# Appendix C.

## Measure Cost Analysis

# Albany Climate Action Plan - Draft GHG Reduction Strategies 5/17/09

## 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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **BE-1.1** | Install cost-effective renewable energy systems on all city buildings, and install building performance data displays to demonstrate savings. | See below | See below | See below | See below | See below | See below | See below |
| A | Renewable energy systems | SolarCity | No Cost (Leasing) | No Cost (Leasing) | No Cost (Leasing) | No Cost (Leasing) | N | Assume City will participate in a Power Purchase Agreement (PPA) with solar company to lease panels at no cost to City. |
| B | Building perfomance data displays | Lucid Design Group | $61,000 | $81,000 | $71,000 | $7,100 | N | 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 f screen + preconfigured). Grand Total: $61,000 - $81,000 |

### Objective BE-2: Retrofit existing residential and commercial buildings to increase energy efficiency and maximize use of renewable energy

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **BE-2.1** | Develop comprehensive outreach programs to encourage energy efficiency and renewable energy investments in the community. | EDAW | - | - | $107,140 | $13,395 | N | 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 |
| **BE-2.2** | Identify and develop low-cost financing products and programs that encourage investment in energy efficiency and renewable energy within existing residential units and commercial buildings. | 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 | - | - | - | $1,316 | Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed. | 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. 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| B | Low Interest Loans | Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis | $140,000 | $1,150,000 | $645,000 | $80,625 | Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed. | 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 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. |
| C | Energy Efficiency Mortgages | Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis | $20,000 | $150,000 | $85,000 | $20,000 | N | 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. 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. |
| D | Revolving Loan from Bond Sale | Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis | $60,000 | $150,000 | $105,000 | $13,125 | Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed. | 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 resu from the revenue bond issue. |
| E | Energy Efficient Local Improvement District | Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis | $150,000 | $500,000 | $325,000 | $40,625 | Depends on the efficiency of the on-site energy efficiency improvements and alternative energy installed. | 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 |
| **BE-2.3** | Develop and implement point-of-sale residential and commercial energy efficiency upgrade requirements. | See below | See below | See below | See below | See below | See below | See below |
| A | Residential | - | - | - | - | $1,316 | Possible increased capital costs that could be off set by increased the property value of an energy efficient home. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| B | Commercial | - | - | - | - | $1,316 | Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient building. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **BE-2.4** | Identify and facilitate solar energy EmPowerment districts in commercial, industrial, and mixed-use portions of City. | - | - | - | - | $1,316 | Possible increase in energy costs assuming higher costs for more renewable energy versus cheaper fossil fuel alternatives. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) Also assumes most businesses will take advantage of PPAs (lease) and will not purchase solar |
| **BE-2.5** | Join Bay Area efforts to ensure green public transit energy sourcing. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

### Objective BE-3: 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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **BE-3.1** | Require new construction to comply with Tier 2 energy efficiency standards contained within section 503.1.2 of the California Green Building Code. | EDAW Seattle Green Building Policy Analysis | - | - | - | $1,316 | Possible increased capital costs that could be off set by long-term energy bill savings and increased property value as an energy efficient building. | 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 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. |
| **BE-3.2** | Require that all new multi-tenant buildings be sub-metered to allow each tenant the ability to monitor their own energy and w consumption. | - | - | - | - | $1,316 | Possible marginal increased costs to tenants. Possible maginal increae in revenue from savings to property owner. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

### Objective BE-4: Community energy management

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **BE-4.1** | Partner with other neighboring cities and PG&E to fast-track smart grid technology in Albany. | - | - | - | - | $1,316 | N | 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 t CAP. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **BE-4.2** | Work with Alameda 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/publicatio ns/pdfs/ssl/gateway_sf-streetlighting.pdf | Assume cost is to County | - | $336,300 | $33,629 | N | Based on Clinton Climate Foundation calculations, City of Albany, 2010 |
| **BE-4.3** | Research the feasibility of joining the Community Choice Aggregation efforts of Berkeley, Oakland, Emeryville, and other neighboring cities. | - | - | - | - | $1,316 | Possible increase in energy costs assuming higher costs for more renewable energy versus cheaper fossil fuel alternatives. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **BE-4.4** | Encourage PG&E and EBMUD to provide comparative energy and water conservation metrics on utility bills. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

## Transportation and Land Use Strategy - *Create an interconnected transportation system and land use pattern that shifts travel from auto to walking, biking and public transit*

### 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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **TL-1.1** | Expand and enhance bicycle infrastructure throughout the city. | See below | See below | See below | See below | See below | See below | See below |
| A | Improve/expand bicycle/pedestrian infrastructure network | Alta Planning, City of Albany, AECOM | $7,900,000 | $46,000,000 | $26,950,000 | $2,695,000 | N | 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). Separated cycle track + street re-design estimated to be $500,000 - $3M per mile. |
| B | Incorporate bicycle-friendly intersections into street design | City of Portland Bureau of Transportation, AECOM | $88,000 | $143,000 | $115,500 | $11,550 | N | $8,000 - $13,000 per box. Assume City will install bike boxes at 11 intersections. $88,000 - $143,000 |
| **TL-1.2** | 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 | N | $200 per 2-bike rack ($150 per rack + $50 for installation). Assumes 100 new racks will be needed in the city. |
| **TL-1.3** | Evaluate the community's walking infrastructure, identify potential barriers, and implement improvements. | Fehr & Peers | $1,418,250 | $2,569,000 | $1,993,625 | $249,000 | N | Source: Fehr and Peers, 2010; http://www.walkinginfo.org/engineering/crossings.cfm |
| **TL-1.4** | Strictly enforce pedestrian rights laws on City streets. | EDAW | $20,000 | $20,000 | $20,000 | $20,000 | N | 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. |
| **TL-1.5** | Encourage additional neighborhood-serving commercial uses and mixed-use development within the City's existing commercial districts. Strive to provide access to daily goods and services within ¼-mile of residences. | EDAW | $800,000 | $800,000 | $266,667 | $33,333 | N | EDAW estimate of consultant fee for General Plan Update: $800,000 |

### 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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **TL-2.1** | Conduct public transit gap study that analyzes strategies for increasing transit use within the City and identifies funding sources for transit improvements. | Nelson Nygaard | $45,000 | $55,000 | $50,000 | $6,250 | N | It is assumed this study will require some data collection. |
| **TL-2.2** | Work with AC transit to provide bus stops with safe and convenient bicycle and pedestrian access and essential improvements such as shelters, route information, benches, and lighting. | See below | See below | See below | See below | See below | See below | See below |
| A | Bus stop improvements | City of Bishop 2008 Capital Improvement Plan; City of Albany | $150,000 | $150,000 | $150,000 | $18,750 | N | Assumed that City will provide bus shelters, benches and existing street lights will provide lighting. AC Transit will pay for maintenance. Estimated that 5 stops need enhancement + 5 new stops = 10 stops total. $15,000 per transit stop = $150,000 |
| B | Extend Bus Line 18 to commercial retail on Eastshore Highway | EDAW | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **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 | N | City is too small to qualify for the AC Transit EasyPass Program. Assume City will be able to partn 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. |

### Objective TL-3: Promote pedestrian- and transit-oriented development

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **TL-3.1** | 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 | N | 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 |
| **TL-3.2** | Update planning documents to promote high-quality, mixed-use, pedestrian- and transit-oriented development in the San Pablo/Solano Avenue commercial districts. | EDAW | $30,000 | $30,000 | $30,000 | $3,750 | N | Consultant fee estimate: $30,000 |
| **TL-3.3** | Evaluate GHG emissions associated with development proposals and work with applicants to reduce emissions during project review, and incentivize projects that generate low levels of GHG emissions. | EDAW | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| 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 | Y | Prescriptive approach: Commercial: LEED NC 2.2 EA Credit 1: Optimize Energy Performance Prescriptive Compliance Option, Residential - ENERGY STAR for Homes (Home Performance tod 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.<br>-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.<br>-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. |
| B | Performance Based Approach | Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis | $225,000 | $500,000 | $362,500 | $45,313 | Y | 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.<br>-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 potentia be leveraged for residential and commercial ratings, respectively.<br>-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. |
| 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 | N - Possible costs to local developers | 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. |

**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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **TL-4.1** | Work with ABAG and neighboring cities to improve the jobs-housing balance within the City and regional transit corridors. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **TL-4.2** | Improve fuel efficiency of the City vehicle fleet by purchasing low- or zero-emission vehicles when vehicles are retired from service. | City of Albany | - | - | $728,000 | $72,800 | N | Estimated cost per hybrid vehicle: $26,000. City has 28 vehicles |
| **TL-4.3** | Incentivize electric and plug-in hybrid vehicles through development of automobile charging infrastructure and preferential street parking spaces. | See below | See below | See below | See below | See below | See below | See below |
| A | Charging station infrastructure | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| B | Preferential street parking for electric and plug-in electric hybrid vehicles | - | - | - | - | - | N | Low cost. Loss of revenue associated with reduced parking fees |
| **TL-4.4** | Create and implement a voluntary transportation demand management (TDM) program to reduce weekday peak period single occupancy commute and school trips. | Nelson Nygaard | $25,000 | $75,000 | $50,000 | $6,250 | N | Comprehensive TDM study tailored to local conditions (including some data collection as needed): $75,000. Basic TDM study: $25,000 |
| A | Facilitate ride-share programs. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| B | Public outreach | EDAW | $300,000 | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |
| **TL-4.5** | Evaluate and consider implementation of community parking management strategies. | EDAW | $45,000 | $55,000 | $50,000 | $6,250 | N | It is assumed this study will require some data collection. |

**Objective TL-5: Prepare for peak oil**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **TL-5.1** | Conduct a study of the potential effects of peak oil on the community and develop a peak oil adaptation plan. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

## Waste Reduction Strategy - *Minimize waste*

**Objective WR1: Become a zero-waste community**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **WR-1.1** | Establish a citywide zero waste target for 2030. | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

## Water Conservation Strategy - *Celebrate water as an essential community resource*

**Objective WC-1: Conserve water in existing buildings/landscapes**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **WC-1.1** | Encourage residential and commercial users to participate in EBMUD's free water audit program. | EDAW | $300,000 | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |
| **WC-1.2** | Encourage 50% reduction in outdoor potable water usage for existing residential and commercial properties. | - | - | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |

**Objective WC-2: Conserve water in new construction/landscapes**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **WC-2.1** | Require new construction and major remodels to achieve indoor water efficiency 20% above the California Building Standards Code. | - | - | - | - | $1,316 | Possible increased capital costs that could be off set by long-term water bill savings and increased property value as an water efficient building. | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |
| **WC-2.2** | Require new landscape projects to reduce outdoor potable water use by 50%. | | | See Measure WC-2.1 | See Measure WC-2.1 | See Measure WC-2.1 | See Measure WC-2.1 | See Measure WC-2.1 |

## 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) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **GI-1.1** | Enhance the community's urban forest and other landscapes to maximize carbon sequestration, reduce stormwater runoff, and augment neighborhood aesthetics. | See below | See below | See below | See below | See below | See below | See below |
| A | Tree planting | City of Albany | - | - | $200,000 | $20,000 | N | Urban Forest Department stated that the City would approach planting capacity 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. |
| B | Undergrounding utilities | - | - | - | - | $1,316 | N | 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. ($200,000 / 19 strategies / 8 years = $1,316 avg annual cost) |

## Food and Agriculture Strategy - Create a sustainable and climate-friendly food system.

**Objective FA-1: Strengthen the regional food system**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **FA-1.1** | Establish a permanent farmer's market site within the City and work to expand the market as a community resource. | - | - | - | - | $20,000 | N | Assumes farmer market site study and consultation with local farmers markets organizations. |
| **FA-1.2** | Facilitate and promote Community-Supported Agriculture organizations and services. | EDAW | $300,000 | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |
| **FA-1.3** | Procure regionally produced food for City events and encourage vendors at City-sponsored events to procure food regionally. | EDAW | $300,000 | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |

**Objective FA-2: Promote awareness of sustainable food choices**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **FA-2.1** | Encourage low-carbon meals through public education. | EDAW | $300,000 | $300,000 | $300,000 (for 14 strategies) | $2,679 | N | 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 |

**Objective FA-3: Increase and enhance urban agriculture**

| Measure | | Data Source | Low Cost | High Cost | Average Cost | Avg Annual Cost (assume 2012 start date for most activities) | Direct Costs to Local Residents and Businesses | Cost Notes |
|---|---|---|---|---|---|---|---|---|
| **FA-3.1** | Establish a local community garden program to increase local food security and provide local recreation amenities. | Urban Harvest | $2,600 | $20,000 | $11,300 | $1,413 | N | 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) |

**Legend for Origin of Policies:**

| | |
|---|---|
| **ACGT** | Albany Clean and Green Task Force |
| **CAP SRV** | CAP Online Survey |
| **ASR** | Albany Strollers and Rollers |
| **BMP** | Best Management Practices |
| **AG** | Attorney General |
| **CAPCOA** | 2007 CAPCOA Report |