for example, is already down an average of 30 percent and spring runoff comes earlier, leaving lower flows in summer months. Lower stream flows affect agriculture, municipal water systems, fish and wildlife, water-based recreation, and summer hydropower needs." (pp 15-15).

Among the recommended actions are:

6.1 **Prevention should be a first priority**: "Prevention will be much less costly than repairing damaged systems and structures after impacts occur (P 20)."

6.4 **Redesign Planning Tools**: "Climate change means, however, that the future will not look like the past and environmental changes will continue to speed up in the future. Climate preparation planning should occur at long time intervals, 10-25 or even 50-75 year scales, especially if major investments are being made in infrastructure that are expected to last more than 10 years. (p 21).

6.5. **Plan at larger scales**: "Efforts to increase resiliency to climate impacts within one sector or region must be carefully meshed with similar efforts underway within other sectors and regions if they are to succeed. For example, preparation efforts within forestry and agriculture must be linked with natural system preparation efforts. In many cases achieving this integration will require planning at much larger scales than is currently done. We need to strengthen our approaches to integrated, system-wide planning." (p 21)."

6.7 **Limit non-climate stresses**: "Climate change is occurring at a time when other stresses already affect Oregon's natural, built, human, and economic systems. For example habitat loss and fragmentation, low summer flows, overfishing, and invasive species already threaten many species in Oregon. Climate change is likely to exacerbate these stresses. For example, by reducing summer stream flows even further, or causing more flooding events due to greater rain-on-snow events coupled with land-use practices that create erosion prone slopes. Many of these

stresses can be controlled at the state and local level, even if global climate change cannot. Land-use codes, for example, can be used and improved to discourage occupancy in flood, fire, or landslide hazard areas. (p 21)."

In light of this information, the Taskforce recommendations must be expanded to include specific land use related actions that will allow for **Adaptation** to the predicted increased winter time and spring flooding; lower summer flows; increased risk of landslides and fire hazards; and direct impacts on both grey and green infrastructure. A new section should be added to address these issues.

Respectfully,

Mike Houck,
Executive Director

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[i] The failure of most local governments to protect urban natural resources is supported by Oregon's State of the Environment Report, 2000: The annual rate of conversion of forest and farmlands to residential and urban uses has declined dramatically since comprehensive planning land use planning was implemented during the 1980s. However, these laws were not written to address ecological issues, such as clean water or ecosystem function within urban growth boundaries. In order to meet the economic and social needs of humans, native vegetation and habitats may be destroyed and converted to buildings and paved surfaces (emphasis added).

[ii] The Defenders of Wildlife's No Place for Nature, Limits in Oregon's Land Use Program to protect fish and wildlife habitat in the Willamette Valley, also points out flaws in how the planning program is implemented at the local level from a natural resource perspective:

"The land use program...tends to focus on one goal, one resource at a time. Furthermore, the land use program is implemented by a multitude of local governments. At present, the planning program carries no requirement that these entities coordinate their approaches to, for example, riparian corridors that may extend across several jurisdictions.

The Defenders report also highlights the importance of a regional approach to growth management and natural resource protection: "If the land use system is to play a more effective role in addressing fish and wildlife needs, it must move away from this site-by-site, resource-by-resource, jurisdiction-by-jurisdiction model. At a minimum, the program should require that significant resources be identified on a watershed basis and evaluated as a system so that important ecological relationships can be addressed in the planning process" Another Defender's criticism of the planning program is, " The Willamette Basin is laced with riparian and upland habitats that extend across urban growth boundaries and city limits. They serve an array of important functions from water quality and floodplain protection to meeting recreational needs. Fish and wildlife habitat issues need to be addressed by the planning processes of local jurisdictions, regardless of their urban or rural nature. With patience and creativity, urban communities can embrace the concepts of "designing with nature" and still provide adequate buildable land for housing and job creation."

[iii] To Save or To Pave, Planning for the Protection of Urban Natural Areas, Audubon Society of Portland, 1000 Friends of Oregon, Metro, June, 1994.

[iv] Green Infrastructure has numerous definitions. The Conservation Fund and its green Infrastructure network has the most comprehensive definition: "Green Infrastructure is the Nation's natural life support system - a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with

conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people. When we think of infrastructure we think of built infrastructure such as roads, electric power lines and water systems as well as social infrastructure such as schools, hospitals and libraries. However, the concept of Green Infrastructure elevates air, land, and water to an equal footing with built infrastructure and transforms open space from "nice to have" to "must have." At the same time, green infrastructure helps frame the most efficient location for development and growth - and related gray infrastructure - ensuring that developers, citizens, and communities capture the cost advantages of location and create and protect household and community amenities.

Green infrastructure provides a diversity of public and private functions and values that address both natural and human needs and benefit the environment and communities. Green infrastructure systems help protect and restore naturally functioning ecosystems and provide a framework for future development. In doing so, they provide a diversity of ecological, social, and economic functions and benefits:

* Enriched habitat and biodiversity
* Maintenance of natural landscape processes
* Cleaner air and water
* Increased recreational and transportation opportunities
* Improved health
* Better connection to nature and sense of place

Well planned green space has also been shown to increase property values and decrease the costs of public infrastructure and public services, including the costs for stormwater management and water treatment systems.

Investing in green infrastructure can often be more cost effective than conventional public works projects. For example, in the 1990s New York City avoided the need to spend $6–$8 billion on new water filtration and treatment plants by instead purchasing and protecting watershed land in the Catskill Mountains for about $1.5 billion. Likewise Arnold, Missouri, has dramatically reduced the cost to taxpayers of disaster relief and flood damage repair by purchasing threatened properties and creating a greenway in the flood plain." (www.greeninfrastructure.net)

U. S. EPA's NPDES program defines green infrastructure as follows: "Green infrastructure is an approach to wet weather management that is cost-effective, sustainable, and environmentally friendly. Green Infrastructure management approaches and technologies infiltrate, evapotranspire, capture and reuse stormwater to maintain or restore natural hydrologies. At the largest scale, the preservation and restoration of natural landscape features (such as forests, floodplains and wetlands) are critical components of green stormwater infrastructure. By protecting these ecologically sensitive areas, communities can improve water quality while providing wildlife habitat and opportunities for outdoor recreation. On a smaller scale, green infrastructure practices include rain gardens, porous pavements, green roofs, infiltration planters, trees and tree boxes, and rainwater harvesting for non-potable uses such as toilet flushing and landscape irrigation." (http://cfpub.epa.gov/npdes/home.cfm?program_id=298)

The State of Maryland combines information about green infrastructure and ecosystem services, "Maryland's most important natural lands comprise its "green infrastructure," and provide the bulk of the state's natural support system. Ecosystem services, such as cleaning the air, filtering and cooling water, storing and cycling nutrients, conserving and generating soils, pollinating crops and other plants, regulating climate, sequestering carbon, protecting areas against storm and flood damage, and maintaining aquifers and streams, are all provided by the existing expanses of forests, wetlands, and other natural lands. These ecologically valuable lands also provide marketable goods and services, like forest products, fish and wildlife, and recreation. They serve as vital habitat for

resident and migratory species, maintain a vast genetic library, provide scenery, and contribute in many ways to the health and quality of life for Maryland residents.

When wetlands and forest are developed into human-centered uses, there are costs incurred that are typically not accounted for in the marketplace. The losses in ecosystem services are hidden costs to society. These services, such as cleansing the air and filtering water, are fundamental needs for humans and other species, but in the past, the lands providing them have been so plentiful and resilient, that they have been largely taken for granted. In the face of a tremendous rise in both population and rate of land use conversion, many people now realize that these natural or ecosystem services must be afforded greater consideration. The breakdown in ecosystem functions causes damages that are difficult and costly to repair, as well as taking a toll on the health of plant, animal, and human populations."
(http://www.dnr.state.md.us/greenways/gi/overview/overview.html#what)

[v]The Ecological Society of America defines ecosystem services as follows, "
An ecosystem is a community of animals and plants interacting with one another and with their physical environment. Ecosystems include physical and chemical components, such as soils, water, and nutrients that support the organisms living within them. These organisms may range from large animals and plants to microscopic bacteria. Ecosystems include the interactions among all organisms in a given habitat. People are part of ecosystems. The health and well being of human populations depends upon the services provided by ecosystems and their components - organisms, soil, water, and nutrients. Ecosystems provide "services" that: moderate weather extremes and their impacts; mitigate drought and floods; protect stream and river channels and coastal shores from erosion; detoxify and decompose wastes; maintain biodiversity; contribute to climate stability; purify the air and water; pollinate crops and natural vegetation
(www.esa.org/teaching_learning/pdfDocs/ecosystemservices.pdf)

ECONorthwest, of Eugene, Oregon in its Technical Memo on the Economic Analysis of Ecosystem Services in the Lents Area (February 18, 2004) for David Evans Associates cites Stanford Economist Gretchen Daily's definition of Ecosystem Services as, "...the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life. They maintain biodiversity and the production of ecosystem goods, such as seafood, forage, timber, biomass fuels, natural fiber and many pharmaceuticals, industrial products, and their precursors. In addition to the production of goods, ecosystem services are the actual life-supporting functions, such as cleansing, recycling, and renewal, and they confer many tangible and cultural benefits as well (Daily, 1977)."

ECONorthest goes on to cite numerous other authors and conclude, "Natural resources provide a range of ecosystem services that benefit society in urban areas including: Riparian areas mitigate flooding and help reduce flood-related property damage; filter sediment and toxins from runoff, which helps maintain water quality in urban streams and rivers; Urban forest absorb air pollutants and help maintain air quality. The shading from trees may help reduce the "heat island" effect, which can reduce cooling costs in summer. "

[vi] The Governor's Climate Change Integration Group, Final Report to the Governor: A Framework for Addressing Rapid Climate Change, State of Oregon, January, 2008.

[vii] Mitigation: Intervention or policies to reduce the emissions or enhance the sinks of greenhouse gases.

[viii] Adaptation: Adaptation can mean adjusting to environmental conditions to avoid negative impacts or can mean to embrace positive consequences of change. By looking at present and likely future environmental conditions, we can see that the past is no longer a good guide for the future. Change, then, can and does affect us in both our natural environment and in our built or human environment. And knowledge around what is likely coming can help us to prepare effectively and become less vulnerable.

Adaptations we make to climatic change need to be aimed at making systems more resilient and healthy now and in the long run. It can mean providing greenways and migration routes for plants and animals that need to move to better match the environment that is best for them; or restoring natural floodways to allow the natural system to better protect the built environment. It can mean investing in long-term projects that reduce vulnerability (of people, infrastructure, or even investments) rather than increasing it. It can mean investing in educating the public to increase their awareness and availability of more environmentally friendly choices and options open to them. From the Adaptation Network, www.adaptationnetwork.org.

[ix] Both natural systems and grey infrastructure such as sewer pipes may be severely impacted by changes in hydrologic regimes in both urban and rural streams and rivers. Stormwater agencies are beginning to plan for "supercharging" of their sewer lines from increased winter runoff. Stream channel downcutting threatens to cancel out the huge restoration efforts agencies such as Portland's Bureau of Environmental Services and Clean Water Services have made in urban stream and wetland restoration.

[x] The Governor's Climate Change Integration Group, Final Report to the Governor: A Framework for Addressing Rapid Climate Change, State of Oregon, January, 2008.

EXHIBIT: Item 4
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 7
SUBMITTED BY: 1000 Friends

March 14, 2008

Gail Achterman, Chair
Oregon Transportation Commission
355 Capitol Street NE
Salem, Oregon 97301

Angus Duncan, Chair
Oregon Global Warming Commission
900 Court Street NE
Salem, Oregon 97301

John VanLandingham, Chair
Oregon Land Conservation and Development Commission
635 Capitol Street NE, #150
Salem, Oregon 97301

Re: Coordinated Program to Reduce Global Warming Pollution from Transportation and Land Use

Dear Chairs Achterman, Duncan, and VanLandingham:

We write to request that your respective commissions act collaboratively to establish a planning framework and specific policies to reduce greenhouse gas emissions caused by Oregon cars and trucks by developing and adopting several key approaches and measures, including reducing growth in vehicle miles traveled. We anticipate these would be implemented through a combination of administrative rules and legislative proposals both for funding and for new programs.

A. SUMMARY OF PROPOSALS

In summary form, we propose that:

1. The Transportation Commission and LCDC, with the advice and guidance of the Global Warming Commission, determine what reductions in vehicle miles traveled will be needed by 2020, 2050, and intervening years, as a component of the total reductions in transportation-based greenhouse gases (including reductions resulting from vehicle and fuel improvements) necessary to achieve the goals established in 2007 HB 3543. Based on this determination, the commissions should set a statewide VMT reduction target for each benchmark year.

2. The Land Conservation and Development Commission and Transportation Commission engage in coordinated rulemaking designed to achieve the VMT reduction targets by:

   a. Allocating the statewide VMT reduction target between the state's six metropolitan planning organizations and the balance of the state, with a reduction target for each MPO;

   b. Establishing, in coordination with MPOs, a transportation and land use planning model that is capable of identifying alternative land use patterns and transportation system investments that will achieve the VMT reduction targets in each region of the state; requiring that each region use the model to adopt a plan meeting its target; and requiring that all transportation investments and land uses be consistent with the applicable regional plan; and

   c. Setting town and neighborhood planning and design requirements for large and growing communities that will enable more Oregonians to conveniently travel on foot, by bicycle or transit, or with shorter driving trips.

3. The Transportation and Land Conservation and Development commissions develop 2009 legislative proposals to:

   a. Adopt and apply a greenhouse gas reduction planning tool for transportation and land use decision making to meet the state's greenhouse gas reduction goals;

   b. Ensure that resources for transportation system expansion are expended in accordance with the planning process for greenhouse gas reduction described above;

   c. Commit to spending resources raised for roads to be directed towards the maintenance of the existing system;

   d. Increase the level of funding for transit, intercity rail, and pedestrian and bicycling facilities;

   e. Authorize local and regional excise taxes on customer, employee, and commercial parking spaces, with the revenue allocated to providing transportation choices;

   f. Refer to the voters a constitutional amendment allowing revenue from newly-developed taxes on motor vehicle operation or emissions to be used to fund transportation options other than highways; and

   g. Provide grants and technical assistance to metropolitan planning organizations and communities that are required to undertake measures to reduce VMT.

B. REASONS FOR THE PROPOSALS

1. The Need for Action to Reduce Transportation-Caused Global Warming Pollution

In 2007, the Oregon legislature passed HB 3543, which requires that Oregon's greenhouse gas emissions be reduced to 10 percent below 1990 levels by 2020 and to 75 percent below 1990 levels by 2050. In Oregon, carbon dioxide comprises 86% of our total greenhouse gas output and transportation accounts for about 40% of the total carbon dioxide emissions. The result is that one-third of the state's overall greenhouse gas emissions are generated by the transportation sector.[1] Any effort to achieve Oregon's greenhouse gas reductions requires strong action to reduce transportation emissions.

As the Urban Land Institute and Smart Growth America put it in their ground-breaking report *Growing Cooler*, sources of transportation emissions represent a "three-legged stool, with one leg related to vehicle fuel efficiency, a second to the carbon content of the fuel itself, and a third to the amount of driving or vehicle miles traveled (VMT)."[2] Most of the attention to date in the transportation sector has been on increases in fuel efficiency standards of motor vehicles or proposals for lower carbon fuels. New technology, in the form of more fuel-efficient vehicles, new propulsion systems, and reduced-carbon fuels, are critically important to reducing transportation greenhouse gas emissions. However, they will not be enough.

They will not be enough because we drive more every year. Since 1980, the amount Americans drive has increased three times faster than the US population and about twice as fast as new vehicle registrations.[3] Moreover, Oregon's population will nearly double by 2050. It is this third leg - the growth in how much we drive and how many of us are driving - that will become the dominant uncontrolled source of emissions unless we invest now in creating desirable land use and transportation alternatives for Oregonians.

Effective land use planning and investments in transportation choices reduce the amount of time commuters spend in traffic, improve our health, reduce the portion of household budgets spent on gasoline, and protect our envied quality of life. These tools are proven and they are cost-effective. They benefit all Oregonians.

2. Oregonians Deserve Transportation Choices that Provide Economic and Energy Security

Changes in transportation investments and land use patterns may not be the only means available to reduce vehicle miles traveled. Sharp increases in the cost of driving, through steep charges on carbon emissions from tailpipes, might also discourage driving. However, simply increasing the

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[1] Governor's Advisory Group on Global Warming, *Oregon Strategy for Greenhouse Gas Reductions* (State of Oregon, 2004), Appendix B with updated data from "Oregon Greenhouse Gas Inventory," presentation by Bill Drumheller, ODOE, November 1, 2007, available from www.deq.state.or.us/aq/climate/meeting.htm

[2] Urban Land Institute and Smart Growth America, *Growing Cooler: The Evidence on Urban Development and Climate Change* (Washington, D.C.: ULI, 2007).

[3] Ibid.

cost of driving alone does not provide Oregonians with alternatives to driving. If significant numbers of Oregonians are stuck in automobile-dependent development, with widely separated low-density land uses, raising the cost of driving simply forces people to pay more to get to work, school, shopping or other destinations, and to continue to drive.

With or without carbon pricing strategies, the cost of petroleum will continue to rise sharply in the years ahead. Energy independence for Oregon, the United States, and for individuals, is an economic and security imperative. Increasing the transportation choices available to Oregonians and Oregon businesses, and reducing our need to drive, will make Oregon and its communities more competitive and more secure in the face of scarcer and more expensive petroleum.

If Oregonians are to have choices that permit them to reduce their dependence on the car, two steps are needed. First, there must be public investment in transportation facilities for pedestrians, bicycles, and both intercity and local transit. Second, public planning is needed to ensure that the market can provide Oregonians with places to live that are close to work, shopping and services. Through planning, those destinations are connected by sidewalks, bike routes, transit service, and a network of streets that makes travel by all those modes, *and* by short driving trips, possible and convenient.

3. Role of the Commissions

On February 29, 2008 the Governor's Climate Change Integration Group (CCIG) issued its final report and recommendations. The report, *A Framework for Addressing Rapid Climate Change*, urges prompt action to implement the greenhouse gas reduction targets established by the Legislative Assembly, warning: "Given the rapid rate at which climate change may affect the state, Oregon's existing governance systems . . . will likely need to consider ways to speed up the rate at which information is considered and decisions are made." *Framework*, p. 22.

CCIG recommends that particular attention be paid to land use and transportation changes to reduce growth in vehicle travel, because transportation is one of the largest sources of Oregon greenhouse gas emissions and "rising population [and] vehicle use" will otherwise overwhelm the benefits Oregon will gain from adopting the California vehicle efficiency standards. *Framework*, p. 35. CCIG's report devotes an entire chapter to discussion of the opportunities for emissions reductions from transportation and land use changes.

CCIG's report advises the Governor to designate Transportation and Land Conservation and Development as the "lead agencies" for reducing greenhouse gases in the transportation and land use sectors, respectively. It proposes that the agencies cooperatively establish baseline inventories of emissions in their sectors and identify strategies for reducing emissions to 10 percent below 1990 levels by 2010 and 75 percent below 1990 by 2050. *Framework,* p. 41-42. Accordingly, we address our recommendations to your commissions.

CCIG also recommends "that the 'Big Look' Task Force explicitly address climate change as a core issue in land-use planning." *Framework*, p. 10. We are providing a copy of this letter to Mike Thorne, Chair of the Oregon Task Force on Land Use Planning.

C. DISCUSSION OF THE PROPOSALS

1. Establishing VMT Reduction Targets

The Oregon Legislature has enacted overall targets for greenhouse gas emissions for 2020 (10 percent below 1990 emission levels) and 2050 (75 percent below 1990 levels). To begin planning for reductions in transportation GHG, the Transportation Commission and Land Conservation and Development Commission will need to know:

- First, what percentage reduction in GHGs will be required by 2020 and 2050 from the transportation sector (i.e., will the reductions be proportional by sector, or greater in some sectors)?
- Second, of the reductions needed from the transportation sector, how much is predicted to be accomplished through more efficient vehicles and lower-carbon fuels, and thus how much will be left to reduce through reductions in VMT?

Guidance in addressing these questions could be provided by the Global Warming Commission. In answering the second question, the commissions should establish an initial estimate for both 2020 and for 2050, and preferably for intervening benchmark years as well (at least every decade). As the vehicle fleet and propulsion systems change over the next 40 years, each vehicle mile traveled will likely produce fewer GHG emissions than today. To properly calibrate VMT planning, it will be important to have estimates of the likely average emissions per mile in future target years.

It is critically important to achieve greenhouse gas reductions from vehicle and fuel improvements, because such improvements enable Oregonians to reduce their expenditures for ever-more-expensive petroleum and allow Oregon to avoid more drastic reductions in vehicle miles traveled. Our organizations support measures to accelerate the "turnover" of Oregon's private vehicle fleet to more efficient low-emission vehicles and putting the right incentives in place for fuel providers to reduce the carbon content of their fuels. Of course, as noted above, VMT reductions will be needed as well.

2 a. and b. Regional Planning Models for Land Use and Transportation

Once the Land Conservation and Development and Transportation commissions establish VMT reduction targets for the next forty years, calibrated as described above, the Transportation Commission, in consultation with LCDC, Metro, the MPOs, and others, should allocate VMT for each target year between the six metropolitan areas (Portland, Salem, Corvallis, Eugene, Bend and Medford) and the balance of the state. The allocation should take into consideration each region's share of current population and VMT, and its projected share of future state population. Greater reductions in VMT should be expected from the six metropolitan areas than from the balance of the state for several reasons:

- The metropolitan areas will experience the greatest amount of new population and development and therefore will have greater opportunity to shift land use and travel choices.

- The population level and densities in urban areas make transit feasible.
- Rural areas of the state will have limited opportunities to reduce reliance on the automobile.

The technology already exists to estimate likely changes in VMT from changes in land use and transportation systems. ODOT and the MPOs already employ a "travel demand model" that estimates future travel behavior (and thus VMT) based on population, employment, and changes in the transportation network. In addition, Metro has developed a tool for modeling alternative land use patterns for future population and employment, called "Metroscope." By alternately running its transportation model and Metroscope, Metro is able to refine alternative land use patterns and transportation systems and choose the most desirable combination. It is thus able to more carefully estimate the VMT reduction potential of various combinations of land uses and transportation investments. Metro is currently working with the Salem MPO to make the Metroscope tool available to the Salem-Keizer region; other MPOs could do the same. (Telephone conversation with Andrew Cotugno, Metro Planning Director, February 21, 2008.)

The commissions should provide by rule that the cities and counties of each metropolitan area of the state mutually adopt a land use and transportation plan that, according to the MPO's model, will enable the region to achieve its necessary reductions in VMT for 2020 and 2050, as well as any interim targets. The rules should establish a schedule for periodically revising these land use and transportation plans in light of updated data on VMT in the metropolitan area and revised reductions necessary to meet the targets. The rules should provide that only transportation projects that are identified in the plan may be funded and built and that only the land use patterns depicted in the plan may be allowed by local land use regulations.

2 c. Community Planning and Design for Reduced VMT

Rulemaking by LCDC can further this VMT reduction effort by clarifying and strengthening the land use tools available to communities to provide land use patterns, designs and densities supportive of transit, biking, walking and short driving trips. Building on the Transportation Planning Rule and rules implementing the Housing and Urbanization goals, the Commission can establish base standards for town and neighborhood development that will encourage and facilitate transportation options. These base standards should include:

a. The proportion of mixed-use, higher-intensity areas (such as town centers or main streets) that must be included in communities' plans;
b. Minimum densities for new development, perhaps scaled by the planned population of the community;
c. Street standards, including sidewalk and bicycle route requirements, connectivity, and maximum street spacing standards;
d. Building orientation and surface parking location standards;
e. Limits on off-street surface parking; and elimination of minimum parking requirements for uses in downtowns and other high-intensity mixed use areas; and
f. Thresholds for infill and redevelopment that must be met before urban growth boundaries may be expanded.

These rules could be drafted to focus on communities within metropolitan counties as designated by the Census (Willamette Valley counties plus Deschutes and Jackson), excusing other communities (as well as small communities within the metropolitan counties) unless those communities propose amendments to their urban growth boundaries. As noted in our proposals for legislative action, this rulemaking should be accompanied by a technical assistance grant program for communities to assist them with implementation.

3. The Legislative Proposals

Improving planning and land development alone, without investment in non-highway transportation options, will not be enough to provide Oregonians with transportation choices. Funding for those investments is a legislative responsibility, and the Governor has begun a process to develop a transportation funding "package" for consideration by the 2009 Legislative Assembly. We believe that any such package must ensure that greenhouse gas-reducing transit, pedestrian and bicycle facilities are adequately funded, and that funding for highway expansion is conditioned on compliance with the VMT reduction planning described in this letter. We hope that you and your commissions will support the Governor's efforts to achieve transportation funding in a manner consistent with his goals for greenhouse gas reduction.

We are ready to work with you to ensure that Oregon accomplishes its goal of reducing greenhouse gas pollution while improving our quality of life.

Very truly yours,

Andrea Durbin
Executive Director
Oregon Environmental Council

Jeremiah Baumann
Program Director
Environment Oregon

Bob Stacey
Executive Director
1000 Friends of Oregon

cc: Governor Ted Kulongoski
Mike Thorne, Chair, Task Force on Land Use Planning
Matt Garrett, Director, ODOT
Richard Whitman, Director, DLCD
Andy Cotugno, Metro Planning Director

1000 friends of Oregon

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EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 2
SUBMITTED BY: 1000 Friends Mary Kyle McCurdy

January 15, 2009

Chair John VanLandingham
Land Conservation and development Commissi0on
635 Capitol Street NE, Suite 150
Salem, OR 97301

Re: Agenda Item No. 6: Petition to Adopt Goal 20 on Climate Change

Dear Commissioners:

1000 Friends of Oregon supports the petition of the Oregon Shores Conservation Coalition to adopt a new statewide planning goal addressing sea level change issues. And, we recommend that the Goal be broadened, to encompass climate change in general.

We believe this issue is appropriate for a new Goal, rather than only an administrative rule or tweaking with existing authority, because:

- The status of a Goal is appropriate. Climate change is the most significant environmental, social, and economic issue facing the state for many, many generations to come.

- Land use and transportation patterns – how we design our cities, towns, and neighborhoods and how we get around - have contributed significantly to global warming. Transportation contributes 30-40% of the greenhouse gas emissions produced in Oregon. And, land use and transportation planning can contribute significantly to the solution. It is estimated that integrating land use and transportation to create compact, mixed-use, walkable neighborhoods with choice in how we get around can reduce greenhouse gas emissions by 30%.

- A new Goal will generate a statewide conversation about how each of us – individually, as communities, and as a state – can contribute to addressing climate change and its impacts.

Therefore, we ask that the Commission start the process to adopt a goal on *climate change*, not just sea level rise. The goal would contain requirements related to (a) climate change mitigation and (b) climate change adaptation. Adaptation strategies are needed in fire-threatened forestlands, flood-threatened valleys, and other areas of the state, in addition to coastal shorelands.

Proposals for reducing greenhouse gas emissions, such as through more compact, mixed use development or through CO2 sequestration in growing forests and rangelands, would fall under part (a), mitigation.

Ten months ago, in March 2008, 1000 Friends of Oregon, the Oregon Environmental Council, and Environment Oregon asked LCDC and the Oregon Transportation Commission to adopt regulations that would guide regional planning for reduced greenhouse gas emissions in the six metropolitan areas of the state. That letter is included here. We described why and how LCDC and the OTC can and should use the existing structures of our land use and transportation system to reduce greenhouse gas emission. The Governor has now incorporated that regional planning approach in his Jobs and Transportation Act; thus, the timing is excellent for the Commission and Department to start this endeavor.

Oregon has the opportunity to be the leader in land use and transportation again – leading the nation in how to reduce greenhouse gas emissions permanently, and adapt to climate change, by using our land use and transportation planning system.

Sincerely,

Mary Kyle McCurdy

Mary Kyle McCurdy
Staff Attorney
Policy Director

EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 2
SUBMITTED BY: Craig Chisholm

January 15, 2009

473 Sixth Street
Lake Oswego, Oregon 97034
503-635-4719
craigchisholm@comcast.net

Land Conservation and Development Commission
c/o Richard Whitman, Director
Department of Land Conservation and Development
635 Capitol St. NE, Suite 150
Salem, OR 97301-2540

Re: Petition for Adoption of New Goal Addressing Seal Level Change

Dear Chair VanLandingham and Members of the Commission:

I am the past chairman of the Oregon Land Title Association, a member of the Oregon Bar and recently retired from Stewart Title Guaranty. I have been asked to present views regarding the relevance of title insurance to the above matter.

Here are a few points for your consideration:

1. **Title insurance can be of little use in addressing the problems of sea level change.**

   The location of the seashore is something that the title industry has dealt with in the past. Basically, the locations of moveable boundaries related to water are simply not covered by the insurance or information contained in title insurance policies. Court determinations or agreements between relevant parties would be required before such movable boundaries could be insured.

   In essence, title insurance is based on title records, which are chronological documents establishing priorities regarding the narrow issue of ownership. Title insurance is highly useful in that role, but practically useless as a method of insuring against losses related to the movement of the sea or for informing the public of the situation. Putting scientific information, such as sea levels, into deed records would not be a good way to provide this information and would damage the recording system.

2. **A geographic information system is needed to readily provide information to the public regarding land use and geographical matters.**

   Title insurance cannot provide the information that a geographic system is able to provide. A vastly superior method of giving such information is a GIS type of

system. Title insurance contracts, for good reason, have in them exclusions for both land use matters and for scientific information related to land. Perhaps the seller's disclosure statement may be modified to include such information, if the information is readily available through a GIS system. To my knowledge, a GIS system has not been developed to work well with the land transfer system. GIS could put the public on easy and rapid notice of matters such as lots of record and other land use matters. It could also give information on the location of surge zones, shorelines, and vegetation lines.

Serious consideration should be given to integrating GIS systems better into the land transfer system. A key point is that the government needs to be the "Czar" for this type of information. The public should be able to find all such information in one place. The government can speak authoritatively, with one voice, based on the best current information, which may change or be disputed.

3. **The issue of the change in sea level should be addressed pursuant to ORS 197.225 in order to provide a framework for a thorough discussion with all relevant parties.**

Information regarding sea level changes is likely to become more important to people involved in real estate transactions. The systems now in place are inadequate to provide such information and the situation will grow worse with the passage of time.

4. **Other jurisdictions:**

There are regulatory and legal systems that are already dealing with changing sea levels. The most advanced I know of are related to the **rising** shorelines between Finland and Sweden. There they address the very opposite problem that we face, but their answers to the issue of shifting seashores may provide some tested ideas for our state to consider. Note that these countries are highly advanced in both land use and technology and have been dealing with these issues for centuries.

Respectfully,

Craig Chisholm, Esq.

EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-8-09
PAGES: 2
SUBMITTED BY: LCDC Staff for Sara O'Brien

January 8, 2009

Land Conservation and Development Commission
c/o Richard Whitman, Director
Department of Land Conservation and Development
635 Capitol St., NE, Suite 150
Salem 97301-2540

Re: Petition for adoption of new goal addressing sea level rise

Dear Chair VanLandingham and members of the commission:

Despite the best efforts of the state of Oregon and other entities to reduce greenhouse gas emissions, human-caused climate change is now inevitable. Some changes are already visible on the landscape, and the negative effects on ecological, economic, and social systems are expected to increase and accelerate over time. While efforts to reduce emissions must continue and expand, it is also important that state agencies and local governments begin to prepare for and proactively adapt to the negative consequences of climate change.

The new goal proposed by the Oregon Shores Conservation Coalition to address anticipated sea level rise represents an important early step toward adapting our state land use planning system to a rapidly changing climate. There is a critical need to begin the challenging process of incorporating projected future climate conditions into all land-use decisions. We support the petition and hope that the commission will heed this timely call to action. The scientific evidence for future sea level rise is strong, and preparing for these changes must play a vital role in land use planning efforts in the coastal zone.

At the same time, we urge the commission to consider other climate impacts in the coastal zone and statewide and the need to reform state and local planning to cope with these changes. Whether a new goal is necessary to begin this important work or whether the work can begin under the existing goals, only the commission can ultimately decide. However, the planning necessary for coastal and other communities to begin to adapt to the impacts of climate change must begin immediately.

We hope the commission will use this petition to begin a conversation with the public about a variety of anticipated climate change impacts, including sea level rise, warming temperatures, declining snowpack, more frequent extreme precipitation events, and an increased risk of drought, flooding, heat waves, and wildfire. There is also a need to consider the negative impacts to Oregon's native biodiversity, including shifts in species' ranges and the spread of invasive species. All of these trends will significantly affect future land use patterns and should be incorporated into planning processes as quickly and as thoroughly as possible. The sooner Oregon begins addressing these issues, the better prepared we will be to face future changes.

Sincerely,

Sara O'Brien
Private Lands Conservation Associate
Defenders of Wildlife

Nan Evans
Director of Government Relations
The Nature Conservancy

Mike Houck
Director
Urban Greenspaces Institute

Jim Labbe
Urban Conservationist
Audubon Society of Portland

Bruce Taylor
Executive Director
Oregon Habitat Joint Venture

EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 3
SUBMITTED BY: Mike Houck

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Greenspaces
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Portland, Oregon

Dr. Alan Yeakley
Environmental Sciences and Resources
d State University
d, Oregon

January 15, 2009

Land Conservation and Development Commission
Department of Land Conservation and Development
635 Capitol St., NE, Suite 150
Salem 97301-2540

Dear Chair VanLandingham and members of the commission:

I am testifying on behalf of the Urban Greenspaces Institute to support the Oregon Shores Conservation Coalition's petition to create a new land use goal aimed at addressing the issue of Climate Change Adaptation and sea level rise. Virtually every local and state effort to address Climate Change focuses exclusively on Climate Change Mitigation measures, primarily reduction of VMT and other transportation related issues. While we strongly support such mitigation efforts, state agencies and local jurisdictions must broaden their efforts to incorporate Climate Change Adaptation[iii] to respond proactively to potentially dramatic changes to the Oregon's landscape, including but not limited to expansions of floodplains, increased risk of catastrophic fires, increased landslide hazards, loss of biodiversity, decreased water supplies, and impacts on human health.

The new proposed goal, which addresses anticipated sea level rise, is an important step toward incorporation the concept of Climate Change Adaptation into the state's land use program. While we support the petition before you, we also strongly urge you to consider other potential statewide climate change related impacts which argue for much broader, more comprehensive, ecosystem-based changes to the state planning program that, among other things, would limit development in floodplains and other hazard lands such as fires in the urban-rural interface and landslide areas. We also urge you to recommend changes that will address issues related to maintaining the state's biodiversity. There is strong evidence that climate change will have significant deleterious impacts on Oregon's ecosystems.

Whether a new goal is the appropriate tool to begin this important work or whether Oregon can address Climate Change Adaptation, including the critical issue of sea level rise, through changes to existing statewide planning goals is debatable. Regardless of the approach, both the Oregon Shores Conservation Coalition's concerns over sea level rise and the broader statewide concerns we have outlined must be addressed.

Respectfully,

Mike Houck,
Executive Director

URBAN GREENSPACES INSTITUTE, POST OFFICE BOX 6903, PORTLAND, OREGON 97228 503.319.7155

[i] "Adaptations we make to climatic change need to be aimed at making systems more resilient and healthy now and in the long run. It can mean providing greenways and migration routes for plants and animals that need to move to better match the environment that is best for them; or restoring natural floodways to allow the natural system to better protect the built environment. It can mean investing in long-term projects that reduce vulnerability (of people, infrastructure, or even investments) rather than increasing it. It can mean investing in educating the public to increase their awareness and availability of more environmentally friendly choices and options open to them." From the Adaptation Network, www.adaptationnetwork.org.

[ii] **While many consider it taboo, adaptation to global climate change needs to be** recognized as just as important as "mitigation," or cutting back, of greenhouse gases humans pump into Earth's atmosphere. The science policy experts, writing in the Feb. 8, 2007 issue of Nature, **say adapting to the changing climate by building resilient societies and fostering sustainable development would go further in securing a future for humans on a warming planet than just cutting gas emissions.**

"New ways of thinking about, talking about and acting on climate change are necessary if a changing society is to adapt to a changing climate," the researchers state in "Lifting the Taboo on Adaptation."

"The obsession with researching and reducing the human effects on climate has obscured the more important problems of how to build more resilient and sustainable societies, especially in poor regions and countries," Sarewitz said.

"Adaptation has been portrayed as a sort of selling out because it accepts that the future will be different from the present," Sarewitz added. "Our point is the future will be different from the present no matter what, so to not adapt is to consign millions to death and disruption."

Adaptation is the process by which societies prepare for and minimize the negative effects of a variety of future environmental stresses on society, Sarewitz said. Mitigation is the effort to slow and reduce the negative impacts of climate change by slowing the accumulation of greenhouse gases in the atmosphere.

"The key difference is that adaptation is the process by which societies make themselves better able to cope with an uncertain future, whereas mitigation is an effort to control just one aspect of that future by controlling the behavior of the climate," Sarewitz said.

Policy discussions on climate change in the 1980s included adaptation as an important option for society. But over the past two decades, the idea of adapting to global environmental changes has become problematic for those advocating emissions reductions and was "treated with the same distaste as the religious right reserves for sex education in schools -- both constitute ethical compromises that will only encourage dangerous experimentation with undesired behavior," the policy experts state.

Over the years, mitigation was favored as the global response to climate change, and adaptation seemed relegated to local responses to the specific changes brought on by global warming. Major global efforts to cut emissions were convened in the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. In those efforts, mitigation was talked about in the grandest of levels and adaptation as only having a limited impact.

As a result, adaptation was often looked upon in a negative sense, to be used if the grander plans failed. All the while, the effects of global warming were beginning to be felt, most notably in poorer countries and regions.

"To define adaptation as the cost of failed mitigation is to expose millions of poor people in compromised ecosystems to the very dangers that climate policy seeks to avoid," the

authors state. "By contrast, defining adaptation in terms of sustainable development, would allow a focus both on reducing emissions and on the vulnerability of populations to climate variability and change, rather than tinkering at the margins of both emissions and impacts.

"By introducing sustainable development into the framework, one is forced to consider the missed opportunities of an international regime that for the past 15 years or more has focused enormous intellectual, political, diplomatic and fiscal resources on mitigation, while downplaying adaptation by presenting it in such narrow terms so as to be almost meaningless," they add. "Until adaptation is institutionalized at the level of intensity and investment at least equal to the UNFCCC and Kyoto, climate impacts will continue to mount unabated, regardless of even the most effective cuts in greenhouse gas emissions." From Science Daily, February 8, 2007, http://www.sciencedaily.com/releases/2007/02/070207171745.htm

EXHIBIT: Item 4
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 1
SUBMITTED BY: OR Shores

RESOLUTION NO. 2008-51

A RESOLUTION OF THE CITY OF LINCOLN CITY ENDORSING THE PETITION REQUESTING THE ESTABLISHMENT OF A NEW STATEWIDE PLANNING GOAL TO ADDRESS SEA LEVEL RISE

WHEREAS, In its 2007 Fourth Assessment Report, the Intergovernmental Panel on Climate Change ("IPCC") stated that "warming of the climate system is unequivocal" and indicates that a sea level rise of .59 meters is likely this century; and

WHEREAS, the IPCC estimate is a consensus based estimate and there is significant evidence that a sea level rise of several meters may be more likely than the .59 meters indicated by the IPCC, and

WHEREAS, the City of Lincoln City is immediately adjacent to the Pacific Ocean and would be affected by a sea level rise of any extent and, if the sea level rise exceeds the IPCC level, the City of Lincoln City would face significant issues related to such a change; and

WHEREAS, the City vulnerability to a sea level rise of any extent is, at this point, unknown; and

WHEREAS, the Oregon Shores Conservation Coalition has submitted a proposed new Goal to the Oregon land Conservation and Development Commission and that Goal would require the state to study the effects of sea level rise and provide information to local governments, such as Lincoln City; and

WHEREAS, the proposed new Goal submitted by the Oregon Shores Conservation Coalition would take other steps, including limiting public investment in infrastructure seaward of a line likely to be subject to significant storm surge; and

WHEREAS, the objectives of the proposed new Goal would significantly benefit the citizens of Lincoln City,

NOW, THEREFORE, BE IT RESOLVED by the City Council of Lincoln City as follows:

Section 1. The City of Lincoln City hereby endorses the petition by the Oregon Shores Conservation Coalition to the Oregon Land Conservation and Development Commission seeking that the Land Conservation and Development Commission adopt a new statewide planning Goal addressing sea level rise.

Adopted, signed and approved this 8th day of December 2008.

EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 9
SUBMITTED BY: Steven Schell OR Shores

Before the Oregon
Land Conservation and Development Commission

Meeting of January 15-16, 2009, Agenda Item 6

Proposed Sea Level Rise Adaptation Goal

Testimony of Steven R. Schell[i]
For
Oregon Shores Conservation Coalition[ii]

Why a Goal on Sea Level Rise/Storm Surge Adaptation?

Two specifics and one general conclusion triggered the need to put before LCDC a proposed goal on sea level rise/storm surge adaptation.

First, watching what has happened in New Orleans with the Lower 9th Ward area after Katrina is something Oregon never wants to go thru, and, unlike Louisiana, Oregon has the tools both to help address the problems and to prevent the chaos, at least as to the aftermath and perhaps in advance.

Second, the statute creating the Global Warming Commission, provides:

> "The Legislative Assembly declares that it is the policy of this state for state and local governments, businesses, nonprofit organizations and individual residents to prepare for the effects of global warming and by doing so, prevent and reduce the social, economic and environmental effects of global warming."[iii]

Yet, while there were much palaver and grants and research papers, Oregon Shores didn't see anything substantive happening in Oregon's unique land conservation and development agency to actually address sea level rise adaptation and climate change.

Third, generally, DLCD and LCDC have fallen on hard times that have caused hard choices. It is easy to see where these difficulties came from. An agency that is constantly under attack through ballot measures 7, 37 and 49 has trouble looking up from the treadmill, especially where "express lane" reviews are not going as advertised. An agency that is undergoing a Big Look oversight has trouble doing other than taking the next small step forward. An agency that the Governor refuses to provide decent budgetary support for has trouble envisioning new programs. Finally, an agency that is constantly filled with and lobbied and sued[iv] by stakeholders, has difficulty seeing anything other than stakes; put another way, it sometimes has trouble seeing the public interest rather than just the stakes. Further, there are things that still need fixing, like Goal 10. However, we think some of these difficulties came from not dialoguing with the public, the citizens, the broader interests in Oregon. The process of dialoguing with the citizens, rather than just the stakeholders, is what the minimum-of-10-hearings goal process[v] is all about. The state agency coordination process[vi] built into the statutes from the very beginning of LCDC is one way the creators of the agency and its policy body used to prevent siloing by the agency; that is, the process of more or less unconsciously thinking that, by itself, the agency and its rules will solve all the problems.

What is the Intent of the Petition?

Everybody we've talked with believes climate change and sea level rise/storm surges are critical problems that need to be addressed. The issue before you is not those facts but rather what should LCDC do about them. The intent of Oregon Shores was and remains an effort to get you to commence the process of developing and implementing a statewide strategy. We never intended to say that our proposal is the end-all or be-all of sea level rise. One person or a small group (including DLCD staff itself) does not know enough to determine what is the best strategy in the public interest of Oregon for dealing with climate change adaptation needs arising out of sea level rise and bigger and more frequent storm surges. I do not know why your staff fears adding a goal or making changes in the existing goals when a whole new set of facts arises and requires an updated LCDC response. As the expression goes, "those who like law and sausages shouldn't watch either being made." I watched and participated in the origin of the existing goals, and, believe it or not, they are not the 10 Commandments.

There are specific questions that have been raised by the staff report and by others we have discussed the petition with. I'm providing with the written copy of this testimony a running commentary of those questions and our answers to them. I will not take time here to go through the points where we specifically disagree with staff, but the answers attached do so. Our goal was not to provide all the final solutions but to raise the topics and start the search for common and workable solutions. This meeting today is one good step in that search, but if you don't instruct staff to keep its options open for a broader dialogue, I believe you will be wasting the energy and understanding of yours, the staffs' and the public's, by not using the goal process.

But let me take this opportunity to raise what we think the unique Oregon questions are, which we have tried to provide solutions to or believe solutions are needed for:

First, develop the information and make it available. The Global Warming Commission, DOGAMI, and LCDC goal implementation are uniquely suited to do this.

Second, set safe harbors. Because of delays in funding and interagency cooperation, you have already developed tools such as "safe harbor" standards to be used until state and local agencies can get their acts together. These could be used here.

Third, think consequences and provide solutions. Is it only the fault of the people along the coast that we all have left huge carbon footprints that could result in taking their property? Transfer of development rights is but one solution for thinking about this problem and what to do about it.

Fourth, know farming impacts. Think about diking districts and consequences in all areas including, we would hope, estuaries.

Fifth, know the Beach Bill and Common Law and their limits under Oregon law. Pay attention to our unique and prized Beach Bill, the doctrine of reliction, and how they are affected by climate change.

Sixth, takings. *Lucas v South Carolina Coastal Council*[vii] sets standards for moving FEMA and surge lines. They must be addressed.

Seventh, is the land use system going to give any guidance with regard to post-damage public infrastructure replacements like sewer and water pipes and plants, roads, and Highway 101? And who is going to pay such costs?

These are some of the questions we posed to ourselves in trying to help you engage in the evolution of a climate change – sea level rise/storm surge adaptation goal. They are certainly not all the questions, but they may be among the hardest.

Where Are We Now?

Revenues: When this goal proposal was submitted to DLCD, people were receiving kicker checks, the financial melt down was not on the horizon, and very few people envisioned the State's being more than $1 billion short in revenues for the biennium.

Global Warming Commission: We didn't have a report from the Global Warming Commission that emphasizes an overall strategy for Green House Gas reductions and urges both Big Look and LCDC to modify the land use planning system to reflect sensitivity to at-risk lands and redirect development away from them, using as its first example, "coastal sea level rise, accompanied by more frequent and intense storm events . . ." [viii]

Big Look: We didn't have the Big Look's January 2009 report, just released, which states:

> "Adapting to the consequences of climate change is another critical land use planning challenge. The state, together with local jurisdictions, must consider how to protect communities from potentially increased environmental hazards and impacts related to sea-level rise, coastal storms and erosion, modified flood hydrographs, increased stress on levees, wildfire risks, and growing demands for water supply."[ix]

The problem with this consideration in the Big Look report is that, unlike some other sections of the report, there are no specifics as to how to go about these critical adaptation planning challenges.

DLCD Efforts: I don't believe we had the 2008 presentation, "Planning and Policy Implications of Sea Level Rise in Oregon Estuaries" where Bob Bailey pointed out (in slide 13) that Current Estuary Management "Does not anticipate: - significant rise in mean tidal elevation or landward migration of estuarine functions; [nor does it anticipate] - changing shape of estuarine footprint."[x] Yet my worry is, that at least in its analysis and recommendations to you, the staff report purports to treat the current goals and rules as adequate.

LCDC Focus on Climate Change: In fairness to the current efforts of Richard Whitman, Bob Bailey, Paul Klarin and Jeff Weber, when the petition was filed, we had not had an all day session before the LCDC devoted to climate change issues, like today's.

Timing and Finding: When the first 14 goals were adopted at the end of 1974, we thought all the governments, state and local, would immediately drop what they were doing and implement the goals within 1 year, as required by statute. As you probably know from your periodic review processes, it was 13 years before all the more than 260 local jurisdictions in Oregon had their planning and zoning in place. State agency coordination took as long, if not longer. A sea level rise/storm surge goal wouldn't be implemented over night, and proper funding (no unfunded

mandates!) will take time to arrange. However, who would fund a program that doesn't have a structure to it? The longest journey begins with but a single step. We're hoping you will start the goal process and along the way accumulate (and let us help you) the funding needed to address this critical need.

What does Oregon Shores Want?

1. LCDC should instruct the staff to provide a plan for a dialogue with the citizens of the State of Oregon through the goal process about what should be contained in a goal on climate change mitigation and adaptation, including sea level rise/storm surge adaptation.

2. I urge you to cast off a narrow definition of involvement, which agency has been forced into by threats to the program and its funding. As you approach Climate Change, which you must deal with regardless of what you do today, you need to try to "see through the glass darkly" the public interest and act on that, rather than just continue to have dialogues with mere stakeholders and never rebuild the consensus and support that this fine and unique program deserves.

3. Finally, even though you and the staff did not get what was wanted in the Governor's budget (I think I can say that even if the staff can't), there are and will be revenues to implement the steps needed to adapt to sea level rise and storm surge. Think of what we have going for us. We have a truly unique way of bring together natural resource requirements and economic development in our land use program. We have thought out goals, even if they tend to be static because of budget and other considerations. We have an Oregon State Professor[xi] and one of the Country's foremost scientists, as head of the National Oceanic and Atmospheric Administration, whose Commerce Department is responsible for Coastal Zone Management grants. We have strong interest from the Pew and other foundations about the problems involved in climate change and its effects on coastal systems. In fact, a Sea Level Rise goal, is more than a field of dreams, "If you build it, they [the money we need] will come."

Thanks to you and your staff for holding this meeting and hearing us out.

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[i] Attorney, Board Member of Oregon Shores Conservation Coalition; LCDC member and vice-chairman 1973-76; Member, Energy Facility Siting Council 1992-2000; Initial chairman and president Energy Trust of Oregon 2002-2005; Member 2004 Governor's Advisory Group on Global Warming.

[ii] Oregon Shores has about 400 members and has about 1400 people who are committed to walk their adopted miles of the Oregon Coast 4 times a year.

[iii] ORS 468A.205(2) (from HB 3543, 2007 Session)

[iv] Oregon Shores is not free from the category of suing stakeholders. The Westlaw index of Oregon and LUBA cases shows 72 different matters where Oregon Shores has been one of the parties or was mentioned.

[v] ORS 197.235

[vi] ORS 197.180

[vii] *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 112 S.Ct. 2886, 120 L.Ed.2d 798 (1992)

[viii] See, e.g, the Oregon Global Warming Commission Transportation and Land Use Committee's June 30 2008 letter, p. 3 of 5.

[ix] Oregon Task Force on Land Use Planning, Final Report (January, 2009) p. 31.

[x] http://www.aswm.org/calendar/wetlands2008/pp/bailey.pdf

[xi] Jane Lubchenko has been a member of Oregon Shores for several years.

Oregon Shores Conservation Coalition
Questions and Answers
For
Proposed Sea level Rise/Storm Surge Adaptation Goal
1/15/09

Q: What is sea level rise, is it really going to happen and why should Oregon be concerned about it?

A. Sea level rise is an inevitable result of global climate change; it is due to the increased temperature of sea water and the melting of fresh water currently stored in ice and glaciers. There is a scientific consensus that it will occur; the only dispute is the extent of the rise. The Intergovernmental Panel on Climate Change put forward a conservative estimate of a rise of .59 meters by 2100 (or 1.94 ft). Should the Greenland ice cap and the westerly ice shelf in Antarctica continue to melt at a rapid rate, that number will be significantly higher. This is important for low lying coastal communities, as a small rise in vertical sea level can result in a much larger horizontal reach of ocean water, particularly as Oregon has extreme high tides and high winds that, together with the sea level rise and storm surges, will cause coastal devastation on a regular basis. At this point, we don't even know the full extent of our vulnerability, which the proposed Goal is intended to remedy.

Q: How does sea level rise relate to ocean storm surges?

A. Along the Oregon Coast there are very high tides, usually in December and January. Winds tend to come from the southwest at that time of year and can develop waves over long stretches of the Pacific Ocean. In addition, El Niños can make a storm surge higher. If a storm, a high tide, an El Niño and sea level rise come together, as they are increasingly wont to do, very large storm surges will cause dramatic public an private damage to the Oregon Coast.

Q. What exactly does Oregon Shores want from LCDC at the January 15, 2009 meeting and hearing on the petition for a goal?

A. Oregon Shores wants LCDC to launch a goal process to deal with sea level rise and storm surge under LCDC's statutes. Oregon Shores does not expect LCDC to adopt any goal at the January 15 meeting.

Q. Would a Coast-wide projection numerical standard misstate actual conditions at any given location? (DLCD p. 6)

A. Yes, but the idea is that there would be a safe harbor until interagency coordination with the Global Warming Commission and the Oregon Department of Geology and Mineral Industries could find the money and time to do their technical jobs.

Q. Are current tools adequate to address the issues associated with Sea Level Rise and other effects of Climate Change? (DLCD p. 6)

A. No. If they were adequate then we wouldn't have the 2009 flooding across Highway 101 at Gearhart or between the Cheese Factory and downtown in Tillamook.

Q. Is the Beach Bill's statutory or vegetation line, whichever is farthest inland, sufficient? (DLCD p. 6 and proposed Goal 20, p. 7)

A. No it is not. Beach vegetation will grow back between the 25 year storm surge line and the old surge line. Oregon needs to recognize that the storm surge line will change how coastal processes will be changed by sea level rise and storm surge.

Q. Is Goal 17 on Coastal Shorelands adequate? (DLCD p. 6)

A. No. The goal is not sufficiently dynamic. It is too narrow for the impact of sea level rise impacted storm surges. Goal 17's identification of Coastal Shorelands as lands "subject to ocean flooding and . . . within 100 feet of the ocean shore," is not sufficient. DLCD staff ducks the issue without careful evaluation.

Q. Is Goal 18 on Beaches and Dunes adequate? (DLCD p. 6)

A. Not really. While the beaches and dunes goal takes account of wave overtopping and ocean undercutting and also recognizes the dynamic nature of active dunes, it fails to address whether public infrastructure consequences exposed as a result of changes will be saved if riprapping is necessary for pre-1977 structures. There are no analyses of New Orleans Lower 9th Ward type situations.

Q. Is Goal 7 sufficient? (DLCD p. 7)

A. No. DLCD doesn't seem to be able to make effective Goal 7. See e.g, *SOUTHERN OREGON PIPELINE INFORMATION PROJECT, INC., Petitioner, and RANDY PRINCE*, LUBA 2007-260 (July 15, 2008)

Q: Is Legislative action needed to fulfill the processes and purposes of the goal? (DLCD p. 8)

A. Ultimately it may be needed. Staff's seeming unwillingness to use the tools at its disposal to address these most important issues, however, is subject to the charge of single agency myopia without understanding the processes at LCDC's disposal. First, under ORS 197.235, the goal adoption process requires at least 10 hearings around the state and enables adjustments as needed. Second, there is an extensive and already used process of state agency coordination set forth in ORS 197.180. Third, DLCD's proposal of additional rules never comes to grips with what is needed here, namely a dialogue between LCDC and the Citizens of Oregon about the consequences of Sea Level Rise and Storm surges to their pocket books and their Oregon coast.

Q: Is inundation needed to justify sea level rise and surge regulation?

A: No. In Oregon sea level rise will be magnified by southwesterly winds and high tides in winter and these surges will render some coastal areas unsafe and unusable even if they are not inundated.

Q: What is a surge line?

A. A surge line is similar to a floodplain fringe line. It is determined by identifying the area that will likely be impacted at some time over a 25-year period by a winter surge from a combination of southwesterly winds, sea level rise and usual December-January higher high tides. As sea levels rise, the surge line moves landward.

Q: Are public moneys well spent if schools, sewage treatment plants or other similar public infrastructure are located seaward of the surge line?

A. No. Because these projects last for 50 years or more, they are very likely to be damaged by storm surges sweeping up to the surge line.

Q: If a 300 to 600 year plat tectonic event will cause a 6 foot land drop followed by a 50 foot tsunami, how will this affect sea level rise?

A. Sea level rise is relatively certain, a land-drop-tsunami event is also certain but less predictable from a time standpoint. Oregon needs to prepare for both. Sea level rise will occur even if the coast line drops. Plans need to be made littoral cell by littoral cell. The processes are different and deserve different treatment.

Q. Is the Surge line different from the Tsunami line?

A. The tsunami line is based on an anticipated wave of several feet. The surge line is based on a line initially determined by estimating a 1.94 Foot Sea level rise a typical December higher high tide, and a southwesterly wind of anticipated velocity over the Pacific Ocean reach.

Q. Will establishment of a surge line take my property?

A. No. If you own beach front property you will continue to have the right to occupy it. Further, if it is damaged it may be repaired. Further, you may sell the property. However, public services that are provided, such as sewer, roads, water or other municipal services, will not be replaced nor, it is anticipated, will publicly subsidized flood insurance for a subsequent loss, be available.

Q. Are private property rights being addressed?

A. Yes, thru transfer of development rights and there would be no takings even if the surge destroys your beach front home.

Q. If a home seaward of the surge line is damaged or destroyed and the owner receives flood insurance to pay for the loss, but is not able to rebuild, will the owner receive any transferable development rights?

A. The Oregon Shores proposed Goal does not specifically answer that question. It will be determined by the contours of the transferable development rights program created by the state.

Q. Oregon has a dry sands public use line along ocean beaches (the 16-foot line). What will happen to this line if a surge extends the beach landward?

A. Under both the Beach Bill and the common law doctrine of reliction, the public right should move with the gradual regression of the dry sand line. In other words, the 16-foot line will move with the sea level rise. However, because storm surge may not happen each year, a vegetative line that does not reflect the surge may be establish closer to the wet sands then is safe or sensible.

Q: What will happen to areas that would be wetlands but for dikes with tide gates holding out the water?

A. Diking Districts will not be able to extend the dikes and these lands will gradually return to their original nature as wetlands.

Q: Can riprap be used to protect a lot if a beach front home within the surge zone is lost?

A. Under the LCDC Beaches goal, if the home was built before 1977, the property owner can riprap to protect the house. However, if the home is within the surge zone and the infrastructure is provided by a public body, it will not be replaced.

Q: Where a surge destroys homes on the Oregon coast will they be replaced like those in the Lower 9th Ward of New Orleans, La.?

A. If you have flood insurance and your property is lost you will receive compensation but it is anticipated you will not be allowed to obtain a second flood insurance policy for the same area.

Q: What is a littoral cell?

A: Generally speaking, a littoral cell is the beach and stream outlets between two headlands. Each littoral cell acts differently; each littoral cell may react differently to sea level rise.

Q: Why do we need a new goal if Goal 7 on hazards already exists?

A. For two reasons: First, Goal 7 has not worked and Oregon Shores is pursuing a case in Coos County because the goal has never been implemented. Second, climate change causing sea level rise is a new problem dealing specifically with Oregon's Coast and the proposed goal deals expressly with that problem.

Q: If a surge line is adopted will it be possible to build a new house in the surge zone?

A. Three difficulties will confront such a person. First, it is likely the surge zone will be tied to the flood zone, and flood insurance will require specific construction. Second, public services will not be expanded to enable the construction. Third, because of already existing law that prevents riprapping to protect construction after 1976, the new construction will be vulnerable to a surge.

Q: If a surge line is established to include part of Highway 101 will the highway be replaceable at that location?

A. The answer is no, the highway will not be replaceable and will need to be moved out of the surge zone to prevent repeated damage to public infrastructure.

Q: If the surge line is based on a predicted sea level rise, how is the prediction determined?

A. The initial sea level rise is based on the conservative estimate provided by the Intergovernmental Panel on Climate Change. Oregon has established a Global Warming Commission and every 5 years it is to re examine the original number and make a new forecast. Thus, the number may change and the surge line will need to be readjusted based on the change.

Q: Will location and replacement of public work, like schools, sewage treatments plants, sewer lines, water lines and roads be affected by the surge line?

A. Yes in 3 ways: (1) planning, (2) construction, and (3) replacement. Money will be saved by avoiding the need to relocate these services. Safety will be enhanced to make sure these services work in times of storm and need.

Q: Where will the state and local governments get the money to develop the maps, get the littoral cell planning done and implement the surge line?

A. The money will need to come from several sources including: Federal Coastal Zone money and new appropriations for climate change response, from gas tax and from other highway related moneys. The state may need to authorize a systems development charge in the affected areas for use of the local governments in dealing with sea level rise.

Q: Why should LCDC do this when it has to deal with Big Look, Goal 10 and Destination Resorts?

A. It is time for LCDC to take on a project that deals with the future of the state, not simply try to deal with the results of disputes that affect a relatively small group of people. The 2007 climate change legislation requires agencies to move forward. Sea level rise will happen quicker than we anticipate. Oregon has the tools and the money (through CZM) to deal with this issue, and it is in the tradition of this State to do so.

Q: How are Cities expected to deal with UGBs and transfer of development rights when they are up against the hills now?

A. Simply ignoring the problem doesn't solve it. Local governments and the transportation agencies need to think together about how to respond and have a plan in place that can be counted on. It affects investment decisions for both the private and the public sectors.

Q: Where will the local government funding come from?

A. It will come from CZM money and through matching funds that will be available from the Federal government, and in better times, the state.

Q: Have we talked to all possible interested parties, such as OCZMA ?

A. No, they'll have plenty of time to respond if LCDC votes to commence goal hearings.

Q: What exactly can DLCD do regarding this adaptation?

A. Set a surge line, set the predicted height of sea level rise and change it as needed, work to save private property values with transfer of development rights, mandate that infrastructure in surge areas will not be rebuilt with public moneys upon washout, help to change threatened areas of Highway 101, work on replacement of lost estuarine areas through a program of diked farm land purchase and reclamation, avoid new development of public infrastructure in vulnerable areas; also see U. of Wash. Publication on subject.

Q: Are changes underway in insuring coastal properties?

A. Yes. We have information that one insurance company is no longer operating to insure new properties on the Oregon Coast. Further, insurers are starting to draw lines, such as a 1000 feet or 2500 feet back from the water.

EXHIBIT: Item 6
LAND CONSERVATION & DEVELOPMENT COMMISSION
DATE: 1-15-09
PAGES: 5
SUBMITTED BY: Thane Tienson

BEFORE THE LAND CONSERVATION AND DEVELOPMENT COMMISSION

Proposed Adoption of Goal 20 to Address Sea Level Rise

Chair Van Landingham and Commissioners:

My name is Thane Tienson. I am an attorney with the law firm of Landye Bennett Blumstein located at 1300 SW 5th Avenue, Suite 3500, Portland, Oregon. I am speaking in general support of the adoption of proposed Goal 20 because sea level rise promises to be an important issue with serious implications for all of Oregon's coastal communities and estuaries.

First, a disclaimer. I am neither a scientist nor a fish biologist, but I have devoted a considerable amount of my professional career as a lawyer to fisheries issues and have developed a fair amount of expertise in fisheries law and a substantial grounding in the science surrounding our coastal fisheries, particularly salmon. I was born and raised in Astoria in the fishing industry, I have represented both commercial and sports fishing groups and environmental and conservation organizations dealing with fisheries issues for more than 25 years. I authored the Fisheries Law Section for the Oregon State Bar and am a Founding Board Member of Save Our Wild Salmon.

On the Oregon coast, unlike our neighboring states, our beaches are not privately owned, and there has not been extensive development along our shoreline. The impacts of a rising sea level, which most climate change models forecast will total in excess of two feet over the next 50-100 years, will be particularly felt by our coastal wetlands and estuaries. These wetlands and estuaries function to protect against flooding by absorbing excess water; they filter out pollutants; they stabilize shorelines; they provide important habitat and nutrients for wildlife; and serve as nurseries for many fish and shellfish species, especially for salmon. As such, they serve as the basis for many coastal communities' economic livelihoods and they provide recreational opportunities for all of the state's residents.

As the sea rises, existing wetlands will erode and new wetlands will form inland as previously dry areas are flooded by higher water levels. But the amount of newly-created wetlands will diminish because of the protection afforded by dikes, tide gates, and other manmade barriers. In addition, our rivers will be warmer, rains and runoff will increase, spring freshets will come earlier and stream flows and estuaries will both diminish, all of which will adversely affect our salmon populations.

Rising sea level also increases the salinity of both surface and ground water through salt water intrusion. Salinity increases in estuaries can harm aquatic species that do not tolerate high salinity. The increased salinity will also bring with it destructive organisms such as barnacles and ship worms which require relatively high salinity to survive and will certainly migrate farther up our estuaries attacking wooden structures. Increased salinity is likely to alter mixing and flushing rates of the estuary, increasing pollution, perhaps dramatically.

Obviously, the full extent to which Oregon's coastal estuaries and salmon and other marine life will be affected by rising sea levels will depend upon exactly how much rise in the sea level there is, when it occurs, and how rapidly it occurs. These are all questions that cannot presently be answered with certainty, but the science underlying these concerns is well-known, well understood, and well appreciated.

We know there will be a significant rise in sea level on the Oregon coast over the next century. The impacts to our estuaries and wetlands will be profound. Accompanying the rise in sea level will be its so-called "evil twin" acidification, which we are already seeing in our coastal ocean. The problem of

rising CO2 concentration is not just thermal, but chemical as well. The results of testing in a northern California upwelling zone just six months ago showed acidification was 50 to 100 years more advanced than models predicted and showed a 300% rise in acidity over pre-industrial levels. These changes, which are expected to continue, will bring substantial reductions in the food chain for salmon and other larger fish species whose diet depend directly or indirectly on zoöplankton, phytoplankton, and other prey organisms vulnerable to calcification impacts of CO2-enriched seawater.

Coos Bay, because of its low lying landscape, is probably the most vulnerable of Oregon's estuaries to a rise in sea level. The Oregon side of the Columbia River estuary, also low lying, will see substantial changes in its hydrology.

Importantly, climate change is also bringing with it stronger storms, heavier precipitation, higher wave conditions, and greater flooding. Last year's devastating coastal storm may have been a symptom of this.

Given the certainty of dramatic changes to our estuarine areas and the enormous consequences for both the natural environment and the built environment for coastal Oregon, and given the other efforts being undertaken

by our federal and state agencies and local governments to address climate change, it is both necessary and appropriate to now address the issue of sea level rise and its impact on our coastal zones.

I am very sensitive to the imposition of additional unfunded mandates on both state and local government, but particularly local governments. I want to reiterate my concern about that issue. For that reason, I do not favor the adoption of short inflexible deadlines to implement this proposed Goal, but I do favor the prompt initiation of a dialogue about this critical issue with the state, our coastal communities, coastal residents, and other stakeholders through the Goal establishment process, and for that reason, I urge the adoption of a Goal-making process to address sea level rise.