

Albany Climate Action Plan - Cost Analysis 4/29/09

Transportation and Land Use Strategy

Objective TL-1: Facilitate walking and biking in the community

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
TL-1.1	Create complete streets throughout the City	See below	See below	See below	See below	See below	See below	See below	See below	N
A	Improve/expand bicycle/pedestrian infrastructure network	Alta Planning, City of Portland, City of Albany	\$14,000,000	\$70,000,000	\$42,000,000	\$4,200,000	22.8%		High	N
B	Incorporate bicycle-friendly intersections into street design	City of Portland Bureau of Transportation	\$128,000	\$139,000	\$133,500	\$16,688	0.1%		Low	N
TL-1.2	Conduct pedestrian obstacle study that analyzes the condition of the pedestrian infrastructure and identifies potential barriers.	Nelson Nygaard	\$45,000	\$55,000	\$50,000	\$6,250		0.2%	Low	N
TL-1.3	Strictly enforce pedestrian rights laws on City streets					\$11,111		0.4%	Low	N
TL-1.4	Install bicycle racks in commercial and civic areas of City where racks do not currently exist.	Alta Planning, Creative Pipe, SFMTA	\$20,000	\$20,000	\$20,000	\$2,000	0.0%		Low	N
A	Require all new commercial and public buildings (and major renovations when feasible) to provide adequate bicycle parking near entrances and require buildings with more than 50 employees to provide end-of-trip facilities for bicycle commuters (e.g. showers, lockers, and secure covered bicycle parking)					\$11,111		0.4%	Low	Y
TL-1.5	Encourage additional neighborhood serving commercial uses and mixed use development within City's existing commercial districts. Strive to provide access to daily goods and services within 1/4 mile of residences through small business incentivization programs, land use/zoning/code changes, etc.	EDAW	\$800,000	\$800,000	\$266,667	\$33,333		1.2%	Med	N

Objective TL-2: Make public transit more accessible and user-friendly

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
TL-2.1	Conduct public transit gap study that analyzes strategies for increasing transit usage within the City and identifies funding sources for transit improvements	Nelson Nygaard	\$45,000	\$55,000	\$50,000	\$6,250		0.2%	Low	N
TL-2.2	Partner with BART and AC Transit to provide shuttles between BART stations, residential neighborhoods and commercial centers	City of Emeryville				\$1,000,000 - \$2,000,000		73%	High	N
TL-2.3	Provide passes and shuttles to transit to encourage use of alternative transportation by City employees	City of Berkeley			\$9,000 per year	\$9,000		0.3%	Low	N
TL-2.4	Work with AC transit to provide transit stops with safe and convenient bicycle and pedestrian access and essential improvements such as shelters, route information, benches and lighting.	Cost estimate based on City of Bishop 2008 Capital Improvement Plan	\$150,000	\$150,000	\$150,000	\$18,750		0.7%	Low	N
TL-2.5	Work with AC transit to extend Bus Line 18 to commercial retail on Eastshore Highway.					\$11,111		0.4%	Low	N

Objective TL-3: Promote transit oriented development

Measure		Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
TL-3.1	Update specific plans, design guidelines, zoning regulations, development standards to promote high-quality, mixed-use, pedestrian- and transit-oriented development in the neighborhood commercial districts along San Pablo Avenue and Solano Avenue.	EDAW	\$30,000	\$30,000	\$30,000	\$3,750		0.1%	Low	N
TL-3.2	Provide incentives for projects that promote mixed use, higher density development in neighborhood commercial districts along San Pablo Avenue and Solano Avenue transit corridors.					\$11,111		0.4%	Low	N
A	Reduced developer fees or processing fees	EDAW Seattle Green Building Policy Analysis	\$200,000	\$200,000	\$200,000	\$25,000		0.9%	Low	N
B	Fast-tracking	EDAW Seattle Green Building Policy Analysis	\$50,000	\$100,000	\$75,000	\$9,375		0.3%	Low	N
C	Local Infrastructure loans	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$140,000	\$1,000,000	\$570,000	\$80,625		2.9%	Med	N
TL-3.3	Evaluate GHG emissions associated with development proposals and work with applicants to reduce emissions during project review					\$11,111		0.4%	Low	N
A	Prescriptive Approach - strategy based on compliance with standard; GHG emissions are estimated based on typical building performance (GHG/sf) for specified design strategies	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$145,000	\$350,000	\$247,500	\$30,938		1.1%	Med	Y
B	Performance Based Approach	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$225,000	\$500,000	\$362,500	\$45,313		1.7%	Med	Y
C	Develop GHG Reduction Development Impact Fee based on a clear nexus of new development's negative contribution to increases in GHG. Performance based development impact fee.	EDAW	\$70,000	\$100,000	\$85,000	\$8,000		NA	Low	N - Possible costs to local developers

TL-3.4	Provide public education about benefits of well-designed, higher-density housing and relationship between land use and transportation.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N
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Objective TL-4: Reduce vehicle emissions and trips

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
TL-4.1	Work with ABAG and neighboring cities to create jobs-housing balance within existing transit corridors					\$11,111		0.4%	Low	N
TL-4.2	Improve the fuel efficiency of City fleet by purchasing low or zero emission vehicles when vehicles are retired from service.	City of Albany			\$728,000	\$72,800	0.4%		Low	N
TL-4.3	Develop electric plug-in auto charging station infrastructure					\$11,111		0.4%	Low	N
TL-4.4	Create and implement a transportation demand management program that reduces weekday peak period trips by at least 20% (applies to commute trips only)	Nelson Nygaard	\$25,000	\$75,000	\$50,000	\$6,250		0.2%	Low	N
TL-4.5	Facilitate ride-share programs					\$11,111		0.4%	Low	N
TL-4.6	Work with the school district to improve/expand school bus services and safe routes to school program					\$11,111		0.4%	Low	N
TL-4.7	Work with existing companies to expand car-share opportunities in the community					\$11,111		0.4%	Low	N
TL-4.8	Provide public education regarding reducing motor vehicle-related greenhouse gas emissions.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N

Objective TL-5: Create disincentives for use of single-occupancy private automobiles

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
TL-5.1	Create commercial district parking fee.							0.0%	Low	N
TL-5.2	Provide preferential street parking spaces for electric and plug-in electric hybrid vehicles							0.0%	Low	N
TL-5.3	Encourage a regional Bay Area cordon fee system for daily use of vehicles.					\$11,111		0.4%	Low	Possible congestion fee cost for commuters

Buildings and Energy Strategy - Minimize energy consumption, create high performance buildings, and transition to clean renewable energy sources

Objective BE-1: Lead by example with zero-emission City buildings by 2015

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
BE-1.1	Install cost-effective renewable energy systems on all city buildings and purchase remaining electricity from renewable sources	SolarCity	No Cost (Leasing)	No Cost (Leasing)	No Cost (Leasing)	No Cost (Leasing)		0.0%	Low	N
BE-1.2	Require all public buildings to install building performance data (energy + water) displays	Lucid Design Group	\$61,000	\$81,000	\$71,000	\$7,100		0.3%	Low	N

Objective BE-2: Retrofit existing residential buildings

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
BE-2.1	Develop and implement point-of-sale residential energy and water efficiency upgrade requirements.					\$11,111		0.4%	Low	Possible increased capital costs that could be off set by increased property value as an energy efficient home.

BE-2.2	Identify and develop financial incentives and low-cost financing products and programs to encourage investment in energy efficiency and renewable energy for existing residential buildings.	See below	See below	See below	See below	See below	See below	See below	See below		
A	On-bill Financing	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis					\$11,111		0.4%	Low	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
B	Low Interest Loans	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$140,000	\$1,150,000	\$645,000		\$80,625		2.9%	Med	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
C	Energy Efficiency Mortgages	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$20,000	\$150,000	\$85,000		\$10,625		0.4%	Low	N
D	Revolving Loan from Bond Sale	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$60,000	\$150,000	\$105,000		\$13,125		0.5%	Low	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
E	Energy Efficient Local Improvement District	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$150,000	\$500,000	\$325,000		\$40,625		1.5%	Med	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
BE-2.3	Identify and implement opportunities to improve efficiency improvements in rental units	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)		\$2,679		0.1%	Low	Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient home.
BE-2.4	Educate residents about the availability of free home energy audit programs and encourage implementation of audit findings.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)		\$2,679		0.1%	Low	N
BE-2.5	Partner with PG&E to provide public education campaign that encourages residential energy efficiency improvements						\$11,111		0.4%	Low	N

Objective BE-3: Retrofit existing commercial buildings

Measure		Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
BE-3.1	Develop and implement point-of-sale commercial energy efficiency upgrade requirements.					\$11,111		0.4%	Low	Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient building.
BE-3.2	Identify and develop financial incentives and low-cost financing products and programs to encourage investment in energy efficiency and renewable energy for existing commercial buildings.	See below	See below	See below	See below	See below	See below	See below	See below	
A	On-bill financing	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis				\$11,111		0.4%	Low	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
B	Low Interest Loans	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$140,000	\$1,150,000	\$645,000	\$80,625		2.9%	Med	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
C	Revolving Loan from Bond Sale	Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis	\$60,000	\$150,000	\$105,000	\$13,125		0.5%	Low	Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed.
BE-3.3	Incentivize businesses to participate in free building energy audit programs and encourage implementation of audit findings.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N
BE-3.4	Partner with PG&E to provide a business education program that encourages commercial energy efficiency improvements	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N

Objective BE-4: Require Energy Performance in New Construction

Measure		Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
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BE-4.1	Ensure new construction complies with Green California Green Building Code Standards and Albany Green Building Ordinance.	EDAW Seattle Green Building Policy Analysis				\$11,111		0.4%	Low	Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient building.
BE-4.2	Require roofing and street, parking lot, and sidewalk paving to use materials with an albedo of 0.3 (30 percent) or greater					\$11,111		0.4%	Low	Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient building.
BE-4.3	Provide incentives, such as priority permitting for buildings that exceed the City's minimum green building requirements	EDAW Seattle Green Building Policy Analysis						0.0%	Low	N
BE-4.4	Require solar orientation, daylighting and natural ventilation in new construction when feasible					\$11,111		0.4%	Low	N
BE-4.5	Require that all new multi-tenant buildings be sub-metered to allow each tenant the ability to monitor their own energy and water consumption					\$11,111		0.4%	Low	Possible marginal increased costs to tenants. Possible marginal increase in revenue from savings to property owner.

Objective BE-5: Maximize use of renewable energy

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
BE-5.1	Develop comprehensive renewable energy financing and informational program for residential and commercial uses					\$11,111		0.4%	Low	N
BE-5.2	Identify and facilitate solar energy empowerment districts in commercial, industrial, mixed-use portions of City					\$11,111		0.4%	Low	Possible increase in energy costs assuming higher costs for more renewable energy versus cheaper fossil fuel alternatives.
BE-5.3	Join Bay Area efforts to ensure green public transit energy sourcing					\$11,111		0.4%	Low	N

Objective BE-6: Community energy management

	Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
BE-6.1	Evaluate potential of district heating and cooling infrastructure within the City and create implementation plan for cost-effective systems	EDAW	\$40,000	\$100,000	\$70,000	\$8,750		0.3%	Low	N
BE-6.2	Partner with other neighboring Cities and PG&E to fast-track "Smart Grid" integration in City.					\$11,111		0.4%	Low	N

A	Require use of smart meters and smart appliances in new commercial and residential construction and major renovations when technology becomes available					\$11,111		0.4%	Low	N
BE-6.3	Work with County to convert all street lights to LED bulbs or LED-Solar systems	Report by Energy Solutions (Dec. 2008). "LED Street Lighting. Host Site: San Francisco, California." http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/gateway_sf-streetlighting.pdf	Assume cost is to County	Assume cost is to County	Assume cost is to County	Assume cost is to County		0.0%	Low	N
BE-6.4	Encourage utility providers (PG&E and EBMUD) to provide comparative energy and water conservation metrics on utility bills					\$11,111		0.4%	Low	N
BE-6.5	Join the Community Choice Aggregation efforts of Berkeley, Oakland, and Emeryville					\$11,111		0.4%	Low	Possible increase in energy costs assuming higher costs for more renewable energy versus cheaper fossil fuel alternatives.

Waste and Water Strategy - Minimize waste and celebrate water as a essential community resource

Objective WW-1: Become a zero waste community

Measure		Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
WW-1.1	Establish 90% waste reduction target for 2030 and work with Alameda County, neighboring cities, Ecology Center and other organizations to leverage zero waste effort and provide public education regarding zero waste strategies					\$11,111		0.4%	Low	N
WW-1.2	Implement paperless office policies in all feasible City operations					\$11,111		0.4%	Low	N
WW-1.3	Partner with the City of Berkeley on the creation of a food industries grease- to-biodiesel recycling program					\$11,111		0.4%	Low	N

Objective WW-2: Conserve water resources

Measure		Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
WW-2.1	Encourage residential and commercial users to participate in EBMUD free water audit program and provide incentives for implementation of appropriate water conservation improvements	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N
WW-2.2	Require residential remodels and renovations to improve plumbing fixture and fixture-fitting water efficiency by 20% above the California Building Standards Code water efficiency standards.					\$11,111		0.4%	Low	Possible increased capital costs that could be off set by long-term water bill savings and increased property value as an water efficient building.
WW-2.3	Encourage use of greywater and rainwater collection in residential and commercial uses.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	Possible increase in initial capital costs for on-site recycled water piping. Possibly offset by water bill savings.
WW-2.4	Require use of greywater and rainwater collection systems in new construction.					\$11,111		0.4%	Low	Possible increase in initial capital costs for on-site recycled water piping. Possibly offset by water bill savings.

WW-2.5	Develop a climate station and web-based irrigation control service for both City and private use	City of Mountain View				\$11,111		0.4%	Low	N
WW-2.6	Partner with EBMUD and Stopwaste.org to provide water conservation outreach programs.	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N

Green Infrastructure Strategy - Conserve, create, and enhance natural assets that improve community quality of life.

Objective GI-1: Expand and enhance urban forestry

Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
GI-1.1	Enhance street tree program to reduce building energy consumption and provide carbon sequestration.	City of Albany		\$200,000	\$20,000.00		0.7%	Low	N

Objective GI-2: Increase and enhance urban green space, including urban farm area

Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
GI-2.1	Expand community garden program to increase local food security and provide local recreation amenity	Urban Harvest	\$2,600	\$20,000	\$11,300	\$1,413	0.1%	Low	N
GI-2.2	Ensure that well-designed green space is provided within 1/4 mile of higher density transit-oriented development				\$11,111		0.4%	Low	N

Sea Level Rise Strategy - Adapt to the reality of sea level rise

Objective SLR-1: Protect community from sea level rise

Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
SLR-1.1	Work with BCDC and other agencies to create Sea Level Rise Risk Assessment and Strategic Plan that would: a) identify areas at risk of sea level rise and significant structural, environmental, aesthetic, social, cultural and historic resources that must be protected from inundation; b) identify areas that are inappropriate for protection from inundation; c) identify areas that are most suitable for ecological restoration; d) identify strategies that will make future projects more resilient to sea level rise	EDAW		\$250,000	\$31,250		1.1%	Med	N
SLR-1.2	Develop community education and outreach program regarding sea level rise	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679	0.1%	Low	N

Objective SLR-2: Facilitate ecosystem adaptation to sea level rise

Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
SLR-2.1	Develop shoreline open space management plan for areas subject to sea level rise inundation (including the Bulb and other shoreline areas) in order to facilitate ecosystem protection and recreational goals of the community, region, and state.	EDAW	\$300,000	\$1,000,000	\$650,000	\$81,250	3.0%	Med	N

Economic Development Strategy - Create community prosperity by embracing the opportunities within today's challenges

Objective ED-1: Develop awareness of climate change in within the business community

Measure	Data Source	Low Cost	High Cost	Average Cost	Avg Annual Cost (assume 2012 start date for most activities)	Percent of CIP 2008/09	Percent of Comm Dev 2008/09 Operating Budget Expenditures	Simplified Cost (If less than 1% = low, 1% - 5% = med, greater than 5% = high)	Direct Costs to Local Residents and Businesses
ED-1.1	Increase commercial development opportunities within City to improve jobs-housing balance	EDAW	\$800,000	\$800,000	\$266,667	\$33,333	1.2%	Med	N

ED-1.2	Establish workshops to educate businesses about effects of climate change and climate change policies on their business	EDAW	\$300,000	\$300,000	\$300,000 (for 14 strategies)	\$2,679		0.1%	Low	N
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Cost Notes
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<p>Huge variations in cost depending on project needs. Alta Planning cost estimates: Bike Path - \$500K - \$3M per mile (high end indicates grade-separated crossings every 1-2 miles); Bike Lanes - \$25-\$50K per mile (could be more if it requires road widening and ROW acquisition); Bike Routes - \$5K-\$50K per mile (depends on level of treatment - route signage only would be low end, signage + shoulder striping, pavement markings, signal actuation would be higher end). Portland's Cully Blvd (separated cycle track a la Copenhagen + street re-design) cost \$5.4M for 0.6 miles. Estimated cost to expand bike network across entire City: \$14M - \$70M</p>
<p>Assume program similar to Portland's "bike boxes". \$8,000 - \$9,000 per box for basic striping and signage. Staff time for all locations = \$40,000 (cost does not include planning time). Portland also spent \$60,000 on a education program that included billboards, bus. Assume City will install bike boxes at 11 intersections. \$88,000 - \$99,000 + Staff time for all 11 locations (\$40,000) = \$128,000 - \$139,000 (cost does not include planning time).</p> <p>Estimates from Nelson Nygaard. It is assumed this study will require some data collection. \$45,000 - \$55,000</p>
<p>Enforcement cost: Implementation costs to the City are largely dependent on the capacity of the Police to enforce existing laws with current staff. Additional training would need to take place to ensure officers fully understand the pedestrian rights laws. Additional hours may also be required in order to conduct enforcement operations. Initial Costs: Cost of training officers about pedestrian rights laws. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing officers.</p> <p>\$200 per 2-bike rack (\$150 per rack + \$50 for installation). Assume 100 new racks.</p>
<p>Amend City of Albany Green Building Standards of Compliance to mandate LEED 2.2 - New Construction Credit SS 4.2: Alternative Transportation: Bike Storage & Changing Rooms for commercial construction. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and oversight cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p> <p>Assumed to be part of the General Plan Update. EDAW estimate of consultant fee for GP update: \$800,000</p>

Cost Notes
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<p>Estimates from Nelson Nygaard. It is assumed this study will require some data collection. \$45,000 - \$55,000</p>
<p>Assumes shuttles would be leased with cost varying by the coverage and frequency of the shuttle system. Emery Go Round shuttle program costs \$2 Million Per Year paid by a business improvement district.</p> <p>City is too small to qualify for the AC Transit EasyPass Program. Assume City will be able to partner with the City of Berkeley to obtain passes for employees. The City of Berkeley pays \$91,837 to provide passes to the 1,374 eligible employees (\$67/employee). City of Albany has 130 employees. ~\$9,000 for passes per year + staff time to coordinate with Berkeley and setup program.</p> <p>Assumed that City will provide bus shelters, benches and existing street lights will provide lighting. AC Transit will pay for maintenance. Cost estimate based on City of Bishop 2008 Capital Improvement Plan. Estimated that 5 stops need enhancement + 5 new stops = 10 stops total. \$4,000 - \$6,000 for shelter. \$15,000 per transit stop = \$150,000</p> <p>Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p>

Cost Notes
EDAW estimate (consultant fee: \$30,000)
<p>Amend City of Albany Green Building Standards of Compliance to mandate LEED 2.2 - New Construction Credit SS 2: Development Density and Community Connectivity for commercial construction; Amend City of Albany Green Building Standards of Compliance to mandate 15-20 out of a possible 26 points in credits A1, A2, and A4 in the Multifamily GreenPoint Checklist for multifamily residential. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and oversight cost: low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p>
<p>Fee rebate equates to ___% of total fee (or of development impact fee); reduced revenues for Building Department, with budgetary implications. Initial Costs: Policy and Program Development: \$200,000; Annual Costs: Additional administration dependent on existing staff availability; reduced developer fees would reduce the permit revenue</p>
<p>Existing staff time; potential redundancy with priority permitting program (though incentive is tied to different development goal). Initial Costs: Policy and Program Development: \$50,000-\$100,000; Annual Costs: Additional administration dependent on existing staff availability.</p>
<p>The City, utilities, or private lenders could offer loans to property owners for pre-approved energy efficiency upgrades. Low interest rates could be guaranteed through volume or by utility buy-down. The goal is to provide capital for energy efficiency upgrades at a discounted rate (something in the range of 50 to 100 basis points lower than market rate). Initial Costs: Policy assessment: \$20,000 - \$50,000. The City would need to assess strategies for maximizing the effectiveness of a low interest loan program, educating a contractor/auditor network and addressing the split incentives between investors and energy end-users (e.g., between a landlord and tenant). Development of billing and collection process: \$20,000 - \$100,000. If the City manages the loan program in-house and intends to affix the loan to the property, then a repayment system would have to be arranged. City investment: \$100,000-\$1,000,000. This investment is wholly dependent on how much the City intends to subsidize interest rates.</p>
<p>Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p>
<p>Prescriptive approach: Commercial: LEED NC 2.2 EA Credit 1: Optimize Energy Performance Prescriptive Compliance Option, Residential - ENERGY STAR for Homes (Home Performance tool) or Earth Advantage Energy Performance Certificate. Initial Costs: Assessment of required upgrades: \$75,000 - \$150,000. Although sample checklists from other jurisdictions are available, assessing and establishing what upgrades are needed in each sector to meet city-wide energy efficiency goals, while also assessing the cost-effectiveness of those measures, is likely to be a significant task.</p> <p>-Development of a database: \$20,000-\$100,000. A database would be needed to track what properties are in compliance with the mandate. Alternatively, existing databases could potentially be leveraged for cost savings.</p> <p>-Legislative Development: \$50,000 - \$100,000. City staff and legal council would need to develop the policy specifics and legislation. Much of this work could be done within existing staffing levels, meaning few to moderate new resources would be needed.</p>
<p>Performance based approach: energy modeling ordinance (possibly tied to LEED NC 2.2 EA Credit 1: Optimize Energy Performance + EA Credit 5: Measurement and Verification) or equivalent for LEED Homes. Possible synergy with expedited permitting/fast tracking policy strategies. Initial Costs: Assessment of existing rating systems: \$75,000 - \$200,000. Experience to date has indicated that existing rating systems must be vetted in the marketplace before making them mandatory. In addition to selecting a rating system, the City would need to assess and select appropriate performance requirements.</p> <p>-Development of database: \$100,000 - \$200,000. A database could be developed to house and provide ability for property owners or City program managers to access the ratings. Alternatively, existing databases (such as the Multiple Listing Service or EPA's Portfolio Manager) could potentially be leveraged for residential and commercial ratings, respectively.</p> <p>-Legislative Development: \$50,000 - \$100,000. City staff and legal council would need to develop the policy specifics and legislation. Much of this work could be done within e</p>
<p>Cost would be to develop the nexus study to determine the relationship between new development and its negative contribution to GHG. The study would require 5-year updates for an accounting of mitigation measures paid through the impact fee.</p>

We are assuming many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies

Cost Notes

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Estimated cost per hybrid vehicle: \$26,000. City has 28 vehicles

If City partners with Better Place or Coulomb Technology, this infrastructure could have no additional cost to the City. Some cities (SF, Oakland, San Jose) are offering incentives to promote electric vehicles, such as expedited permitting and installation of electric vehicle charging outlets. Cost assumes private company will install infrastructure. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Nelson Nygaard estimated full-fledged TDM study tailored to local conditions (including some data collection as needed): \$75,000. Basic/generic "off-the-shelf" TDM: \$25,000

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

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Assume many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies

Cost Notes

Assume this would be self-financing in the long-term. There would be an upfront cost to create program and an on-going cost to implement program, but fee could be structured to pay the City's program cost and potentially make the City money.

Low cost. Loss of revenue associated with reduced parking fees

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Cost Notes

Assume City will participate in PPA with solar company (lease panels). No cost to City.

Dashboard starter (electricity only): \$10,000 - \$30,000 + \$950 for each additional resource (assume city will monitor electricity and water). Annual service fee + data hosting: \$3,000 per year. Free for first year. City has 5 main public buildings. Touch screen available + installation: \$9,950 (32 inch flat screen + preconfigured). Grand Total: \$61,000 - \$81,000

Cost Notes

Cost of developing ordinance; ENERGY STAR for Homes, BOMA Energy Performance Contract. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

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<p>City could coordinate with PG&E to facilitate the repayment of loans for efficiency upgrades on utility bills. Upgrades would be selected by the building owner (in coordination with the City) such that the efficiency savings would pay for the investment over a fixed period of time. Customers would “share” monthly energy efficiency savings with the utility until the loan is paid back, at which point all savings would be reflected in lower monthly bills.</p> <p>The goal is to simplify loan repayment and (in combination with a funding source) reduce upfront cash outlay by property owners. In addition, some models of on-bill financing would allow for the loan to remain with the property (even if sold by the current owner), thereby sharing the cost of upgrades over time with future beneficiaries of those upgrades. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p>
<p>The City, utilities, or private lenders could offer loans to property owners for pre-approved energy efficiency upgrades. Low interest rates could be guaranteed through volume or by City buy-down. The goal is to provide capital for energy efficiency upgrades at a discounted rate. Initial Costs: Policy assessment: \$20,000 - \$50,000.</p> <p>The City would need to assess strategies for maximizing the effectiveness of a low interest loan program, educating a contractor/auditor network and addressing the split incentives between investors and energy end-users (e.g., between a landlord and tenant). Development of billing and collection process: \$20,000 - \$100,000. If the City manages the loan program in-house and intends to affix the loan to the property, then a repayment system would have to be arranged. Initial or Annual Costs (depending on structure of financing): City investment: \$100,000-\$1,000,000. This investment is wholly dependent on how much the City intends to subsidize interest rates.</p>
<p>Energy Efficiency Mortgages can provide owners additional financing (whether at time-of-sale or upon refinancing) for energy efficiency improvements at discounted interest rates. Energy efficiency upgrades could be chosen that would allow owners to realize a net monthly savings. The goal is to provide capital for energy efficiency upgrades at a discounted interest rate. Initial Costs: Partner development: \$20,000 – \$50,000.</p> <p>Costs to the City would generally be low because these products would be administered through private lenders, but the City would need to devote some financial resources to assisting with partner recruiting. Technology upgrades: \$0 – \$100,000. Depending on the City’s role in administration, there may be costs incurred in development of a database to track and verify energy efficiency upgrades in participating properties.</p>
<p>Energy savings could be financed through a (potentially tax-exempt) municipal bond issue. The City would administer a revolving loan fund with the bond proceeds. The goal is to provide capital for energy efficiency upgrades at the lowest cost of capital possible. Initial Costs: Policy assessment: \$40,000 - \$100,000. Further research would be needed to consider whether the City’s internal funds would be a better (less expensive, more flexible) option than bonds. Technology upgrades: \$20,000 - \$50,000. Depending on the repayment mechanism and administrative system chosen by the City, some costs would be incurred for establishing a tracking system to manage the loan fund that results from the revenue bond issue.</p>
<p>Monitoring and enforcement cost: Implementation costs to the City are largely dependent on the capacity of the City for policy administration and enforcement. Additional staff training would need to take place to ensure officials fully understand the code requirements. Additional staff may also be required in order to meet the increased administration and implementation workload, particularly in the period immediately prior to and following the code’s implementation. While implementation costs are likely to be high, once introduced, ongoing policy development costs to the City are likely to be manageable as updates would be conducted in line with the City’s existing cyclic code review process. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications: ~\$10,000 - possible additional education and outreach related expenses. Annual Costs: Monitoring and enforcement cost: ~\$10,000 + possible additional staff</p>
<p>If advertising PG&E, this could be included in the marketing costs or could be assumed to be staff time to coordinate with major landlords. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies</p>
<p>Assume many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies</p>
<p>Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p>

Cost Notes
Amend City of Albany Green Building Standards of Compliance to require 12% increase in energy efficiency at point-of-sale of commercial buildings. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.
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<p>City could coordinate with PG&E to facilitate the repayment of loans for efficiency upgrades on utility bills. Upgrades would be selected by the building owner (in coordination with the City) such that the efficiency savings would pay for the investment over a fixed period of time. Customers would “share” monthly energy efficiency savings with the utility until the loan is paid back, at which point all savings would be reflected in lower monthly bills. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.</p> <p>The goal is to simplify loan repayment and (in combination with a funding source) reduce upfront cash outlay by property owners. In addition, some models of on-bill financing would allow for the loan to remain with the property (even if sold by the current owner), thereby sharing the cost of upgrades over time with future beneficiaries of those upgrades.</p>
<p>The City, utilities, or private lenders could offer loans to property owners for pre-approved energy efficiency upgrades. Low interest rates could be guaranteed through volume or by utility buy-down. The goal is to provide capital for energy efficiency upgrades at a discounted rate. Initial Costs: Policy assessment: \$20,000 - \$50,000. The City would need to assess strategies for maximizing the effectiveness of a low interest loan program, educating a contractor/auditor network and addressing the split incentives between investors and energy end-users (e.g., between a landlord and tenant). Development of billing and collection process: \$20,000 - \$100,000. If the City manages the loan program in-house and intends to affix the loan to the property, then a repayment system would have to be arranged. Initial or Annual Costs (depending on structure of financing): City investment: \$100,000-\$1,000,000. This investment is wholly dependent on how much the City intends to subsidize interest rates.</p>
<p>Energy savings could be financed through a (potentially tax-exempt) municipal bond issue. The City would administer a revolving loan fund with the bond proceeds. The goal is to provide capital for energy efficiency upgrades at the lowest cost of capital possible. Initial Costs: Policy assessment: \$40,000 - \$100,000. Further research would be needed to consider whether the City’s internal funds would be a better (less expensive, more flexible) option than bonds. Technology upgrades: \$20,000 - \$50,000. Depending on the repayment mechanism and administrative system chosen by the City, some costs would be incurred for establishing a tracking system to manage the loan fund that results from the revenue bond issue.</p>
<p>Assume many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies</p>
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Cost Notes

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Amend City of Albany Green Building Standards of Compliance to mandate LEED 2.2 - New Construction Credit SS 7.1 and 8.2: Heat Island Effect: Non-Roof for commercial construction or equivalent in GreenPoint system for residential construction. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Priority permitting creates an incentive for developers to incorporate green building practices and/or achieve specified energy efficiency objectives by giving greater assistance and facilitation through the permitting process for qualified projects. Assume to be no cost to City if priority permitting only includes expedited permitting.

Amend City of Albany Green Building Standards of Compliance to mandate LEED 2.2 - New Construction Credits EQ 8.1 and 8.2: Daylighting and Views for commercial construction or equivalent in GreenPoint system for residential construction. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Cost Notes

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP. Also assumes most businesses will take advantage of PPAs (lease) and will not purchase solar

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Cost Notes

Consultant Fees. \$40,000 for a examining a particular small district within Albany. Up to \$100,000 for a larger study area.

California Public Utility Commission agreed to allow PG&E to charge ratepayers for an additional \$467 million to bring 10 million gas and electric meters with two-way communications capabilities to its customers by 2011. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Assume County would pay for all of costs, as LED/solar lights should save the County money in the long-term. \$410 - \$825 per light (inc. installation). City has 355 street lights.

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Cost Notes

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Cost Notes

Assume many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies

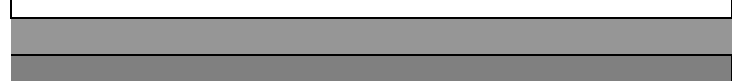
Amend City of Albany Green Building Standards of Compliance to require residential remodels and renovations improve plumbing fixture and fixture-fitting water efficiency by 20% above the California Building Standards Code water efficiency standards. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Assume many marketing/education-related strategies could be addressed concurrently. EDAW community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. \$75,000 per campaign (3-4 strategies per campaign) for strategies-related to marketing. Assume 4 advertising campaigns would take place for the CAP = \$300,000 for all 14 strategies

Amend City of Albany Green Building Standards of Compliance to mandate use of greywater and rainwater collection systems in new residential construction construction. Initial Costs: Cost of Adopting an Ordinance + Training City Staff to administer program/process applications. Possible additional education and outreach related expenses. Annual Costs: Administrative, monitoring, and enforcement cost low to none, depending on availability of existing staff. Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.

Assume State will construct the weather station (CIMIS). Cost to City will be coordination time and outreach/marketing. [If interested in personal irrigation control, there are numerous Self-Adjusting Irrigation Controller systems available. EBMUD offers rebates for self-adjusting irrigation controllers to customers who use more than 250 gallons per day of summer irrigation. The rebates are for \$100, \$250, \$350, and \$500, and depend on past water consumption. WeatherTRAK Smart Irrigation Controller costs between \$500 - \$2500 for hardware + \$50 - \$225 annual fee for subscription service.]

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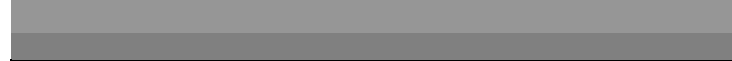
Cost Notes

Urban Forest Dept stated that the City would approach "plant-out" in approx. 10 years with an additional 5,000 trees. Estimated that this would require an additional \$20,000 per year to purchase/plant trees/expand urban forest program.

Cost Notes

Assuming land is dedicated, new garden could be built for \$1,000 - \$4,000 + annual maintenance costs with volunteer labor. Potential additional cost higher depending on on-site facilities (assumed \$20,000)

Assume City will hire one green building/sustainability professional at (\$80K + benefits/overhead = \$200,000) who will be responsible for implementing all strategies related to the CAP.



Cost Notes

Consultant fees. Consultant fee estimate from EDAW (\$250,000). Assumes reconnaissance level work and above grade assessment only. These costs could be appended to General Plan Update.



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Cost Notes

Can vary from \$300,000 to \$1 million.



Cost Notes

Assumed to be part of the General Plan Update. EDAW estimate of consultant fee for GP update: \$800,000

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