

Sustainability 2.0

Creating a Culture of Sustainability:
Best Practices in Retrofitting Our Cities,
Communities and Neighborhoods



Where the Future Comes From?

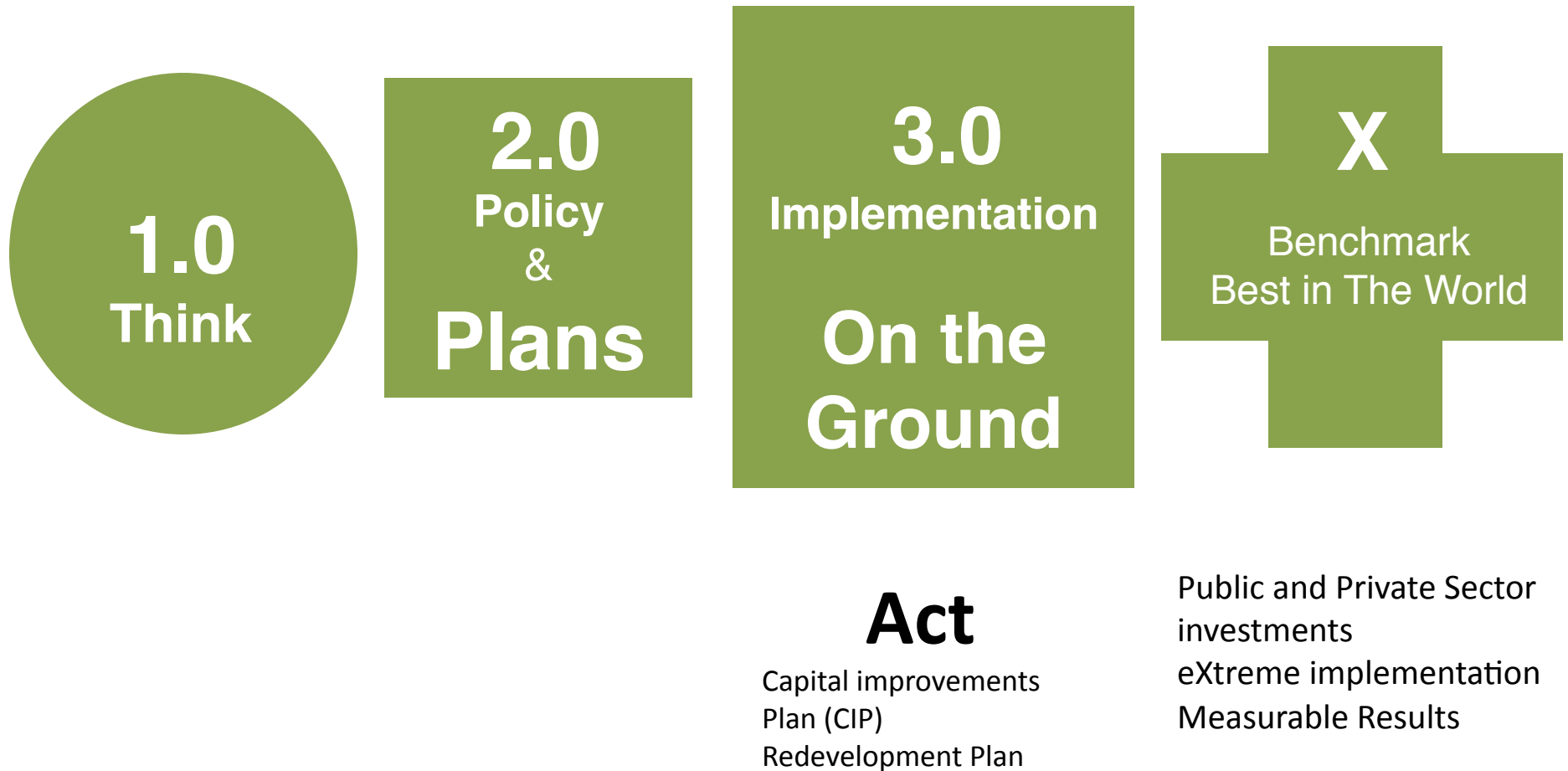


If you don't
know the
destination ...
any path will get
you there!

Zoning ordinance
Guidelines

Capital improvements Plan
(CIP)
Redevelopment Plan

Stages of Sustainability



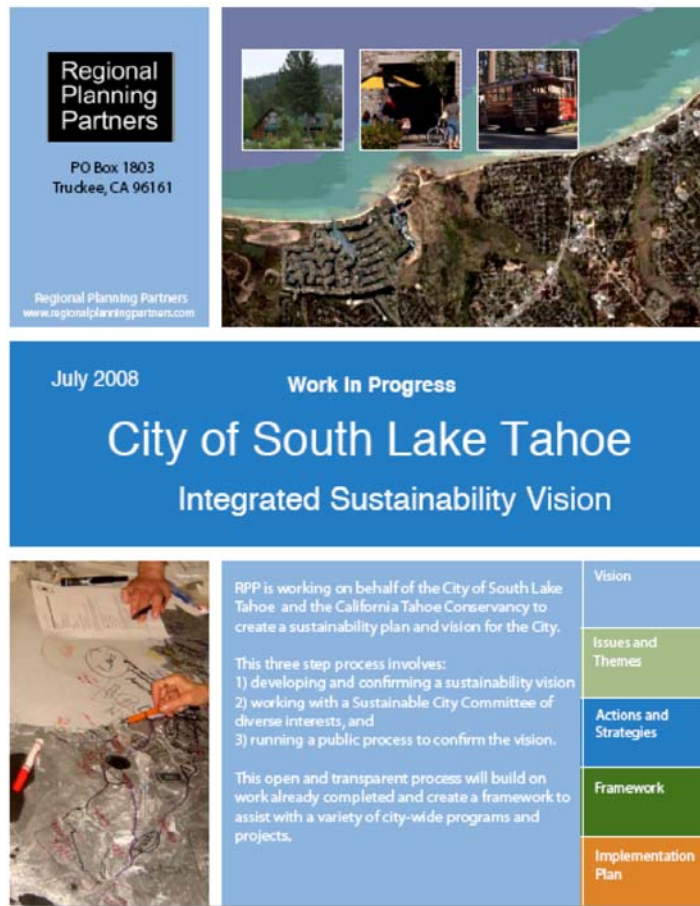


Key Elements of Sustainability 1.0



1. Vision
2. Results orientation
3. Strategic financing orientation
4. Adaptability to changing conditions
5. Broad base of community support
6. Key champions
7. Strong internal systems
8. Sustainability plan with baseline condition

Sustainability Principles for the City of South Lake Tahoe



- 1) Green Infrastructure
 - Energy/Resource Usage
 - Waste Reduction & Recycling
 - Water and Stormwater Infrastructure
- 2) Complete Community
 - Neighborhoods, town centers and nodes, gateways & enhanced Places
- 3) Environmentally-Friendly Transportation
- 4) Vibrant Economy
- 5) Diverse Housing
- 6) Forest Health and Functional Open Space
- 7) Community Facilities and Programs
- 8) Healthy Food System
- 9) Green Buildings
- 10) Regeneration/Restoration



Vision for a Sustainable City of South Lake Tahoe

Looking back from the year 2028 – South Lake Tahoe has become a national story – successful because communities and public agencies made a concerted effort to invite investment that improved the region's competitive position and image while moving the City toward a more sustainable future. Gateways and places have been enhanced and Highway 50 has been transformed into an interconnected series of pedestrian-oriented mixed-use districts served by efficient and convenient transit and connected to adjacent neighborhoods. South Lake Tahoe has become nationally recognized as a bicycle-friendly community.

In 2028, South Lake Tahoe is an exceptional place where the prosperous year-round community thrives in harmony with the natural environment. The overwhelming presence of nature is apparent. The Lake is blue and clear, the air is clean, the ecosystem is healthy, and natu-



ral sounds are evident. The City has increased its livability and prosperity, reduced the ecological footprint of its residents and improved human and ecological health by implementing key sustainability strategies. Within communities, the economy is strong and sustainable, the population diverse and vital, and the richness of everyday life is obvious. A vibrant and sustainable regional food system connects fresh, healthy, and local food to residents, grocers, casinos, and restaurants.

By 2028, the City has made significant advances toward sustainability that meets the needs of the present community without comprising the needs of future generations.

"Equity, Education, and Awareness will be the result of a partnership between the City, local organizations, and community leaders."



City of South Lake Tahoe Sustainability Priorities



VIBRANT

Create live/work and work/live opportunities with flexible buildings and mixed-use zoning that allows local businesses to grow and evolve over time



COMPLETE

Implement Smart Growth principles to create walkable, mixed-use centers, compact neighborhoods, and enhanced gateways and places



CONNECTED

Improve bicycle and pedestrian connections between all neighborhoods and communities with sidewalk and multi-use trail network enhancements



HEALTHY

Connect surrounding forests to urban open spaces, parks, natural areas, and SEZs to encourage biodiversity and healthy habitat



EFFICIENT

Identify action items for residents and businesses that improve energy efficiency and reduce environmental impact

CLEAR



Use water more efficiently in our homes, businesses and landscapes, and manage runoff that maintain natural hydrological regimes

DIVERSE



Offer a wide range of diverse housing opportunities, both ownership and rental, for all income levels

GREEN

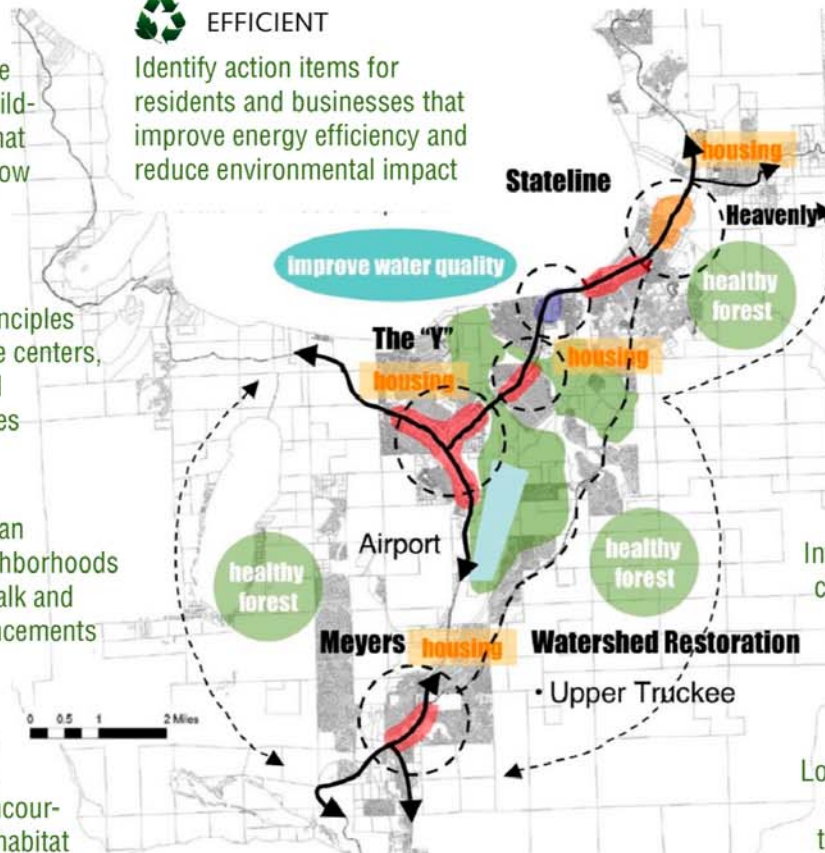


Integrate green and sustainable construction into new housing units, neighborhoods, and mixed-use centers

LOCAL



Look at a regional food network as an economic development tool to build health and wealth





Mixed-Use Neighborhood Center

This site plan incorporates Energy Efficiency, Best Management Practices, Mobility Options, a Green Street, a Complete Street, Green Buildings, and strategies for Solid Waste Reduction and Recycling.

Best Management Practices

- Improve stormwater quality management with use of swales and natural treatment systems and integration of runoff into functional design elements and public art
- Develop a coordinated stormwater management system to minimize runoff, improve area-wide stormwater retention and reuse

Mobility Options

Redevelopment/reinvestment along the Highway 50 corridor will include a variety of compact and walkable places that support transit and reduce trips. Improve transit efficiency, service, and convenience to encourage use.

- New Bike Lanes
- New Sidewalks and Connections



Green Buildings

- Commercial/Mixed-Use Buildings
- Live/Work Townhouses
- Residential Townhouses
- Duplex/Cabins

Green Streets

- Shared Parking with Permeable Surface
- Bio-Swales/Native Landscaping
- Water Quality Transmission to BMPs
- Trees and Traffic Calming
- Sidewalks

Applying Complete Street Concepts to Highway 50

Stormwater Facilities Designed as Civic Space

Streetscape, Street Furniture



Outdoor Seating Areas Pedestrian Lighting (low) Mid-block Crossing Transparent Shop-front Windows

Reduce, Reuse, Recycle

Divert solid waste from the landfill including household, commercial, construction and site/forest clearing waste.

- Consolidated Refuse/Recycling Facilities for Commercial/Multi-Family
- Simplify Recycling with Curbside Household Pickup

Sustainable Planning and Design to Reduce GHG Emissions and Climate Change Impacts.

- Infill/Redevelopment
- VMT Reduction
- Mobility Options
- Energy Efficiency
- Green Buildings

Existing Conditions along Highway 50



DRAFT Tahoe Sustainability Framework - Climate Action Plan



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The Regional Climate Action Plan Framework includes programs focused on reducing greenhouse gas (GHG) emissions and climate change impacts. The concept of moving toward local and regional sustainability will guide Regional policy, the EIP programs and projects. The long-term impacts of policy choices and projects will be considered to ensure a sustainable legacy and the necessary reduction in GHG. The following concepts are intended to provide significant benefits to multiple environmental threshold areas. By implementing these concepts, the Region will increase its livability and prosperity, reduce the ecological footprint of its residents and visitors, and improve human and ecological health.

Reducing GHG emissions is a shared responsibility involving both public land managers, local jurisdictions, transportation agencies, land use planning jurisdictions at a regional and local level, businesses, visitors to the area, nonprofit organizations, and residents working together to minimize their impact. The public and private sector will need to work together to take action and make appropriate investments and changes in behavior. By implementing these priorities and actions the region may become a national leader in sustainability and proactive environmental planning.

Version 1
For Discussion Purposes Only



CLIMATE CHANGE ACTION PLAN

Critical areas related to climate change include awareness, protection, prevention, and adaptation. The EIP will create a broad framework of actions with supporting programs and projects to reduce GHG Emissions and the impacts of climate change. The programs and projects are designed to guide and direct early action for the Basin as a whole.

The Regional Climate Action Plan framework outlines nine concepts that provide a starting point for sustainable decision making. The concepts were based on past visioning efforts, including Place-based Planning and Regional Visioning, the Regional Plan update, and the EIP. These concepts for dealing with climate change will help to inform regional planning, the EIP, and become a framework for decision making and project prioritization.

Priorities include:

- preventing catastrophic wildfires, maintaining healthy forests, and harnessing forests to store carbon
- implementing adaptation strategies for water and vegetation to protect Lake clarity
- creating a redevelopment and uplift focus on more compact and walkable communities
- improving environmentally-friendly transit
- reducing energy use and increasing efficiency
- reducing waste and improving recycling programs
- focusing on sustainable site design, and green buildings.

New investment in the Region should "set the green bar high" and demonstrate leadership in sustainable design. Investment and redevelopment should be designed to last and encourage a focus on environmentally sensitive planning, including:

- Supporting "Green" transit (low and zero-emission transit)
- Focusing on a mix of land uses that support transit use
- Emphasizing infill instead of Greenfield development
- Using alternative energy sources and infrastructure investment
- Incorporating "Cradle to cradle" design solutions and green building for new construction
- Planning for infrastructure that improves water and air quality
- Developing a "Green" solution for undesirable forest fuels

Maintain Healthy Forests



Concept

Forests will continue to be managed for public safety to reduce the threat of wildfire; this will in turn prevent the release of GHG emissions during large events. Public land managers would use a science-based approach for restoration and management of the existing forests to maintain GHG release and maximize carbon sequestration. Forest management will be managed to improve the entire forest system and minimize the release of forest GHG. Forest management will also consider what to do with forest fuels in a manner consistent with reducing the overall carbon footprint.

Actions

- Reduce the severity of fire and the risk of catastrophic wildfire, major sources of GHG emissions
- Capture more carbon in forests through thinning and tree growth that would maximize carbon sequestration
- Establish biomass programs to replace pile burning (which releases large GHG emissions) and to generate alternative energy
- Grow more diverse and tolerant forests that are resilient to rising temperatures, catastrophic wildfire, changing hydrology, and insect outbreaks
- Revegetate disturbed areas and manage vegetation for adaptation to climate change
- Restore and improve habitats for fish and other wildlife
- Control and reduce the spread of terrestrial invasive species and invasives as the climate change impacts the forest

Watershed Restoration, Stormwater Management and Lake Clarity



Concept

An increase in air temperature in the Lake Tahoe Basin has been documented, along with the finding that the number of days below freezing has declined by over 30 percent in the last 100 years. This has resulted in a decline in the relative fraction that snow contributes to annual precipitation. At Lake level, 52 percent of the precipitation that has consisted of snow while currently that has dropped to 34 percent.

The pollutants that impact Lake clarity primarily come from urban sources located adjacent to the shoreline. Given that (1) concentration and load of these pollutants vary depending on precipitation type and runoff conditions, (2) it is well known that rain on snow generates significant erosion compared to snowmelt, and (3) significant amounts of pollutant loading can be associated with just a few individual rain and rain-on-snow events, urban pollutant load can be sensitive to the impacts of climate change.

The process of Lake mixing from top to bottom is also highly influenced by climate change. It is known that the average temperature of Lake Tahoe has increased since measurements began over four decades ago. Modeling studies strongly suggest that further increase in water temperature would likely affect the distribution of nutrients and dissolved oxygen in the Lake with potential negative consequences for water quality and aquatic biota. There is current evidence that the increase in water temperature has already impacted the Lake's biodiversity.

Actions

- Support ongoing efforts to obtain federal, state and local resources to keep EIP projects for watershed protection and pollutant load reduction viable.
- Consider the possible impacts of climate change in area-wide planning and design, and stress the need to focus on stormwater runoff control and enhancement of natural infiltration in all urban projects.
- Determine the specific dynamics of urban hydrology in the Lake Basin to evaluate the impact of increased rain on snow on runoff and pollutant loading from this critical source area.
- Integrate stormwater monitoring with water quality restoration projects within a management system that will directly integrate with the TMDL, and provide quantification of progress.
- Protect and restore key riparian areas and natural features.
- Increase the number of private parcels that are in compliance with the BMP Certification program.
- Promote the development and testing of innovative approaches to pollutant load reduction.
- Ensure that capital funds spent on water quality improvement are dedicated to priority projects that demonstrate the potential for the greatest pollutant load reduction.

Invasive Species and Vegetation Management



Concept

Rising temperatures and changes in precipitation patterns make the basin more vulnerable to invasions by non-native species in both aquatic and terrestrial environments. Furthermore, the composition or biodiversity of resident species can be influenced by factors associated with climate change. It is not uncommon to see the geographic and elevational range of species to change under warmer or cooler conditions. There are also indirect effects of climate change, for example if warmer air temperatures lead to higher fire risk, this could promote the opportunity for invasive grasses and other terrestrial species to become established.

Lake Tahoe is currently impacted by invasive aquatic species that are likely to be favored by warmer water temperatures. Examples include bass, Asian clams and Eurasian watermilfoil. The impact of warmer water temperatures are likely to be exaggerated along the shoreline, nearshore zone where these species typically reside.

Actions

- Devote efforts to prevent aquatic invasive species from entering the Lake (e.g. boat inspections) and further evaluate approaches to the removal of existing aquatic invasives.
- Monitor other regional water bodies for invasive aquatic species, especially those that are hydrologically connected to Lake Tahoe.
- Monitor Lake Tahoe for new invasive species that have recently moved into the western U.S.
- Support the existing Lake Tahoe Aquatic Invasive Species Working Group, using this group as a liaison to resource agencies.
- Promote healthy aquatic biota in Lake Tahoe, its tributaries and surrounding lakes.

Areas of Habitat Protected
• 605 acres of Wildlife Habitat Acquired and 13,000 acres of Wildlife Habitat Improved.
• Map also indicates areas where plant and wildlife species are protected

Redevelop Existing Communities



Concept

Redeveloping our urbanized areas with compact, walkable, transit-oriented communities and green buildings will help to reduce GHG emissions and accurate attainment of environmental thresholds. The land-use direction outlined in the Regional Vision document, draft Regional Plan policies, and the Regional Transportation Plan are consistent with VCL principles for addressing climate change. By developing compact communities and neighborhoods, residents are offered the opportunity to work, live, play, shop and learn within a convenient walking or transit distance. Efficient land-use planning will reduce energy, water use and vehicle miles traveled (VMT). Regional Vision principles and draft Regional Plan policies will be focused on creating walkable, mixed-use centers, compact neighborhoods, and enhanced gateway and plaza. The promotion of infill and redevelopment is necessary in order to increase density and compact development within walking distance of transit stops.

Actions

- Reconfigure land-use patterns to create walkable, mixed-use centers and compact appropriately scaled redevelopment.
- Redesign up to nine centers with improved pedestrian and transit-oriented urban design that reduces dependency on the automobile.
- Design for improved connectivity, walkability, and mobility options between centers to reduce automobile dependency.
- Increase affordable housing solutions and a work/living balance that reduces the need for commuting.
- Create incentives and workforce opportunities with flexible design of mixed-use zoning that allows local businesses to grow and evolve over time.

Green Jobs and Innovation to Support a Vibrant Year-round Economy



Concept

Basic communities have an opportunity to once again be a national environmental leader by focusing on innovation around environmental solutions. No other region in the country has a 40-plus year history of achieving environmental thresholds while focusing on vibrant and successful communities. Because of the level of study, analysis and science, Lake clarity can be an indicator of success in dealing with climate change prevention, adaptation and protection. With almost 90 percent of the Basin consisting of public lands, the recreation sector should stress that it is the centerpiece of a green economy in the Basin.

Actions

- Create high-quality jobs focused around: training, education, technology, innovation, energy efficiency, green building, technology, arts, and science.
- Continue philanthropic pursuits that focus on solutions and innovation.
- Partner to establish green jobs tied to energy efficiency, and climate change.
- Build on the existing expertise in water quality and public lands management to create successful public/private partnerships.
- Encourage existing businesses, NGO and communities to host special events that bring together arts, science, business and educational institutions and to create a new think tank, (e.g. Aspen Institute, Rocky Mountain Institute, or the Earth Institute).
- Recognize that sustainability requires both local and regional economic prosperity and resilience to maintain the health and vitality of the region.
- Encourage self-reliance, entrepreneurial activity, and the generation of wealth to occur in a manner that does not undermine the environmental carrying capacity of the region.
- Focus on green jobs and innovation to support a vibrant year-round economy that provides for a diversity of local housing choices and quality jobs.

Reduce Energy and Resource Use



Concept

Local jurisdictions and Basin businesses may want to follow the lead of the City of South Lake Tahoe that has established a priority goal to:

Reduce Green House Gas Emissions (GHG) and the City's Carbon Footprint by reducing energy use in City facilities 15% by 2013. The City will complete an energy audit and develop an action plan that will accomplish this goal.

Actions

- Shift away from reliance on non-renewable sources of energy.
- Develop a comprehensive strategy to reduce GHG emissions and climate change impacts.
- Increase energy efficiency, reduce emissions and support local, clean and renewable energy sources.
- Shift from reliance on non-renewable sources.
- Incorporate climate change into general plans.

Improve Mobility and Access



Concept

In more rural destinations within proximity to a large population base, transportation is the largest contributor to the release of GHG. Basic communities and recreational destinations should be served by a centrally-managed transportation system. Consolidation of automobile travel for both visitors and commuters should be facilitated by various transportation options. Complete streets are a solution for connecting residential, mixed-use centers, nodes, and neighborhoods. These streets would be tailored to meet the needs of each community. Other neighborhood specific solutions would include improved sidewalks and trail connections. This shift to travel patterns would provide multiple environmental improvements to air and water quality and reduced GHG. Improved connections and mobility options would help to reduce traffic volumes, year-round mobility, and an enhanced visitor experience.

Actions

- Support and invest in environmentally-friendly transportation.
- Reduce dependence on the automobile by providing increased mobility options and improved access.
- Improve the Basin's transit systems and reduce vehicle miles traveled (VMT) through a basin-wide bike trail network, improved transit network, and waterborne transit network.
- Encourage pedestrian/friend-oriented transportation to reduce emissions and VMT.
- Shift to more efficient modes of transportation to improve quality of life while reducing GHG emissions.
- Integrate transit with site design.
- Manage parking to encourage walking, bicycling, and transit use.
- Locate long-term parking in shared lots behind buildings and create parking standards that respond to specific needs of each Basin community.
- Design Complete Streets to integrate pedestrian and non-automobile oriented facilities to reduce automobile traffic and related emissions, increase pedestrian safety, and provide opportunities for community interaction.

Urban Environmental Improvements



Concept

Comprehensive "green" infrastructure strategies are important when addressing sustainability objectives in the supply and management of energy, solid waste and materials, water and waste water. Local municipalities may want to follow the lead of the City of South Lake Tahoe to: "Develop a recycling action plan to achieve a 95% diversion rate by 2011. By requiring recycling containers in all city buildings the City will lead by example. Recycle and conserve" and to: "Investigate and discuss with the business community by June 2009 and inform City Council with a program designed to reduce the use of plastic bags and Styrofoam in the City of South Lake Tahoe."

Actions

- Work with local agencies to improve solid waste reduction and recycling.
- Increase economic efficiency and performance by reducing the consumption of non-renewable resources.
- Divert solid waste from the landfill including household, commercial, construction and silvoforest clearing waste.
- Implement recycled content and green procurement policies.
- Work with local agencies to improve water and waste water reduction.
- Use water more efficiently in our homes, businesses and landscapes, and manage runoff that maintains natural hydrological regimes.
- Develop an innovative water and waste water management strategy that considers water supply and treatment systems.
- Reduce demand for potable water through water recycling and reuse of treated water.

Sustainably Designed Communities, Places, and Buildings



Concept

Thoughtful site design and area-wide planning and design may result in coverage reductions while supporting more valuable and compact development. Sustainable site planning and design should also incorporate improved solar orientation, energy efficiency and design and introduction of new efficient building types. New buildings are long-term investments and should feature quality design/maintenance, flexible design to deal with changing demands and be built green. Energy use in existing buildings and new building construction generally contributes over 30% to the regional GHG emissions. Many of the residential units are also heated when they are only occupied seasonally or a small percentage of the year.

Actions

- Promote efficient use of land and redevelopment/infill with compact development in existing community plan areas and nodes.
- Develop a green building strategy with local partners to encourage redevelopment, compact neighborhoods, mixed-use centers and green buildings, energy efficiency, solar design, indoor air quality, green roofs, water efficient features, etc. Work with local county and city municipalities to:
- Improve design building guidelines and incorporate energy performance measures including studies to demonstrate solar orientation and passive design elements.
- Become model building leaders and incorporate energy efficiency in public buildings and facilities.
- Promote energy-efficient green buildings in town centers and nodes.
- Provide clear incentives for green buildings and consider phasing in the green rating system or LEED certification.
- Create Tahoe Specific Green Building programs focusing on key points of certification important to the region.

DRAFT 3-17-09

Key Elements of Sustainability 2.0

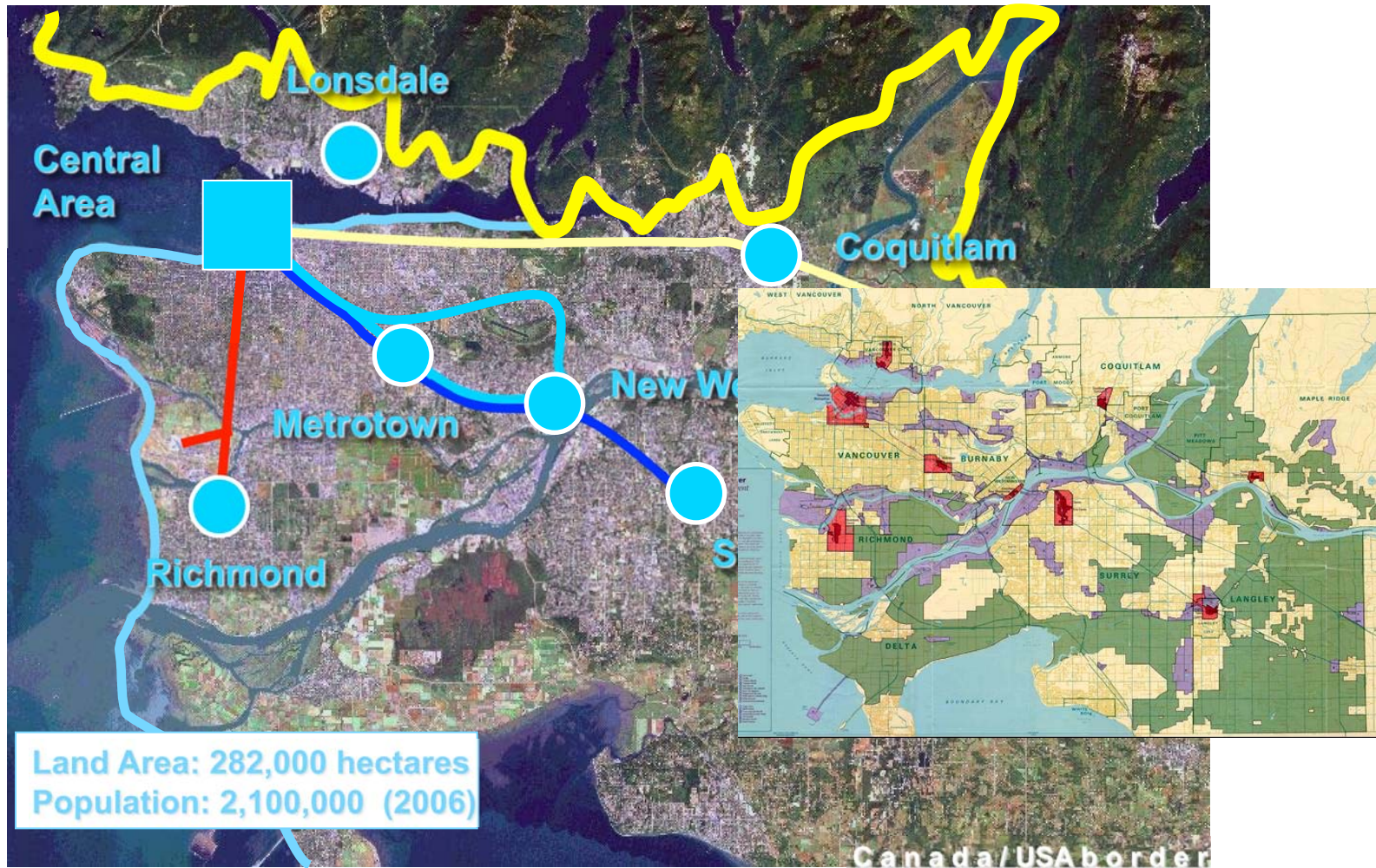
1. On the ground implementation
2. Integrated Systems and Decision Making
3. Government Restructuring?
4. Completed Cost Effective GHG reductions
5. Metrics and Tracking Systems in Place
6. Benchmarking
7. Living Documents that learn and evolve
8. Incentives and Competitions

Sustainable Cities by Design: **Vancouver**



(source: City of Vancouver)

GVRD Regional Town Centres



(source: City of Vancouver)



(source: City of Vancouver)

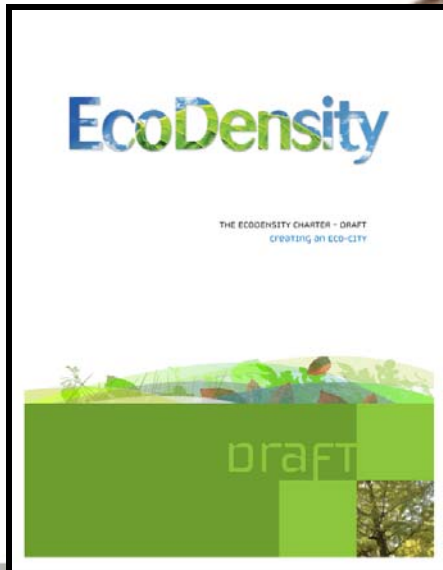


(source: City of Vancouver)



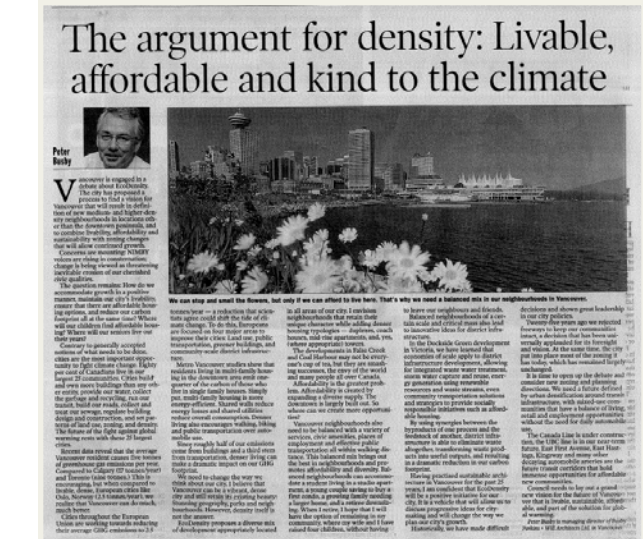
EcoDensity Policy

Vancouver
EcoDensity



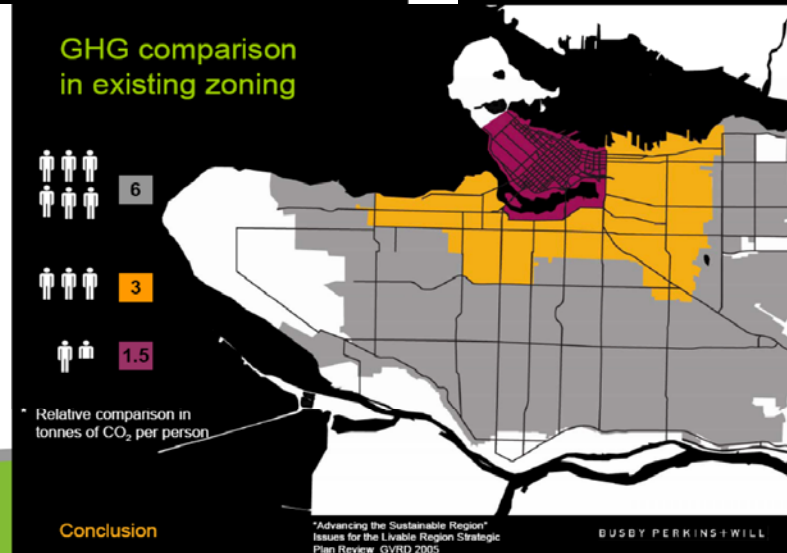
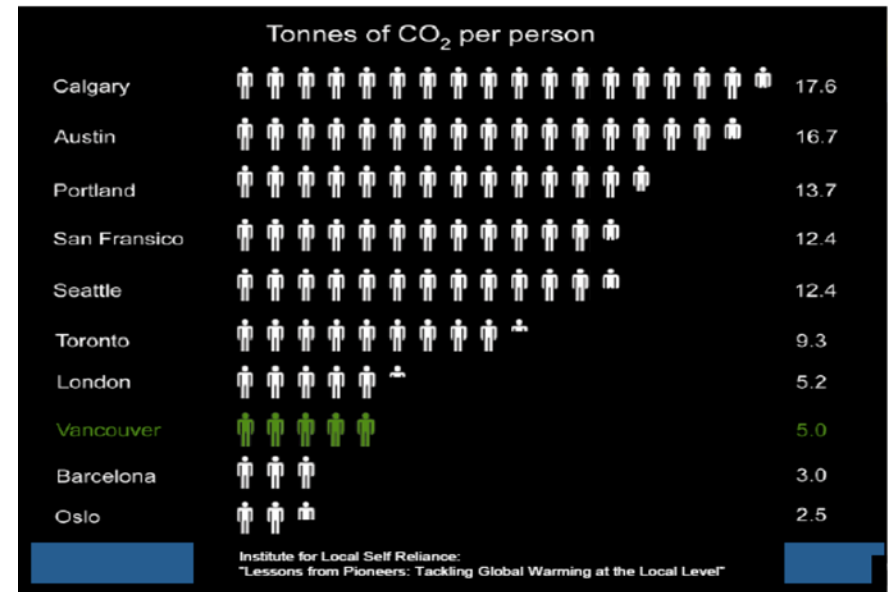
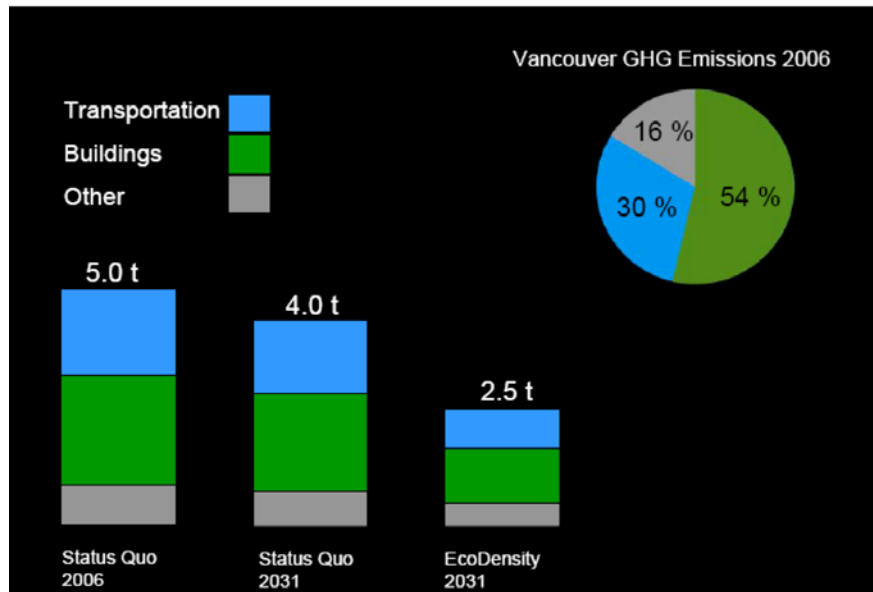
"In order to become a truly sustainable city, we must do more to increase the densification of our neighbourhoods, and I am inviting all Vancouverites to participate in this initiative"

(source: City of Vancouver)



530-277-0196 | darindinsmore@gmail.com

Total GHG Emissions with EcoDensity



(source: City of Vancouver)

Community Climate Change Action Plan

2012 carbon neutral city operations

2030 carbon neutral buildings

2050 community GHG emissions reduced by 80%

a shared challenge

While Vancouver is one of North America's leaders in addressing the challenge of climate change, rapid population and employment growth since 1990 (24% and 14% respectively) have resulted in a total increase in greenhouse gas emissions of 5% since 1990.

Most of Vancouver's emissions are directly controlled by individuals. If we are going to meet our 6% reduction target by 2012, each of us will need to make the changes that are within our power to decrease energy and fuel use.

AT HOME
Did you know 78% of energy is used for space heating and hot water?

- Wash laundry in cold water with special cold-wash detergent
- Install a low flow shower head
- Have your home's energy efficiency evaluated

ON THE MOVE
Did you know 30% of community emissions are linked to passenger cars and trucks?

- Cycle, walk, carpool or take transit whenever possible
- When purchasing a vehicle, consider size and fuel efficiency ratings

AT THE STORE
Did you know the average meal travels 2,000 km to your plate?

- Buy less and waste less
- Choose locally produced products
- Purchase products with less packaging, or with recyclable or reusable containers.

For tips, tools, and incentives for making these and other changes, visit www.onedayvancouver.ca

CLIMATE PROTECTION PROGRESS REPORT 2007

One Day Vancouver could be the cleanest, greenest, healthiest city in the world

CITY OF VANCOUVER

The City of Vancouver is one of the leading cities in North America acting to address climate change. Greenhouse gas emissions (GHG) from municipal operations are 5% below 1990 levels and on track to a 20% reduction by 2010.

As a community, Vancouver has the lowest emissions on a per person basis of any major North American city and is amongst the leaders in reducing per capita emissions since 1990. Despite these successes, additional action by citizens, businesses, and all levels of government are required if the effects of rapid population growth are to be offset and the targeted 6% reduction in total emissions by 2012 is to be achieved.

Vancouver's Greenhouse Reduction Targets all reductions are from 1990 unless otherwise stated

2003 2005 2010 2012 2020 2030 2050

- 2003: Complete Climate Change Action Plan approved
- 2005: Community Climate Change Action Plan approved
- 2010: Reduce municipal operations emissions by 20%
- 2012: Achieve climate neutral municipal operations and reduce community emissions by 6%
- 2020: Reduce community emissions by 10% (below 2007)
- 2030: All new buildings are carbon neutral
- 2050: Reduce community emissions by 80%

CITY OF VANCOUVER
oneday...

To learn more about the City's Climate Change Action Plans, visit www.vancouver.ca/sustainability

(source: City of Vancouver)

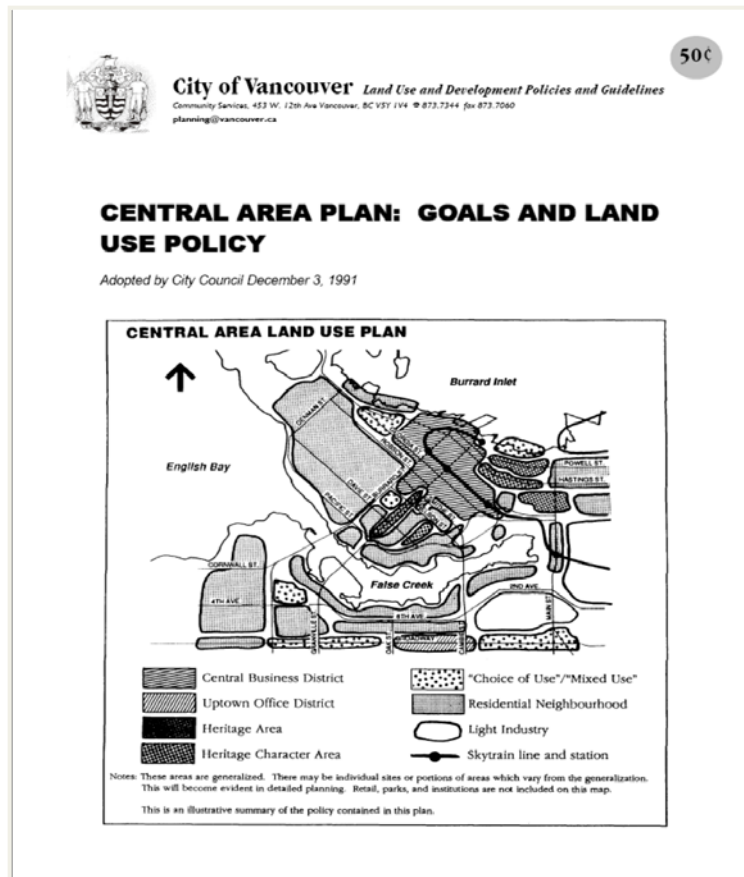
Ecological Footprint



One Planet Living



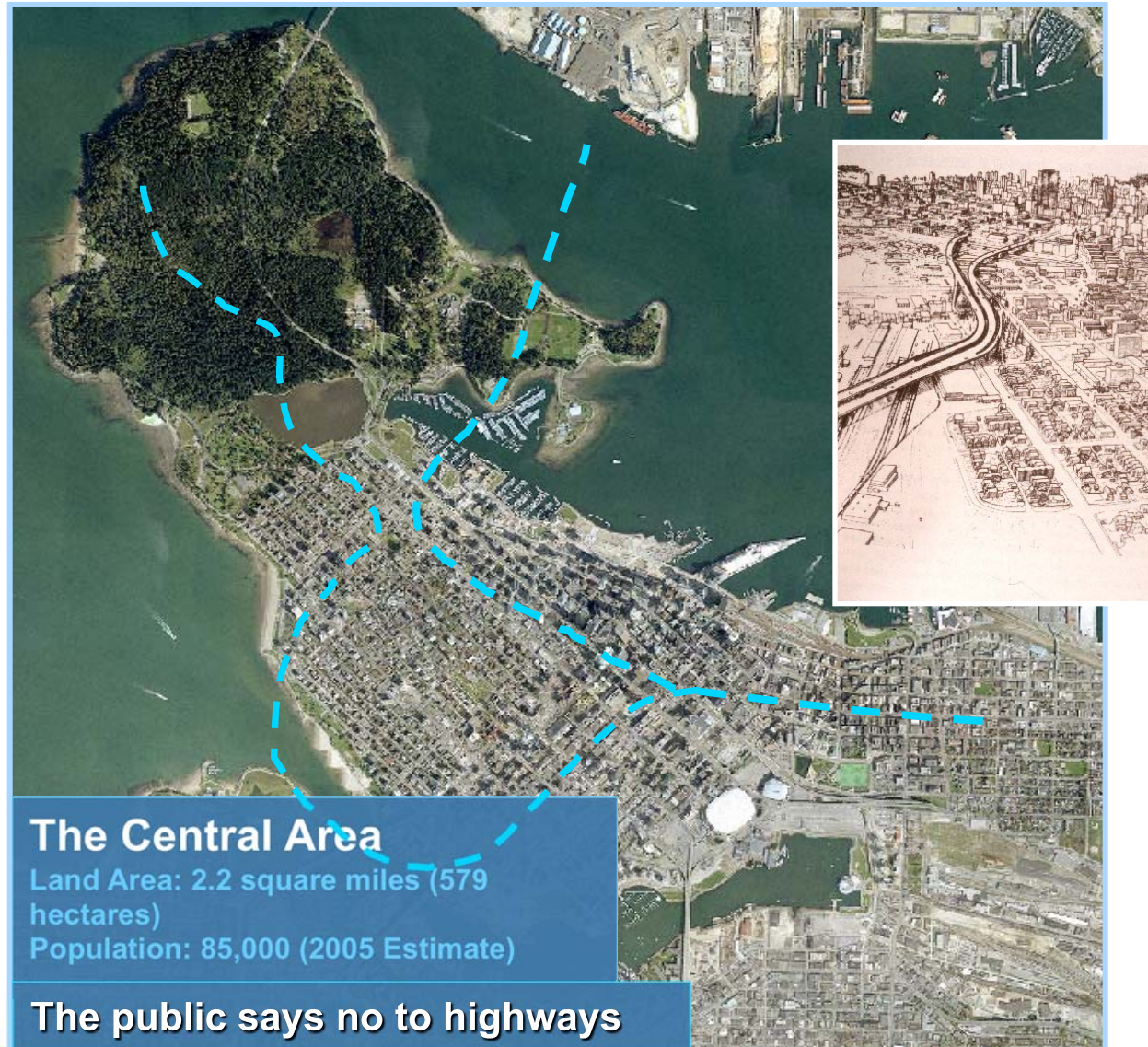
"Living First" and the Central Area Plan



(source: City of Vancouver)



Sustainability through Livability



Livability is density done well

Movement



(source: City of Vancouver)

Livability is density done well

Amenities



(source: City of Vancouver)



(source: City of Vancouver)

Surprise! Downtown living's fine for families — as good as the suburbs, these folks say



IAN SMITH/VANCOUVER SUN

Meet the Huntleys, living happily in north False Creek. From left, mom Tanya; Simon, 13; Johnny, 6; Charlie, 2; Emma, 10; and dad Robert. They love the lifestyle and they're far from alone: Many say the mix of people — singles, seniors and families — as well as the amenities and the slow pace of life make downtown their choice. Find out why: **Story, B1**

New Project



(source: City of Vancouver)

Livability is density done well

Done well, density can enable...

Movement

- Reduced energy use in buildings, getting around
- More green design options
- Less sprawl
- More affordable housing choices
- Public health
- Vitality, diversity, safety
- Etc



Amenities



Densify and Modify: Vancouver's Green Dream

By ALLISON GAGNON
Special to the Epoch Times

At a time when the concept of climate change is endorsed by politicians and government officials, the word sustainability has become the catch-phrase of the day.

It seems just about everyone agrees that something has to change. On February 22, the City of Vancouver will make its contribution to sustainability with the official unveiling of its EcoDensity policy. The idea was first introduced in June 2006 by Mayor Sam Sullivan as a way to reduce the effect of city lifestyle on the earth's surface.

Planners say the idea is to lessen the impact of Vancouver's ecological footprint and rein in the growth of sprawling suburbs. The plan is aimed at strengthening the density in pre-existing residential neighborhoods with the added bonus that both industrial and agricultural land will be protected from further development.

"Vancouver is not a sustainable city. We need to stop pretending that we are [sustainable] and take action towards Vancouver's future livability," the city's Director of Planning, Brent Toderian, told reporters during a tour of Vancouver last Friday.

The plan outline states that if everyone in the world were to live the way Vancouver residents presently do, the earth's population would need four planets to sustain itself. According to city planners, only eleven per cent of Vancouver's 113 square kilometers of land area is used for multiple-unit residences, while almost half is composed of single family housing.

Through densifying certain areas, planners believe residents will be more likely to consume less energy through the use of renewable heat and water sources and use public transit more often.



Converted from an old garage using re-cycled materials and featuring "water ready" roof slopes and heat recovery ventilators, Koo's Corner on Hawks Avenue in Vancouver is a model eco-density project.



Located on West 10th Street, ROAR, one is designed with an open air concept that utilizes continuous energy conservation technology. City planners hope to make eco-density buildings more common throughout Vancouver.

greywater heat recovery systems are also in place in renewable energy generation.

Some of the challenges in the quest for eco-density are cost, affordability and zoning infrastructures. The city will work closely with leading architects and city planners in designing the best eco-structure possible while maintaining the unique characteristics of the neighbourhood.

"We want to design and build a city to encourage behavior of a certain type," said Toderian. ROAR, one, with its cross-hatched railings, exposed staircases and lime green exterior, is another example of densification. Situated above a shopping district on West 10th Street and resembling a converted warehouse, the complex is designed with an open

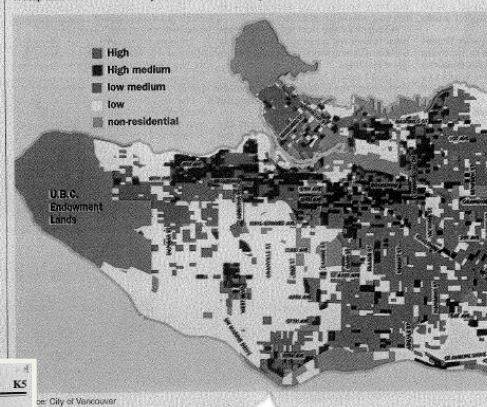
BIO THE VANCOUVER SUN, SATURDAY, FEBRUARY 17, 2007

WESTCOAST NEWS

City begins 4-month public discussion on density

Density of Vancouver neighbourhoods

A map made for the EcoDensity initiative shows density is the lowest in the city's southwest



VANCOUVER | Initiative will gather ideas, set new policies for neighbourhoods

By FRANCES BULA
VANCOUVER SUN

Vancouver residents are about to find out what EcoDensity means for them, as the city launches its four-month public process to gather ideas and set new policies.

But if the map included in the city's EcoDensity package is any indication, it's primarily the southwest single-family neighbourhoods — its wealthiest, council-electing neighbourhoods — that are the going to be a focus of Vancouver's efforts to reduce its ecological footprint through urban planning.

Those neighbourhoods, in the map generated specifically for the EcoDensity initiative, form a solid block of the lowest-density housing in the city.

Unsurprisingly, the map shows the downtown peninsula is the densest area of the city and the inner ring of neighbourhoods like Kitsilano, Mount Pleasant and Commercial Drive are also moderately dense. But in the single-family neighbourhoods that predominate south of 16th Avenue, there's a sharp divide between the southeast, where single-family housing that often disguises homes broken into two

or more suites results in more moderate-density housing, and the southwest.

"EcoDensity is about focusing on that piece of sustainability that is not being done now," Brent Toderian, the city's new planning director, told those who came out Friday to hear a "pre-launch" briefing about EcoDensity. (The real launch is next week, all of that a prelude to four months of public consultation, idea fairs, and then policy presentations to council.)

Toderian talked about many kinds of "pieces of sustainability" that could be introduced to make Vancouver a more environmentally friendly city: making it easier to add low-impact density like coach houses or garage suites; changing bylaws in order to encourage new kinds of energy systems or water recycling; finding ways to get the market to produce different, more affordable, types of housing.

He and other city planners also showed off model "green" projects around the city, although always emphasizing that none of them represented EcoDensity completely. They were just a part of the EcoDensity puzzle or a good first effort.

However, Toderian also took

aim at the large amount of space devoted to single-family neighbourhoods as one of the biggest pieces of the puzzle.

Almost half of Vancouver's 113 square kilometres is dedicated to single-family zones.

"We are not a sustainable city and we can no longer pretend we are one," he said. "We do not have urban densities in the vast majority of our city."

But he stayed away from talking specifically about the southwest, although it is the least dense and has a long history of resisting densification as minimal as townhouses and seniors' multiple-unit housing.

This week, two narrower-than-standard houses in Dunbar under construction were hit by arson, a development that some believe is linked to the area's traditional opposition.

Toderian, in response to questions at the briefing, said it will be up to councillors to decide whether the city wants to allow individual neighbourhoods to opt out of any policies that the EcoDensity initiative comes up with.

Toderian said there hasn't been a target set yet, in terms of either population or average density.

frbul@vancouver.ca

WESTCOAST HOMES

THE VANCOUVER SUN, SATURDAY, JUNE 2, 2007

K5

Vancouver city hall concerns shift dramatically

Regulators will be asking developers what their proposals will contribute to helping save the planet



BOB RANSFORD
SPECIAL TO WESTCOAST HOMES
REAL ESTATE MATTERS

Vancouver may not be leading the way in sustainable urban development, but the city is poised to make up ground in the race to sustainability at a rapid pace. There's a new era in urban develop-

ment where our individualistic and hedonistic obsession with the lifestyle pleasures of our special natural setting will be replaced with a collective serious concern for sustaining the ecosystems that are at the heart of our natural environment. The "new" part of Mayor Sam Sullivan's nifty brand name for new urbanism — EcoDensity — is a real meaning under the leadership of Brent Toderian, Vancouver's new director of planning.

Most suspected that Toderian had a serious green streak running through his planning ethos when he replaced his high-profile predecessor Larry Beasley, who developed an almost cultish following as a savvy child for the new urbanism. But few knew how deep that

The new urbanism, a planning theory born more than two decades ago in the U.S., advocates the design of new "walkable" neighbourhoods that contain a diverse range of housing, jobs and high quality amenities.

Beasley guided the development of Vancouver's own brand of the new urbanism with the rebirth of our downtown as a vibrant place for people to live and work. Some have argued, though, that the new urbanism has historically put too much emphasis on human livability and not enough on protecting the natural environment. In many ways, new urbanism focus on creating great places for people, embracing sustainable development by emphasizing principles like access to public transit, while focusing not so much on green building technology and the finer details of natural ecosystem preservation.

The focus of new urbanism is changing. EcoDensity will now be the measure of expected performance when judging new proposed developments in Vancouver.

New urbanism planners, like Toderian, are leading the way, reminding us that livability may be an important pursuit, but that livability means little if the planet no longer exists as a habitable environment for humans and all other creatures.

Toderian has already come out and told developers, politicians and citizen advisors — and anyone else who wants to listen to his message — that livability will no longer be the first indicator used to measure the quality of development in Vancouver. He is leading the way in

replacing that benchmark with what he believes is a more urgent measure of our commitment to sustainability. Ecological sustainability will now be the measure of expected performance when judging new proposed developments in Vancouver.

Instead of asking how a development will improve quality of life in the city, Vancouver planners will be asking the question: how will that development contribute to helping save the planet?

This is a crucial difference. This shift in thinking at Vancouver City Hall is pretty dramatic. What does it mean for the ordinary citizen in one of Vancouver's typical single family neighbourhoods? Well, when you combine this thinking with EcoDensity, the picture is pretty dramatic. See SUSTAIN REPLACES K20

Where's the
affordability,
livability?

EcoDensity politicization
distracts from its merits

We're beginning
to get the 'Eco'
but what's Density?

Vancouver has head start on higher density

Smart growth must become more demanding, more community-oriented, and greener (literally)



Kaid Benfield

Director, Smart Growth Program, Washington, DC

[Blog](#) | [About](#)

Posted August 18, 2009 in [Green Enterprise](#) , [Living Sustainably](#) , [Solving Global Warming](#)



Actions

- Secondary suites within buildings (invisible density)
- Backyard laneway infill housing (hidden density)
- Ground oriented housing (gentle density)
- Arterial mid-rise housing

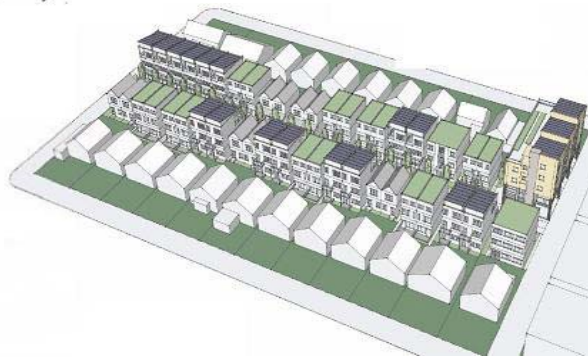
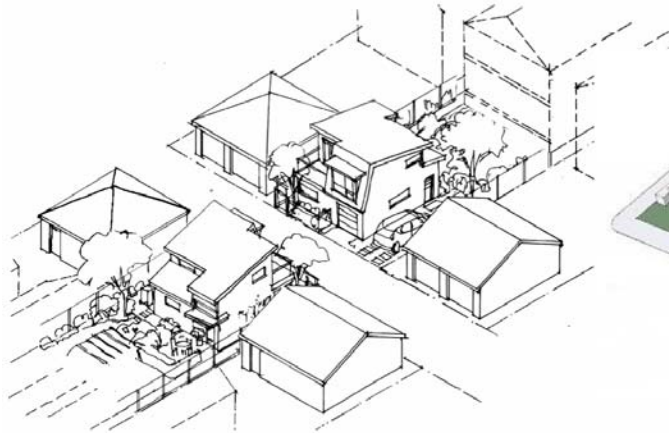
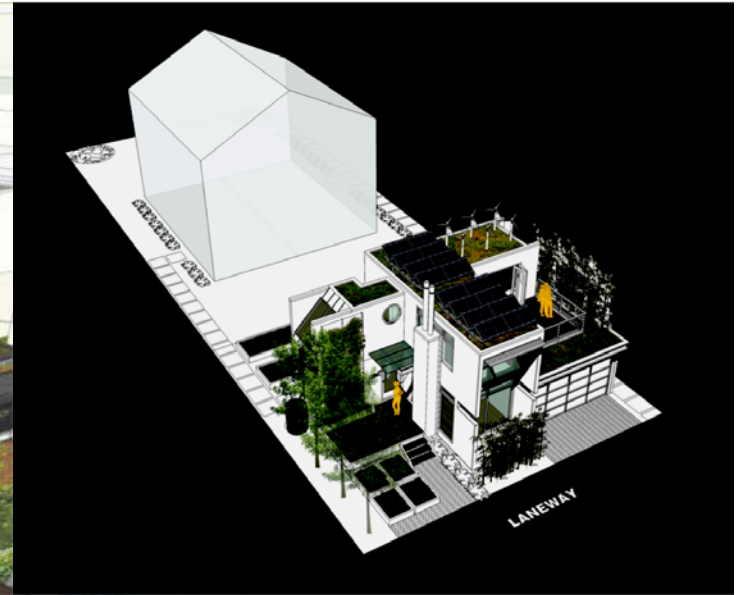


(source: City of Vancouver)



FORM SHIFT

Laneway Housing



The Greenest City in the World by 2020: Think you can do better?

- Urban agriculture
- District Energy
- Burrard Bridge traffic trial
- Car-free streets
- Bike sharing
- Green jobs
- Etc.



GREENEST CITY



QUICK START RECOMMENDATIONS



(source: City of Vancouver)

A Carbon Neutral City by 2030?



(source: City of Vancouver)

Stages of Sustainability



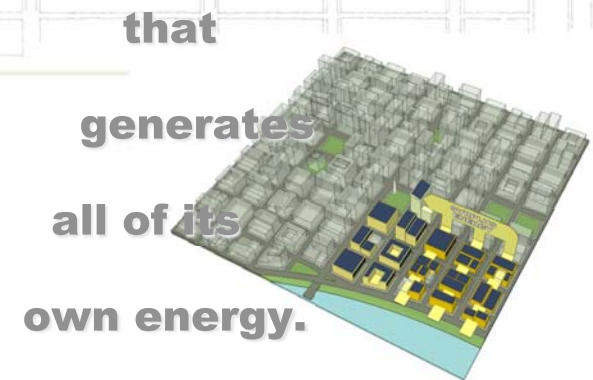
Act

Capital improvements
Plan (CIP)
Redevelopment Plan

Public and Private Sector
investments
eXtreme implementation
Measurable Results

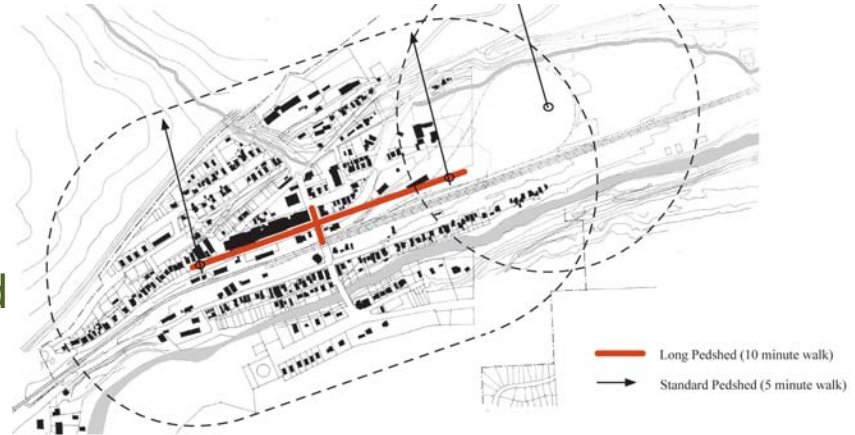
EcoDistrict Benefits - Sustainability 3.0

- District energy
- Solar orientation
- Passive energy solutions
- Urban agriculture
- TDM prioritizing sustainable modes
- Sustainable rainwater management plan
- Solid waste diversion strategy
- Affordability



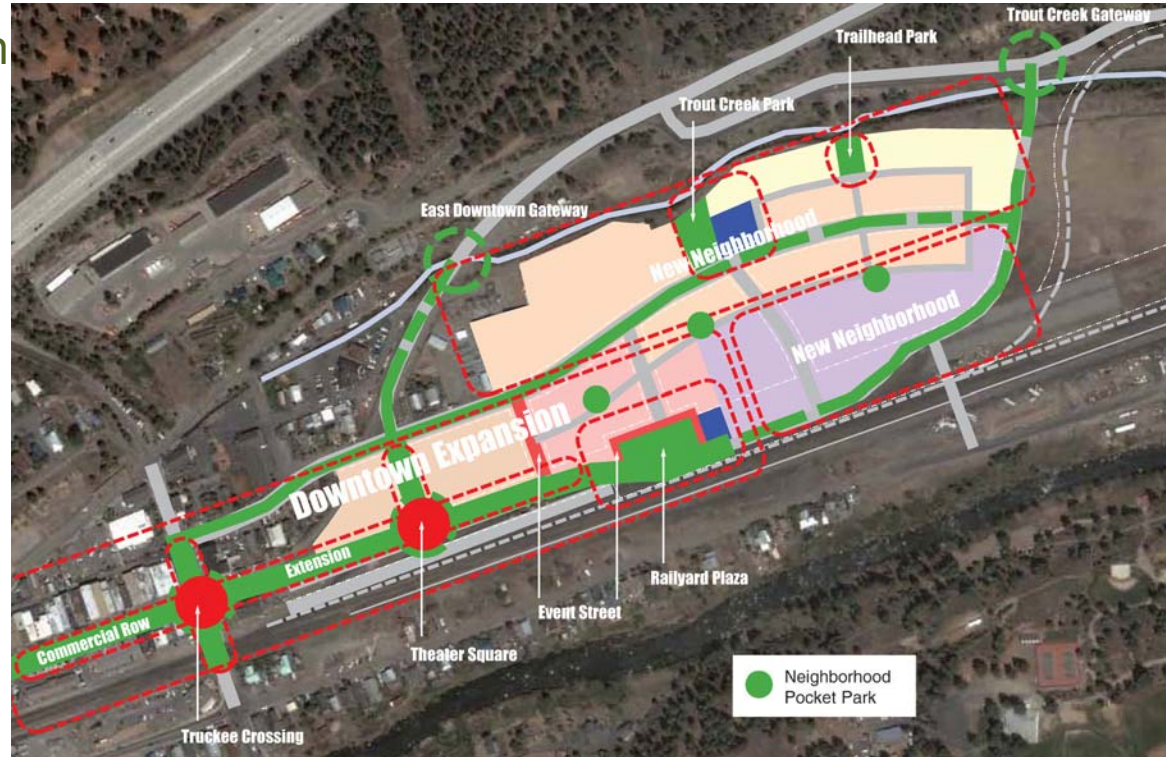
EcoDistrict Projects – Truckee Railyard

- District energy ?
- Solar orientation by design
- Passive energy solutions
- Community based planning and design
- Sustainable Building Types preapproved
- Sustainable rainwater management plan & snow storage Plan
- LID
- Affordability



EcoDistrict Projects - Truckee Railyard

- Urban stream restoration
- placemaking
- 3 districts
- Brownfield cleanup
- Transit center
- Infill Redevelopment
- Expansion of grid
- Model LEED ND



EcoDistrict Projects – Nevada City, CA

- Downtown innovation center
- Commercial retrofit project
- Leadership



EcoDistrict Projects – UC Davis Expansion

- West Village
- Supported by a California Energy Commission grant
- West Village will integrate sustainable design into the site plan, infrastructure, and building designs to achieve a Zero Net Energy Goal
- energy-saving measures - "smart grid" for generating, storing and distributing energy
- renewable electricity generated on-site
- **Research, Demonstration and Leadership**
- New Curriculum
 - Sustainability by Design - April
 - Creating a Culture of Sustainability - Fall
 - The Business of Sustainability - 2011

EcoDistrict Projects – LTC

- Solar, geothermal
- placemaking
- 3 districts

Mixed-Use Neighborhood Center

This site plan incorporates Energy Efficiency, Best Management Practices, Mobility Options, a Green Street, a Complete Street, Green Buildings, and strategies for Solid Waste Reduction and Recycling.

Best Management Practices

- Improve stormwater quality management with use of swales and natural treatment systems and integration of runoff into functional design elements and public art
- Develop a coordinated stormwater management system to minimize runoff, improve area-wide stormwater retention and reuse

Mobility Options

Redevelopment/reinvestment along the Highway 50 corridor will include a variety of compact and walkable places that support transit and reduce trips. Improve transit efficiency, service, and convenience to encourage use.

- New Bike Lanes
- New Sidewalks and Connections



Stormwater Facilities Designed as Civic Space

Streetscape, Street Furniture

Applying Complete Street Concepts to Highway 50



Outdoor Seating Areas
Pedestrian Lighting (low)
Mid-block Crossing
Transparent Shop-front Windows

Reduce, Reuse, Recycle

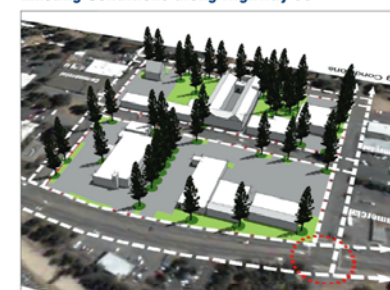
Divert solid waste from the landfill including household, commercial, construction and site/forest clearing waste.

- Consolidated Refuse/Recycling Facilities for Commercial/Multi-Family
- Simplify Recycling with Curbside Household Pickup

Sustainable Planning and Design to Reduce GHG Emissions and Climate Change Impacts.

- Infill/Redevelopment
- Energy Efficiency
- VMT Reduction
- Green Buildings
- Mobility Options

Existing Conditions along Highway 50



Green Buildings

- Commercial/Mixed-Use Buildings
- Live/Work Townhouses
- Residential Townhouses
- Duplex/Cabins

Green Streets

- Shared Parking with Permeable Surface
- Bio-Swales/Native Landscaping
- Water Quality Transmission to BMPs
- Trees and Traffic Calming
- Sidewalks

EcoDistrict Projects – SANDAG ?

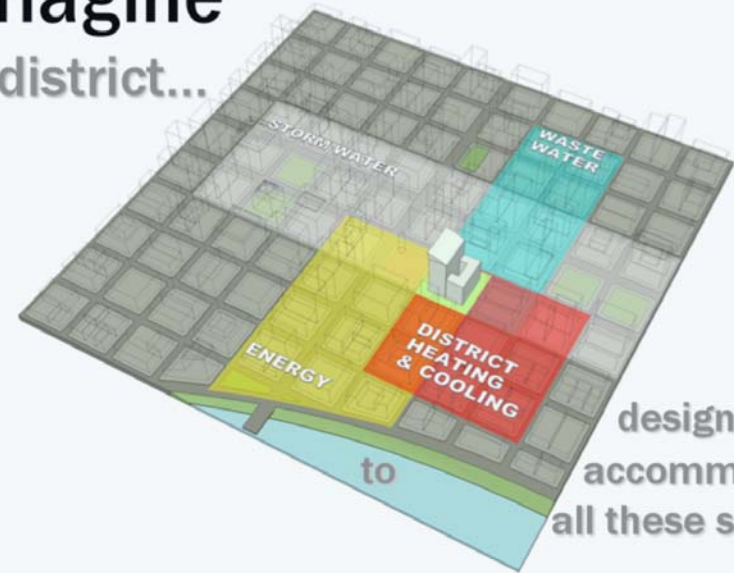
The EcoDistricts Program could implement mixed use and energy efficient redevelopment in a variety of your place types, including:

- Metropolitan Center**
- Urban Center**
- Town Center**
- Community Center**
- Rural Village**
- Mixed Use Transit Corridor**
- Special Use Center**

EcoDistrict Projects – Vision California

- High Speed Rail Locations
- New and Retrofit
- High Performing districts and Neighborhoods
- 47 Pilot LEED ND projects in CA
- Only 3 Certified - Stage 3
- Only 3-4 would meet Ecodistrict requirements as planned
- Integrated Systems approach

imagine
a district...



Sustainability Implementation

Finance model and feasibility

- Political feasibility
- Market feasibility
- Financial feasibility

- Microecodistricts - built on the co-Housing finance model
- Small scale build to suit
- How do we create the systems for green infrastructure now to support projects that evolve over time?
- Sustainability by Site Design
- Cost effective green building solutions
- Phase in green building requirements - going for gold - LEED certification



Cost Effective Green Building



PACIFIC GAS AND ELECTRIC COMPANY NET ENERGY METERING ELECTRIC STATEMENT

THIS IS NOT A BILL

Service Dates: May 01, 2008 to June 02, 2008

Includes True-up period from Jul 2007 to Jun 2008



MCCAMANT, KATHRYN
507 REDBUD WY
NEVADA CITY, CA. 95959

Rate Schedule: E W7PB/NEMS
Account ID: 6653884881
Service ID: 6653884666

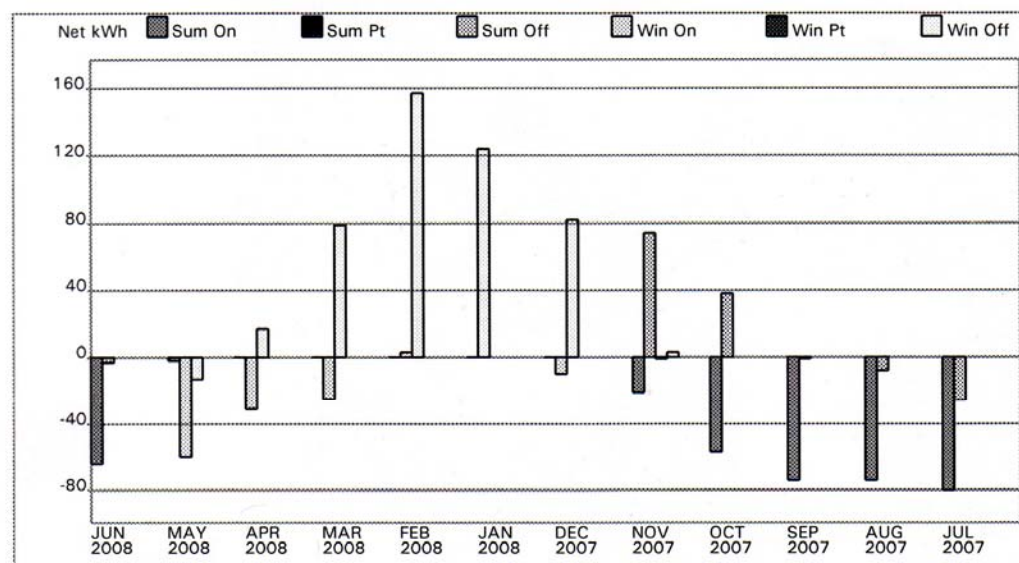
PAGE 3

ENERGY TRUE-UP HISTORY:

BILLING MONTH	BILL TO DATE	SUMMER ON	SUMMER OFF	WINTER ON	WINTER OFF	TOTAL ENERGY	ENERGY CHARGES / CREDITS
JUN 2008	06/02/08	-64	-3			-67	\$-18.27
MAY 2008	05/01/08	-2	0	-60	-13	-75	\$-7.54
APR 2008	04/02/08			-31	17	-14	\$-1.83
MAR 2008	03/04/08			-25	79	54	\$3.40
FEB 2008	01/31/08			3	157	160	\$12.01
JAN 2008	01/03/08			0	124	124	\$9.20
DEC 2007	12/03/07			-10	82	72	\$5.10
NOV 2007	11/01/07	-21	74	-1	3	55	\$-4.5
OCT 2007	10/04/07	-57	38			-19	\$-13.15
SEP 2007	09/04/07	-74	-1			-75	\$-20.68
AUG 2007	08/06/07	-74	-8			-82	\$-21.17
JUL 2007	07/05/07	-80	-26			-106	\$-24.12
TOTALS						27	\$-77.50

\$-77.50

**Energy Charges/Credits (-) include all energy related amounts and taxes. Any negative amounts shown in the "TOTALS" row will not be applied to your next true-up period. This is because the net metering program was designed by the legislature for systems sized to customer usage on an annual basis. Currently approved tariffs and legislation provide that any financial credit associated with the program be used to offset current year bills, but neither result in a negative annual bill, nor be carried forward from one year to the next.

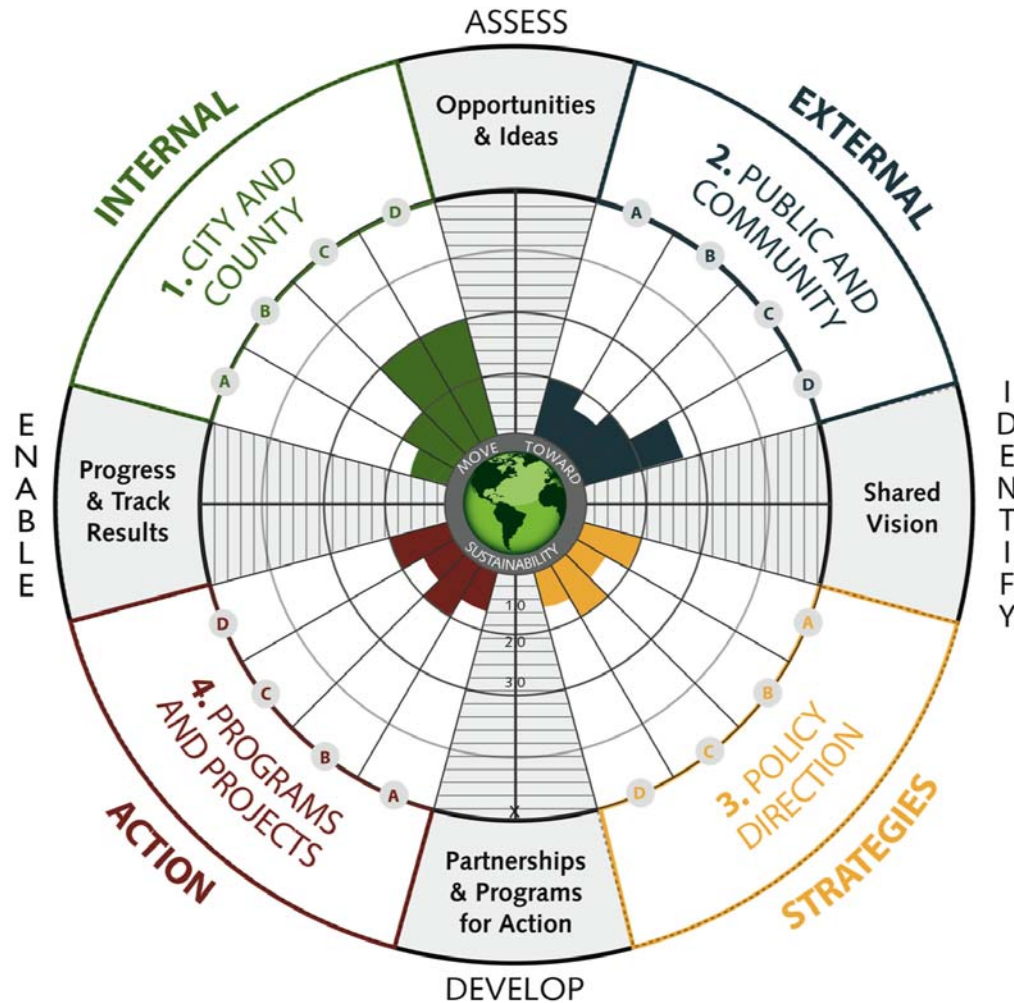


EcoDistrict Innovations - SymbioCity

- Design By Sweden
- Green Jobs
- Implementation Expertise
- What if we are successful?
- What does success look like?
- How far do we need to go and how fast?

SCS Adaptive Management Tool

Implementing SB 375 – A Collaborative Approach



SCS Adaptive Management Tool

4



1. Internal

S



2. External

T



3. Strategies

E

P



4. Program & Projects

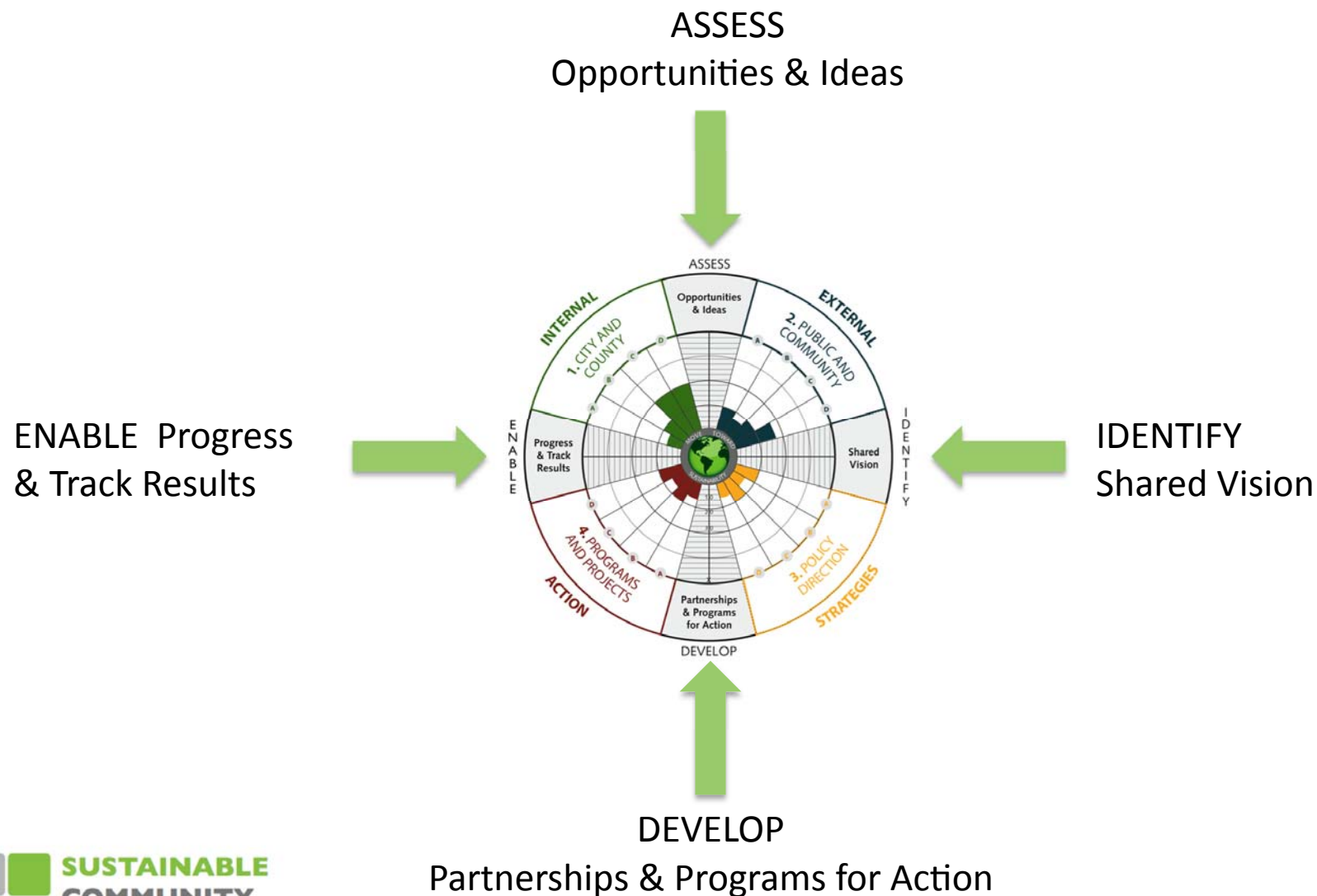
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+ Integrated Collaboration

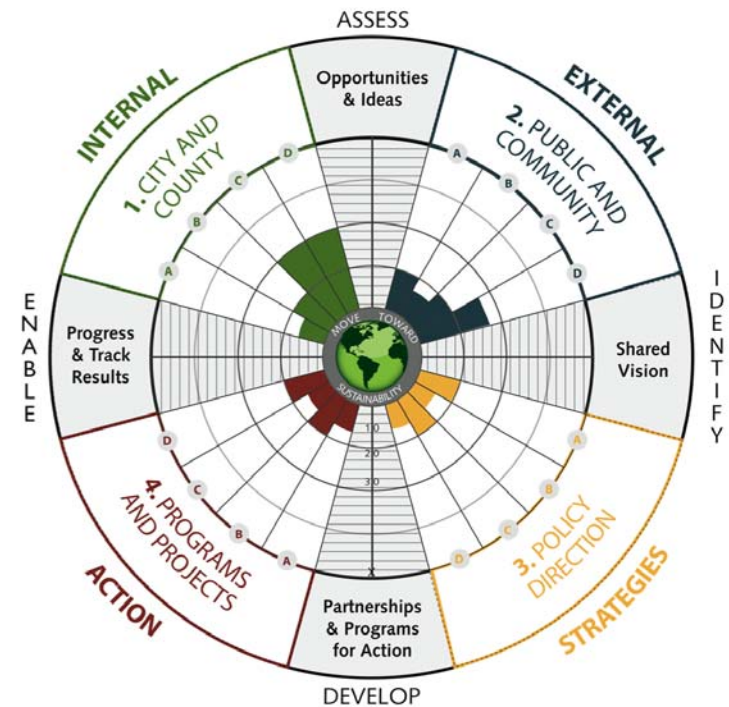
- Assess Opportunities & Ideas
- Identify Shared Vision
- Develop Partnerships & Programs
- Enable Progress & Track Results

A Focus on Collaboration

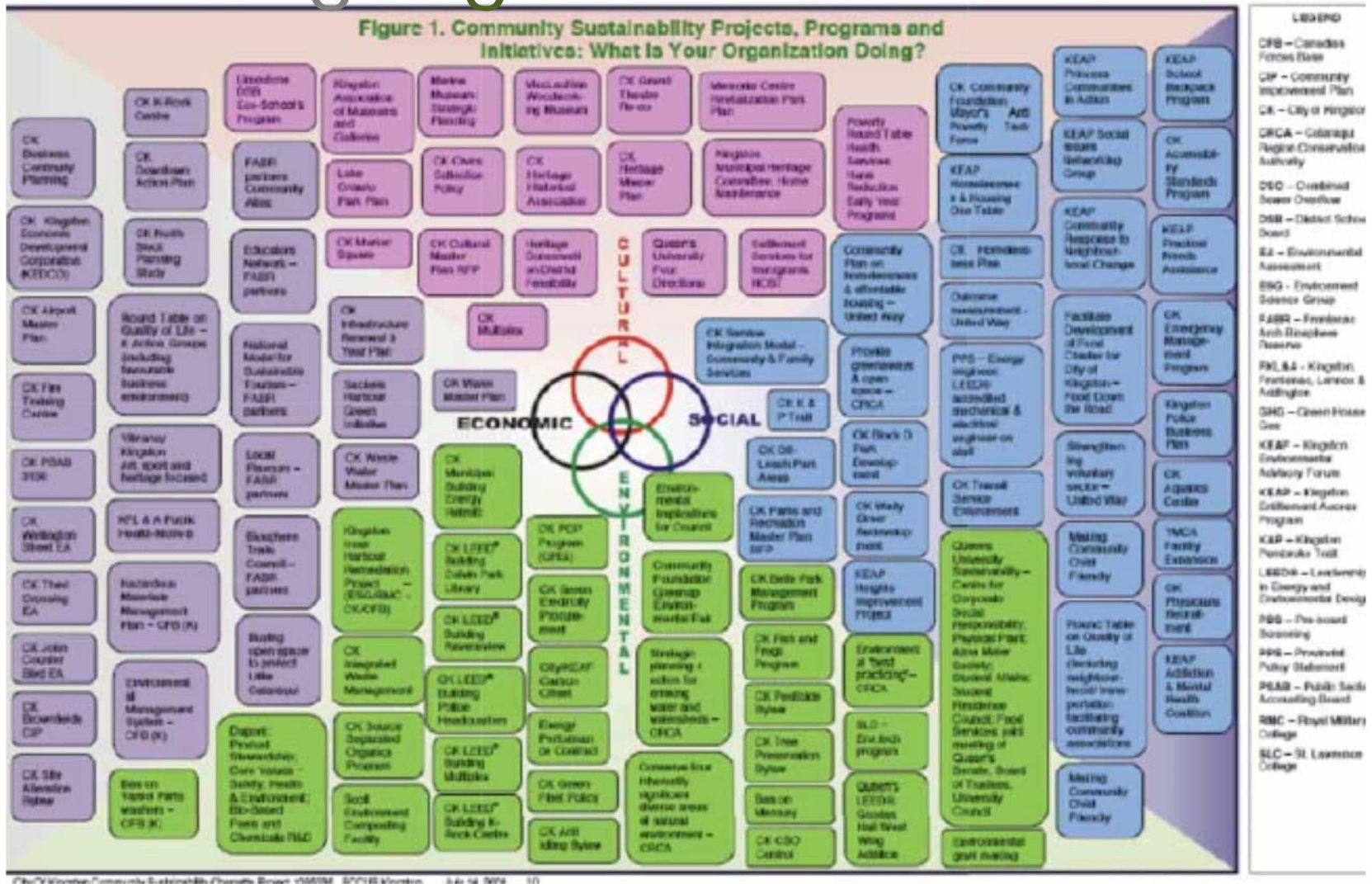


Creating a Culture of Sustainability

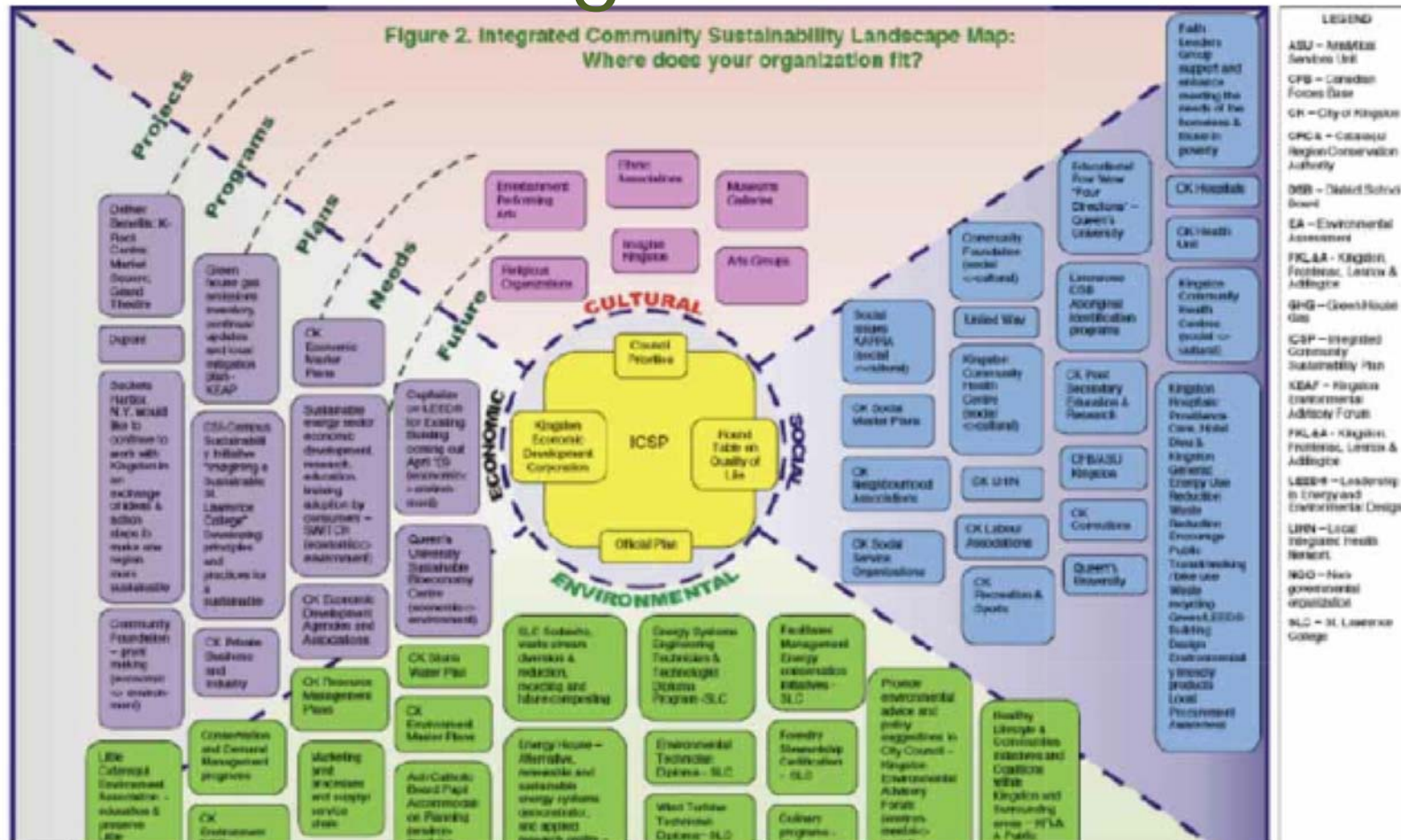
- Challenge: creating more cost effective sustainability in communities and organizations
- Challenge: shifting the organizational culture while developing and implementing the plan
- Opportunity: organizational alignment and potential restructuring of departments to be more efficient and effective



Existing Organizational Structure



Streamlined Organizational Structure



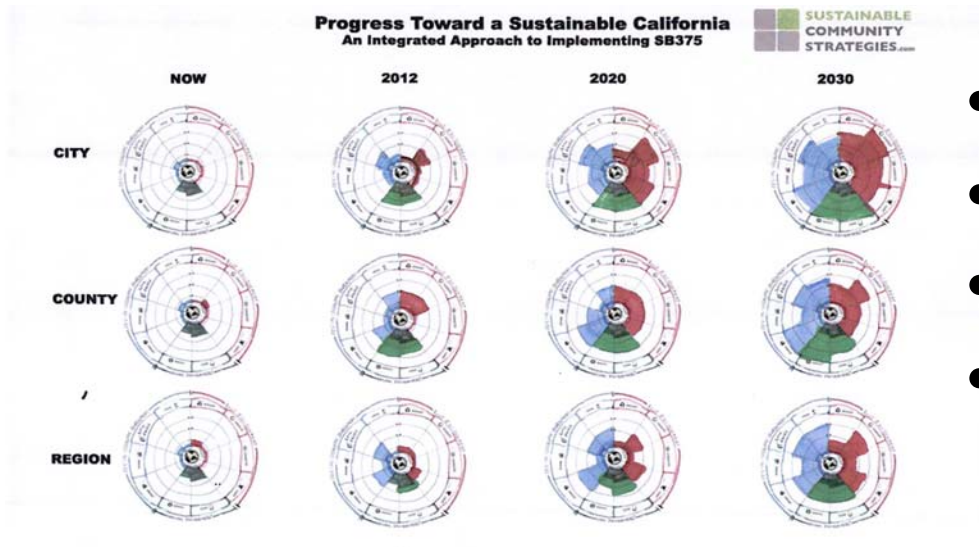
Metrics and Monitoring: Action Planning



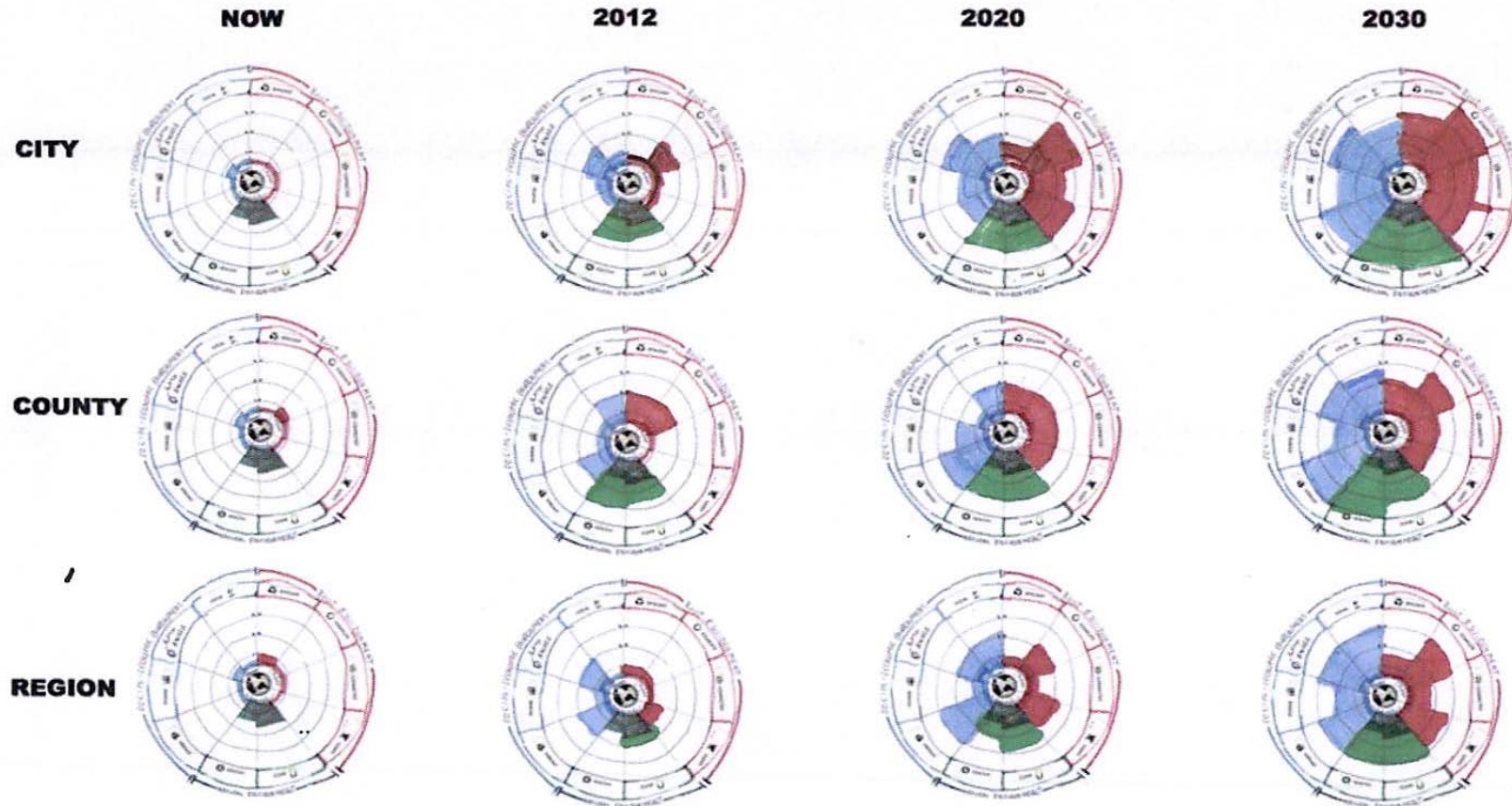
SCS Sustainability Dashboard SM

A Comprehensive Sustainability Implementation Framework
for cities, counties and regions which includes:

- adaptive management tools
- collaboration tools
- tracking and monitoring system
- benchmarking program

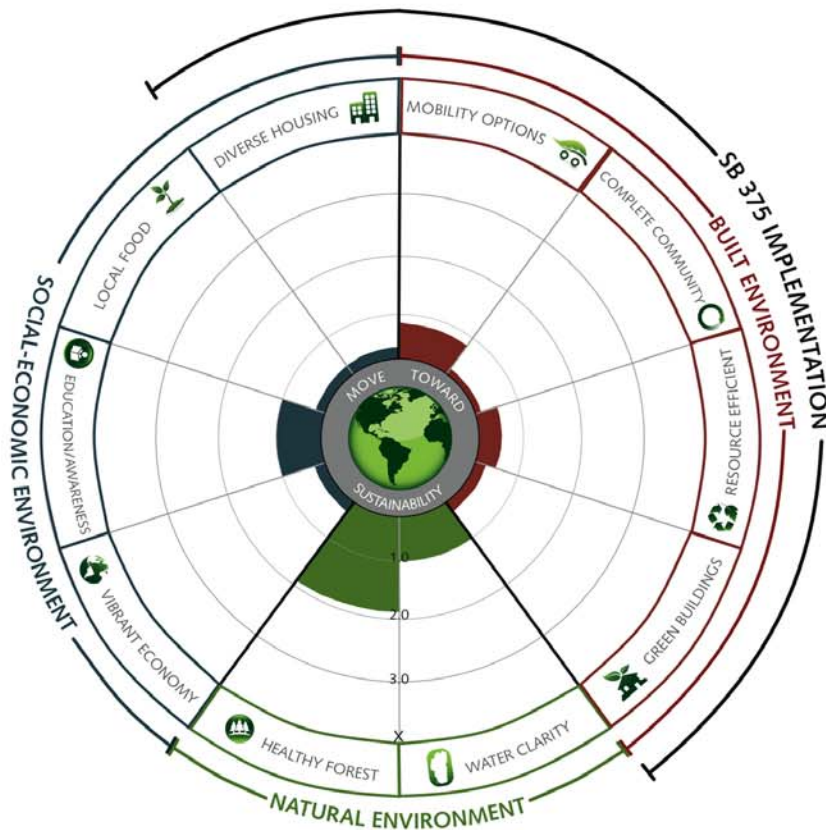


Progress Toward a Sustainable California
An Integrated Approach to Implementing SB375

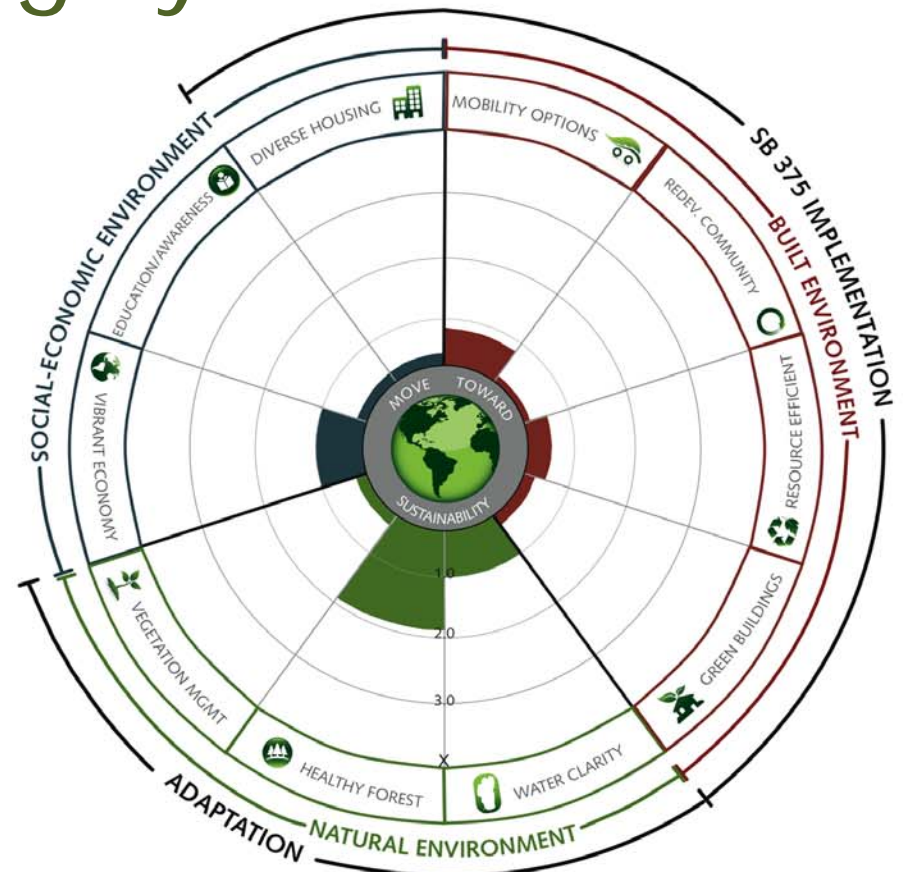


SCS Sustainability Dashboard SM

Implementation Framework & Tracking System



CITY



REGION

Stages of Sustainability

