# **SAN DIEGO** DOWNTOWN SUSTAINABLITY

# Centre City green



ADOPTED SEPTEMBER 2010



Centre City Development Corporation



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The completion of this report could not be possible without the direction and guidance offered by the collective whole. Specifically, Paladino and Company would like to thank the following groups for their endless support and hours of commitment for Centre City Green.

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### **Downtown Community Plan**



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Provides design standards for off-site improvements within the public right of way

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### **Downtown Design Guidelines**



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# SAN DIEGO DOWNTOWN SUSTAINABILITY PLAN

Executive Summary September 2010

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### **Executive Summary**

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Section 1: Long Range Goals and Policies



**Section 2**: Green Streets's Pilot Project and Program



Green Building Incentive Program Submittal Manual

### **Overview**

Centre City Green is the sustainability master plan for downtown San Diego. The plan employs an integrated long-term sustainability strategy that addresses both the building and the public realm spaces in-between.

Centre City Green acts as a supplement to the Downtown Community Plan (DCP) and identifies long-term goals and policies that meet local, regional and statewide mandates. It includes a voluntary Private Development Incentive Program that incentivizes measures beyond the code, a Green Street's Program Concept to expand sustainability to the public realm, and expands the current Transportation Demand Management Plan for commercial development by adding more program options. Centre City Green was created by the Centre City Development Corporation (CCDC), which facilitates downtown redevelopment on behalf of the City of San Diego. The plan was adopted on September 29, 2010 and is the product of more than two years of citizen engagement and interagency coordination.

### **Doing Our Share**

As the heart of the San Diego region, downtown has the opportunity to lead as a model for sustainability. For example, the typical downtown resident today uses 15% less energy, 50% less water, and travels 60% fewer vehicle miles than his or her suburban counterpart.



### Centre City green

Indicator	Comparison	Downtown Metric	Suburban Metric	Reference
Energy	Uses roughly 15% less energy consumed per SF of space	High Rise Residential = 31 kBtu/sq.ft./yr	= 36 kBtu/sq.ft./yr	CEC CA Commercial End-Use Survey data for SDG&E service area, 2006 and CEC Residential Appliance Saturation Survey, 2003
Water	Uses roughly 50% less water	20,400 gallons / year / occupant	41,400 gallons / year/ occupant	Calculated using CALGreen methodology and CA code requirements for indoor and irrigation uses
Mobility	Travels 60% less vehicle miles	6.3 VMT per capita per day	19.8 VMT per capita per day	The Urban Structure and Personal Travel: An Analysis of Portland, OR Data and Some National and International Data, T. Keith Lawton, Director, Travel Forecasting, Transportation Department, City of Portland, Oregon

Table 0.1 <u>Comparison of a resident living downtown to a resident living in suburban context</u>. A resident who lives and works downtown can have significant savings in energy, water and carbon impacts.

Centre City Green is focused on making downtown buildings more sustainable. Since buildings are responsible for approximately 40 percent of total energy use, building guidelines, measures and incentives have been developed as part of Centre City Green to assure that downtown grows sustainably in the future. Though the program is currently focused on new construction, many of the new green building technologies are equally applicable to existing structures. Future programs may be developed to incentivize green renovations to older buildings.

Some of the key findings from Centre City Green confirm that downtown has a strong foundation of sustainability. Specifically, the report found:

- The mixed-use density of downtown contributes positively to all of the Sustainability Indicators.
- As compared to suburban development, downtown uses less energy and water, has a more efficient use of materials and promotes a more dynamic/livable streetscape.
- Downtown's excellent access to multiple public transportation options



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allows residents and workers to significantly reduce vehicle miles traveled (VMT) and dependence on single occupancy vehicles, resulting in substantial carbon savings for the region.

- There are significant opportunities to incentivize water and energy savings in both new and existing buildings.
- Sustainability can have a substantial impact in the spaces inbetween buildings. The upgrade of the Streetscape Manual based on the key Sustainability Indicators provides the opportunity to make significant progress in areas of energy, water and urban mobility.

Centre City Green was informed by the best practices of other North American cities of similar size and, ideally, will serve as a model for other metropolitan areas and communities in the San Diego region and beyond.

Green Building Program Element	Chicago	Los Angeles	San Francisco	New York City	Seattle	Austin	San Diego: Centre City Green
Addresses State policies regarding climate change and water conservation				х			х
Supports local long range community planning documents and General Plans	х		х	х	х	х	х
Addresses streetscapes and the spaces between				Х		Х	Х
Provides incentives for new construction	Х	Х	Х		Х	Х	Х
Works with the US Green Building Council's rating program (LEED)	х	х	х	х	х	х	х
Works with the State Green Building Codes (CALGreen)				х			х
Contains incentive options based on building type	х						х
Point system awarded for optional measures	х					х	х
Multiple incentive levels based on performance	х					х	х
Provides tools to calculate savings and determine incentives						х	х

Table 0.2 <u>Comparison to other Top-of-Class sustainability plans.</u> When compared to other programs, Centre City Green offers flexibility for the applicant with options that fit the building type. In addition, Centre City Green offers long range planning to meet regional and state mandates and addresses the public right-of-way.

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### **Policy Background**

The Downtown Community Plan (DCP) estimates downtown's population to grow from the current 30,000 residents and 75,000 jobs to 90,000 residents and up to 165,000 jobs projected by 2030. As buildings are estimated to consume approximately 40 percent of total energy use, guidelines, measures and incentives are being developed with the City of San Diego that assures downtown's growth is shaped by appropriate sustainable and energy efficient measures that meet regional and state regulatory policies.

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Centre City Green advances the Visions and Goals of the (DCP) and the objectives of the Centre City Redevelopment Project by:

- Implementing the goals and policies of Section 5.8 Sustainable Development of the Downtown Community Plan;
- Ensuring development in the downtown are guided by sustainable practices; and
- Meeting the goals of regional and State mandates to reduce carbon emissions.

During the last four years, the State of California adopted significant legislation that affects the way cities operate. In September 2006, the State of California enacted Assembly Bill 32, the Global Warming Solutions Act of 2006 (AB 32), which requires the state to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. The bill required the California Air Resources Board (CARB) to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990. This reduction limit is specified to be achieved by 2020. Each local jurisdiction will be required to develop a plan to meet this target.

Under AB32, local and regional jurisdictions will be required to develop plans by January 2011 outlining how they intend to meet carbon emissions targets. Subsequent bills signed into law, most notably Senate Bill 375 (SB 375), will require local metropolitan planning agencies to prioritize higher densities that are located adjacent to transit facilities.

Other policies have informed the development of Centre City Green including the San Diego Association of Government's (SANDAG) Regional Comprehensive Plan (2004) and Climate Action Strategy Plan (2010); the City of San Diego's General Plan Conservation Element; and CALGreen (California's new green building code) that includes new code restrictions for all new construction in January 2011 have also been incorporated into this planning effort.





### **Centre City Green Planning Process**

Through a competitive process, CCDC selected a consultant team led by Paladino and Company to assist in the development of Centre City Green. Paladino and Company is a nationally recognized leader in the green building industry. The firm has been engaged with the U.S. Green Building Council since its inception, wrote the LEED 2.0 Reference Guide, and has consulted on more than 500 sustainable projects. The Paladino team included subconsultants Platt Whitelaw Architects and Delorenzo Incorporated, which provided expertise in green building and sustainable landscape practice found within San Diego, and Wade Communications, which facilitated public participation.

Assembly Bill 32 (AB 32)	Senate Bill 375 (SB 375)	California Green Building Code (CALGreen)	Downtown Community Plan (DCP and PDO)	Centre City Green	
Reduction of carbon (CO2) emissions to 1990 levels	Sets regional CO2 targets through the Metropolitan Planning Organization (SANDAG) - Climate Action Plan, Regional Transportation and Comprehensive Plans	California Green Building Code (CALGreen)	Planning policies and development regulations for downtown.	Sustainability Master Plan for downtown to supplement the goals and policies of the DCP 2030 build-out	
	Sustainable Communities Strategy Plan as part of the Regional Transportation Plan		Residential population expected to triple to 90,000 and employment is expected to double to 165,000 by 2030.	Sets sustainability indicators and metrics to measure success over time	
CO2 levels to 1990 levels. Scoping Plan required for local jurisdictions	Travels 60% less vehicle miles	Reduction of 3 million metric tons of CO2 (projected) by 2020 20% reduction of water and 50% diversion of waste from landfills by 2020	(projected) by 2020 20% reduction of water and 50%	New residential development will be located less than one quarter of mile from a transit stop	Transportation Demand Management Plan (TDM) will be updated to include more choices
			3.5 FAR (minimum) to 20.0 FAR (maximum). New development will be a minimum. ¼ miles from a transit stop and includes bus, light rail, coaster or plane.	Incentivizes energy and water measures to meet carbon reduction goals: - Peak energy loading order to maximize savings - Graywater systems - Green Street Program	

Table 0.3 Policy Comparison Table: This table shows how Centre City Green aligns with existing policies, laws, and planning documents.







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### Centre City Green

Centre City Green was developed within an active public process involving a broad range of local and regional stakeholders. An advisory committee comprised of downtown residents, developers, businesses, design professionals, city planners and environmental groups helped to shape the plan throughout its development. As a result, the plan represents a snapshot of the current green knowledge base in San Diego and provides an improvement path that will prepare designers, builders and facility operators for the new green economy.

### **Defining Sustainability**

Downtown citizens, regional stakeholders and other public agencies helped to determine which issues uniquely define sustainability for downtown San Diego. That process was critical because different cities in different regions have unique environmental, social and economic conditions as well as unique values.

These issues form the "indicators" of downtown's progress toward sustainability:

- Energy Measured through building energy use & greenhouse gas emissions
- Water Measured by building & landscape water use
- Materials Measured by recycled content materials & waste diversion
- Economic Vitality Measured by tax increment projections in downtown
- Streetscapes Measured by streetscape amenities & social interaction
- Healthy Spaces Measured through pollution prevention of indoor & outdoor spaces
- Green IQ Measured by education & communication programs
- Urban Mobility Measured by transit accessibility

These indicators form a framework for new programs and can be used by all City of San Diego planners to develop sustainability plans in other neighborhoods, districts and areas of the city, making Centre City Green uniquely transferrable outside of downtown.

### **Centre City Green Organization**

The Centre City Green document is organized into two sections:

- 1. Long Range Goals and Policies
- 2. Green Streets Program and Pilot Project



Centre City Green includes a voluntary <u>Green Building Incentive Program</u> for private development which is located in the Appendix. The program will be updated periodically.

Centre City Green proposes revisions to the 2006 Centre City Planned District Ordinance which includes a revised Transportation Demand Management Plan and updates to the Eco-Roof and Urban Open Space Programs. The revisions will be initiated sometime in mid-late 2011.

### 1. Long-Range Goals and Policies

Centre City Green implements the goals and policies of the Downtown Community Plan through a variety of proposed implementation actions. The following are key implementation strategies framed by the existing chapters of the Community Plan:

<u>Chapter 3 Structure and Land Use</u>: Develop a Private Development Incentive Program to promote innovative green building.

<u>Chapter 4 Parks, Open Space, and Recreation</u>: Develop East Village Green as a showcase of sustainability by incorporating the indicator goals into the programming, design and construction process.

Chapter 5 Urban Design: Develop the Green Streets Program concept.

<u>Chapter 6 Neighborhoods and Districts</u>: Develop Neighborhood Pilot Projects for energy and water that addresses sustainability at the block scale, such as neighborhood cogeneration facilities and/or water reuse systems.

<u>Chapter 7 Transportation</u>: Assist in the creation of a Downtown Connector Shuttle that allows people to move within downtown once they arrive from outlying areas.

<u>Chapter 8 Public Facilities and Amenities</u>: Make the redevelopment of the Civic Center the centerpiece of green development.

<u>Chapter 9 Historic Preservation</u>: With the assistance of SDG&E, participate in creating a Building Energy Audit and Retrofit program for historical buildings, as well as significant buildings constructed before Title 24 energy savings requirements.

<u>Chapter 11 Economic Developmen</u>t: Develop a business incubator model for creative technologies or "green" start-up enterprises to foster down-town employment.



Section 1: Long Range Goals and Policies



Section 2: Green Streets's Pilot Project and Program





Green Building Incentive Program Submittal Manual

### DOWNTOWN'S SUSTAINABILITY PLAN





### 2. Green Streets Pilot Project and Program

Centre City Green includes a new "Green Streets" program designed to make downtown streets places for people and not just for cars.

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The program will create healthier outdoor spaces that are more pedestrian and bike friendly, add more greenery, celebrate transit, use less energy and water, improve air quality and reduce storm water pollution that makes its way into the San Diego Bay.

Centre City Green defines the Green Street's Program Concept and framework for future capital improvements, starting with a "baseplan" two-lane street configuration with widened sidewalks and a bicycle lane, with possible overlays of various low-impact development (LID) features that include storm water management systems, locally based streetscape materials with high recycled content and energy efficient pedestrian street lights.

For developments that are located along designated Green Streets, a menu of streetscape "enhancement options" have been defined that are intended to become part of the Streetscape Manual. The applicant would be required to achieve a minimum of 20 points from a menu of options that are intended to provide for flexibility per building type.

### **Green Building Incentive Program**

At the heart of Centre City Green are new "green building" measures that will ensure buildings built in the future use less water and less energy, reduce automobile demand, and create healthy indoor and outdoor spaces for people.

With the adoption of the State's new CALGreen building codes in January 2011, California will have some of the most stringent environmental building standards in the country. To increase performance beyond those standards, Centre City Green creates an incentive-based program based on the principal of rewarding those building owners and developers who exceed California green building standards.

Centre City Green allows applicants to earn development incentives by designing and operating buildings in ways that exceed CALGreen, which positively impact the Sustainability Indicator metrics. The program is also designed to create a green market shift that influences the design and approach of mid- to high-rise structures and the public spaces in-between buildings. Applicants can refer to the <u>Green Building Incentive Program</u> - <u>Submittal Manual</u>, which provides guidance for interested applicants.

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### Summary

### **Revisions to the 2006 Centre City Planned District Ordinance**

### Urban Open Space Program:

- Change the required open hours to dawn dusk rather than 6 am to 10 p.m.
- Reduce the minimum size required to 500 square feet
- Allow north-facing open space to qualify for bonus with enhanced public amenities provided

### Eco-Roof Program:

- All Eco-Roofs shall be designed to be accessible to building occupants
   as outdoor space
- Eco-Roof should be incorporated into Centre City Green's Green Building Program as well be offered as a stand alone program with a maximum bonus of .5 FAR

- Planned for mid-late 2011 to take effect

### **Revised Transportation Demand Management Plan**

In order to reduce single-occupant vehicle trips, the Centre City Planned District Ordinance currently requires that all commercial and hotel projects containing more than 50,000 SF achieve a minimum of 24 points through Transportation Demand Management options. Based on input from stakeholders, Centre City Green updates the menu of transportation demand management options to provide for alignment with new standards and green building rating systems including LEED.

### **Measuring Our Progress**

Centre City Green's sustainability indicators form a framework for new programs for buildings and the spaces in-between, and can be used by all City planners to develop sustainability plans in other neighborhoods, districts and areas of the City of San Diego.

Many of Centre City Green's sustainability indicators have definable metrics for measurement that will allow CCDC to monitor its performance over time. By benchmarking our progress downtown, CCDC and the City of San Diego will be able to make incremental improvements, compare our progress with that of other peer cities and report our progress to local and regional stakeholders.







# SAN DIEGO Downtown Sustainability Plan

1. Long Range Goals and Policies

# Long Range Goals and Policies



### **1.0 OVERVIEW**

Centre City Green comprises planning guidance that acts as a supplement to the Downtown Community Plan (DCP) and its goals and policies for build-out by 2030. While the DCP contains goals and policies for sustainability in Chapter 5.8, recent laws, mandates, and long-range regional planning documents have established new sustainability standards and opportunities that need to be addressed. Analysis provided in this section of Centre City Green focuses on recent changes in local, regional and state policies as they relate to the DCP, by highlighting existing goals and policies that are relevant to the Sustainability Indicators or by proposing new goals and policies that meet the new regional and state standards. The analysis provided in this chapter should be considered as a Sustainability Appendix to the DCP. The analysis includes a review of existing planning documents and adopted state legislation that was carried out within an outreach process that engaged stakeholders who are affected by goals and policies that will impact the long term growth of downtown.

The first step in this process involved a comprehensive review of existing planning documents that affect the greater San Diego region, including the goals and policies of the

DCP, State Senate and Assembly Bills, Executive Orders, regional planning documents and environmental issues. This effort was undertaken to understand how Centre City Development Corporation can best engage and interact with the greater governance of the region. This process identified that SANDAG's Regional Comprehensive and Climate Action Plans, as well as the City of San Diego's General Plan Conservation Element each contain a number of policy guidelines, programs, indicators, and metrics that provide a solid basis for Centre City Green.

The second step was to engage a broad range of CCDC stakeholders in a discovery process, and ask participants to provide their vision of a preferred future for Centre City. The combination of outreach and research helped create Sustainability Indicators and preliminary metrics. In total, the Indicators reflect a shared vision of sustainability by CCDC stakeholders in alignment with existing state, regional, and local governments.

The following set of eight CCDC Sustainability Indicators and Goals were developed for Downtown to augment the DCP Goals and Policies.



INDICATOR	GOALS				
Energy /GHG	<ul> <li>Energy-G-1 20% reduction in GHG emissions by 2020 (AB 32)</li> <li>Energy-G-2 33% green power by 2020 (EOS-14-08)</li> <li>Energy-G-3 Net zero buildings by 2030 (AB 212)</li> </ul>				
Water	Water-G-1 70% reduction in potable water use				
Urban Mobility	<b>Mobility-G-1</b> Promote transportation planning that creates downtown as a multi-modal public transit destination with easy transit access between all neighborhood centers				
Materiala	Materials-G-1 75% construction waste recycled (CALGreen)				
Materials	Materials-G-2 50% operational waste recycled (CALGreen)				
Economic Vitality	Economic-G-147,700 new residentsEconomic-G-277,300 new jobsEconomic-G-329,400 new housing unitsEconomic-G-423,372,000 SF new non-residential development				
Streetscape	<b>Streetscape-G-1</b> Make Centre City a top-of-class streetscape environment that promotes walking over all other modes of transit				
Healthy Spaces	<b>Healthy Spaces-G-1</b> Develop buildings that capitalize on San Diego's temperate climate to create top-of-class healthy indoor spaces				
Green IQ	<b>Green IQ-G-1</b> Develop a green knowledge base that leads the country in successful demonstration of economically viable green technologies and sound green building practices				



The Sustainability Indicators developed as part of Centre City Green served as a lens to evaluate the DCP, which was reviewed to identify which of its sections currently assist in meeting the Indicator goals and to bring attention to existing policies that should be emphasized as they relate to the identified Indicators. In addition, new policies were identified to address gaps in the existing community plan to help achieve the goals for each of the Indicators. Finally, a series of key opportunities that connect Indicator goals and policies were identified that should be the starting point for future capital and policy improvements:

- Structure and Land Use:
  - Develop a Private Development Incentive Program to promote innovative green building measures
- Parks, Open Space, and Recreation:
   Develop East Village Green as a showcase of sustainability by incorporating the Indicators' goals into the programming, design and construction process
- Urban Design:
- Develop the Green Streets Program as identified in the DCP
- Neighborhoods & Districts:
  - Develop Neighborhood Pilot Projects for energy and water that address sustainability at the block scale, such as neighborhood cogeneration facilities
- Transportation:

Assist in the creation of a Downtown Connector Shuttle that allows people to move within downtown once they arrive from outlying areas

- Public Facilities & Amenities:
  - Make the redevelopment of Civic Center the center piece of green development
- Historic Preservation:
  - Create an existing Building Energy Audit and Retrofit program to incentivize energy and water efficient upgrades
- Economic Development:

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Use sustainability as a means to increase Employment and Economic Development Strategies available to downtown building owners

The planning process for Centre City Green reviewed the Centre City Planned District Ordinance (PDO) to identify areas of improvement from a regulatory standpoint in order to support the Indicator goals. Additionally, a review of existing floor area ratio (FAR) bonus programs was conducted to identify which ones are working with the Indicator goals and which ones need revisions to increase their use by building owners or developers. Some key findings of this effort include:

 FAR Payment Bonus Incentive: Increased density has significant benefits to the Sustainability Indicators. A cost/benefit analysis should be used to update the target rate for bonus FAR.

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• Urban Open Space FAR program:

Open space improves several Indicators, such as Healthy Spaces and Streetscape, though adoption has been limited. Suggested changes attempt to provide for more flexibility that makes this incentive more attractive to implement.

• Eco-Roof Incentive program:

This incentive promotes the adoption of green roofs to reduce the heat island effect and contributes to several Sustainability Indicators and can be incorporated into the Centre City Green Incentive Program.

• Transportation Demand Management Plan:

This existing requirement should be updated to address SANDAG's Comprehensive Plan and Climate Action Strategy Plan to include more transportation options that will allow developers greater flexibility and improve carbon reduction.



### 1.1 Defining Sustainability

### **Contextual Analysis**

San Diego is subject to a growing number of state, regional, and local laws and policies. Many of these laws and policies share similar sustainability goals, such as greenhouse gas reductions, but differ in terms of timelines, means of implementation, and methods for measurement. These differences can create a confusing environment for those charged with implementation and policy development. Research was conducted on a number of key environmental governing documents to determine what the various laws and policies mean to the downtown community. Documents that were reviewed include:

- CA Assembly Bill 32 "Global Warming Solutions Act" (AB 32) (Mandatory Scoping Plan with measures): Establishes carbon emission targets for 2020 and outlines targets for all sectors, including transportation, industry and residential & commercial buildings
- California Green Building Code (CALGreen) (Mandatory): Establishes target criteria for energy, water and materials use, effective January 2011
- CA Senate Bill 375 (SB 375): Establishes criteria for the preferred location of development based on access to transit, and requires each region to create a plan to meet the AB 32 carbon reduction targets, called a "Sustainable Communities Strategy," which all of downtown exceeds
- CA Assembly Bill 1102 (AB 1102): Requires utility companies to get a third of their energy from renewable resources by 2020
- Climate Change Mitigation Check List, Office of the Attorney General: This document collects information from municipalities about actions being taken to improve on Energy, Water, Waste, Transportation and other environmental improvement areas. To see how Centre City Green addresses these, please see Appendix A

When considered as a whole, these documents paint a picture of impending challenges. Exhibit 1.1 charts actual carbon emissions  $(CO_2)$  for the San Diego Region and reduction targets established by California Legislation. All of these documents indicate a  $CO_2$  target zone of 1990  $CO_2$  emission levels. The solid black dots represent the current trend in emissions as documented by each of the documents; these currently show emissions are currently trending upwards. The blue dots represent the specific targets established by California based legislation, which show a significant break from the current trend.



"San Diego Today and Tomorrow" Artwork provided by Monarch School, San Diego



According to the California Air Resources Board (CARB), CALGreen, which took effect in January 2011, is estimated to reduce greenhouse emissions (C0<sub>2</sub> equivalent) by 3 million metric tons by 2020. Additionally, the provisions will reduce water use by 20 percent and divert 50 percent of construction waste from landfills. CALGreen will make significant progress towards AB 32. While CCDC currently regulates the development of buildings and sidewalks, other agencies likely need to be engaged to meet the targets outlined above within the street right-of-way. For more detail on each of these key documents, please review Section I of the BMP report found in Appendix B.

As shown in Exhibit 1.1, meeting these targets will require an integrated approach that will not be solved simply by adopting CALGreen alone. While entitlement of new buildings within downtown is the principal responsibility of CCDC, collaboration with other agencies that are responsible for the operations of transportation, existing buildings, industry and other downtown systems will be required to meet the mandates facing the San Diego region.

CCDC has a unique role in meeting these challenges, as it mainly influences the future development at the building and block scale but does not operate or have any jurisdiction over the operations of buildings, public utility or transportation systems within downtown. Exhibit 1.2a shows a typical streetscape section found in downtown.

CCDC can incentivize and promote sustainability through the documents



Exhibit 1.1: Actual CO<sub>2</sub> and Target Years for CO<sub>2</sub> emission levels

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Exhibit 1.2a: CCDC street transect depicting private and public realms



### Centre City green



Exhibit 1.3: Advisory Committee Meeting #1, visioning snow card exercise

it administers, such as the PDO which provides development regulations (such as building use, height, depth, and materials) for new construction or renovation projects within downtown, and the Streetscape Manual which defines the public realm up to the sidewalk curb and includes street trees, pedestrian light fixtures, sidewalk furniture and finishes.

CCDC can also play a role in improving both existing buildings and right-ofway by actively participating in policies being implemented by partnering agencies and City departments.

### Public Outreach

The public outreach program included stakeholder input in shaping a vision of sustainability for downtown. This has been accomplished through meaningful engagement of public agencies, elected officials, building owners/operators, developers, civic leaders, environmental non-governmental organizations (NGO), area residents and workers. Specifically, the objectives of the outreach program were to:

- Identify sustainability indicators to measure and evaluate progress over time
- Identify existing sustainability/green building programs and resources to build upon
- Identify a framework for implementation

The public participation program was structured using two primary engagement methods in order to efficiently collect information from a variety of sources. Both of these methods – Advisory Committee Meetings and Stakeholder Interviews – were successful in helping to drive forward the vision for downtown sustainable development. Each group was comprised of market leaders, regional governance, and environmentally focused persons/groups to bring a balanced perspective of public and private concerns to the forefront.



Advisory Committee meeting



The Advisory Committee included 15-20 members, and through six separate meetings functioned as a sounding board for direction and input on work being performed. Exhibit 1.3 depicts the result of a typical Advisory Committee brainstorm meeting.

The first step in the stakeholder engagement process was to identify groups and individuals to interview. Paladino and Company worked with CCDC and Wade Communications to map key stakeholder organizations and groups in San Diego to three critical areas:

- Market Drivers: Organizations that will be primarily affected by the development of Centre City Green polices and incentives
- Environmental Focus: Organizations that help inform what impending regulations mean and what actions should be taken to address them
- Regional Partners: Other governmental agencies that have sustainability plans under development that Centre City Green needs to align with or that will participate in the implementation of Centre City Green policies and incentives

This categorization helps ensure that balanced viewpoints from differing perspectives were captured and synthesized into a coherent vision to frame the project. These stakeholders were then engaged through (16) 90-minute interviews in which direct dialogue with a single group provided unfiltered feedback and input on their vision of sustainability. Detailed meeting minutes were captured so that themes could be identified and used to develop the content for Centre City Green. For more detailed information regarding Stakeholder Interview results, please see the Stakeholder Interview Report located in Appendix C of this report.

### Indicator Intent

One of the major goals of Centre City Green was to establish welldefined indicators against which CCDC can measure and compare its development performance. An indicator is something observed or calculated that is used to show the presence or state of a condition or trend. For example, a gas gauge in a car is an indicator of the amount of fuel in the gas tank (shown in Exhibit 1.6). By tracking this indicator, the driver can measure the car's efficiency (miles per gallon) or track cost (dollars per mile).

In the same way, an appropriate set of indicators allows CCDC to set goals and document its improvement over time. Much like the dashboard of a car, CCDC Indicators can be assembled to show how well each of the programs implemented are performing at any point in time. If a program is failing to improve performance, funds and effort can be shifted to existing or new programs that are gaining traction in the community.



Exhibit 1.4: Stakeholder Mapping



Exhibit 1.5: Indicator: Something observed or calculated that is used to show the presence or state of a condition or trend



Exhibit 1.6: Combining mutually exclusive indicators gives a total picture of performance at a glance.

### DOWNTOWN'S SUSTAINABILITY PLAN



Exhibit 1.7: Growth toward the identified indicators adds incrementally over time to achieve the overall goal of sustainability.

By tracking indicator performance over time (as illustrated graphically in Exhibit 1.7), CCDC can show how its programs compare to sustainability goals and report its performance to stakeholders. Tracking performance also provides a basis of comparison with other peer cities. The following indicator characteristics are important to create a balanced set:

Significant:	Each Indicator must reflect major economic, social, and natural environmental issues within CCDC's context and area of control.
Measurable:	Indicators must have a unit of measure that is quantifiable over time. An indicator must report useful data to evaluate progress toward (or away from) the goal.
Comprehensive:	The Indicators must include all significant issues to give a complete picture of sustainability performance for CCDC.
Discrete:	Each Indicator should provide independent information that is discrete (not overlap each other) to prevent data from being double counted.
Consensus Based:	The Indicators must represent the major concerns of all CCDC stakeholders.



### Centre City Green's Indicators

Sustainability Indicators are essentially an alignment strategy that coordinates efforts undertaken by State, regional and local governments, and provide a basis for measuring progress and developing policies. A growing number of state, regional and local laws and policies are being legislated that all have similar goals in sustainability but differ in timelines and means for implementation and methods for measurement. Specifically, SANDAG's Regional Plan and San Diego's General Plan both contain sustainability direction, though they are not directly aligned with each other

In addition, the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) green building rating system has been widely adopted around the country. This national standard has been used widely in California and within downtown San Diego. While this is a voluntary system, its frequent use by developers necessitated that the Indicators for San Diego incorporate it.

Exhibit 1.8 shows how both national, regional and local documents were used to generate Indicators and metrics for downtown.



Exhibit 1.8: Documents used to generate CCDC Indicators and metrics



The combination of outreach groups and research of San Diego environmental imperatives and existing regional planning documents helped create Sustainability Indicators for CCDC and preliminary metrics for each of them. In total, the Indicators create a shared vision of sustainability and provide a way to measure progress of policy documents.

Centre City

The following set of eight CCDC Sustainability Indicators was identified:

2	Energy /GHG	Measured by building energy use & GHG emissions
	Water	Measured by building & landscape water use
	Materials	Measured by recycled content materials & waste diversion
<u>ř</u>	Economic Vitality	Measured by development density downtown & percentage of region's employment
	Streetscape	Measured by streetscape amenities & social interaction
	Healthy Spaces	Measured through the quality of indoor & outdoor spaces
	Urban Mobility	Measured by transportation demand management
	Green IQ	Measured by education & communication programs



The Indicators provide a filter to assess what green measures should be implemented in new and existing buildings, how the education needs of the development community can be met, what amendments to the PDO should be made, and how to further engage regional partners and governance.

These Indicators effectively serve as the foundation to affect positive movement towards meeting the local, regional and State mandates. In addition, they help align other recent policy documents, set an agenda for future development, and form the basis of Centre City Green.

Each of the above Indicators have specific metrics that allow CCDC to measure progress of their own programs. In addition, these metrics can provide data to interact with regional indicators, such as those found in SANDAG's Regional Com

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Each of the above Indicators has specific metrics that allow CCDC to measure progress of their own programs. In addition, these metrics can provide data to interact with regional indicators, such as those found in SANDAG's Regional Comprehensive Plan and the Conservation Element of the General Plan. For more information on how these two documents compare to CCG Indicators, please see Appendix D: Indicator Report and Appendix F: Indicator Alignment Table.

### **Applying Sustainability Indicators**

The Sustainability Indicators were developed to align with local and regional documents so that they could be easily transferable to other geographic and planning areas of San Diego, if desired, with measures and incentives defined by community and stakeholder input and adapted to the land use requirements. Transferability to other parts of the City is a key objective of Centre City Green because it establishes consistency in incentivized measures and expectations across San Diego.

Thus, the Indicators themselves are transferrable to other planning processes during which the planning organization asks a simple question:

"What policies can my planning jurisdiction implement to improve Indicator performance?"



"San Diego Today and Tomorrow" Artwork provided by Monarch School, San Diego

### Centre City green

This question serves to identify how each City department, organization, or private development can contribute towards a coordinated and regional effort. The targets for CO<sub>2</sub> reduction as described by AB 32 and other regional planning documents require an integrated approach. While entitlement of new buildings within downtown is the principal responsibility of CCDC, the Sustainability Indicators provide a framework for collaboration with other agencies and City departments that are responsible for transportation, streets, existing buildings, industry and other planning districts.

As an example, Centre City Green takes the eight Sustainability Indicators and applies them to Downtown and its development extents, as described by the PDO, to develop specific goals and polices that will help drive San Diego towards a shared vision of sustainability. The following section of this report outlines the findings of this exercise and proposes a roadmap to reach goals in 2030.



Figure 1.9: 4-Square Framework Model



### **1.2 Indicator Goals and Policies**

The following section provides a summary of the Centre City Green set of eight Sustainability Indicators. The information for each Indicator includes:

- Indicator Intent: Acknowledges the impacts the Indicator is intended to evaluate
- Summary: Reviews the sustainability issues for the Indicator, their importance for the City of San Diego and their alignment with other regional planning documents, goals and policies
- Tracking Metrics: Identifies what will be measured to report on the progress toward the Indicator
- 2030 Vision Goals: Identifies the general goals for each Indicator and provides background on how the goals were determined
- Downtown Performance Review: Evaluates the current status of the Indicator for the downtown area, projects the performance of currently existing programs across the analysis period (2010-2030) to identify how close existing programs would get to achieving the goal, and identifies potential additional programs/policies needed to close the gap between the current projection and the final goal.
- Goals for 2030 Build-Out: Shows the specific 2030 Build-Out goals for each Indicator developed through the stakeholder and research phases of the project
- Centre City Green Policies: Lists the new Sustainability Policies for each Indicator that will drive improvement towards meeting 2030 goals



"In almost every metropolitan area, carbon emissions are significantly lower for people who live in central cities than for people who live in suburbs."

> Green Cities, Brown Suburbs, Glaeser, City Journal, Winter, 2009

**Downtown Metrics:** High Rise Residential = 31 kBtu/sq.ft./yr

Suburban Metrics: Low Rise Residential = 36 kBtu/sq.ft./yr

### Energy/GHG

### Indicator Intent

To promote energy efficient building design and renewable energy generation.

Centre

### Summary

Energy use and its associated greenhouse gas (GHG) emissions are critical sustainability issues for development today. Efficient use of energy and development of renewable energy sources reduces dependence on limited natural resources and vulnerability to international energy markets, in addition to reducing costs and greenhouse gas emissions. This Indicator tracks the efficient use of energy within the built environment, including electricity and natural gas demand.

The Energy Indicator aligns with goals established in the Regional Comprehensive Plan and General Plan Conservation Element (CE), which track energy consumption, energy produced from renewable resources, and greenhouse gas emissions. Centre City Green's energy goals and policies shown below will help demonstrate progress toward these common goals.

### **Tracking Metrics**

- kBtu per sq.ft. or kBtu per person
- Share of energy produced from renewable resources (total annual renewable energy in kWh)

### 2030 Vision Goals

There are several performance goals with regards to energy that have been established by AB 32, AB 212 and Executive Order S-14-08:

- Assembly Bill 32: Establishes targets for GHG emissions that cut across all industry sectors. For buildings, the goal of a 20% reduction in GHG from 1990 levels is targeted for 2020.
- Executive Order S-14-08: Establishes a renewable energy portfolio of 33% by 2020 that will significantly reduce GHG for all buildings as they represent 40% of all emissions.
- Assembly Bill 212: Targets net zero energy demand for all new construction by 2030.

### **Downtown Performance Review**

As demonstrated by the graph below, the current utility renewable energy portfolio and Title 24 2008 requirements establish a baseline of about 28% energy savings relative to the net zero energy use goal for 2030. More stringent future versions of the Title 24 energy code and increases in renewable energy



are anticipated to increase savings over time to represent about 78% energy offset by 2030. The gap between this and the goal of net zero (100% offset) will need to be achieved by providing incentives for efficiency measures like daylighting, exterior shading, central heat and power, ice storage, lighting retrofits and local renewable energy generation.



### **Energy Goals for 2030 Build-Out**

Energy-G-1 20% reduction in GHG emissions by 2020 (AB 32)

- Energy-G-2 33% green power by 2020 (EOS-14-08)
- Energy-G-3 Net zero buildings by 2030 (AB 212)

### **Centre City Green Energy Policies**

- Energy-P-1 Provide incentives for alternative green power including cogeneration and PV installations
- Energy-P-2 Provide incentives for energy efficiency measures in new buildings, such as natural ventilation, daylighting, exterior shading and condensing boilers
- Energy-P-3 Provide incentives for strategies that generate power or reduce the peak load on source generation, such cogeneration, photovoltaic panels and ice batteries
- Energy-P-4 Address pre-Title 24 existing buildings through a retrofit and upgrade program





While water use for domestic purposes is similar for both downtown and suburban locations, water use for irrigation can be over 5 times higher in suburbs than in an urban core.

**Downtown Metric:** Irrigation use = 400 gallons /occupant

Suburban Metric: Irrigation use = 21,000 gallons /occupant

### Water

### Indicator Intent

To promote water efficiency in buildings and landscaping and use of alternatives to potable water supply.

### Summary

Due to the City's limited supply, water was the highest issue of concern among Stakeholders and Advisory Committee members who contributed to the development of the Sustainability Indicators. Water conservation strategies and alternative sources are needed to support the City's growing needs. This Indicator tracks the efficient use of water within the built environment and landscape, including potable water, graywater, blackwater and waterfront runoff protection.

The Water Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and General Plan Conservation Element (CE), which are meant to track water consumption, diversity of water supply, amount of reclaimed water, and water quality. The Community Plan Water Indicator goals and policies shown below will help demonstrate progress towards these common goals.

### **Tracking Metrics**

- Gallons of potable water use per person per day and total (in CCDC Project Area)
- Gallons of reclaimed or recycled water (graywater) per person per day and total

### 2030 Vision Goal

To establish a goal for water, industry standards were used to determine the maximum water savings that could be achieved through the use of existing water technologies. Low water consuming fixtures in combination with alternatives to using potable water for all uses can achieve nearly a 70 percent water savings when compared to current building practices.

### **Downtown Performance Review**

Downtown's dense urban development uses approximately 40 percent less water than the typical suburban development due to more compact landscaped areas per person. However, there is potential to reduce downtown usage even further with efficient water fixtures and reuse. As demonstrated by the graph below, implementation of the CALGreen Building Code in 2011 is anticipated to initially achieve about 12 percent water savings. This is due mainly to limits on the flush and flow rates of standard water fixtures, such as toilets, showers



and faucets. Expected increases in stringency of this code over time should increase this to about 25 percent by 2030. The remaining gap to reach the 70 percent goal by 2030 will need to be closed by implementing incentive policies for graywater reuse and cooling tower efficiency approaches.



### Water Goals for 2030 Build-Out

Water-G-1 70 percent reduction in potable water use by 2030

### **Centre City Green Water Policies**

Water-P-1	Bring public utility supplied recycled water to the downtown core
Water-P-2	Encourage sustainable landscape design and low-impact maintenance practices
Water-P-3	Incentivize graywater systems to demonstrate applicability to downtown





A study for Metro Portland found that VMT per capita was reduced by over 12 miles per day when citizens lived in areas with good transit and mixed use living versus suburban areas.

**Downtown Metrics:** 6.3 VMT per capita per day

Suburban Metrics: 19.8 VMT per capita per day

The Urban Structure and Personal Travel, Keith Lawton http://www.rand.org/scitech/stpi/Evision/ Supplement/lawton.pdf

### **Urban Mobility**

Indicator Intent:

To promote adoption of transportation alternatives to single-occupant vehicles

Centr

### Summary

The Urban Mobility Indicator tracks the development of sustainable urban design strategies that support alternative transportation modes to improve urban mobility and create a walkable and bicycle-friendly community.

By tracking this Indicator, San Diego places importance on urban development and programs that help ensure that alternative forms of transportation are viable options for downtown residents, workers, and visitors.

The Urban Mobility Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and General Plan Conservation Element (CE), which are currently tracking transit ridership, commute mode shares, travel times, air quality, and greenhouse gas emissions. The CE has issued a number of policies to improve urban mobility, such as providing incentives for the use of alternative transportation, including public transit, electric/hybrid vehicle infrastructure, carpooling, bicycling, walking and tele-working. Centre City Green Urban Mobility goals and policies shown below will help demonstrate progress towards these common goals.

### **Tracking Metrics**

- Accessibility to high frequency transit as measured from a five minute walk with transit frequency every ten minutes or better
- Percent of commute trips via alternative transit (non-SOV)
- Number of hybrid/electric parking stalls
- Number of preferred parking for carpools/vanpools
- Downtown bicycle trip miles per day and per year
- Downtown vehicle trip miles per day and per year
- Downtown trip miles in CCDC per day and per year

### 2030 Vision Goal

Downtown is transit rich, providing residents, employees and visitors with walkable five minute access to high frequency transit from any point in downtown to the regional transit system. Downtown is directly adjacent to Lindberg International Airport's Intermodal Transit Center and the cruise ships. Many of the challenges today stem from operating a regional system through downtown at a speed and frequency that is conducive to a fine grain pedestrian environment. The goals for 2030 are to provide inter-modal transit opportunities for navigating in and around downtown, improving bus and trolley connections from regional


transit centers at 12th and Imperial, Smart Corner and Santa Fe Depot with a downtown shuttle circulator and bicycle networks. Equally important, within the urban context, the design of transit should be about "place-making", reinforcing the streetscape fabric, public safety and supporting the "end destination".

#### **Downtown Performance Review**

Approximately 3.8 percent of San Diego County's population uses public transit during the work commute compared to approximately 10 percent of downtown (US Census 2008). Some form of public transit is accessible from no more than a quarter mile walk from any point in downtown.

The graph below shows how transit mode share can grow with service improvements that provide more options. The lighter green band represents the impact of increased downtown service access. The Performance Gap can be closed with an inner city circulator that connects destinations, bike lanes, and improved walkable streetscapes. Promotion of carpools and alternative transportation vehicles can accommodate the accessibility issue. In addition, an aggressive campaign to educate commuters on the benefits of alternative transportation modes can leverage the benefits of arriving and traveling within downtown.



#### Urban Mobility Goals for 2030 Build-Out

Mobility-G-1 Promote transportation planning that creates downtown as a multi-modal public transit destination with easy transit access between all Neighborhood Centers

#### **Centre City Green Urban Mobility Policies**

Mobility-P-1 Revise the Transportation Demand Management requirements in the PDO to include more options to reduce single occupant vehicles

#### DOWNTOWN'S SUSTAINABILITY PLAN





Downtown affords density that cannot be met outside of CentrE City creating outstanding economic opportunities

Downtown Metrics: built area = 53,000 - 435,000 sq.ft./ac

Suburban Metrics: built area = 15,000 - 57,000-sq.ft./ac

#### **Economic Vitality**

Indicator Intent:

To promoted increased density and a livable, workable downtown core

#### Summary:

The Economic Vitality Indicator tracks the leasing and development of new and existing buildings and spaces that promote increased density and a healthy urban center. By tracking this Indicator, San Diego emphasizes the importance of development density and creating a livable and workable downtown core.

The Economic Vitality Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and City of San Diego's General Plan Conservation Element (CE), which track employment growth, income levels, education, housing, etc. The CE has identified a number of strategies to stimulate economic prosperity including the development of clean or green industries, implementing incentive programs to promote energy and water efficiencies and encouraging green building. The Community Plan Economic Vitality goals and policies shown below will help demonstrate progress towards these common goals.

#### **Tracking Metrics**

- Number of new residents, jobs and housing units
- Square footage of new entitlements of all building types
- Percent of projects that take advantage of FAR bonus programs
- Percent of employment to the region

#### 2030 Vision Goal

The Downtown Community Plan was written to achieve an increased density within downtown by 2030. These established goals remain the vision to achieve that will also address all Indicators within the Centre City Green sustainability master plan.

#### Downtown Performance Review

Downtown San Diego employment represents only 5.8 percent of the total region, down from 6.5 percent in 1995, a reflection of increased growth and competition from north county areas that offer cheaper leasable areas per square foot with an abundance of free parking. Downtown currently has about 52 million square feet of existing building stock and will need to grow to 65 million square feet by 2030 to reach full build-out.

For downtown to remain competitive, a comprehensive "economic development strategy" plan must be undertaken that seeks to lure and retain more employ-



ment to downtown. One place to start is by leveraging its assets: (1) Density drives all sustainability indicators and can more easily be accommodated in downtown. An enhanced building incentive program with enhanced coordination between CCDC and the City of San Diego's Development Services Department (DSD) can promote downtown as a more attractive place to build. (2) Downtown has direct access to the regional transportation network, including Lindbergh Airport that many areas in San Diego do not have. (3) Downtown has a large residential inventory within established neighborhoods that can offer a short walk for future employees. (4) Current and future planned parks and open space amenities offer a refined quality of life and amenities. (5) Downtown is a hub of the region's governmental and academic institutions.



#### Economic Vitality Goals for 2030 Build-Out

Economic-G-1	47,700 new residents (DCP)
Economic-G-2	77,300 new jobs (DCP)
Economic-G-3	29,400 new housing units (DCP)
Economic-G-4	23,372,000 square feet new non-residential development (DCP)

#### **Centre City Green Economic Vitality Policies**

Economic-P-1	Introduce a new Private Development Incentive Program coordinated with the City
Economic-P-2	Increase adoption of the Employment Center FAR
Economic-P-3	Develop a program (Business Incubator) with a third party entity to provide leasable area
	for start-up companies that provide employment in the downtown

#### DOWNTOWN'S SUSTAINABILITY PLAN



Factors influencing walkability include the presence or absence and quality of sidewalks or other pedestrian right-of-ways, traffic and road conditions, land use patterns, building accessibility, and safety, among others. Wikipedia, April 2010

#### **Downtown Poor Walkability**



#### **Downtown Top-of-Class**



#### **Streetscape Vitality**

#### Indicator Intent:

To promote a social interaction and a sense of community at the street level

#### Summary:

The Streetscape Vitality Indicator tracks the development of streetscapes that promote social interaction and a sense of community through strategies such as active storefronts, friendly sidewalks and view corridors. By tracking this Indicator, CCDC places importance on development that creates a sense of community, improves quality of life and stimulates the downtown economy.

The Streetscape Vitality Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and City of San Diego's General Plan Conservation Element (CE), which track smart urban design that promotes sustainable landscape design and open space and habitat preservation. The CE has identified a number of strategies to develop a healthy urban environment including increasing tree canopy, preserving open space and encouraging sustainable building and landscape design. Centre City Green's Streetscape Vitality goals and policies shown below will help demonstrate progress towards these common goals.

#### **Tracking Metrics**

- Square feet of active storefront added
- Square feet of pedestrian-oriented development
- Square feet of vegetated dedicated open space
- Square feet of canopy cover and shade from overhangs
- Walking miles per day

#### 2030 Vision Goal

Downtown San Diego can become one of America's top walkable cities due to its temperate climate and existing development patterns. Current planning documents, such as the Streetscape Manual should be revised to promote open space, Green Street elements that increased tree canopies, active street life, with a revised right-of-way that increases areas for pedestrians.

#### Downtown Performance Review

The Downtown Streetscape Manual provides for 14-foot standard sidewalks, which is greater than the City's standard of five feet. In addition, the PDO requires active use at the base of buildings at designated streets, such as Commercial, Main Street and Neighborhood Centers.



As demonstrated by the graph below, improvements in PDO requirements for individual building projects, increased density, the Streetscape Manual revision for green street elements, CIP Street projects and the completion of the Neighborhood Design Guidelines are anticipated to move San Diego streetscapes close to the top-of-class goal. The top-of-class can be reached with a comprehensive green street program.



#### Streetscape Goals for 2030 Build-Out

Streetscape-G-1 Make Centre City a top-of-class streetscape environment that promotes walking over all other modes of transit

#### **Centre City Green Streetscape Policies**

Streetscape-P-1 Develop a Green Streets Pilot Project and program to demonstrate the potential to revise the street right-of-way

Streetscape-P-2 Revise the Streetscape Manual to include elements from a Green Streets Program







There are certain design decisions and operation practices that are generally known to affect IEQ and are commonly used in green buildings. These strategies include (but are not limited to): improving ventilation, removing indoor pollutants, using green materials, giving occupants personal control over operable windows, task air-conditioning, or under floor air distribution systems, employing daylight, and reducing ambient light levels by using task lighting.

Occupant Satisfaction with Indoor Environmental Quality in Green Buildings, Center for the Built Environment, University of California

#### **Healthy Spaces**

Indicator Intent:

To promote daylight, naturally ventilated and low-toxicity interiors.

#### Summary:

The Healthy Spaces Indicator tracks the amount of indoor and outdoor spaces that promote the health and well-being of downtown occupants with features such as daylit interiors, operable windows and non-toxic materials. By tracking this Indicator, CCDC places importance on the health productivity and quality of life of building occupants.

The Healthy Spaces Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and City of San Diego's General Plan Conservation Element (CE), which track healthy air quality both indoors and outdoors. The CE has identified a number of strategies to improve air quality including the use of healthy indoor building materials and the elimination of chlorofluorocarbon-based refrigerants. Centre City Green's Healthy Spaces goals and policies shown below will help demonstrate progress towards these common goals.

#### **Tracking Metrics**

- Square feet of green buildings and/or LEED rated or CALGreen Tier 1 & 2 buildings
- Square feet of existing building green renovations

#### 2030 Vision Goal

Top-of-class healthy spaces are characterized by good indoor air quality and access to natural light, fresh air and views. These may be accomplished by increasing access to daylight/views, natural ventilation/increased outside air, use of low-VOC products/low-toxicity materials, individual control for lighting & thermal comfort and acoustic privacy control.

#### **Downtown Performance Review**

The Introduction of the CALGreen code in 2011 is anticipated to significantly increase the production of healthy interior spaces in San Diego buildings as it establishes minimum requirements for volatile organic compounds (VOC) and promotes user controls for lighting and thermal comfort. Additionally, the gradual increases anticipated from the LEED Certification program will drive towards improved indoor environmental quality as roughly one eighth of all points are contained within the Environmental Quality credit category. Although many downtown buildings provide good access to fresh air and daylight from existing setbacks and massing requirements outlined in the PDO, many buildings can more effectively engage the San Diego climate. By combining operable

windows that are tied to smart HVAC controls that turn off cooling when the window is open or notify tenants when it is appropriate to open or shut windows, an office environment becomes more productive and energy efficient. Daylight and natural ventilation are two strategies that are viable within the context of existing PDO requirements and are ideal based on climate characteristics.



#### Healthy Spaces Goals for 2030 Build-Out

Healthy Spaces-G-1 Develop buildings that capitalize on San Diego's temperate climate to create top-of-class healthy indoor spaces

#### **Centre City Green Healthy Spaces Policies**

Healthy Spaces-P-1 Create green incentives for natural ventilation and daylighting to harness the San Diego climate
 Healthy Spaces-P-2 Rely on the CALGreen code to monitor minimum requirements for use of low VOC adhesives, sealants, and paints
 Healthy Spaces-P-3 Promote adoption of LEED Certification, specifically Environmental Quality credits
 Promote adoption of green measures that increase occupant controllability through lighting controls and access to operable windows



The build-out of downtown will have a significant impact on green house gas emissions that can be reduced through the use of local, sustainably harvested, renewable, and recycled content materials.

- Each SF of building generates between 50-90 lbs of construction waste
- Each SF of downtown building generates 54 98 lbs of CO2 equivalent emissions

#### **Materials**

Indicator Intent:

To promote conservation of natural resources through both material procurement and end-of-life reprocessing activities

Centre

#### Summary:

The Material Indicator tracks the recycling of construction and operational waste materials and the use of local, recycled and sustainably sourced materials. By tracking this Indicator, CCDC can evaluate its contributions to sustaining San Diego's natural resource base and reducing the amount of waste taken to landfills. Material choices are important because of their impact on our limited natural resources, the potential pollution created, and energy used during their extraction, processing and transportation.

The Materials Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and General Plan Conservation Element (CE), which are currently tracking construction waste management, recycling and the use of recycled and local building materials. The CE has identified a number of strategies to reduce construction waste through the reuse of building materials, use of recycled materials and recycling of waste. Centre City Green's Materials goals and policies shown below will help demonstrate progress towards these common goals.

#### **Tracking Metrics**

- Construction waste recycling rate (percent diversion, tons)
- Operational waste recycling rate (percent diversion, tons)
- Percentage of recycled content materials used
- Locally manufactured/harvested materials used

#### 2030 Vision Goal

Downtown San Diego's density requirements and full build-out provide needs for an expansive range of construction materials. A top-of-class position can be adopted such that the build-out of downtown represents the best allocation of materials through the use of regional materials, recycled content materials, materials reuse and by diverting materials from the landfill from construction and operational waste sources.

#### **Downtown Performance Review**

Although City of San Diego has made progress on both construction waste recycling mandates and requirements to maintain recycling areas in new buildings, additional efforts are required to attain top-of-class performance. As demonstrated by the graph below, introduction of the CALGreen code in 2011



is anticipated to significantly improve recycling and the use of green materials in San Diego. In addition, new LEED projects, the Green Streets Program and street recycling efforts will make additional improvements. The gap between these efforts and true top-of-class performance will require further efforts including selection of green materials and recycling on all new public works and the development of green materials incentives for all private developments.



#### Materials Goals for 2030 Build-Out

Materials-G-1	75 percent construction waste recycled on all new projects
Materials-G-2	50 percent operational waste recycled for all businesses and residences in Centre City

#### **Centre City Green Materials Policies**

Materials-P-1	Provide Centre City Green Incentive for construction waste recycling above 95 percent
Materials-P-2	Promote use of sustainable materials in downtown public improvements





"Achieving the goals of sustainable development requires widespread community education and a responsible media committed to encouraging an informed and active citizenry."

UN Decade of Education for Sustainable Development, 2005-2014

http://unesdoc.unesco.org/images/0 014/001416/141629e.pdf

#### **Green IQ**

Indicator Intent:

To promote development of a green knowledge base among the San Diego population

#### Summary:

Green IQ tracks the development of the green knowledge base of residents, workers, building owners, visitors, City staff and designers concerning sustainable design and operations of the built environment. By tracking this Indicator, CCDC can measure the increase in awareness and actions taken by the building community towards conservation and green building.

The Green IQ Indicator aligns with goals and indicators established in the Regional Comprehensive Plan and The City of San Diego's General Plan Conservation Element (CE), which are currently tracking green building educational programs and services. The CE has identified a number of strategies to increase green education, such as offering technical services for green buildings and educational programs to increase awareness of resource conservation. The Green IQ goals and policies shown below will help demonstrate progress towards these common goals.

#### **Tracking Metrics**

- Number of LEED Rated Projects
- Number of LEED Accredited Professionals
- Number of CALGreen Tier 1 & 2 Projects
- Annual number of sustainability communications & trainings to businesses and local/regional community

#### 2030 Vision Goal

Downtown San Diego is uniquely positioned to attract and retain a green knowledge base that will be prepared to address sustainability challenges facing San Diego. As downtown has ample opportunities for future development as stated by the development goals of the Community Plan, downtown can create green jobs by promoting the green development standards and generating green building guidelines.

#### **Downtown Performance Review**

Centre City Green's Building Incentive Program is designed to prepare building owners and developers for future upgrades to Title-24 and CALGreen that will ensure more high performing green buildings are built in downtown. Exemplary projects that test new technologies and promote new standards can also have an educational benefit and increase public awareness. Signature green



buildings and streetscapes that conserve energy and water above standard practice should be publically recognized by the CCDC Board with a "Centre City Green plaque", mounted on the exterior of the building in a highly visible area. CCDC's website and marketing brochures can also bring awareness to the public and encourage the green economy.

#### Green IQ Goals for 2030 Build-Out

Green IQ-G-1

**2030 Build-Out** Develop a green knowledge base that leads the country in successful demonstration of economically viable green technologies and sound green building practices

#### Centre City Green Green IQ Policies

Green IQ-P-1	Develop a public outreach program with case studies, educational signage and tours to
	promote green developments in downtown
Green IQ-P-2	Provide support for pilot projects utilizing new sustainable technologies





Exhibit 1.10: DCP cover

#### **1.3 Planning and Implementation Strategy**

Centre City Green advances the Visions and Goals of the Downtown Community Plan (DCP) and the objectives of the Centre City Redevelopment Project. It supports downtown's estimated population growth, from the current 30,000 residents and 75,000 jobs to 90,000 residents and up to 165,000 jobs projected by 2030. By implementing the goals and policies of Section 5.8 Sustainable Development of the Downtown Community Plan and strengthening relevant DCP Chapters with criteria and standards that ensure development in the downtown is guided by sustainable practices, Centre City Green can make significant progress towards a sustainable future.

Centre City Green's Sustainability Indicators provide the basis for identifying long range goals and policies. By measuring them over time and mapping them directly into the DCP, sustainability can strengthen DCP topical areas and key concepts. Chapters such as Urban Design, Structure and Land Use and Transportation can be refined with updated practices and improved as it relates to energy use and water conservation. This process will ensure that the long range build-out of downtown is consistent with local, regional and state mandates to reduce carbon emissions.

Eight out of the 14 DCP chapters describe policies that relate to buildings and the spaces in-between:

Chapter 3:	Structure and Land Use
Chapter 4:	Parks, Open Space, and Recreation
Chapter 5:	Urban Design
Chapter 6:	Neighborhoods and Districts
Chapter 7:	Transportation
Chapter 8:	Public Facilities and Amenities
Chapter 9:	Historic Preservation
Chapter 11:	Economic Development

(no overlays have been provided for Chapters 1-2,10,12-14).

Each chapter has been analyzed for alignment to the Sustainability Indicators, summarizing benefits and identifying key long range opportunities. For each chapter:

- Specific goals have been identified that support the chapter's intent and drive the Sustainability Indicators over the course of downtown's build-out
- Relevant DCP chapter goals and policies are referenced to the appropriate Sustainability Indicators



 Long range goals, opportunities, initiatives and programs are identified that support and are consistent with the California Public Utilities Commission net-zero buildings, San Diego Association of Governments (SANDAG) Climate Action Strategy Plan and state long range policies and mandates that seek to redeuce carbon emissions.

Some of the key principles for identifying long range goals, programs and initiatives include:

- Focus on water conservation, energy and the State's preferred loading order: New energy resources come first from energy efficiency and then demand response, renewable energy, and distributed generation, all before new transmission and natural gas generation are sought.
- Promote state policies and mandates: The California Global Warming Solutions Act of 2006 (AB 32) and related Scoping Plans require planning districts to aid in meeting milestone reductions in energy use and carbon footprint. Downtown San Diego should be consistent with the policy direction of state agencies like the California Public Utility Commission (CPUC) to achieve zero net energy usage in new residential and commercial buildings and meet the intent of the AB 32.
- Support SANDAG's Climate Action Strategy: Goals, objectives and policy measures in the areas of transportation, land use, buildings and energy use need to be mapped into long range goals to the appropriate section of the DCP.
- Support San Diego's Comprehensive Regional Energy Strategy: Goals and policy measures need to be mapped to the appropriate section of the DCP. Strategies are needed that promote and incentivize the use of clean and renewable energy sources by focusing on: (1) Energy efficiency and conservation, (2) Renewable energy, (3) Distributed generation, (4) Energy and water, (5) Peak demand, (6) A long range goal of a "smart grid," and (7) A clean energy economy.

As many of the Indicators demonstrate, the increased density, improved access to services and amenities, and strong sense of community available in a downtown area provide inherent sustainability benefits as compared to surrounding suburban areas. From energy use to urban mobility, we see the sustainability benefits of more dense urban settings:

• **Energy/GHG:** High rise residential energy use (which predominates in the downtown) is 5 kBtu/sq.ft./yr lower than low rise residential (which predominates in the suburbs)



Exhibit 1.11: DCP build-out model





**Water:** Irrigation water use is over fifty times higher in the suburbs as compared to the downtown (21,000 gallons/occupant in the suburbs as compared to only 400 gallons/occupant in the downtown)

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• **Urban Mobility:** Per capita vehicle miles traveled (VMT) per day reduces from 19.8 in the suburbs to only 6.3 in the downtown

These are some of the many sustainability benefits that are reflected in the identified Sustainability Indicators and that will be leveraged by the additional policies identified below for each DCP chapter.

#### **Chapter 3: Structure and Land Use**

#### **Summary of Sustainability Benefits**

Land use patterns determine the bulk and scale of development across the City, providing the density needed to support a vibrant urban life while modulating its intensity to ensure a good balance with adjacent smaller scale residential neighborhoods and open space. Progressive land use policies encourage a dynamic central urban core with a diverse mix of uses that has sufficient density to establish the downtown area as a multi-use regional center with strong employment and residential opportunities. Mixed-use density provides the following sustainability benefits:

- Density supports a comprehensive transit system, reducing the emissions, congestion and required parking areas associated with the use of single occupant vehicles
- Reduced commute and entertainment miles traveled per person (saving energy, money and personal time)
- Preservation of open space, habitat and farm lands in outlying areas that would be otherwise developed if downtown were not to increase density
- Stronger sense of community and sense of place

#### Key Sustainability Opportunity:

#### **Private Development Incentive Program**

Green building incentives encourage new development to locate in downtown and to implement low impact design strategies with energy, water and materials saving measures. Green development incentives can be linked to specific measures and reward those who exceed the standards, such as to a level of achievement in a rating system like LEED or as part of CALGreen Tier guidelines. Development incentives may involve activities such as increases in FAR or expedited processing of permits and should be tailored to building types such





that all have equal opportunity to achieve incentives based on building performance. Please see the section on Private Development Incentive Program that further develops this opportunity into a new policy program.

#### Land Use & Housing Sustainability Policies

Land Use- CCG .1	Provide development incentives for new projects that demonstrate high levels of energy and water savings and sustainability through the Centre City Green Program	x
Land Use-CCG .2	Provide incentives for existing buildings that implement audits/commissioning and efficiency upgrades	x
Land Use- CCG .3	Provide incentives for installation of peak reduction, cogeneration, and renewable energy measures	x
Land Use-CCG .4	Provide incentives for new developments to include streetscape improvements that increase bicycle ridership (racks, access to showers for commuters, etc.)	x
Land Use-CCG .5	Work with the City of San Diego to align Centre City Green Incentive program with City incentives	

#### **Related Downtown Community Plan Policies**

CP 3.5-G-1	Develop a system of neighborhoods sized for walking, with parks and concentrations of retail, restaurants, cultural activities and neighborhood services in mix with residential and other commercial uses.	x	
CP 3.3-G-2	Ensure supplies of housing for downtown employees commensurate with their means to reduce automobile trips and achieve related air quality benefits	×	
CP 3.2-P-3	Allow intensity bonuses for development projects in specific locations established by this plan that provide public amenities/benefits beyond those required for normal development approvals	x	

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DOWNTOWN'S SUSTAINABILITY PLAN





#### Chapter 4: Parks, Open Space, and Recreation

#### **Summary of Sustainability Benefits**

Parks and open spaces are valuable urban assets that provide multiple sustainability benefits touching upon several of the identified Sustainability Indicators including Energy, Water, Materials and Streetscape. Best practice development of parks and open space in Centre City should provide the following sustainability benefits:

- Increased social interactions and a sense of place
- Connections of people with nature to relieve stress and encourage stewardship of natural resources

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- Exercise and healthy lifestyle habits
- Reduction of urban heat island effect and its associated energy use by providing shade and reducing evapotranspiration
- Improved water quality by absorbing and filtering stormwater runoff
- Reduced air pollutants through the sequester of carbon from increased landscaping
- Reduced noise by providing buffer areas
- Wildlife habitat for songbirds and non-pest animals and diverse ecosystems to maintain a healthy biodiversity in the urban environment
- Education of citizens on low water use, native landscape techniques

#### Key Sustainability Opportunity:

#### East Village Green Park

The East Village Green Park can be developed as a showcase of sustainability by incorporating best practice design including native landscaping and habitat for song birds and other non-pest animals. Treated recycled water should be used to the greatest extent possible. The landscape plan should offer a mix of native tree shaded areas and sunny open spaces, all of which are designed with Low Impact Development techniques to manage stormwater on site. Some areas of the park should provide a calming, natural refuge, while other areas could meet the needs for exercise and social interactions. Consideration should also be given for a demonstration community garden and potential fruit trees on the site. An educational signage program should be developed for the park to communicate the sustainability elements to park users, both to increase the understanding of the importance of nature in the urban environment and to edu-



CP 4.1-P-4-9

CP 5.8-P-2

CP 5.8-P-6

CP 5.8-P-7

cate users on sustainable landscaping approaches they can implement at their own homes. Materials should be selected based on examples of sustainable procurement and should showcase new and innovative solutions.

#### Parks & Open Space Sustainability Policies Parks-CCG .1 Develop all new parks as showcases of sustainability with native and drought-tolerar grasses and plants Parks-CCG .2 Provide Centre City Green incentives for addition/preservation of open space in private developments Parks-CCG .3 Use local- or regional-sourced landscaping materials Parks-CCG .4 Develop a signage program to provide education on the native plantings and low water use sustainability features implemented in new parks Parks-CCG .5 Coordinate location of new parks/open spaces to encourage economic development in targeted areas Parks-CCG .6 Coordinate transit stops to provide easy access to parks & open space activity areas Parks-CCG .7 Partner with a local gardening organization to develop a demonstration community garden in one of the urban parks **Related Downtown Community Plan Policies** CP 4.1-P-4 Wherever possible, incorporate parking under all new parks and open spaces greater t half-block in size. Design underground parking so access ramps do not isolate the park

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Community Plan Policies	Е	w	М	EV	s	HS	UM	IQ
Wherever possible, incorporate parking under all new parks and open spaces greater than a half-block in size. Design underground parking so access ramps do not isolate the park from adjacent pedestrians	x						x	
Improve green streets as an essential element of the open space program – as connections to the waterfront, Balboa Park, activities centers and parks and plaza; as tree-lined open spaces; and as continuous recreational paths					x		x	
In cooperation with other agencies, undertake a program of street tree planting, maintaining a target of 10,000 trees downtown by 2030	x				x			
In new development and re-use projects alike, encourage use of Low Impact Development principles such as eco-roofs, roof gardens, landscaped courtyards, grass filter strips, permeable pavement, and rainwater systems, to reduce surface runoff volumes and pollutants as well as reduce heat-island effects	x	x			x			
Promote biodiversity and indigenous plantings that require low or no irrigation. Encourage habitats for songbirds and non-pest animals		x			x			

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#### **Chapter 5: Urban Design**

#### **Summary of Sustainability Benefits**

The Urban Design chapter of the DCP provides significant direction for sustainable planning, urban design/relationships and green buildings in the downtown core. Centre City Green Planning Guidance is intended to supplement the information currently in the Urban Design Chapter 5.8 by expanding sustainability goals and policies that are aligned to stakeholder outreach, current laws and mandates that have occurred since the 2006 adoption.

This additional direction is especially important since the urban design and infrastructure form the core connecting threads for the sustainability fabric of the City. The Land Use policies create the density needed to provide a vibrant urban setting and the Urban Design policies ensure that this results in a livable, dynamic urban core. As identified in the current Urban Design Chapter, the critical sustainability benefits of sensitive urban design include:

- View corridors that connect people with San Diego's dynamic natural surroundings to promote pedestrian activity and the relaxation and well being associated with the connection to natural areas
- A balanced development pattern that addresses the bulk, skyline and solar access issues to promote fine grain developments that engage pedestrians while providing the needed density to support a sustainable and dynamic urban core
- Rich and varied streetscapes and building interfaces to encourage multimodal transportation options ranging from walking and bicycling to public transit
- Expanded use of public domain areas to encourage public gatherings, naturally infiltrate stormwater and reinforce a sense of place, in addition to meeting the needs for transit and utility corridors.
- Connections and gateways to surrounding neighborhoods to both strengthen community identity and reinforce the interconnectedness
- Wayfinding and signs to encourage pedestrian mobility and economic activity

#### Key Sustainability Opportunity:

#### **Green Streets Pilot Project and Program**

A well-designed green street calms vehicular traffic and offers a more pleasant pedestrian environment by narrowing vehicular pavement and providing streetside native plantings that shade the pavement, allow natural low impact development (LID) infiltration of stormwater and provide habitat for song birds.



Green streets balance the needs for all modes of transportation by providing bicycle lanes, widened sidewalks, and access to an intra-downtown circulator/ shuttle. Green streets can also provide casual gathering spots with art installations and seating to promote impromptu social interactions. The sidewalks and other built amenities can utilize materials that are produced locally and that have high recycled content. Good green street designs modulate the width of paved areas with street bulb-outs, landscaped areas and variations in sidewalk widths to allow for a variety of space types and to promote bicycle parking areas and angled vehicular parking to support economic vitality of adjacent businesses. See Green Streets Development Program section that further develops this opportunity to a conceptual level.

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Urban Design Su	stainability Policies	Е	w	м	EV	s	HS	UM	IQ
Urban Design-	Implement a Green Streets Pilot Project at a designated location that extends the open space	F							
CCG.1	system and addresses more than three Sustainability Indicators.				х	×			
Urban Design-	Upgrade the Streetscape Manual based on the Green Streets Program and Pilot project	Γ			~	x			
CCG.2					^	^			
Urban Design-	Incentivize and promote large-scale developments that promote (1) new green technologies								
CCG.3	at a neighborhood scale, employing smart grid or cogeneration/bio-cell technologies that takes the development completely off the grid; and (2) promote water reuse technologies at a neighborhood scale				x	x			
Urban Design- CCG.4	Increase awareness of existing green buildings and promote top-of-class examples to the public	x	x	x	x	x	x	x	x
Urban Design-	Provide development incentives for projects that implement energy- and water-conserving	F							
CCG.5	features and other sustainability strategies through the Centre City Green program	x	x	x		x	x	x	
Urban Design-	Provide an integrated design review step that encourages consideration of neighborhood-								
CCG.6	scale sustainability options like cogeneration, Low Impact Development, water reuse, wind & solar patterns, etc.	x	x	x	x	x		x	х
Urban Design-	Promote the adoption of new green technologies to increase awareness and drive market	Г							
CCG.7	adoption of green practices								х
Urban Design-	Increase awareness of existing green buildings and promote top-of-class examples to the								х
CCG.8	public	L							
Related Downtow	n Community Plan Policies	E	w	м	EV	s	HS	UM	IQ
CP 4.1-P-9	Improve Green Streets as an essential element of the open space system - as connections to	Г							
	the Waterfront, Balboa Park, activity centers and parks and plazas; as tree-lined open		x		х	х			
	spaces; and as continuous recreational paths								
CP 4.1-P-15	Encourage the position of outdoor seating and/or cafes where appropriate				х	х			
CP 5.2-G-2	Promote walkability by providing amenities in proximity to every downtown worker and	x			x	x		x	
CP 5.4-P-5	resident and linking Neighborhood Centers with Green Streets Emphasize pedestrian orientation of buildings & development, especially in the retail districts,	H			-				
GF 3.4-P-3	Neighborhood Centers.	x			х	х	x	x	
			-		_				

CP 5.3-G-4 Ensure uninterrupted sunlight during designated periods in all major parks and maintain standards to ensure adequate sunlight on sidewalks and streets in Neighborhood Centers and residential areas.
 CP 5.2-P-2 Ensure that Centers are attractive destinations, offer pedestrians comfort and maximize sun

access to streets and sidewalks through a variety of implementing mechanisms including<br/>streetscape improvements (street trees, widened sidewalks, seating and lighting,), sun access<br/>standards, and fine grained development.CP 5.3-P-3Establish performance-based Sun Access requirements in the Neighborhood Centers, which

provide flexibility in building massing.



# Centre City green

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CP 5.4-G-1	Enhance downtown through distinctive streetscapes. Promote street trees and unified landscape treatment along streets, while ensuring sunlight through species selection and placement.			
CP 5.4-P-5	Emphasize pedestrian orientation of buildings, especially in the retail districts and Neighborhood Centers			
CP 5.6-P-1	Work with Caltrans and other agencies to prioritize construction of a "lid" decking I-5 in Cortez to reconnect downtown with Balboa Park.			
CP5.8-P-1	Prepare and implement Green building guidelines and/or standards, appropriate to the intense San Diego downtown context, to ensure high levels of energy efficiency and reduction of life-cycle environmental impacts associated with construction and operations of buildings.	x	x	
CP 5.8-P-3	Maintain building volume standards that allow sunlight to reach streets and public spaces. Explore the feasibility of building reflectivity standards to maximize ambient light in streets and other public spaces, without glare.			
CP 5.8-P-6	In new development and re-use projects, encourage use of Low Impact Development principles such as eco-roofs, roof gardens, landscaped courtyards, grass filter strips, permeable pavement, and rainwater systems to reduce surface runoff volumes and pollutants as well as reduce heat-island effects	x	x	

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Exhibit 1.12: DCP Neighborhood Center Illustration







#### **Chapter 6: Neighborhoods & Districts**

#### **Summary of Sustainability Benefits**

The DCP identifies Neighborhood Centers at key downtown locations with finer grain development standards and neighborhood supporting uses at the base. Neighborhood Centers generate "ownership" that encourages local interactions and stewardship. This minimizes unnecessary transit outside the neighborhood and opens the way for "neighborhood scale projects" that employ district based improvements such as cogeneration, low impact development approaches to stormwater treatment, and street-side recycling. Neighborhood Centers provide for a best practice approach to the development of neighborhoods and districts in Centre City with the following benefits:

- Provides for localized area's needs for employment, shopping, education, entertainment, open space and services, thus minimizing the time and energy use of transit to other areas
- Increases social interactions and appreciation for a sense of place and environmental responsibility
- Promotes healthy lifestyles for neighborhood residents through increased walking and bicycling
- Increases local networks to evaluate and implement neighborhood scale sustainability initiatives that achieve greater performance than building-based measures

#### Key Sustainability Opportunity:

#### **Neighborhood Pilot Project Opportunities**

The downtown neighborhoods are based on existing character and expected new development patterns that will define new building volumes, parks and open spaces, land use emphasis, design, texture, and light. These work together to foster a sense of individual identity, and emphasize a human scale. Per the DCP, each downtown neighborhood is served by, or shares, at least one Neighborhood Center that provides amenities necessary for daily life, and a focal core of activity. The Neighborhood Centers are located within a convenient, five-minute walking radius of the surrounding neighborhoods. Neighborhood Design Guidelines (a separate document) will further provide direction on design character and should be consulted.

A Neighborhood Center could provide the opportunity to implement a district approach to large-scale sustainability measures based on multi-developments or parcels, either as a producer or a consumer of a particular resource. For example, a multi-block development could implement a cogeneration facility, taking multiple parcels off the grid and achieving a net-zero energy status.



Other opportunities can be based on intensive resource exchanges. Hotel developments produce significant amounts of graywater generated through laundry facilities yet may have no appropriate use for it. An adjacent public park, green street, or landscaped street median could be the beneficiary of this graywater resource, treated on-site. This would allow the public right-of-way to meet its irrigation demand with a neighborhood scale graywater system.

A district or neighborhood pilot program should be initiated as part of Centre City Green that demonstrates the viability of the system and establishes cost sharing between multiple projects.

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Neighborhoods &	& Districts Sustainability Policies	Е	w	М	EV	s	HS	UM	IQ
Neighborhoods- CCG .1	Develop a pilot program for co-generation or water reuse systems that serve a neighborhood or district	x	x		x				x
Neighborhoods- CCG .2	Provide support for neighborhood scale LID approaches that reduce runoff		x			$\square$			$\square$
Neighborhoods- CCG .3	Develop water sharing guidelines to allow projects to share the generation and use of gray water within their neighborhoods	x							
Neighborhoods- CCG .4	Provide recycling bins for metal, glass and paper on all major streets in all neighborhood centers			x					x
Polotod Commun	sity Plan Polician	٦	14/	м	EV	<u>د</u>	це	LIM	

#### **Related Community Plan Policies**

CP 6.5-G-12

Develop cohesive, lush streetscapes to promote sub-district identity, character and connections

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#### **Chapter 7: Transportation**

#### **Summary of Sustainability Benefits**

Downtown has extraordinary access to major transportation systems including air, water, light and heavy rail, bus transit (rapid and local) and walk/bike networks as well as highly developed street and freeway networks. These connect the area locally, regionally and even nationally and internationally, while the street grid system, with small blocks, facilitates easy pedestrian, bicycle and vehicle movement. With well planned density supported by open space, employment, tourism and amenities and linked with a variety of transit modes, Downtown San Diego can demonstrate the greatest impact on energy and water conservation and economic prosperity. As 42 percent of California's carbon emissions are associated with transportation, further development of amenities in Centre City can make a significant contribution to the regional carbon reduction goals. By enhancing transportation systems, the following benefits can be realized:

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- Increased opportunities for building community through casual interactions on the street, at transit stations and in shared vehicles
- Enhanced public health with bicycling and walking opportunities
- Reduced use of non-renewable fuels and their associated carbon emissions
- Reduced metal, rubber, oil and fossil fuel contamination of stormwater runoff

#### Key Sustainability Opportunity:

#### **Downtown Connector Shuttle**

Serving as San Diego's regional transit hub, the various forms of regional transit networks that traverse downtown need to be linked with an intra-downtown shuttle. The shuttle should reinforce and connect transit hubs, such as Santa Fe Depot, Smart Corner and the 12th and Imperial rail stations that in turn have connections to bus linkages, downtown attractions, the Convention Center, hotels and the cruise ship terminals. The shuttle would offer a multi-modal and seamless experience of transport that supports the local economy, tourism and employment.

The development of a downtown shuttle has been consistently cited as a desire by the downtown residential and business community, not only as an efficient method of transport in and around downtown, but as an economic development tool and "jobs creator" that supports local business. A downtown shuttle offers more flexibility than a regional system by being uniquely scaled to the urban form and fine grain character of downtown street blocks. Frequent stops and flexible routes that can easily be programmed to directly connect the arrival



point with the destination and neighborhood to neighborhood would serve as an economic and social engine. As such, a downtown shuttle would entail the participation and ownership of local stakeholders, property owners, merchants, employees, residents and visitors alike.

To support a successful downtown shuttle, the regional transit systems should be planned in a manner that effectively connects to the intra-transport system by arriving at key "transit hubs" and at other appropriate downtown perimeter locations. Trolley service should also be provided that bypasses downtown by utilizing the Bayside connection, addressing a significant ridership that needs to get through downtown in a more efficient and timely manner. Regional systems, whether rapid bus or the trolley, should always operate within the existing street block geometry, with operational characteristics that are complimentary to areas of high pedestrian volume, ground level business and public safety.

#### Sustainable Transportation Policies

Transportation-	Develop Green Streets Program that prioritizes the pedestrian to all modes of transit within		Γ
CCG.1	downtown		
Transportation-	Reduce auto-dependency, pollution impacts, and waste of valuable downtown real estate by		Γ
CCG.2	encouraging shared parking, automated parking, carpools, transit and non-polluting mobility modes such as electric vehicles, pedicabs, bicycling and walking	x	
Transportation-	Revise the Transportation Demand Management requirements in the PDO to encourage		Γ
CCG.3	options to reduce use of single occupant vehicles		
Transportation-	Support the use of carpool and low-emission vehicles with preferred parking locations.	x	Γ
CCG.4		F	+
Transportation- CCG.5	Partner with local agencies and the private sector to develop a downtown connector shuttle to link all major amenities, neighborhoods and transit hubs.	x	

#### **Related Community Plan Policies**

CP 5.8-P-4	Reduce auto-dependency, pollution impacts and waste of valuable downtown real estate by encouraging shared parking, automated parking, transit use, carpools, and non-polluting mobility modes such as electric vehicles, pedicabs, bicycling, and walking.	x	
CP 7.2-P-1	Create a system of bike paths and encourage regional links such as the San Diego Bayshore Bikeway	x	
CP 7.2-P-3	Require bike racks and locking systems in all residential projects, multi-tenant retail and office projects and government and institutional uses.	x	
CP 7.2-P-4	In pedestrian priority zones, undertake strategic streetscape improvements (such as sidewalk widening, bulb-outs, enhanced lighting and signage), lengthen traffic signal walk times for pedestrians and explore feasibility of "all-walk" signalization at intersections with heavy pedestrian flow, and accept lower levels of automobile traffic service	x	

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#### DOWNTOWN'S SUSTAINABILITY PLAN





#### **Chapter 8: Public Facilities & Amenities**

#### **Summary of Sustainability Benefits**

A strong framework of public facilities and amenities is an essential component in establishing downtown as a livable place and a regional center. Moreover, public facilities, such as parks, open spaces and schools, support a growing population; police and fire stations ensure public safety; and Convention and Civic Centers can be a catalyst for redevelopment.

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In the sustainable design and operation of its public facilities, the City has the opportunity to save resources, reduce costs, and demonstrate state-of-the-art sustainability technologies to the broader community. As public facilities operate on limited budgets, efficient use of energy and water can produce operational savings while also reducing the drain on non-renewable resources. A well-designed, sustainable public facility provides the following benefits to the community:

- Reduction of water and energy use and their attendant savings in cost and carbon emission equivalents
- Increased comfort and indoor air quality for building occupants by improvements in ventilation, lighting and thermal controls
- Improved site designs that maximize open space with native plantings
- More pervious site area and LID designs to reduce stormwater runoff and improve water quality in the Bay
- A demonstration "living laboratory" for students in educational buildings to investigate sustainable design approaches
- Stimulation of the local economy

#### Key Sustainability Opportunity:

#### **Redevelopment of Civic Center**

The City's Civic Center complex that includes the Administration and Operations Buildings, Civic Center Theater, the Concourse, Golden Hall and an above-grade structured parking lot, are strong anchors for downtown's central business district. The Civic Center is also a prominent functional and visual landmark.

There is wide consensus that the aging and deteriorating Civic Center facilities need full-scale redevelopment, as can be seen by the fact that over half of the space occupied by downtown City staff is leased in private office buildings. A redeveloped Civic Center that is outward facing, welcoming, and reconnected



to the street grid and surrounding areas provides an inspiring yet functional regional government center.

The redevelopment of Civic Center provides the opportunity to showcase to the public and building community new sustainability technologies and approaches with positive impact on the San Diego urban infrastructure. Civic Center could be a demonstration project, addressing each of the Sustainability Indicators and promoting market opportunities by showcasing state-of-the-art sustainability technologies, such as cogeneration, blackwater treatment systems, use of graywater and integrated daylighting strategies.

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Policies: Sustainat	ble Public Facilities & Amenities	Е	w	М	EV	s	HS	UM
Public Facilities-	Design public facilities with low water use/native landscaping and other interior water saving		x					
CCG.1	technologies and strategies		^					
Public Facilities-	Design Public Facilities to LEED Silver or CALGreen Tier II standards	~	x	x	<		~	v
CCG.2		Ĺ	^	^	^		^	^
Public Facilities-	Develop an educational signage and/or tour program to inform building users of the							
CCG.3	sustainability measures installed in public facilities							
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#### **Related Community Plan Policies**

CP 5.8-P-5	Encourage the use of daylighting, natural ventilation, photovoltaic panels, district energy
	plants, insulation and other energy conserving techniques and strategies
CP 5.8-P-8	In accordance with established City policy, ensure that public projects – including buildings,
	streets and parks – incorporate sustainable design and construction practices.

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#### **Chapter 9: Historic Preservation**

#### **Summary of Sustainability Benefits**

Historical resources contribute greatly to a city's complexity and sense of place. The fine collection of memorialized buildings—such as the El Cortez, County Administration Building, U.S. Grant Hotel and the concentration of historic buildings in the Gaslamp Quarter Historic District provides scale and helps to convey downtown's historicity. Since newer buildings must conform to the nation's strictest building code and energy standards and represent only 10-12 percent of the total carbon emissions from building stock, adaptive reuse and/ or retrofitting pre-Title-24 existing and/or historic buildings is arguably one of the most important approaches in achieving overall efficiencies in energy and water conservation.

Centre

Rehabilitation of historically designated structures offsets the need for new materials (and their embodied energy) while reinforcing the cultural history of the area. However, as energy, and water-saving technologies and indoor air quality measures have significantly improved over time, the reuse of buildings is only a net sustainability benefit if the buildings are upgraded to take advantage of the most recent high performance technologies. Comprehensive building audits are required to benchmark current performance and propose efficient upgrades. The upgrade of existing buildings provides the following sustainability benefits:

- Minimizes extraction of new, non-renewable materials and the associated embodied energy use and carbon emission equivalents
- Minimizes materials going to the landfill to reduce landfill size and preserve open space
- Improves energy and water performance of building systems to reduce the costs and depletion of these resources and the urban infrastructure needed to support them
- Improves health, comfort and indoor air quality for building occupants by improving ventilation, lighting and thermal controls
- Reduces the impact of construction on neighborhood centers and the attendant disruption to the pedestrian experience and economic activity

#### Key Sustainability Opportunity:

#### Existing Building Energy Audit and Retrofit Program

To reach sustainability goals and meet improvement targets for the Energy, Water and Material Indicators, a program to incentivize existing building upgrades is needed. The highest priority structures should be those that have historic designation or were constructed prior to Title-24 energy code compliance stan-



dards. As CCDC has no jurisdictional control over the existing building stock, incentive based voluntary programs need to be developed to encourage building owners to make building and operational improvements.

The USGBC's LEED for Existing Building Operations and Maintenance program can be used as a performance approach. Another approach is to provide funds to complete audits that identify retrofit opportunities with less than a five year payback. SDG&E and CCDC funds and various State and Federal grants should be identified to start the program. As part of the Private Incentive Building Program new developments should be able to contribute to the audit and retrofit fund in exchange for incentives, such as CCDC's FAR bonus and City of San Diego's DSD expedited review.

	CCG Indicator Map								
Historic Preservation Sustainability Policies	Е	w	М	EV	s	HS UM	IQ		
Preservation- CCG.1 With the participation of the City of San Diego and San Diego Gas & Electric (SDGE), develop an energy audit and retrofit program.	x	x	x			x		x	
Preservation- CCG.2 Promote the adoption of green operations and maintenance practices on all existing buildings	x	x	x			x		x	
<b>Preservation- CCG.3</b> Develop a retrofit fund for pre-Title 24 buildings over 100,000 SF	x	x	x					x	

#### **Related Downtown Community Plan Policies**

Promote the adaptive reuse of intact buildings (designated or not) and/or significant element CP 9.2-P-4 as a cultural and sustainability goal. CP 5.8-P-9 Promote adaptive re-use of historic resources as an effective means to reduce construction materials, energy and waste.

x	x	x		x	x
x	x	x		x	x
x	x	x			x

	Е	w	М	EV	s	HS	UM	IQ
ts,	x		x	x	x			
	x		x					

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#### **Chapter 11: Economic Development**

#### **Summary of Sustainability Benefits**

Downtown's private office market currently consists of approximately nine million square feet of space, representing the largest concentration of office space within the region. However, downtown's share of the regional overall inventory has diminished from 23 percent in 1991 to about 15 percent in 2004 and its percentage of the region's employment also has been reduced from 6.5 percent in 1995 to 5.8 percent in 2006.

Centre

Employment provides the key metric for the Economic Vitality Sustainability Indicator and drives many other Indicators, such as Energy, Urban Mobility and Healthy Spaces. Employment in a mixed use context furthers the region's smart growth policies and significantly reduces VMT by promoting alternative forms for transit resulting in less energy spent and less traffic congestion.

Additionally, promoting growth within downtown versus suburban areas means that investment in existing infrastructure within downtown is capitalized rather than having to develop new services for suburban green field development. The sustainability benefits for economic development with an emphasis on employment include:

- Supports residential and mixed-use communities by lowering vehicle miles traveled and encouraging a diverse array of services
- Supports the regional transit system and reduces traffic congestion on the highways and connector streets
- Leverages existing public investments and urban infrastructure as well as planned improvements, such as parks, open space, green streets and bicycle infrastructure
- Encourages the development of a green economy knowledge base that works to actively save energy, water and material resources and promote quality indoor environments both in the products/projects they develop and in their operations
- Engages centers of sustainability excellence (like the UCSB Sustainability Resource Center) that both model and promote state-ofthe-art sustainability approaches

#### Key Sustainability Opportunity:

#### **Employment and Economic Development Strategies**

In the efforts to draw tenants away from established suburban markets to downtown, a coordinated economic development and employment strategy should be developed that may include the following:



- 1. Regional partnerships for fostering smart growth objectives: Many agencies and entities have a stake in downtown economic development, including SANDAG, the San Diego Regional Economic Development Corporation (EDC), the Downtown San Diego Partnership and the City's Community Planning and Community Investment Department (CPCI).
- 2. Financing for public improvements: Parks and open space, green streets, bicycle facilities and transit options provide infrastructure that suburban markets do not have. The DCP identifies a network of public open spaces that will be built over the next 30 years.
- 3. Development Incentives: Refine employment incentives for new and existing projects within downtown's redevelopment areas that help stimulate and retain businesses, promote economic growth and further redevelopment goals. Incentives could include site assembly, fee deferral to certificate of occupancy, expedited permitting, off-site improvements, commercial façade loans and rebates and parking reductions and/or deviations to code.
- Business Incubator: CCDC and the City of San Diego should partner with a private, non-profit or academic entity in developing a facility to attract new start-up entities in green technology or international business.

#### **Economic Development Sustainability Policies**

Economic Dev-CCG.1

 Maintain and expand partnerships with nonprofit and community organizations like Clean Tech San Diego that work to increase green jobs in the City of San Diego

#### **Related Community Plan Policies**

11.3-P-1	Preserve sites in Core/Columbia for business or primarily employment orientated
	development to ensure that downtown's employment potential is maintained.
11.3-P-2	Permit office and other employment-orientated development in a variety of locations across
	downtown, and allow mixed-use developments in all neighborhoods
11.3-P-3	Emphasize shared parking and merchant serving parking approaches.

	(	cce	ind	ica	tor N	lap	
Е	w	М	EV	s	HS	UM	IQ
			x				

Е	w	М	EV	s	HS	UM	IQ
			x	x			
			x	x			
			x				

#### DOWNTOWN'S SUSTAINABILITY PLAN





#### 1.4 2006 Planned District Ordinance Analysis

The PDO provides development regulations for all new construction within the Centre City Project Area of downtown and is based on goals and policies of the DCP, emphasizing fine grain development in Neighbor Centers, Main and Commercial Streets with street level activation and quality architectural design standards. A cohesive collection of urban mixed-use neighborhoods have resulted over the last twenty years, with an urban form that promotes lower vehicle miles traveled and that has lower energy and water usage when compared to every standard and metric.

Centre

Additional sustainability requirements were reviewed as part of the development process of Centre City Green. However, the State of California enacted a new green building code, CALGreen, the first in the nation statewide green building code that incorporated many of the items that were identified by Centre City Green stakeholders for inclusion in the PDO.

The purpose of CALGreen is to improve public health, safety and general welfare by enhancing the design and construction of buildings. Building strategies that have a reduced negative impact or positive environmental impact and that encourage sustainable construction practices were organized in the following categories:

- 1. Planning and design
- 2. Energy efficiency
- 3. Water efficiency and conservation
- 4. Material conservation and resource efficiency
- 5. Environmental quality

CALGreen takes effect January 2011 and defines minimum requirements in energy, water and material efficiencies. CALGreen will require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills and install low pollutant-emitting materials. It also requires separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects. It stipulates mandatory inspections of energy systems (e.g., heat furnace, air conditioner and mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies. The CARB estimates that the mandatory provisions will reduce greenhouse gas emissions (CO, equivalent) by three million metric tons equivalent in 2020. Lowflow water fixtures, automatic light shut-off sensors, use of low VOC adhesives, sealants and primers will all be regulated as part of CALGreen. Each of these items was initially considered as "market standard" by Centre City Green stakeholders, which was the criterion for identifying additional PDO requirements.



As CALGreen will be updated every five years and will become part of the DSD review process, the PDO does not need to consider additional requirements beyond CALGreen. Instead, the PDO should promote an incentive based program coordinated with the City that prioritizes CALGreen voluntary tiers, LEED certification and green building measures accumulative equivalents.

Centre City Green focuses on "market opportunities" such as mid- to high- rise building efficiencies that are not specified in the Code. It does so by incentivizing selected "green" design features and measures based on SANDAG's Climate Action Strategy and AB 32 Scoping Plan, addressing peak energy loads and water conservation.

To implement Centre City Green, the PDO will be required to:

- Expand the existing incentive programs, such as the eco-roof and public open space into the Centre City Green Incentive Program. For more information see the **Private Development Incentive Program** section of this report
- 2. Install the Centre City Green Incentive Program as a function of the regulatory processes of the PDO.

The Centre City Green Incentive Program will be required to be reviewed and updated every five years based on CALGreen's review and update by the California Building Standards Commission.

#### 1.5 Revised 2006 Sustainability Incentive Programs

#### FAR Payment Bonus Incentive Program

In 2009, nearly half of all projects that were entitled by Centre City elected to purchase additional FAR at the current cost of \$15/SF. While this cost may be considered low by current and former market analysis, the program encourages owners to develop more floor area downtown than is possible in other areas of the City. Nearly all of the Sustainability Indicators improve with density as constructed in compliance with the Community Plan (Energy, Water, Streetscapes, and Economic Vitality). CCDC should conduct a sensitivity analysis to evaluate the appropriate balance of costs and benefits for the FAR incentive program.

#### Urban Open Space Incentive Program

In 2009, less than 10 percent of projects elected to attempt the Urban Open Space FAR bonus. In reviewing the requirements for this program, there are several restrictions that both make the program unattractive and limit achievement of the 2030 Streetscape Indicator Goals.

#### DOWNTOWN'S SUSTAINABILITY PLAN





It is suggested that the following restrictions are removed to increase adoption of the bonus incentive:

- Change the required open hours to dawn dusk rather than 6am to 10 p.m.
- Reduce the minimum size required to 500 square feet
- Allow north-facing open space to qualify for bonus with enhanced public amenities provided

#### **Eco-Roof Incentive Program**

In 2009, nearly half of all projects elected to attempt the Eco-Roof bonus program. Eco-Roofs are well aligned with the Healthy Spaces Sustainability Indicator as they can provide outdoor green environments for occupants. However, the current requirements for Eco-Roofs do not clearly indicate that they should be accessible for occupants. Additionally, the Eco-Roof program is a small measure that achieves a large incentive.

As part of Centre City Green, a new sustainability incentive program is being considered that includes several green building measures that have similar performance as eco-roofs. As described in section **Private Development Incentive Program**, the program offers another avenue to incentivize eco-roofs.

It is suggested that the following adjustments to the Eco-Roof program is made:

- FAR bonuses for Eco-Roofs be reduced to bring alignment with current market rates and prevent double credit for attempting it as part of Centre City Green incentives
- All Eco-Roofs shall be designed to be accessible to building occupants as outdoor space
- Eco-Roof should be incorporated into Centre City Green's Private Development Incentive Program

## 1.6 Revised 2006 Transportation Demand Management Plan

#### Overview

In order to reduce single occupant vehicle trips, the PDO currently requires that all commercial and hotel projects containing more than 50,000 SF must achieve a minimum of 25 points by selecting a number of Transportation Demand Management options. Adopted in May of 2006, the list of options relates directly to the Urban Mobility Sustainability Indicator and is a critical component



in reaching 2030 goals. However, the chart is outdated and does not feature alignment with other green building rating systems, such as LEED. By increasing the number of options and modifying the points given to any one measure, the TDM program can drive greater performance against the Urban Mobility Indicator. The following chart captures suggested changes:

#### **Transportation Demand Management Revisions**

Points	Measure
20	5-year, 50% subsidy for transit passes for employee occupants
15	Public accessible shuttle to all downtown and airport locations
15	Vehicle parking to meet, but not exceed, minimum PDO requirements
15	"Shared use vehicles" by property tenants - minimum 1 vehicle per 33 occupants - vehicles provided have CARB classification of ULEV, SULEV, PZEV or ZEV - preferential parking
15	Electric, natural gas, fuel cells, fueling stations - minimum office (1 per 30,000 s.f.), hotel (1 per 100 rooms) - minimum 50% of stations are electric vehicle charging stations
10	* On-site daycare
5	Bicycle storage - minimum 1 space per 20 occupants
5	* Upgraded transit stop adjacent to new development, including shelter, seating, lighting and ongoing maintenance
5	Preferential parking for vehicles with CARB classifications ULEV, SULEV, PZEV, and ZEV - minimum 5% of permitted parking
5	Preferential carpool and/or vanpool parking - minimum 5% of permitted parking
5	On-site shower facilities available to all tenants/employees of a building - minimum office (1 per 100,000 s.f.), hotel (1 per 100 rooms)
5	Participation by building management and tenants in carpool coordination, ridesharing and car-sharing programs
5	Discounted parking rates for vehicles with CARB classifications ULEV, SULEV, PZEV, and ZEV - minimum 20% discount
5	Discounted parking rates for carpools containing 3 or more adults - minimum 20% discount
5	Preferential parking for car-sharing vehicles (at least one space)
5	* On-site transit pass sale, maps and information
1	* Proximity to public transit stop/station (1,320 feet or fewer)

Exhibit 1.13: Revised TDM Programl

# SAN DIEGO DOWNTOWN SUSTAINABILITY PLAN

### 2. Green Streets Pilot Project and Program
# 



### 2.1 Overview

The Downtown Community Plan (DCP) emphasizes "public realm" enhancement that includes designated Green Streets envisioned as an essential element and integral to the open space system – as connectors to the waterfront, Balboa Park, downtown activity centers proposed parks and plazas, and as continuous recreational bicycle paths. Green Street designs will employ sustainable landscape elements, energy efficient street lights, storm water management, multimodal transportation choices, and widened sidewalks bordering tree-lined open spaces. (See Exhibit 2-4 for locations of designated DCP green streets)

In concert with the region, Green Streets advance downtown efforts to reduce greenhouse gas emissions by implementing streetscapes that conserve energy by connecting public amenities with pedestrian friendly routes. These Green Streets also have energy efficient streetlights and are constructed with locally sourced materials that employ low volatile organic compounds (VOC). If planned in conjunction with private development, Green Streets can be translated into plans that act as a catalyst for redevelopment. Green Streets incorporate features that concurrently enhance pedestrian comfort and safety, encourage pedestrian activity, and provide environmental benefits. Key attributes of Green Streets include:

- Sidewalk and street design to prioritize and enhance the experience of pedestrians and bicyclists
- Abundant vegetation to provide shade, clean stormwater runoff, and improve air quality
- Facilities and furnishings to foster use of the sidewalk as a community space and a marketplace
- Enhanced localized transit facilities, such as downtown circulator shuttle stations
- Material and fixture selection with preference to items with reduced environmental impacts, increased efficiency or local sources





Bicycle parking

Centre City Green defines a framework for the implementation of designated Green Streets, starting with a basic configuration or "base plan" and possible overlays of various green street elements to enhance the streetscape experience. Pilot project concepts are established to seek improvement within multiple Sustainability Indicators, such as water, energy and materials, with the intent of testing new approaches and methodologies that could lead to the upgrade of current standards and practices within the public realm. A menu of implementation options are defined for developments located along designated green streets that will eventually become part of the Streetscape Manual.

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**Bicycle lanes** 



Areas for sitting and relaxing



Stormwater management Exhibit 2-1 Elements of a Green Street:



Exhibit 2-2 Green Streets connect to proposed parks. See Map - Illustrative of the proposed East Village Green (A)



Exhibit 2-3 Green Streets connect to Neighborhood Centers



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Exhibit 2-4 Designated Green Streets per the Downtown Community Plan

### DOWNTOWN'S SUSTAINABILITY PLAN

2



Exhibit 2-5 Base Plan Elements of a Green Street:



Reduced auto lanes with expanded sidewalk widths



Sidewalk builb-outs at intersections



Bulb-outs with planting



Bicycle parking

# 2.2 The Green Street "Base Plan"

Centre City Green defines a Green Streets "Base Plan" for all designated Green Streets in the DCP and a framework for future CCDC capital improvements. The Base Plan Elements include a reconfiguration of the typical 80 foot right-of-way that involves the reduction of one lane of vehicular traffic (from three to two lanes) of a typical street right-of-way.

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# 2.3 Design Elements of Green Streets

A comprehensive Green Street design addresses buildings' street interfaces as well as infrastructure, landscaping, and sidewalk furnishings. The following images provide a visual guide to the types of features that can be implemented as parts and pieces of a Green Street. Viewed individually, the relative impact of each measure is limited; in fact many of the features are already present on some streets in downtown. However, a Green Street represents an integrated design strategy that links each of the individual features to create a unique urban environment that currently does not exist in downtown San Diego.

### **Building Features**

The juncture between buildings and the street edge can promote a walkable and inviting urban environment. When properly designed, overhangs can be used to provide shade for sidewalk enterprises and open space can create time-unique gathering spaces for lunchtime, outdoor meetings or impromptu encounters.

### Landscape Features

Landscape provides a softening of the streetscape that can enhance the pedestrian environment by providing shade and habitat for song birds. Native landscaping also does not require a large irrigation demand. Non-native accent plantings can be watered with graywater generated by neighboring buildings.

### **Infrastructure Features**

Often overlooked, infrastructural elements that are required in any urban environment can play a vital role in a Green Street program. Utility vaults, building indentions for fire access, and bike parking should be located out of the pedestrian way but maintain access for servicing. Exterior lighting should be energy efficient and hardscape materials should be locally sourced to represent the San Diego region while providing easy removal for access to underground utility lines.

## **Green Streets Pilot Project and Program**



Exhibit 2-6 Base Plan

### Green Streets – ROW Option 1

This option removes one outside lane of traffic in favor of additional sidewalk, thereby creating an asymmetrical street section:

- Two-way, two-lane street
- Replaces one of the existing curbs to accommodate the reduction of three to two lanes of traffic
- Parallel parking on both sides
- Striped bicycle lanes on both sides of the street
- Existing sidewalk improved to add long bulb-outs at intersections and introduce second row of trees



### Green Street – ROW Option 2

This option also removes one bicycle lane, further accentuating the asymetrical street:

- One-way, two-lane street
- Replaces one of the exisitng curbs
- Parallel parking on both sides
- Replaced sidewalk to accomodate double row of trees on either side of clear pedestrian zone for a promenadelike pedestrian experience
- Existing sidewalk improved to add long bulb-outs at intersections and introduce second row of trees

### DOWNTOWN'S SUSTAINABILITY PLAN







1. Building overhangs or awnings to shade the adjacent sidewalk

### **Sidewalk Features**

Sidewalks are perhaps the greatest asset to an urban environment. When designed properly, they provide economic opportunities, encourage walking over single occupant vehicles, and generate activity to ward off vagrancy. Green Streets should have sidewalks that are shaded and that connect major amenities and destinations within downtown. Cross walks should be wide and pronounce to motorists that they need to slow down and pay attention. Sidewalk improvements can significantly increase the development pressures resulting in greater density and increased activity at local businesses.



2. Plazas or other pockets of public open space to encourage street-side activity



3. Transit access and street trees to shade the adjacent sidewalk

Exhibit 2-7 Elements of Green Streets



4. Native plantings adjacent to buildings can create habitat for song birds



5. Curbside infiltration areas to divert stormwater runoff from sewers

### 2.4 Pilot Project Concepts

Centre City Green defines concepts for Green Street Pilot Projects ("Pilots") as enhancement overlays to the green street "Base Plan" that can be used to evaluate methods of sustainability in the areas of energy, water and materials. As new materials, finishes and technologies used in the Pilots demonstrate more efficient standards and practices, they can be incorporated into the City's current streetscape design manuals and/or practices. The priority of such Pilots is on the embodied impacts of construction and materials, with a focus on lowering the operational footprint of infrastructure projects, including an emphasis on lowering the embodied footprint of its construction. This can include reducing the total amount of material, using more recycled material, making use of existing slavaged material as part of new construction (such as with demolition debris, or full-depth reclamation), using materials with lower footprint (water or CO2 for instance) regardless of source, and using materials with less transport distance.

The Pilots will focus on what drives the reduction of environmental footprint and are intended as a multi-faceted approach that addresses multiple Sustainability Indicators, such as energy, water, and regional materials, leveraging multiple funding sources and are aniticipated to generate partnerships among public and private entities. Some of the areas of development may include:

<u>Stormwater Management System:</u> reduces runoff to storm sewers by nearly 20 percent as a result of the increase in infiltration area. In addition, the combination of increased landscaping and shaded paving would reduce peak outdoor temperatures by up to 3°C, leading to an estimated twenty percent reduction in air conditioning energy use and a 5 - 10 percent decrease in peak electricity load.



6. Porous Pavement





7. Sidewalk enterprise to promote economic activity at street-level



8. Sidewalk seating



9. On-street bicycle corrals to support local businesses with bicycle patrons



10. Street-side recycling bins to reduce waste sent to landfills

# <u>Bicycle Enhancements:</u> promotes public health and offers transit alternatives to the single occupant vehicle, therefore reducing carbon emissions.

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<u>Energy Efficient Street Lights:</u> results in about 50 – 70 percent energy savings with light emitting diode (LED) technologies that have a life span three to five times longer than conventional high pressure sodium lamps. These savings result in the reduction of carbon dioxide emissions from 450 million kg to 300 million kg per 100,000 hours. In addition, new light poles and covers can minimize light pollution by prioritizing light to areas where it is needed.

<u>Sidewalk Finishes:</u> alternatives to energy intensive Portland cement should be evaluated, especially materials that have a high recycled content, low VOC and are locally sourced. The sidewalk area will also be expanded to allow for wider pedestrian areas with more parklike elements and landscaped areas, employing drought resistant landscaping where possible.

<u>Roadway Improvements:</u> In conjunction with the City of San Diego material alternatives to asphalt with lower carbon content and heat island effect should be investigated. Material could include rubberized asphalt, recycled asphalt pavement, full-depth reclamation, cold-in-place recycling, warm mix asphalt, recycled concrete aggregate, pervious concrete, and porous asphalt.



Exhibit 2-9 Typical Street Block

### 2.5 Existing Downtown Streetscape

The majority of downtown streetscapes are designed to facilitate traffic flow – vehicle traffic on the street and pedestrian traffic on the sidewalk. As a result, much of downtown's outdoor space has the character of a corridor - a place to pass through - rather than that of a destination or a place to linger. While transportation is an essential function, the typical utilitarian streetscape prioritizes traffic to the exclusion of other potential uses and functions of this public sphere. Additionally, many existing downtown sidewalks lack provisions for pedestrian comfort, such as shading, and offer no accommodations for persons using alternate forms of transportation, such as bicyclists. Common features of existing streetscapes are listed in the inset.

Centre City Green's Green Street features are intended to reshape the conventional streetscape into a vibrant and sustainable community space. However, the approach is flexible; the green features can be layered and combined in a variety of ways to achieve this transformation. On the following pages, two distinct Green Street configurations are presented. Both options incorporate features of conventional streetscapes, improve upon other typical attributes, and add entirely new green elements to produce dissimilar environments with similar benefits and similar Sustainability Indicator impacts.

#### Typical Features of Existing Streetscapes

- Three drving lanes, one-way
- Wide intersections at crosswalks
- Parallel parking
- Sidewalk utility boxes
- Low-density street trees
- Little to no landscaping
- · Little to no open space
- No bike lanes and limited bike parking
- Inefficient high pressure sodium lighting

DOWNTOWN'S SUSTAINABILITY PLAN

# Centre City green



Exhibit 2-10 Pilot Project 'A'

### **Plan A Green Features**

- Narrower intersections / crosswalks
- Increased density of street trees
- Increased shading of sidewalk
- LED or induction lighting
- Bicycle parking
- Dedicated bicycle lanes
- Underground utilities with Porous paving
- Many small curbside landscaped areas with native vegetation
- Green patios with public art

# 2.6 Pilot Project: Plan A

Green Street Example Plan A includes parallel parking and small, distributed centers of sidewalk activity as is common to typical streetscape design. However, Plan A is distinguished by dedicated bicycle lanes, dense street trees and many small pockets of landscaping. Plan A also incorporates narrowed streets and crosswalks, underground utilities, porous paving, and a variety of other features listed in the inset (right).

Compared to the typical streetscape design, the Plan A Green Street design demonstrates significant gains across a variety of CCDC Sustainability Indicators. Plan A offers the following benefits:

Energy/Emissions	43% street light energy savings 40% increase in surface area of materials that mitigate urban heat island impact 30% increase in carbon capture by street trees
Water	14% reduction in stormwater runoff
Materials	100% of materials include recycled content or locally manufactured
Economic Vitality	Two-fold increase in sidewalk café/activity area
Streetscape Vitality	900 sq ft public open space Ten-fold increase in landscaped area
Healthy Spaces	33% reduction in crosswalk distance
Urban Mobility	16% increase in sidewalk area

### SUSTAINABILITY INDICATOR IMPACTS

**Green Streets Pilot Project and Program** 



Exhibit 2-11 Pilot Project 'B'

## 2.6 Pilot Project: Plan B

Like conventional downtown streetscapes, Green Street Example Plan B incorporates low-density street trees and provides minimal sidewalk shade. The defining characteristics of this plan include angled parking, large, concentrated activity areas and a few large pockets of landscaping. Plan B is substantially different from Plan A in these aspects, as well as in how bicycle traffic is accommodated – in sharrows, rather than dedicated, lanes.

Despite the differences from Plan A, the Sustainability Indicator impacts of Plan B are quite similar. Plan B offers the following benefits:

#### **Plan B Green Features**

- Angled back-in parking
- Narrower intersections / crosswalks
- Underground utilities
- LED or induction lighting
- A few large sidewalk activity areas
- Bicycle parking
- Bicycle sharrow lanes
- A few large curbside landscaped areas
- Porous paving
- Inner-City Transit Enhanced Stop
- Green patios with public art

Energy/Emissions	43% street light energy savings 75% increase in surface area of materials that mitigate urban heat island impact
Water	16% reduction in stormwater runoff
Materials	100% of materials include recycled content or locally manufactured
Economic Vitality	Threefold increase in sidewalk café/activity area
Streetscape Vitality	900 sq ft public open space Twelve-fold increase in landscaped area
Healthy Spaces	47% reduction in crosswalk distance Increased cyclist visibility and safer vehicle loading/unloading due to back-in parking
Urban Mobility	47% increase in sidewalk area. Enhanced Transit Access

### SUSTAINABILITY INDICATOR IMPACTS

### DOWNTOWN'S SUSTAINABILITY PLAN







"San Diego Today and Tomorrow" Artwork provided by Monarch School, San Diego

# 2.7 Streetscape Manual Update

The Centre City Streetscape Manual provides designers with development guidelines to make the streets consistent from one project to the next. As part of the entitlement process, new developments are reviewed to make sure that they comply with the intent of the guidelines. Currently, the streetscape manual does not include any additional requirements for properties that are located on a Green Street as identified in the DCP.

To improve the effectiveness of the Streetscape manual and to align it with the Centre City Green Sustainability Indicators, it is proposed that projects located on a Green Street identified in the DCP would be required to implement green elements. Based on the TDM requirements found in the PDO, a system of options and points for various green measures are provided in the chart below. To meet the requirements of the program, owners would be given the option to select any measures that achieve a minimum of 20 points. Additional incentives may be offered for projects that elect to increase points well above 20, thereby adding significant value to Sustainability Indicators and the urban experience.

Exhibit 2-12 Streetscape Manual Update - Green Street Elements

Green Street Elements										
Minimum points for entitlement benefit = 20 At designated Green Streets only Measure			Energy	Water	Materials	Streetscape	Economic	Healthy Space	Mobility	Green IQ
Building	Open space greater than 250 SF or 5% of lot, whichever is larger	15				x				
	Incorporate transit shelters into development	20				x			x	
Infra- structure	An additional 10 feet of sidewalk area provided on private property	20				х				
	Efficient Exterior Lighting (LED or Induction)	10	х							
	100% of materials locally manufactured or include at least 10% recycled content	5			x					
Landscaping	Street trees that will shade 50% of sidewalk area within 5 years	15				x				
	Landscaped stormwater management systems at the curb edge containing local plantings	15		x	x	x				
	Native landscaping at additional ROW landscaped area	5		х				х		
Furnishings	Sidewalk enterprises, such as exterior sales kiosks, cafes, and retail sales	10				х	х			
	Benches and or movable seating maintained by the building owner	10				х	х			
	Street recycling that will be managed by the building owner	5			х					
	On-street bicycle corrals	10							х	
	Public art that is located at the focal point of the development	5			х			х		
	Sustainability educational display that is accessible to the public	1								x



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Centre City Development Corporation



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